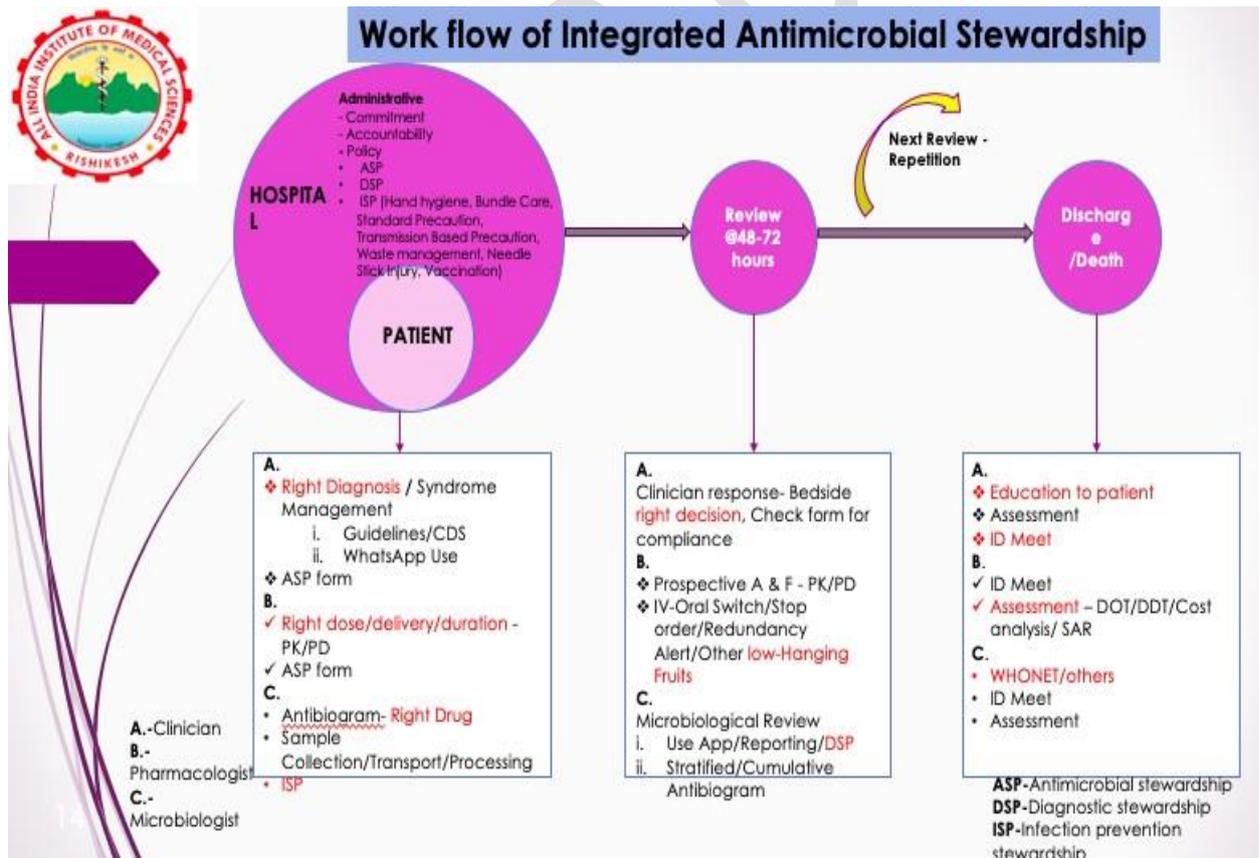


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	Haria L.G Rotary Hospital	HRH/IPC/AS/12	10-03-2022

Step 8: Optimize PK-PD parameters

We cannot influence how a drug gets metabolized but we can influence drug administration for maximum efficacy. Age and co-morbidities like renal failure, sepsis and burns also influence the outcomes of the patients. Overall, exposure of the infective agent to the unbound antibiotic drug fraction at the relevant effect site seems to be the most important factor. Optimizing Pk-PD parameters include loading doses when needed, therapeutic drug monitoring for toxicity and efficacy and optimization of drug infusion or administration. For e.g.,

