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(FORMERLY NEHRU COLLEGE OF NURSING)

8.1.3. Students are exposed to quality of care and patient safety procedures including infection prevention and control practices as practiced by the teaching hospital in didactic and practical sessions during their clinical postings

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8.1.3 Students are exposed to quality care and patient safety procedures including infection prevention and control practices as practiced by the teaching hospital in didactic and practical sessions during their clinical postings

Nehru College of Nursing is a unit of P.K Das Institute of Medical Science which is second entry level NABH accreditated in 2023-2025 and NABL accreditated Hospital which is 665 bedded hospital. The hospital is enhanced with quality of health care services in excellence and follows infection control and patient safety practices by staffs and students rendering health care in hospital. The undergraduate students receive adequate training from the hospital as they get exposure to various sections of the hospital, especially different ward settings and critical care areas. It is a golden opportunity for students to learn, how to give quality care to patients suffering from various disease conditions especially during Covid pandemic situations. The medical, nursing and allied health staffs are duly qualified. The hospital is equipped with the latest treatment modalities and diagnostic services. The faculty and nursing personnel help the students to learn from basic to advanced nursing care to patients. The exposure of B Sc Nursing students to clinical settings prepare them adequately as staff nurses with innovative and evidenced based practices. The various manuals prepared by the hospital provide clear guidelines and information regarding the quality patient care, infection control practices, safety guidelines for the staff and students of the hospital. The students are informed about the manuals by the faculty and nursing personnel in the hospital. The hospital infection control department conducts regular sessions to update the staff and students with infection control practices. The safety manual of P K Das Institute of Medical Sciences includes various aspects of safety for the patients, staff and students i.e. patient safety, lab safety, radiology safety, emergency codes and response, crisis management, safety measures related to gas, equipment, hazardous materials, waste disposal, staff education and training on safety. The students are given support if they are exposed to any kinds of risks.

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Document Name	HOSPITAL INFECTION CONTROL	
Document No:	PKDIMS/HIC/PO/01-08	
Revised date	03rd March 2023	
Revision Number	02	
First Issue date	28th March 2018	
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Sl.no	Amendment point	Amendment date	Reason for amendment
1.	Full policy	03.03.2023	Revised the full policy with reference to the 5th edition NABH standard and 1st Edition pre entry level standard

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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. 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. Quality is responsible for issuing the amended copies to the copyholders, the copyholder should acknowledge the same and he /she should return the obsolete copies to the Quality. 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 NABH.

The authority over control of this manual is as follows:

Preparation	Verified by	Approval
Infection Control Nurse	Infection Control Officer	Director (Operations)

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 'Control Copy'.

Distribution List of the Manual:

Manual	Designation	Copy
MC01	Quality Department	Master Copy
CC01	Nursing	Control Copy

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1. HIC 01: THE ORGANIZATION HAS A WELL-DESIGNED, COMPREHENSIVE AND COORDINATED HOSPITAL INFECTION PREVENTION AND CONTROL PROGRAM AIMED AT REDUCING/ ELIMINATING RISKS TO PATIENTS, VISITORS AND PROVIDERS OF CARE

1.1. PURPOSE

1.1.1. To maintain standards in infection control measures and minimize hospital acquired infections in patients and employees.

1.1.2. To define policy and procedure regarding healthcare associated infections in the hospital

1.2. SCOPE

1.2.1. Hospital Wide

1.3. RESPONSIBILITY

1.3.1. Infection Control Nurse

1.3.2. Infection Control Officer

1.4. POLICIES AND PROCEDURE

1.4.1. The organisation has a well-designed ,comprehensive and coordinated Hospital Infection Prevention and Control (HIC) programme aimed at reducing/eliminating risks to patients, visitors and providers of care

1.4.2. The organisation has a HIC manual that incorporate the structure of the program, all processes, activities and surveillance procedures related to the program.

1.4.3. Manual will be based on current scientific knowledge, guidelines from international/national and professional bodies and statutory requirements, whenever applicable.

1.4.4. Reference documents include WHO guidelines,CDC guidelines and Manuals for control of Hospital Associated Infections etc

1.4.5. The infection prevention and control programme is a continuous process and updated once in a year. And update will be based on newer literature on infection and outbreak prevention mechanism, infection trends and outcomes of audit processes

1.4.6. The organisation has a infection control team comprising of ICN(s) and ICO to coordinate day –to –day functioning of infection prevention and control programme and to support surveillance process and detect outbreaks and also for conducting audit activities

1.4.7. The organisation has a multi disciplinary infection control committee, which coordinates all infection control and prevention activities.

1.4.7.1. The multi disciplinary infection control committee includes

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1.4.7.1.1. Medical Superintendent (HICC Chairman)

1.4.7.1.2. Infection Control Nurse (Convenor)

1.4.7.1.3. Microbiologist- Infection Control Officer

1.4.7.1.4. Infection Control Physician

1.4.7.1.5. Physician

1.4.7.1.6. Surgeon

1.4.7.1.7. General Manager

1.4.7.1.8. Nursing Superintendent

1.4.7.1.9. CSSD Incharge

1.4.7.1.10. Quality Officer

1.4.7.1.11. OT Incharge

1.4.7.1.12. Intensivecare unit Incharges

1.4.7.1.13. Others as invitees

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1.4.8. Microbiologist is designated as **Infection Control Officer (ICO)** in PKDIMS

1.4.9. Organisation has designated **Infection Control Nurses (ICNs)**

1.4.10. Main Responsibilities of ICN Includes

1.4.10.1. Maintaining records and statistics regarding IC activities and maintains HAI incidents record.

1.4.10.2. Checking by inspection that Infection Control and prescribed disinfectant procedures are being carried out in accordance with hospital policy.

1.4.10.3. Checking of housekeeping activities like the use of Personal Protective Equipments usage of proper disinfectant, mopping plan, and biomedical waste management.

1.4.10.4. Training of all category staff.

1.4.10.5. Liaison between laboratory and ward staff: Informing head of department and giving advice on infection control problems.

1.4.10.6. Notification of communicable diseases and other Notifiable disease through telephone and as well as through email.

1.4.10.7. Arrangements taken to provide hand washing solutions and alcohol based hand rubs.

1.4.10.8. Work as a clinical supervisor by ensuring all the established policies and protocols are practiced like handwashing 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.

1.4.10.9. Ensure health checkup of all employees.

1.4.10.10. Monitoring engineering activities like maintenance of aqua guard registers and cleaning register of Water tanks etc.

1.4.10.11. Immediate attentions in NSI & Post exposure prophylaxis.

2. HIC 02: THE ORGANIZATION IMPLEMENTS POLICIES AND PROCEDURES LAID DOWN IN THE INFECTION CONTROL MANUAL IN ALL AREAS OF THE HOSPITAL

2.1. PURPOSE

2.1.1. To implement all policies and procedures to prevent infection in all identified areas of the hospital

2.2. SCOPE

2.2.1. Hospital Wide

2.3. RESPONSIBILITY

2.3.1. Infection Control Nurse

2.3.2. Infection Control Officer

2.4. POLICIES AND PROCEDURES

2.4.1. Organisation identified the various high-risk areas and procedures and has policies to prevent infection in these areas. High risk areas of the hospital are identified as

- ✓ Intensive care units
- ✓ Operation Theatre
- ✓ Emergency Department
- ✓ Blood bank
- ✓ Post operative ward
- ✓ CSSD
- ✓ Mortuary

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2.4.2. **Standard precautions** - The organisation adheres to standard precautions at all times. Standard precautions are meant to reduce the risk of transmission of blood borne and other pathogens from both recognized and unrecognized sources, which are to be observed, as a minimum, in the care of all patients.

