

Operational Directives	WRHA Infection Prevention & Control Program	
	Infection Prevention and Control for Construction, Renovation and Maintenance	Page 1 of 20
	Approval Signature: Original signed by <i>Nancy Dixon</i>	Department: Infection Prevention and Control
	Date: February 2020	Supersedes: May 14, 2012

1.0	<u>PURPOSE:</u>	
1.1	To minimize healthcare associated infections due to construction, renovation and maintenance.	
1.2	To ensure infection prevention and control guidelines are included in all phases of facility design and implementation of Work in a Health Care Facility throughout the Winnipeg Health Region to reduce the risk of Healthcare Associated infections.	

2.0	<u>DEFINITIONS:</u>	
2.1	<u>Capital Planning (CP):</u> The department responsible for managing and delivering capital and non-capital Projects (new construction, renovations and Safety and Security) within the Winnipeg Health Region sites.	
2.2	<u>Construction clean:</u> An ongoing program of cleaning activities performed during construction to maintain site cleanliness during the project (i.e., through a daily cleanup); prevent dust and debris from being trapped in fixtures, the ceiling, and other closed off spaces; and maintain conditions that will facilitate the effective final cleaning of the site prior to hand-over.	
	Notes: 1) See <i>Final construction clean.</i> 2) <i>Construction clean is not a single event, but a continuous process starting at the commencement of the work and finishing at the hand-over of the site to the HCF. It is achieved through a system of cleaning practices, methods statements, checklists, and quality audits.</i> 3) <i>Construction clean is generally applied to area bounded by the project, including access routes.</i> [5.2]	

2.3	<p><u>Construction Terminal Cleaning:</u> The thorough cleaning of a clinical space by the health care facility following construction and before the space is used for patient care, medical equipment, or the storage of clean or sterile supplies, in order to remove contaminating micro-organisms that could be acquired by subsequent occupants or staff. Note: <i>Terminal cleaning is also referred to as hospital cleaning, clinical cleaning, or return to service cleaning. The intent is to bring the space to the point where it can be safely used for patient care.</i> ^[5.2]</p>
2.4	<p><u>Construction Start-Up Phase:</u> After award of a Project contract and before construction begins, this phase includes a 'start-up' meeting chaired by CP and/or the prime consultant for the Project. This meeting is attended by the general contractor, their representatives, as well as site and regional representatives including Facility Management (FM), Infection Prevention and Control (IP&C), and primary program contacts. This meeting serves to collect and clarify: contact information, security requirements, access, privacy requirements, and review service shutdown and IP&C procedures, among others, specific to the project.</p>
	<p><u>Constructor:</u> A person who undertakes construction, renovation, maintenance, or repair work for an owner. Note: <i>A constructor can be, for example, a prime (or general) contractor, contractor, subcontractor, construction manager, construction worker, tradesperson, or facility operations and maintenance staff.</i> ^[5.2]</p>
2.5	<p><u>Design Phase:</u> Pre-construction phase of a Project where Project scope is determined and construction contract documents are prepared. It is during this phase when IP&C is engaged to review and provide IP&C recommendations for inclusion into the Project, as well as complete an Infection Control Risk Assessment (ICRA) This also includes schematic phase. Note: This is done in consultation and consensus with <u>Multidisciplinary team (MDT)</u>.</p>
2.6	<p><u>Facility Management (FM):</u> The department(s) responsible for the maintenance and operation, housekeeping and security of all building related systems and maintenance projects.</p>
2.7	<p><u>Final Construction Clean:</u> A state of cleanliness at the end of the project that allows for effective terminal cleaning of the construction site by the HCF after hand-over. ^[5.2]</p>
2.8	<p><u>Healthcare Associated Infection (HAI):</u> An infection occurring in a patient/resident/client during the process of care in a hospital or other healthcare facility, which was not present or incubating at the time of admission.</p>

