



HEALTH HOLDING

HAFER ALBATIN HEALTH
CLUSTER
MATERNITY AND
CHILDREN HOSPITAL

Department:	Infection Prevention and Control Department		
Document:	Multidisciplinary Policy and Procedure (MPP)		
Title:	Construction and Renovation Measures in the Healthcare Facility		
Applies To:	All MCH Department		
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1. PURPOSE:

- 1.1 To define the steps and precautionary measures to ensure environmental health risk assessments, interventions, and infection control practices are incorporated into the planning of construction and renovation in the healthcare setting.

2. DEFINITONS:

- 2.1 Infection Control Risk Assessment (ICRA): A tool used to stratify infection control risks associated with construction or renovation.

3. POLICY:

- 3.1 IPC team is involved prior to, during, and post any construction, demolition, and renovation project (planning, ICRA, IPC permit, continuous follow - up, and authority to stop the project).
- 3.2 An established multidisciplinary team composed of IP&C, Safety and Engineering staff, with the involved clinical areas will ensure patient safety given that clear lines of communication among all concerned departments are in place.
- 3.3 Microbiological cultures are conducted after construction for positive pressure isolation rooms and operating theatre or when required (e.g, outbreak) based on the IPC recommendations.

4. PROCEDURE:

- 4.1 Pre-Construction Preventive Measures. See appendices 7.1
 - 4.1.1 An Infection Control Risk Assessment Form: Construction Permit will be completed and submitted by the proponent contractors and/or maintenance staff to the IPC office prior to the commencement of any project. This permit will be posted on the door of the work site by the project management department and a copy given to Facility Management & Safety or the department head hosting the construction work.
 - 4.1.2 The completed construction renovation follow up form (Appendix 6-X-09) will be posted on the door of the work site by IP&C personnel indicating their findings and preventive measure recommendations as per the approved construction permit.
 - 4.1.3 The IP&C trained personnel will provide information on the following Infection Control Risk Assessment (ICRA):
 - 4.1.3.1 Step 1: Identify the type of Construction project . Determining the Type of Construction / Renovation
 - 4.1.3.2 Step 2: Identify the Patient Risk Groups that might be affected (Determining the Patient Risk Groups that will be Affected by the Construction/ Renovation).
 - 4.1.3.3 Step 3: Matching the Patient Risk Group (from step 2) with the type of Construction Project (from step 1) according to the IC Matrix-Class of Precautions
 - 4.1.3.4 Step 4: Based on the Patient Risk group as per the previous IC matrix, use Description of the Required Precautions by Class, which describes the

- category of infection control precautions involved during the construction project and upon completion of the project.
- 4.1.4 The Infection preventionist (IP) is responsible for observing and reporting any breaches in the ongoing construction and renovation activities in their assigned areas.
 - 4.1.5 IP&C trained personnel will use the Walk-Through Assessment Form and will be responsible for:
 - 4.1.5.1 Identifying issues related to ventilation, plumbing, and electrical in terms of occurrence of probable outages.
 - 4.1.5.2 Identifying containment measures using prior assessment such as types of barriers (solid wall) and the need for HEPA filtration.
 - 4.1.5.3 Ensuring renovation/construction area must be isolated from the occupied areas during construction and must have negative ventilation with respect to surrounding areas.
 - 4.1.5.4 Considering potential risks of water damage and risks due to compromised structural integrity (i.e., walls ceiling and roof).
 - 4.1.5.5 Managing working hours for the project and assess whether work can be carried out during non-patient care areas.
 - 4.1.6 All contracted construction workers must be aware and trained on the health and safety risks to staff and patients during construction / renovation activities. It is the responsibility of the construction team to comply with the provisions in this policy outlined by IP&C Department.
 - 4.1.7 Facility Management & Safety will be responsible in establishing traffic patterns for construction workers that will avoid patient care areas
 - 4.2 Preventive Measures during Construction and Renovation
 - 4.2.1 The involved hospital ward/department is responsible for addressing the needs of immunocompromised patients. They should be moved to an area away from the construction zone if the air quality cannot be assured during construction. Immunocompromised patients should wear a mask if it is necessary to transport them through or near the construction areas/zones. IPC measures are followed during the construction, demolition, and renovation projects by using infection control risk assessment (ICRA).
 - 4.2.2 All windows, doors, air intake and exhaust vents are sealed in areas of the hospital adjacent to buildings that are going to be demolished including areas confining susceptible patients, to prevent air and dust leaks into patient care areas.
 - 4.2.3 A dust barrier is created from the floor to the ceiling with the edges sealed. Plastic (for short-term projects) or sheetrock (for long-term projects) are examples of materials that can be used to seal the construction area.
 - 4.2.4 All windows, doors, vents, plumbing penetrations, electrical outlets and any other sources of potential air leak are sealed in the construction zone. Seal all holes, pipes, conduits and punctures appropriately
 - 4.2.5 Negative air pressure within the construction zone should be maintained compared with adjacent areas. Air in the construction zone should be exhausted directly outside. If this is not possible, then the air should be filtered through a HEPA filter before being re-circulated in the hospital. The integrity of the HEPA filter should be assessed to ensure that it is not punctured or blocked.
 - 4.2.6 Any unused exhaust vents in the construction area have to be capped to prevent exhausted air from being drawn back into the facility.
 - 4.2.7 The construction zone is cleaned daily using a wet mop technique.
 - 4.2.8 Used supplies and equipment are enclosed in covered containers when being transported out of the area to prevent spillage.
 - 4.2.9 Installation of cleaned ceiling tiles is secured with silicone sealant.
 - 4.2.10 The partition floor track is clean prior to installation of sound insulation & closing of partition.
 - 4.2.11 Construction workers should wear protective equipment based on the construction and