The main components are

a) Hand hygiene.
b) Use of personal protective equipment (e.g., gloves, masks, eyewear).
c) Respiratory hygiene / cough etiquette.
d) Prevention of needle stick injury and injuries from other sharp instruments
e) **Disinfectant Environment appropriately**
f) **Handle laundry carefully**

a) **Hand hygiene** - is a major component of standard precautions and one of the most effective methods to prevent transmission of pathogens associated with health care.

- Perform hand hygiene by means of hand rubbing and hand washing
- Perform hand washing with soap and water if hands are visibly soiled, or exposure to spore forming organisms is proven or strongly suspected, or after using the restroom. Otherwise if resources permit, perform hand rubbing with an alcohol-based preparation.
- Ensure availability of handwashing facilities with clean running water
- Ensure availability of hand hygiene products (Clean water,soap,single use clean towels,alchohol based hand rub).Alchohol based hand rub should also ideally be available at the point of care.

b) **Personal Protective Equipment** - Personal protective equipment (PPE) refers to wearable equipment that is designed to protect DHCP from exposure to or contact with infectious agents. These include gloves, face masks, protective eye wear, face shields, and protective clothing (e.g., reusable or disposable gown, jacket, laboratory coat)

c) **Respiratory Hygiene/Cough Etiquette** – Respiratory hygiene/cough etiquette infection prevention measures are designed to limit the transmission of respiratory pathogens spread by droplet or airborne routes.

d) **Prevention of needle stick injury and injuries from other sharp instruments**

Precautions will be taken while

- Handling needles, scalpels and other sharp instruments or devices-appropriate PPE and procedure to

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be followed as per the protocol

- Cleaning used instruments- cleaning protocol and safety measures will be followed
- Disposing of used needles and other sharp instruments-proper disposal at source in puncture proof container

e) **Disinfectant Environment appropriately** –Use appropriate dilution of disinfectant and adequate frequency for the routine cleaning and disinfection of environmental and other frequently touched surfaces

f) **Handle laundry carefully** -Handle ,transport and process used linen in a manner in which

- Prevents skin and mucous membrane exposures and contamination of clothing
- Avoid transfer of pathogens to other patients and or to the environment
- **Do not**
  - Rinse,shake or sort linen on removal from beds/trooley (to avoid aerosol generation)
  - Place used linen on the floor or any other surfaces
  - Re-handle used linene once bagged
  - Overfill laundry receptacles
  - Place inappropriate items in the laundry receptacle e.g. used equipment /needles

g) **Waste Disposal**

- ✓ Ensure safe waste management
- ✓ Treat waste contaminated with blood, body fluids,secreations and excretions as clinical waste ,in accordance with local/national regulations
- ✓ Human tissues and laboratory waste that is directly associated with specimen processing should also be treated as clinical waste
- ✓ Discard single use items properly

h) **Patient care Equipment**

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- Handle equipment soiled with blood, body fluids, secretions and excretions in a manner that prevents skin and mucous membrane exposures, contamination of clothing, and transfer of pathogens to other patients or environment
- Clean, disinfectant and reprocess reusable equipment appropriately before use with another patient

Organisation adheres to hand hygiene guidelines

- Indications for Hand Hygiene are
  - ✓ Wash hands with soap and water when visibly dirty or visibly soiled with blood or other body fluids (IB) or after using the toilet
  - ✓ If exposure to potential spore-forming pathogens is strongly suspected or proven, including outbreaks of *Clostridium difficile*, hand washing with soap and water is the preferred means
  - ✓ Use an alcohol-based handrub as the preferred means for routine hand antisepsis in all other clinical situations, if hands are not visibly soiled
  - ✓ If alcohol-based handrub is not obtainable, wash hands with soap and water
- **Follow 5 moments of hand hygiene**
  - Before Touching A Patient
  - Before Clean/ Aseptic Procedure
  - After Body Fluid Exposure Risk
  - After Touching A Patient.
  - After Touching A Patient Surrounding
- **Hand Hygiene Technique**

Apply a palmful of alcohol-based handrub and cover all surfaces of the hands. Rub hands until dry (The technique for handrubbing is illustrated in Figure I)

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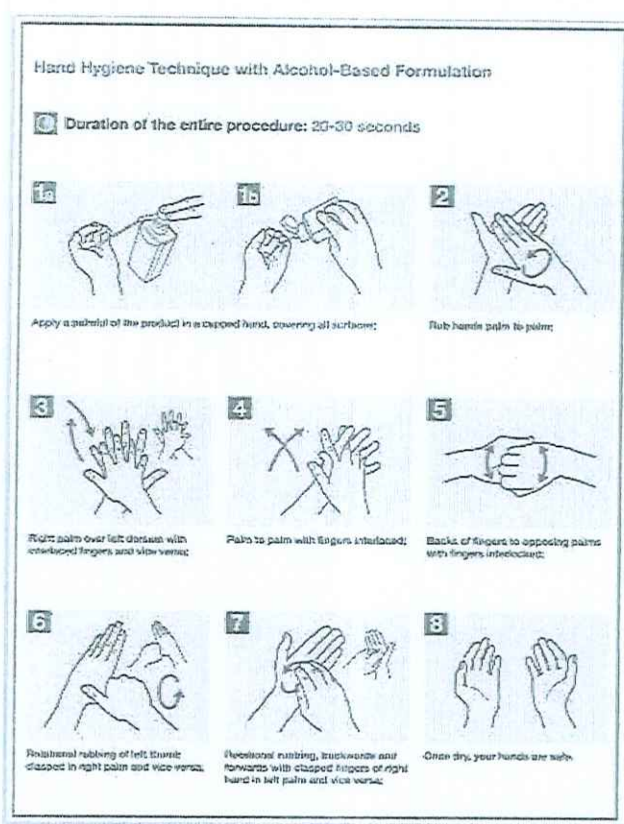

When washing hands with soap and water, wet hands with water and apply the amount of product necessary to cover all surfaces. Rinse hands with water and dry thoroughly with a single-use towel. Use clean, running water whenever possible. Avoid using hot water, as repeated exposure to hot water may increase the risk of dermatitis .Use towel to turn off tap/faucet .Dry hands thoroughly using a method that does not recontaminate hands. Make sure towels are not used multiple times or by multiple people (The technique for **handwashing** is illustrated in Figure II)

