Ministry of Health
Brunei Darussalam

GUIDANCE ON ISOLATION PRECAUTIONS FOR THE PREVENTION AND CONTROL OF INFECTIONS IN THE HEALTHCARE SETTING

Ownership: DIRECTOR-GENERAL MEDICAL AND HEALTH SERVICES (DGMHS) OFFICE	Document Code: DGMHS / IPC / GIPPCIHCS / V.1 / 09 / 2020	Total Pages: 43
		Version: 1
Title: GUIDANCE ON ISOLATION PRECAUTIONS FOR THE PREVENTION AND CONTROL OF INFECTIONS IN THE HEALTHCARE SETTING		1st Version: -
		Issued: Sept 2020
		Next Review: Sept 2025

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1. INTRODUCTION

1.1 An infection in a person and its spread from person to person occurs through a series of linked events called the Chain of Infection.

1.2 The Chain of Infection is made up of 6 different links, namely the infectious agent, reservoir, portal of exit, mode of transmission, portal of entry, and the susceptible host.

1.3 Each link has a unique role in the chain, and each can be broken through various means.

1.4 The infection prevention and control measures described in this guidance are designed to break the chain at the various links thus preventing from an infection to occur in a person, and stopping the spread of infectious diseases from person to person.

2. PURPOSE

2.1 This document is aimed to provide a practical guidance on the standard and isolation precautions to minimise the risk of transmission of epidemiologically important pathogens during the course of patient care delivery in the healthcare setting.

3. SCOPE

3.1 This document applies to ALL healthcare facilities and ALL healthcare personnel who have the potential for exposure to infectious materials, including body substances, contaminated environmental surfaces, or contaminated air.

3.2 It also applies to patients, visitors and other persons who enter a healthcare facility.

4. DEFINITIONS

4.1 **Clinical Waste:**

4.1.1 Clinical waste is a term used to describe waste produced from healthcare and similar activities that may pose a risk of infection from known or suspected pathogens, which includes waste contaminated with blood and body fluid e.g. used dressings, gauzes and swabs etc; human tissues and body parts; patient related tubings; unused blood products etc.

4.2 **Departmental Services:**

4.2.1 Other services under the Ministry of Health such as Renal Services, Dental Services, Public Health Services, Laboratory Services etc.

4.3 **Enhanced or Full Personal Protective Equipment (PPE):**

4.3.1 Refers to the use of a set of PPE for complete protection against potential exposure of body fluids and airborne particles from patients with suspected or known to have highly pathogenic, virulent or life-threatening diseases such as viral haemorrhagic diseases e.g. Ebola Virus Disease, which includes N95 (or equivalent) mask, hair cover using Operating Theatre (OT) cap, eye protection (goggles or face-shield visor), fluid-impermeable coveralls (Jupiter suit), disposable plastic apron, disposable gloves and fluid-impermeable rubber boots.

4.4 **General or Domestic Waste**

4.4.1 General or domestic waste is the term used to describe waste that does not pose any specific biological, chemical, radioactive or physical hazard (non-hazardous waste) which includes food scraps, paper, bottles and plastics.

4.5 **Healthcare Facility:**

4.5.1 Healthcare facility is a set of physical infrastructure elements supporting the delivery of health-related services.

4.6 **Healthcare Personnel:**

4.6.1 Refers to all persons working in the healthcare settings who have the potential for exposure to infectious materials, including body substances (e.g. blood, tissue, and specific body fluids), contaminated medical supplies and equipment, and contaminated environmental surfaces.

4.6.2 These persons might include but are not limited to:

- 4.6.2.1 Emergency medical service personnel
- 4.6.2.2 Dental personnel
- 4.6.2.3 Laboratory personnel
- 4.6.2.4 Autopsy personnel
- 4.6.2.5 Nurses
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4.7 **Healthcare Setting:**

4.7.1 A healthcare setting is any location of provision of health care, e.g. hospitals, mental health facilities, outpatient clinics, community health centres and clinics; and ambulatory care in both the public and private sectors.

4.8 **Safety Data Sheets (SDS):**

4.8.1 A document which is prepared by the supplier or the manufacturer of the material or chemical that contains information on the potential hazards (health, fire, reactivity and environmental) and how to work safely with the product. It also contains information on the use, storage, handling and emergency procedures of all the related hazards of the material.

5. ROLES AND RESPONSIBILITIES

5.1 **ALL healthcare personnel** are to comply with the following:

5.1.1 the Standard Precautions in the care of ALL patients in EVERY healthcare setting, whenever relevant, regardless of their diagnosis or presumed infectious status.

5.1.2 the Transmission-based Precautions, in addition to Standard Precautions for the care of patients KNOWN or SUSPECTED to be infected or colonized by epidemiologically important or highly transmissible organisms / infections, based on the routes of transmissions.

5.2 **Respective healthcare facilities and departmental services administrators** are to ensure that the infection prevention and control (IPC) measures outlined in this document are being implemented and the items and equipment required to carry out the measures are in adequate and continuous supply and are of the required standard.

6. BACKGROUND INFORMATION

6.1 **Modes of Transmission of Infectious Agents**

6.1.1 There are **three** principal modes of transmission of infectious agents:

6.1.1.1 Contact Transmission

6.1.1.2 Droplet Transmission

6.1.1.3 Airborne Transmission

6.1.2 Refer to Appendix 1 for the description of the different modes of transmission.

6.2 **Types of Isolation Precautions**

6.2.1 For the prevention and control of infectious agents, two tiers to isolation precautions have been designed. They are **Standard Precautions** and **Transmission-Based Precautions**.

6.2.2 Standard Precautions and Transmission-Based Precautions are designed to reduce the risk of transmission of potentially or known infectious agents from the patients to healthcare workers, visitors and the environment.

6.2.3 **STANDARD PRECAUTIONS** are a set of measures designed for the care of **ALL** patients in **EVERY** healthcare setting, whenever relevant regardless of their diagnosis or presumed infectious status to reduce the risk of transmission of microorganisms from both recognized and unrecognized sources of infection in the healthcare settings.

6.2.4 **TRANSMISSION-BASED PRECAUTIONS** are sets of measures which are **in addition to Standard Precautions**, designed for the care of patients who are **KNOWN OR SUSPECTED** to be infected/colonized by epidemiologically important or highly transmissible organisms/infections.

6.2.4.1 Transmission-Based Precautions are categorized into **Contact Precautions, Droplet Precautions** and **Airborne Precautions** according to the predominant mode(s) of transmission of infectious agents.

6.2.5 Another type of isolation precaution is **PROTECTIVE PRECAUTION** which is the creation of a **protective environment** for patients who are **severely immunosuppressed**.

6.2.5.1 The groups of patients requiring Protective Precautions include the following:

6.2.5.1.1 Patients with CD4 count < 200 cells/UL or < 14%

6.2.5.1.2 Severe neutropenia- ANC (Absolute Neutrophil Count) < 0.5 x 10^9/L

6.2.5.1.3 Allogeneic Haematopoietic Stem Cell Transplant (HSCT) patients.

6.2.5.2 The Protective Environment is designed to minimize fungal spore counts in the air and reduce the exposure to the environmental fungi, thus reducing risk of invasive environmental fungal infections in these susceptible patients.

6.2.5.3 The use of Personal Protective Equipment (PPE) in healthcare workers in Protective Precaution, which was previously known as Reverse Barrier Nursing, is aimed to reduce the risk of transmission of potentially infectious agents from healthcare workers or visitors to the susceptible patients.

7. STANDARD PRECAUTIONS

7.1 Components of Standard Precautions

7.1.1 The components of Standard Precautions are as follows:

- Hand Hygiene
- Use of appropriate Personal Protective Equipment (PPE)
- Appropriate handling of patient care equipment
- Adequate environmental cleaning
- Appropriate handling of linen
- Appropriate handling and disposal of sharps
- Appropriate management of waste
- Safe injection practices
- Infection control practices for special lumbar puncture procedures
- Respiratory hygiene and cough etiquette

7.2 **Description of the Components of Standard Precautions**

7.2.1 **Hand Hygiene** *(refer to Ministry of Health Brunei Darussalam Hand Hygiene Policy)*

7.2.1.1 Hand Hygiene is the act of hand cleansing either by rubbing the hands with alcohol-based hand rub or by washing the hands with soap and water which are aimed at reducing or inhibiting the growth of microorganisms temporarily on the hands.

7.2.1.2 Hand hygiene is to be performed using the 6-Steps of hand hygiene (Annex 1).

7.2.1.3 In the clinical setting, hand hygiene is indicated during the WHO's 5 Moments for hand hygiene (Annex 2).

7.2.2 **Use of Appropriate Personal Protective Equipment (PPE)**

7.2.2.1 Use of appropriate PPE refers to the selection and use of PPE according to the type of anticipated activity or procedure or exposure (Refer to Appendix 2).