- renovation risk assessment and monitored by the contractor/safety personnel.
- 4.2.12 All personnel entering work site are required to wear appropriate personal protective equipment (PPE) indicated by the contractor/safety personnel.
- 4.2.13 Trained personnel from IP&C will regularly visit the construction site until the project is completed to ensure all preventive measures are being adhered to, or appropriate modifications are completed if there are any on-site design changes.
- 4.2.14 Housekeeping are responsible for ensuring that adjacent areas are vacuumed daily or more frequently if needed with HEPA filtered vacuums.
- 4.3 Post-Construction Preventive Measures
 - 4.3.1 Facility Management will be responsible for ensuring that the following procedures have been complied with:
 - 4.3.1.1 Thoroughly clean construction zone, including all horizontal surfaces, before the barrier is removed, and again after the barrier is removed and before patients are readmitted to the area.
 - 4.3.1.2 Ensure that the multidisciplinary team or designee conducts a final walk-through to ensure ventilation system is functioning properly in the constructed area and adjacent areas. Flush water lines prior to use if these were disrupted.
 - 4.3.1.3 Consider hyper chlorinating stagnant potable water or superheating and flushing all distal sites before restoring or repressurizing the water system if there are concerns about Legionella and Aspergillus.
 - 4.3.2 Trained personnel from IP&C and IP will inspect the finished area before barriers are removed and patients are re-admitted. An air sampling will be conducted if required.
- 4.4 General Requirements:
 - 4.4.1 All clinical areas walls should be painted with smooth paint and easy to be cleaned and disinfected with approved disinfectants.
 - 4.4.2 All clinical areas floors should be covered with a smooth material and easy to be cleaned and disinfected with approved disinfectants (vinyl).
 - 4.4.3 Decorative hidden areas should be avoided, as they will be the reservoir for microorganisms and dirt.
 - 4.4.4 All posters and signs should be made of or covered by cleanable material
 - 4.4.5 Water fountains should be avoided in clinical areas
 - 4.4.6 Carpets and cloth covering of the seats should be avoided in clinical areas as they are very difficult to be cleaned and disinfected
- 4.5 IPC Requirements for Inpatient general wards
 - 4.5.1 Sufficient spaces between beds to accommodate equipment/staff (at least 2.5 meters, measured from the center of one bed to the center of the next bed).
 - 4.5.2 Beds separated by curtains (both for privacy and for infection control during cough-generating procedures).
 - 4.5.3 Good natural ventilation or regularly maintained mechanical ventilation
 - 4.5.4 Provision of some isolation rooms, preferably with en suite bathrooms (at least 20% of all beds, and up to 40% of all beds in settings with high burden of infectious diseases)
 - 4.5.5 Sufficient toilets and bathrooms with handwashing facilities.
 - 4.5.6 One dedicated handwashing basin per room or per four to six beds in case of multi-patient's rooms.
 - 4.5.7 Alcohol hand rub dispensers between each two beds.
 - 4.5.8 Sharps containers on portable procedure trolleys or in high-care areas wall-mounted next to each bed.
 - 4.5.9 Walls should be painted with smooth paint easy to be cleaned and disinfected with approved disinfectants.
 - 4.5.10 Dedicated storage spaces for sterile, clean and used equipment, sterile and clean supplies, clean and used linen, cleaning equipment, waste holding (clean & dirty utility rooms – clean & sterile stores)
- 4.6 IPC Requirements for Isolation rooms

