LIAQUAT UNIVERSITY HOSPITAL HYD /JAM

Document Name:	**HOSPITAL INFECTION CONTROL MANUAL**
Document No.:	**E /SHCC / LUH / HIC /001**
No. of Pages:	**88**
Date Created:	**1st July 2022**
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AMENDMENT SHEET

S.No.	Section No & Page No	Details of the Amendment	Reasons	Signature of the Preparatory Authority	Signatureof the Approval Authority

CONTROL OF THE MANUAL

The holder of the copy of this manual is responsible for maintaining it in good and safe condition and in a readily identifiable and retrievable manner.

The holder of the copy of this Manual shall maintain it in current status by inserting latest amendments as and when the amended versions are received.

The Infection Control Nurse is responsible for issuing the amended copies to the copyholders and the copyholder should acknowledge the same and he /she should return the obsolete copies to the Infection Control Nurse.

The amendment sheet, to be updated (as and when amendments received) and referred for details of amendments issued.

The manual is reviewed once a year and is updated as relevant to the hospital policies and procedures. Review and amendment can happen also as corrective actions to the non-conformities raised during the self-assessment or assessment audits by SHCC.

The authority over control of this manual is as follows:

Preparation	Approval	Issue
Infection Control Officer	Medical Superintendent	Accreditation Coordinator

The procedure manual with original signatures of the above on the title page is considered as 'Master Copy', and the photocopies of the master copy for the distribution are considered as 'Controlled Copy'.

Distribution List of the Manual:

S.No.	Designation
1	Medical Superintendent. Dr.Hafeez Abro
2	Infection Control Officer. Dr. Nazeer Haider
3	Accreditation Coordinator. Dr.Muhammad Toufique

CONTENTS

PATIENT SAFETY AND INFECTION PREVENTION AND CONTROL PROGRAMME

LUH recognizes the control of healthcare associated infections (HAI) as an important issue and is committed to fulfilling its responsibility by ensuring that proper safeguards are instituted to identify and prevent HAI .All aspects of hospital function are included in this activity.

Definition of Healthcare Associated infection

"Any clinically recognizable microbiological disease that affects the patient as a consequence as being admitted to hospital, or attending for treatment, or the hospital staff as a consequence of their work, whether or not the symptoms of a disease appear while the infected person is in the hospital.

Purpose

- To maintain standards in infection control measures and minimize hospital acquired infections in patients and employees.
- To define policy and procedure regarding healthcare associated infections in the hospital

HIC.1: INFECTION PREVENTION AND CONTROL PROGRAMME.

a) Liaquat University Hospital has documented infection prevention and control program which aims at preventing and reducing risk of health care associated infections.

b) The infection prevention and control program is a continuous process and updated every year.

LUH has an Infection Control Committee Which Coordinates all Infection Prevention Control activities

Hospital Infection Control Committee Members:

➢ HICC Chief Executive Chairman	Medical Superintendent	Dr.Abdul Hafeez Abro
➢ HICC Chief Monitoring Officer	Director Administrator	Mr. Abdul Sattar Jatoi
➢ Vice Chairman	AMS (General)	Dr. Shahid Islam Junejo
➢ Vice Chairman II	RMO (General)	Dr. Faisal Memon
➢ Public Health Lead Person.	AMS (Preventive)	Dr. Nazeer Hyder Shah
➢ Quality Manager	CMO (Dentistry)	Dr. Altaf Kakepota
➢ Accreditation Coordinator	AMS (Internship/Vigillence)	Dr.Muhammad Toufique
➢ Secretary	Nursing Supervisor	Mr. Badar Abro
➢ IPO Officer	RMO (HMIS)	Dr. Aftab Haider Deshak
➢ IPC Nurse	SN / FP (PS &IPC)	Miss Sumeera Aftab
➢ Representative Intensive Care Unit	Director (ICU)	Dr. Kashif Ali Memon
➢ Representative Medicine Department.	AMS (Medicine)	Dr. Manzoor Memon
➢ Representative Surgery Department	AMS (OPD/ WM)	Dr. Mujeeb Kalwar
➢ Representative Radiology Department	AMS (COD)	Dr.Wali Muhammad
➢ Representative Pathology Department	AMS (Pathology)	Dr. Dasrat
➢ Representative Radiology Department	AMS (Radiology)	Dr.Feroza memon
➢ Nursing Superintendent		Ms. Rasheeda Banoo

Aims of the HICC:

The aim of HICC is to improve hospital infection control practices and to prevent or minimize thepotential for nosocomial infections in patients, relatives, and health care providers.

Activities of IPC Team

1. The hospital has an infection control team, which coordinates implementation of all infection prevention and control activities. The team is responsible for day-to-day functioning of infection control program.
2. Periodical training of all category staff about Infection Control Protocols and Policies.
3. Establish standard operational procedures for Infection Control practices.
4. Introduce new policies and protocols on the method of disinfection and sterilization.
5. Maintain and implement biomedical waste management protocols.
6. Regular monitoring of Engineering department and water supply system.
7. Supervision of biomedical waste management activities

The IPC Focal person is designated as **Infection Control Officer (ICO)** in LUH
LUH has a designated **Infection Control Nurse (ICN**) based on training and experience.
It is the criteria that we have to arrange 1 (ICO) on each 250 beds 10 ICO Required
1 (ICN) on each 250 beds. 10 ICN Requierd

Responsibility of IPC Nurse

1. Maintaining records and statistics regarding IPC activities and maintains HAI incidents record.
2. Checking by inspection that Infection Control and prescribed disinfectant procedures are being carried out in accordance with hospital policy.
3. Checking of housekeeping activities like the use of Personal Protective Equipments usage of proper disinfectant, mopping plan, and biomedical waste management.
4. Training of all category staff.
5. Liaison between laboratory and ward staff: Informing head of department and giving advice on infection control problems.
6. Notification of communicable diseases and other Notifiable disease through telephone and as well as through email.
7. Arrangements taken to provide hand washing solutions and alcohol based hand rubs.
8. Work as a clinical supervisor by ensuring all the established policies and protocols are practiced like hand washing procedures, use of hand rubs, isolation policies, care of IV and vascular access, urinary catheters, universal precautions, housekeeping, cleaning and disinfection, PPE, equipment cleaning, etc.
9. Ensure health checkup of all employees.
10. Monitoring engineering activities like maintenance of aqua guard registers and cleaning register of Water tanks etc.
11. Immediate attentions in NSI (Needle stick injury) & Post exposure prophylaxis.

HIC.2: POLICIES AND PROCEDURES O F INFECTION PREVENTION CONTROL MANUAL.

LUH Hospital identified various high risk areas and procedures, and has policies to prevent infection in these areas.

High risk areas of the hospital are identified as

1. Operation Theatres
2. Intensive care units
3. Causality
4. Endoscopy Ward
5. Pathology lab
6. Pulmonology
7. Covid Ward.
8. Cath lab.

Concept of Standard Precautions:

There are a number of precautions designed to protect health care workers from exposure to blood borne pathogens. While majority of patients infected with HIV/HBsAg/ HCV are asymptomatic at the time of presentation, all patients are considered as having potentially infectious blood and body fluids. Precautions may vary based on anticipated exposure.

Features of Universal Precautions:

1. **Use of Personal Protective Equipments**

a) Mask-Protection from air bone infections or situation which lead any splash or sprays of blood and body fluid.
b) Glove –Use glove when we are touching the hand with blood and body fluids, secretions any wound, or any other contaminated items.
c) Apron-Any Chances of splash or contamination on soiling.
d) Goggles –During positive cases (OT &LR).
e) Boots-If necessary.
f) Caps are worn whenever indicated.

2. Prevention of injury with sharps:

Sharps injuries commonly occur during use of needles and surgical instruments and after use during disposal.

Precautions to be Observed:

1. Needles should not be recapped, bent or broken by hand.
2. Disposable needles & other sharps should be discarded into puncture resistant containers (Safety Box or Sharp box) at the site ofprocedure
3. Sharps should not be passed from one HCW (Health Care Worker) to another. The person using the equipment should discard it. If necessary a tray can be used to transport sharps.
4. All sharps containers to be discarded when 3/4ths full.

Hand Washing

Hand washing means vigorous rubbing of hand with soap and water or with any antiseptic agents

Types

1. Social hand wash
2. Procedure hand wash
3. Surgical hand wash with scrub.

Purpose

1. To remove dirt and debris
2. To decontaminate the hands
3. To prevent cross infection
4. To break the chain of infection

Most common mode of transmission of pathogens is via **HANDS**

"Hand washing is the single most important means of preventing the spread of infection"

When?

- Before and after duty
- Before each invasive procedures.
- Before and after using gloves
- After touching of blood or body fluid
- Before and after touching patients
- Before touching invasive devices
- After toileting, urination
- After eating.

Indications for Hand Hygiene

- When hands are visibly dirty, contaminated, or soiled, wash with non-antimicrobial or antimicrobial soap and water.
- If hands are not visibly soiled, use an alcohol-based hand rub for routinely decontaminating hands.

Specific Indications for Hand Hygiene

Before:

a) Patient contact

b) Donning gloves when inserting a CVC

c) Inserting urinary catheters, peripheral vascular catheters, or other invasive devices that don't require surgery

After:

a) Contact with a patient's skin

b) Contact with body fluids or excretions, non-intact skin, wound dressings

c) Removing gloves

1. **Social hand washing (10 -15 sec)**

Indications

1. Before handling food
2. After visiting toilet
3. Before and after nursing the patient (Bathing and bed making)
4. It can be used in community and public places

2. **Procedure hand washing or hygienic hand washing .40 to 60 sec**
3. **Procedure hand rub or hygienic by senitizer 20 to 30 sec**

1. Before each invasive procedures
2. Before attending Immuno compromised patients
3. Before and between caring for high risk patients
4. Before and after use of gloves
5. After touching of blood or body fluid

Methods of Hand Washing

1. Wet hands with running water.
2. Obtain soap or detergent that contains antimicrobial agents spread all area of the hands.
3. Vigorous rubbing of hands (all area) about 40 sec to 1 min.
4. Wash hands thoroughly with running water.
5. Rinse and dry.
6. Turn off water with using paper towel or use elbow to close the tap handle.

Steps of Procedure Hand Washing

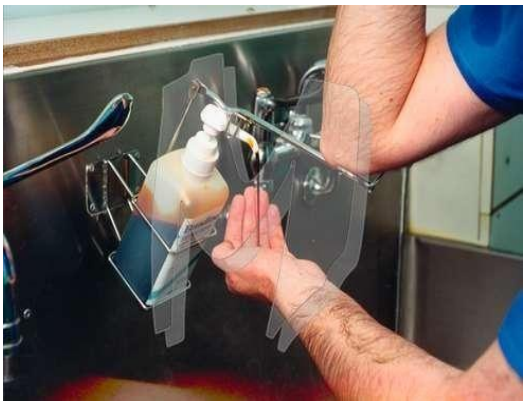
1. Palm to Palm
2. Right palm over left dorsum and left over right dorsum.
3. Palm to palm finger interlocked.
4. Back of finger to opposing palms with finger interlocked.
5. Rotational rubbing of right thumb clasped in left palm and vice versa
6. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa.
7. Rotational rubbing of right wrist and vice versa. Dry thoroughly.

3. Surgical Hand Wash (3-5mts)

1. Prior to all operative procedures
2. Prior to treatment of all burns cases
3. Before insertion of all invasive devices (cardiac catheterization, Insertion of all lines especially arterial and central venous Catheterization).

Method

1. Hands are washed up to the elbow freely using disinfectant
2. Scrubbing of fingers, space between fingers and nails ,brush used to scrub the nails
3. wash hands thoroughly with running water .after wash the tap should be closed with elbow
4. Keep the hand finger upright position.
5. Dry the hand with sterile towel






Hand Scrub

In Pyodine /alcohol 70% hand rub in all areas

When?

i. Before touching invasive devices
ii. After touching the patient
iii. Before handling the patient
iv. Before preparing any injections

Safe Injection and Infusion Practices

A safe injection, lancet procedure or intravenous device insertion is one that:

A. Does not harm the recipient
B. Does not expose the provider to any avoidable risk
C. Does not result in any waste that is dangerous for other people.

Purpose:

The purpose of SAFE is to promote implementation of safe practices associated with the following medical procedures:

- Intradermal, subcutaneous and intramuscular needle injections
- Intravenous infusions and injections
- Lancet procedures.

General safety practices

This section describes the following practices that are recommended to ensure the safety of injections and related practices:

- Hand hygiene
- Gloves where appropriate
- Other single-use personal protective equipment
- Skin preparation and disinfection

A. Hand hygiene- Perform hand hygiene **BEFORE:**

- Starting an injection session (i.e. preparing injection and giving injections)
- Coming into direct contact with patients for health-care related procedures
- Putting on gloves (first make sure hands are dry).

A. Hand hygiene- Perform hand hygiene **AFTER:**

- An injection session
- Any direct contact with patients
- Removing gloves.