7.2.3 **Appropriate Handling of Patient-Care Equipment**

7.2.3.1 Appropriate handling of patient-care equipment refers to the handling of used patient care equipment, which may be soiled with blood, body fluids, secretions and excretions, in a manner that prevents exposure to skin and mucous membrane, contamination of clothing and transfer of microorganisms to healthcare workers, other patients and the environment.

7.2.3.2 Refer to Appendix 3 for the general principles of appropriate handling of patient-care equipment.

7.2.4 **Environmental Cleaning**

7.2.4.1 Environmental cleaning refers to the appropriate cleaning and disinfection of environmental surfaces to reduce or inhibit the

growth of microorganisms on these surfaces thus reduce the risk of disease transmission from contaminated environmental surfaces.

7.2.4.2 Each institution needs to develop procedures for routine and targeted cleaning and disinfection of environmental surfaces as indicated by the level of patient contact and degree of soiling.

7.2.4.3 Refer to Appendix 4 for the general principles of environmental cleaning and disinfection.

7.2.5 **Appropriate Handling of Linen**

7.2.5.1 Appropriate handling of linen refers to the handling, including during the transport and the processing, of soiled linen in a manner so as to prevent skin and mucous membrane exposures and contamination of clothing and to minimize transfer of microorganisms to other patients and the environment.

7.2.5.2 Refer to Appendix 5 for the practices of appropriate handling of linen.

7.2.6 **Appropriate Handling and Disposal of Sharps**

7.2.6.1 Sharps refer to medical devices that cut or go into the skin such as needles, scalpel and other sharp instruments or equipment.

7.2.6.2 Appropriate handling and disposal of sharps refers to the handling and disposal of these medical devices in a manner to prevent injuries.

7.2.6.3 All sharps are to be disposed of in sharps containers which are to be closed once ¾ filled.

7.2.6.4 Refer to Appendix 6 for measures to prevent sharps injuries.

7.2.7 **Appropriate Management of Waste**

7.2.7.1 **Definition and Categories of Healthcare Waste**

7.2.7.1.1 Healthcare waste refers to all the waste generated within healthcare facilities, research centres and laboratories which are related to medical procedures and the delivery of health care.

7.2.7.1.2 Refer to Appendix 7 for the categories and description of healthcare waste.

7.2.7.2 **General Principles of Appropriate Management of Waste in the Health-Care Setting**

7.2.7.2.1 Appropriate management of waste refers to the safe handling of waste in a way to minimize the risk of transmission of potential harmful microorganisms to staff, patients and the general public from contaminated waste.

7.2.7.2.2 Refer to Appendix 8 for the general principles of the appropriate handling of waste in the health-care setting.

7.2.8 **Safe Injection Practices**

7.2.8.1 Safe injection practices refer to a set of measures that are intended to prevent the transmission of potential harmful microorganisms between one patient to another, or between a patient and healthcare workers during the preparation and injection of medications.

7.2.8.2 Refer to Appendix 9 for the set of safe injection practices.

7.2.9 **Infection Control Practices for Special Lumbar Puncture Procedures**

7.2.9.1 Special lumbar puncture procedures refer to the placing of a catheter or injecting material into the spinal canal or subdural space e.g. during myelogram, lumbar puncture, spinal or epidural anaesthesia or intrathecal chemotherapy.

7.2.9.2 Infection control practices for special lumbar puncture procedures refer to the wearing of a surgical mask by the person who conducts the procedure to prevent the risk of droplet transmission of oropharyngeal flora of healthcare workers to patients when carrying out spinal procedures such as lumbar puncture.

7.2.9.3 Refer to Appendix 10 for the appropriate measures to be taken during Special Lumbar Procedures.

7.2.10 **Respiratory Hygiene / Cough Etiquette**

7.2.10.1 Respiratory hygiene / cough etiquette refers to a set of measures to prevent the transmission of potential harmful microorganisms from the act of sneezing or coughing.

7.2.10.2 Refer to Appendix 11 for the appropriate respiratory hygiene / cough etiquette in the healthcare setting.

8. TRANSMISSION-BASED PRECAUTIONS

8.1 Categories of Transmission-Based Precautions

8.1.1 Transmission-based Precautions are categorized into three categories:

8.1.1.1 Contact Precautions

8.1.1.2 Droplet Precautions

8.1.1.3 Airborne Precautions

8.2 Components of The Categories of Transmission-Based Precautions

8.2.1 Contact Precautions

8.2.1.1 Apply Contact Precautions for patients documented or suspected to be infected or colonized with epidemiologically important pathogens that are transmitted by direct or indirect contact.

8.2.1.2 Explain the need for isolation to the patient.

8.2.1.3 Place a Contact Precautions signage (refer Annex 4) outside patient's room door or, if patient is being placed in a bed in a general ward due to bed/room constraints, at the end of patient's cubicle.

8.2.1.4 Refer to Appendix 12 for details of the components of Contact Precautions.

8.2.2 **Droplet Precautions**

8.2.2.1 Apply Droplet Precautions for patients documented or suspected to be infected with pathogens that are transmitted by large droplet particles >5µm in size.

8.2.2.2 Explain the need for isolation to the patient.

8.2.2.3 Place a Droplet Precautions signage (refer Annex 5) outside patient's room door.

8.2.2.4 Refer to Appendix 13 for details of the components of Droplet Precautions.

8.2.3 **Airborne Precautions**

8.2.3.1 Apply Airborne Precautions for patients documented or suspected to be infected with pathogens that are transmitted by airborne droplet nuclei < 5µm in size.

8.2.3.2 Explain the need for isolation to the patient.

8.2.3.3 Place an Airborne Precautions signage (refer Annex 6) outside patient's room door.

8.2.3.4 Refer to Appendix 14 for details of the components of Airborne Precautions.

9. PROTECTIVE PRECAUTIONS

9.1 For patients who are severely immunosuppressed (refer to 6.2.5.1), apply Protective Precautions, in addition to Standard Precautions.

9.2 If the patient has a transmissible infection in addition to the immunocompromised state, apply Transmission-Based Precautions to the Protective Precautions.

9.2.1 The duration of Transmission-Based Precautions for viral infections in immunocompromised patients needs to be prolonged for many weeks as viral shedding in these patients can persist for prolonged periods of time (many weeks to months).

9.3 Explain the need for isolation to the patient.

9.4 Place a 'Protective Precautions' signage (see Annex 7) outside patient's door.

9.5 Refer to Appendix 15 for details of the components of Protective Precautions.

10. REFERENCES

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11. ACKNOWLEDGEMENTS

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Appendix 1

DESCRIPTION OF ROUTES OF TRANSMISSION AND EXAMPLES OF INFECTIOUS AGENTS

Types of Transmission	Description	Examples of conditions or infectious agents (not exhaustive list)
Contact Transmission	The most common mode of transmission. Divided into 2 subgroups: **1. Direct Contact Transmission** • Occurs when microorganisms are transferred from infected person to another person without a contaminated intermediate object. **2. Indirect Contact Transmission** • Involves the transfer of an infectious agent through a contaminated intermediate object or person	• *Clostridium difficile* • Norovirus • Rotavirus • Hepatitis A or E with diarrhoea • Acute diarrhoea • Scabies • Hepatitis B, C or HIV with **active bleeding** • Ebola Virus • Multi-Drug Resistant organisms (MDROs) e.g. -MDR *Acinetobacter baumanii* (MDR ACBA) -Extended Spectrum Beta-Lactamases (ESBLs) -Carbapanem-Resistant Enterobacteriaceae (CRE) -Vancomycin Resistant *Enterococci* (VRE) -Methicillin-Resistant *Staphylococcus aureus* (MRSA)
Droplet Transmission	Occurs when large respiratory droplet particles > 5μm in size carrying infectious pathogens travel directly from the respiratory tract of the infected individual to susceptible mucosal surfaces of the recipient over short distances of at least 1 metre. Droplets are generated by sneezing, coughing, talking, and procedures such as cardiopulmonary resuscitation.	• *Bordetella pertussis* (Whooping cough) • Influenza virus • Adenovirus • Rhinovirus • *Mycoplasma pneumonia* • SARS-associated coronavirus including SARS-CoV 2 • Group A *Streptococcus* • *Neisseria meningitides* • Respiratory Syncytial Virus (RSV) • Rubella • Mumps • Hand Foot and Mouth Disease • MRSA pneumonia • MDR *Acinetobacter baumanii* pneumonia or respiratory colonisation • Pulmonary melioidosis