2.9	<u>Healthcare facilities</u> Include, but are not limited to, acute care hospitals, emergency departments, rehabilitation hospitals, mental health hospitals, and long-term care facilities. ^[5.8]
2.10	<u>Infection Control Plan:</u> A document that describe the procedures, processes, and safeguards that will be used to maintain the appropriate infection control preventive measures throughout the project.
2.11	<u>Infection Control Risk Assessment (ICRA):</u> A matrix of precautions for construction, renovation and maintenance as described in Appendix A.
2.12	<u>Infection Prevention and Control (IP&C):</u> The department responsible for the prevention and control of infection transmission in WRHA healthcare facilities and community sites.
2.13	<u>Infection Prevention and Control Construction Checklist:</u> A checklist used to define parameters and IP&C requirements for the work as described in Appendix B.
2.14	<u>Manager/Designate:</u> The person responsible for the day-to-day operations of the area the work is to take place in (e.g., Unit Manager, Program Manager, Manager of Facility and Support Services [MFSS]).
2.15	<u>Multidisciplinary team (MDT):</u> a group comprising representatives from various disciplines in the healthcare facility that works with the Project management team and others to ensure the appropriate IP&C and safety and health measures are followed during construction activities.
2.16	<u>Occupational and Environmental Safety & Health (OESH):</u> The department providing employee safety, injury prevention, occupational health and disability case management services to all WRHA staff.
2.17	<u>Patient:</u> A patient, resident, or client receiving health care within a health care setting.
2.18	<u>Pre-Occupancy Phase:</u> Post-construction phase of a Project where the primary Project stakeholders review the conditions of the space to verify its readiness for its intended use, following a terminal cleaning and prior to the space being occupied.
2.19	<u>Project:</u> ^[5.9] The design development including the total construction contemplated of which the Work may be the whole or a part.

2.20	<p><u>Project Contact:</u> The primary contact responsible for the work being performed. This may include but is not limited to ensuring construction, renovation and/or maintenance meet the contract, ICRA measures and safety guidelines</p> <ul style="list-style-type: none"> • For construction and renovation the contact is usually a member of CP • For maintenance the contact is usually a member of FM.
2.21	<p><u>Staff:</u> All persons employed by the WRHA facilities, or WRHA funded facilities, as well as members of the medical staff, volunteers, board members, students and other associated through contracts.</p>
2.22	<p><u>WRHA Multi-Disciplinary Construction, Renovation, Maintenance and Design Working Group:</u> A permeant, Regional team that meets regularly and has a goal to provide resources for MDT's and Projects</p>
2.23	<p><u>Work:</u> For the purposes of this operational directive, Work is defined as construction, renovation and or maintenance/repair work, requiring Preventative Measures III or IV as described in Appendix A. Note: IP&C considerations are part of all work projects undertaken within WRHA facilities, regardless of the class of precautions required.</p>

3.0	<p><u>OPERATIONAL DIRECTIVE (OD):</u></p>
3.1	<p>Use a collaborative approach to construction and renovation, with practical application of the standards using critical thinking and working in a cooperative environment with the multidisciplinary team.</p>
3.2	<p>The Project lead shall establish a MDT during the pre-planning stage of each Project and ensure continued involvement in all work until Project completion.</p>
3.3	<p>Consult the MDT when questions arise, if clarification is required, or if the scope of Work changes.</p>
3.4	<p>Consult the MDT during all stages, including planning, design, construction, and maintenance of ALL renovation or construction projects.</p>
3.5	<p>The ICRA shall outline the IP&C requirements for all Work and shall be developed by the MDT during the design phase.</p>
3.6	<p>The MDT shall determine responsibilities for compliance monitoring as well as the required procedures for reporting concerns.</p>