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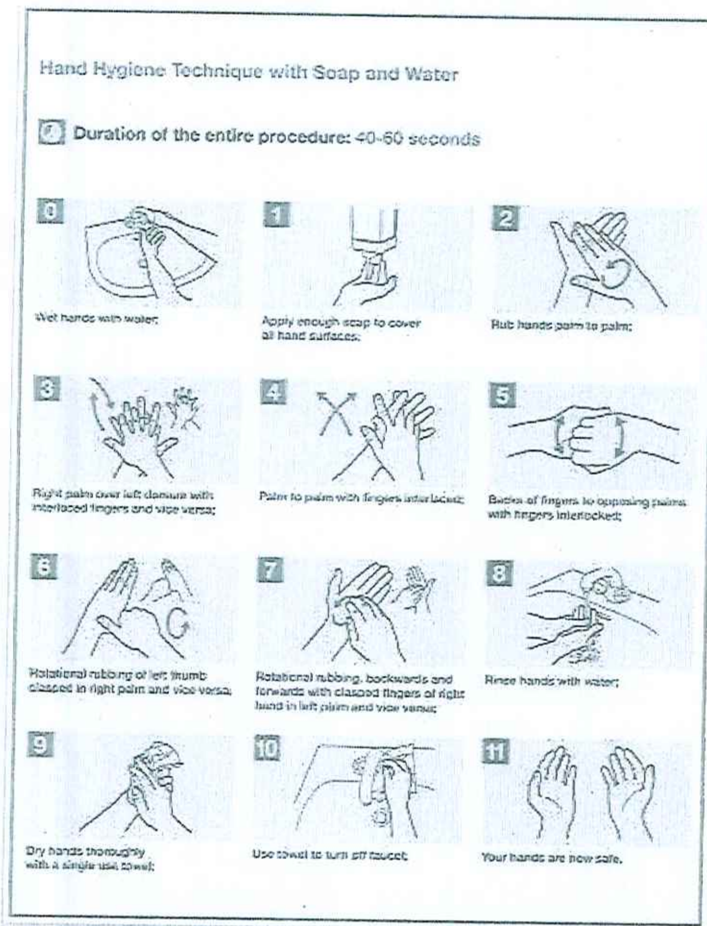

Liquid, bar, leaf or powdered forms of soap are acceptable. When bar soap is used, small bars of soap in racks that facilitate drainage should be used to allow the bars to dry

Hand wash Poster displayed at all hand washing areas

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➢ **Surgical Hand Preparation**

A. Remove rings, wrist-watch, and bracelets before beginning surgical hand preparation. Artificial nails are prohibited.

B. Sinks should be designed to reduce the risk of splashes.

C. If hands are visibly soiled, wash hands with plain soap before surgical hand preparation. Remove debris from underneath fingernails using a nail cleaner, preferably under running water.

D. Brushes are not recommended for surgical hand preparation

E. Surgical hand antisepsis should be performed using either a suitable antimicrobial soap or suitable alcohol-based handrub, preferably with a product ensuring sustained activity, before donning sterile gloves

F. If quality of water is not assured in the operating theatre, surgical hand antisepsis using an alcohol-based handrub is recommended before donning sterile gloves when performing surgical procedures

G. When performing surgical hand antisepsis using an antimicrobial soap, scrub hands and forearms for the length of time recommended by the manufacturer, typically 2–5 minutes. Long scrub times (e.g. 10 minutes) are not necessary

H. When using an alcohol-based surgical handrub product with sustained activity, follow the manufacturer's instructions for application times. Apply the product to dry hands only. Do not combine surgical hand scrub and surgical handrub with alcohol-based products sequentially.

I. When using an alcohol-based handrub, use sufficient product to keep hands and forearms wet with the handrub throughout the surgical hand preparation procedure

J. After application of the alcohol-based handrub as recommended, allow hands and forearms to dry thoroughly before donning sterile gloves

2.4.3. **The organisation adheres to transmission-based precautions**

a) Precautions against Airborne Transmission
b) Precautions against Contact Transmission
c) Precautions against Blood Borne Transmission

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a) <u>Precautions against Airborne Transmission</u>

a 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.

b Components of respiratory isolation:

c Place the patient in a single / private room with closed doors. Patients with same illness (but no other infection) can be cohered in one room.

d Masks to be worn by those who enter the patient's room. Susceptible persons should not enter the room of patients known or suspected to have measles or Varicella (chicken pox).

e Gowns are not routinely necessary. Use gowns if soiling is likely.

f Gloves are necessary while handling patients.

g Hand must be washed after touching the patient or potentially contaminated articles and before taking care of another patient.

h Articles contaminated with infective material must be discarded or bagged and labelled before being sent for decontamination and reprocessing.

b) **<u>Precautions against Contact Transmission:</u>**

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:

a Gowns are indicated if soiling is likely.

b Gloves are indicated for touching infected material / area

c Hands must be washed after touching the patient or potentially contaminated articles and before taking care of another patient.

d 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.

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e Articles contaminated with infective material must be discarded or bagged and labelled before being sent for decontamination and reprocessing

c) **Precautions Against Blood Borne Transmission:**

Instruction for wards

a) **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.

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

c) 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.

d) **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.

d) **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.

The organisation adheres to transmission-based precautions

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2.4.4. **The organisation adheres to safe injection and infusion practices**

Injections are an important mode of administration of drugs. It may be the only mode of administration in some situations; however it is also misused frequently. Infection like HIV, Hepatitis B and C virus can be transmitted through needles and unsafe injection practices. Keeping this in mind following guidelines is recommended for injections use in the hospital.

The following recommendations apply for the safe injection & infusion practices.

Aseptic Technique

- Hand hygiene is performed (Soap solution or hand sanitizer) prior to accessing supplies, handling vials and IV solutions, and preparing or administering medications.
- Medications and supplies are stored and prepared in a clean area on a clean surface.
- Needles and syringes are stored in their original packing /wrapper. They are not stored unwrapped as sterility cannot be assured.
- Skin at the injection/insertion site is prepared with the appropriate antiseptic which is allowed to dry on the skin.
- The injection site is not touched after skin antisepsis has been done.

Needles / syringes

- Sterile, single use syringes are always used for any type of injection or infusion.

Manufacturer's prefilled syringes are always used for only one patient.

- Needles, cannulas and syringes are always used as single use (used for only one patient) and are never re-used on other patients or to access medications/solutions more than once.
- Medications are never administered from the same syringe or needle to more than one patient. Changing the needle but not the syringe is unacceptable.
- The sterile needle/cannula and /or syringe are removed from the packaging just prior to use. Storage of syringes removed from packaging (even with capped needle) is prohibited.
- Medications are not prepared in one syringe and then transferred to another syringe.
- All medications drawn up in a syringe should be discarded after 24hrs or when completely used.
- Time and date of loading of medication should be mentioned on the syringe.

Vials

- Single – use or single – dose vials are used whenever possible .Single – dose (single – use) medication vials are used only for one patient. Discard after one use.
- Entry into a medication vial is always done with a new needle or cannula and syringe.

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- Multi-dose vials are dated when first opened and discarded within 28 days of opening.
- Needles and cannula are never left inserted in any rubber septum for multiple withdrawals.

IV solutions

- Bags/bottles of IV solutions are never used as common source supply(i.e. flush solutions) for more than one patient.
- Infusion supplies such as needles, syringes,flush solutions, administration sets,IV fluids are never used for more than one patient.
- Do not puncture bottles with needles to create airways.
- The bottle must be carefully checked for any damage before its use
- If there is any visible contaminant present in the IV bottle, immediately inform & replace it in the Pharmacy so that the particular batch of IV fluids can be withdrawn.
- IV sets need to be changed at least once in 72hrs.If blood , blood products or lipid emulsions have been used , change sets promptly every time.
- Disinfect IV bottle tops with alcohol swab wipe before puncturing bottle.
- If an IV bottle has been opened or accessed (e.g. IV set – punctured) it should be dated and discarded within 24hrs.

Disposal of Waste Used For SIP

- Sharps & other waste are segregated and disposed appropriately.

