Manual

Infection Prevention and Control

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for

Hayatabad Medical Complex, Peshawar

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Chairman IPC	Medical Director	Chairman BOG

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INFECTION PREVENTION AND CONTROL PROGRAM

2.1 PROGRAM OVERVIEW

The Infection Prevention and Control program (IPC) is a governance program essential for coordinating institutional efforts in reducing and preventing healthcare associated infection (HCAI). The program is run by an IPC committee which is primarily responsible in developing and implementing policies and procedures related to infection prevention and control in the hospital.

2.2 PROGRAM OBJECTIVES

The infection prevention and control program for MTI-Hayatabad Medical Complex, a tertiary care hospital, is designed to achieve a set of critical objectives aimed at ensuring patient safety and minimizing healthcare-associated infections (HAIs). Key goals include a substantial reduction in HAIs, strict compliance with local and international standards.

The scope of the program covers various areas, such as infection prevention in clinical settings, robust surveillance and reporting mechanisms, education and training initiatives, environmental hygiene, preparedness, and response planning for emerging infectious diseases, as well as fostering research and innovation in infection prevention. By implementing these comprehensive measures, MTI-Hayatabad Medical Complex aims to create a safe and hygienic healthcare environment while remaining adaptable to emerging challenges in the field of infection prevention and control.

2.3 RESPONSIBILITIES

The hospital Infection Prevention and Control committee which is the sub-committee of clinical executive board is responsible for ensuring effective implementation of the program.

2.4 ACCOUNTABILITY

The Chairman of Infection Prevention and Control committee has overall responsibility for the Infection Prevention and Control team within the Hospital. The Chairman has the strategic and operational responsibility of the implementation of IPC policies, challenging inappropriate infection prevention and control practices, undertaking the impact assessment of new and revised policies, together with recommendations for change, integrating infection prevention and control together with clinical governance and patient safety agenda.

2.5 KEY TERMS & DEFINITIONS

Term	Definition
IPC	Infection Prevention and Control
MTI	Medical Teaching Institute
HMC	Hayatabad Medical Complex
MDRO	Multi-Drug Resistant Organism
WHO	World Health Organization
PPE	Personal Protective Equipment
HAI	Healthcare associated infections are infections that patients acquire 48 or more hours after admission during the course of receiving treatment for other conditions within a healthcare setting (CDC).
CAP	Community Acquired Infections

2.6 SUPPORTING DOCUMENTS

Document Title	Ref. #	Retention Medium	Retention Period
SOP	-	Soft	05 years

3 PART 01
POLICIES & GUIDELINES

3.1 POLICY / GUIDELINE # 1: STANDARD PRECAUTIONS

3.1.1 PURPOSE

Standard Precautions are designed to prevent cross transmission from recognized and unrecognized sources of infection. Standard Precautions are based on the principle that all blood, body fluids, secretions, excretions (except sweat), broken skin, and mucous membranes are treated as if infectious. Standard precautions are a set of principles to support safe practice, protecting both patients and healthcare workers from micro-organisms that may cause infection.

3.1.2 SCOPE

These standard precautions shall be implemented across the hospital. Standard Precautions should be applied at all times where care is being provided and must underpin all health and social care activities.

3.1.3 RESPONSIBILITIES

Actor	Role / Responsibilities
Chairman BOG / MD / HD	•
HOD	•
Managers / Functional Leads	•
Supportive Staff (Technicians / Attendants, Clerical)	•

Cross Functional Teams	•

3.1.4 DESCRIPTION

Standard infection prevention and control precautions include:

- Effective hand hygiene
- Use of personal protective equipment
- Safe aseptic non-touch technique
- Safe handling and disposal of sharps
- Management of spillages of blood and body fluids
- Safe handling and disposal of clinical waste
- Decontamination of re-usable medical equipment

3.1.5 Hand Hygiene

Hand hygiene is the single most effective measure in the prevention of the spread of infection. With the rising problem of HCAI's it is critical that all health care workers (HCW) understand the importance of good hand hygiene and undertake effective hand hygiene decontamination consistently

3.1.6 Definitions and terms used:

Bare Below the Elbow (BBE) - Hands and arms up to the elbows/mid forearm are free from clothing and jewelry (bracelets and stoned rings), wrist jewelry (Watches), nail varnish, and acrylic nails. Not wearing false nails or nail polish, not wearing a wrist watch or stone rings, wearing short sleeved garments or being able to roll or push up sleeves.