Key Elements	Indications	Precautions
Hand hygiene (hand washing or alcohol-based hand rub)	Hand hygiene before and after contact with every patient is the single most important means of preventing the spread of infection When hands are visibly dirty or contaminated with proteinaceous material, wash them with antibacterial or plain soap and running water, then dry them using single-use paper ,towels When hands appear clean (i.e. are	DO NOT use alcohol-based hand products when hands are visibly soiled DO NOT use alcohol-based hand products when hands are visibly soiled DO NOT use alcohol- based hand products after exposure of nonintact skin to blood or body fluids; in such cases, wash hands with antibacterial or

	Not visibly soiled), clean them with an alcohol-based hand product for routine decontamination, then dry them using single-use paper towels	plain soap and running water, then dry them using single-use paper towels

B. Staff at LUH, who is in direct contact with patients, shall wear non-sterile, well-fitting latex or latex-free gloves when coming into contact with blood or blood product. Indications for glove use in injection practice are

Key Elements	Indications	Precautions
Glove use	Wear non-sterile, well-fitting, single-use gloves: •when there is a likelihood of coming into direct contact with a patient's blood or other potentially infectious materials (e.g. body fluids, moist body substances and saliva [in dental procedures]), mucous membranes and nonintact skin •when performing venipuncture or venous access injections, because of the potential for blood exposure at the puncture site •if the health worker's skin is NOT intact (e.g. through eczema, or cracked or dry skin)	When undertaking injections, **DO NOT** use gloves: •for routine intradermal, subcutaneous and intramuscular injections •if the health worker's skin is intact •if the patient's skin is intact. Gloves DO NOT provide Protection against needle-stick or other puncture wounds caused by sharp objects. Needles, scalpels and other sharps should be handled with extreme caution.

D. <u>Other Single-Use Personal Protective Equipment</u>

- ❖ Masks, eye protection and other protective clothing ARE NOT indicated for the injection procedures unless exposure to blood splashes is expected.
- ❖ When using single-use personal protective equipment, dispose of the equipment immediately after use.

E. Skin Preparation And Disinfection

To disinfect the skin, use the following steps

1. Apply a 60–70% alcohol-based solution (isopropyl alcohol or ethanol) on a single-use swab or cotton-wool ball. DO NOT use methanol or methyl-alcohol as these are not safe for human use.
2. Wipe the area from the centre of the injection site working outwards, without going over the same area.
3. Apply the solution for 30 seconds then allow it to dry completely.

F. Injection Devices

The management of LUH shall ensure that an adequate supply of single-use devices is available, to allow providers to use a new device for each procedure.

G. Practical Guidance On Use Of Injection Devices

When using a sterile single-use device

a) Use a new device for each procedure, including for the reconstitution of a unit of medication or vaccine;
b) Inspect the packaging of the device to ensure that the protective barrier has not been reached;
c) Discard the device if the package has been punctured, torn or damaged by exposure to moisture, or if the expiry date has passed.

H. Medication

I. When giving medication:

a) NOT use a single loaded syringe to administer medication to several patients (i.e. ensure one needle, onesyringe, one patient!)
b) DO NOT change the needle in order to reuse the syringe
c) DO NOT use the same mixing syringe to reconstitute several vials
d) DO NOT combine leftover medications for later use.

Single-dose vials – Whenever possible, use a single-dose vial for each patient, to reduce cross-contamination between patients.
Multi dose vials – Only use multi dose vials if there is no alternative.

i. Open only one vial of a particular medication at a time in each patient-care area.
ii. If possible, keep one multi dose vial for each patient, and store it with the patient's name on the vial ina separate treatment or medication ward.
iii. DO NOT store multi dose vials in the open ward, where they could be contaminated with spray or spatter.

Discard a multi dose vial:

I. If sterility of content is compromised
II. If the expiry date or time has passed (even if the vial contains antimicrobial preservatives)
III. If it has not been properly stored after opening
IV. Within 24 hours of opening, or after the time recommended by the manufacturer, if the vial does not contain antimicrobial preservatives
V. If found to be undated, improperly stored, inadvertently contaminated or perceived to be contaminated, regardless of expiry date.

Preparing injections

Injections should be prepared in a designated clean area where contamination by blood and body fluids is unlikely.

Practical guidance on preparing injections

Three steps must be followed when preparing injections.

- ❖ Keep the injection preparation area free of clutter so all surfaces can be easily cleaned.
- ❖ Before starting the injection session, and whenever there is contamination with blood or body fluids, clean the preparation surfaces with 70% alcohol (isopropyl alcohol or ethanol) and allow to dry
- ❖ Assemble all equipment needed for the injection
    - Sterile single-use needles and syringes;
    - Reconstitution solution such as sterile water or specific dilutent
    - Alcohol swab or cotton wool;
    - Sharps container.

Labeling

After reconstitution of a multi dose vial, label the final medication container with

- Date and time of preparation
- Final concentration
- Expiry date and time after reconstitution
- Name and signature of the person reconstituting the drug.

For multi dose medications that DO NOT requires reconstitution, add a label with:

- Date and time of first piercing the vial
- Name and signature of the person first piercing the vial.

Administering Injections

Antiseptic technique should be followed for all Injections.

Practical guidance on Administering Injections

When administering an injection:

- Check the drug chart or prescription for the medication and the corresponding patient's name and dosage
- Perform hand hygiene
- Wipe the top of the vial with 60–70% alcohol using a swab or cotton-wool ball
- Open the package in front of the patient to reassure them that the syringe and needle have not been used previously
- Using a sterile syringe and needle, withdraw the medication from the ampule or vial.

Reconstitution

- If reconstitution using a sterile syringe and needle is necessary, withdraw the reconstitution solution from the ampule or vial, insert the needle into the rubber septum in the single or multi dose vial and inject the necessary amount of reconstitution fluid.
- Mix the contents of the vial thoroughly until all visible particles have dissolved.
- After reconstituting the contents of a multi dose vial, remove the needle and syringe and discard them immediately as a single unit into a sharps container.

Delay in administration

- If the dose cannot be administered immediately for any reason, cover the needle with the cap using a one-hand scoop technique.
- Store the device safely in a dry kidney dish or similar container.

Important points

- DO NOT allow the needle to touch any contaminated surface.
- DO NOT reuse a syringe, even if the needle is changed.
- DO NOT touch the diaphragm after disinfection with the 60–70% alcohol (isopropyl alcohol or ethanol).
- DO NOT enter several multi dose vials with the same needle and syringe.
- DO NOT re-enter a vial with a needle or syringe used on a patient if that vial will be used to Withdraw medication again (whether it is for the same patient or for another patient)

Prevention of Sharps Injuries to Health Workers

Use of best practices can help to prevent sharps injuries to health workers

Practical Guidance on Prevention of Sharps Injuries

To avoid sharps injuries:

1. Ensure that the patient is adequately prepared for the procedure
2. Do not bend, break, manipulate or manually remove needles before disposal
3. Avoid recapping needles, but if a needle must be recapped, use a single-handed scoop technique
4. Discard used sharps and glass ampules immediately after use in the location where they were used, disposing them into a robust sharps container that is leak and puncture resistant
5. Place the sharps container within arm's reach (preferably in a secured area) to allow for easy disposal of sharps
6. Seal and replace sharps container when the container is three quarters full.

Define Infection

LUH adheres to transmission based precautions at all times. Infection is the invasion and multiplication of microorganisms. Hospital infection control is important for patients, health care workers and public .The Infection control Team plays a major role in the prevention and control of nosocomial infections.

Precautions Against Airborne Transmission

- These precautions are designed to reduce the risk of airborne and droplet transmission of infectious agents, and apply to patients known or suspected to be infected with epidemiologically important pathogens that can be transmitted by these routes.
- Components of respiratory isolation:
- Place the patient in a single / private ward with closed doors. Patients with same illness (but no other infection) can be cohered in one ward.
- Masks to be worn by those who enter the patient's ward. Susceptible persons should not enter the ward of patients known or suspected to have measles or Varicella (chicken pox).
- Gowns are not routinely necessary. Use gowns if soiling is likely.
- Gloves are necessary while handling patients.
- Hand must be washed after touching the patient or potentially contaminated articles and before taking care of another patient.
- Articles contaminated with infective material must be discarded or bagged and labeled before being sent for decontamination and reprocessing.

Precautions Against Contact Transmission:

Contact isolation precautions are recommended for specified patients known or suspected to be infected or colonized with epidemiologically important microorganisms that can be transmitted by direct contact with the patient (hand or skin-to-skin contact that occurs when performing patient care) or indirect contact (touching) with contaminated environmental surfaces or patient care items.

Components:

- Gowns are indicated if soiling is likely.
- Gloves are indicated for touching infected material / area
- Hands must be washed after touching the patient or potentially contaminated articles and before taking care of another patient.
- When possible, dedicate the use of non-critical patient - care equipment to a single patient (or cohort of patients infected or colonized with the pathogen requiring precautions) to avoid sharing between patients. If use of common equipment or items is unavoidable, then adequately clean and disinfect them before use for another patient.
- Articles contaminated with infective material must be discarded or bagged and labeled before being sent for decontamination and reprocessing

Precautions Against Blood Borne Transmission:

Instruction for wards

Admission: Patients with HIV / HBV / HCV disease but presenting with unrelated illnesses may be admitted in any ward as per existing rules. Confidentiality shall be maintained with appropriate precautions to prevent nosocomial transmission.

Preparation of patient: It is the responsibility of the attending physician to ensure that patients, testing positive are informed about the result and receive counseling.

The nursing staff will explain to patients, attendants and visitors (when necessary), the purpose and methods of hand washing, body substance and excreta precautions, and other relevant precautions.

Red bag (Reusable non-sharp material) : The ward sister must ensure that the prescribed bag is obtained from CSSD when a patient with HIV, HbsAg or HCV infection is admitted. All contaminated items that are to be sent to CSSD for disinfection are placed in the bag and sent for autoclaving. Sharps are not to be discarded in the red bag. Linen and procedure trays to be sterilized separately.

HAI /Nosocomial infection/ Cross infection:

Infection acquired during or as a result of hospitalization generally after 48 hrs of admission. It can manifest even after discharge.

Cleaning Protocols

1. Moping plan - clean to unclean area

2. Mopping plan means cleaning done from clean area to unclean area.
3. It gives special information to cleaning staff about priority of cleaning.
4. Mopping plan contains four categories
   The order of cleaning is
   a) Immuno compromised patient's ward
   b) Ward of the patient with clean case -Clean ward
   c) General
   d) Infected

   If there is a patient with communicable disease that ward should be cleaned in the last, irrespective of plan (Direction will be given by the Head nurse/ Sr. Staff Nurse on duty
   Housekeeping supervisor/ HIC Nurse)

2. Environment:-

- ❖ Clean the floors with a disinfectant thrice a day.
- ❖ Clean with soap solution first and then with Disinfectant 3 times a day
- ❖ Wash the floors with soap & water and disinfecting solution using scrubbing machine once in a week.

Do not carry out any cleaning activities while

1. Sterile supplies are being handled.
2. Sterile procedures are in progress.

a. Use 1 % Sodium Hypochlorite solution to clean environment surfaces if contamination with blood and body fluids occur.
b. Use 1 % Sodium Hypochlorite solution for 30 min for disinfecting mops used for cleaning blood.
c. Detach the pads and brushes of scrubbing machine after each use, clean thoroughly and dry.
d. Clean the walls and ceilings weekly and on transfer / discharge/ death of a patient.

3. **High Risk Areas**:-

a. Floors are cleaned with prescribed disinfectant five times a day with Surf detergent

b. Ventilator parts are cleaned with prescribed disinfectant.

c. All equipment including monitor are cleaned with prescribed disinfectant spray.

d. Some plastic items like ambu bag, ventilator tubing,O_2 mask, Nebulization set are sterilized by formalin gas (generally ETO sterilization recommended - implement the same)

e. Change the HEPA filter (ventilator) every 72 hours.

f. Keep a disinfectant hand rub solution in each bed side.

g. Keep separate stethoscope, BP always ready to use with a standby.

h. Damp dust bed frames, railings, I/V stands, lockers etc daily with prescribed disinfectant.

i. Floor cleaning done four times in a day with prescribed disinfectant.

j. Cover the mattresses and pillows with water proof covers.

k. Use disposable plastic sheets / Mackintosh to protect the bed linen.

l. Disinfect the patient's unit with prescribed disinfectant solution after the transfer / discharge / death.

m. Check the expiry date of CSSD items every day.

4. Wards:-

a. Damp dust the bed frames, railings, I/V stands, lockers etc. daily with prescribed disinfectant.(Name the disinfectant)

b. Floor cleaning done three times a day from clean area to unclean area

c. Cover the mattresses and pillows with water proof cover.

d. Use disposable plastic sheets or mackintosh to protect the bed linen.

e. Disinfect the unit with prescribed disinfectant after the discharge/ death of a patient. Fumigate with sulfur the ward after the transfer/ discharge/ death of an infected patient is discouraged

Fogging (Fumigation) for terminal cleaning after the discharge ,death , transfer and operation of infectious patient.

- If Necessary than should use Hydrogen Peroxide+ Silver Nitrate fog instead of fumigation with sulfur and sodium hypochlorite
- Ward should be kept closed for two hours.

