



الإدارة العامة لمكافحة عدوى المنشآت الصحية

General Directorate of Infection Prevention
and Control in Healthcare Facilities

(GDIPC)

Infection Prevention & Control in Medical
Rehabilitation and Long-Term Care Services

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**In the name of ALLAH, Most Gracious,
Most Merciful**

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Introduction:

Introducing infection prevention and control (IPC) measures in long-term care or medical rehabilitation services is vital for protecting the health of patients, and healthcare workers. These facilities frequently care for individuals with chronic illnesses, blunted immune responses, and an increased use of invasive devices imposing their vulnerability to infections. Implementing effective IPC measures is crucial to prevent the transmission of healthcare-associated infections (HAIs), enhance patient outcomes, and ensure a safe care environment. Therefore, comprehensive IPC guidelines are essential to effectively implement protocols and improve the overall quality of care in these services.

Infection Prevention and Control Department

The infection prevention and control department is a specialized unit within healthcare facilities responsible for developing, implementing, and monitoring infection prevention and control program. This department typically consists of trained professionals, such as infection prevention & control practitioners, nurses, epidemiologists, and microbiologists, and other healthcare categories who work together to prevent spread of infections within the healthcare setting.

The facility's IPC department must include the following parts:

- IPC is a separate discipline with a specialized body of knowledge, requiring specialized education and training.
- The healthcare facility has infection prevention & control staffing ratio of not less than 1 full-time practitioner for every 100 beds and additional for every 30 beds in special care units (e.g., Intermediate ICU) assigned merely for the IPC program to accomplish the tasks in an effective manner.

- The infection prevention & control team is given a full authority to implement the IPC policies and procedures.
- Any outsourced functions (e.g., laundry or dietary services) should be supervised by the infection control team with support from facility leaders.

Responsibility

Infection Prevention & Control Team:

- Create infection prevention & control risk assessment & annual plan.
- Construct infection prevention & control program based on scope of service.
- Apply scientific principles and methods to the collection and presentation of IPC data.
- Conduct surveillance following current and approved definitions of infection and standard methodologies for case identification, data collection, and reporting.
- Prepare reports and presentations for committees.
- Monitor and supervise the implementation of infection prevention & control practices among healthcare workers, patients, visitors, volunteers, students, and other individuals providing services under a contractual arrangement in the medical rehabilitation and long-term care facilities.
- Provide ongoing education and training about infection prevention & control measures.
- Investigate outbreaks and implement infection prevention and control interventions.
- Report outbreaks of communicable diseases.
- Plan and conduct educational programs.

- Develop and review policies and procedures and monitor their use to support optimal healthcare workers compliance and patients' safety.
- Ensure compliance with the national standards for infection prevention & control.

Rehabilitation & Long-term Care Services Healthcare Workers (HCWs):

- Strict adherence to Infection prevention & control practices.
- Care bundles implementation for best patient outcomes.
- Medical rehabilitation and long-term care services HCWs must be well-trained and competent enough to implement IPC measures and to ensure the prevention of cross-infection transmission of HAIs in these services.

Infection Prevention and Control Program

- By implementing a comprehensive infection prevention and control program, rehabilitation and long-term care services can effectively reduce the incidence of HAIs, protect patients and HCWs, and promote overall quality of care.
- The optimum success of the IPC program depends on having both a highly trained IPC practitioners and access to essential IPC resources.
- The IPC program is described in a written plan based on both facility and infection prevention risk assessments.
- Developing an infection prevention & control program should be based on the scope of service.
- key components typically found in such programs:
 - Infection control activities: Establish and implement infection control policies and procedures which consider as important aspect in IPC program that should be updated & reviewed on a scheduled basis.

- Risk Assessment and management: Conduct regular risk assessments to identify potential sources of infection transmission and implement strategies to mitigate these risks.
- Standard & transmission-based precautions: Precautions system to reduce the risk of transmission of infectious agents.
- Surveillance of healthcare-associated infections (HAIs): Monitoring and tracking of infections to identify trends, outbreaks, and areas for improvement. This includes collecting data on infection rates, types, and locations.
- Education and training: Providing ongoing education and training to HCWs on infection prevention practices, including but not limited to (hand hygiene, personal protective equipment (PPE), outbreak, surveillance, environmental cleaning protocols).
- Collaboration: Working closely with other healthcare departments and external stakeholders to promote a culture of infection prevention and control.
- Compliance monitoring: Monitoring adherence to infection control practices through audits, observations, and feedback mechanisms. This ensures that staff consistently follow established protocols to prevent the spread of infections.
- Outbreak and exposure investigation: Developing plans and protocols for responding to infectious disease outbreaks within the rehabilitation and long-term care services, including rapid identification, containment measures, and communication strategies.
- Environmental health: Developing an effective environmental health program which involves; waste management, product evaluation and disinfection, sterilization and asepsis to ensure a safe environment for patients, HCWs, visitors, volunteers, students, and other individuals providing services under a contractual arrangement in the medical rehabilitation and long-term care facilities.

- Occupational health and safety (Employee Health): Developing an occupational health clinic program to ensure the well-being and safety of all HCWs in the institution and protect patients from being exposed to any health hazard in a health care facility; and aiding them from occupational diseases or injuries to post-exposure management, disability evaluation, and compensation.
- Antibiotic stewardship: A system for antibiotic review and control.
- Preparedness planning: Develop emerging or reemerging pandemic preparedness plan.

Considerations for Infection Prevention and Control Program

- The interdisciplinary IPC team determines goals and objectives for the IPC program by performing an annual risk assessment. These should be based on the institution's strategic goals and institutional data and findings from the previous year's activities. Identification of high-volume, high-risk, and problem-prone activities is an important component of the risk assessment.
- The IPC program is based on current scientific knowledge, referenced practices guidelines, and applicable national laws and regulations
- IPC resources and data systems needs should be evaluated in the context of these goals and objectives.
- Risk assessment can assist in setting priorities and obtaining support from key stakeholders. Set priorities to help focus on the appropriate allocation of IPC program resources.

- Realistic strategies for surveillance and intervention should be developed.
- Steps to use in this process include the following:
 - Establishing a reliable, focused surveillance program based on the annual risk assessment
 - Streamlining data management activities
 - Analyzing HAI rates
 - Aiming for zero HAI rates
 - Educating staff regarding prevention strategies
 - Identifying opportunities for performance improvement
 - Taking a leadership role in performance improvement teams
 - Developing and implementing action plans that outline the steps needed to accomplish each objective
 - Evaluating the success of action plans in accomplishing the goals and objectives of the IPC plan.

Note

- **Annual evaluation of the IPC program is a required element for accreditation. It should outline the achievements and activities of the program and describe support requirements.**

Infection Prevention and Control Committee

- The Infection prevention & control (IPC) committee functions as a central decision & policy-making body for infection prevention and control and strengthening the performance management of healthcare-associated infections (HAIs) and to provide assurance to the healthcare institute that results in improving patient outcomes through making recommendations on IPC matters and assess and identify risks within the infection prevention and control portfolio and escalate it as appropriate.
- There should be written approved terms of reference document for the IPC committee containing structure, rules, duties, and members' responsibilities.
- Meeting minutes are written in a manner of task force tables with a time frame for actions needed and the documented actions must be followed in the next meeting.
- IPC committee is chaired by the facility director or medical director
- The IPC committee meets regularly (at least quarterly) or when required on urgent demand.
- Functions of the IPC committee include but are not limited to (revision and evaluation of the IPC yearly plan, review and approval of IPC policies & procedures, review of surveillance data, & discussion of respiratory protection program-related activities & measures, etc.).
- The committee consists of multidisciplinary team members:
 - Chairman: Rehabilitation or long-term care services chief executive officer or medical director.
 - Deputy Chairman: (Nominated by Chairman).
 - Committee coordinator
 - Committee secretary.