Direct (Clinical) Contact- Direct contact with a service user, this includes face to face consultation, Hands on or face-to-face contact with patients, any physical aspect of the healthcare of a patient, including treatments, self-care and administration of medication.

Hand hygiene is a generic term that covers the process of removing or destroying loosely attached 'transient' micro- organisms from the surface of the hands, the practice of physically decontaminating the hands using the most appropriate method and product as determined by assessment of risk. Hands are contaminated with both transient and resident flora.

Resident flora is those micro-organisms that live on the skin and provide a protective function. In the vast majority of instances these flora do not cause cross-infection

Transient flora is micro-organisms that are not resident on the skin but are acquired by day-to-day activity including direct contact with service users, contaminated equipment and

environmental surfaces. It is these micro-organisms that our hands come into contact with during the course of daily living. Transient flora are readily removed by the mechanical action of washing, rinsing and drying hands using soap and water and use of alcohol gel hand rub.

Heath Care Associated Infection (HCAI) a term that applies to infections that develops as a direct result of medical or surgical treatment or contact with a health care setting. They can occur in hospitals and health and social care settings in the community.

Health Care Worker- Any person whose duties concern the provision of treatment, accommodation or related services to patients and who has access to patients or the patient environment during the course of their work.

3.1.7 Hand hygiene technique

Hand washing techniques are often inadequate, as areas of the hands are often missed. All areas of the hands and wrist bacteria must be decontaminated before and after all patient contact. Hand washing should be performed using: liquid soap; warm running water; friction; and thorough drying with disposable paper towels. Hand decontamination is also necessary prior to surgery or other highly invasive procedures. In these cases this process is achieved by using an antiseptic hand cleansing preparation, for 8 example a Chlorhexidine based solution. The WHO 5 moments of hand washing shall be displayed at each patient care floor. All staff must decontaminate their hands following the WHO 5 Moments of hand hygiene:

- Before Patient Contact
- Before an aseptic task
- After exposure body fluid exposure risk
- After patient contact
- After contact with patient surroundings

Patient hand hygiene must be promoted to assist in reducing the spread of infection. These patients who are able can be directed to hand washing facilities, or be supplied with hand wipes if unable to access them. Confused or incontinent patients may require frequent assistance from staff to support them with hand hygiene.

3.1.8 Bare Below the Elbow

Hands can only be decontaminated effectively by ensuring that the correct technique is used therefore it is imperative that staff comply with ‘Bare Below the Elbow’ to facilitate this.

Bare Below the Elbow Standards & Rationale

- Keep finger nails short and clean
- Do not wear false nails or nail polish
- Do not wear wrist watches, bracelets and rings with stones and ridges. One plain band is permitted
- Sleeves must be short or rolled up to facilitate effective hand decontamination.

- Any breached skin - cuts, dermatitis or abrasions - must be covered with a waterproof dressing.

3.2 Use of personal protective equipment

The aim of personal protective equipment (PPE) is to prevent the transmission of blood borne viruses and other pathogens and offers protection to Health Care Workers (HCW) and patients. Personal Protective Equipment (PPE) is defined by the National Institute for Health and Care Excellence (NICE) (2012) as “equipment that is intended to be worn or held by a person to protect them from risks to their health and safety while at work. Examples include gloves, aprons, and eye and face protection”.

The selection of PPE must be based on an assessment of the risk of transmission of microorganisms to the patient, carer and healthcare worker (HCW). Healthcare workers (HCW) who come into contact with blood and body fluids may be at risk of acquiring blood borne viral infections such as Hepatitis B, C and Human Immunodeficiency Virus (HIV).

The purpose of the PPE policy is to prevent the transmission of micro-organisms and in doing so reduce the risk of infection to patients, visitors and staff. It is also to ensure that HCW’s that come into contact with blood and body fluids understand the importance and rationale for using PPE. All staff must be aware of the procedures for using PPE.

3.2.1 Definitions and terms used:

The term blood and body fluids includes amongst others, sputum, urine, vomit, faeces, wound drainage, saliva.

Healthcare worker (HCW) People employed by the health service, social services, a local authority or an agency to provide care for a sick, disabled or elderly person.