Disinfection and cleaning of equipments

Critical, Non Critical and Semi Critical items

S.NO.	Items	Disinfection/Cleaning	Duration and periodicity
1	B.P Apparatus & Stethoscope	Clean properly with sprit	Daily
2	B.P Apparatus-Cuff	Wash thoroughly with Soap and water and dry it properly Wash and dry the B.P cuff if used for an infected patient after the discharge.	Weekly Clean if used for an infected patient after the discharge.
3	Digital Thermometer	Clean properly with Sprit/Ethanol 70%	Daily - After the use of every patient
4	Glucometer	Clean properly with sprit	Daily
5	Dressing Trolley	Clean with Super shine Keep the Store solutions in their original bottles. Avoid refilling to smaller bottles.	Daily
6	Steel Tray	Wash with soap and water	Daily
7	Measuring Tape & Torch	Clean properly with spirit	Daily & SOS

8	Nebulizer	Clean properly with spirit	Daily
9	O2 Flow Meter.	Wash with soap and water	Weekly - After each use of patient-Change sterile water every day
10	Suction Apparatus	Empty the bottles in every week or SOS. Scrub with soap and water. Disinfect with 1% Sodium Hypochlorite solution.	Weekly & after each use
11	Infusion Pumps and Monitors	Clean with Super shine.	Daily - After the use of every patient
12	Refrigerator	Defrost and Wash with soap and water	Weekly
13	Laryngoscope Blades	Detach the blades ,wash with soap and water, Clean with spirit	Daily - After the use of every patient
14	Weighing Machine	Clean with soap and water	Daily
15	Electronic Weighing Machine	Clean with Super shine	Daily
16	Telephone	Clean with sprit	Daily
17	Ventilator	Rinse& disinfect the expiratory channel with Spirit Humidifier to be cleaned with water and then to be disinfected with codex for 3 to 6 hrs. Rinse with sterile water & dry before replacing Disinfect the transducer with 70% alcohol about 1hr Silicon tubing are used after ETO. Change the bacterial filter (HME) every 72 hrs or SOS	After each use of the patient

		Expiratory & Inspiratory filters are send to CSSD for plasma sterilization Attach one bacterial filter to the expiratory port if used for an infected patient	
18	Patient Trolley & Wheel Chairs	Clean with soap & water	Daily
19	Steam Inhaler	Wash with soap and water	Daily
20	IV Stand	Clean with soap and water	Weekly
21	Defibrillator and Monitor.	Incidure	Daily
22	Pulse Oxymeter	Clean with sprit	Daily
23	Airway	Use disposable airways for each patient. Scrub with soap and water daily and SOS Discard after discharge/death of the patient.	After each use
24	E.T. Tubes Tracheostomy Tubes: -	Use disposable E.T. and Tracheostomy tubes. Refer -Equipment related protocol No.4	
25	Oxygen mask / Nasal Cannula	Use fresh mask / cannula for each patient's use. Clean with alcohol SOS. Don't reuse nasal cannula	After each use
26	Ambu Bag &Mask:-	Detach the parts. Wash with soap and water. Send to CSSD for ETO. Disinfect the Ambu bag with Hypochlorite 1% solution for 10 hrs for infectious cases and send to CSSD.	After each use
27	Proctoscope	Clean with spirit.	After each use

		Clean with soap and water. Send to the CSSD for sterilization.	
28	E.C.G. & Transducer Cables	Clean with spirit daily. Wash and dry the B.P cuff if used for an infected patient after the discharge. Wash BP cuff weekly.	After each use
29	Bedpan, Measuring jar, Commode	Clean properly with soap and water. Immerse in 1% antiseptic solution for 45 mts.	Solution to be changed every week.
30	Urinal and Sputum Mug	Disposable	
31	Endoscopes	Glutraldehyde	After each use

Laundry And Linen Management **:**All used linen shall be considered contaminated and shall be bagged at the location of use before being taken to laundry.

A. **Soiled linen:**

- Soiled linen shall be collected in the designated container and taken to laundry
- Designated container shall be covered during transport of soiled linen.
- Cloth liners /containers shall be washed daily
- Dirty utility ward shall be swept daily and washed /Mopped with a detergent/Disinfectant weekly and whenever visibly soiled
- Soiled linen shall be handled as little as possible and with minimum agitation, in order to prevent gross microbial contamination of the air and of persons handling the linen
- All soiled linen shall be bagged at the location of use. Soiled linen shall not be sorted in-patient care areas.
- Bags containing soiled linen shall be tied before being taken to laundry in order prevent spillage
- All linen that is contaminated with blood, excreta or other body fluids shall be placed in designated laundry bags

- Personnel shall wear protective clothing, including gloves and gowns/aprons
- When handling soiled linen. Employees collecting linen at the laundry shall also wear heavy-duty gloves and a gown.
- Hands shall be washed after gloves are removed.
- Staff shall be instructed in the principles of personal hygiene, including frequent hand washing

Clean linen:

- Hand washing for 10-15 seconds, with attention to nails and areas fingers is mandatory before handling clean linen.
- Clean linen shall not be handled more than necessary in order to
- Minimize contamination
- Any linen dropped shall be considered soiled
- Covered linen carts shall be used to transport clean linen to the units
- Clean linen shall be stored in a clean, dry area.

Facilities:

- Hand washing facilities should available to all employees in the linen area
- Barriers to protect employees from blood, body fluids, secretions and

  excretions are located in the laundry area. Employees shall be informed of the location and of barriers at the time of orientation to the unit.
- Carts must be cleaned before transporting clean linen

Patient linen

- Bed linen is to be changed daily and whenever soiled with blood or body fluids.
- Patient's gown is to be changed every day and whenever soiled with blood or body fluids. Dry dirty linen is to be sent to the laundry for regular wash.

Engineering Controls to Prevent Infection:

LUH adopts appropriate engineering control to prevent infections.

1. The hospital patient care areas are designed in such a manner to ensure optimum bed spacing.

2. Operating wards should provided with HEPA filter, to ensure double filtration of air.

3. Periodical checking of water resources

4. Periodical checking and maintenance of equipments, AC ducts, AHUs, replacement of filters.

5. Periodical checking, replacement/ repair of plumbing and sewer lines.

6. Machinery and equipment should be checked, cleaned and repaired routinely
7 Urgent repairs should be carried out at the end of the day's list
8. Air conditioners and suction points should be checked, cleaned and repaired on a weekly basis.

9. Preventive maintenance on all theatre equipment to be carried out weekly and major work to be done at least once every year.

OT: **Air Changes Per / Hour:**

1. Air Change Per/ Hour:

a) All the General OT's of LUH should installed with laminar flow system so as to maintain air exchanges. Allthese OT's have a minimum 5-10 air exchanges per hour and not more than 25 per hour
b) The fresh air component of the air change is required to be minimum 4 air changes out oftotal minimum 25 air changes.

2. Temperature and Humidity: The temperature shouldbemaintainedat21+/-3DegCinsidethe OT all the time with corresponding relative humidity between 40 to 60% though the ideal Rh is considered to be 59%.

House Keeping In LUH

I. House Keeping in Wards

A patient admitted to the hospital can develop infection due to bacteria that survive in the environment. Therefore, it is important to clean the environment thoroughly on a regular basis. This will reduce the bacterial load and make the environment unsuitable for growth of micro-organisms.

1. The floor is to be cleaned at least twice in 24 hours. Detergent and copious amounts of water should be used during one cleaning.
2. The walls are to be washed with a brush, using detergent and water once a week
3. High dusting is to be done with a wet mop
4. Fans and lights are cleaned with soap and water once a month.
5. All work surfaces are to be disinfected by wiping with suitable disinfectant. Chloride) then cleaned with detergent and water twice a day.
6. Cupboards, shelves, beds, lockers, IV stands, stools and other fixtures are to be cleaned with detergent and water once a week.
7. Curtains are to be changed once a month or whenever soiled. These curtains are to be sent for regular laundering. In certain areas, eg. ICUs, more frequent changes are required.
8. Patient's cot is to be cleaned every week with detergent and water. 1% Hypochlorite to be used when soiled with blood or body fluids. In the isolation ward, cleaning is done daily.
9. Store wards are to be mopped once a day and high dusted once a week.

10. The floor of wards is to be cleaned with a detergent once a day and then disinfected.
11. Toilets are cleaned with a brush using a detergent twice a day (in the morning and evening). Disinfection and stain removal solution may be used.
12. Wash basins are to be cleaned every morning
13. Regular AC maintenance is required. The AC section should draw up a protocol for this.

Miscellaneous items

Kidney trays, basins, bed pans, urinals, etc to be cleaned with detergent and water and disinfected with 7% Lysol.

II. House Keeping In the Operation Theatre

Theatre complex should be absolutely clean at all items. Dust should not accumulate at any region in the theatre. Soap solution is recommended for cleaning floors and other surfaces. Operating wards are cleaned daily and the entire theatre complex is cleaned thoroughly once a week.

Before the start of the 1st case

Wipe all equipment, furniture, ward lights, suction points, OT table, surgical light reflectors, other light fittings, slabs etc with soap solution. This should be completed at least one hour before the start of surgery.

a. Linen & gloves

Gather all soiled linen and towels in the receptacles provided. Take them to the service corridor (behind the theatre) and place them in trolleys to be taken for sorting. The dirty linen is then sent to the laundry. Use gloves while handling dirty linen.

b. Instruments

Used instruments are cleaned immediately by the scrub nurse and the attender. Reusable sharps are decontaminated in Lysol / Hypochlorite and then washed in the ward adjacent to the respective OT by scrubbing with a brush, liquid soap and vim. They are then sent for sterilization in the CSSD. After septic cases the instruments are sent in the instrument for autoclaving. Once disinfected, they are taken back to the same instrument cleaning area for a manual wash described earlier. They are then packed and re-autoclaved before use.

c. Environment

Wipe used equipment, furniture or table etc., with **detergent and water**. If there is a blood spill, disinfect with sodium Hypochlorite before wiping.

Empty and clean suction bottles and tubing with disinfectant.

d. After the last case

The same procedures as mentioned above are followed and in addition the following are carried out.

- Wipe over head lights, cabinets, waste receptacles, equipment, furniture with disinfectant like rapid incidur, foam incidur etc…
- Wash floor and wet mop with liquid soap and then remove water and wet mop with Super Shine solution.
- Clean the storage shelves, scrub & clean ward.
- **Weekly cleaning procedure**
- Remove all portable equipment.
- Damp wipe lights and other fixtures with detergent.
- Clean doors, hinges, facings, glass inserts and rinse with a cloth moistened with detergent.
- Wipe down walls with clean cloth mop with detergent.
- Scrub floor using detergent and water or Super shine.
- Stainless steel surfaces - clean with detergent, rinse & clean with warm water.
- Replace portable equipment: Clean wheel castors by rolling across toweling saturated with detergent.
- Wash (clean) and dry all furniture and equipment (OT table, suction holders, foot & sitting stools, Mayo stands, IV poles, basin stands, X-ray view boxes, hamper stands, all tables in the ward, holes to oxygen tank, kick buckets and holder, and wall cupboards)
- After washing floors, allow disinfectant solution to remain on the floor for 5 minutes to ensure destruction of bacteria.

Protocol for body fluid splash & spillages

- Wear non-sterile gloves for this procedure.
- Blood and body fluid spillage
- Wipe the area immediately with a paper towel/absorbent cloth.
- Discard immediately as clinical waste.
- Disinfect area with 10,000 ppm of hypochlorite (bleach) solution.
- Dry surface with disposable paper towels.
- Discard gloves and paper towels as clinical waste, in accordance with local policy.
- Wash hands with soap and water and dry hands immediately afterwards

Small spills (up to 10 cm diameter or < 30 ml)

- Select appropriate PPE.
- Wipe spills immediately with absorbent material.
- Place contaminated absorbent material into impervious containers or plastic bag for disposal.
- Clean the area with a warm detergent solution, using disposable cloth or sponge.
- Wipe the area with sodium hypochlorite and allow to dry.
- Perform hand hygiene.

Larger spills

- All spills must be removed gently and carefully. Always wear the appropriate PPE (especially heavy-duty gloves); wear a single-use plastic apron if contamination of the body is likely. Use of gown, face shield, mask, and goggle are not necessary.

Cover the area of spill with NaDCC granule (if available) or cover the spill using disposable paper towels or cloth soaked in 10,000 ppm of hypochlorite solution and leave it for 3–5 minutes. Do not pour the solution directly onto the spillage, it may cause splashing and widen the area of contamination

HIC.2:MONITORING OF INFECTION PREVENTION AND CONTROL

Methods of Surveillance

Fumigation and Random Culture from High Risk Areas

HICC decided that culture swab to be taken from critical areas once in two months or when an infection is suspected. Take the swabs according to the table shown below. The request of sample to be approved by the Infection Control Nurse. The original copy of the culture report to be filed in the infection control department and a copy of the report to be filed in the concerned department as well.

Surveillance Culture Schedule

S.NO	Department	Duration	Period for surveillance culture	Period for Fumigation	Weekly cleaning	Air culture
1	**ALL OT**	WEKLY	Monthly twice (Sunday)	Every Sundays, day before any major surgeries &any infected cases notified	Every Sunday& SOS	Every 6months
2	**NICU**	MONTHLY	Every month	Twice a Month & SOS	Every Sunday	Once in a Year
3	**SICU**	MONTHLY	Every month & SOS	Every month & SOS	Every Sunday	Once in a Year
4	**ICCU**	WEEKLY	Every month & SOS	Every month & SOS	MOTHLY	ONCE IN A YEAR
5	**Casualty Procedure ward**		Every month	Every 3rd month	Every Sunday	Once in a Year
6	**CSSD**		Monthly	Weekly		
7	**Labour ward**		Every month & SOS	Every month & SOS		
8	**Endoscopy**		Every month & SOS	Every month & SOS		

The collection of surveillance data is an ongoing process in LUH
The infection control team verifies the data on a regular basis.
The surveillance activities in LUH also incorporates tracking and analyzing of infection risks, rates and trends

Monitoring activities includes

- The surveillance activity include monitoring of compliance with hand hygiene guidelines
- Surveillance activities in LUH hospital also include monitoring of effectiveness of house keeping service on a regular basis using a checklist.
- Report regarding HAI rates is informed to all the departments' monthly wise.
- LUH hospital identifies all Notifiable diseases and ensures that this is sent at the specified frequency andin format as required by statutory authorities.