Type of Transmission	Description	Examples of conditions or infectious agents (not exhaustive list)
Airborne Transmission	Occurs by dissemination of either airborne droplet nuclei or small particles in the respirable range i.e. < 5 µm in size containing infectious agents that remain infective over time or distance	• Spores of *Aspergillus spp*. • Pulmonary or laryngeal tuberculosis • Measles (Rubeola virus) • Varicella / Herpes zoster • Novel / emerging respiratory illnesses • Smallpox (Variola virus) • Aerosol Generating Procedures (AGPs) such as suctioning, endoscopy, bronchoscopy, nebulization, sputum induction, endotracheal intubation

Appendix 2 TYPES OF PERSONAL PROTECTIVE EQUIPMENT (PPE) AND WHEN TO USE

Type of PPE	When to use	Additional remarks
Gloves	When it is anticipated that the hands will be in contact with mucous membranes, non-intact skin, blood or other body fluids and/or contaminated item	• Perform hand hygiene before donning gloves. • Sterile gloves are not necessary, unless performing aseptic procedure. • Do not use the same pair of gloves for the care of more than one patient. • Change or remove gloves before attending to another patient and/or before touching non-contaminated items and environmental surfaces. • Change or remove gloves if moving from a contaminated body site to a clean body site within the same patient. • Discard the removed gloves as clinical waste immediately after use. • Perform hand hygiene immediately after removal and disposal of gloves. • Use heavy duty rubber gloves for housekeeping chores involving potential contact with blood and sharps and for instrument cleaning and decontamination procedures.
Gown /apron	For procedures and patient care activities that are likely to generate splashes or sprays of blood, body fluids, secretions or excretions.	• Select a gown/apron that is appropriate for the activity and the amount of fluid likely to be encountered. • Remove a soiled gown/apron promptly after use in a manner that avoid transfer of microorganisms to self, other patients or the environment. • Discard the used gown/apron as clinical waste immediately after removal. • Perform hand hygiene after removal and disposal of the gown/apron.
Masks and Eye Protection (goggles or visors) or Face-shield	To protect the mucous membranes of the eyes, nose and mouth for procedures and patient care activities that are likely to generate splashes or sprays of blood, body fluids, secretions, and excretions.	• Remove the mask and the eye protection according to manufacturer's instruction and in a manner that avoid transfer of microorganisms to self, other patients or the environment. • Discard the used mask and eye protection or face-shield (if single-use) as clinical waste or clean and disinfect (if reusable) immediately after removal. • Perform hand hygiene immediately after removal of the used mask and eye protection or face-shield.

Appendix 3

GENERAL PRINCIPLES OF APPROPRIATE HANDLING OF PATIENT-CARE EQUIPMENT	
1.	Appropriate PPE, according to the level of anticipated contamination, is to be worn when handling used patient-care equipment.
2.	Hand hygiene is to be performed after handling used equipment, PPE removal and disposal.
3.	Single-use items are not to be re-used. The items are to be discarded as clinical waste immediately after use.
4.	All reusable equipment is to be cleaned and disinfected appropriately between each patient use.

Appendix 4

GENERAL PRINCIPLES FOR ENVIRONMENTAL CLEANING AND DISINFECTION	
Before Cleaning	
1.	Check own skin and cover any open wounds with water-proof bandages.
2.	Assemble all the required items for cleaning before entering the room. For isolation areas, use disposable cloths and disposable mop heads.
3.	Prepare the detergent and hospital-grade disinfectants* daily in a well-ventilated area. Follow the manufacturer's instruction for proper dilution and contact time for the cleaning and disinfecting solutions.
4.	Check for Precautions signs on patient's room door. Follow the precautions as indicated.
5.	Clean hands and put on appropriate Personal Protective Equipment (PPE)** before entering the room.
During Cleaning	
1.	Remove any clutter and wastes:
	Look out for needles and other sharp objects. Do not pick up sharps using bare hands but use mechanical devices and place in sharps container. Report incident to the supervisor.
	Dispose any wastes into appropriate lined bins.
	Remove and tie ¾ filled waste plastic bags. Handle the bags from the top and do not compress bags with hands. Keep bag away from the body.
	Replace waste plastic bags with new ones.
	Seal close ¾ sharps bin (if available) and bring to collection area.
2.	Progress from **least soiled to the most soiled** and from **high to low surfaces**. Start from the area furthest from patient's bed towards it.
3.	Remove gross soil prior to cleaning and disinfection. Observe the following principles:
	Use fresh cloth.
	Do not double-dip the cloth.
	Change the cloth when it is no longer saturated with detergent or disinfectant and after cleaning heavily soiled areas.
	Clean the environmental surfaces with detergent and water to remove any soilage prior to disinfection.
	Then rinse the surface with clean water.
	Disinfect the surface with fresh cloth dip in prepared hospital-grade disinfectant.
	Follow the product SDS*** for the appropriate contact time before rinsing the surface with water.
	Change cleaning solutions as per manufacturer's instructions. Change more frequently in heavily contaminated areas, when visibly soiled and immediately after cleaning blood and body fluid spills.
4.	Dry mop floors prior to wet/damp mopping. Minimize turbulence to prevent the dispersion of dust that may contain micro-organisms (e.g. never shake mops).

During Cleaning (contd…)	
5.	'No-touch disinfection'**** if available, is only to be applied after the room have been manually cleaned. To operate, follow manufacturer's Instruction For Use (IFU).
6.	Remove PPE and clean hands upon leaving the room.
After Cleaning	
1.	Restock but do not overstock the room.
2.	Clean, disinfect and dry the cleaning equipment between use.
3.	Launder reusable mop heads daily and dry thoroughly before each use.
4.	Clean housekeeping cart and carts used to transport waste daily.

*Appropriate hospital-grade disinfectant should be bactericidal, virucidal (to include activity against non-enveloped viruses) and mycobactericidal for most organism; and sporicidal for the disinfection of environmental surfaces that are potentially contaminated with spore-forming microorganisms such as *Clostridium difficile;* or use chlorine-based solution.

** Minimum PPE includes gloves, fluid impermeable long-sleeve gown, splash-proof disposable surgical mask (use N95 or equivalent respirators if entering rooms of patients on Airborne Precautions or within 1 hour after patients on Airborne Precautions are discharged from the room), eye protection (goggles or face-shield), protective boots.

Use enhanced/full PPE if performing environmental cleaning of surfaces contaminated by cases with viral haemorrhagic illnesses such as Ebola virus disease.

*** Each area **must** keep a list of all the hazardous chemicals (including detergent and disinfectants) used in the area and the **SDS** (Safety Data Sheets) of each hazardous chemical to be made available in a folder and readily accessible by staff in the area for easy reference in case of accidental splashes/exposure. (In case of accidental exposure, each facility administrator is to ensure emergency shower facilities are available and in good working order in each area). The list and availability of SDS has to be updated with the introduction of the usage of new hazardous chemical in the area within 30 days of introduction.

****'No-Touch Disinfection' such as ultraviolet (UV) disinfection and hydrogen peroxide (H2O2)-based disinfection is not mandatory but is useful to enhance the effectiveness of environmental cleaning, in addition to manual environmental cleaning and disinfection.

Ref: Ontario Agency for Health Protection and Promotion (Public Health Ontario), Provincial Infectious Diseases Advisory Committee (2018). Best practices for Environmental Cleaning for Prevention and Control of Infections in All Health Care Settings. 3rd ed. Toronto, ON: Queen's Printer for Ontario

Appendix 5

PRACTICES OF APPROPRIATE HANDLING OF LINEN	
1.	Covering any skin lesions on the hands prior to handling used linen
2	Putting on appropriate PPE* before handling used linen
3.	Changing bed linen routinely on discharge of a patient or if it becomes soiled or contaminated.
4.	Placing used linen in linen bags. Place linens used by patients with infectious conditions into hot-water soluble bags.
5.	Ensuring sharps and/ or patient-care equipment is removed from linen
6.	Not rinsing, shaking or sorting linen in the clinical area to minimize aerosolization of any organisms but to roll or fold the used linen carefully and placing into linen bags at the point of use
7.	Not placing used linen on the floors or any other surfaces
8.	Not re-handling used linen once bagged
9.	Not overfilling linen bags. They should be tied when ¾ filled, before transporting
10.	Changing bed curtains if visibly soiled, after a patient with an infectious condition has been discharged and routinely on a scheduled basis
*Minimum PPE: Gloves and water impermeable long sleeve gown. Use other PPE such as splash proof surgical mask and eye protection if the activity is anticipated to generate splashes of blood or body fluids. Use enhanced/full PPE prior to handling used linen of patients with viral haemorrhagic illnesses such as Ebola virus disease.	