Practical Guidance on Skin Preparation and Disinfection (WHO Guideline)

For the disinfection of skin, use the following steps:

- Apply a 60-70% alcohol –based solution on a single-use swab or cotton ball.
- Wipe the area from centre to periphery in a circular motion by using a cotton ball without going over the same area.
- Wait for 30 seconds and allow to dry the site completely.

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Note:

- **DO NOT** pre-soak cotton wool in a container – these become highly contaminated with hand and environmental bacteria.
- **DO NOT** use alcohol skin disinfection for administration of vaccinations.

Multi dose vial policy

- If a multi- dose has been opened or accessed (e.g. needle –punctured) the vial should be dated and discarded within 28 days unless the manufacturer specifies a different (shorter or longer) date for that opened vial.
- To inspect all vials and their expiry date every month. Most multi – dose vials are safe until the manufacture's expiry date printed on the vial if not opened or accessed.
- To examine all vials for cracks in the stoppers, precipitation in the vial, and any abnormal appearance in the medicine during monthly inspections.
- Multi-dose vials are stored in the medication room and not in the immediate patient treatment area.
- Cleanse the access diaphragm of multi dose vials with 70% isopropyl alcohol before inserting a device into the vial.
- Never leave a needle inserted into the septum of a medication vial for multiple draws.
- Discard multi dose vial if sterility is compromised.
- Use a sterile device to access a multi dose vial and avoid touch contamination of the device before penetrating the access diaphragm.
- Refrigerate multi dose vials if recommended by the manufacturer.
- A fresh needle must be used for loading the solution and another fresh needle should be used for injecting the solution every time.
- The person administering a multiple dose medication must read the label on the container to confirm that the medication is intended for multiple uses.
- Solutions used for injections can be open for a maximum of one day only.
- After loading the solution for one injection, remove the needle from the vial and discard it in the sharps container.

Multi Vial Drugs

- Inj.Heparin
- Insulin
- Inj.Xylocaine
- Inj.Hepatitis B
- Oral polio Vaccine.

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Collection and transport of specimens

a) General instructions for collection of specimen

- All specimens should be collected before the administration of antibiotics.
- Adequate amount of specimen exposed to the environment. Specimen should be kept in the specimen carrier box.
- Fill the appropriate form for proper investigations, with clinical details and clinical diagnosis.
- Use sterile containers only. Do not fill till the brim, since over flow or absorption by plugs or caps may occur.
- Use wide mouth container for specimen like urine, sputum, faeces.
- In case of known serology positive cases, stick biohazard symbol in sample bottle & the request form.

Specimens for culture:

All specimens for culture for etiological diagnosis must be taken before institution of antimicrobial therapy.

- For each specimen the appropriate container must be used and spillage must be avoided during collection site is disinfected by chlorohexidine 70%
- All specimen containers should be labeled with the name and hospital number of the patient.
- Check with the laboratory regarding this.

Transport of Clinical Specimens:-

- Transport the specimens to the laboratory within 2 hrs of collection.
- If not possible to transport immediately, refrigerate. Refrigeration can also be done only 2-3 hours.
- Do not refrigerate following specimens- CSF for anaerobic culture, blood culture bottles, blood or urine for dark ground Microscopy for Leptospira.

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2.4.5. **Cleaning, Disinfection and Sterilization**

Cleaning

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Cleaning is the removal of foreign material(e.g.soil and organic material) from objects and is normally accomplished using water with detergent or enzymatic products.cleaning is performed after the disinfection with recommended disinfectant then do sterilization if it is required.Because inorganic and organic materials that remain on the surfaces of instruments interfere with the effectiveness of these processes.Also ,if soiled materials dry or bake onto instruments ,the removal process becomes more difficult and the disinfection or sterilization process less effective or ineffective.

Manual Cleaning of Soiled Instruments and Equipment

- Routine cleaning of soiled instruments is done immediately after the procedure.
- Instruments should not be soaked in saline, as they will become pitted.
- Use water enzymatic product and hard brush to completely remove the blood, tissue, food and other residue, paying special attention to small teeth of instruments and joints.
- Finally rinse with clean water to remove traces of solutions.
- Dry properly .Failure to remove water from trapped areas will cause corrosion.
- Prior to sterilization wrap the instruments properly to prevent recontamination.
- There is NO substitute for proper cleaning. Whether steam sterilization, ethylene oxide or disinfectants are used they CANNOT penetrate debris .These processes will NOT work when instruments are NOT cleaned properly.
- ALWAYS keep soiled items separated from clean and disinfected /sterile areas to prevent cross contamination.
- Consider the item contaminated when packaging is torn, damaged, wet, and dropped on the floor and when the expiry date has passed.

Approaches to Disinfection and Sterilization

Critical Items

Critical items confer a high risk for infection if they are contaminated with any microorganisms. Thus, objects that enter sterile tissue or the vascular system must be sterile because any microbial contamination could transmit disease.This category includes surgical instruments, cardiac and urinary catheters, implants, and ultrasound probes used in sterile body cavities. Most of the items in this category should be treated with ETO.

Semi critical Items

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Semi critical items that contact mucous membranes or non-intact skin. This category includes respiratory therapy and anesthesia equipment, some endoscopes, laryngoscope blades, cystoscopes. These medical devices should be free from all microorganisms; however, small numbers of bacterial spores are permissible. Intact mucous membranes, such as those of the lungs and the gastrointestinal tract , generally are resistant to infection by common bacterial spores but susceptible to other organisms ,such as those of the lungs and the gastrointestinal tract, generally are resistant to infection by common bacterial spores but susceptible to other organisms ,such as bacteria,

mycobacteria, and viruses, Semicritical items minimally require high-level disinfection using chemical disinfectants(Gluteraldehyde).

Noncritical Items

Noncritical items are those that come in contact with intact skin but not mucous membranes. Intact skin acts as an effective barrier to most microorganisms, therefore, the sterility of items coming in contact with intact skin is "not critical". In this guideline ,non-critical items are divided into non-critical patient care items (bedpans, blood pressure cuffs, crutches) and non-critical environmental surfaces. In contrast to critical and some –critical items, most noncritical reusable items may be decontaminated where they are used and do not need to be transported to a central processing area.

Disinfection

Disinfection is a process where most microbes are removed from a defined objects or surface, except bacterial end spores .

Disinfectants can be classified according to their ability to destroy these categories of microorganisms. The agent which destroys only vegetative bacteria is termed low-level disinfectant. If the agent is capable of rendering mycobacterium non-viable ,it is termed an intermediate level disinfectant. It is a safe assumption that all the other categories of microbes which are classified more susceptible.e.g.fungi,are also destroyed if efficacy against mycobacteria can be demonstrated.High level disinfection is in other words sterilization where in all microbial life is destroyed,inclusive of end spores.