3.7		The Infection Control plan, including the ICRA, is to be reviewed and updated by the MDT as required for the duration of the project. In the event the scope of Work changes, the Infection Control Plan (including a new ICRA) shall be completed.
3.8		FM and CP contractors shall receive the WRHA Infection Prevention and Control (IP&C) During Construction, Renovation, and Maintenance Orientation presentation prior to ALL Project starts. FM contractors shall also receive the WRHA IP&C During Construction, Renovation, and Maintenance Training presentation prior to any Project start. It is the responsibility of FM and CP to complete this training.
3.9		Manager/Designate shall ensure Patients, visitors and staff in affected areas are informed of any potential impacts while work is in progress. This is done in consultation with the MDT.
3.10		It is the responsibility of <u>any staff who observe Patients or staff at risk of exposure</u> to potentially pathogenic microorganisms or injury to immediately notify a contact as designated by MDT for remediation and consideration of a Work stoppage.
3.11		The ICP shall be an active member of the MDT throughout the construction project, from the Planning to Occupancy Phase.
3.12		It is the responsibility of the contractor to ensure all equipment used to achieve and monitor negative pressure shall be maintained as per manufacturers' directive.
3.13		Subsequent to the constructor's final construction clean (which shall include removal of all debris and dust associated with construction, e.g., drywall dust in cupboard spaces) and upon turnover of the building or space by the constructor, the building or space shall be in such a condition that only a final terminal clean by environmental services is required.
	3.13.1.	Where portable hoarding are used it doesn't need to remain in place until initial cleaning inspection. A process must be in place to ensure portable hoardings are cleaned between projects and that the area outside the portable hoarding meets with 3.13.1.
	3.13.2	The constructor shall ensure that its cleaning responsibilities are completed prior to contacting for post-construction inspections.
	3.13.3	Hoarding shall be maintained until final inspection is complete.
	3.13.4	Initial and final cleaning inspections can be done by IP&C or Housekeeping.

	<p>Note: A typical sequence for closeout and transfer would be as follows: Constructor performs final construction clean; HCF's environmental services perform the first terminal clean of the site; conduct an initial cleaning inspection before the hoarding comes down; if the site meet inspection, hoarding is removed; HCF's environmental services perform the final terminal clean; and final cleaning inspection takes place.</p>
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4.0	<u>PROCEDURE:</u>	
	4.1	Multidisciplinary Team
	4.1.1	Project contact will form a site MDT for all Projects.
	4.1.2	This team shall participate in the planning phase.
	4.1.3	The MDT will have site knowledge and appropriate expertise (per 4.1.1.2.1) and shall be involved throughout a construction Project beginning at the design phase. A chair or lead shall be established as part of the formation of the team.
	4.1.4	The MDT shall include members with expertise and accountability in the following areas: <ul style="list-style-type: none"> • IP&C • administration • environmental services/housekeeping • clinical care (e.g., health care staff) • occupational health and safety • design (e.g., architects, engineers); and • construction (e.g., FM/CP)
	4.1.5	The MDT shall provide guidance for incorporation of this OD's requirements into all phases of the project, including planning, design, implementation phases, commissioning, occupancy, and maintenance, where applicable.
	4.1.6	Meetings of the MDT will take place on a schedule to be determined by the MDT and will continue until the occupancy.
	4.1.7	During the planning phase traffic restrictions and flow of materials and waste to Work site should be organized.

	4.1.8	<p>Determine the frequency/schedule of inspections done by IP&C.</p> <ul style="list-style-type: none"> • Will be based on the population risk group, the intensity of Work and revisions in IP&C measures required. • For visits requiring internal inspection of the Work area: <ul style="list-style-type: none"> ○ Confirm attendance with construction foreman/site supervisor ○ Follow all required safety precautions ○ Wear required personal protective equipment.
	4.1.9	<p>The frequency of monitoring of negative pressure, hoarding, walk off mats and filters during construction using Appendix B will be determined during the planning phase and is the responsibility of the contractor to carry out.</p>
	4.1.10	<p>Communication is essential at all stages. Hold regular meetings with the MDT to discuss upcoming stages and to anticipate issues.</p>
	4.1.11	<p>The MDT shall develop lines of communication before Work begins, in event of a Work stoppage due to patient safety.</p>

	4.2	<p>Infection Prevention and Control (IP&C)</p>
	4.2.1	<p>Is an integral member of the MDT and attend/participate in Work-related meetings as required, throughout the length of the Project.</p> <p>Include IP&C from the beginning of each Project - from the Planning Phase, through the Design Phase, through the Work Phase, and involved in the Pre-Occupancy Phase in order to provide IP&C recommendations consistent with the documents listed in Appendix B. This is done in consultation with the MDT.</p> <p>In collaboration with the MDT, IP&C will complete an ICRA (Appendix A) and use the checklist (Appendix A) to determine the preventative measures required for the Project.</p> <p>Monitor changes in infection rates and patterns during and immediately after construction, renovation, maintenance, or repairs.</p>