Appendix 6

APPROPRIATE HANDLING OF SHARPS TO PREVENT SHARPS INJURIES	
Be Prepared	
1.	Know which sharps safety devices are available in your clinical area. Get training on how to use such devices.
2.	Organize your work area:
	Assess any hazards- get help if needed.
	Prepare all the required items such as alcohol swabs, gauze, needles, syringes etc before going to the patient.
	Make sure sharps container: • Are within reach • Will fit all the used sharps items • Is not ¾ full
	Work in well-lit areas
Be Cautious	
1.	Be aware of people around you
2.	Stop if you feel rushed or distracted
3.	Focus on your task
4.	DO NOT uncover or unwrap sharps until it is time to use it
5.	Keep the exposed sharp in view
6.	Keep sharps pointed away from yourself and other people at all times
7.	Keep your fingers away from the tip of sharps
8.	NEVER hand-pass sharps. Put in a tray for another person to pick it up.
9.	Use verbal alerts when moving sharps.
10.	NEVER recap or bend sharps. If recapping is necessary, use a one-handed 'scoop' technique – the needle itself used to pick up the cap, and then the cap is pushed against a hard surface to ensure a tight fit onto the device, or use tongs or forceps to hold the cap and place over the needle.
11.	If the sharp equipment is reusable, place in a secure, closed container after use
12.	Clean up after a procedure yourself.
13.	Watch for sharps in linen, beds, on the floor, or in waste containers.
Dispose Sharps with Care	
1.	Be responsible of the device used.
2.	Activate any safety features after use.
3.	Dispose sharps in rigid containers*. Do not overfill. (Replace when ¾ full).
4.	The sharps container should be within reach.
5.	Keep fingers away from the opening of the sharps container. NEVER put fingers into the sharps container.
6.	If a needle or sharps device is sticking out of the container, DO NOT push it with your hands. Use tongs to push the needle back into the container.

Dispose Sharps with Care (contd..)	
7.	If needle has tubing attached to it, hold the needle and the tubing when putting it in the sharps container.
8.	If an uncovered sharps device is found outside of a sharps container, do not pick up using bare hands unless can grasp the non-sharp end. If cannot, use tongs to pick it up and dispose of it.

***Specifications of Sharps Containers:**

- Puncture-proof.
- Leak-proof.
- Has tight-fitting, puncture resistant lid, without sharps being able to come out.
- Appropriately colour-coded (yellow) and labeled to warn of the bio-hazardous contents.

Location of Sharps Containers:

- Place out of reach of patients, the public and others who may be at risk.
- Place in a safe and secure position in the clinical area so they cannot be tipped over. Use tray or wall/trolley bracket.
- Do not place on the floor or above shoulder level.
- Place on a secure, stable surface, at or just above waist height.
- Take to the point-of-use to ensure immediate sharps disposal.

Other Requirement:

- Must be kept upright- to keep sharps and any liquids from spilling out of the container.
- Should not be overfilled. The container should be closed and replaced once ¾ filled.
- If there is a chance of leakage from the sharps container, it should be placed in a secondary leak-proof, closable container and appropriately labeled before transporting it.

Disposal of Sharps Container:

- Close and secure the sharps container lid prior to the disposal of the container.
- Dispose sharps containers within 3 months of assembly, even if not ¾ full.
- Ensure the sharps container is labelled at the time of disposal with:
  - The date of locking
  - The clinical location of the sharps container
- Ensure closed sharps container are stored in a secure place whilst awaiting collection for final disposal

Appendix 7

CATEGORIES OF HEALTH-CARE WASTE

Waste Categories	Descriptions and Examples
Hazardous Healthcare Waste	
Infectious Waste	Waste known or suspected to contain pathogens and pose a risk of disease transmission, e.g. waste and waste water contaminated with blood and other body fluids, including highly infectious waste such as laboratory cultures and microbiological stocks; and waste including excreta and other materials that have been in contact with patients infected with highly infectious diseases in isolation wards.
Sharps waste	Used or unused sharps, e.g. hypodermic, intravenous or other needles; auto-disable syringes; syringes with attached needles; infusion sets; scalpels; pipettes; knives; blades; broken glass.
Pathological waste	Human tissues, organs or fluids; body parts; foetuses; unused blood products.
Pharmaceutical waste, cytotoxic waste	Pharmaceuticals that are expired or no longer needed; items contaminated by, or containing, pharmaceuticals. Cytotoxic waste containing substances with genotoxic properties, e.g. waste containing cytostatic drugs (often used in cancer therapy); genotoxic chemicals.
Chemical waste	Waste containing chemical substances, e.g. laboratory reagents; film developer; disinfectants that are expired or no longer needed; solvents; waste with high content of heavy metals, e.g. batteries, broken thermometers and blood pressure gauges.
Radioactive waste	Waste containing radioactive substances, e.g. unused liquids from radiotherapy or laboratory research; contaminated glassware, packages or absorbent paper; urine and excreta from patients treated or tested with unsealed radionuclides; sealed sources.
Non-hazardous or general health-care waste or 'domestic' waste	Waste that does not pose any specific biological, chemical, radioactive or physical hazard.

Appendix 8

GENERAL PRINCIPLES OF APPROPRIATE HANDLING OF WASTE IN THE HEALTH-CARE SETTING	
1.	**Segregation of Waste at the Point-of-Generation**
	Provide separate bins for the different categories of waste at the point-of generation to facilitate the person who produces the waste to dispose the waste appropriately.
	Specifications of waste bins: • Sturdy, leak-proof bins • Has well-fitting lid which is pedal/foot-operated • Appropriately labeled and/or colour-coded: • Bin (preferably yellow) with biohazard symbol and with 'clinical waste' label, for infectious and pathological waste (clinical waste) • Yellow bin with SHARPS label and biohazard symbol for sharps waste • Bin (preferably black but can be of any colour other than yellow) with 'general (or domestic) waste' label for general/'domestic' waste • The designated waste bins are to be lined with colour-coded and appropriately fitting sturdy plastic bags (recommended thickness of 70μm): • Lined with yellow bag with biohazard symbol for clinical waste bins • Lined with preferably black bag (but can be of any colour other than yellow) for general /'domestic' waste bins • Bins are of the same size (to avoid tendency to throw in the largest receptacle)
	AVOID mixing colours such as having yellow bags in black bins.
	Location of clinical waste bins: • Suitable locations for clinical waste bins include (not exhaustive list): • Isolation Rooms • Treatment Rooms • Procedure Rooms • Nursing Stations (near handwashing sinks) • Sluice/utility room • Designated areas for PPE doffing • Intensive Care Units • Labour Rooms
	Provide reminder/guiding posters of the types of waste to be disposed in the designated bins (see Annex 8-10)
2.	**Sealing of Health-Care Waste**
	Waste bags and sharps containers should be tied and closed/sealed respectively, ready for collection and replaced when ¾ filled
	Never staple plastic bags but tied or sealed with a plastic tag or tie
	Make replacement bags or containers available at each waste-collection location so that full ones can be replaced immediately

	Label tied/sealed waste bags and sharps container with date and location to allow for tracking purposes
3.	**Interim/Short Term Waste Storage in Clinical Areas**
	Sealed waste bags or sharps containers should be stored in the utility rooms, whenever possible, while waiting to be collected and transported to a central storage facility.
	If utility rooms are not available, waste can be stored in a designated location which should be near to a medical area but away from patients and public access.
	Another possibility for interim storage is a closed container, which is clearly labelled and preferably lockable, stationed indoors within or close to a medical area.
4.	**Collection and Transportation of Health-Care Waste**
i.	**Use of Appropriate PPE:**
	Staff collecting and transporting health-care waste should wear appropriate PPE according to anticipated exposure risk - heavy-duty gloves, strong, closed shoes, overalls and surgical masks (use protective eye-wear if anticipated splash risk).
ii.	**Handling of Waste Bags or Containers (including sharps containers)**
	The waste bags or containers are not to be carried against the body e.g. shoulders, legs; or be dragged on the floor.
	The waste bags and sharps containers are not to be transported from clinical areas to designated central storage areas by hand but are to be placed in designated waste transportation trolley – to avoid risk of accident or injury from infectious material or incorrectly disposed sharps that may protrude from waste bags or containers.
	The waste transportation trolleys are NOT to be left unattended at any time.
iii.	**Collection Times:**
	General/'domestic' waste SHOULD NOT be collected at the same time and SHOULD NOT be collected in the same transportation trolley as clinical waste (including sharps containers).
	Collection times should be set, which should be daily for most wastes, timed to match the pattern of waste generation during the day and to take place during less busy times whenever possible.
iv.	**Collection Routes**:
	Collection routes should be set, which is away from patient care and other clean areas. This is to prevent exposure to staff and patients
	The set collection route is to follow the principle of 'from clean to dirty' areas i.e. start from the most hygienically sensitive clinical areas (e.g. dialysis units, operating theatres, intensive care units) and follow a fixed route around the other clinical areas and interim storage areas to designated central storage facilities.
v.	**Transportation Trolley**:
	Designate separate transportation trolleys for the different types of waste: • General/'domestic' waste Trolley- preferably colour-coded black and/or labelled clearly as 'General Waste' or 'Non-hazardous Waste' or 'Domestic Waste' • Clinical waste Trolley- preferably colour-coded yellow and labelled with 'Bio-hazardous' symbol and as 'Clinical Waste'. Sharps containers and clinical waste can be transported in the same trolley.