- 4.6.1 An Anteroom or airlock lobby, when attached to an Isolation room
 - 4.6.1.1 A barrier against the potential loss of pressurization
 - 4.6.1.2 Controls the entry or exit of contaminated air when the anteroom door is opened
 - 4.6.1.3 Isolation rooms do not necessarily always require the provision of an Anteroom.
 - 4.6.1.4 A controlled area where accessible personal protective equipment cabinet is present
 - 4.6.1.5 Personal protective equipment (PPE) or clothing can be donned or removed prior to entry/exit of the isolated contamination area.
 - 4.6.1.6 The Anteroom requires sufficient space to allow for storage of Personal Protective Equipment (PPE) i.e. gowns and gloves for protective isolation.
 - 4.6.1.7 Protective Equipment (PPE) i.e. gowns and gloves for protective isolation.
 - 4.6.1.8 Anterooms should not be shared between Isolation rooms.
 - 4.6.1.9 A door that is kept closed at all times (preferably with a patient observation window so that A clinical hand wash basin inside the room).
 - 4.6.1.10 Easy to clean surfaces (walls and floors)
- 4.6.2 Airborne Infection Isolation Room (AIIR):
 - 4.6.2.1 Negative pressure rooms should be located at the entry to an Inpatient Unit so that the patient requiring isolation does not need to pass other patient areas to access the Isolation Room.
 - 4.6.2.2 A dedicated exhaust system should be provided to the negative pressure isolation room to maintain negative pressure the exhaust system removes a quantity of air greater than that of the supply air with air change per hour 12 ACH as a minimum.
 - 4.6.2.3 The exhaust air duct should be independent of the building exhaust air system to reduce the risk of contamination due to back draughts and should discharge away from staff, visitors and air intake for other patient areas.
 - 4.6.2.4 The Isolation Room bathroom exhaust should not be connected to the building toilet exhaust system.
 - 4.6.2.5 The Isolation room pressure is lower than the adjoining rooms or corridors. Pressure differentials should not be less than -2.5 Pa between isolation rooms and the adjacent ambient air.
 - 4.6.2.6 ACH, pressure difference, air temperature and humidity should be monitored continuously by a fixed monitor outside the isolation room or anteroom if provided and should be provided with an audiovisual alarm in case of a drop in pressure difference outside the range.
 - 4.6.2.7 An Anteroom is optional for the negative pressure Isolation Room. If an Anteroom is not provided, a PPE should be located adjacent to the room entry.
 - 4.6.2.8 A negative pressure Isolation Room requires the following:
 - 4.6.2.8.1 A clinical hand wash basin with 'hands-free' operation in the Isolation Room and the Anteroom, if provided.
 - 4.6.2.8.2 An en suite shower and toilet.
 - 4.6.2.8.3 A self-closing door.
 - 4.6.2.8.4 100% outside air ventilation (i.e. no return air permitted), with low level exhaust ducts.
 - 4.6.2.8.5 approximately 150 – 300 mm above floor level to discharge vertically to the outside air
 - 4.6.2.8.6 Supply air ducts are to be independent of the building supply air system
 - 4.6.2.8.7 For immunosuppressed and infectious patients, a HEPA filtration system should be provided on the supply air ducting to protect the patient from unfiltered air.
 - 4.6.2.8.8 Exhaust air should be HEPA filtered air-conditioning systems for

negative pressure Isolation Rooms should be connected to an emergency power supply to maintain air pressurization in the event of a power failure.

4.6.2.8.9 The AIIR H is a negative pressure Isolation Room.

4.6.3 AIIR Architectural Details

- 4.6.3.1 AIIR walls, ceiling, and floor, including penetrations, shall be constructed to prevent air exfiltration
- 4.6.3.2 AIIR should have self-closing devices on all room exit doors.
- 4.6.3.3 Edge seals should be provided along the sides and top of the door frame for any door into the AIIR
- 4.6.3.4 Bottom edge door sweeps could be used to assist in maintaining negative pressure (sweep for the opening under the door should be the minimum required for proper door operation. (If the All room is not sealed well and the negative pressure of the room cannot be maintained at negative - 2.5 Pascals without a door sweep, provision of a sweep is necessary).
- 4.6.3.5 The window should be completely sealed and could not be opened.
- 4.6.3.6 Window material should be easily cleaned and disinfected.
- 4.6.3.7 Privacy curtains should be washable.
- 4.6.3.8 The floor and wall base in AIIR should have floor and wall base assemblies that are monolithic and have an integral coved wall base that is carried up the wall a minimum of 6 inches (150 mm) and is tightly sealed to the wall.
- 4.6.3.9 Wall finishes should be washable, smooth, scrub-able, water-resistant and with standing repeated cleaning and disinfection with approved disinfectants.
- 4.6.3.10 Wall finishes should be free of fissures, open joints, or crevices that may retain or permit the passage of dirt particles.
- 4.6.3.11 Ceilings should be of monolithic construction, Cracks or perforations in the ceilings should not be permitted.