- Loading dose of Colistin 9 million units stat and then followed by 3 million units Q8H or 4.5 million units Q12H [to target Colistin Average Steady State Plasma Concentration (C_{ss,avg} = 2-2.5 mg/L)
- Inj vancomycin 1g IV Q12H and dose to be adjusted to maintain a trough level between 15-20 µg/ml [however there are increasing recent data that suggests that AUC/MIC may be a better indicator of clinical efficacy than a trough level]
- Extended infusion of beta-lactams.



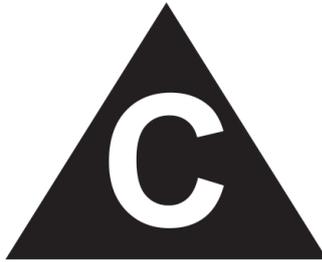
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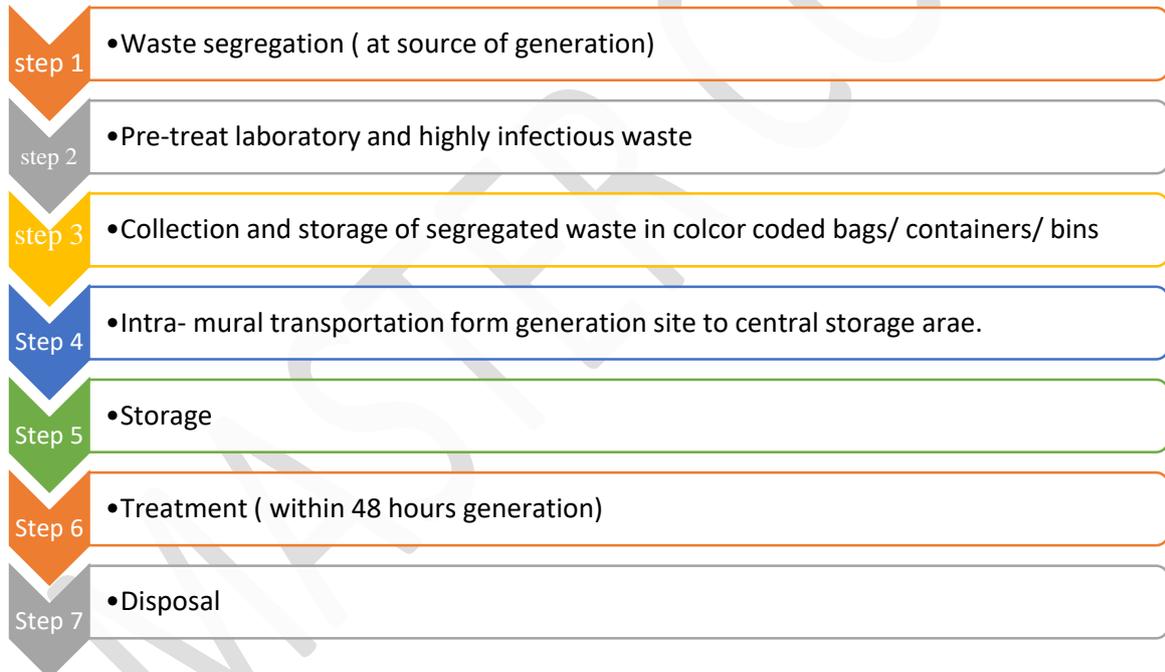
Biohazard symbol



Cytotoxic hazard symbol

Fig.1. Logos used for segregation of biomedical waste.

Steps of Bio Medical waste Management



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HRH/IPC/CAUTI/5.a

10-03-2022

- It is difficult to train uncooperative and uneducated patient.