High level disinfectants:

- Ethylene oxide
- Gluteraldehyde (more exposure time)

Intermediate level disinfectants

- Alcohols
- Sodium hypochlorite
- Povidine iodine
- Hydrogen peroxide
- Chlorhexidine
- Glutaraldehyde(short exposure time)

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Low level disinfection

- Benzalkonium chloride

Disinfectants used in our hospital

1. **Skin disinfectants**
- Chlorhexidine 70% - hand rub
- Chlorexidine 4% 100ml (Bactoscrub) – pre op body wash
- Povidone 7.5% (Cutaprep –PVP Scrub)
- Povidone iodine 10% (Cutaprep – PV Solution)
- Povidone iodine 5% (Lupidine)

2. **Surface disinfection**
- Benzalconium Chloride (TASKI)- surface cleaning
- Hydrochloric Acid (R6) – Surface cleaning
- Bacillol Special – Surface disinfection & fogging.
- Ultrasol – Surface cleaning & fogging
- Bacillol 25 – Surface cleaning
- Sodium Hypochlorite – Surface cleaning

3. **Disinfection of equipments**
- Glutaraldehyde Hospal – G Plus (Endoscope)
- Gigazyme – Enzymatic wash – instruments wash.
- Ron & Baker Disinfection solution – Dental OPD

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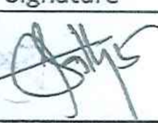
Disinfection and cleaning of equipment

SL NO	Item	Cleaning & Disinfection	Periodicity
1.	B.P apparatus	Clean with alcohol	Daily
2.	B.P apparatus cuff	Wash thoroughly with detergent and water and dry it properly.	Weekly

		After use with infected patient dip it in 1% sodium hypochlorite for 30mts and wash.	
3.	Thermometer	Clean the bulb with alcohol	Daily and after the use of every patient
4.	Glucometer	Clean with alcohol	Daily
5.	Dressing trolley	Clean with Ultasol/Bezlakonium chloride	Daily
6.	Steel tray	Wash with soap and water Disinfect with 1% gigazyme xtra solution for 30mts.	After each use
7.	Stethoscope, Taps & Torch	Clean properly with alcohol	Daily
8.	Plastic Tray	Wash with soap and water	Daily
9.	Nebulizer (Machine)	Clean properly with alcohol	Daily
10.	O2 Flow meter	Wash with soap and water	Weekly &after each use of patient. Change purified water every day
11.	Suction apparatus	Empty the bottles after every use or when jar is full 3/4th in continuous usage cases.	After each use



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	Signature		Signature		Signature
Infection Control Nurse		Infection Control Officer		Dr.R.C.Krishnakumar Director(Operations)	

		Disinfect with 0.5% sodium hypochlorite solution for 30mts. Rinse with water and dry.	
12.	All electronic equipments& monitors	Clean with bacillol 25 spray.	Daily& after the use of every patient
13.	Refrigerator	Defrost and Wash with soap and water	Weekly
14.	Laryngoscope blades	Detach the blades, wash with soap and water. Don't remove the bulb. Dip in Hospal – G Plus solution for 20 minutes. Rinse with sterile water and dry. Clean the bulb and handle with alcohol.	After the use of each patient
15.	Steam inhaler	Wash with soap and water	After each use
16.	Airway LMA(laryngeal mask airway), naso pharyngeal airway	Use disposable airways for each patient. Clean with soap and water then send for ETO	After each use
17.	Ambu bag and mask	Detach the parts. Disinfect the ambu bag with 1% sodium hypochlorite for 10 mts	After each use

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		Rinse with water and make it dry. Assemble the parts and send for ETO.	
18.	Otoscope and Ophthalmoscope	Clean with alcohol	After each use
19.	E.C.G. & Transducer cables	Clean with light soap solution and keep it dry	After each use
20.	Trolleys and wheel chair	Clean trolley with ultrasol in critical care areas and Benzalkonium in non-critical care areas	After each use
21.	IV Stand	Clean with ultrasol in critical care areas and Benzalkonium in non-critical care areas	After each use
22.	Tables and cardiac tables	Clean with ultrasol in critical care areas and Benzalkonium in non-critical care areas	After each use
23.	Electric fans	Clean with basilol spray.	Monthly once
24.	Sputum mug, bed pan and urinal	Use disposable items Clean with 1% Sodium hypochlorite solution for 30mts.	After each patient use
25.	Curtains	Wash once in 15 days and whenever soiled. In case of infected patients after discharge, transfer out or death.	Once in 15 days.
26.	Baby warmer & transport incubator	Clean with Bacillol 25 spray	Daily
27.	Mattress and pillows	Clean with ultrasol in critical care	After each patient use

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		areas and Benzalkonium in non-critical care areas	
28.	Cot and side rails	Clean with ultrasol in critical care areas and Benzalkonium in non-critical care areas	After each patient use
29.	Floor cleaning	Critical care area – 1% Ultrasol active solution Non critical care area – with Taski solution	Twice a day Once a day
30.	Infected cases	Areas and equipments which are cleaned with ultrasole/benzalkonium should be primarly washed with 1% Hypochlorite solution.	After each patient use/Terminal cleaning.

2.4.6. **Laundry Management**

Management of Linen

Linen is the second most powerful reservoir of micro-organism in health care settings. All linen should be handled carefully so that there is minimum dispersion of micro organism. Appropriate PPE should be used when handling linen soiled with bodily substances.

Categories

1. Used Linen : All used linen is considered as contaminated.
2. Soiled Linen : Linen visibly contaminated with blood, body fluids, secretions and excretions
3. Infected Linen : Linen is used by an infectious patient.

Transportation of used linen

1. Used linen should be bagged at location of use and it is transported to laundry Trolley.
2. Linen that is heavily soiled with blood or other bodily substances should be placed in leak proof yellow bags and securely tied(All infected linen).
3. Transportation of linen to laundry by using covered trolleys.

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Note: All the trolleys should be cleaned on a regular basis.

Return of clean linen to the user

1.Transport in a clean dry and covered trolley which is clean and disinfect prior to loading with clean linen.

2. Store the clean linen in clean and dry area.

Handling of soiled linen

a. Soiled lined should be handled as little as possible and with a minimum amount of agitation to prevent gross microbial contamination of the air and of persons handling of linen.

b. All soiled linen should be bagged or put in to special carts at the location where used.

c. Linen soiled with blood or body fluids, and all linen used by patients diagnosed to have HIV,HBV and MRSA, is to be decontaminated by soaking in 1% Na Hypochlorite for at least half hour.

Sorting soiled linen

In the laundry, hand washing facilities and protective garb (eg. Gowns, gloves,masks) are available to personnel who sort laundry. In the wards, sorting of laundry should be done only in the sluice rooms and not at the bedside.

Hot-water Washing

Linen is washed at 80-90°C for over 20mts with a detergent in water since this is an effective method for cleaning and killing most vegetative bacteria.

Clean linen

The clean linen section should be cleaned every day; Cupboards and walls are damp dusted and the floor mopped.

All clean linen should be stored and transported in carts used exclusively for this purpose.Clean linen is delivered to the user in such a way as to minimize microbial contamination from surface contact or airborne deposition.

It is desirable to protect linen in individual patient care areas. But once clean linen is distributed for individual patient use, protection or covering is not required.There is to be a functional separation of clean and soiled linen during storage and transport.

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Sterile linen

Only linen used in procedures requiring sterile technique should be sterilized.

2.4.7. Engineering Controls to Prevent Infection:

PKDIMS 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 rooms are 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.

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

1. Air Change Per/ Hour:

a) All the General OT's are installed with laminar flow system so as to maintain air exchanges. All these 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 of total minimum 25 air changes.

1. **Temperature and Humidity:** The temperature should be maintained at 21+/- 3DegC inside the OT all the timewith corresponding relative humidity between 40 to 60% though the ideal Rh is considered to be 55%.