	• Other hazardous waste, such as chemical and pharmaceutical wastes, should be transported separately in boxes to central storage sites
	DO NOT use the designated waste transportation trolleys for any other purposes.
	Specifications of the transportation trolleys should be as follows: • Wheeled and be easy to push and pull. • Be easy to load and unload. • Have no sharp edges that could damage waste bags or containers during loading and unloading. • Be easy to clean and, if enclosed, fitted with a drainage hole and plug. • Be labelled and dedicated to a particular waste type. • Not be too high (to avoid restricting the view of staff transporting the waste). • Be able to be secured with a lock (for hazardous waste). • Be appropriately sized according to the volumes of waste generated at a health-care facility.
	All waste bag seals should be in place and intact at the end of transportation.
	The transportation trolleys should be cleaned and disinfected daily.
vi..	**Use of Waste Chutes**
	Use waste chutes in health-care facilities is **NOT RECOMMENDED** because of increased risk of transmitting airborne infections.
5.	**Central Storage Facilities** - places within a health-care facility where different types of waste are stored until it is treated or collected for transport offsite
i.	**General Requirements:**
	• Separate and clearly labelled storage for general and clinical or infectious and other hazardous waste. • Located away from supply rooms, fresh food stores or food preparation areas. • Have easy access for waste-collection vehicles. • Sized appropriate to the quantities of waste generated and frequency of collection. • Completely enclosed. • Have protection from the sun. • Have good lighting. • Have a minimum passive ventilation. • Be inaccessible to animals, birds and insects. • Secure storage area with locks and visible 'restricted access' labelling on entrance door in place- to prevent unauthorized persons • Have an impermeable, hard-standing, easy to clean and disinfect floor with good drainage. • Have water supply for cleaning purposes. • Have a washing basin with running tap water and soap for hand hygiene purposes. • Have a supply of cleaning equipment, PPE, waste bags and containers located conveniently close to the storage area. • Have spillage containment equipment.

	• Be cleaned regularly (at least once a week).
ii.	**Additional Specific Requirement for Clinical Waste Storage Area:**
	Refrigerated storage room – kept cool at temperature no higher than 3 - 8˚C (will allow waste to be stored for > 1 week)
	If room not kept cool, storage time of infectious waste is maximum 24 hours during the hot season and 48 hours during the cool season

Appendix 9

SAFE INJECTION PRACTICES	
1.	Use aseptic technique to avoid contamination of sterile injection equipment
2.	To not use a single needle or syringe to administer intravenous medications to multiple patients even if the needle on the syringe is changed
3.	To use sterile, single-use, disposable needle and syringe for each injection given
4.	To use single-dose vials for parenteral medications whenever possible
5.	To not administer medications from single-dose vials to multiple patients or combine leftover contents for later use.
6.	If multi-dose vials must be used, to scrub the top of the vial using alcohol swabs for at least 30 seconds and use new sterile needle and syringe each time to access the multi-dose vial
7.	To use fluid infusion and administration sets (i.e. intravenous bags, tubing and connectors) for one patient only
8.	To not use bags or bottles of intravenous solution as a common source of supply for multiple patients

Appendix 10

APPROPRIATE INFECTION CONTROL PRACTICES FOR SPECIAL LUMBAR PUNCTURE PROCEDURES	
1.	Performing hand hygiene prior to performing the aseptic lumbar puncture procedure
2.	Putting on non-sterile gown/apron
3.	Putting on surgical mask
4.	Putting on sterile gloves
5.	Removing and discarding used PPE as clinical waste immediately after use
6.	Performing hand hygiene promptly afterwards

Appendix 11

APPROPRIATE RESPIRATORY HYGIENE/COUGH ETIQUETTE IN THE HEALTHCARE SETTING	
1.	Covering the mouth and nose with a disposable tissue when coughing or sneezing or coughing or sneezing onto own upper sleeve if tissue is not available
2.	Discarding used tissue promptly into a lined bin after use
3.	Cleaning hands with soap and water afterwards
4.	Putting on surgical mask when having respiratory symptoms
5.	Surgical mask worn within at least 1 metre of a symptomatic patient
6.	Getting visitors to put on surgical mask if they have respiratory symptoms and preventing them from visiting, particularly immunocompromised patients
7.	Getting symptomatic persons in common waiting areas to wear surgical masks
	Creating physical distancing of at least 1 metre between each person in waiting areas
8.	Performing hand hygiene after contact with respiratory secretions and/or contaminated objects or materials

Appendix 12

COMPONENTS OF CONTACT PRECAUTIONS (in addition to Standard Precautions)	
Patient Placement	Place patient in a **single patient room when available**
Patient Placement when Single Room is Limited	**Cohort patients** who are infected or colonized **with the same organism** together in the same room.
Patient Placement when it is not possible to cohort patient with same organism	• Avoid placing patients on Contact Precautions in the same room with patients who have conditions that may increase the risk of adverse outcome from infection or that may facilitate transmission e.g. immunocompromised patients, have open wounds, have indwelling catheters or have anticipated prolonged lengths of stay. • Ensure physical separation of at least 1 metre between each patient. Privacy curtain between beds may be drawn to reduce opportunities for direct contact
Personal Protective Equipment (PPE) Required:	
Disposable Non-sterile Gloves	√
Surgical Splash-proof Face Mask	√ (If splashes of blood and body fluid anticipated)
Long Sleeve Fluid Impermeable Gown	√
Eye protection (Goggles or Face Shield)	√ (If splashes of blood and body fluid anticipated)
Other items/equipment Required	• Handwashing station • Alcohol-based hand-rub (ABHR) at the end of patient's bed and near entrance/exit door* • Lidded, foot-operated lined clinical /biohazard waste bin
Staff Procedure Before Entering Patient's Room/Cubicle	• Perform hand hygiene • Put on the PPE
Staff Procedure on Leaving Patient's Room/Cubicle	• Remove the PPE upon leaving the patient's room/cubicle. • Discard the used PPE as clinical waste. • Perform hand hygiene immediately after removal and disposal of the PPE.
Patient Equipment	• Use dedicated non-critical patient care equipment for a single patient if possible. • If unable, clean and disinfect the equipment according to manufacturer's cleaning instructions before using on another patient.

COMPONENTS OF CONTACT PRECAUTIONS (contd..)	

Patient Movement	• Limit the movement and transport of the patient from the room for the essential purposes only.
	• If the patient has to go to a different department, follow the following measures:
	  • Whenever possible, contain and cover infected or colonized areas of patient's body.
	  • Inform the receiving department/team of the patient's transmission-based precaution so they can take the necessary precautionary steps to prevent spread of disease
	  • The receiving department/team are to ensure cleaning and disinfection of the environmental surfaces are carried out after the patient leaves the area
	  • Maintain contact precautions for the patient when he/she leaves the room.

Visitors	• Get visitors to check with the nursing staff before entering the room • Visitors are to be informed to refrain from touching patient or patient's environment and to perform hand hygiene before and after visiting patient • Visitors are limited to 1- 2 person(s) at any one time.
Cleaning Requirement	• Use disposable or separate designated cleaning equipment to clean and disinfect the room. • Use sporicidal disinfectants when cleaning rooms housing patients infected or colonized by spore-forming organisms such as *Clostridium difficile.* • Use of 'No-Touch Disinfection' (such as UV disinfection, H2O2-based disinfection) is useful to use in addition to manual cleaning and disinfection to enhance the effectiveness of the environmental cleaning and disinfection. • On patient discharge, clean and disinfect the outer surfaces of patient's belongings (such as luggages) with disinfectant wipes or solutions**. (Healthcare staff is to put on appropriate PPE prior to conducting such cleaning and to perform hand hygiene after completion of the task, removal and disposing of the PPE).

* Risk assess the appropriateness and safety of the ABHR placement by taking account patient and public factors

**Appropriate hospital-grade disinfectant wipes or solutions should be bactericidal, virucidal (to include activity against non-enveloped viruses) and mycobactericidal for most microorganisms; and sporicidal for the disinfection of surfaces potentially contaminated with spore-forming microorganisms such as *Clostridium difficile);* or use chlorine-based disinfectant wipes or solution.