3.2.2 Procedure for the Use of Personal Protective Equipment

All Healthcare facilities and bases must have the following available:

- Powder free disposable gloves which conform to European Standards (CE).
- Disposable plastic aprons
- Sharps containers and clinical waste bags if applicable
- Domestic waste bags
- Cleaning, disinfectant agents and spillage kits
- Protective eye wear, glasses and /or face visors
- Fluid and splash resistant face masks

Gloves: Sterile gloves are normally worn when carrying out aseptic (non-touch) procedures where touching ‘critical parts’ cannot be avoided. Refer to the Aseptic Non-Touch Technique (ANTT) section for details.

Non-sterile gloves should be worn in all other situations, primarily when there is a risk of exposure to body fluids. This should be established through a process of risk assessment.

Gloves must be worn

- For invasive procedures
- For contact with sterile sites and non-intact skin or mucous membranes (sterile gloves)
- For activities assessed as carrying a risk of exposure to blood, body fluids, secretions, excretions, sharp or contaminated instruments
- If the HCW has non intact skin (cover with waterproof plaster)
- When decontaminating equipment and handling chemicals.
- After removing gloves decontaminate hands by washing with soap and water or using alcohol gel.
- Wearing gloves should never be considered as a substitute for hand hygiene.
- Change gloves between caring for different patients
- Change gloves between different care or treatment activities for the same patient.

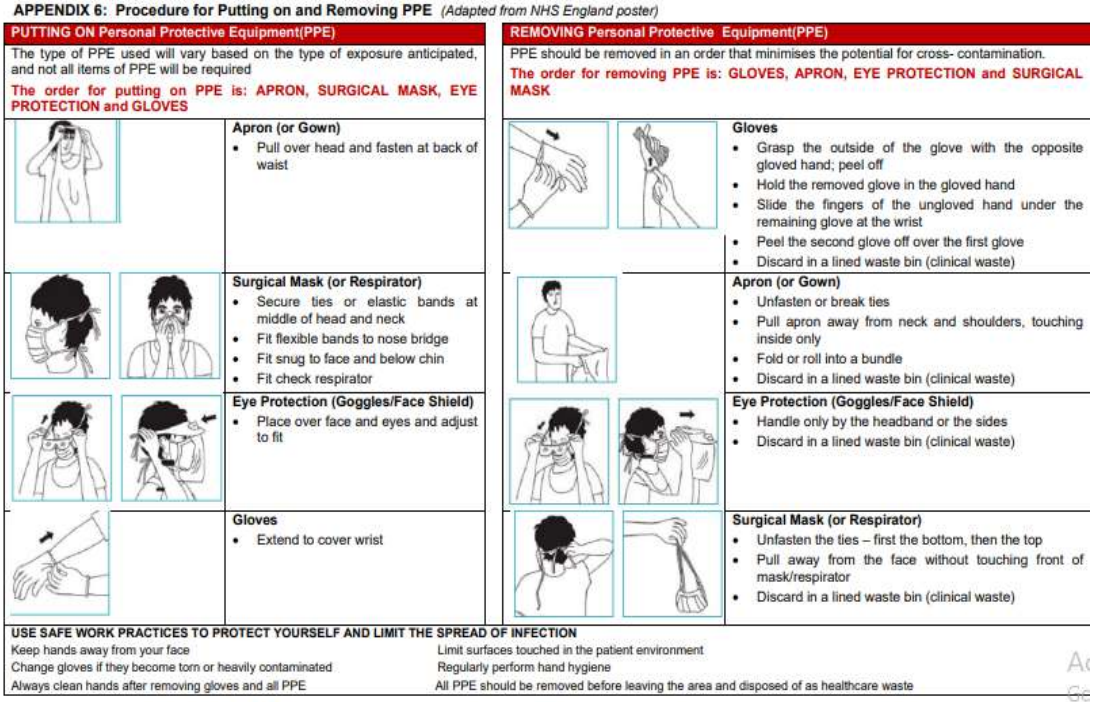
Aprons:

Disposable plastic aprons should be worn to protect clothing from possible contamination with blood, body fluids, secretions or excretions with the exception of sweat.