1. Acute diarrheal disease
2. Acute Dysentery – Amoebic / Bacillary
3. Acute flaccid paralysis
4. Cholera or Cholera- like disease
5. Diphtheria
6. Encephalitis
7. Plague
8. Hepatitis-viral
9. Leptospirosis
10. Malaria
11. Measles
12. Meningitis – Pyogenic/ Prescribed disinfectant
13. Rabies
14. Tetanus
15. Enteric fever
16. Pertussis
17. Dengue
18. Chickenpox
19. Chikungunya
20. H1N1(Swine flu)

HIC.3: ACTIONS TO PREVENT OR CONTROL THE RISK OF HEALTH CARE ASSOCIATED INFECTIONS (HAI) IN PATIENTS .

There are predominately four types of hospital acquired infections. They can be recorded on the basis of clinical and /microbiological data

Urinary Tract Infections

The urinary tract infections may be symptomatic [fever, dysuria, lumbar pain] or asymptomatic. Their recordings depend partly on the microbiological tests performed.

Respiratory Tract Infections

Analyzing the respiratory tract infections through the following;

- Ventilated days
- Fever
- X ray findings
- Neutropenia

Post-Operative Infections

Any surgical wound which results in a purulent discharge must be regarded as a hospital acquired infections whether the bacteria are of endogenous or exogenous origin is not taken in to the account.

A. The organization takes action to prevent Urinary tract infections.

Urethral catheterization

Personnel

- Only persons who know the correct technique of aseptic insertion and maintenance of catheters should handle catheters.

Catheter Use

Urinary catheters should be inserted only when necessary and left in place only as long as medically indicated.

Hand wash:

- Hand washing should be done immediately before and after any manipulation of the catheter site or apparatus.

Catheter Insertion

- Catheters should be inserted using aseptic technique and sterile equipment. Use an appropriate antiseptic solution for periurethral cleaning.
- As small a catheter as possible, consistent with good drainage, should be used to minimize urethral trauma. Indwelling catheters should be properly secured after insertion to prevent movement and urethral traction.

Anchoring the catheter

Strapping of the catheter is done to the lower anterior abdominal wall in male patients. This is to prevent direct transmission of the weight of the bag on the catheter, so that pulling and inadvertent dislodgment of the catheter does not occur. This also helps to prevent stricture of the penile urethra if the patient is on a catheter for a long duration.

B. LUH hospital takes action to prevent respiratory tract infections.

In addition to the general guidelines that are to be adhered to the following should also be noted with regard to respiratory care .Mouth flora influences development of nosocomial pneumonia in ventilated patients. Frequent chlorhexidine mouthwashes minimize the chances of pneumonia.

1. Ventilator

- Sterile water is to be used in nebulizers and humidifiers. This should be replaced once or twice a day.
- Pneumatic circuits (masks, Y connection and tubes) are to be changed every 24-48 hours.
- Condensate in tubing should not be drained into the humidifier or airway as they contain large numbers of pathogenic organisms. This should be drained only into water traps. Use disposable circuits if cost permits.
- Use heat and moisture exchanging filter (HMEF) at Y connection for all patients if feasible and cost permits. Heat and moisture exchanging filter (HMEF) is to be changed every 24- 48 hours. It should not be removed from circuit except at the time of changing.
- Oxygen masks, venture devices and nebulizer chambers are cleaned carefully and then sterilized by ETO.
- Humidifier domes are ETO sterilized. Ambu bags are cleaned thoroughly and are then sent for ETO sterilization.
- Microbiological surveillance of respiratory therapy equipment is practiced in our hospital.

2. Tracheostomy Care / Endotracheal Tube

- ❖ Careful attention to post-operative wound care is mandatory.
- ❖ The patient should receive aerosol therapy to prevent desiccation of the tracheal and bronchial mucosa or the formation of crusts. The skin around the tracheostomy tube should be cleaned with betadine (Povidone-iodine 5%) every four hours or more frequently, if necessary.
- ❖ In case of metal tracheostomy tubes, the inner cannula should be cleaned every four hours and more often if necessary to prevent the formation of crusts. The inner cannula is cleaned with water, immersed in hydrogen peroxide for 15 minutes and then rinsed with fresh & sterile normal saline. The plastic tracheostomy tubes are removed, another plastic tube is inserted, and the tube is cleaned, with hydrogen peroxide, and rinsed well before reuse.
- ❖ The tracheostomy tube should be changed every 24 hours. This tube must be tied securely at all times.
- ❖ The first complete tube change should be performed not earlier than 4-5 days to allow time for the tract to be formed. Subsequent changes should be done weekly or as necessary.
- ❖ Clean technique should be used to change the tracheostomy tube unless there is a medical indication for sterile technique.
- ❖ The obturator should be at the bedside (preferably taped to the head of the bed) to be used if the tracheostomy tube accidently is dislodged or is removed for any reason.

3. Suctioning of endotracheal / tracheostomy tube :

Employees should be instructed and supervised by trained personnel in proper technique before performing this procedure on their own. Assess the patient using auscultation, ECG, (if available) and vital signs prior to suctioning.

a. Sterile Suctioning

1. Wash your hands.
2. Use a catheter with a blunt tip.
3. The wall suction should be set no higher than 120 mm Hg for adults and between 60 and 80 mm Hg for children.
4. Attach the suction catheter to the suction tubing; do not touch the catheter with bare hands (leave it in its protective covering).
5. Put on sterile gloves. The wearing of a mask is also strongly recommended.
6. However, if saline does need to be instilled, '1/2 cc of sterile saline is put into the tracheostomy tube on inspiration only.
7. If on a respirator, pre-oxygenate the patient by connecting the resuscitation bag to the artificial airway and ventilating the patient with three or four deep breaths. A mechanical ventilator on 100% oxygen may also be used by depressing the manual ventilation button three or four times.
8. Insert the catheter gently through the inner cannula until resistance is met. Do not apply suction during insertion.
9. Withdraw the catheter approximately 1 cm and institute suctioning.
10. Carefully withdraw the catheter, rotating it gently between the thumb and forefinger applying intermittent suctioning.
11. Continuous suctioning for longer than 10 seconds may create an unacceptable level of hypoxia.
12. The patient should be given time to rest between suctioning episodes. If possible, this time should be from two to three minutes. If the patient is receiving oxygen or ventilator support, reapply the oxygen or ventilator for at least two minutes before re-suctioning.
13. Observe for unfavorable reactions such as increased heart rate, hypoxia, arrhythmia, hypotension, cardiac arrest, etc.
14. If oral suctioning is necessary, it should be done after the tracheostomy is suctioned.
15. When suctioning is completed, clear the catheter and tubing of mucous and debris with sterile water or saline.
16. Discard the catheter, water container, and gloves appropriately.
17. Wash hands.The tubing and suction canister should be changed every 24 hours. The canister should be labeled with the date and time when they are changed. If debris adheres to the side of the tubing or the canister, either or bothshould be changed. The tubing should be secured between suctioning periods so that it will not fall to the bed,floor, etc.

4. <u>Liaquat University Hospital has taken action to Prevent Intra Vascular device infection.</u>

I. Hand washing

Wash hands before every attempted intravascular cannula insertion. Antimicrobial hand washing soaps are desirable and are preferred before attempted insertions of central intravenous catheters, catheters requiring cut downs, and arterial catheters.

II. Preparation of skin

Povidine-iodine (PVP)or 70% alcohol may be used for cleaning the skin. Insertion sites should be scrubbed with a generous amount of antiseptic. Beginning at the centre of the insertion site, use a circular motion and move outward. Antiseptics should have a contact time of at least 30 seconds prior to catheter insertion. Antiseptics should not be wiped off with alcohol prior to catheter insertion.

III. Applying dressings

Sterile dressings should be applied to cover catheter insertion sites. Unsterile adhesive tape should not be placed in direct contact with the catheter-skin interface.

IV. Record Time and date of IV insertion.

V. Inspecting catheter insertion sites

Intravascular catheters should be inspected daily and whenever patients have unexplained fever or complaintsof pain, tenderness, or drainage at the site for evidence of catheter related complications.

VI. Inspect For Signs of Infection
(redness, swelling, drainage, tenderness) or phlebitis and also palpate gentlythrough intact dressings.

VII. Manipulation of intravascular catheter systems

Strict aseptic technique should be maintained when manipulating intravascular catheter systems. Examples of such manipulations include the following:

- Placing a heparin lock
- Starting and stopping an infusion
- Changing an intravascular catheter site dressing
- Changing an intravascular administration set

Flushing IV lines

Solutions used for flushing IV lines should not contain glucose which can support the growth of microorganisms. Do not reuse syringes used for flushing. One syringe is used for flushing only one IV line once.

a. Peripheral IV sites (short term catheters):

Dressing changes.

Peripheral IV site dressings should not usually require routine changes, since peripheral IV catheters, should be removed within 72 hours.

Replacement of Peripheral IV Catheters:

Peripheral IV catheters should be removed 72 hours after insertion, provided no IV-related complications, requiring catheter removal are encountered earlier.

A new peripheral IV catheter, if required, may be inserted at a new site.

b. Central intravascular catheters (long term catheters) Dressing changes.

Central IV catheter dressings should be changed every 72 hours. Replacement Central IV catheters do not require routine removal and reinsertion. The catheter can be kept for a maximum of 3 months, provided there is no sign of catheter related infection or other complications.

Catheter related Infection:

At the time of catheter removal, the site is examined for the presence of swelling, erythema, increased tenderness and palpable venous thrombosis. Any antimicrobial ointment or blood present on the skin around the catheter is first removed with alcohol. The catheter is withdrawn with sterile forceps, the externalized portion being kept directed upward and away from the skin surface.

(If infection is suspected, after removal, the wound is milked in an attempt to express purulence. For 5.7 cm catheters, the entire length, beginning several millimeters inside the former skin surface catheter interface, is aseptically cut and sent for culture. With longer catheter, (20.3 cm and 60.9 cm in length), two 5-7 cm segments are cultured a proximal one beginning several millimeters inside the former skin catheter interface and the tip. Catheter segments are transported to the laboratory in a sterile container.)

Three way with extension is used only when multiple simultaneous infusion or Central Venous Pressure monitoring are required.

All invasive procedure are recorded in a book.(please keep a register for this in nursing areas)

5. The organization takes action to prevent surgical site infections.

Surgical wounds

- Surgical wounds after an elective surgery are inspected on the third post-operative day, or earlier.
- All personnel doing dressings should wash their hands before the procedure. Ideally, a two member technique is followed. One to open the wound, and one to do the dressing.
- If two health care workers are not available, then, take off the dressing, wash hands again before applying a new dressing.
- A clean, dry wound may be left open without any dressing after inspection.
- If there is any evidence of wound infection, or purulent discharge, then dressings are done daily, using povidone-iodine to clean the wound and applying dry absorbent dressings.
- If any Surgical site infection occur
    - Surgical site infection reporting format is filled up by surgeons.
    - Records maintained by registrar in charge. Data collected every quarterly by IPC Officer to presented Medical Superintendent.

Special studies will be conducted as needed. These may include

- The investigation of clusters of infections above expected levels.
- The investigation of single cases of unusual or epidemiologically significant nosocomial infections.
- Prevalence and incidence studies, collection of routine or special data as needed and sampling of personnel or the environment as needed.
- Injection abscess.

Calculation of Total HAI:

A percentage is calculated based on the detected number of HAI and the total number of long stay patients in the hospital.
Calculation of device associated infection rate:

$$\text{Device- associated Infection Rate} = \frac{\text{Number of device -associated infections for a specific site}}{\text{Number of device days}} \times 1000$$

Calculation of numerator = No. of isolates from lab device samples

Calculation of denominator = No of days of exposure to device by all of the patients in a month. For this note down the number of patients exposed to the device on each day of the month. The total is the denominator. This is done for 3 devices namely.

- Central line, Sample from CVP tip, Ventilator Sample from endotracheal tube secretions
- Water from humidifier after being in use for 12 hours

Foley's Catheter - Urine sample

HIC.4: RESOURCES FOR PREVENTION AND CONTROL HEALTH CARE ASSOCIATED INFECTIONS.

Liaquat University Hospital provides adequate and appropriate personal protective equipment for employees, soaps and disinfectant at the point of use and adequate inventory is maintained at all time to ensure availability of these.

Personal protective equipments includes

- ✓ Gloves
- ✓ Protective eye wear
- ✓ Mask
- ✓ Apron
- ✓ Gown
- ✓ Boots/ shoe covers
- ✓ Cap/ hair cover

The hospital have adequate and appropriate facilities for hand hygiene in all patient care area such as liquid hand wash, large wash basin with elbow operated taps, tissue paper/ hand dry, hand rubs etc. are available to all health care providers.

a. The hospital defines the conditions where isolation , barrier nursing or both isolation and barrier nursing is required. The organization provides barrier nursing facilities such as clothing , mask , gloves…etc.