4.6.4 Pressure Difference Monitor Specifications:

- 4.6.4.1 Gives pressure difference readings in Pascal.
- 4.6.4.2 Provides a continuous reading of the air charge in the room per hour.
- 4.6.4.3 It has an audio alarm when the pressure differential collapses for a period of time that can be adjusted.
- 4.6.4.4 It has a visual alarm when the pressure differential collapses for a period of time that can be adjusted.
- 4.6.4.5 It can be connected to the Building Management System (BMS).
- 4.6.4.6 Protected from tampering from third parties.

4.6.5 Positive pressure Isolation Rooms:

- 4.6.5.1 Positive pressure Isolation Rooms, relative to the ambient pressure are used to isolate immune-compromised patients, for example, oncology and some transplant patients
- 4.6.5.2 The intent is to reduce the risk of airborne transmission of infection to a susceptible patient. These rooms are also known as 'protective isolation units' or protective environment rooms. (PE rooms)
- 4.6.5.3 An anteroom is not required.
- 4.6.5.4 The protective Isolation room should be provided with a higher pressure in relation to the adjoining rooms or spaces +2.5 Pascal as minimum.
- 4.6.5.5 A clinical hand wash basin with 'hands free' operation in the Isolation Room
- 4.6.5.6 A bathroom with shower and toilet
- 4.6.5.7 A self-closing door.
- 4.6.5.8 Positive pressure Isolation Rooms may share a common air system.
- 4.6.5.9 A HEPA filter however must be fitted to the supply air inlet.
- 4.6.5.10 A HEPA filter is not required to the exhaust air, as the exhaust air is not considered infectious.
- 4.6.5.11 Differential air pressure continuous monitoring is required external to the

- Isolation Room in a prominent location (e.g.: adjacent to the entry door).
- 4.6.5.12 The room requires labelling as a positive pressure Isolation Room
- 4.7 Handwashing Basins
- 4.7.1 Handwashing basins should be provided in rooms where clinical procedures are likely to occur, including inpatient rooms, ICU bed bays, ICU- NICU-CCU rooms, treatment and procedure rooms, O.R., E.R., at areas where food, drugs, pathology and laboratory specimens and contaminated materials are handled or processed.
- 4.7.2 Hand-washing stations inpatient care areas should be located so they are visible and unobstructed
- 4.7.3 Soap dispensers should be a non-refillable type and positioned so that any spills from the dispenser during operation can be captured onto the basin; spills onto floors should be avoided.
- 4.7.4 A paper towel dispenser and waste receptacle should be provided.
- 4.7.5 Mirrors should not be installed at hand scrub stations or at hand-washing stations in food preparation areas, nurseries, clean and sterile supply areas, or other areas where asepsis control could be lessened by hair combing
- 4.8 Handwashing Basins Types
- 4.8.1 Type "A" handwashing basin is a large "Clinical Scrub" type.
- 4.8.1.1 The tapware is wall mounted with a hands-free operation (elbow, foot or electronic).
- 4.8.1.2 This hand wash basin is used in areas requiring clinical hand-washing for sterile/aseptic procedures, ICU Rooms, Cardiac Catheterization areas
- 4.8.2 Type "B" basin is a general staff hand wash basin of a medium - sized wall mounted type
- 4.8.2.1 Tapware can either be wall mounted or basin mounted with hands-free operation (elbow or wrist).
- 4.8.2.2 This basin is used in areas requiring general staff hand washing, for example Inpatient Unit corridors.
- 4.8.3 Type C basin is a small staff hand washbasin that is wall mounted.
- 4.8.3.1 The tapware is either wall mounted or basin mounted with hands-free operation (elbow or wrist)
- 4.8.3.2 This basin is used in areas requiring general staff hand washing, for example Staff Amenities and Toilet Areas.
- 4.8.4 Surgical Scrub Sink Type:
- 4.8.4.1 Scrub sink is a long deep sink that can accommodate one or more staff scrubbing for a sterile surgical procedure at the one time
- 4.8.4.2 The sink should be deep to avoid splash during surgical scrub procedure that may cause contamination of the hand.
- 4.9 Handwashing Basins Ratios
- 4.9.1 Single patient room / Isolation Room / Mortuary – one of Type B
- 4.9.2 Multi patient room - one of Type B
- 4.9.3 ICU –NICU – ER - HD one / 4 beds of Type A
- 4.9.4 O.R – scrub surgical Type
- 4.10 Operating room
- 4.10.1 Surgery department areas
- 4.10.1.1 Unrestricted area
- 4.10.1.1.1 An area may include a central control point for designated personnel to monitor the entrance of patients, personnel, and materials into the semirestricted areas; staff changing areas; staff lounge; offices; waiting rooms or areas; pre-and postoperative patient care areas
- 4.10.1.1.2 Street clothes are permitted in these areas. Public access to unrestricted areas should be limited according to policy and procedures.