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Organisation adheres to housekeeping Procedures

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.

a) The floor is to be cleaned at least twice in 24 hours. Detergent and copious amounts of water should be used during one cleaning.

b) The walls are to be washed with a brush, using detergent and water once a week

c) High dusting is to be done with a wet mop

d) Fans and lights are cleaned with soap and water once a month.

e) All work surfaces are to be disinfected by wiping with suitable disinfectant Quaternary ammonium compound then cleaned with detergent and water twice a day.

f) Cupboards, shelves, beds, lockers, IV stands, stools and other fixtures are to be cleaned with detergent and water once a week.

g) 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.

h) Patient's cot is to be cleaned every week with detergent and water. 1% hypo chloride to be used when soiled with blood or body fluids. In the isolation ward, cleaning is done daily.

i) Store rooms are to be mopped once a day and high dusted once a week.

j) The floor of bathrooms is to be cleaned with a broom and detergent once a day and then disinfected.

k) 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.

l) Wash basins are to be cleaned every morning

m) Regular AC maintenance is required. The AC section should draw up a protocol for this.

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Miscellaneous items

a) Kidney trays, basins, bed pans, urinals, etc to be cleaned with detergent and water and disinfected with 1% Sodium Hypochlorite solution

House Keeping In the Operation Theatre

a. 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 rooms are cleaned daily and the entire theatre complex is cleaned thoroughly once a week.

Before the start of the 1st case

b. Wipe all equipment, furniture, room 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.

Linen & gloves

a. 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 / hypo chloride and then washed in the room adjacent to the respective OT by scrubbing with a brush and Rapid Multi- Enzyme Cleaner. 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 hypo chloride before wiping.

Empty and clean suction bottles and tubing with disinfectant.

d. After the last case

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4. Identify the spill kit.
5. Wear PPE.
6. Put soaking paper (brown paper, newspaper and tissue paper) over the spill.
7. Make fresh bleaching solution by using 0.75gm of bleaching powder in 100ml water which equivalent to 0.5 to 1% strength or 1:10 sodium hypochlorite solution
8. Pour this prepared solution over the recovered spill from outer to inner.
9. Leave for contact time ideally 20 minutes
10. After contact time remove the soaked paper and put it in the YELLOW bag.
11. Discard this yellow bag in main yellow bin the unit.
12. Clean the area with soap and water once and with disinfectant twice.
13. Remove the PPE & discard it in the appropriate bag.
14. Do the hand washing.
15. Report the spill in incident reporting form.
16. It is the responsibility of person who had done the spill to manage it with the help of Housekeeping person.

3. HIC 03. THE ORGANIZATION PERFORMS SURVEILLANCE ACTIVITIES TO CAPTURE AND MONITOR INFECTION PREVENTION AND CONTROL DATA

Methods of Surveillance

- ✓ Fumigation and Random Culture from High Risk Areas
- ✓ HICC decided that culture swab to be taken according to the table shown below.

Surveillance Culture Schedule

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

a) Wipe over head lights, cabinets, waste receptacles, equipment, furniture with disinfectant like rapid incidur, foam incidur etc…

b) Wash floor and wet mop with liquid soap and then remove water and wet mop with Super Shine solution.

c) Clean the storage shelves, scrub & clean room.

d) Weekly cleaning procedure

e) Remove all portable equipment.

f) Damp wipe lights and other fixtures with detergent.

g) Clean doors, hinges, facings, glass inserts and rinse with a cloth moistened with detergent.

h) Wipe down walls with clean cloth mop with detergent.

i) Scrub floor using detergent and water or Quaternary ammonium compound.

j) Stainless steel surfaces - clean with detergent, rinse & clean with warm water.

k) Replace portable equipment: Clean wheel castors by rolling across towelling saturated with detergent.

l) 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 room, holes to oxygen tank, kick buckets and holder, and wall cupboards)

m) After washing floors, allow disinfectant solution to remain on the floor for 5 minutes to ensure destruction of bacteria.

2.4.8. Protocol for body fluid splash & spillages

1. Make the people aware about spill
2. Cordon off the area.
3. Mark the area

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SL.NO	DEPARTMENT	DURATION	PERIOD OF SURVEILLANCE	PERIOD OF FUMIGATION	WEEKLY CLEANING
1	**ALL OT**	Weekly	Monthly twice and SOS	Every Sundays Day before any major surgeries & infected cases notified	Every Sundays & SOS
2	**NICU**	Monthly	Monthly once & SOS	Monthly once and SOS	Every Sundays & SOS
3	**SICU**	Monthly	Monthly once & SOS	Monthly once and SOS	Every Sundays & SOS
4	**CCU**	Monthly		Monthly once & SOS	Every Sundays & SOS
5	**Casualty Minor OT**		Monthly once and SOS	Monthly once & SOS	Every Sundays & SOS
6	**CSSD**	Weekly	Monthly once and SOS	Monthly once & SOS	Every Sundays & SOS
7	**Labour Room**	Weekly	Monthly once and SOS	Monthly once and dry	Every Sundays & SOS

- ✓ The collection of surveillance data is an ongoing process in PKDIMS
- ✓ The infection control team verifies the data on a regular basis.
- ✓ The surveillance activities in PKDIMS also incorporates tracking and analyzing of infection risks, rates and trends
- ✓ The surveillance activity include monitoring of compliance with hand hygiene guidelines
- ✓ Report regarding HAI rates is informed to all the departments' monthly wise.

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✓ PKDIMS hospital identifies all Notifiable diseases and ensures that this is sent at the specified frequency and in format as required by statutory authorities.

a) Acute diarrheal disease
b) Acute Dysentery – Amoebic / Bacillary
c) Acute flaccid paralysis
d) Cholera or Cholera- like disease
e) Diphtheria
f) Encephalitis
g) Plague
h) Hepatitis-viral
i) Leptospirosis
j) Malaria
k) Measles
l) Meningitis – Pyogenic / Prescribed disinfectant
m) Rabies
n) Tetanus
o) Enteric fever
p) Pertussis
q) Dengue
r) Chickenpox
s) Chikungunya
t) H1N1(Swine flu)

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4. HIC 04.THE ORGANIZATION TAKES ACTIONS TO PREVENT OR CONTROL THE RISK OF HEALTH CARE ASSOCIATED INFECTIONS (HAI) IN PATIENTS

4.1. Types of Infection

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

a) 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

b) Respiratory Tract Infections

Analyzing the respiratory tract infections through the following;

a Ventilated days
b Fever
c X ray findings
d Neutropenia

c) 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

4.2. The organization takes action to prevent Urinary tract infections

4.2.1. Urethral catheterization

4.2.1.1. **Personnel:** Only persons who know the correct technique of aseptic insertion and maintenance of catheters should handle catheters.

4.2.1.2. **Catheter Use :** Urinary catheters should be inserted only when necessary and left in place only as long as medically indicated

4.2.1.3. **Hand wash:** Hand washing should be done immediately before and after any manipulation of the catheter site or apparatus

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4.2.1.4. **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

4.2.1.5. **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.

4.3. The organization 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

a) Sterile water is to be used in nebulizers and humidifiers. This should be replaced daily.

b) Pneumatic circuits (masks, Y connection and tubes) are to be changed every 24-48 hours.

c) 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.

d) 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.

e) Oxygen masks, venture devices and nebulizer chambers are cleaned carefully and then sterilized by ETO.

f) Humidifier domes are ETO sterilized. Ambu bags are cleaned thoroughly and are then sent for ETO sterilization.

g) Microbiological surveillance of respiratory therapy equipment is practiced in our hospital.