Isolation protocols

Definition: It is the separation of infected persons from the non-infected persons for the period of communicability under conditions which will prevent the transmission of infection.

When a patient comes with any infectious disease/ Immuno compromised state, the concerned ward staffwill inform the ICN and she will arrange the separate beds or shifted to separate ward if the patient is critically ill admit the patient in sidebed allocated for ISOLATAION PATIENTS of the concerned IC

Strict Isolation

Strict isolation is an isolation category designed to prevent transmission of highly contagious or virulent infections that may be spread by both air borne ,droplet and contact.

Specification for strict isolation

1. Private or specific ward is indicated; door should be kept closed.
2. Masks, gowns & gloves are indicated for everyone entering the ward.

Contact Isolation

a) Contact isolation is designed to prevent transmission of highly transmissible or epidemiologically important infections (or colonization that do not warrant strict isolation.
b) All diseases or conditions included in this category are spread primarily by close direct contact.

Specification for Contact Isolation

1. Private or specific ward is indicated.
2. Masks are indicated for those who come close to the client.
3. Gowns are indicated if soiling is likely.
4. Gloves are indicated for touching infective material.

Multiple resistant bacterial infection, or colonization (any site) with any of the following

- Gram-negative bacilli resistant to all aminoglycosides that are tested. Staphylococcus aureus resistant to penicillin.
- Pneumococcus resistant to penicillin.
- Haemophilus influenzae resistant to ampicillin (betalactamase –positive) and chloramphenicol.
- Other resistant bacteria may be included if they are judged by the infection control team to be of special clinical and epidemiological significance.
- Pediculosis
- Pharyngitis, infections, infectious, in infants and young children.

- Pneumonia, viral, in infants and young children.
- Pneumonia, Staphylococcus aureus or group A streptococcus.
- Rabies
- Rubella, congenital and other.
- Scabies
- Scalded skin syndrome, staphylococcal (Ritter's disease)

Skin wound or burn infection, major (draining and not covered by dressing or dressing does not adequately contain the purulent material) including those infected with Staphylococcus aureus or group A streptococcus.

1) Respiratory Isolation

Respiratory isolation is designed to prevent transmission of infectious diseases primarily over short distances through the air (droplet transmission).

Specifications for Respiratory Isolation

1. Private or specific ward is indicated.
2. Masks are indicated for those who come close to the client.
3. Gowns are not indicated.
4. Gloves are indicated if contamination of hands is anticipated.

Requiring Respiratory Isolation

- Epiglottitis, Haemophilusinfluenzae
- Erythematic infections
- Measles
- Meningitis
- Haemophilusinfluenzae, known
- Meningococcal, known or suspected
- Meningococcal pneumonia
- Meningococcemia
- Mumps

- Pertussis (whooping cough)
- Pneumonia, Haemophilusinfluenzae, in children (any age)

2) Tuberculosis Isolation (AFB Isolation)

Tuberculosis isolation (AFB isolation) is an isolation category for clients with pulmonary tuberculosis who have a positive sputum smear or a chest film that strongly suggests current (active) tuberculosis. Laryngeal tuberculosis is also included in this isolation category.

Specification for Tuberculosis Isolation (AFB Isolation)

1. Private ward with special ventilation is preferred; door should be kept closed.
2. Masks are indicated only if the client is coughing and does not reliably cover mouth.
3. Gowns are indicated only if needed to prevent cross contamination of clothing.
4. Gloves are indicated if contamination of hands is anticipated.

3) Enteric Isolation

Enteric precautions are designed to prevent infections that are transmitted by direct or indirect contact with faeces.

Specification for Enteric Precautions

1. Private ward is indicated if client's hygiene is poor. (A client with poor hygiene does not wash hands after touching infective material, contaminates the environment with infective material, shares contaminated articles with infective material, or shares contaminated articles with other clients.)
2. Masks are not indicated.
3. Gowns are indicated if soiling is likely.
4. Gloves are indicated for touching infective material.

Disease Requiring Enteric precautions

- Amoebic dysentery, Typhoid, Hep A
- Cholera
- Coxsackievirus disease
- Enterocolitis caused by Clostridium difficile or Staphylococcus aureus

- Enteroviral infection
- Tetanus
- Gastroenteritis caused by
  - ✓ Campylobacter species
  - ✓ Cryptosporidium species
  - ✓ Dientamoebafragilis
  - ✓ Escherichia coli (enterotoxic, enteropathogenic, or enteroinvasive)
  - ✓ Giardia lambdia
  - ✓ Salmonella species.
  - ✓ Shigella species
- Vibrio parahaemolyticus
- Viruses – including Norwalk agent and rotavirus

Protocol for receiving patient with Dengue and Chikungunya, Lepto, Malaria

1. Receive the patient in isolation ward.
2. Inform Infection Control Officer or Nurse.
3. Confirm report from laboratory.
4. Provide isolation measures with facilities of mosquito net, mosquito repellant.
5. Send notification card to Infection Control Nurse.
6. Infection Control Nurse will inform to DHO OR DG health office by telephone and then send notificationthrough e-mail to DG Office and DHO.
7. Instruct the relatives to protect themselves and others by keeping the environment free from mosquito.

Drainage / Secretion Precautions
Body substance isolation

Drainage /secretion precautions are designed to prevent infections that are transmitted by direct or indirect contact with purulent material or drainage from an infected body site.

Specification for Drainage /Secretion Precautions

1. Masks are not indicated.
2. Gowns are indicated if soiling is likely.
3. Gloves are indicated for touching infective material.

Disease Requiring Drainage / Secretion Precautions

The following infections are examples of those included in this category provided they are not

1. Caused by multiple resistant microorganisms;
2. Major draining (not covered by a dressing or does not adequately contain the drainage) skin wound, or burn infections, including those caused by Staphylococcus aureus or group A streptococcus.
3. Gonococcal eye infections in newborns. See contact isolation if the infection is one of these:
    - Tetanus
    - Abscess, minor limited.
    - Burn infection, minor limited.
    - Conjunctivitis.
    - Decubitus ulcer, infected, minor or limited.
    - Skin infection, minor or limited.
    - Wound infection, minor or limited.

Blood body fluid isolation

This type is designed to protect the caregiver from getting infected by the disease.

1. **Specifications for Blood and body fluid isolation:**
    a. Private or specific ward required only if the person's hygiene is poor.
    b. Use of mask is indicated if the client is suffering from other infections e.g. Active Tuberculosis, Pneumonia etc.
    c. Gowns are indicated if spoilage with blood and body fluids is likely.
    d. Gloves are indicated for touching blood and body fluids.
    e. Wash hands immediately if potentially contaminated by blood or body fluids.

2. **Disease conditions requiring blood and body fluid isolation.**
   a. Acquired Immune Deficiency Syndrome.
   b. Creutzfeld- Jacob Disease.
   c. Hepatitis B (And HBsAg carrier).
   d. Hepatitis C
   e. Hepatitis non-A, non-B.

The following points are common for all the types of isolation.

a. Hands must be washed after touching the client or potentially contaminated articles and before taking care of any other client.
b. Stick BIO-HAZARD symbol on the contaminated articles before sending to the CSSD.
c. Discard all infectious wastes- non-plastic in yellow plastic bag.

MRSA (Mehacilline Resistant Staphloccocus aureus) Protocol

1. Admission to an Isolation ward
2. Single use Disposable plastic apron should be worn for patient contact
3. The gown/plastic apron & gloves should be removed before leaving the ward
4. Single use disposable gloves should be worn for handling contaminated tissue, dressing or linen.
5. Hands must be decontaminated after removing the gloves
6. High efficiency filter type masks should be used for procedures that may generate aerosols
7. Bed linen / clothing should be changed daily
8. Linen bags must be sealed at the bed side and removed directly to the dirty utility area or the collection point
9. All instruments used for the patient care must be kept with the patient
10. Use dedicated equipments
11. Hand must be washed before and after contact with the patient or their environment .Use Chlorhexidine oralcoholic based hand rub.
12. All single use items must be disposed of as clinical waste. Clinical waste bags must be sealed before leaving the ward. All reusable items would be processed in accordance with the local disinfection policy.

Pre and Post Exposure Prophylaxis

LUH hospital provides Hepatitis B vaccination for all staff as a part of pre exposure prophylaxis

Managing exposure to potentially infectious body fluid:

Categories of exposure:

1. Needle stick injuries
2. Non- intact skin exposure
3. Mucosal exposure e.g. Splash into eye

Immediate action to be taken

1. Wash in running water.
2. Non intact skin exposure: Wash for 10 minutes with soap and water. Report to infection control nurse
3. Mucosal exposure e.g. splash into eyes

   Wash for 10 minutes by using clean water or normal saline to irrigate the eye. The eyelid should be held open by another person wearing sterile gloves. Do not use soap and water or disinfectant.

NEEDLE STICK INJURY

(Post exposure prophylaxis)

DO NOT SQUEEZE & RUB

1. Don't squeeze and rub the hand
2. Wash hand in running water with soap
3. Inform Infection Control Nurse.
4. If housekeeping staff injured,
   a. Inform housekeeping supervisor and Housekeeping Supervisor is responsible to inform infection control nurse.

Steps – Protocol/Manual

1. Check status of the injured staff
2. Status of the source:
3. Inform the consultant
4. Inform patient – Check patient's serology

Step-1

1. If patients serology – HepB+ve /Known case **of HepB+ve**
2. Check vaccination status of injured person.

   If vaccinated → Check HB3 A3 titer

   If not vaccinated → Provide Hepatitis B vaccine.
   If patient is +ve case → Check HbsAg titer
   If HbsAg Titer value < 10 Provide immunoglobin within 24 hour

Step-2

If patient known case of HIV +ve / Unknown and staff is injured

1. Consult concerned physician
2. Start Anti Retro Viral Therapy (ART) as early as possible.
3. If patient is HCV positive: hand washing in running water with soap.
4. Consult concerned physician

After Post exposure of Known case of Hepatitis-B, HIV&HCV/Unknown

- Follow up the serology of staff for 3months,6 months and 12 months
- Infection control nurse to monitor, follow up and maintain documents.

HIC.5: IDENTIFIES AND TAKES APPROPRIATE ACTIONS TOM CONTROL OUTBREAKS OF INFECTIONS.

LIAQUAT UNIVERSITY HOSPITAL documents the procedures for identifying and managing an outbreak.

Procedure to Identifyan Outbreak

The occurrence of two or more similar cases relating to place and time is identified as a cluster or an outbreak and needs investigation to discover the route of transmission of infection, and possible sources of infection in order to apply measures to prevent further spread. If the cases occur in steadily increasing numbers and are separated by an interval approximating the incubation period, the spread of the disease is probably due to person to person spread. On the other hand if a large number of cases occur following a shared exposure e.g an operation, it is termed a common source outbreak, implying a common source for the occurrence of the disease.
LIAQUAT UNIVERSITY HOSPITAL has a laid down procedure for handling such outbreaks.

Investigation of an outbreak:

I. Epidemiological methods

The investigation of an outbreak may require expert epidemiological advice on procedures. Formulation of a hypothesis regarding source and spread is made before undertaking microbiological investigations in order that the most appropriate specimens are collected.

Steps to be taken to investigation an outbreak

a. Step 1

- Recognition of the outbreak. Is there an increase in the number of cases of a particular infection or a rise in prevalence of an organism? Such findings indicate a possible outbreak.
- Preliminary investigation must be begun by developing a case definition, identifying the site, pathogen and affected population.
- Determination of the magnitude of the problem and if immediate control measures are required. If so general control measures such as isolation or cohorting of infected cases; strict hand washing and asepsis should be immediately applied.
- Verification of the diagnosis. Each case should be reviewed to meet the definition.
- Confirmation that an outbreak exists by comparing the present rate of occurrence with the endemic rate should be made.

b. Step 2

The appropriate departments and personnel and the hospital administration should be notified and involved.

c. Step 3

- ✓ Additional cases must be searched for by examining the clinical and microbiological records.
- ✓ Line listings for every case, patient details, place and time of occurrence and infection details should be developed.
- ✓ An epidemic curve based on place and time of occurrence should be developed, the date analyzed, the common features of the cases e.g age, sex, exposure to various risk factors, underlying diseases etc. should be identified.
- ✓ A hypothesis based on literature search and the features common to the cases; should be formulated to arrive at a hypothesis about suspected causes of the outbreak.
- ✓ Microbiological investigations depending upon the suspected epidemiology of the causative organism should be carried out. This will include (a) microbial culture of cases, carriers and environments (b) epidemiological typing of the isolates to identify clonal relatedness.
- ✓ The hypothesis should be tested by reviewing additional cases in a case control study, cohort study, and microbiological study.

d. Step 4

- ✓ Specific control measures should be implemented as soon as the cause of outbreak is identified.
- ✓ Monitoring for further cases and effectiveness of control measures should be done.
- ✓ A report should be prepared for presentation to the HICC, departments involved in the outbreak and administration

The hospital takes appropriate corrective action to prevent the recurrence

Immediate control measures

Control measures should be initiated during the process of investigation. An intensive review of infection control measures should be made and general control measures initiated at once. General measures include:

- Strict hand washing;
- Intensification of environmental cleaning and hygiene.
- Adherence to aseptic protocols, and
- Strengthening of disinfection and sterilization.