8. CAUTI bundle (Prevention strategy of CAUTI)

Verification of need prior to insertion.	Insert urinary catheter using aseptic technique.	Maintain urinary catheter
Urinary retention/obstruction Severely ill/immobility Lack bladder control Patient request/end of life Perioperative—selected surgical procedures Assisting with pressure ulcer healing for incontinent patients	Catheter insertion kit with sterile gloves, drape, cleaning supplies, sterile lubricant, sterile urinary catheter attached to a drainage bag	Secure catheter to prevent irritation of the urethra Maintain an unobstructed flow, maintain the drainage bag below the level of the bladder and off the floor Perform hand hygiene before and after each patient contact Provide individual labelled collection container at the bedside Review urinary catheter necessity daily, remove catheter promptly when not needed

CAUTI Care Bundle	D1	D2
Closed drainage system	×	√
Urinary cath. Secure	√	×
Drainage bag above the floor and below the bladder	×	√
Meatal care	√	√
Single use gloves while emptying	√	√
No contact between jug and bag, separate jug for collection.	√	×
Assess readiness of removal-Documented?		

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This is not intended to be a comprehensive list of all elements of care related to central lines; rather, the bundle approach to a small group of interventions promotes teamwork and collaboration. The approach has been most successful when all elements are executed together, an “all-or-none” strategy.



MAS

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HRH/IPC/HH/3b

10-03-2022

STEPS OF HAND HGIENE

How to handrub? WITH ALCOHOL-BASED FORMULATION

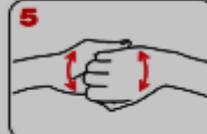
1a  **1b** 

Apply a palmful of the product in a cupped hand and cover all surfaces.

2 
Rub hands palm to palm

3 
right palm over left dorsum with interlaced fingers and vice versa

4 
palm to palm with fingers interlaced

5 
backs of fingers to opposing palms with fingers interlocked

6 
rotational rubbing of left thumb clasped in right palm and vice versa

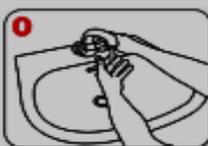
7 
rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa

8 
rinse hands with water

9 
dry thoroughly with a single use towel

10 
use towel to turn off faucet

How to handwash? WITH SOAP AND WATER

0 
Wet hands with water

1 
apply enough soap to cover all hand surfaces.

5.2.5 Surgical Scrub

Scrubbing with antiseptic before beginning surgical or invasive procedures. The aim of surgical hand scrubbing with an antiseptic agent is to minimize the number of microorganisms on hands under the gloves. This reduces the risk of infection to a patient if gloves develop a small hole, tears or nicks during the procedure. The steps of surgical hand scrub are as follows:

- i. Start timing. Scrub each side of each finger, between the fingers, and the back and front of the hand for 2 minutes.

		
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Date of Issue:

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10-03-2022



1
Put approximately 5 mL (3 doses) of alcohol-based handrub in the palm of your left hand, using the elbow of your other arm to operate the dispenser



2
Dip the fingertips of your right hand in the handrub to decontaminate under the nails (5 seconds)



3
Images 3–7: Smear the handrub on the right forearm up to the elbow. Ensure that the whole skin area is covered by using circular movements around the forearm until the handrub has fully evaporated (10–15 seconds)



4
Put approximately 5 mL (3 doses) of alcohol-based handrub in the palm of your right hand, using the elbow of your other arm to operate the dispenser



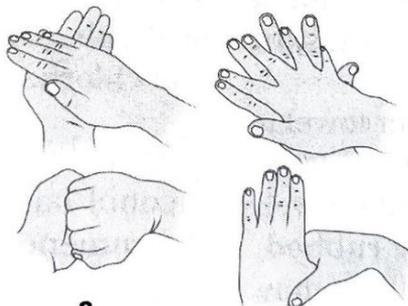
5
Dip the fingertips of your left hand in the handrub to decontaminate under the nails (5 seconds)



6
Smear the handrub on the left forearm up to the elbow. Ensure that the whole skin area is covered by using circular movements around the forearm until the handrub has fully evaporated (10–15 seconds)



