Standard Operating Procedure Title	SOP #:
Infection Prevention & Control during construction, renovation, and maintenance projects	IP&C-7-S-100
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Site/Area	**Approved by:**
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Purpose:
To provide a structured outline of the required process of construction, renovation, and maintenance (CRM) projects in order to maintain a safe environment for patients, residents, clients, visitors and staff.

Scope:
Capital planning and facility management (CP/FM) shall notify Infection Prevention and Control (IP&C) and Environmental Services for all projects occurring within a facility. Occupational Health and Safety shall be notified as required.

Definitions:
Consultant/prime: a professional (specialist) who oversees/manages a construction project.

Capital Planning (CP): the department responsible for managing and delivering capital and non-capital projects (new construction and renovations).

Design Phase: occurs before construction takes place and includes determination of project scope and preparation of construction contract documents. During this phase, IP&C is included to review and provide recommendations/requirements for the space as well as complete an Infection Control Risk Assessment if required.

Environmental Services (EVS): highly trained support service staff who conduct cleaning and disinfection of the environment within healthcare facilities.

Facility Management (FM)/designate: responsible for the maintenance and operation of all building related systems and maintenance projects. A designate may be appointed by FM (lead hands or maintenance workers) and must be knowledgeable in CRM activities.

Infection Control Risk Assessment (ICRA): a multidisciplinary documented assessment is required for *all* projects and is intended to proactively identify and mitigate risks from infection that could occur during the construction or renovation process. It considers the population at risk, the nature and scope of the project, and determines the required minimum level of preventative measures required to maintain a safe healthcare environment.

Multidisciplinary Team (MDT): a group that at minimum should include representation from infection prevention and control, administration, facility management, architect, engineer, project manager, consultant and the constructor.

Project Manager: assigned person(s) responsible for the project.

Preventative Measures (PM): actions or procedures implemented to decrease the risk of spreading contaminants including equipment, barriers, and inspections throughout project phases.

Risk Group: the population type within or near the area of construction activities that may be at risk of negative outcomes related to CRM activities.

Construction Activity Type: major and minor activities that disturb or modify facility structures of systems given a designation based on the potential for creating and dispersing contaminants (Type A-D).

Constructor: a person who does CRM activities for an owner.

Construction: major and minor facility activities that disturb or modify facility structure or systems. Includes new construction, maintenance, renovation and repairs.

Hoarding: the construction of temporary barriers to separate areas under construction and/or renovation from other areas of the health care facility.

Post-construction Cleaning: the thorough cleaning of the clinical space 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 occupants or staff. Includes cleaning performed by the constructor and Environmental Services.

Procedure:

- A notification process shall be implemented where CP/FM alerts IP&C of upcoming projects and upon discovering concealed hazards that may result in CRM activities (i.e. water leaks/damage).
- A *written* description of the scope of the work including location of work, expected duration and any systems impacted/shutdowns (i.e. plumbing, HVAC) shall be sent by CP/FM, external constructor, or designate, to IP&C responsible for the site. This shall occur *prior* to planning, tendering whenever possible (as Preventative Measures may affect pricing), mobilizing to the site and commencing work.
- Work should not be started prior to communication/consult with IP&C for the site.
- IP&C should be included in all phases of the construction project planning to ensure that requirements for the space meet current CSA standards. This includes, but is not limited to, product review for surfaces, finishes, and furnishings.
- Risk mitigation strategies such as patient placement, hoarding design, phasing, routing of supplies and demolition should be considered.
- Abatement work shall be performed by a qualified abatement contractor or by qualified operation and maintenance staff trained in abatement protocols. IP&C shall be notified and involved in all abatement measure planning regardless of PM classification. Abatement measures are **in addition** to requirements identified by the ICRA, and the highest PMs shall be followed.

Planning/Design Phase

- An ICRA (IP&C-7-F-7597) shall be completed early in the planning phase, before construction begins. If the scope of the work changes during the project, CP/FM shall notify IP&C in order to assess impact to PMs. The ICRA shall be updated to reflect these changes.
- When an ICRA is completed by CP/FM, it shall include designated population risk group, construction type and preventative measures (PM) selected. This shall be documented and submitted to the site, along with the scope of work, for IP&C for review. CP/FM may only complete ICRAs for PM I and PM II projects.
- ICRAs for PM III-IV projects shall be completed in conjunction with IP&C as part of the multi-disciplinary team and must be documented.
- CP/FM, IP&C and the constructor shall refer to Interlake-Eastern RHA Construction documents (see Supporting Documents) for all projects as well as the most current applicable CSA standards (including but not limited to CSA Z317.13; CSA Z8000).
- IP&C in conjunction with MDT shall identify high risk patients in the area or adjacent to the area that may require relocation.
- The MDT shall outline frequency and responsibility for compliance monitoring as well as requirements for reporting concerns.
- Traffic restrictions and flow of materials and construction debris removal shall be planned by the MDT.
- Hoarding plans, either written and/or reviewed at site walkthrough, for PM III and IV shall include IP&C.