- The IPC committee provides oversight of the infection prevention and control program.
- The IPC committee coordinates, evaluates, and supports the activities of the Infection prevention and control program and communicates with all departments of the healthcare facility
- The IPC committee ensures the engagement and full support of the program by all stakeholders.
- The IPC committee advocates for the program and shall ensure all resources needed are available.

For further information, kindly refer to:
Infection Prevention and Control Committee Terms of Reference, General Directorate of Infection Prevention & Control (GDIPC), MOH, 2023

Training and Education

- Education and training in infection prevention and control are vital for HCWs to prevent the spread of infections, ensure safety, promote efficiency, comply with regulations, adapt to emerging threats, and contribute to public health goals.
- Proper education equips HCWs with the knowledge and skills necessary to prevent the spread of infections, reducing the risk of outbreaks in healthcare settings and the community.
- There should be an annual infection control training program based on need assessment and include basic and specialized infection prevention & control training sessions for all HCWs in the facility
- The IPC department offers orientation and training on the fundamentals of infection prevention and control for newly hired HCWs, to be completed before or within one month of starting their job.
- The IPC department provides education on infection prevention and control for patients, staff, trainees, volunteers, families, and visitors.
- Develop processes to ensure that all HCWs understand and are competent to adhere to infection prevention requirements as they perform their roles and responsibilities.
- The Basic Infection Control Skills License (BICSL) Training Program is implemented for all HCWs in healthcare facilities, following national regulations and guidelines.

Infection Prevention and Control Policy and Procedure

- Evidence-based infection prevention and control Policies & Procedures should be developed and implemented to reduce HAI and AMR.
- The policies and procedures for infection prevention and control should be developed by the IPC department and must be approved by the IPC committee.
- policies and procedures are based on approved MOH guidelines and scientific references, such as those from GCC, CDC, WHO, or APIC.
- The education and training of relevant HCWs on the guidelines and the monitoring of adherence to guideline recommendations should be undertaken to achieve successful implementation.

Standard Precaution

Hand Hygiene (HH):

Hand hygiene involves antibacterial soap and water or alcohol-based hand rub and used to remove or kill microorganisms that colonize the hands.

Types of Hand Hygiene:

- **hand rubbing (with 70–80 % alcohol):** Applying an antiseptic hand rub to reduce or inhibit the growth of microorganisms
- **handwashing:** Wash hands with antimicrobial soap and water before aseptic techniques.
- **Surgical hand scrub:** an antiseptic surgical scrub or antiseptic hand rub that is performed before donning surgical attire

Note :

- **Alcohol-based hand rub is preferred over soap and water in most clinical situations because it (see Figure 1):**
 - Is more effective than soap at killing potentially deadly germs on hands.
 - Requires less time.
 - Accessible than handwashing sinks.
 - Reduce bacterial counts on hands than soap and water.
- **Hand washing with soap and water is mandatory in the following situations:**
 - When the hands are visibly soiled.
 - When caring for patients known or suspected to have Spore-Forming Pathogens such as Clostridium difficile.
- **5 moments for HH: (See Figure 1).**
 - Before patient contact
 - Before clean/aseptic tasks
 - After body fluid exposure risk
 - After patient contact
 - After contact with the patient's surroundings/environment
- **Examples of the Indications of Hand Hygiene:**
 1. **Before touching the patient.**
 - Before assisting a patient in daily activities: moving, taking a bath, eating, getting dressed, etc...
 - Before performing a physical non-invasive examination: take pulse, blood pressure, chest auscultation, and recording ECG, etc...

2. Before clean/aseptic procedures.

- Before dressing a wound.
- Before inserting an invasive medical device (nasal cannula, nasogastric tube, endotracheal tube, urinary probe, percutaneous catheter, drainage).

3. After body fluid exposure/risk.

- After contact with a mucous membrane and non-intact skin.
- After a percutaneous injection or puncture, after inserting an invasive medical device (vascular access, catheter, tube, drain, etc.); after disrupting and opening an invasive circuit.
- After removing an invasive medical device.
- After removing any form of material offering protection (napkin, dressing, gauze, sanitary towel, etc.).

4. After touching a patient.

- After shaking hands, stroking a child's forehead
- After you have assisted the patient in personal activities: to move, to bath, to eat, to dress, etc.
- After performing a physical non-invasive examination: taking pulse, blood pressure, chest auscultation, recording ECG.

5. After touching the patient's surroundings.

- After an activity involving physical contact with the patient's 'immediate environment: changing bed linen with the patient out of the bed, holding a bed trail, clearing a bedside table.
- After a care activity: adjusting perfusion speed and clearing a monitoring alarm.
- After other contacts with surfaces or inanimate objects.

- **Other Opportunities for Hand Hygiene:**
 - Whenever hands are visibly soiled.
 - Moving from one contaminated body site to another body site during the care of the same patient.
 - Before starting and finishing the duty shift.
 - Before entering and leaving the patient's room.
 - Before applying or removing personal protective equipment (PPE).
 - After handling contaminated waste.
 - When preparing or handling food, drinks, or medication for patients.
 - After leaving the bathroom

Your 5 Moments for Hand Hygiene

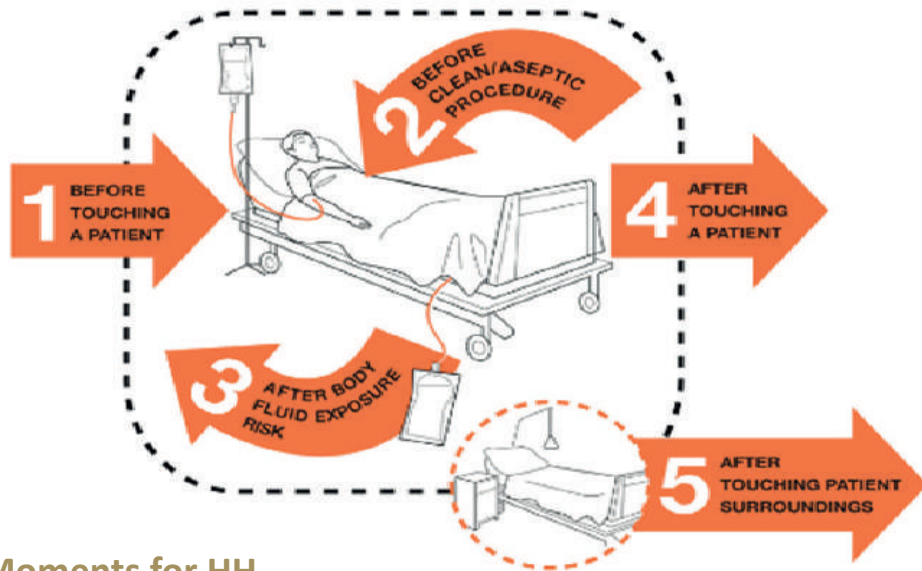


Figure:5 :1 Moments for HH

- **HH technique and duration:**

1. **Alcohol-based hand rubs: (see Figure 2)**


- **Duration: (20-30 Sec).**

- **Technique:**

- A. Fill the palm of your hand with sanitizer covering the entire surface.
- B. Rub palms together to distribute the gel in both hands.
- C. Rub the back of your left hand with your right hand, interlacing fingers, then vice versa.
- D. Rub the palms of your hands together, interlacing fingers.
- E. The backs of fingers with opposing palms, fingers interlocked.
- F. Rotational rubbing of left thumb, then right.
- G. Rotational rubbing, backward and forwards with clasped fingers of right hand in left palm and vice versa.
- H. Your hands are clean once they are dry. (See Figure 2).