2. Tracheotomy Care / Endotracheal Tube

a) Careful attention to post-operative wound care is mandatory.

b) The patient should receive aerosol therapy to prevent desiccation of the tracheal and bronchial mucosa or the formation of crusts. The skin around the Tracheotomy tube should be cleaned with betadine (Povidone-iodine 5%) every four hours or more frequently, if necessary.

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c) 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 Tracheotomy tubes are removed, another plastic tube is inserted, and the tube is cleaned, with hydrogen peroxide, and rinsed well before reuse.

d) The Tracheostomy tube should be changed every 24 hours. This tube must be tied securely at all times.

e) 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.

f) Clean technique should be used to change the Tracheostomy tube unless there is a medical indication for sterile technique.

g) 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.

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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 unfavourable 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.
18. The tubing and suction canister should be changed every 24 hours. The canister should be labelled with the date and time when they are changed. If debris adheres to the side of the tubing or the canister, either or both should be changed. The tubing should be secured between suctioning periods so that it will not fall to the bed, floor, etc.

4.4. The organization takes action to prevent intra vascular device infection

a) **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.

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b) **Preparation of skin :** Povidone-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.

c) **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.

d) Record Time and date of IV insertion.

e) **Inspecting catheter insertion sites**Intravascular catheters should be inspected daily and whenever patients have unexplained fever or complaints of pain, tenderness, or drainage at the site for evidence of catheter related complications.

f) Inspect for signs of infection (redness, swelling, drainage, tenderness) or phlebitis and also palpate gently through intact dressings.

g) **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

h) **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.

i) **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.(Teflon material)

j) **Replacement of Peripheral IV Catheters:**Peripheral IV catheters should be removed 96 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.

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k) **Central intravascular catheters (long term catheters) dressing changes:** Central IV catheter gauze dressings should be changed every 2days and transparent dressing should be changed every 7days. Replacement Central IV catheters do not require routine removal and reinsertion. The catheter can be kept as long as there is no sign of catheter related infections or other complications.

l) **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)

4.5. The organization takes action to prevent surgical site infections

4.5.1. Surgical wounds

a Surgical wounds after an elective surgery are inspected on the third post-operative day, or earlier.

b 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.

c If two health care workers are not available, then, take off the dressing, wash hands again before applying a new dressing.

d A clean, dry wound may be left open without any dressing after inspection.

e 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.

f 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 and will be present in committee meeting
- The investigation of single cases of unusual or epidemiologically significant nosocomial infections.

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- 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 =

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

5. HIC 05 : THE ORGANIZATION PROVIDES ADEQUATE RESOURCES FOR PREVENTION AND CONTROL HEALTH CARE ASSOCIATED INFECTIONS

5.1. Organisation 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

a) Gloves
b) Protective eye wear
c) Mask
d) Apron
e) Gown
f) Boots/ shoe covers
g) Cap/ hair cover

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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.

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.

5.2 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 staff will inform the ICN and she will arrange the room or if the patient is critically ill admit the patient in side bed allocated for ISOLATAION PATIENTS of the concerned ICU. If the patient can't afford the room patient will be admitted in the isolation room, the patient and the family members will.

5.2.1 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 and contact.

5.2.1.1 Specification for strict isolation

a) Private room is indicated; door should be kept closed.

b) Masks, gowns & gloves are indicated for everyone entering the room.

5.2.1.2 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.

5.2.1.3 Specification for Contact Isolation

1. Private room 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.

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

a Gram-negative bacilli resistant to all amino glycosides that are tested. Staphylococcus aureus resistant to penicillin.

b Pneumococcus resistant to penicillin.

c Haemophilus influenza resistant to ampicillin (betalactamase –positive) and chloramphenicol.

d Other resistant bacteria may be included if they are judged by the infection control team to be of special clinical and epidemiological significance.

e Pediculosis

f Pharyngitis, infections, infectious, in infants and young children.

g Pneumonia, viral, in infants and young children.

h Pneumonia, Staphylococcus aureus or group A streptococcus.

i Rabies

j Rubella, congenital and other.

k Scabies

l 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.

5.2.1.5 Respiratory Isolation

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

5.2.1.5.1 Specifications for Respiratory Isolation

a Private room is indicated.
b Masks are indicated for those who come close to the client.

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c Gowns are not indicated.

d Gloves are indicated if contamination of hands is anticipated.

5.2.1.5.2 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)

5.2.1.6 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.

5.2.1.6.1 Specification for Tuberculosis Isolation (AFB Isolation)

1. Private room 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.

5.2.1.7 Enteric Isolation

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

5.2.1.7.1 Specification for Enteric Precautions

1. Private room 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.

5.2.1.7.2 Disease Requiring Enteric precautions

- Amoebic dysentery, Typhoid, Hep A
- Cholera
- Coxsackie virus 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

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- Viruses – including Norwalk agent and rotavirus

5.2.2 Protocol for receiving patient with Dengue and Chikungunya, Leptospira, Malaria

1. Receive the patient in isolation room. / ward.
2. Inform Infection Control Nurse.
3. Confirm report from laboratory.
4. Provide isolation measures with facilities of mosquito net, mosquito repellent.
5. Send notification card to Infection Control Nurse.
6. Infection Control Nurse will inform to DMO – Health by google form
7. Instruct the relatives to protect themselves and others by keeping the environment free from mosquito.

5.2.3 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.

5.2.3.1 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.

5.2.3.2 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.

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3. Gonococcal eye infections in newborns. See contact isolation if the infection is one of these:
   - a Tetanus
   - b Abscess, minor limited.
   - c Burn infection, minor limited.
   - d Conjunctivitis.
   - e Decubitus ulcer, infected, minor or limited.
   - f Skin infection, minor or limited.
   - g Wound infection, minor or limited.

5.2.4 Blood body fluid isolation

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

5.2.4.1 Specifications for Blood and body fluid isolation:

1. Private room required only if the person's hygiene is poor.
2. Use of mask is indicated if the client is suffering from other infections e.g. Active Tuberculosis, Pneumonia etc.
3. Gowns are indicated if spoilage with blood and body fluids is likely.
4. Gloves are indicated for touching blood and body fluids.
5. Wash hands immediately if potentially contaminated by blood or body fluids.

5.2.4.2 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

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

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2	Organizational Preparedness for Preventing & controlling Covid-19	
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	3.4 Appropriate use of personal protective equipment(PPE)	
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4	Cleaning & disinfection Protocol-Routine &terminal cleaning.	
5	Bio-Medical waste management	
6	Admission &Discharge Protocol Covid19	
7	Dead body Management for Covid-19	

1. INTRODUCTION TO COVID -19

Healthcare personnel (HCP) are on the front lines for caring patients with confirmed or possible infection with Corona virus disease 2019 (COVID-19) and therefore have an increased risk of exposure to this virus. HCPs can minimize their risk of exposure when caring confirmed or possible COVID-19 patients by following these guidelines.

DEFINITION

Corona virus disease 2019 (COVID-19) is an infectious disease caused by **severe acute respiratory syndrome corona virus 2 (SARS-CoV-2)**. The disease was first identified in December 2019 in Wuhan, the capital of China's Hubei province, as an outbreak of pneumonia of unknown cause. The outbreak was declared public health emergency of international concern on 30 January 2020. It spread globally; involving many countries resulted in the ongoing 2019 - 20 corona virus pandemic.