Pre-Construction

- Contracted workers/external constructors will receive education and training on safe work practices from Occupational Health and Safety and Infection Prevention & Control practices prior to the project commencing.
- All internal employees involved in construction shall receive education (IP&C-7-R-05) on Infection Prevention & Control practices during construction.
- FM or designate shall implement any required routes for traffic, clean materials and debris identified during the planning phase.
- FM or designate will ensure that patient care equipment and supplies are protected from dust exposure or removed from the area.
- IP&C/designate shall inspect hoarding from PM III and PM IV projects (IP&C-7-R-07) prior to the onset of any construction/renovation activities and on an ongoing basis. IP&C/designate may periodically inspect PM II projects to ensure preventative measures are effective.
- Work and service shutdowns are scheduled during periods of low activity whenever possible.

During Construction

- FM or designate will ensure that any work being performed by internal and/or external constructors follows the most current Canadian Standards Association (CSA) standards as appropriate (including but not limited to CSA Z317.13; CSA Z8000).
- FM or designate is responsible for day to day monitoring of the construction site. Any breaches in infection control practices will be reported to the project manager and IP&C for the site in a timely manner.

- When work is being performed by IERHA employees using equipment belonging to the region to achieve and monitor negative pressure (IP&C-7-F-7598; IP&C-7-F-7599), it is the responsibility of FM to ensure it is maintained as per manufacturers direction and as per CSA Z317.13.
- IP&C inspection frequency shall include consideration of the population risk group, type of work being performed and PMs in place.
- IP&C shall immediately notify the project manger/MDT of serious issues/breaches in PMs. Likewise, the project manager shall inform IP&C of any infection prevention concerns that arise. If a response and/or rectification of the issue is not achieved in a timely way, it shall be escalated to the Director of Capital Planning and Facility Management and the Director of Infection Prevention & Control for review.
- If required, the process for issuing a stop-work order shall be the responsibility of FM/CP. If a stop-work order is issued, IP&C will be notified. Stop-work orders shall be escalated to the consultant/prime for external projects where applicable.
- Environmental Services (EVS) shall ensure areas adjacent to construction area are cleaned daily and more often if necessary.

Post-Construction

- Upon completion of a project and prior to hoarding removal, the constructor shall complete a post-construction clean (IP&C-7-F-7600).
- The timing of the EVS clean may occur before and/or after the hoarding is removed as directed by the MDT/IP&C.
- Following the post-construction clean(s), IP&C or designate shall complete an inspection to assess the cleanliness of the area and identify any deficiencies. IP&C will provide direction if hoarding may be removed or if further cleaning is required.
- CP/FM or designate shall ensure that all required work is completed prior to occupancy phase. CP/FM shall communicate and coordinate with EVS when a post-construction clean is required, and ensure it is completed to satisfaction prior to resuming use of the space.
- No healthcare equipment or supplies shall be moved into an area that has undergone construction or renovation until the following sequence has been completed (sequence may vary as directed by MDT):
    - **All dust generating work** has been completed
    - All construction materials and equipment are removed
    - Constructor clean complete
    - EVS clean complete when required by MDT/IP&C
    - IP&C inspection complete
    - Hoarding is removed
    - Final EVS clean complete

Supporting Documents:
Infection Control Risk Assessment IP&C-7-F-7597
Infection Control New Construction Audit IP&C-7-R-04
Infection Control CRM Education IP&C-7-R-05
Infection Control Placement Requirements IP&C-7-R-06
Infection Control Hoarding Audit IP&C-7-R-07
Pressure Differential Monitoring Form IP&C-7-F-7598
CAHU Monitoring Form IP&C-7-F-7599
Construction Cleaning Checklist IP&C-7-F-7600

References:
CSA Z317.13-22. Infection control during construction, renovation and maintenance of health care facilities.

CSA Z8000-18. Canadian health care facilities.

APIC (2019). Infection Prevention Manual for Construction & Renovation. Retrieved from SLS9808_Preview.pdf (apic.org)

Safe Work Manitoba (2015). Investigation, Assessment and Remediation of Mould in Workplaces. Retrieved from Investigation, Assessment and Remediation of Mould in Workplaces (safemanitoba.com)

Public Health Ontario (2015). CRMD Checklist. Retrieved from https://www.publichealthontario.ca/-/media/documents/c/2015/crmd-toolkit-hoarding.pdf?sc_lang=en&hash=88029EC1FCC21F054829EC2B3EE8E578

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