How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

 **Duration of the entire procedure: 20-30 seconds**



Apply a palmful of the product in a cupped hand, covering all surfaces;



Rub hands palm to palm;



Right palm over left dorsum with interlaced fingers and vice versa;



Palm to palm with fingers interlaced;



Backs of fingers to opposing palms with fingers interlocked;



Rotational rubbing of left thumb clasped in right palm and vice versa;



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



Once dry, your hands are safe.



World Health Organization

Patient Safety

A World Alliance for Safer Health Care

SAVE LIVES

Clean Your Hands

Figure:2 Technique of Hand Rubbing With 60–80 % Alcohol

2. Hand washing with soap and water: (see Figure 3)

- **Duration: 40-60 Sec.**

- **Technique:**

- A. Wet hands with water.
- B. Apply enough soap to cover all hand surfaces and rub hands palm to palm.
- C. Right palm over left dorsum with interlaced fingers and vice versa.
- D. Palm to palm with fingers interlaced.
- E. The backs of fingers to opposing palms with fingers interlocked.
- F. Rotational rubbing of left thumb clasped in right palm and vice versa.
- G. Rotational rubbing backward and forwards with clasped fingers of the right hand in the left palm and vice versa.
- H. Rinse hands with water.
- I. Dry hands thoroughly with a single-use towel.
- J. Use a towel to turn off the faucet.
- K. Your hands are now safe.
- L. Your hands are clean once they are dry.


Note :

To ensure effective hand hygiene practices:

- You should use the appropriate HH products with appropriate technique and duration.
- Fingernails should be kept short.
- Artificial nails or nail enhancements should be avoided.
- Wrist and hand jewelry should be avoided.
- Cuts and abrasions should be covered with a waterproof dressing.

How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

 Duration of the entire procedure: 40-60 seconds



Wet hands with water;



Apply enough soap to cover all hand surfaces;



Rub hands palm to palm;



Right palm over left dorsum with interlaced fingers and vice versa;



Palm to palm with fingers interlaced;



Backs of fingers to opposing palms with fingers interlocked;



Rotational rubbing of left thumb clasped in right palm and vice versa;



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



Rinse hands with water;



Dry hands thoroughly with a single use towel;



Use towel to turn off faucet;



Your hands are now safe.

Figure 3: Technique of Hand Washing with Soap and Water

Personal Protective Equipment (PPE).

Specialized clothing or equipment worn by an employee for protection against infectious materials.

- PPE must be available at all times in the Rehabilitation and long-term service centers in adequate amounts and with proper qualities
- PPE must be available in all sizes to be suitable for all health practitioners in Rehabilitation and long-term service centers

Type of PPE Used

Gloves:

- **Types:**
 - Sterile: Mostly used for surgical procedures, they are disposable, sterile, and individually wrapped items.
 - Non-sterile: Disposable single-use gloves (e.g., latex-free gloves). They are used to protect against direct exposure to blood or other body fluids and before contact with contaminated equipment or surfaces.
- **General indications for the gloves use:**
 - The type of gloves used depends on the procedure performed
 - Should be used for all patients under contact precautions
 - should be used for all patients when anticipating splashes of blood and body fluids.
 - Change the gown between patients and procedures.
 - When in contact with a single patient and his/her surroundings, a contaminated body site on a patient has ended.
 - Moving from one contaminated body site to another body site during the care of the same patient.

Important Point:

- Medical gloves should be selected appropriate according to job tasks, patient care activities and hand size.
- Medical gloves should be discarded immediately after removal.
- Gloves should NOT BE washed, decontaminated, or reprocessed for any reuse purpose.
- The use of gloves does not replace the need for hand hygiene.
- In situations where gloves are removed because of a tear or a puncture and the HCW has had contact with blood or another body, hand washing with soap and water is necessary.

Gown:

General indications for the gown use:

- a. Protect from the contamination of clothing with potentially infectious material.
- b. Gowns should be worn as part of Standards Precautions or Contact Precautions.
- c. The type of gown to be used depends on the procedure performed
- d. It should be used for all patients under contact precautions.
- e. It should be used for all patients when anticipating splashes of blood and body fluids.
- f. Change the gown between patients and procedures.
- g. Disposable gowns should be discarded after use

Types:

- a. Clean Isolation gown: used for isolation.
- b. Sterile gown: used for performing invasive procedures, such as inserting a central line or surgical procedures.

Face/Surgical Mask

Indications:

- a. Surgical masks: protect nose and mouth from exposure to respiratory secretions and sprays of blood or body fluids.
- b. Surgical masks should be worn as part of Standard Precautions or Droplet Precautions.
- c. Use the surgical mask if you expect blood or body fluids splashing
- d. Change the mask between patients
- e. Change the mask if becomes soiled or moist or torn

Filtering Facepiece Respirators

Indications:

- a. N95 respirators reduce the wearer's exposure to airborne particles, from small particle aerosols to large droplets. These respirators filter out at least %95 of very small (less than 0.3 microns) particles.
- b. Respirators should be worn as part of Airborne Precautions.

Note:

- Not everyone can wear a respirator due to medical conditions that may be made worse when breathing through a respirator. Before using a respirator or getting fit-tested, HCW must have a medical evaluation to make sure that they can wear a respirator safely (see **Appendix 3**) for medical evaluation form.

Instructions for N95 respirator use:

- a. Fit testing must be done for all HCWs before using a respirator in the workplace.
- b. Achieving an adequate seal to the face is essential. Conduct a user seal check each time the respirator is used.
- c. A high-efficacy respirator should be used during aerosol-generating procedures
- d. (AGPs) for MERS COV, COVID19- cases, and all airborne diseases regardless of the
- e. patient's condition, whether it is stable or critical.
- f. Clean hands with soap and water or an alcohol-based hand sanitizer before and after touching or adjusting the respirator.
- g. Discard N95 respirators outside the patient room appropriately & immediately following use.

Remember:

User Seal Checking (formerly known as Fit Check):

A simple procedure intended to help the wearer verify that he/she has properly put on the respirator. To seal check a respirator, the wearer should forcefully inhale and exhale several times. The respirator should collapse slightly upon inhaling and expand upon exhaling. It should be completed each time the respirator is donned and is only applicable when a respirator has already been successfully fit tested on the individual (see **Figure 4**).



1
Place both hands over the respirator, take a quick breath in to check whether the respirator seals tightly to the face.



2
Place both hands completely over the respirator and exhale. If you feel leakage, there is not a proper seal.



3
If air leaks around the nose, readjust the nosepiece as described. If air leaks at the mask edges, re-adjust the straps along the sides of your head until a proper seal is achieved.



4
If you cannot achieve a proper seal due to air leakage, ask for help or try a different size or model.

Figure 4: Technique of Seal Checking

Goggles/Face shields:

Indications:

- **Goggles:**

Protect only eyes from splashes of blood or body fluids.

- **Face shields:**

Protect the face, nose, mouth, and eyes when there is a risk of exposure to splashes and body fluids.