7
Put approximately 5 mL (3 doses) of alcohol-based handrub in the palm of your left hand, using the elbow of your other arm to operate the dispenser. Rub both hands at the same time up to the wrists, and ensure that all the steps represented in images 12–17 are followed (20–30 seconds)



8
Perform hand rub steps as described in Fig. 5.2



9
When the hands are dry, sterile surgical clothing and gloves can be donned

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	Name of Organization:	Document Code:	Date of Issue:
	Haria L.G Rotary Hospital	HRH/IPC/SF/3d	10-03-2022

infections remain as a silent epidemic. However, the consequences of this silent epidemic are increasingly recognized. While HIV has been well recognized for more than three decades as a pandemic; WHO has recently raised an alert to be watchful of the silent transmission of hepatitis group of viruses as the morbidity and mortality burden due to direct and indirect causes of hepatitis transmission is rising alarmingly.

Hepatitis B Virus (HBV)

HBV is highly infectious, the risk from a single needle stick or a cut exposure to HBV-infected blood ranges from 6%–30%.

Hepatitis C Virus (HCV)

The estimated risk for infection after a needle stick or cut exposure to HCV-infected blood is approximately 1.8%

Human Immunodeficiency Virus (HIV)

The average risk for HIV infection after a needle stick or cut exposure to HIV-infected blood is 0.3%.

7. 3 Injection Safety

Injection safety or safe injection practices, is a set of measures taken to protect patients, HCW, biomedical waste handlers and general community. Injection safety includes practices intended to prevent transmission of infectious diseases between one patient and another or between a patient and healthcare provider, and also to prevent harms such as needle stick injuries.

PREVENT INJURIES BY

Avoid recapping the needles; If unavoidable use single hand scoop technique

Never break/bend the needles

Never pass the sharps directly in hands (use trays)

Never place used sharps on table, beds, furniture

Always dispose off sharps at the point of use

Use needle cutters/burners/sharp boxes for disposal of sharps



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- Shoe cover
- Gown
- Mask or respirator
- Goggles or face shield
- (Hand hygiene) Gloves

Sequence for doffing (Removing) PPE:

- Gloves (Hand Hygiene)
- Goggles or face shield
- Gown
- Shoe cover
- Mask or respirator (Outside contaminated area)

SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as a contact and/or contact, droplet or airborne infection isolation precautions. The procedures 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 isolated gown

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

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

HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. **Remove all PPE before exiting the patient room except a respiratory if worn.** Remove the respirator after leaving the patient room and closing the door. Remove PPE in the following sequence:

- 1. GLOVES**
 - Outside of gloves are contaminated!
 - If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
 - Using a gloved hand, grasp the bottom area of the other gloved hand and peel off the glove
 - Hold removed glove in gloved hand
 - Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove next to the first
 - Discard gloves in a waste container
- 2. GOGGLES OR FACE SHIELD**
 - Outside of goggles or face shield are contaminated!
 - If your hands get contaminated during goggles or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
 - Remove goggles or face shield from the back by using head band or ear pieces
 - Place them in a receptacle, place in designated receptacle for reprocessing. Otherwise, discard in a waste container
- 3. GOWN**
 - Open front and expose the contaminated!
 - If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
 - Unfasten gown ties, being careful sleeves don't contact your body when reaching for ties
 - Roll gown away from neck and shoulders, touching inside of gown only
 - Turn gown inside out
 - Fold or roll into a bundle and discard in a waste container
- 4. MASK OR RESPIRATOR**
 - Top of mask/respirator is contaminated! — **DO NOT TOUCH!**
 - If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
 - Grasp top elastic or straps of the mask/respirator from the front of the top, and remove without touching the face
 - Discard in a waste container
- 5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE**

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

❖ Technique of Gloving:

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encountered including necrotic tissue without evidence of purulent drainage (e.g., dry gangrene) are included in this category.