Hands should be decontaminated prior to putting on aprons. They must be single use, removed after the task has been completed and disposed of as clinical waste. Disposable plastic aprons are worn in the following circumstances:

- When there is a risk of contamination with blood or body fluids
- For direct contact with a patient when providing personal or clinical care
- During invasive procedures and minor surgery
- For cleaning activities
- Whenever gloves are worn One disposable apron should not come into contact with more than one patient. Micro- organisms will survive for a sufficient time to allow cross infection to occur if the apron is worn caring for more than one patient. The apron must be disposed of prior to leaving the clinical area or the patient's home. Full body fluid repellent gowns must be worn where there is a risk of extensive splashing of blood, body fluids, secretions or excretions

APPENDIX 6: Procedure for Putting on and Removing PPE *(Adapted from NHS England poster)*



Face and Eye Protection:

Facial protection may be required if there is a high risk of splashing with blood or body fluids, for example when cleaning contaminated equipment or treating patients with an upper respiratory condition. The eyes, nose and the mouth should be protected using one of the options below:

- A surgical mask with disposable/reusable goggles
- A combined disposable mask with visor
- A full-face disposable/reusable visor

In case of splashing, eye cleanser shall be made readily available to ensure prevention of damage.

3.3 Safe aseptic non-touch technique

ANTT is a technique to prevent micro-organisms from being introduced to sterile/susceptible body sites during any invasive procedure, e.g. wound care or when handling or manipulating devices: urinary catheters, peripheral and central venous cannula. ANTT aims to prevent the contamination of wounds and other susceptible sites, by ensuring that only uncontaminated equipment, referred to as 'key parts' come into contact with susceptible or sterile body sites during clinical procedures. The aim of ANTT is asepsis, not sterility. Asepsis is supported by standard precautions the necessary infection control measures to prevent pathogenic micro-organisms on hands, surfaces or equipment from being introduced to susceptible sites during clinical practice. ANTT should be

undertaken when performing any aseptic procedure i.e. cannulation, venepuncture, IV medication, wound care, urinary catheterisation and central and peripheral line management.

3.3.1 Definitions and Terms

Aseptic/Asepsis – free from pathogenic organisms Sterile – free from microorganisms

Clean – Free from visible marks and stains

Decontamination – Is a process which removes or destroys contamination so that infectious agents cannot reach a susceptible site in sufficient quantities to initiate infection response. Differing levels of decontamination are used depending on the device and the procedure The levels of decontamination are: cleaning, cleaning followed by disinfection and cleaning followed by sterilisation

Aseptic technique: the method by which precautions are taken during invasive clinical procedures to prevent the transfer of potentially pathogenic organisms: from the healthcare worker, procedure equipment or the immediate environment to the patient. An aseptic technique must be used during any procedure, which breaches the body's natural defenses.

Aseptic Field - (traditionally termed 'sterile field'). A designated aseptic working space that contains and protects the procedure equipment

Aseptic Non Touch Technique (ANTT) - A specific type of aseptic technique with a unique Theoretical and Clinical Practice Framework based upon the original concept of Key-Part and Key-Site Protection. Surgical or Sterile Aseptic Technique aims to eliminate micro-organisms from a body site, equipment or the environment, and is only achievable in a specialized area such as an operating theatre or treatment area which has strict environmental controls Key-site: can be a wound, insertion and access sites for a medical device.

Key-Part: the critical part of procedural equipment that comes into contact with the patient a **Key Site** or other procedural equipment i.e. liquid infusion during the procedure.

General Aseptic Field is used to promote asepsis rather than ensure it; this may be through the use of a clean tray or trolley Equipment asepsis is maintained by protecting Key-Parts individually with micro critical aseptic fields.

Micro critical aseptic field (MCAF): a small critical aseptic field used to protect a specific Key Part, e.g. a syringe cap or needle cover, other examples may include 'backing' to dressings

Healthcare associated infection (HCAI): any infection acquired by a person as a consequence of healthcare interventions regardless of where care is delivered

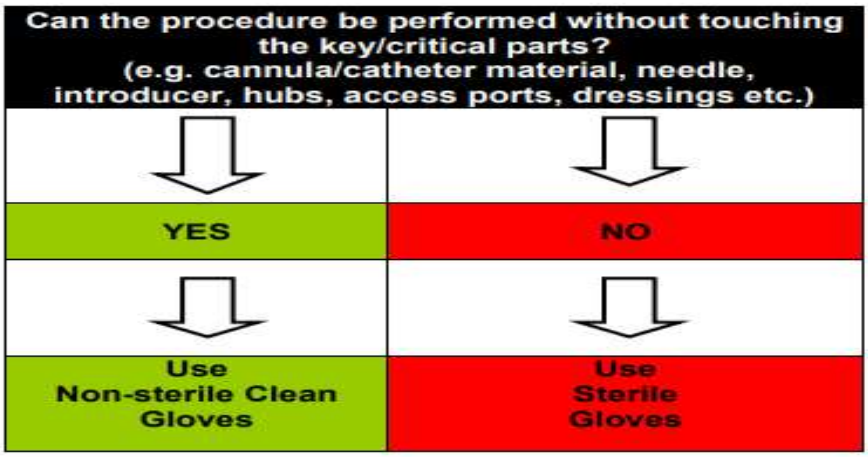
3.3.2 Process

The following principles must be observed when a clinical procedure requiring ANTT is performed:

- Always decontaminate hands
- Never contaminate 'key parts' or sites
- Touch non 'key parts' with confidence

- Take appropriate infection prevention and control precautions.