Instructions for the use of Goggles/Face shields:

- a) Goggles should be removed and reprocessed after each use based on the manufacturer's instructions.
- b) Eye protection should be discarded if damaged (e.g., the face shield can no longer fasten securely to the provider, if visibility is obscured and reprocessing does not restore visibility).
- c) HCW should take care not to touch their eye protection. If they touch or adjust it, they must immediately perform hand hygiene.

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How to put on PPE (Donning): (see Figure 5)

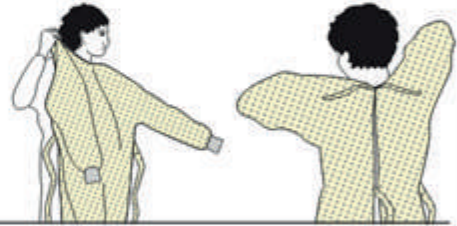
- a. The Sequence of PPE Donning:
 1. Gown
 2. Mask
 3. Goggles or Face Shield
 4. Gloves

SEQUENCE FOR **PUTTING ON** PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator



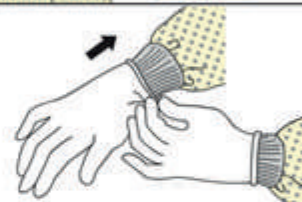
3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit



4. GLOVES

- Extend to cover wrist of isolation gown



USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene



Figure 6: How to put on PPE

Sequence for Removing PPE (Doffing) (see Figure 6):

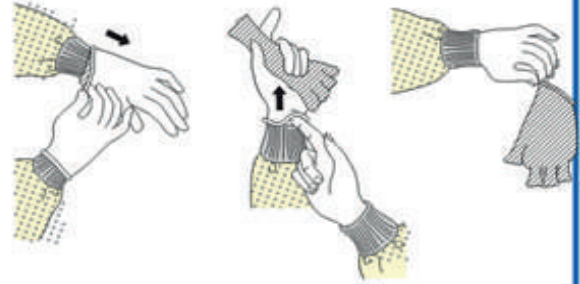
1. Gloves
 2. Face shield or goggles
 3. Gown
 4. Mask
- The order for removing PPE is to limit opportunities for self-contamination. The gloves are considered the most contaminated pieces of PPE and are removed first. The face shield or goggles are next because they are clumsier and would interfere with the removal of other PPE. The gown is third in the sequence, followed by the mask or respirator. Hand hygiene must be performed between sequences of each PPE.

SEQUENCE FOR REMOVING PERSONAL PROTECTIVE EQUIPMENT (PPE)

Except for respirator, remove PPE at doorway or in anteroom. Remove respirator after leaving patient room and closing door.

1. GLOVES

- Outside of gloves is contaminated!
- Grasp outside of glove with opposite gloved hand; peel off
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist
- Peel glove off over first glovet
- Discard gloves in waste container



2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield is contaminated!
- To remove, handle by head band or ear pieces
- Place in designated receptacle for reprocessing or in waste container



3. GOWN

- Gown front and sleeves are contaminated!
- Unfasten ties
- Pull away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard



4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- Grasp bottom, then top ties or elastics and remove
- Discard in waste container



**PERFORM HAND HYGIENE BETWEEN STEPS
IF HANDS BECOME CONTAMINATED AND
IMMEDIATELY AFTER REMOVING ALL PPE**



CS250672-A

Figure 6: How to remove PPE

Respiratory hygiene/ Cough Etiquette

- All HCWs must practice cough etiquette when coughing or sneezing.
- Cover nose and mouth with a tissue when coughing or sneezing
- Dispose of tissue after use in the waste receptacle and perform hand hygiene.

Safe Injection Practices:

- Use an aseptic technique when preparing and administering injectable medications
- Minimize distraction, always maintain focus on the task, Keep fingers/hands away from the point of injection
- use a sterile single-use disposable syringe and needle for each injection given
- All injection equipment and medication vials should be free of contamination, turbidity, or discoloration
- The sterile package should only be opened immediately before use on the patient and not before that.
- Disinfect the self-sealed rubber cap of a medication vial or an IV solution bottle with approved antiseptic wipes (e.g., %70 alcohol wipes) before access.
- Don't administer medications from the same syringe to multiple patients, even if the needle is changed.
- Don't reuse a syringe to enter a medication vial or solution.
- Use a fluid infusion or administration set (i.e., intravenous tubing) for one patient only.
- Used needles should never be recapped, bent, or broken.
- All used sharps should be placed immediately in a puncture-resistant container that is designated for sharp disposal.
- Dedicate multi-dose vials to a single patient whenever possible.
- If multi-dose vials must be used for more than one patient, the vials should be restricted to a centralized medication area and should not be brought into the immediate patient treatment area.

- Never administer medications from the same syringe to multiple patients, even if the needle is changed.
- Never reuse a syringe or needle when withdrawing medication or solutions from multiuse vials or other containers, even when obtaining additional doses for the same patient.
- Dispose of used sharps in a sharps container that is closable, puncture-resistant, and leak-proof. Securely seal and replace sharps containers when they become three-quarters (3/4 or 75%) full.

Aseptic technique

- Aseptic technique refers to practices designed to render and maintain objects and areas maximally free from microorganisms and aid in the prevention of surgical site, bloodstream, and pneumonia infections that may be procedure related.
- Clean technique refers to medical aseptic practices that use clean and disinfected or sterile equipment and supplies to reduce the number of microorganisms and minimize the risk of transmission from personnel or the environment to the patient.

Components of Aseptic Technique:

Appropriate Attire:

- Appropriate attire is based on the risk of the procedure and the area of the rehabilitation and long-term service centers where the procedure is performed
- Scrubs are not considered personal protective equipment (PPE).
- HCWs performing procedures resulting in splashed or potential exposure to body fluids should wear impervious or fluid-resistant barriers as well as face and eye protection.

- Depending on the aseptic procedure being performed, barriers may include gloves, gown, and hair covering or as per rehabilitation and long-term services centers' policy on PPE

Hand Hygiene:

- Hand decontamination before any procedure is an integral step of the process that should be done by the team working in direct contact with the patient, equipment, instruments, and/or sterile field.

Skin Antisepsis:

- Use the appropriate recommended antiseptic for each procedure type as well as screening for contraindications such as allergies.
- Antiseptic agents should be used following the manufacturer's direction for use, including ensuring skin is clean before placement as well as antiseptic contact and drying time.

Single-use devices, Equipment, and Supplies:

- HCW should maintain the sterile packaging and/or container integrity to ensure an intact seal and confirm that sterilization indicators with an expiration date are verified
- Before use, sterile packages should always be inspected for signs of contamination such as moisture, tears, discoloration, and expiration.
- DO NOT reuse single-use items

Table 1: Examples of suggested techniques by procedure

Procedure/Intervention	Hand Hygiene Indicated	Type of Personal Protective Equipment to Be Used"	Supplies Indicated	Instrumentation
Wound cleaning	Yes	Clean exam gloves and personal protective equipment as appropriate	Normal saline or prepared sterile wound cleanser. Sterile supplies such as 4 × 4 or cotton applicator	Irrigation performed with sterile device while maintaining clean technique
Routine dressing changes without debridement	Yes	Clean exam gloves and personal protective equipment as appropriate	Sterile supplies using clean technique	Sterile supplies using clean technique
Dressing change with mechanical, chemical, or enzymatic debridement	Yes	Clean exam gloves and personal protective equipment as appropriate	Sterile supplies using clean technique	Sterile supplies using clean technique
Dressing change with sharp, conservative bedside debridement	Yes	Sterile gloves and personal protective equipment as appropriate	Sterile supplies and sterile technique due to the potential for entering new, unaffected tissues	Sterile supplies and sterile technique
Central line dressing change	Yes	Sterile gloves for removing old dressing and new sterile gloves for dressing change procedure	Sterile dressing change kit and sterile technique; surgeon mask should be worn	Sterile supplies and sterile technique
Tracheal suctioning where the tracheal Protective catheter is not within a closed sheath	Yes	Sterile gloves, use of personal protective Equipment, including face shield or mask when suctioning	Sterile suction catheter	Sterile supplies using clean technique
Tracheostomy care or suctioning with a suction catheter within a closed sheath	Yes	Clean exam gloves and use or personal protective equipment, including face shield or mask	Sterile supplies using clean technique	Sterile supplies using clean technique

Table 2: Examples of suggested techniques by procedure.