		4.2.2	<p>Design Phase: IP&C will be engaged in the Design Phase of each Project to review and assess each Project as it relates to IP&C issues. These include but are not limited to:</p> <ul style="list-style-type: none"> • Class of Project (in consultation with MDT) • Traffic patterns for people and supplies • Ventilation systems • Hand washing facilities • Patient care areas including accommodations for patients requiring additional precautions • Composition of vertical and horizontal surfaces • Water supply and plumbing • Storage of equipment and supplies • Storage and disposal of infectious waste.
		4.2.3	<p>Before the start of the Work:</p> <ul style="list-style-type: none"> • Work with the MDT to document and approve the completed checklist (Appendix A) • Work with the MDT to complete the Infection Control Risk Assessment (ICRA). Review and update these measures as required for the duration of the Project in consultation with Project Contact.
		4.2.3.1	<p>Review Project area prior to commencement of Work and provide comment/clearance the area is safe for Work.</p>
		4.2.4	<p>During Work Phase:</p> <ul style="list-style-type: none"> • Assist in the planning for potential disruption of services during the course of Work, if IP&C measures are required. • Communicate and collaborate with the Project Contact to ensure the IP&C measures are adequate on an ongoing basis. • The ICP will review Work by performing inspections to ensure the appropriate preventative measures are maintained. The ICP will discuss any suspected breaches in IP&C measures with the Project Contact. If required, coordinate with CP or FM to inspect the Work area before Work begins and as required during Work. <ul style="list-style-type: none"> ○ At any time during Work, if spot inspections identify breaches in preventative measures, the MDT will collaborate and ensure breaches resolved immediately. If unable to resolve breaches immediately and there is a significant failure to adhere to the required preventative measures, any member of the MDT has the authority to stop Work. The MDT shall have a procedure in place for notifying the Project Contact in the event of Work stoppage. ○ The Project Contact will respond to the deficiencies in a time line agreed upon by MDT.

	4.2.5	Commissioning/Pre-occupancy Phase: <ul style="list-style-type: none"> • Prior to re-opening of an area, a post-Project or move coordination meeting will be held with representatives from IP&C, Housekeeping, FM or CP, and the users of the area, as appropriate, to discuss IP&C requirements such as: <ul style="list-style-type: none"> ○ Terminal cleaning ○ Settle time (time between terminal cleaning and return to use) ○ Timing of re-opening ○ Walk through ○ General environmental services schedules for new areas ○ Ventilation system checks (i.e., air balance, pressurization, microbial contamination, air exchange rates).
	4.3	Facility Management (FM)
	4.3.1	Is an integral member of the MDT and attend/participate in Work-related meetings as required, throughout the length of the project.
	4.3.2	For FM lead work: Assess Work undertaken: <ul style="list-style-type: none"> • Collaboratively with the MDT to identify the Population Risk Group, Construction Activity Type, and Preventive Measure Analysis using Appendix A. • Ensure any contracts or Work performed by internal or external personnel follows the most current Canadian Standards Association (CSA) standards as appropriate (Z317, Z8000) (see Appendix D). • Implement traffic restrictions to Work site before work begins. • Shall notify IP&C of any significant changes to the scope of Work so IP&C may assess any impact to IP&C recommendations. • Ensure required all Work is completed prior to pre-occupancy phase.
	4.3.3	Notify Manager/Designate and ICP of planned disruption to services to Patient care areas, e.g., air, water, medical gases, providing sufficient time for the implementation of alternative arrangements. Use existing shut down procedures.
	4.4	Housekeeping
	4.4.1	Is an integral member of the MDT and attend/participate in Work-related meetings as required, throughout the length of the project.
	4.4.2	<ul style="list-style-type: none"> • is responsible for keeping areas adjacent to the construction area and the occupied areas of the HCF clean • Clean daily, and more often as necessary, in the area adjacent to the Work • Is responsible for terminal cleaning of the construction site