- 4.10.1.2 Semi-restricted area:
 - 4.10.1.2.1 Peripheral areas that support surgical services. These areas may include storage for equipment and clean and sterile supplies; work areas for processing instruments; sterile processing facilities; hand scrub stations; corridors leading from the unrestricted area to the restricted area of the surgical suite; and entrances to staff changing areas, pre-and postoperative patient care areas, and sterile processing facilities.
 - 4.10.1.2.2 Personnel in the semi-restricted area should wear surgical attire and cover all head and facial hair.
 - 4.10.1.2.3 Access to the semi-restricted area should be limited to authorized personnel and patients accompanied by authorized personnel.
- 4.10.1.3 Restricted area:
 - 4.10.1.3.1 A designated space contained within the semi-restricted area and accessible only through a semi-restricted are
 - 4.10.1.3.2 The restricted area includes operating and other rooms in which surgical operations or other invasive procedures are performed.
 - 4.10.1.3.3 Personnel in the restricted area should wear surgical attire and cover head and facial hair.
 - 4.10.1.3.4 Masks should be worn when the wearer is in the presence of open sterile supplies or of persons who are completing or have completed a surgical hand scrub.
 - 4.10.1.3.5 Only authorized personnel and patients accompanied by authorized personnel should be admitted to this area.
- 4.10.2 Operating Rooms (OR) or Procedure Rooms are required to be positive pressure rooms, relative to any adjacent area.
- 4.10.3 The pressure gradient must provide an airflow direction from the OR to the surrounding areas to prevent infection.
- 4.10.4 Terminal filters at the point of entry to the OR should be HEPA filters, with provision for testing filter integrity.
- 4.10.5 A minimum of four exhaust or return air intake grilles should be located in the corners of the OR, approximately 200mm above floor level.
- 4.10.6 Temperature ranges from 20 to 24 Celsius, relative humidity ranges from 20-60%, positive pressure +2.5 Pascal as a minimum, air change per hour 20 ACH as a minimum
- 4.10.7 Sanitary openings are not allowed inside the restricted area in OR, basins inside operation rooms are not allowed.
- 4.11 Compound Sterile Preparations (CSPs) Area in Pharmacy. See policy no.083 Pharmacy Department.
 - 4.11.1 The pharmacy room or suite should be located to be accessible to clinical areas of the hospital; the Clean room used for CSPs should be inside the pharmacy unit
- 4.12 Soiled workroom or soiled holding room (Dirty Utility Room)
 - 4.12.1 Dirty utility room should be separate from and have no direct connection with either clean workrooms (clean utility room) or clean supply rooms.
 - 4.12.2 Soiled workroom used for cleaning, disposal, or reuse of soiled items (e.g., emptying and rinsing bedpans or emesis basins, emptying or solidifying suction canisters, rinsing and gross cleaning of medical instruments).
 - 4.12.3 This room provides temporary storage for soiled items prior to their removal from the unit.
 - 4.12.4 This room shall contain a Hand-washing station, work counter, flushing-rim clinical service sink with a bedpan-rinsing device or equivalent flushing rim fixture and separate covered containers for waste and soiled linen.
 - 4.12.5 Should be clearly labelled with a "Dirty Utility Room" label.
- 4.13 Clean workroom (Clean Utility Room)
 - 4.13.1 The room is used for preparing patient care items, it should contain a Hand-washing station, work counter and storage facilities for clean supplies including clean Lenin.
 - 4.13.2 Should be clearly labelled with the "Clean Utility Room" label