Procedure	Example	Hand hygiene	Gloves	Preparation of patient's skin	Comment
A. Medical Asepsis (Clean Procedures)					
Procedures in which instruments come in contact with intact mucous membranes	1. Bronchoscopy, gastrointestinal endoscopy, tracheal suction	Antibacterial soap and water or alcohol-based hand rub	Clean	None is required	
	2. Peripheral Intravenous Insertion	Antibacterial soap and water or alcohol hand rub	Clean	Hospital-approved antiseptics should be used Select appropriately for the patient's site	
	3. Urinary tract catheterization	Antibacterial soap and water or alcohol hand rub	Sterile	Hospital-approved antiseptics and rinse with sterile water	DO NOT use alcohol-containing antiseptic
B. Surgical Asepsis (Sterile Procedures)					
Procedures in which instruments go through sterile tissue or fluid	1. CVL insertion -CVL wire insertion -Cardiac pacemaker insertion	Surgical hand scrub with antibacterial soap and water or Alcohol surgical hand scrub	Sterile	Hospital-approved antiseptics should be used	Defatting agents do not appear to decrease infections and can cause skin irritation
	2. Arterial line insertion	Surgical hand scrub with antibacterial soap and water or Alcohol surgical hand scrub	Sterile	Hospital-approved antiseptics should be used	Most epidemics of infection associated with arterial pressure monitoring devices appear to be caused by hospital-associated contamination of components external to the skin, such as transducer heads or domes: "endemic" IV-related blood- stream infections are frequently associated with skin flora□

Antiseptics available are:*

- 1 . 2% aqueous chlorhexidine gluconate swabs (for CVC insertion in neonates <2 wk and <1500 grams-avoid excessive skin exposure, remove excess CHG with sterile gauze & observe for skin reactions)
- 2 . 2% chlorhexidine in %70 alcohol swabs
- 3 . 10% povidone iodine (swabs or liquid)
- 4 . 70% alcohol (swabs or liquid)

"Hand preparations available are:

1. Antibacterial soap
- 2 %70-%62alcohol-based hand rub

Medication Preparation :

- A separate clean area is available for the preparation of medications and away from patients' treatment areas.
- Use only ready-made single-dose sterile solutions for preparation & dilution of medications
- Single-dose or single-use vial is used for a single procedure/injection in a single patient
- Single- dose or single-use vial is not stored for future use even on the same patient
- Whenever possible, a multi-dose vial is used for a single patient, with the recorded patient's name and date of the first use (when it has been accessed for the first time) and discarded after 28 days unless the manufacturer specifies a different shorter, or a longer date (i.e., reuse life).
- If a multi-dose vial is used for more than one patient, it is exclusively kept and accessed in the area specified for the preparation of medications
- Cartridge devices such as insulin pens are used for only one patient.
- The self-sealed rubber cap of a medication vial or an IV solution bottle is disinfected with approved antiseptic wipes (e.g., alcohol wipes) before any access.
- IV solution bottles are only accessed through the self-sealed rubber cap after being disinfected.
- IV sets that are used to administer blood, blood products will be replaced every 4 hours
- IV sets that are used to administer lipid emulsions, or dextrose/amino acid Total Parenteral Nutrition (TPN) solutions are replaced within 24 hours of initiating the infusion.
- Sterile solutions are used in nebulizers, humidifiers, or any aerosol-generating system and changed between patients every 24 hours for the same patient unless the manufacturer of ready-made sterile solutions specifies different dates.

- A peripheral venous catheter must be properly fixed, with a clearly written date of insertion, and to reduce the risk of infection and phlebitis, it is replaced - if still needed, but it is not replaced more frequently than every 72 to 96 hours.

Handling/Disposal of Contaminated Items :

Needles/sharps

- All used sharp items should be disposed into an approved puncture-resistant container immediately after use, at or as close as possible to the point of use.
- Do not place used sharp items on any environmental surface.
- Do not recap or manipulate needles using both hands because this increases the risk of injury.
- If recapping or manipulating the needle is deemed essential, then use either a one-handed “scoop” technique or a mechanical device designed to hold the needle sheath.
- Before attempting to remove needles from reusable aspirating syringes, recap them with either a one-handed “scoop” technique or a mechanical device designed to hold the needle sheath.
- Close sharps containers when $\frac{3}{4}$ full and remove them for incineration.

Transmission Based Precautions

- Isolation precautions contain two tiers: Standard Precautions and Transmission-based Precautions
- Transmission-based precaution is designed for patients documented to be or suspected to be infected or colonized with highly transmissible or epidemiologically important pathogens for which additional precautions beyond Standard Precautions are required.

Types of transmission-based Precautions:

Contact Isolation Precautions:

- Contact isolation precautions must be used together with Standard Precautions.
- All HCWs in the rehabilitation and long-term services centers must use Contact isolation precautions when there is a suspected or confirmed diagnosis of an infectious disease that is transmitted by the contact route.
- The patient should be in a single room
- All HCWs in the Rehabilitation and long-term services centers must wear the appropriate PPE (Gown-Gloves) and other PPE as needed when anticipating contact with the patient or the patient's environment
- All HCWs in the Rehabilitation and long-term service centers must follow the correct sequences of donning and doffing of PPE.

Droplet Isolation Precautions:

- Droplet Isolation Precautions must be used together with Standard Precautions
- All HCWs in the Rehabilitation and long-term services centers must use the Contact isolation precaution when there is a suspected or confirmed diagnosis of an infectious disease that is transmitted by the droplet route
- The patient should be in a single room
- All HCWs in the Rehabilitation and long-term service centers must wear the appropriate PPE (Surgical Mask) and other PPE as needed. A surgical mask is required within three (3) feet of the patient
- All HCWs in the Rehabilitation and long-term service centers must follow the correct sequences of donning and doffing of PPE.

Airborne Isolation Precautions:

- Airborne isolation precautions must be used together with Standard Precautions
- All HCWs in the Rehabilitation and long-term service centers must use airborne isolation when a patient is suspected or confirmed to have any of the diseases that are spread by the airborne route.
- The patient should be in a single room with a negative air pressure system
- All HCWs in the Rehabilitation and long-term service centers must wear the appropriate PPE when anticipating contact with a patient or the patient's environment
- A fit-tested respirator particulate mask (N95 or Higher) is required for all HCWs who will potentially care for patients in respiratory isolation
- All HCWs in the Rehabilitation and long-term service centers must follow the correct sequences of donning and defining PPE.