Appendix 13

COMPONENTS OF DROPLET PRECAUTIONS (in addition to Standard Precautions)	
Patient Placement	Place patient in a **single patient room** when available.
Patient Placement when Single Room in Short Supply	• Prioritize single patient room for patients with excessive cough and sputum production and according to the infective organism involved** • Cohort patients who are infected or colonized with the same organism together in the same room.
Patient Placement when it is not possible to cohort patient with same organism	• Avoid placing patients on Droplet Precautions in the same room with patients who have conditions that may increase the risk of adverse outcome from infection or that may facilitate transmission e.g. immunocompromised patients, have open wounds, or have anticipated prolonged lengths of stay. • Ensure physical separation of at least 1 metre between each patient. Privacy curtain between beds may be drawn to reduce opportunities for close contact
Personal Protective Equipment (PPE) Required:	
Disposable Non-sterile Gloves	√ (If anticipated will be in contact with mucous membrane, non-intact skin, blood, body fluid or contaminated items)
Surgical Splash-proof Face Mask	√
Long Sleeve Fluid Impermeable Gown	√ (If splashes of blood and body fluid anticipated)
Eye protection (Goggles or Face Shield)	√ (If splashes of blood and body fluid anticipated)
Other Item/ Equipment Required	• Handwashing station • Alcohol-based hand rub (ABHR) at the end of patient's bed and near entrance/exit door* • Lidded, foot-operated lined clinical / biohazard waste bin
Staff Procedure Before Entering Patient's Room/Cubicle or working within at least 1 metre of the patient	• Perform hand hygiene. • Put on the PPE.
Staff Procedure on Leaving Patient's Room/Cubicle	• Remove PPE upon leaving patient's room/cubicle or in the anteroom (if available). • Discard the used PPE as clinical waste. • Perform hand hygiene immediately after removal and disposal of the PPE.

COMPONENTS OF DROPLET PRECAUTIONS (contd..)	
Patient Movement	• Limit the movement and transport of the patient from the room for the essential purposes only. • If the patient has to go to a different department, inform the receiving department /team of the patient's transmission-based precaution so they can take the necessary precautionary steps to prevent spread of disease. • As far as possible, put on a surgical mask for the patient when he/she leaves the room. • Staff transporting patients on Droplet Precautions do not need to wear a mask during transport if the patient is wearing a mask. However, this may be subject to current facility's policy, particularly during a pandemic, which may require the universal use of surgical mask by healthcare personnel whenever handling patients.
Visitors	• Get visitors to check with the nursing staff before entering the room • Staff are to explain to visitors that patient is on droplet precautions and the need to put on surgical mask (visitors to bring their own) • Visitors are required to put on surgical masks (visitor's own) and to perform hand hygiene before and after visiting the patient • Visitors without surgical masks are not allowed to visit • Visitors are limited to 1- 2 person(s) at any one time
Cleaning Requirement	• Use disposable or separate designated cleaning equipment to clean and disinfect the room. • Use of 'No-Touch Disinfection' (such as UV disinfection, H2O2-based disinfection) is useful to use in addition to manual cleaning and disinfection to enhance the effectiveness of the environmental cleaning and disinfection. • On patient discharge, clean and disinfect the outer surfaces of patient's belongings (such as luggages) with disinfectant wipes or solutions***. (Healthcare staff is to put on appropriate PPE prior to conducting such cleaning and to perform hand hygiene after completion of the task, removal and disposing of the PPE)

* Risk assess the appropriateness and safety of the ABHR placement by taking account patient and public factors

** Refer to Guidance on the Prioritisation of Use of Isolation Rooms in Healthcare Facilities, Ministry of Health Brunei Darussalam

***Appropriate hospital-grade disinfectant wipes or solutions should be bactericidal, virucidal (to include activity against non-enveloped viruses) and mycobactericidal for most microorganisms; and sporicidal for the disinfection of surfaces potentially contaminated with spore-forming microorganisms such as *Clostridium difficile);* or use chlorine-based disinfectant wipes or solution.

Appendix 14

COMPONENTS OF AIRBORNE PRECAUTIONS (in addition to Standard Precautions)	
Patient Placement	• Place patient in a single negative pressure room. • Keep the patient's room door closed at all times.
Patient Placement in an outbreak or exposure involving large numbers of patients	• Cohort patients in areas of the facility that are away from other patients, especially patients who are at increased risk of infection e.g. immunocompromised patients • Use temporary portable solutions (e.g. exhaust fan) to create a negative pressure environment in the converted area of the facility and discharging air directly to the outside, away from people and air intakes, or direct all the air through HEPA filters before it is introduced to other spaces.
Specific Engineering Requirement for Patient's Room	• Ventilation to maintain ≥ 6 air changes per hour (ACH) for existing facility or ≥12 ACH for new construction/renovation. • Direct exhaust of air to the outside. • If it is not possible to exhaust air directly to the outside, air may be returned to the air-handling system or adjacent spaces if all air is directed through HEPA filters. • Daily visual monitoring of air pressure (e.g. smoke tubes, flutter strips), regardless of presence of differential pressure sensing devices (e.g. manometers).
Other Requirement for Patient's Room	• Keep patient's door closed. • Handwashing station. • Alcohol-based hand rub (ABHR) at the end of patient's bed and near entrance/exit door*. • Lidded, foot-operated lined clinical /biohazard bin.
Personal Protective Equipment (PPE) Required:	
Disposable Non-sterile Gloves	√ (If anticipated will be in contact with mucous membrane, non-intact skin, blood, body fluid or contaminated items)
Disposable N95 or equivalent masks or Powered Air Purifying Respirator (PAPR)	√
Long Sleeve Fluid Impermeable Gown	√ (If splashes of blood and body fluid anticipated)
Eye protection (Goggles or Face Shield)	√ (If splashes of blood and body fluid anticipated)
Staff Procedure Before Entering Patient's Room	• Perform hand hygiene • Put on the PPE

COMPONENTS OF AIRBORNE PRECAUTIONS (contd..)	
Staff Procedure on Leaving Patient's Room	• Close the door. • Remove gloves, gown and eye protection (if worn) upon leaving patient's room but remove the N95 or equivalent mask or PAPR outside patient's room. But if anteroom is available, remove all the PPE in the anteroom. • Discard used PPE as clinical waste and clean and disinfect reusable PPE appropriately as per manufacturer's cleaning instruction. • Perform hand hygiene immediately after removal and disposal of the PPE.
Restriction of Healthcare Personnel/Visitors	Restrict susceptible healthcare personnel and visitors (e.g. pregnant, immunocompromised, non-immune) from entering the rooms
Patient Movement	• Limit the movement and transport of the patient from the room for the essential purposes only. • If the patient has to go to a different department, inform the receiving department /team of the patient's transmission-based precaution so they can take the necessary precautionary steps to prevent spread of disease. • As far as possible, put on a surgical mask for the patient when he/she leaves the negative pressure room. • For patients with skin lesions associated with varicella or small pox or draining skin lesions caused by *M. tuberculosis,* cover the affected areas to prevent aerosolization or contact with the infectious agents in skin lesions. • Once a patient on Airborne Precautions leaves a room, the room should remain vacant for at least 1 hour, to allow for full exchange of air. If it is necessary to enter the room by staff (e.g. cleaners) within an hour after the patient left the room, N95 or equivalent mask or PAPR need to be kept on while in the room. • Staff transporting patients on Airborne Precautions do not need to wear a mask during transport if the patient is wearing a mask and infectious skin lesions are covered. However, this may be subject to current facility's policy, particularly during a pandemic, which may require the universal use of surgical mask by healthcare personnel whenever handling patients.
Visitors	• Get visitors to check with the nursing staff before entering the room • Visitors are refrained from visiting while patient is on airborne precautions except for essential main carer.

COMPONENTS OF AIRBORNE PRECAUTIONS (contd…)	
Cleaning Requirement	• Use disposable or separate designated cleaning equipment to clean and disinfect the room. • Use of 'No-Touch Disinfection' (such as UV disinfection, H2O2-based disinfection) is useful to use in addition to manual cleaning and disinfection to enhance the effectiveness of the environmental cleaning and disinfection. • On patient discharge, clean and disinfect the outer surfaces of patient's belongings (such as luggages) with disinfectant wipes or solutions**. (Healthcare staff is to put on appropriate PPE prior to conducting such cleaning and to perform hand hygiene after completion of the task, removal and disposing of the PPE)
* Risk assess the appropriateness and safety of the ABHR placement by taking account patient and public factors **Appropriate hospital-grade disinfectant wipes or solutions should be bactericidal, virucidal (to include activity against non-enveloped viruses) and mycobactericidal for most microorganisms; and sporicidal for the disinfection of surfaces potentially contaminated with spore-forming microorganisms such as *Clostridium difficile);* or use chlorine-based disinfectant wipes or solution.	