- 4.14 Central Laundry. See Policy no. 82 Guidelines for Laundry.
 - 4.14.1 The laundering services department should be located in a suitable place. Ideally, it should be in the basement or on the ground floor of the building, with convenient access from various departments
- 4.15 Dietary Services Department
 - 4.15.1 The kitchen is designed as physically separated areas with specified equipment & supplies (e.g., Mixers, Juicers, boards, plates, knives, etc.) for different types of food as premises areas are separated based on assign functions such as a separate area for vegetables, meat, dessert preparation
 - 4.15.2 Each work area should have dedicated appropriate handwashing sink(s) with accessories and hand rub dispenser(s)
 - 4.15.3 Hand washing basins with accessories should be available at all work areas in the department including food preparation, cooking, distribution areas.
 - 4.15.4 The floor should be covered with smooth, non-slippery, easy to be cleaned with approved hospital detergents.
 - 4.15.5 There must be a dedicated store for dry food, refrigerators and chemical supplies.
 - 4.15.6 There must be a dedicated place for uninstalls and reusable equipment to be cleaned and thermally disinfected
- 4.16 Central Sterilization* Department (CSSD). See policy no. 90 Guidelines for Central Supply Department (CSSD)
 - 4.16.1 The Central Sterilization Service Department (CSSD) role is to decontaminate, sterilize and store re-usable medical equipment and surgical devices to ensure patient safety, and prevent surgical site infections.
 - 4.16.2 The Central Sterilization Service Department (CSSD) should be located with direct or close access to the Operating Unit and Day Surgery Units. This may be achieved with the use of lifts.
 - 4.16.3 Access to the CSSD should be restricted to authorized personnel only.
- 4.17 Medical Waste Store
 - 4.17.1 Medical waste store should be away from traffic or medical stores
 - 4.17.2 Door should be with access controlled allowed only for medical waste workers and supervisors.
 - 4.17.3 There should be a clear door sign for biohazard warning
 - 4.17.4 Temperature degrees not exceed 18 degrees through air conditioning and there should be a fixed thermometer
 - 4.17.5 A hand washing basin should be available with all accessories needed (liquid soap/paper towels).
 - 4.17.6 Sanitary opening is available for cleaning
 - 4.17.7 The walls and floor should be covered by materials easy to be repeatedly cleaned and disinfected with approved disinfectants.
- 4.18 Morgue & Autopsy
 - 4.18.1 Hand washing basins with accessories (liquid soap dispenser and paper towels) are available in morgue areas including the body washing area and autopsy room if available.
 - 4.18.2 Morgue & Autopsy spaces should be provided with temperature control (20-24°C), a maximum 60% RH with a 12 ACH.
 - 4.18.3 Direct exhaust connection to the autopsy table should be provided.
 - 4.18.4 Exhaust air should be HEPA filtered
 - 4.18.5 Negative autopsy room pressure (-2.5-10 Pa) with respect to the corridors and adjacent areas is required.
 - 4.18.6 Active Monitoring of pressure is required through a pressure display monitor, connected to the BMS system with an alarm in case of pressure changes.
- 4.19 Emergency / Respiratory Triage and Pathway
 - 4.19.1 Respiratory triage is a designated area for respiratory triage at the ER and H.D entrance with required personal protective equipment (facemask, gown, gloves, hand hygiene sanitizer and tissues)

- 4.19.2 There should be a designated respiratory triage area (Respiratory waiting area/ Respiratory Triage Clinic/isolation room) is available.
- 4.19.3 The respiratory waiting area should be available physically separated with fixed chairs and a distance of at least 1.2 meters.
- 4.19.4 At least one single patient respiratory clinic should be available and provided with portable HEPA filters.

Laboratory

5. MATERIALS AND EQUIPMENT:

- 5.1 **Forms and Records:**
 - 5.1.1
- 5.2 **Materials and Equipment**
 - 5.2.1

6. RESPONSIBILITIES:

- 6.1 This policy applies to all construction/renovation works within healthcare facilities by ensuring preventive maintenance are done (i.e., heating, ventilation and air conditioning (HVAC) system, ventilator cleaning, filter replacement, etc.) that may compromise and/or contaminate air and water supply.


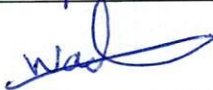

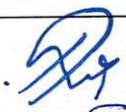
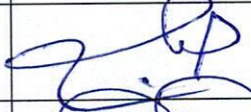


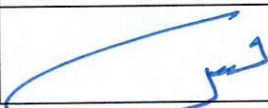
7. APPENDICES:

- 7.1 Infection Control Risk Assessment Permit Form - Construction Permit
- 7.2 Determining the Type of Construction / Renovation
- 7.3 Determining Patient Risk Groups that will be Affected by the Construction / Renovation
- 7.4 Class of Precautions: Construction Project by Patient Risk
- 7.5 Description of the Required Precautions by Class

8. REFERENCES:

- 8.1 General Directorate of Infection Prevention and Control in Healthcare Facilities (GDIPC) Infection Control Requirements in Design, Construction and Renovation in Healthcare Facilities 1443 – 2021 V.1
- 8.2 The GCC Infection Prevention and Control Manual. <http://gdipc.org/wp-content/uploads/2018/07/The-GCC-Infection-Prevention-and-Control-Manual-3rdEdition.pdf>. CCC 3rd Edition 2018, Page 381-387.

9. APPROVALS:

	Name	Title	Signature	Date
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Reviewed by:	Ms. Awatif Hamoud Al Harbi	IPC Director		November 25, 2024
Reviewed by:	Mr. Sabah Turayhib Al Harbi	Nursing Director		November 28, 2024
Reviewed by:	Mr. Abdullellah Ayed Al Mutairi	QM & PS Director		December 02, 2024
Reviewed by:	Dr. Thamer Naguib	Medical Director		December 03, 2024
Approved by:	Mr. Fahad Hazam Al Shammari	Hospital Director & IPC Committee Chairman		December 5, 2024

7.1 Infection Control Risk Assessment Permit Form - Construction Permit

Type of Construction: _____	Project Start Date: _____
Construction Location: _____	Estimated Duration: _____
Project Coordinator: _____	BN #: _____ Tel. Ext.: _____
Contractor Performing Work: _____	Permit Expiration Date: _____
Supervisor: _____	BN#: _____ Tel. Ext.: _____
Mobile #: _____	Pager #: _____