The Following Table Shows the PPE Selection Based on the Isolation Precautions

Type of PPE	Standards Precautions	Transmission-Based precautions		
		Contact Precautions	Droplet Precautions	Airborne Precautions
Hand Hygiene				
Gloves	AS needed	At all times	AS needed	AS needed
Gown	AS needed	At all times	AS needed	AS needed
Surgical Mask	AS needed	AS needed	At all times	Never
Respirator	Never	Never	AGPs Only	At all times
Eye protection	AS needed	AS needed	AS needed	AS needed

Transfer patient under Transmission-Based precautions:

- Restricted the transfer of patients under isolation precautions for medically necessary purposes.
- Isolation transportation cards must be used and should be consistent with the patient diagnosis, color-coded, posted in Arabic and English, and indicating the type of precautions required for staff (it is preferable to use the MOH-approved isolation transportation cards) and through less crowded traffic routes.

Transfer patient under Contact Isolation Precautions:

- Contain and cover all skin lesions and infected or colonized wounds if available with a clean bandage/dressing.
- Instruct patients to wear a clean gown and clean linen should be used.
- HCW should wear clean gloves and perform hand hygiene after taking off.

Transfer patient under droplet Isolation Precautions:

- Instruct the patient to wear a surgical mask
- Educate the patient about respiratory hygiene (Cough Etiquette).
- HCW should perform hand hygiene after patient transport.

Transfer Patient Under Airborne Isolation Precautions:

- Notify the receiving unit/ward/department (Diagnosis, Type of Isolation Precautions)
- Patients should wear a surgical mask.
- Educate the patient about respiratory hygiene (Cough Etiquette).
- HCW should perform hand hygiene after patient transport.
- If the patient can not tolerate wearing a surgical mask during transportation healthcare workers should wear the fitted N95 respirator.

Environmental Health

Definitions :

- Cleaning: The physical removal of foreign material (e.g., dust, soil) and organic material (e.g., blood, secretions, excretions, microorganisms).
- Disinfection: A thermal or chemical process for inactivating microorganisms on inanimate objects.
- Routine cleaning: Regular cleaning (and disinfection, when indicated) when the room is occupied.
- Terminal (discharge) cleaning: Cleaning and disinfection after the patient is discharged or transferred.
- Disinfectants: Chemical compounds that inactivate (i.e., kill) pathogens and other microbes.

- Contact time: The time that a disinfectant must be in contact with a surface or device to ensure that appropriate disinfection has occurred.
- Material Safety data sheet (MSDS): A document by the supplier or manufacturer of a chemical product that contains information on the product's potential hazards (health, fire, reactivity, and environmental) and how to work safely with it. It also contains information on the use, storage, handling, and emergency procedures.
- Environmental cleaning: Cleaning and disinfection (when needed, according to risk level) of environmental surfaces (e.g., bed rails, mattresses, call buttons, chairs) and surfaces of non-critical patient care equipment (e.g., IV poles, stethoscopes).
- Low-touch surfaces: Surfaces that are minimally touched by HCWs and patients (e.g., walls, ceilings, floors).
- High-touch surfaces: Surfaces, often in-patient care areas, that are frequently touched by HCWs and patients (e.g., bed rails, overbed tables, IV poles, doorknobs, medication carts).

Cleaning products used:

- Must be approved by MOH infection prevention and control, occupational health and safety, and environmental services.
- Must be compatible with the surfaces/equipment.
- Must be used according to the manufacturers' recommendations (e.g., for dilution, temperature, water hardness, contact time, etc.).
- Must be used according to the product's safety data sheet.
- Must be dedicated for facility use.

General recommendation:

- There should be comprehensive policy and procedures for the environment cleaning and disinfection
- Environmental cleaning is under housekeeping responsibilities
- There will be an appropriate written schedule for cleaning and decontamination of all areas of the health care facility
- Cleaning must be performed in a systematic manner to ensure all surfaces are cleaned.
- Cleaning procedure should begin with the least soiled areas and move to the most soiled areas.
- Cleaning also proceeds from high to low surfaces, allowing dust and debris from high
- In the cleaning procedure, dust should not be dispersed into the air (wet mopping is the only allowed method).
- Scrubbing with a mop and an approved MOH disinfectant/detergent solution should be performed
- Cabinet counters, work surfaces, and similar horizontal areas should be cleaned once a day with an approved MOH intermediate-level disinfectant/detergent
- Walls, windows, storage shelves, and similar non-critical surfaces should be scrubbed periodically with MOH-approved low-level disinfectant/detergent solution as part of the general housekeeping program.
- Friction cleaning is important to ensure the physical removal of dirt and contaminating microorganisms.
- Patient room and bathroom should be cleaned daily and as needed
- Terminal cleaning should be done after patient discharge or transfer under the in-charge nurse supervised

- Environmental terminal cleaning equipment (H2O2 and ultraviolet) is preferred to be used in terminal cleaning
- In case of outbreaks, infection control practitioners should supervise the terminal cleaning and disinfection procedures.
- Clean or change the curtains for patients, not on isolation precaution in a routine schedule and when visibly soiled
- change the curtain for a patient on isolation precaution after the patient is discharged, transferred, or taken out of isolation
- Environmental cleaning should be done according to the approved cleaning schedule and with a cleaning checklist to ensure the quality of the process.

For further information, kindly refer to:

- Best Practices of Environmental Health for Prevention & Control of Infections in Healthcare Facilities Guidelines, GDIPC, MOH, 2022
- Best Guidance for Selecting, Evaluating & Monitoring of the Infection Prevention & Control Supplies & Equipment's, GDIPC, MOH, 2022
- Manual of Environmental Cleaning and Disinfection in Healthcare Facilities, GDIPC, MOH, 2021

Therapeutic Pool:

- Infection prevention and control of hydrotherapy pools can be challenging as micro-organisms are always present in the water during a treatment procedure. Policy shall be implemented to maintain safety and hygiene in the therapeutic to prevent the transmission of infection.
- As part of an aquatic physiotherapy assessment all patients should have a screening health assessment for potential precautions and/or contraindications for immersion.
- Preventive measures to decrease the risk of microbial contamination of

hydrotherapy pools:

- Educate the patients and sitters about basic infection control measures prior to the start of therapy to ensure compliance
- Ensure pre-swim hygiene such as showering before therapy to remove traces of sweat, urine, fecal matter, cosmetics, oil and other potential contaminants.
- Do not allow bathers to use the pool if with open infected wounds, severe skin fungal infections, with herpetic lesions, vomiting, diarrhea, conjunctivitis and fecal incontinence.
- Patients known to be positive for blood-borne pathogens such as Hepatitis B, Hepatitis C and HIV are allowed entry provided if there are no open wounds.
- Hydrotherapy equipment must be cleaned and disinfected between patients and at the end of the day using MOH-approved disinfectant as per the manufacturer's instructions.
- Immersion tanks and whirlpools need to be cleaned with the MOH-approved and appropriate disinfectant and following the manufacturer's recommendations.
- Ensure regular, thorough cleaning of pool equipment and environment including pool surfaces, surrounds, railings and drains and pipework.
- Dry out pool equipment after use and store in a dry environment.

Toys/Playrooms/Activity Room Cleaning & Disinfection

- Only allow toys that can be kept clean and disinfected in between uses.
- Avoid water-retaining bath toys and soil-based items.
- Offer disposable play items when possible.
- Clean and disinfect toys regularly, after use and immediately when visibly soiled.

Biological Spill Management (For management of blood and body fluid spills).