The flowchart below should be used in deciding whether to use sterile or non-sterile clean gloves in performing aseptic procedure.



3.4 Safe handling and disposal of sharps

Contaminated needles can transmit more than 20 blood-borne pathogens, including hepatitis B, hepatitis C and human immunodeficiency virus (HIV). Injuries from contaminated sharps pose a significant risk to the physical and mental wellbeing of healthcare workers (HCW's).

3.4.1 Definitions and Terms:

Medical Sharps Injury An object or instrument necessary for the exercise of specific health care activities which is able to cut, prick or cause injury. This includes equipment such as needles and scalpels. Injuries presenting a higher risk are sharps that are contaminated with blood, where there is the potential of transmitting infectious pathogens such as hepatitis B or C and HIV. Most sharps injuries can be prevented. Injury can occur with a wide range of items, but those with a higher risk of injury include:

- Hollow bore hypodermic needles
- IV cannula
- Winged steel needles (butterfly)
- Phlebotomy needles

A Sharps Incident is defined as an injury where a needle or other sharps contaminated with blood or other high risk body fluid penetrates percutaneous (through the skin). This includes cuts, pinches, scratches, nicks, bites and needles which break the skin.

Five Steps to Risk Assessment and Sharps Injuries

Step 1: Identify the Hazards

Step 2: Decide who might be harmed and how

Step 3: Evaluate the risk and decide on precautions

Step 4: Record your findings and implement them

Step 5: Review your assessment and update if necessary

3.5 Work Practice Controls - General Principles for Safe Handling and Disposal of Sharps

These controls aim to change the behavior of workers to reduce exposure to occupational hazards. Examples include:

- Do not recap or re-sheath needles
- Ensure that needles are not protruding from the box
- Apply safe assembly of sharps containers
- Place sharps containers at waist level and within arms' reach
- Establish means for the safe handling and disposal of sharps devices before the beginning of the procedure
- When disposing of sharps do not insert fingers/hands into the box
- Ensure that all clinical sharps are single use only
- Keep handling of sharps to a minimum Do not pass sharps from hand to hand
- Discard sharps directly into sharps container immediately after use and at the point of use
- Take the box to the sharp, and not the sharp to the box
- Do not put sharps containers in waste bags

3.6 Safe handling and disposal of waste

Refer to SOP#07, HMC-FMD-MAN-01

3.7 Decontamination of re-usable medical equipment

All medical devices and equipment may become contaminated with micro-organisms and present a risk to patients, and those subsequently handling or using them. Safe and effective decontamination of all re-usable equipment between uses is therefore an essential part of routine infection control practice. Decontamination is a term used to describe a range of processes, including cleaning, disinfection and/or sterilization.

1. All devices must be decontaminated according to the manufacturers" guidance. Devices should be built into a regular cleaning schedule following manufacturer's recommendations for cleaning.
2. Medical devices and equipment can be divided into 3 categories:

(i) Those that are used only once and are then disposed of: **single use**

(ii) Those that are used for a single patient only during a course of their treatment or an episode of care and are then disposed of: **single patient use**

(iii) Those that are used repeatedly and on different patients but are decontaminated between each use: **Re-usable**

The table below summarizes the level of decontamination required for each category of risk:

Risk Rating	Application of Item	Recommended Level of Decontamination
HIGH	• Penetrates skin or mucous membranes • In contact with 'broken' skin or mucous membranes • In contact with 'intact' mucous membrane (vagina) • Enters sterile body areas	CLEANING FOLLOWED BY STERILISATION *(Not routinely used across ELFT services)*
MEDIUM	• In contact with intact skin or mucous membranes (except vagina) • Contaminated with blood or body fluid • Used on a patient with known carrier status with an alert organism or with any active infection.	CLEANING FOLLOWED BY DISINFECTION
LOW	• In contact with intact skin Not in direct contact with patient skin	CLEANING ONLY

3.8 Isolation Precautions for TB and MDRO

On identification of any TB case a decision will be made about appropriate placement based on a risk assessment. If a patient is suspected or confirmed to be AFB sputum smear- positive (not MDR TB) from 1 or more of 3 samples, the patient must be isolated in a single room with en-suite facilities (e.g. toilet) and with the door closed on the ward provided that there are no patients who are immunosuppressed in the area. If these groups cannot be relocated then the infectious patient should be referred to a specialist centre with negative pressure isolation facilities. If the patient is suspected to have MDR-TB they will need to be transferred to an acute hospital with negative pressure isolation facilities.