Microbiological Study

Microbiological study is planned depending upon the known epidemiology of the infection problem. The study is carried out to identify possible sources and routes of transmission. The investigation may include cultures from other body sites of the patient, other patients, staff and environment. Careful selection of specimens to be cultured is essential to obtain meaningful data.

Specific control measures

Specific control measures are instituted on the basis of nature of agent and characteristics of the high-risk group and the possible sources. These measures may include:

- Identification and elimination of the contaminated product;
- Modification of nursing procedures;
- Identification and treatment of carriers, and
- Rectification of lapse in technique or procedure

Evaluation of efficacy of control measures

- The efficacy of control measures should be evaluated by a continued follow-up of cases after the outbreak clinically as well as microbiologically. Control measures are effective if cases cease to occur or return to the endemic level.
- The outbreak should be documented.

HIC.6: BIO-MEDICAL WASTE (BMW)

The organization adheres to statutory provisions with regard to Bio-medical Waste.
Waste management policy at Liaquat University Hospital has been implemented in accordance withthe rules of Biomedical Waste Management Act 2014. The hospital has got the consent to operate under Sindh Envirourmental Protection..

Purpose & Rational: The Purpose Of this procedure is to ensure that all waste from operational activities is controlled, handled and disposed of in an environmentally acceptable manner to reduce the risk of current and future liabilities, and to present a good hospital image.

B. Policy: Keeping a clean and safe environment will be an important standard precaution, to decrease incidence of Healthcare Associated Infection (HAI)

C. Responsibilities:

WASTE MANAGEMENT TEAM:

- Consult Microbiologist (or his/ her designee)
- Infection Control Nurse
- Manager Engineering
- Manager Support Services
- All HODs (*relevant)
- Applies where hazardous waste is generated (Nosing, Laboratory, Central Sterile Services Department, Non-Invasive Cardiology, Cardiac Cauterization Laboratory, Cardiothoracic Surgery)

- **Duties and Responsibilities of Waste Management Team:**
  - A waste management team shall be responsible for the preparation, monitoring, periodic review, revision or updating if necessary and implementation of the waste management plan and also supervises all the action taken.
- **Meeting of waste Management Team:** Meeting shall be held six monthly , one third of the members shall constitute the quorum for meeting.
- **Duties and responsibilities of the Chairperson.**
  - Constitute the waste Management Team
  - Designate the waste Management Personnel
  - Facilitate meetings of the team and ensure implementation of its decisions.
  - Supervise implementation, mentoring and review of the waste management plan ensure that it is kept updated

D. Definition & Terms:

- **Chemical Waste:** Chemicals from diagnostic and experimental work, cleaning process, housekeeping and disinfecting procedures. Mercury waste such as from broken clinical equipment and spillage.
- **Hazardous waste:** Waste contaminated by any type of pathogens such as bacteria, viruses, parasites or fungi and also including cultures from microbiological work, waste from surgeries, waste from infected patients and equipments and disposables which have been in contact with such patients.
- **Non-hazardous waste:** Office waste which includes paper, cardboard, packing and foods etc
- **Pathological waste:** includes tissues, organs, body parts, blood and body fluids.
- **Pharmaceutical waste:** includes expired or unused pharmaceutical product, spilled contaminated pharmaceutical products, surplus drugs, vaccines and discarded items used in handling pharmaceuticals such as bottles, boxes gloves, masks, tubes or vials.
- **Radioactive waste:** includes liquid, solid and gaseous waste contaminated with radionuclide generated from in vitro analysis of body tissue & fluids, in-vivo body organ imaging and investigation and therapeutic procedures.
- **Hazardous waste:** means infectious waste, pathological waste, sharps, pharmaceuticals waste, chemical waste and radioactive waste.
- **Sharp:** includes whether infected or not needles, syringes, scalpels, infusion sets, knives, blades, broken glass or any other item that could cut or puncture

E* Applicability: This procedure applies to the hospital operational activities and all personnel, and contractors, involved in the operations.

F* Procedure: Waste Category/ Segregation & treatment of waste management policy by Dr Aftab

Procedure for Waste Collection:

- Ensure internal collection of waste bags and waste containers to their transport to central storage facility of the hospital on daily basis.
- Liaise with the supplies department to ensure that an adequate supply of waste bags, containers, protective clothing and collection trolleys available at all time
- Ensure that sanitary staff immediately replaces used bags and containers with the new bags and containers of the same type and also ensure cleaning of the container before a new bag is fitted there in.
- Directly supervise the housekeeping staff to collect and transport the waste.

Procedure for Waste Transportation:

Housekeeping staff and their supervisors are responsible for waste transportation.

- A Waste collection trolley shall be free of sharp edges, easy to load, unload and to clean.
- The trolley shall be cleaned regularly.
- The sealed waste bags shall be carefully loaded by hand onto the trolleys to minimize the risk of punctures or tears.
- Red-bagged risk waste and green-bagged non-risk waste shall be collected on separate trolleys which shall be marked in the corresponding colors.
- The collection route shall be the most direct one from wards to central storage facility, and all the waste should be transported in lift # 2.
- The transportation of waste is properly documented.

Procedure for waste storage:

- Ensure correct use of the central storage facility and that it is kept secured from unauthorized access.
- Prevent unsupervised dumping of waste containers on the hospital premise, even for a short period of time.

Procedure for waste Disposal:

- Depending upon the type and nature of the waste material and the organism in the waste, risk waste will be decontaminated by using thermal method in the waste management plant, and in case of laboratory waste it should be decontaminate by using autoclave inside the laboratory and then transported in the red bag to the central storage facility to be handed to……

Incident and Spillages:

- The contaminated area shall be immediately evacuated, if required
- The contaminated area shall be cleared and, if necessary disinfect
- Exposure of staff members shall be limited to the extent possible during the clean-up procedure.
- Any emergency equipment used shall be immediately replaced in the same location from which it was taken.
- All patient handling staff members should be vaccinated and log be maintained.
- All hospital staff member`s shall be properly trained and prepared for emergency response including procedures for treatment of injuries, clean-up of the contaminated area and prompt reporting of al accidents and spillages.
- Manager Support Services shall immediately investigate record and review all such incidents to establish causes and shall submit his report to a waste management team.
- The Waste Management Team shall review the report, and where necessary shall amend the Waste management Plan to prevent recurrence of such incidents, and take such further action as may be required.

For Incident Management Control:

- Ensure that emergency procedures are available at all times and that all staff members are aware of the action to be taken by them.
- Investigate record and review all incidents reports regarding hospital waste management.

For Staff Training and Information:

- Liaise with the Head of Department and Infection Control Department to ensure that all doctors, nursing staff, laboratory staff, and medical assistant are fully aware of their duties and responsibilities under the waste management plan.
- Ensure that Housekeeping staff are not involved in waste segregation and that they only handle waste bags and containers in the correct manner. rules. Annual report of waste generated is maintained by administration and report submitted to Pollution ControlBoard. All categories of staff handling bio medical waste are using appropriate personal protective measures.

HIC.7: TRAINING OF ALL HEALTH CARE WORKERS:

- ✓ The Management makes available resources required for the infection control program.
- ✓ The Hospital management ensures the availability of resources required for the infection control program.
- ✓ The Hospital conducts induction training for all newly joined staff as and when required. Induction training includes policies, procedures and practice of infection control program. All categories of staff under goes induction training and the records are maintained.
- ✓ The Hospital conducts in service training for all staff as per the training schedule. The frequency of training decided by the hospital based on the priority of the topic.

HIC.8: POLICY & SOP OF INFORMED CONSENT

List of following procedures before which informed consent should be taken.

- All major surgeries.
- All minor surgeries leading anesthesia.
- Needle Biopsy liver
- Endoscopy
- Radiation Therapy
- Chemotherapy
- Electro Convulsive Therapy.
- Blood Transfusion.

Note: All Informed consent should be taken by on duty doctor or staff nurse in patient native language in presence of one witness who may be above 18 years adult patient's relative or another colleague, Nurse or Doctor. In Case of minor 18 years of ageinformedconsent should be taken from parents or guardian.

CONSENT FORM

مريض جي شناخت:
ايم آر نمبر:

Liaquat University Hospital لياقت يونيورسٽي اسپتال

MR/NO:_____ _____ ولد / بنت / زال _____ آئون _____
_____ آپريشن جي هر فائدي ۽ نقصان کان _____ ڊاڪٽر
آگاهه ڪيو آهي جيڪو منهنجي لاءِ فائديمند آهي آئون پنهنجي مرضي سان اجازت ڏيان ٿو/ ٿي ته جيڪو سرجيڪل پروسيجر ڊاڪٽر صاحب ۽ ان جي ٽيم ڪن پيا اهو منهنجي حق ۾ بهتر آهي ان لاءِ بيهوش ڪرڻ به لازمي آهي ان لاءِ ايمرجنسي بنياد تي کابه پيچدگي ٿئي ته ڪو پيو پروسيجر ڊاڪٽر صاحب ڪرڻ چاهن ته ان جي به اجازت هوندي.
آپريشن دوران رت جي گهٽتائي ساهه ۾ تڪليف ٿيڻ ۽ ان دوران رت جي منتقلي ڪرڻ جيڪو منهنجي علاج لاءِ ضروري هجي ان جي آئون اجازت ڏيان ٿو/ ٿي.

ڈاکٹر----------اور ان کی ٹیم نے مجھے----------آپریشن کے ہر فائدہ اور نقصان سے آگاہ کیا ہے جو میرے لئے فائدے مند ہے میں اپنے مرضی سے اجازت دیتا ہوں جو بھی سرجیکل پروسیجر ڈاکٹر صاحب اور ان کی ٹیم کرے گی وہ میرے حق میں بہتر ہے اس لیے بےہوش کرنا لازمی ہے اس میں ایمرجنسی بنیاد پے کوئی بھی پیچیدگی ہوئی ہوئی تو کوئی بھی پروسیجر ڈاکٹر صاحب کرنا چاہے تو اس کے لیے بھی اجازت ہوگی آپریشن کے دوران خون کی کمی، سانس میں تکلیف اور اس دوران خون کی منتقلی کرنا جو ہمارے علاج کے لئے ضروری ہو اس کی میں اجازت دیتا ہوں ۔

1 ڈاکٹر کا نام---------- 2 اسٹاف نرس کا نام----------

دستخط---------- دستخط ----------
مریض یا ان کی رشتیدار کے اجازت نامہ پر دستخط یا انگوٹھے کا نشان۔

گواہ کا نام---------- وقت----------
دستخط---------- تاریخ----------
مریض---------- اجازت دینے والا----------

نوٹ:

1۔ اس فارم کے مقصد کو مد نظر رکھتے ہوئے جو بھی آپریشن / یا سرجیکل پروسیجر کرنے کا سمجھا جائے۔

2۔ آپریشن کے 30 دن تک یہ فارم کا ر آمد ہے۔

3۔ اگر مریض جسمانی/ دماغی طور پر کمزور اور بے ہوشی کی صورت میں ہے تو اس کا کوئی بھی رشتہ دار یہ فارم بھر سکتا ہے۔

4۔ لیاقت یونیورسٹی ہسپتال کے عملے کی اس پروسیجر کی تصویریں لینے کی اجازت ہے یا نہیں۔

5۔ مریض یا ان کا رشتہ دار کے اجازت نامہ پر دستخط یا انگوٹھے کا نشان۔

6۔ اگر اجازت نامہ دینے والا دستخط نہیں کر سکے تو سیدھے یا الٹے ہاتھ کے انگوٹھے کا نشان ہونا لازمی ہے۔

Duty Doctor Name:_____ **Staff Nurse Name:**_____

Signature: _____ **Signature:**_____

Witness Name: _____

CNIC: _____-_____-___

Contact: _____

Date: _____/_____/_____

HIC.9: POLICY & SOP OF BLOOD TRANSFUSION

Select Correct Blood Component for your Patient

1. **Red Blood Cell.**
   A) Hemoglobin less than or equal to 7g/dl
   B) Hematocrit less than or equal to 20%
   C) Active blood loss greater than 750 ml (15% of Estimated blood Volume)
   D) Pre-operative Hb less than or equal to 8g/dl

2. **Platelet**

   a) Platelet < 20,000/ul
   b) Platelet < 50,000/ul and patient actively bleeding or impending surgery or invasive procedure.
   c) Diffuse micro – vascular bleeding with any platelet count / no count.
   d) Platelet function defect with bleeding
   e) Platelet < 10,000/ul in immune thrombocytopenia
   f) Platelet < 100,000 with CNS bleeding

3. **Plasma**

   1. Active Bleeding / Invasive procedure/ impending surgery with multiple coagulation factor deficiency (DIC Liver Disease) documented by:
      a) PT/APTT greater than 1.5 times of normal.
      b) INR > 1.5
   2. Emergency reversal of warfarin effect (For non – Emergency consider vitamin K)
   3. Documented deficiency of specific coagulation factor
   4. Diffuse micro-vascular bleeding and no labs available

Note: These are general guidelines. The final decision resets with the treating clinician.