4. Dirty or Infected: Includes old traumatic wounds with retained devitalized tissue and those that involve existing clinical infection or perforated viscera. This definition suggests that the organisms causing postoperative infection were present in the operative field before the operation.

8. Preventive measure for SSI divided into three phases: Pre-operative, Intra-operative, and Post-operative.

PRE OPERATIVE	INTRAOPERATIVE	POSTOPERATIVE
Pre –op bathing	Surgical site preparation (antiseptics+ alcohol)	Aseptic non –touch technique (ANTT)
Screening for <i>S.aureus</i>	Hand scrub before and in between cases	Surgical dressing
Hair removal not done or removed by clipper	Oxygenation of Fio2 (80%)	
Surgical antimicrobial prophylaxis	Normothermia (36 C) Blood glucose (140-200mg/dl) Normovolemia	Hand hygiene

8.1 PREOPERATIVE PREVENTIVE MEASURES

- The patients scheduled for elective surgical intervention should be instructed to **have a bath** with either normal or antimicrobial soap on the night before surgery as well as on the morning of scheduled surgery.
- Intranasal application of **2% mupirocin** ointment in perioperative period is beneficial in patients with known nasal carriage of MRSA.

		
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IPC 3c Transmission based precaution

1. Policy:

Infection control within the hospital is an essential component of patient care. The HIC activities will be in accordance with the parameters of quality as established and shall meet the requirements of NABH HCO Standards 5th Edition for all intents and purposes.

2. Purpose:

This document delineates policies and procedures for “**Transmission based precaution**” in Haria L.G Rotary hospital.

- To prevent the transmission of infectious agents among patients, staff, and visitors.
- To reduce the risk of healthcare-associated infections (HAIs).
- To create a safe and healthy environment for all individuals within the organization.
- To comply with applicable regulatory requirements and best practices for infection prevention and control.

3. Scope:

This policy applies to all employees, visitors.

4. Transmission based precautions (Isolation precautions)

These are the precautions for the patients known or suspected to be infected by epidemiologically important pathogens spread by airborne or droplet transmission or by contact with dry skin or contaminated surfaces. In this case, additional precautions beyond Standard precautions are needed to interrupt the transmission in hospitals.

Additional precautions include:

- 1) Contact precautions
- 2) Airborne precautions
- 3) Droplet precautions

General Requirement of Transmission based Precautions:

Private room preferred. Single rooms reduce the risk of transmission of infection from the source patient to others by reducing direct or indirect contact transmission. Where possible, single rooms should have the following facilities:

- Hand washing facilities

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HARIA L. G. ROTARY HOSPITAL

G.I.D.C., VAPI - 396 195. Tel.: (0260) 6638888



VAP INSERTION AND MAINTENANCE BUNDLE CHECK LIST

Patient Name: _____

UHID No. : _____ Date of Admission: _____ Doctor Name: _____

Intubation done by: _____ Assist by: (Staff name & sign): _____

Date of Intubation: _____ Department: _____

Sr. No.	Criteria	Date →																	
		M	E	N	M	E	N	M	E	N	M	E	N	M	E	N	M	E	N
1	Hand Hygiene																		
2	Elevation of the head of the bed (elevated 30° to 40°)																		
3	Oral Hygiene with chlorhexidine Gluconate mouth wash - 4 Hourly																		
4	Follow Sterile Suction Practice																		
5	Ensure that ET tube / tracheotomy cuff pressure is maintained at 20 - 30 cm H2O																		
6	HME filter & viral filter to be changed every 72 hours or when choked or visibly soiled																		
7	DVT prophylaxis (if not contraindicated)																		
8	Peptic ulcer prophylaxis (if not)																		
9	Daily assessment of readiness to extubated																		
10	Daily sedation vacation																		
11	Measurement of residual volume in external feed. Hold feed if residual volume > 150 ml.																		
12	Change ventilator circuit between patients or if soiled																		
13	Early wean off																		

Signature of Staff Nurse																			
Employee ID Number of Staff																			
Signature of the In Charge																			

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