3.9 Decontamination of the Environment (Environmental cleanliness)

The healthcare environment must be visibly clean, free from dust and spoilage and acceptable to patients, their visitors and staff. All healthcare workers need to be aware of their individual responsibility for maintaining a safe care environment for patients and staff. Every healthcare worker needs to be clear about their specific responsibilities for cleaning equipment and clinical areas (especially those areas in close proximity to patients). They must be educated about the importance of ensuring that the hospital environment is clean and that opportunities for microbial contamination are minimized. The clinical environment is cleanliness is monitored by the facilities department.

3.10 Handling Biological and Hazardous materials

This policy outlines the procedures for handling these products safely and in a manner that minimizes exposure. The main routes of exposure are through inhalation, dermal absorption, accidental injection, and ingestion through contact with contaminated food or contaminated hands. Opportunity for exposure may occur at many points during handling.

All staff will handle hazardous materials in such a way as to minimize risk of exposure, in accordance with the National Institute for Occupational Safety and Health (NIOSH), the Occupational Safety and Health Administration (OSHA), and the American Society of Health-System Pharmacists (ASHP) as delineated in the following procedures.

1. All employees with potential exposure to hazardous materials will be informed by their department of the potential risks and the need to follow the procedures related to the handling of these agents.
2. All hazardous material packages received from the manufacturer or distributor, pharmacy, or medical clinic should be in separate, properly labeled totes with a distinctive identifier notifying personnel to wear appropriate PPE (e.g., chemotherapy certified gloves, eye covering) when handling them. The label must display, in striking color, an unambiguous, succinct logo and a short, informative description. Only personnel trained in the handling of hazardous materials should receive or unpack these deliveries.
3. Place packages in a clean sealed plastic bag upon receipt, since many commercial hazardous materials have contamination on the outside of their packages when they are received.
4. Hazardous materials shall be stored separately from other materials. The agents should be stored in closed units that minimize the risk of breakage (e.g., closed cytostatic cabinet, refrigerator).
5. Use labels that are clear to non-English readers.
6. Place distinctive labels on drug packages, bins, shelves and storage areas for hazardous drugs that identify the drugs as requiring special handling precautions.
7. Use storage bins with high walls to protect hazardous drugs from falling out and breaking. Use storage bins of sufficient size to properly contain all stock.
8. Provide mandatory safety training for all individuals involved with the storage or transport of hazardous drugs, including training in spill management procedures.
9. Materials contaminated with substantial amounts of hazardous drugs will be considered potentially mutagenic and carcinogenic and will be disposed of according to guidelines published
10. Dispose of all preparation materials and packaging (e.g., box, enclosed package insert) in the plastic bag labeled "Hazardous Waste" except for sharp items that may pierce the

plastic bag. Dispose of these items (eg, glass ampules, needles) in the plastic bin container labeled "Hazardous Waste."

11. Place all contaminated materials requiring special disposal directly in a designated garbage container marked specifically for hazardous drug disposal. Designated garbage containers are found on all patient care units.
12. If the materials are to be transported from one area to another (eg, patient room to waste container), first confine them in a plastic bag and then transport them to the nearest hazardous drug waste container. When the 2 specially colored and labeled plastic bags lining the garbage container marked specifically for "Hazardous Disposal" are full, the housekeeping crew leader will transport the bag and container to the pharmacy or other hazardous waste collection area. (The bags are NOT labeled "Biohazard" but should be labeled as "Hazardous Waste. Dispose Of Properly." The disposal of hazardous waste is for drugs and paraphernalia, not for patient excreta.)
13. Place any potentially sharp items in the nearest puncture-proof sharps container and handle these items in the same manner as other sharps. Such items may include needles, syringes, scalpels, lancets, broken glass, capillary tubes, glass, ampules, blood collection tubes, slides, slide cover slips, pipettes, and breakable items.

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