Appendix 15

COMPONENTS OF PROTECTIVE PRECAUTIONS (in addition to Standard Precautions)	
Patient Placement	• Place patient in a single positive pressure room (if available) or at least in a single standard pressure room. • However, if patient has an airborne transmissible infection in addition to the immunocompromised state, patient should be placed in a negative pressure room until deemed non-infectious and place portable ventilation units, industrial grade HEPA filters to enhance filtration of spores

Specific Engineering Requirement for Patient's Room	• Central or point-of-use HEPA (99.97% efficiency) filtration of incoming (supply) air (capable of removing particles 0.3 µm in diameter).
	• Well-sealed rooms to prevent flow of air from the outside:
	  • Proper construction of windows, doors and intake and exhaust ports
	  • Ceilings: smooth, free of fissures, open joints, crevices
	  • Walls sealed above and below ceiling
	• Ventilation to maintain ≥ 12 ACH
	• Directed room air flow: air supply and exhaust grills are located in such a way to ensure clean, filtered air enters from one side of the room, flows across the patient's bed and exits on the opposite side of the room.
	• Positive air pressure in relation to the corridor (Pressure differential of > 2.5 Pa)
	• Daily visual monitoring and documentation of air flow patterns (e.g. flutter strips, smoke tubes) or by using hand held pressure gauge
	• Self-closing door
	• Maintain back-up ventilation equipment (e.g. portable units for fans or filters) for emergency provision of ventilation requirements and take immediate steps to restore the fixed ventilation system

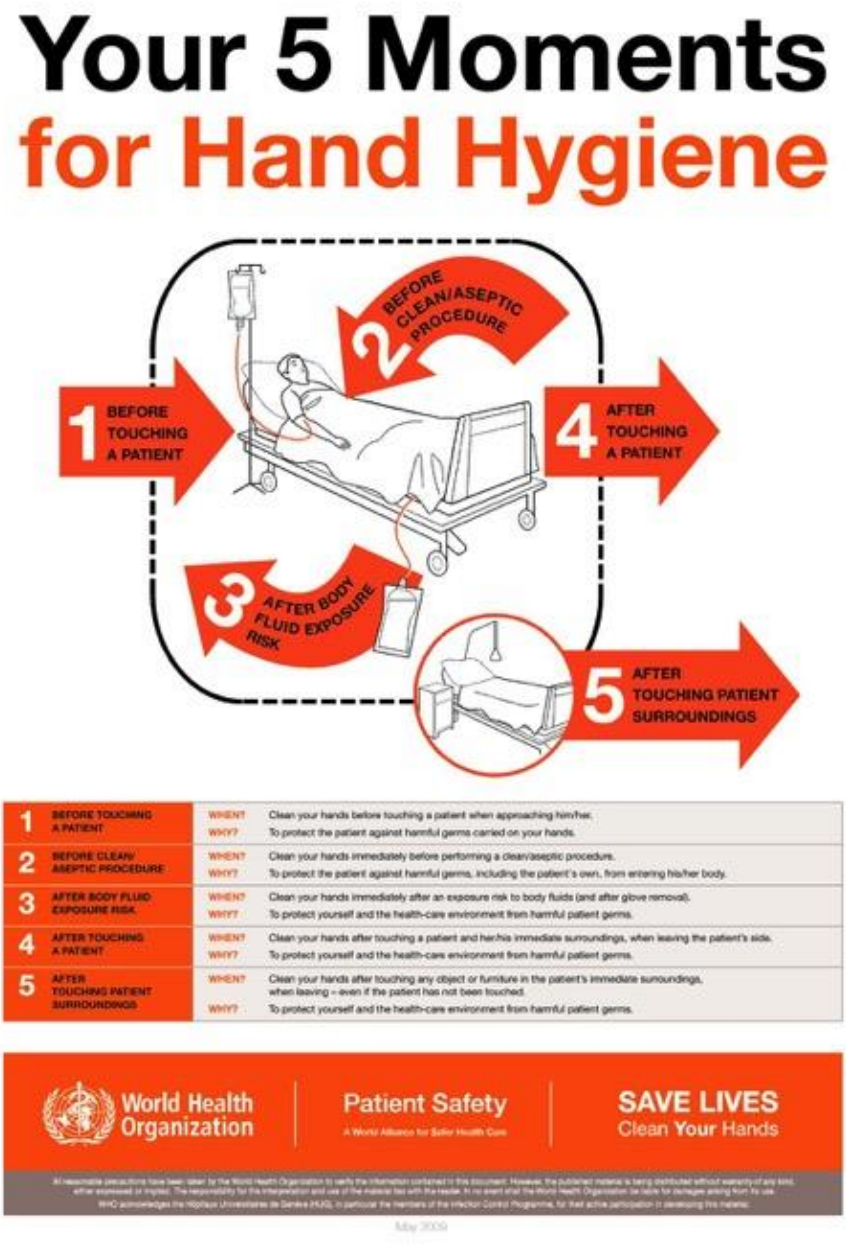
Other Specific Requirement for Patient's Room	• Keep patient's room door closed • Remove unnecessary equipment from the room. • No carpet, soft furnishings, or upholstered furniture in the room. • Prohibit dried or fresh flowers and potted plants inside patient's room.
Personal Protective Equipment (PPE) Required	• Disposable non-sterile gloves • Disposable fluid-impermeable gown /apron • Disposable surgical splash-proof mask or Disposable fluid shield N95 or equivalent mask (to be used by staff if patient is on airborne precautions) • Protective eyewear or face shield /visor if performing procedures where splashes of body fluids are anticipated.
Other items/equipment Required	• Handwashing station • Alcohol-based handrub (ABHR) at the end of patient's bed and near entrance/exit door* • Lidded, foot-operated lined clinical /biohazard waste bin

COMPONENTS OF PROTECTIVE PRECAUTIONS (contd…)	
Staff Procedure Before Entering Patient's Room	• Perform hand hygiene • Put on the PPE
Staff Procedure on Leaving Patient's Room	• Close the door • Remove the PPE upon leaving the patient's room (or in the anteroom, if available). • Discard used single-use PPE as clinical waste and clean and disinfect reusable used PPE appropriately according to manufacturer's cleaning instruction. • Perform hand hygiene immediately after removal and disposal of the PPE.
Patient Equipment	Use dedicated non-critical patient care equipment for a single patient if possible, or clean and disinfect the equipment according to manufacturer's cleaning instructions before using on the patient.
Patient Movement	• Limit the movement and transport of the patient from the room for the essential purposes only. • If the patient needs to leave the room, provide respiratory protection. Get the patient to put on surgical mask, if possible. If it is anticipated that they will have exposure to construction work, get the patient to put on N95 mask if medically fit to tolerate a respirator. (This is to prevent inhalation of respirable particles that could contain infectious spores generated by construction work).
Visitors	• Visitors are to check with nursing staffs before entering patient's room and are limited to 1-2 persons at any one time. • Do not allow staffs or visitors who are unwell in any way, for example with coughs and colds, sore throat, herpes simplex, diarrhea or infected skin lesions, from entering patient's room.
Cleaning Requirement	• Use disposable or separate designated cleaning equipment to clean and disinfect the room. • Avoid cleaning methods which disperse dust. Damp dust horizontal surfaces routinely and whenever dusts are detected. • Routinely clean crevices and sprinkler heads where dusts may accumulate. • Use vacuum cleaner equipped with HEPA filters when vacuum cleaning is necessary. • Use of 'No-Touch Disinfection' (such as UV disinfection, H2O2-based disinfection) is useful to use in addition to manual cleaning and disinfection to enhance the effectiveness of the environmental cleaning and disinfection.
* Risk assess the appropriateness and safety of the ABHR placement by taking account patient and public factors	

Annex 1


KEMENTERIAN KESIHATAN
MINISTRY OF HEALTH
6 steps of hand hygiene
6 langkah pembersihan tangan
1
Rub hands palm to palm
Gosok kedua telapak tangan
2
Right palm over left dorsum with interlaced fingers and vice versa
Gosok telapak tangan sebelah kanan ke bahagian atas tangan sebelah kiri dengan jari-jemari berselang-seli dan sebaliknya
3
Palm to palm with fingers interlaced
Gosok kedua-dua telapak tangan dengan jari-jemari berselang-seli
4
Backs of fingers to opposing palms with fingers interlocked
Gosok belakang jari-jemari dengan mencengkam jari-jemari kedua-dua belah secara berlawanan
5
Rotational rubbing of left thumb clasped in right palm and vice versa
Genggam ibu jari kiri dengan tangan kanan dan gosok secara putaran dan sebaliknya
6
Rotational rubbing, backwards & forwards with clasped fingers of right hand in left palm & vice versa
Rapatkan jari-jemari tangan kanan & gosokkan ke telapak tangan sebelah kiri secara putaran, ke belakang & ke depan dan sebaliknya
HANDWASH WITH SOAP AND WATER (40-60 seconds)
CUCI TANGAN DENGAN MENGGUNAKAN AIR DAN SABUN (40-60 saat)
ALCOHOL BASED HANDRUB (20-30 seconds)
PRODUK BERASASKAN ALKOHOL (20-30 saat)
Adapted from / Diadaptasi dari
World Health Organization
123 | www.moh.gov.bn