- Clean spills of blood or body fluids immediately, using the techniques in Spills of blood or body fluids.
- Control access to the area: Prevent people from walking through the affected area. Use the wet floor sign.
- Put on appropriate Personal Protective Equipment (PPEs) (see Figure 3):
 - a. Disposable Gown.
 - b. Disposable face Mask with a shield.
 - c. Disposable Gloves.
- Use a plastic scoop or other mechanical means to remove any broken glass or other sharp objects from the spill area and dispose them into the sharp container.
- Contain spill: Use absorbent granules or absorbent pads to contain the spill. Sprinkle absorbent granules over the spill and leave for two minutes or as per the manufacturer's recommended contact time. Allow the spill to solidify before removing it.
- Remove the solidified waste material using the scoop and scraper and carefully dispose of all contaminated materials into the infectious waste bag.

- Add one tablet of chlorine disinfectant $2.5 \text{ gm} / 250 \text{ ml} = 5000 \text{ ppm}$ which is effective against any risky blood spill.
- Use a disposable wiping cloth to wipe up all the disinfectant, and then discard it into the yellow plastic bag.
- Place all items including PPE into a yellow biohazard plastic bag.
- Close the yellow biohazard bag securely with a fastener to prevent leakage.
- Finally, Hand Hygiene.

Note:

The urine & vomit spill kit is not chlorine-based, and it is ideally used in the management of these spill types because adding chlorine products to urine can produce particularly unpleasant odors. When used on vomit, chlorine-based chemicals may give off extra chlorine gas

Medical Waste Management.

- Healthcare Waste (Medical Waste) refers to any waste generated by facilities that provide various healthcare services.
- Infectious Waste refers to waste that contains biological agents (e.g. Bacteria , viruses, parasites, fungi) in quantities or at concentrations sufficient to cause infectious disease to individuals susceptible to infection.
- Any items contaminated (i.e. Dripping) with blood or body fluid are considered to be infectious.
- Sharps Waste refers to waste that contains sharp items such as vaccine glass vials, needles, syringes with needles, scalpels, lancets, razors, broken glass, or any other sharp object that has the potential to cut or puncture the body or skin.
- Infectious waste should always be (segregated, collected, transported, and stored) in a safe manner with consideration in accordance the local regulations.
- Staff should be knowledgeable about the risks and safety operating procedures of the waste they are handling.
- Infectious Waste will be collected in yellow plastic bags bearing the phrase Hazardous Medical Waste (in Arabic and English) along with the Bio-Hazard logo.
- Sharps Waste will be disposed of in yellow thick, leak-proof, puncture-proof containers, bearing the phrase Hazard-Sharp Items (in Arabic and English) and the Bio-Hazard logo.
- The collection and transportation of bags and containers of infectious medical waste should be conducted using special trolleys and well-trained staff.

- HCWs who transport waste should be trained in proper procedures and spill management.
- Before collection and transportation of infectious waste, bags, and containers should be fully sealed and locked, and display the appropriate data sticker identifying content, as well as proper hazard identification and its related labelling, including the Bio-Hazard logo.
- Waste bags will not be filled to more than 4/3 of their capacity and will not be pressurized or compacted.
- Infectious waste will be transported within the facilities covered, specially designed leakproof, and easy to clean or disinfect trolleys.
- Trolleys for collecting and carrying hazardous medical waste will be cleaned, washed, and disinfected daily in special locations by trained staff under the supervision of the person responsible for hazardous medical waste

For further information, kindly refer to:

Medical and Sharp Waste Management, General Directorate of Environmental Health, MOH, 2023

Wound Care Infection Prevention Recommendations

Hand hygiene

- Perform hand hygiene before starting wound care for each patient : This includes before retrieving wound care supplies, before donning gloves, and after doffing gloves.
- Unless hands are visibly soiled, alcohol-based hand rub is preferred over soap and water
- HCWs should not touch items in the patient care environment while performing wound care as this will contaminate gloves, supplies, and/or the environment.

Personal protective equipment (PPE)

- Wear gloves during all stages of wound care including when applying new dressings. Don gloves after performing hand hygiene
- Wear a mask and eye protection if there is any chance of splashes or sprays (e.g., wounds with drainage, especially during debridement and irrigation).
- Wear a clean gown to cover arms and clothing that may come in contact with the patient or his care environment for each dressing change.
- Doffing PPE in correct order to decrease the spread of infection and cross-contamination.

Wound care equipment and supplies

- Any medical reusable equipment that meets non-intact skin, or mucous membranes is considered a semi-critical instrument and needs to be disinfected by high-level disinfection (HLD) before use on the same patient or another patient
- Dedicate tape, sprays, creams, and all wound care products to an individual patient, and do not store used sprays with clean wound care supplies.

- If fresh bandages are cut for the patient, it should be done with clean scissors, not with scissors used to cut off soiled bandages.
- Follow the medical waste policy and procedure for Wound care dressings disposed with blood or other regulated body fluids.
- Clean and disinfect the surface (e.g., over the bed table) where wound care supplies will be placed

Occupation Health Program

- All new HCWs undergo screening for latent tuberculosis infection (LTBI) using either:
 - Interferon Gamma Release Assay (IGRA) or Two-Step Tuberculosis Skin Testing (TST) or
 - Two-Step (PPD).
- In case of positive TST or PPD results, confirmation with IGRA is necessary
- A. Immunization Documentation:
 - HCWs expected to have direct or indirect contact with patients must be immune to specific infections

Infection	Category/ timing	Requirement
Measles, Mumps, Rubella	All HCW/ Pre-employment	Proof of receiving at least two doses of MMR vaccine or Proof of immunity by lab test (IgG)
Chickenpox (Vari -cella)	All HCW/ Pre-employment	Proof of receiving at least two doses of Varicella vaccine or Proof of immunity by lab test (IgG) or Clinically documented previous infection
Hepatitis B Virus (HBV)	All HCW/ Pre-employment	Proof of receiving at least three doses of HBV vaccine or Proof of immunity by lab test (HBsAb \geq 10U)
Meningococcal meningitis	HCW working at microbiology lab Pre- employment and then every 5 years	Proof of receiving at least one doses of a quadrivalent Meningococcal meningitis vaccine
Influenza vaccine	All HCW annually	Proof of vaccination is required during the influenza season (usually December through the end of April)

- Other specific immunizations as recommended by the GCC infection control manual or national guidelines.
- HCWs should maintain accurate records of their immunization history and provide documentation as required by their employer or regulatory authorities.
- This documentation helps ensure compliance with infection control protocols and protects both HCWs and the patients they serve.

Vaccine	Indications	Route/ Schedule	Booster Dose
Hepatitis B	All health care staff	3 doses intra muscular (I.M) 0,1 month, 6months	No recommended
Influenza	All health care staff	1 I.M dose of inactivated injectable vaccine annually	Vaccine repeated annually
MMR (measles, Mumps, Rubella)	HCP without serologic evidence of immunity or prior vaccination (documented immunity)	2 doses of MMR 4 weeks apart are given subcutaneous (S.C)	
Varicella (Chickenpox)	HCP who have no serologic proof of immunity, prior vaccination or history of varicella disease weeks apart are given S.C (Documented immunity)	2 doses of varicella vaccine 4 weeks apart are given S.C	
Tdap (tetanus, diphtheria & pertussis)	Persons without documented immunity.	3 doses I.M (0, 1-2 months, 6 months)	-Td booster doses every 10 years. -If exposed to dirty wound regardless of the last booster dose
Meningococcal	Microbiologists who are routinely exposed to isolates of N. meningitidis	Single dose	

Post Exposure Management

In case of needle stick injury or sharps injury or exposed to blood or other body fluid of a patient during work, HCWs should immediately follow specific steps:

1. Do not apply pressure to the wound, allow it to bleed freely.
2. Wash the wound with lots of soap and water.
3. Identify the patient involved so that they can be evaluated for an infection
4. If exposure is to the eyes wash with eyes solution or tap water for 1 minute at least.
5. Immediately report the injury to the supervisor
6. Immediately seek medical treatment. And get a medical assessment.
7. Follow the directions for any necessary blood tests, vaccinations, or medications to prevent infection.