HIC.10: GUIDELINES FOR THE RECOGNITION AND MANAGEMENT OF ACUTE TRANSFUSION REACTIONS

Category: 1 Mild Reaction
S/Symptoms Uticaria, Rash, Pruritis

Management:

1. Slow the Transfusion
2. Administer Antihistamine
3. If no clinical improvement or worsen within 30 minutes treat as Category 2.

Category: 2 Moderate Reactions

S/Symptoms

Flushing	Anxiety	Urticaria
Palpitation	Rigors	Dyspnea
Fever	Headach	Tachycardia

Management:

1. Stop the transfusion, replace the infusion set and keep IV line open with N/ Saline.
2. Notify the responsible doctor and blood bank
3. Send the infusion set, blood unit and fresh blood sample in EDTA tube and plain tube from the vein opposite to infusion site to blood bank for investigations.
4. Administer
   - Antihistamine
   - Antipyretic
   - Corticosteroids
   - Bronchodilators (in case of branchospasm)
5. Collect Urine for next 24 hours for
   - Evidence of Hemolysis
   - Input/out Put Chart
   - Labs for Hemolysis
6. If no clinical improvement with in 15 min or S/Symptoms worsens treat as **category 3.**

CATEGORY 3: LIFE THREATENING REACTIONS

S/ Symptoms

Rigors
Fever
Hypotension (>20% fall in BP)
Tachycardia (>20% rise in HR)
Haemoglobinuria (red urine)
Unexplained bleeding (DIC)
Chest Pain.
Loin/ Back Pain
Dyspnea

Management:

1. Stop the transfusion. Replace the infusion set and keep IV line open with normal Saline.
2. Infuse normal saline (initially 20-30 ml/ kg) to maintain systolic BP. If hypertensive, give over 5 minutes and elevate patient`s legs.
3. Maintain airway and give high flow oxygen by mask.
4. Give adreline (as 1:1000 solution) 0.01 mg/ kg body weight by slow intramuscular injection.
5. Give IV corticosteroids and bronchodilators if there are anayphylactoied features (e.g. broncospasdm, stridor).
6. Give diuretic: e.g frusemide 1 mg/kg IV or equivalent.
7. Notify the doctor responsible for patient and blood bank immediately.
8. Send blood unit with infusion set, fresh urine sample and new blood samples (EDTA tube and 1 pain tube) from vein opposite to infusion site with appropriate request form to blood bank for investigations.
9. Check a fresh urine specimen visually for signs of haemoglobinuria.
10. Start a 24-hours urine collection and fluid balance chart and record all intake and output Maintain fluid balance.
11. Assess for bleeding from puncture sites or wounds. If there is clinical or laboratory evidence of DIC, give platelets (adult:5-6 units) and either cryoprecipitate (adult: 4-6 units) or fresh frozen plasma (adult:3 units)

Note.

1. If an acute transfusion reaction occurs, first check the blood pack labels and the patient`s identify. If there is any discrepancy, stop the transfusion immediately and consult the blood bank.
2. In an unconscious or anaesthetized patent, hypotension and uncontrolled bleeding may be the only signs of an incompatible transfusion.

HIC.12: SOP & POLICY OF BLOOD TRANSFUSION

01. Purpose:

To promote a culture of patient safety and donor safety by adhering to best practices

02. Objective:

A leadership will ensure that minimal SOP`s for patient safety and donor safety are followed and a culture of safe blood transfusion & blood transfusion adverse reaction risk estimated and medical errors are minimized.

03. Scope:

The SOP's applies to all indoor wards surgical Operation theaters COD casualty where ever blood transfusion performs including blood banks.

04. Responsibilities:

All medical and Para medical staff, administrative, clinical involved in blood transfusion.

Department of Health,
Government of Sindh

Type of blood requests in Regional Blood Bank Jamshoro / Hyderabad:

1. **Emergency release:** Emergency release is a situation in which red cells are required on immediate basis (as soon as possible) without cross-match to save patient's life, e.g.

i. Anemic shock/severe anemia
ii. Profuse bleeding
iii. RTA

Note:

- Only red cells are released according to emergency release protocol, it will not be applicable to other blood products like FFPs, platelets etc. as issuance of these products do not require cross-match.
- It is primarily responsibility of treating physician to go for emergency transfusion, for this, the asking physician will have to certify to the blood bank in writing for the emergency release, which can be submitted after dealing with the emergency situation).

Timelines:

- **Within 10 min issue:**
  - O Negative: If blood group of patient is not known.
  - Group specific: If blood group of patient is already registered in Blood bank system of Hospital blood bank Hyderabad.
- **Within 15-20 min issue:**
  - Group specific without cross-match blood can be provided after performing blood grouping of patient sample.

Note:

- Routine cross-match of all emergency release will be proceeded in parallel. The result of any incompatibility in cross-match will be notified to the primary physician timely.

2. **Urgent cross-match:** Blood can be provided after performing full cross-match i.e after 45 min.
   (Note: The doctor has to justify the state of clinical urgency)
3. **Routine cross-match:** Blood will be provided after performing full cross-match within 4 hours of sending request from ward.

Note:

- Donors will be sent by doctors from wards with all the requests. In-case of emergency request, blood will be issued to patient without donor and donors can be drawn later against the request. Duty doctor must ensure that donors are provided by the attendants).

RBC

Department of Health, Government of Sindh

Transfusion of red blood cells in emergency situation:

- When blood is needed in emergency, the **patient's physician** must weigh the risk of transfusing uncross-matched blood against the risk of delaying transfusion until compatibility testing is completed.
- Transfusion service physician can be contacted for consultation as needed.
- Following steps must be taken while transfusing:

1. Before transfusion, positively identify the patient with **name and MR number** at bedside.

2. Blood components are infused slowly for first 10 to 15 min while the patient is observed closely for signs of a transfusion reaction. After 15 min, if no any signs of transfusion reactions are observed, then rate of transfusion can be changed to optimum level.

3. Patient's vital signs (pulse, respiratory rate, temperature and blood pressure) should be monitored periodically during the transfusion to detect signs of transfusion reaction.

4. Signs and symptoms are fever with back pain (acute hemolytic transfusion reaction), anaphylaxis, hives or pruritus (urticarial reaction), congestive heart failure (volume overload) and fever alone (febrile non-hemolytic transfusion reaction).

5. In case of any untoward reaction during transfusion, hold the transfusion and notify blood bank for further guidance (0222668622/0222668623).

6. The empty blood bag should be returned to the transfusion service.

HIC.13: POLICY & SOP OF PATIENT IDENTIFICATION

1. POLICY STATEMENT:

Patient identification is essential in all aspects of healthcare and must be adopted by all staff, as best practice for in-patients, day care patients,out-patients and emergency patients.

- At the time of admission, all patients should be identified correctly.
- All in patients should wear patient identification band approved by the institute.
- The identification band shall be checked by the care providing hospital staff to ensure that it is legible and contains the correct information throughout their hospital stay.
- There should be at least two (2) identifier which may include.
    - **The patient complete name and;**
    - **An assigned identification number (Medical Record Number)**
- A plaque of "SAME NAME ALERT" will be placed in front of patient bed side.
- The room number and bed number should not be used to identify the patient.
- In case of patient admitting to ER, nurse will prepare identification band.
- Staff providing the care is responsible for verifying the patient's identity by utilizing two identifier (complete Name of the Patient and Medical Record Name) prior to the administrative of Medications, Treatments, or for any Diagnostics Procedure.
- Staff shall verbally assess the patient to assure proper identification and match the verbal confirmation to the written information on the identification (tags / bracelets / bands) by checking Medical Record Number and Name of the patients.
- The patient can remove the identification band after discharge.

- In the event of death, the identification band shall remain on the patient`s body.
- Dead Body Identification: According to Law and Regulation of Local Government, dead body should be identified by picture. (Where applicable)
- Three identifying stickers contain patient complete name with:
  - First name.
  - Father name / Surname and CNIC number.

2. PURPOSE & RATIONAL:

- To ensure correct identification of the patients at all times. Particularly before undertaking any procedure.
- To provide an identification system to ensure that all hospital patients are properly identified prior to any care and treatment provided to them.
- Exception: Patients those are unable to provide their identification (comatose / unconscious) and require emergency care, will receive treatment prior to identification if such care and treatment is necessary to stabilize the patient`s condition. (The identification process will be followed later).

3. RESPONSIBILITIES:

All Hospital Staff of Liaquat University Hospital Hyderabad.

4. Definition & Terms:

Correct patient identification is a system of verification or to confirm that the identity markers or information provided by the patient or the patient`s guardian / representative, match those on the patient`s identity band and or on patient`s document.

- In-patient: In-patient are those patients who are admitted to the hospital and expected to stay overnight.

- Day care patient: Day ward attendees are those patients who are admitted to the hospital for a Hospital for a procedure or monitoring, but not expected to stay overnight.
- Out-patient: Out-patient are those patients who attend the Out-Patient Department for a consultation or to undergo a procedure, but who are not admitted as in-patients or day ward attendees.

5. Procedure:

- All inpatients in clinical units should wear wrist bands provided by hospital. The wrist bands should include Patients Full Name, and Medical Record Number. No treatment, procedures or medication should be administered unless the person giving or providing the care has established the identity of the patient.
- Health care providers verify at least two Patient Identifiers, Patients complete Name and Medical Record Number whenever administering. ° Medications or Blood Product. ° Collecting Blood Specimens. ° Providing other treatments and procedures. ° Attach ID band to a visible part of the patient`s body according to the patient`s conditions e.g., Allergies or wearing ID band interferes with any procedures / treatment.
    - If the identification is spoiled or unreadable, place new identification band and re-confirm it.
    - The transferring nurse verifies that the identification band is in place before a patient is transferred.
    - The receiving nurse verifies that the identification band upon receiving the patient from other units to ensure proper identification of the patient and ensure patient safety.

HIC.14: POLICY ON HAND – OVER COMMUNICATION

POLICY STATEMENT:

A communication approach (SBAR format) to hand-off patient information will occur under the following circumstance in order to improve "the effectiveness of communication"

Transfer of Patient-Specific Information:

Nurse to physician interaction about the patient-specific situation.

Notification to providers critical laboratory, and any other critical diagnostic test results, or a change in patient status as appropriate.

PURPOSE & RATIONAL:

- To provide accurate information about the patient's status, care, treatment or services, and their current conditions with any recent or anticipated changes when responsibilities are " handed off " from one care provider to another.
- To provide every healthcare practitioner a concise, structure and detailed information of hands-off communication that results to an accurate, non-delayed patient's treatment, care and system management.
- To provide a framework for effective communication among members of the healthcare team in order to ensure consistency of communication and continuity of treatment, through a standardize approach of giving and receiving information.

RESPONSIBILITIES:

It is the responsibility of all staff.

Definition & Terms:

Hand-Over: The Patient hand-off is a process when the passing of patient specific informationoccurs from one caregiver to another of from one department to another. A hand-off also includes transferring the responsibilities of care from one staff to another.

SBAR: Is an acronym that stand for Situation-Background-Assessment-Recommendation. It is an evidence based communication model that assists the speaker by providing a framework to organize and convey information.

Procedure:

Transfer of patient-specific information.

- The following steps are important before calling the physician.
  - Patient has been assessed.
  - Patient's condition has been discussed with the charge nurse.
  - Patient's chart reviewed.
  - Physician notes and nurse's notes were reviewed.
  - Know the code status of the patient.
  - Know the patient and family preference
  - Call the right physician.

S- Situation (Objective)

1. Reason of admission.
2. Treatment
3. Remarks

B-Background (Objective) □ May include the following:

1. Date of admission
2. Admission day
3. Diagnosis
4. Co morbid/ allergies

A-Assessment (Subjective)

1.State what you think is going on

2. State what you found when you assessed the patient or situation

3. State the severity or urgency of the problem based on your assessment.

Examples:

a) Patient condition

b) Orientation

c) ECG Rhythm

d) Morbidities (if any)

e) Coughing

f) Chest tube placement (if any)

g) Air entry

h) Problem with eating

i) I/V Access

j) Monitoring out comes.

R-Recommendation/s (Subjective) 1. Nursing Care

2. NCP evaluation and reevaluation (Nursing care plan)

3. Carried out/ pending orders.

HIC.15: SOP & POLICY OF HIGH CONCENTRATIONS OF ELECTROLYTES

POLICY STATEMENT:

a. High Concentration electrolytes are changed particles in solutions in high concentration that have narrow therapeutic index and may cause potential harm to the patient.

PURPOSE:

a. To describe the mechanism of storage and dispensing of high concentration of electrolytes.

DESCRIPTION:

- High concentrations electrolytes are not available in any of the ward / patient medication basket/ nursing counter / operation theatres.
    - High concentrations electrolytes will be provided by in patient pharmacy /OT store o requisition by HMIS only.
    - High concentration electrolytes are used at the time when diluted / reconstituted / removed from original packaging.
    - Any Remaining of High concentration electrolytes are discarded in the same shift.
    - Remaining of High concentration electrolytes is never used for the other patients.
    - Before administrative the name and dose of High concentration electrolytes are re-verified by the concerned staff nurse.
    - High concentration electrolytes are labeled properly with **Red tags**before dispensing.
    - During re-checking In-charge pharmacist ensures placement of Red Tags on all High concentration electrolytes ampules / vials
    - Auxiliary labesl .cautionary labels must be attached with the container.
    - All pharmacy and nursing srtaff are aware about the dosages / diluents of these medicines.
    - The expiry of these medicines must be up-to date,no time must be having expiry of less than 1 month.
    - The expiry must be monitored on monthly basis.