	4.5	Capital Planning (CP)	
		4.5.1	Is an integral member of the MDT for any projects (of any funding source) which CP have been designated to lead and attend/participate in Work-related meetings as required, throughout the length of the project.
		4.5.2	For CP lead work: Ensure Project bid documents and contracts include specifications for infection prevention and control measures: <ul style="list-style-type: none"> • As a minimum, the contract language will indicate the contractor must meet the current CSA Z317 standard. • Bid documents shall include the Infection Control plan.
		4.5.3	CP shall notify IP&C of any significant changes to the scope of Work so IP&C may assess any impact to IP&C recommendations.
		4.5.4	Report completion of Work MDT.
	4.6	Manager/Designate	
		4.6.1	Is an integral member of the MDT and attend/participate in Work-related meetings as required, throughout the length of the Project affecting their areas.
		4.6.2	Review ICRA and consults IP&C when clarification is required.
		4.6.3	Identify all Patients potentially affected by the Work and relocate as appropriate.
		4.6.4	Keep unauthorized persons (patients, visitors, and staff) out of the Work area until completion of Project as advised by Project Contact.
		4.6.5	Collaborate with Materials Management and IP&C to ensure protection of sterile/clean supplies.
		4.6.6	Communicate with Project Contact if any breach in a Work area is found in a Patient care area.

5.0	REFERENCES:
5.1	Calgary Health Region regional policy no. 1346: Infection Prevention and Control For Patient Care and Related Areas During Construction, Renovation and Maintenance. Retrieved October 1, 2010 from: Calgary Health Region Policy - Infection Prevention and Control During Construction, Renovation and Maintenance.
5.2	Canadian Standards Association. (2017) Infection Control During Construction, Renovation, and Maintenance of Health Care Facilities, CSA-Z317.13-17.
5.3	Capital Health Edmonton Area. (2007) Regional Infection Prevention and Control Best Practice Recommendation. Infection Prevention and Control Preventative Measures Analysis - Infection Control Risk Assessment (ICRA) and Preventative Measures required for all construction, renovation, maintenance and repair work activities.
5.4	Guidelines for Design and Construction of Health Care Facilities. (2010 Edition). The Facility Guidelines Institute. Retrieved December 22, 2010 from: http://www.fgiguilines.org/2010guidelines.html
5.5	Infection control risk assessment (ICRA) 2009. Retrieved August 12, 2010 from: http://www.premierinc.com/quality-safety/tools-services/safety/topics/construction/downloads/ICRA-MatrixColorRevised-091109.pdf .
5.6	Kingston Hospitals Infection Control Manual. (2005, October) Prevention of Infections – Construction. Sec 2-70, pp 2-17.
5.7	Prevention of hospital-acquired infections. A practical guide 2nd edition WHO 2002 G. Ducelet et al. Retrieved August 1, 2008 from: http://whqlibdoc.who.int/hq/2002/WHO_CDS_CSR_EPH_2002.12.pdf .
5.8	Routine Practices and Additional Precautions: Preventing the Transmission of Infection in Health Care. (2012, April). Manitoba Health. Available at: http://www.gov.mb.ca/health/publichealth/cdc/docs/ipc/rpap.pdf .
5.9	Manitoba Health Standard Form of Agreement Between Owner and Prime Consultant.

Operational Directive Contacts:

Molly Blake, Program Director, Infection Prevention & Control
 Craig Doerksen, Divisional Director, Facility Management
 Ken Kollinger, Regional Director, Capital Planning

Appendix A

Infection Control during Construction, Renovation and Maintenance Preventive Measure Analysis

To be completed before work commences to provide infection control and safety for patients, patient care staff, visitors and workers

Assessment Date:		Trade(s): Contractor:		Supervisor:	
WO#:		Project#:		Length of Job:	
Construction		<input type="checkbox"/> NEW	<input type="checkbox"/> RENOVATION	<input type="checkbox"/> MAINTENANCE	
<input type="checkbox"/> Phase 1	<input type="checkbox"/> Phase 2	<input type="checkbox"/> Phase 3	<input type="checkbox"/> Phase 4	<input type="checkbox"/> Phase 5	<input type="checkbox"/> NO PHASES

Full Description of work to be done:

Population risk groups – Table 1

<p>Group 1 Lowest</p>	<ul style="list-style-type: none"> • Office areas • Unoccupied wards • Public areas 	<ul style="list-style-type: none"> • Laundry and soiled linen cleaning areas • Physical plant workshops and housekeeping areas
<p>Group 2 Medium</p>	<ul style="list-style-type: none"> • Patient care areas, unless listed in group 3 or group 4 • Outpatient clinics (except oncology and surgery) • Admission and discharge units • Waiting rooms 	<ul style="list-style-type: none"> • Autopsy and morgue • Occupational therapy and physical therapy areas remote from patient care areas
<p>Group 3 Medium High</p>	<ul style="list-style-type: none"> • Emergency room (except trauma) • Imaging • Labour and delivery (non-operating) • Nurseries for healthy newborns • Nuclear medicine • Hydrotherapy • Echocardiography • laboratories 	<ul style="list-style-type: none"> • general medical and surgical wards • pediatrics • geriatrics • long-term care • food preparation, serving and dining areas • respiratory therapy • clean linen handling and storage area
<p>Group 4 Highest</p>	<ul style="list-style-type: none"> • intensive care units • operating rooms (including pre, induction PACU, and scrub areas) • anesthesia storage areas and workrooms • oncology units and outpatient clinics • Transplant units and outpatient clinics • Wards and outpatient clinics for patients with AIDS or other immunodeficiency diseases • Dialysis units • Critical care nurseries • Labour and delivery operating rooms • Cardiac catheterization and angiography • Cardiovascular and cardiology patient areas 	<ul style="list-style-type: none"> • Endoscopy • Pharmacy admixture rooms • Sterile processing department, rooms and supply rooms • Burn care units • Animal rooms • Trauma rooms • Protective environment isolation rooms • Tissue culture laboratories • Bronchoscopy • Cystoscopy • Pacemaker insertion rooms • Dental procedure rooms

Construction/Renovation activity type – Table 2

Type A	<p>Inspection and non-invasive activities. Includes, but is not limited to,</p> <ul style="list-style-type: none"> • Activities that involve a single controlled opening in a wall or ceiling for minor work or visual inspection, that is accessed by <ul style="list-style-type: none"> - Removing no more than one ceiling tile; or - Opening of an access panel on a wall or ceiling • Painting (but not sanding) and wall covering • Electrical trim work • Minor plumbing work that disrupts the water supply to the localized patient care area (i.e., one room) for less than 15 min. • Other maintenance activities that do not generate dust or require cutting of walls or access to ceiling other than for minor work or visual inspection as described in the first bullet above
Type B	<p>Small-scale, short-duration (e.g., less than 2 hours) activities that create minimal dust. Includes, but is not limited to</p> <ul style="list-style-type: none"> • Activities that require access to and use of chase spaces • Cutting a small opening in contained space where dust mitigation can be controlled, e.g., cutting of walls or ceilings to provide an access point for installing or repairing minor electrical work, ventilation components, telephone wires, or computer cables • Sanding or repair of a small area of a wall • Plumbing work that disrupts the water supply of one or more patient care areas for less than 30 min
Type C	<p>Activities that generate a moderate to high level of dust, cause a moderate service disruption, require demolition, require removal of a fixed facility component (e.g., a sink) or assembly (e.g., a countertop or cupboard) or cannot be completed in a single work shift. Includes, but is not limited to,</p> <ul style="list-style-type: none"> • Activities that require sanding of a wall in preparation for painting or wall covering • Removal of floor covering, ceiling tiles and casework • New wall construction • Minor ductwork • Electrical work above ceilings • Major cabling activities • Plumbing work that disrupts the water supply of one or more patient care areas for more than 30 min., but less than 1 hour
Type D	<p>Activities that generate high levels of dust, activities that necessitate significant service disruptions, and major demolition and construction activities requiring consecutive work shifts to complete. Includes but is not limited to,</p> <ul style="list-style-type: none"> • Soil excavation • New construction that requires consecutive work shifts to complete • Activities that involves heavy demolition or removal of a complete cabling system • Plumbing work that disrupts the water supply of one or more patient care areas for 1 hour or more



ICRA MATRIX

Population Risk Group (Circle One):	1	2	3	4	Refer to Table 1.
Construction Activity Type (Circle One):	A	B	C	D	Refer to Table 2.

Risk Group	Construction Activity			
	Type A	Type B	Type C	Type D
Risk Group 1	I	II	II	III/V*
Risk Group 2	I	II	III	IV
Risk Group 3	I	III	III/IV*	IV
Risk Group 4	I-III**	III/IV*	III/IV*	IV

Refer to Preventive Measures to ensure all required processes are implemented to ensure patient, worker safety.