For further information, kindly refer to:
Occupational Health Clinics Program, MOH, 2019

Emerging and Re-Emerging Preparedness

- Rehabilitation and long-term service centers should have policies and procedures for emerging or re-emerging infectious diseases based on national guidelines and references.
- There should be Protocols for early detection of patients with infectious diseases of National alert
- There should be Management protocols for patients with Infectious diseases of national alert
- There should be Active surveillance is implemented for monitoring HCWs with signs and symptoms of exposure to any emerging or re-emerging infectious disease
- There should be continuous job-specific training on emerging or reemerging infectious diseases should be provided to All HCWs in the facility

For further information, kindly refer to:

- Healthcare-Associated Outbreak Management Manual, GDIPC, MOH, 2023
- Standard Operating Procedure (SOP) for Rapid Response Teams in Infection Prevention and Control (IPC-RRT), GDIPC, MOH, 2024

Outbreak Management

- Outbreak management should be undertaken when there is a significant increase in the rate of infection at a certain body site or with a particular microbe, this involves the identification of common risk factors for transmission or acquisition of infection.
- A review of infection prevention procedures, including compliance with hand hygiene, aseptic techniques, and practices for sterilization and disinfection, should be performed.
- Infected or colonized patients should be rapidly identified and either isolated
- There should be a screening policy for all MDROs implemented for the admission or transfer of patients to the health care facility according to the up-to-date national MOH guidelines
- Healthcare facilities should establish a defined Outbreak Management Team (OMT) chaired by either the facility director or the medical director. This team should have clear roles and responsibilities and include all key members involved in outbreak management.
- A well-designed notification system exists between the IPC department, the laboratory, and all Rehabilitation and long-term services departments for any critical values (e.g., MDROs, positive cultures). All these values must be monitored regularly.

For further information, kindly refer to:

- Healthcare-Associated Outbreak Management Manual, GDIPC, MOH, 2023

Surveillance and Epidemiology Reporting

- Surveillance is a systematic method of ongoing collection, consolidation, and data analysis concerning the distribution and determinates of a given disease or event, followed by the dissemination of that information to those who can improve the outcome.
- Surveillance of Healthcare-Associated Infections & MDROs must be conducted in the facility for prevention of device-associated HAIs (CAUTI, CLABSI, VAEs) & non-device-associated HAIs such as BSI, Pneumonia, and UTIs.
- Medical Rehabilitation and long-term services staff must ensure strict implementation of all elements of care bundles as part of process surveillance.

Care Bundles for Prevention of Device-Associated Infections in Rehabilitation and Long-term Services:

- A bundle is a structured way of improving the processes of care and patient outcomes.
- It is a small, straightforward set of evidence-based practices, generally, three to five that, when performed collectively and reliably, have been proven to improve patient outcomes.

Type of Prevention Care Bundles:

- Central line Insertion bundle
- Central line maintenance bundle
- Adult ventilator bundle
- Pediatric/Neonatal Ventilator Bundle
- Urinary catheter bundle

Components of central line insertion bundle:

1. Hand hygiene
2. Maximal barrier precautions
3. Chlorhexidine skin antisepsis
4. Optimal catheter site selection, with subclavian vein as the preferred site for non-tunnelled catheters
5. Ultrasound guidance to place central venous catheters.

Components of central line maintenance bundle:

1. Hand Hygiene and aseptic technique
2. Daily review/assessment of catheter necessity with prompt removal of unnecessary lines.
3. Proper dressing choice
4. Proper frequency of dressing change
5. Proper replacement of administrative sets

Components of adult ventilator bundle:

1. Elevation of the head of the bed to between 30 and 45 degrees
2. Daily “sedative interruption” & daily assessment of readiness to extubate.
3. Peptic ulcer disease (PUD) prophylaxis
4. Deep venous thrombosis (DVT) prophylaxis (unless contraindicated)
5. Daily oral care with chlorhexidine

Components of pediatric ventilator bundle :

1. Hand hygiene
2. Semi-recumbent position
3. Mouth rinse with an appropriate solution.
4. Appropriate ventilator circuit care
5. Daily assessment of readiness to extubate.

Components of urinary catheter bundle:

1. Avoid unnecessary urinary catheters
2. Insert catheter using an aseptic technique
3. Maintain catheters based on recommended guidelines (daily care)
4. Review catheter necessity daily and remove promptly

- For further information, kindly refer to:
- Healthcare-Associated Infection Surveillance Manual, GDIPC, MOH, 2024

References:

Ministry of Health. (2023). Infection Prevention and Control Committee Terms of Reference.

<https://jed-s3.blualt.com/psj-1ifn-s-3ifn01/files/03/Guidelines/Infection20%Prevention20%&20%Control20%Committee20%Term20%of20%Reference%202023.pdf>

Ministry of Health. (2022). Best Practices of Environmental Health for Prevention & Control of Infections in Healthcare Facilities Guidelines

<https://jed-s3.blualt.com/psj-1ifn-s-3ifn01/files/06/Guidelines/Best-Practices-of-Environmental-Health-for-Prevention-Control-of-Infections-in-Healthcare-Facilities-Guidelines-Aug-2022-V1.1.pdf>

Ministry of Health. (2022). Best Guidance for Selecting, Evaluating & Monitoring of the Infection Prevention & Control Supplies & Equipment's.

<https://jed-s3.blualt.com/psj-1ifn-s-3ifn01/files/06/Guidelines/Guidance20%for20%Selecting,20%Monitoring20%of20%Infection20%Prevention20%&20%Contro20%Supplies20%nd20%Edition.pdf>

Ministry of Health. (2021). Manual of Environmental Cleaning and Disinfection in Healthcare Facilities.

<https://jed-s3.blualt.com/psj-1ifn-s-3ifn01/files/06/Guidelines/Manual-of-Environmental-Cleaning-and-Disinfection-in-Healthcare-Facilities-Ver-1.0-GDIPC-.pdf>

Ministry of Health. (2023). Healthcare Associated Infections Surveillance Manual.

https://jed-s3.blualt.com/psj-1ifn-s-3ifn01/files/07/Guidelines/MOH_Surveillance_Manual_2nd_Edition_5%2023B5%1D.pdf

Ministry of Health. (2023). Healthcare-Associated Outbreak Management Manual.
<https://jed-s3.blualt.com/psj-1ifn-s-3ifn01/files/04/Guidelines/Healthcare-Associated20%Outbreak20%Management20%Manual.pdf>

Association for Professionals in Infection Control and Epidemiology (APIC). (2022)
. Infection Prevention and Control in Long-Term Care Facilities.

Ministry of Health. (2023). Medical and Sharp Waste Management Guidelines.
<https://jed-s3.blualt.com/psj-1ifn-s-3ifn01/files/06/Guidelines/Medical-waste-managment.pdf>

Ministry of Health. (2019). Occupational Health Clinics Program.



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