YES	NO	CONSTRUCTION ACTIVITY	YES	NO	INFECTION CONTROL RISK GROUP
		Type A: Inspection, non-invasive activity			Group 1: Low Risk
		Type B: Small scale, short duration, moderate to high level of dust.			Group 2: Medium Risk
		Type C: Activity generates moderate to high levels of dust and/ or noise requires greater work shift for completion			Group 3: Medium / High Risk
		Type D: Major duration and construction activities requiring consecutive work shifts			Group 4: Highest Risk

CLASS I	<ol style="list-style-type: none"> 1. Implement work methods to minimize dust dispersion from construction operations. 2. Immediate replace any ceiling tile displaced for visual inspection. 3. Minor demolition for remodeling. 4. Provide Safety Data Sheet (SDS) for paint and disinfectants prior to use.
CLASS II	<ol style="list-style-type: none"> 1. Provide active means to prevent air-borne dust from dispersing into atmosphere. 2. Water mist work surfaces to control dust while cutting. 3. Seal unused doors with duct tape 4. Block off and seal air vents. 5. Wipe surfaces with disinfectant. 6. Contain construction waste before transport in tightly covered containers. Choose low traffic and route. 7. Wet mop and / or vacuum with HEPA filtered vacuum before leaving work area. 8. Place dust mat at entrance and exit of work area 9. Refinove or isolate HVAC system in areas where work is being performed. 10. Provide SDS for paint and disinfectants prior to use.

CLASS III	<ol style="list-style-type: none"> 1. Obtain Infection Control permit before construction begins. 2. Isolate HVAC system in area where work is being done to prevent contamination of the duct system 3. Complete all critical barriers or implement control cube method before construction begins. 4. Maintain negative air pressure within work site. 5. Do not remove barriers from work area until complete. 6. Vacuum work with HEPA filtered vacuums. 7. Wet mop with disinfectant. 8. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 9. Contain construction waste before transport in tightly covered containers. Choose low traffic and route. 10. Cover transport receptacles or carts. Tape covering. 11. Remove or isolate HVAC system in areas where work is being performed. 12. Provide SDS for paint and disinfectants prior to use.
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CLASS IV	<ol style="list-style-type: none"> 1. Obtain Infection Control permit before construction begins. 2. Isolate HVAC system in area where work is being done to prevent contamination of duct system. 3. Complete all critical barriers or implement control cube method before construction begins. 4. Maintain negative air pressure within work site. 5. Seal holes, pipes, conduits, and punctures appropriately. 6. Construction anteroom and require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving work site or they can wear cloth or paper coveralls that are removed each time they leave the work site. 7. All personnel entering work site are required to wear shoe covers. 8. Do not remove barriers from work area until completed project is thoroughly cleaned by the Environmental Services Department. 9. Vacuum work area with HEPA filtered vacuums. 10. Wet mop with disinfectant. 11. Remove barrier
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7.2 Determining the Type of Construction / Renovation

Type A	<p>Inspection and non-invasive activities including, but not limited to:</p> <ul style="list-style-type: none"> ▪ Removal of ceiling tiles for visual inspection limited to tile per 50 square feet ▪ Painting (but no sanding) ▪ Wall covering, electrical trim work, minor plumbing, and activities which do not generate dust or require cutting of walls or access to ceilings other than for visual inspection
Type B	<p>Small scale, short duration activities which create minimal dust. Includes, but is not limited to:</p> <ul style="list-style-type: none"> ▪ Installation of telephone and computer cabling ▪ Access to close spaces ▪ Cutting of walls or ceiling where dust migration can be controlled
Type C	<p>Work which generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies. including, but not limited to:</p> <ul style="list-style-type: none"> ▪ Sanding of walls for painting or wall covering ▪ Removal of floor coverings, ceiling tiles and caseworks ▪ New wall construction ▪ Minor duct work or electrical work above ceilings ▪ Major cabling activities ▪ Any activity which cannot be completed within a single work shift ▪ Painting in medium and high risk areas ▪ Moderate to high level of noise (cutting steel)
Type D	<p>Major demolition and construction projects including, but not limited to:</p> <ul style="list-style-type: none"> ▪ Activities which require consecutive work shifts ▪ Requires heavy demolition or removal of a complete cabling system ▪ New construction