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- High concentrations electrolytes are identified and are available every time in ample quantity in ER, Inpatient and OT pharmacy.
- Minimum stock of 3 days consumption is available in satellite location all the time.
- Availability of the items are checked on daily basis.
- Main medical store, stores , High concentration electrolytes not less than their 7 days consumption.
- List of High concentration electrolytes medicines is displayed and is accessible to all staff.
- High concentrations electrolytes having expiries of less than 1 month are placed in front and long medicines of long expiry at back.
- Counter check of all medicines are done by pharmacist before delivering to staff nurse.
- Minimum 2 training sessions are conducted in a month to train the pharmacy staff and practicing nurses about the policies and procedures of High concentration electrolytes.

HIC.16: SOP & POLICY OF VERBAL & TELEPHONIC ORDER

Purpose of this policy to ensure telephonic verbal orders are implemented as desired.

Objective:

This policy is to minimize / ensure zero errors between verbal / telephonic orders and implementation.

Scope:

Scope applies to all indoor wards / operation theaters and patient care areas.

Responsibilities:

It is responsibilities of nursing staff and all health care workers on duty.

Procedure:

- The staff member taking the order shall record at assigned place (in physician's order sheet) in the patient's file.
- The staff members taking the order shall record the order in chronological order.
- The Staff member taking the order shall read order back to the authorized provider and request confirmation.
- The Steps of READ-BACK process include the following:
- Listen carefully to the order or test result.
- Write down: The message so that it is clearly legible
- Read back: Your message to the caller.
- Confirm: That what you read back is accurate.
- Known allergies (if this has not been determined at the time of verbal/ telephonic order).
- The purpose the drug is ordered for the patient.
- Name of the designation of the individual who implemented the order
- If the prescriber does not know both the generic and the brand name of the medication, the receiver should obtain the clarification from a pharmacist. Both names (generic and brand) should be recorded in the order.
- In certain situation, such as operating room or the emergency department (ED), intensive care unit prescriber verbally confirm the order. **The person who is to administer the order can say it loud before administration and again receive verbal confirmation from the prescriber. (Repeat back).**
- All verbal and telephone orders should be transcribed, dated, timed and signed by the authorized recipient in the patient's medical record.
- Pharmacists, respiratory therapists and registered dietitians should notify the responsible registered nurse of any verbal or telephone orders they transcribed.
- Verbal and telephone orders should be counter-signed, dated and time by the prescribing provider or any authorized provider within 48 hours.

- Note: In some instances, the ordering practitioner may not be able to authenticate his or her verbal order (for example, the ordering practitioner gives a verbal order that is written and transcribed, and then he or she is "off duty" for the weekend or an extended period of time). In such cases, it is acceptable for another practitioner who is responsible for the care of the patient to authenticate the verbal order of the ordering practitioner.

- Documentation of verbal orders includes the time the verbal order was received.
- **Critical test results:** Those values/interpretations that indicate the patient is in imminent danger of death, significant morbidity, or serious adverse consequences unless treatment is initiated immediately; results that are determined by the radiologist or other diagnostician to be critical to the patient's subsequent treatment decisions.

Additional test measures:

- Medication order recipients should repeat the name of the drug and dosage order to the prescriber and request or provide correct spelling, using spelling aids such as "B" as in ball:, "M as March", spell out all the numbers: for example 16 should be stated as "one six" to avoid confusion with number 60.
- Avoid using abbreviations. For example, "1 tab tid" should be stated as "take/give one tablet three times daily"

Verbal & Telephonic Order

- Whenever possible, have a second person listen to the verbal telephone order to verify its accuracy. This is especially important when the person taking the verbal order is inexperienced with the process.
- Certain medications are prescribed in Units, rather than the metric system. For those medications, the word "unit" should be completely written out. The use of "U" is not acceptable.
- For medications that are prescribed in micrograms, the word "microgram" should be written out. The abbreviation "mcg" is not acceptable.

G. Reference / Related Records:

HIC.17: SOP & POLICIES FOR HANDLING OF DEAD BODY

- These will be written policies & Scope of handling the dead body before handing over to the attendants/ Blood relation are guardian.
- The Service shall be under the department of causality and emergency wards under medicoligal services which are applicable to mortuary services.
- The person in chargeis involved in the safety and quality improvements activities as appropriate.
- Body receiving area shall be of a suitable size and design to facilitated in coming or outgoing Dead bodies
- If any viral diseases family consoling to comply with Sop's provided disease spread risk.
- Teams and family members taking part in body preparation and burial must use PPEs.

CAUSE OF DEATH:

Condition of the body:

Arrange of refrigerator or cool place for keep a body should be handling with

- Main principle don't touch maintain distance and minimizing exposure body preparation at hospital/ place of dead.
- Remove all wearing form and dispose infections wastes.
- Process Dry ablution.
- Wrapping in plastic bag.
- Disinfection of surface with0.5% chorine the dead body should be spared with 1/10 liquid bleach solutions and then wrapped in the winding sheet body should be place the plastic bag which should be sealed with Adhesive Tape.

- Body transportation in ambulance or deputed vehicle.

Body should not be handed over without completion of following information

1. Name
2. Father Name
3. Age
4. CNIC Number
5. Mark of Identification of dead body
6. Time Of Death
7. Cause of Death
8. Body Receiver name, Relation, NIC Number

IN CASE OF UNIDENTIFIED BODY

In case of unidentified body firstly inform to the police station of jurisdiction from and the letter provided by station house officer for the purpose of post mortemand then it may be sent to Edhi for burial

IN CASE OF UNCLAIMED BODY

In case of unclaimed body information sends to the deputy commissioner of district and he will contact the heirs of the deceased for burial of the body. In case heirs are not found/ do not claim the body then deputy commissioner issues the letter to Medical Superintendent for the burial of the deceased

HIC.18: Policy on Safe Medication Management

1. **POLICY STATEMENT:**

   To established the standards of safe medication use and its management.

2. **PURPOSE & RATIONAL:**

   To establish standards for a safe medication management system that addresses the medication selection & procurement, processes of storage, ordering and transcribing, preparing and dispensing, administering, monitoring, evaluation, expiry, and disposal management in accordance to all applicable laws and regulations.

3. **RESPONSIBILITIES:**
   - Physician
   - Pharmacists
   - Nurses

4. **DEFINITION & TERMS:**

Medication is defined as any prescription medication; sample medication: herbal remedies; vitamins; nutraceuticals; over the counter drugs; or diagnostic and contrast agents used on or administered to persons to diagnose, to treat, or to prevent disease or other abnormal conditions; radioactive medication, respiratory therapy treatment; parenteral nutrition; and intravenoussolution, solutions (plain, electrolytes and/ or drugs).

Formulary Management:

- Medication, as an important resource in patient care, must be organized effectively and efficiently. Medication management is not only the responsibility of pharmacy, but is a shared responsibility of Health care practitioners of clinical and diagnostic areas and the related staff.
- To ensure efficient medication management and use, the hospital conducts a system review at least once a year which includes the following:

- Planning
- Selection & Procurement
- Storage
- Ordering
- Preparing & dispensing
- Administration
- Monitoring
- Evaluation
- The Annual review identifies how well system is working by pulling together all information and experience related to medication management as identified in this policy.
- Pharmacy Services is supervised by a licensed and/ or registered pharmacist.
- Both pharmacy and medication are managed as per prevailing laws and regulations.
- Appropriate sources of drug information (e.g. up to date, Micromedex, Drug information Centre) are current, used in pharmacy for medication safety information.

HIC.19: SOP & POLICY OF WASTE MANAGEMENT

A. Purpose & Rational:

The Purpose Of this procedure is to ensure that all waste from operational activities is controlled, handled and disposed of in an environmentally acceptable manner to reduce the risk of current and future liabilities, and to present a good hospital image.

B. Policy:

Keeping a clean and safe environment will be an important standard precaution, to decrease incidence of Healthcare Associated Infection (HAI).

C. Responsibilities:

WASTE MANAGEMENT TEAM:

- Consult Microbiologist (or his/ her designee)
- Infection Control Nurse
- Manager Engineering
- Manager Support Services
- Head ofall Departments.
- Applies where hazardous waste is generated.

- **Duties and Responsibilities of Waste Management Team:**
  - A waste management team shall be responsible for the preparation, monitoring, periodic review, revision or updating if necessary and implementation of the waste management plan and also supervises all the action taken.
- **Meeting of waste Management Team:**

  Meeting shall be held six monthly, one third of the members shall constitute the quorum for meeting.

- **Ditties and responsibilities of the Chairperson.**
  - Constitute the waste Management Team
  - Designate the waste Management Personnel
  - Facilitate meetings of the team and ensure implementation of its decisions.
  - Supervise implementation, mentoring and review of the waste management plan ensure that it is kept updated.

D. Definition & Terms:

- Chemical Waste: inches chemicals from diagnostic and experimental work, cleaning process, housekeeping and disinfecting procedures. Mercury waste such as from broken clinical equipment and spillage.

- Hazardous waste: means waste contaminated by any type of pathogens such as bacteria, viruses, parasites or fungi and also including cultures from microbiological work, waste from surgeries, waste from infected patients and equipments and disposables which have been in contact with such patients.

- Non-hazardous waste: includes office waste which includes paper, cardboard, packing and foods etc.

- **Pathological waste:** includes tissues, organs, body parts, blood and body fluids.

- **Pharmaceutical waste:** includes expired or unused pharmaceutical product, spilled contaminated pharmaceutical products, surplus drugs, vaccines and discarded items used in handling pharmaceuticals such as bottles, boxes gloves, masks, tubes or vials.

- **Radioactive waste:** includes liquid, solid and gaseous waste contaminated with radionuclide generated from in vitro analysis of body tissue & fluids, in-vivo body organ imaging and investigation and therapeutic procedures.

- **Hazardous waste:** means infectious waste, pathological waste, sharps, pharmaceuticals waste, chemical waste and radioactive waste.

- **Sharp:** includes whether infected or not needles, syringes, scalpels, infusion sets, knives, blades, broken glass or any other item that could cut or puncture.

- **Waste management:** includes waste segregation, waste collection, waste transportation, waste storage and waste minimization and reuse

E. Applicability:

This procedure applies to the hospital operational activities and all personnel, and contractors, involved in the operations.

F. Procedure:

Waste Category/ Segregation:

Hazardous health care waste	Descriptions and examples	Waste Color Coding	Disposal Method
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)	Yellow Box	**Steam Sterilization** (Recommended Techniques for treatment of infectious waste) Reference: EPA 1986
Highly Hazardous Waste	Waste suspected to contain pathogens and that poses a risk of disease transmission laboratory cultures and microbiological stocks: waste including excreta and other materials that have been in contract with patients infected with highly infectious diseases in isolation wards)	Red	
Infection waste	Infection Waste bandages, gauze, cotton or any other object in contact with body fluid.	Yellow	
Pathological Waste	Human tissues, organs or fluids: body parts: fetuses: unused blood products	Red	
Pharmaceutical Waste	Pharmaceuticals that are expired or no longer needed: items contaminated or containing pharmaceuticals	Yellow	
Radioactive Waste	Waste containing radioactive substance (e. g. unused liquids from radiotherapy or laboratory research: contaminated glassware, packages or absorbent paper: urine and extra from patients treated or tested with unsealed radionuclide's: sealed sources)	Yellow	As per PNRA guidelines
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 blood-pressure gauges)		Land Fill
Non-hazardous or general health-care Waste	Waste that does not pose any particular biological, chemical, radioactive or physical hazard	Green/ Black/ White	Land Fill

- **Procedure for Waste Collection:**
  - Ensure internal collection of waste bags and waste containers to their transport to central storage facility of the hospital on daily basis.
  - Lease with the supplies department to ensure that an adequate supply of waste bags, containers, protective clothing and collection trolleys available at all time
  - Ensure that sanitary staff immediately replaces used bags and containers with the new bags and containers of the same type and also ensure cleaning of the container before a new bag is fitted therein,
  - Directly supervise the housekeeping staff to collect and transport the waste.

- **Procedure for Waste Transportation:**
  - Housekeeping staff and their supervisors are responsible for waste transportation.

  - A Waste collection trolley shall be free of sharp edges, easy to load, unload and to clean.
  - He trolley shall be cleaned regularly.
  - The sealed waste bags shall be carefully loaded by hand onto the trolleys to minimize the risk of punctures or tears.
  - Red-bagged risk waste and green-bagged own risk waste shall be collected on separate trolleys which shall be marked in the corresponding colors.
  - The collection route shall be the most direct one from wards to central storage facility, and all the waste should be transported in lift # 2.
  - The transportation of waste is properly documented.

- **Procedure for waste storage:**
  - Ensure correct use of the central storage facility and that it is kept secured from unauthorized access.
  - prevent unsupervised dumping of waste containers on the hospital premise, even for a short period of time.

- **Procedure for waste Disposal:**
  - Depending upon the type and nature of the waste material and the organism in the waste, risk waste will be decontaminated by using thermal method in the waste management plant, and in case of laboratory waste it should be decontaminate by using autoclave inside the laboratory and then transported in the red bag to the central storage facility to be handed to further treatment.