Identification of surrounding areas to assess potential impact of work.

Unit below	Unit Above	Lateral Left	Lateral Right	Behind	Front
Risk Group	Risk Group	Risk Group	Risk Group	Risk Group	Risk Group

Preventative Measure: _____



Infection Control Measures

Preventive Measure 1	<ol style="list-style-type: none"> 1. Review infection control construction agreement before work begins. 2. Execute work by methods to minimize raising dust from construction operations. 3. Protect patient care equipment and supplies from dust exposure. 4. Immediately replace any ceiling tile displaced for visual inspections. 5. Report discoloured water and water leaks to maintenance. <p>Comments/Special Instructions:</p>
Preventive Measure 2	<p>PM 1 measures to be followed</p> <ol style="list-style-type: none"> 1. Determine a safe route for the transportation of the clean or sterile supplies and equipment away from the construction area. 2. Establish traffic patterns for the construction workers that avoid, or at the minimum reduce, adverse impacts on patient care areas. 3. Provide active means to prevent airborne dust from dispensing into atmosphere. 4. Water mist work surfaces to control dust while cutting. 5. Seal unused doors with duct tape. 6. Block off and seal air vents. 7. Wipe work surfaces with disinfectant. 8. Contain construction waste before transport in tightly covered containers. 9. Vacuum the area (with HEPA-filtered vacuum) and wet mop area daily with a hospital grade low level disinfectant. 10. Place dust mat (sticky mat) at entrance and exit of work area. 11. Remove or isolate HVAC system in areas where work is being performed. (if possible) 12. Flush potable water lines in the construction area and adjacent areas before re-use. <p>Comments/Special instructions:</p>
Preventive Measure 3	<p>PM 1 & 2 measures will be followed</p> <ol style="list-style-type: none"> 1. Isolate HVAC system in area where work is being done to prevent contamination of duct system. 2. Complete all critical barriers or implement cube control method from floor to true ceiling if practicable before construction begins. 3. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units. (0.03 inches of water column) 4. Do not remove barriers from work area until complete project is thoroughly cleaned by housekeeping. 5. Vacuum the area (with a HEPA-filtered vacuum) and wet mop area daily with a hospital grade low level disinfectant. 6. Remove the barrier material carefully to minimize spreading of dirt and debris associated with construction. 7. Contain construction waste before transport in tightly covered containers. 8. Remove or isolate HVAC system in areas where work is being performed. 9. Consider hyper-chlorinating or superheating stagnant potable water. <p>Comments/Special Instructions:</p>



Preventive Measure 4	<p>PM 1, 2 and 3 measures shall be followed</p> <ol style="list-style-type: none"> 1. Construct anteroom at access points to the construction area if access is from within the health care facility. 2. Place walk off mat (sticky mat) outside the anteroom in patient care areas and inside the anteroom 3. Ensure construction workers <ol style="list-style-type: none"> a. Leave the construction area through the anterooms so they can be vacuumed using a HEPA vacuum cleaner before leaving worksite; or b. Wear protective clothing that is to be removed each time they leave the construction area and before going into patient care areas. 4. Repair holes in walls within 8 hours or seal them temporarily. 5. Ensure that ventilation systems are working properly in adjacent areas. <p>Comments/Special instructions:</p>
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Identification of containment measures (Check all that apply)

Containment Cube	Poly Zip wall	Poly Zip wall + Hardboard	Anteroom

Plan to follow containment issues

Traffic flow:

Debris Removal:

Housekeeping:

Identify and communicate the responsibility for infection control and safety of the project with all workers. The ICRA may be modified throughout the project and must be communicated to all workers involved along with Infection Prevention and Control if necessary.

Project/Supervisors Signature:

Infection Control Practitioner Signature (if necessary):

Analysis prepared by: Date:



Appendix C Construction, Renovation and Maintenance Resources

1.	Canadian Health Care Facilities, Standard Z8000.-11. (2011, First Edition) Canadian Standards Association.
2.	Construction Related Nosocomial Infections in Patients in Health Care Facilities. (2001) Health Canada. Accessed December 14, 2018.
3.	Infection Control During Construction, Renovation, and Maintenance of Health Care Facilities, CSA-Z317.13-17. (2017) Canadian Standards Association.