7.3 Determining Patient Risk Groups that will be Affected by the Construction / Renovation

Group 1 Low Risk	<ul style="list-style-type: none"> ▪ Office areas ▪ Non-patient areas
Group 2 Medium Risk	<ul style="list-style-type: none"> ▪ Patient areas not listed in Groups 3 or 4 ▪ Materials management ▪ Physical therapy / occupational therapy / speech therapy ▪ Admission / discharge ▪ Public corridors (thoroughfare for patients, and supplies) ▪ Laboratories not specified in Group 3 ▪ Echocardiography ▪ Nuclear medicine ▪ MRI ▪ Respiratory therapy ▪ Cafeteria ▪ Dietary
Group 3 High Risk	<ul style="list-style-type: none"> ▪ Critical care units (CCU) ▪ Emergency room ▪ Radiology ▪ Labor and delivery ▪ Microbiology / Virology laboratories ▪ Intensive care units (ICU) ▪ Intermediate care nursery ▪ Newborn nursery ▪ Long term / sub-acute units ▪ Dialysis ▪ Endoscopy ▪ Outpatient surgery ▪ Pediatrics ▪ Pharmacy ▪ Post-anesthesia care unit ▪ Surgical units
Group 4 Highest Risk	<ul style="list-style-type: none"> ▪ Any area caring for immunocompromised patients ▪ Burn unit ▪ Cardiovascular intensive care unit (CVICU) ▪ Cardiac ▪ Catheterization ▪ Angiography areas ▪ Central sterile supply / processing areas ▪ Pharmacy admixture ▪ Negative pressure isolation rooms ▪ Oncology ▪ Radiology oncology suite ▪ Anesthesia and pump areas ▪ Operating rooms

7.4 Class of Precautions: Construction Project by Patient Risk

Patient Risk Group	Construction Project Type			
	A	B	C	D
Low Risk	I	II	II	III / IV
Medium Risk	I	II	III	IV
High Risk	I	II	III / IV	IV
Highest Risk	I	III / IV	III / IV	IV

7.5 Description of the Required Precautions by Class

	During Construction Project	Upon Completion of Project
Class I	<ol style="list-style-type: none"> 1. Implement work by methods to minimize dust dispersion from construction operations. 2. Immediately replace ceiling tiles displaced for visual inspection. 3. Provide Safety Data Sheet (SDS) for paint and disinfectants prior to use. 	<ol style="list-style-type: none"> 1. Clean work area upon completion of task.
Class II	<ol style="list-style-type: none"> 1. Provide active means to prevent airborne dust from dispersing into the atmosphere. 2. Water mist work surfaces to control dust while cutting. 3. Seal unused doors with duct tape. 4. Block off and seal air vents. 5. Place dust mat at entrance and exit of work area. 6. Remove or isolate HVAC system in areas where work is being performed. 7. Provide SDS for paint and disinfectants prior to use. 	<ol style="list-style-type: none"> 1. Wipe work surfaces with hospital approved disinfectant. 2. Contain construction waste prior to transportation in tightly covered containers. Select low traffic time and route. 3. Wet mop and/or vacuum with HEPA filtered vacuum before leaving work area. 4. Remove isolation of HVAC system in areas where work has been performed.
Class III	<ol style="list-style-type: none"> 1. Remove or isolate HVAC system in areas where work is being done to prevent contamination of duct system. 2. Complete all critical barriers such as sheetrock, plywood, plastic to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins. 3. Maintain negative air pressure within work site. 4. Contain construction waste before transport in tightly covered containers. Choose low traffic time and route. 5. Cover transport receptacles or carts. Tape covering unless solid lid. 6. Provide SDS for paint and disinfectants prior to use. 	<ol style="list-style-type: none"> 1. Do not remove barriers from work area until project is inspected by IP&C-EHOHS, as well as, thoroughly cleaned by the construction workers and the Environmental Services department. 2. Remove barrier materials carefully to minimize spread of dirt and debris associated with the construction. 3. Vacuum work area with HEPA filtered vacuums. 4. Use wet mop with disinfectant. 5. Remove isolation of HVAC system in areas where work is being performed.
Class IV	<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 such as sheetrock, plywood, plastic to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins. 3. Maintain negative air pressure within work site. 4. Seal holes, pipes, conduits, and punctures appropriately. 5. Construct anteroom and require all personnel to pass through this room which can be vacuumed with HEPA vacuum cleaner before leaving work site or they can wear cloth or paper coveralls that are removed each time they leave the work site. 6. All personnel entering the work site are required to wear shoe covers. Shoe covers must be changed each time the work exits the work area. 7. Do not remove barriers from work area until project is completed and inspected by the IP&C and thoroughly cleaned by the Environmental Services department. 8. Provide SDS for paint and disinfectants prior to use. 	<ol style="list-style-type: none"> 1. Remove barrier materials carefully to minimize spread of dirt and debris as a result of construction activities. 2. Contain construction waste before transport in tightly covered containers. 3. Cover transport receptacles or carts. Tape covering unless solid lid. 4. Vacuum work area with HEPA filtered vacuums. 5. Use wet mop with disinfectant. 6. Remove isolation of HVAC system in areas where work has been performed.