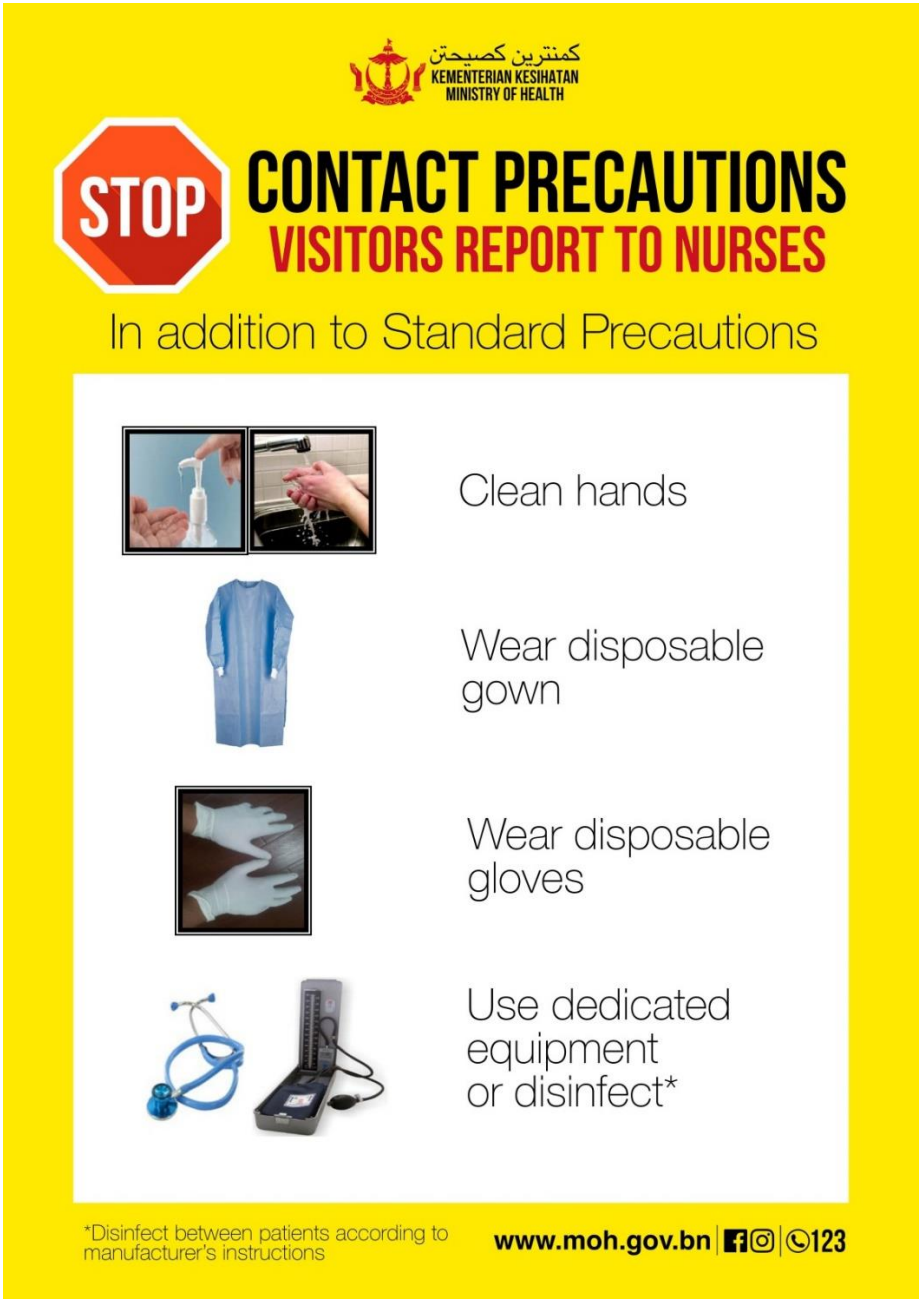
Annex 2


Your 5 Moments
for Hand Hygiene
1 BEFORE TOUCHING A PATIENT
2 BEFORE CLEAN/ASEPTIC PROCEDURE
3 AFTER BODY FLUID EXPOSURE RISK
4 AFTER TOUCHING A PATIENT
5 AFTER TOUCHING PATIENT SURROUNDINGS
1 BEFORE TOUCHING A PATIENT
WHEN? Clean your hands before touching a patient when approaching him/her.
WHY? To protect the patient against harmful germs carried on your hands.
2 BEFORE CLEAN/ ASEPTIC PROCEDURE
WHEN? Clean your hands immediately before performing a clean/aseptic procedure.
WHY? To protect the patient against harmful germs, including the patient's own, from entering his/her body.
3 AFTER BODY FLUID EXPOSURE RISK
WHEN? Clean your hands immediately after an exposure risk to body fluids (and after glove removal).
WHY? To protect yourself and the health-care environment from harmful patient germs.
4 AFTER TOUCHING A PATIENT
WHEN? Clean your hands after touching a patient and her/his immediate surroundings, when leaving the patient's side.
WHY? To protect yourself and the health-care environment from harmful patient germs.
5 AFTER TOUCHING PATIENT SURROUNDINGS
WHEN? Clean your hands after touching any object or furniture in the patient's immediate surroundings, when leaving – even if the patient has not been touched.
WHY? To protect yourself and the health-care environment from harmful patient germs.
World Health Organization
Patient Safety
SAVE LIVES
Clean Your Hands

Annex 3


كمنترين كصيحتن
KEMENTERIAN KESIHATAN
MINISTRY OF HEALTH
STANDARD PRECAUTIONS
For the care of all patients
Clean hands
Use PPE* if body fluid exposure anticipated
Safe injection practices handle and dispose sharps safely
Clean environment routinely
Disinfect equipment**
Follow respiratory hygiene and cough etiquette
Handle and dispose waste and used linen safely
*PPE - Personal Protective Equipment
**Disinfect between patients according to manufacturer's instructions
www.moh.gov.bn 123

Annex 4


كمنترين كصيحتن
KEMENTERIAN KESIHATAN
MINISTRY OF HEALTH
STOP
CONTACT PRECAUTIONS
VISITORS REPORT TO NURSES
In addition to Standard Precautions
Clean hands
Wear disposable gown
Wear disposable gloves
Use dedicated equipment or disinfect*
*Disinfect between patients according to manufacturer's instructions
www.moh.gov.bn 123

Annex 5


كمنترين كصيحتن
KEMENTERIAN KESIHATAN
MINISTRY OF HEALTH
STOP
DROPLET PRECAUTIONS
VISITORS REPORT TO NURSES
In addition to Standard Precautions
Clean hands
Wear surgical mask
Wear protective eyewear*
*If splashes anticipated
www.moh.gov.bn 123

Annex 6


كمنترين كصيحتن
KEMENTERIAN KESIHATAN
MINISTRY OF HEALTH
STOP
AIRBORNE PRECAUTIONS
VISITORS REPORT TO NURSES
In addition to Standard Precautions
Clean hands
Wear N95 mask*
Keep door closed
*Staff must be mask-fitted
www.moh.gov.bn 123

Annex 7


كمنترين كصيحتن
KEMENTERIAN KESIHATAN
MINISTRY OF HEALTH
STOP
PROTECTIVE PRECAUTIONS
VISITORS REPORT TO NURSES
In addition to Standard Precautions
Clean hands
Wear surgical mask, disposable gown and gloves
Use dedicated equipment or disinfect*
Keep door closed
No plants
Do not enter if unwell
*Disinfect between patients according to manufacturer's instructions
www.moh.gov.bn | 123

Annex 8


KNOW YOUR BIN
contaminated dressings / swabs /gauzes
patient related tubings
blood transfusion bags
used PPE
human tissues and body parts
CLINICAL WASTE
YELLOW BIOHAZARD BAGS ARE FOR CLINICAL WASTE ONLY
www.moh.gov.bn 123

Annex 9


KNOW YOUR BIN
used tissues
diapers
cardboard boxes, metal cans, papers, plastic bottles
food waste
IV solution
IV solution sets and bags (excluding sharp tips)
BLACK PLASTIC BAGS ARE FOR DOMESTIC WASTE ONLY
www.moh.gov.bn | 123

Annex 10


KNOW YOUR BIN
broken glass
IV canulla needles
dental wires
surgical blades
butterfly needles
needles
dental anaesthesic catridges
syringe with needles
infusion sets
lancet
YELLOW BIOHAZARD CONTAINERS ARE FOR SHARPS ONLY
www.moh.gov.bn 123