RISK FACTORS

- Travel
- Viral Exposure

MODE OF TRANSMISSION

Person-to-person spread

Person-to-person transmission of COVID-19 virus occurs via droplet and contact

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transmissions.

- **Droplet transmission**: The transmission of COVID-19 is thought to occur mainly through respiratory droplets. These droplets, produced when the infected person coughs or sneezes, can infect the persons who are within 1 meter distance
- **Contact transmission**: Respiratory droplets settle down on floor and surfaces, inanimate objects. Virus can easily spread through contact with contaminated surfaces.
- **Airborne transmission:** Airborne transmission occurs when performing aerosol generating procedures such as tracheal intubation, open suctioning, Tracheostomy, and cardiopulmonary resuscitation, manual ventilation before intubation, bronchoscopy, airway suction, chest physiotherapy, Nebulization, sputum induction and collection of specimens for investigations.
- Some recent studies have suggested that COVID-19 may be spread by asymptomatic/ presymtomatic people

INCUBATION PERIOD

- Typically 5–6 days (may range between 2–14 days)

CLINICAL MANIFESTATIONS

Common symptoms include:

- Fever
- Fatigability
- Dry cough.

Other symptoms include:

- Shortness of breath
- Myalgia
- Sore throat
- Diarrhea, nausea or a runny nose.

Anosmia /hyposmia or dysgeusia.

DIAGNOSTIC METHOD

- Real Time PCR (RT-PCR) testing with nasopharyngeal swab in case of upper respiratory tract infection. In case of lower respiratory tract infection sputum sample and for patients on ventilator, endotracheal aspirate must be collected for testing.
- CT scan

COMPLICATION

- Pneumonia
- Viral Sepsis
- Acute Respiratory Distress Syndrome(ARDS)
- Acute Kidney injury.

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- Disseminated intravascular coagulation [DIC]

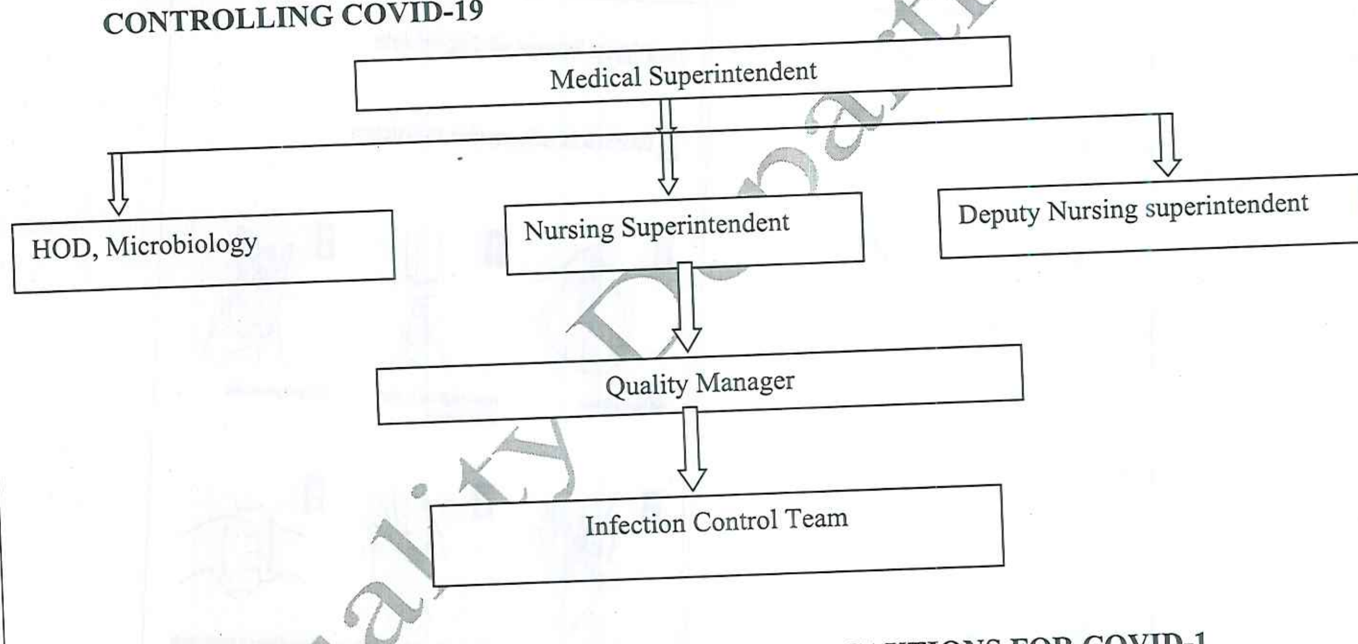
Benefits Of Infection Prevention Control

- Protecting yourself
- Protecting your family
- Protecting your community

IPC Goals In Outbreak Preparedness

1. To reduce transmission of healthcare associated infection.
2. To enhance the safety of staff, patient & visitors
3. To enhance the ability of organization/health facility to response to an outbreak
4. To lower or reduce the risk of the hospital (health care facility) itself amplifying the outbreak.

2. ORGANISATIONAL PREPAREDNESS FOR PREVENTING AND CONTROLLING COVID-19



2. INFECTION PREVENTION & CONTROL PRECAUTIONS FOR COVID-1

Elements of Standard Precaution

- Hand hygiene
- Respiratory hygiene(cough etiquette)
- PPE according to the risk
- Safe injection practices, sharps management and injury prevention.
- Safe handling, cleaning and disinfection of patient care equipment
- Environmental cleaning
- Safe handling and cleaning of soiled linen

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- Waste management.

Hand Hygiene

- Hands are the most important vehicle of transmission of infection. So Hand hygiene is the most important measure for the prevention and control of COVID- 19.
- Use alcohol based hand rub, if hands are not visibly soiled (duration 20-30sec.).
- Use soap and water, if hands are visibly soiled(duration 40-60sec), before having food and after using wash room.

Steps of Hand Hygiene Technique

Hand Hygiene Technique with Alcohol-Based Formulation

Duration of the entire procedure: 20-30 seconds

- 1a, 1b: Apply a palmful of the product in a cupped hand, covering all surfaces;
- 2: Rub hands palm to palm;
- 3: Right palm over left dorsum with interlaced fingers and vice versa;
- 4: Palm to palm with fingers interlaced;
- 5: Backs of fingers to opposing palms with fingers interlocked;
- 6: Rotational rubbing of left thumb clasped in right palm and vice versa;
- 7: Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;
- 8: Once dry, your hands are safe.

Hand Hygiene Technique with Soap and Water

Duration of the entire procedure: 40-60 seconds

- 0: Wet hands with water;
- 1: Apply enough soap to cover all hand surfaces;
- 2: Rub hands palm to palm;
- 3: Right palm over left dorsum with interlaced fingers and vice versa;
- 4: Palm to palm with fingers interlaced;
- 5: Backs of fingers to opposing palms with fingers interlocked;
- 6: Rotational rubbing of left thumb clasped in right palm and vice versa;
- 7: Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;
- 8: Rinse hands with water;
- 9: Dry hands thoroughly with a single use towel;
- 10: Use towel to turn off faucet;
- 11: Your hands are now safe.

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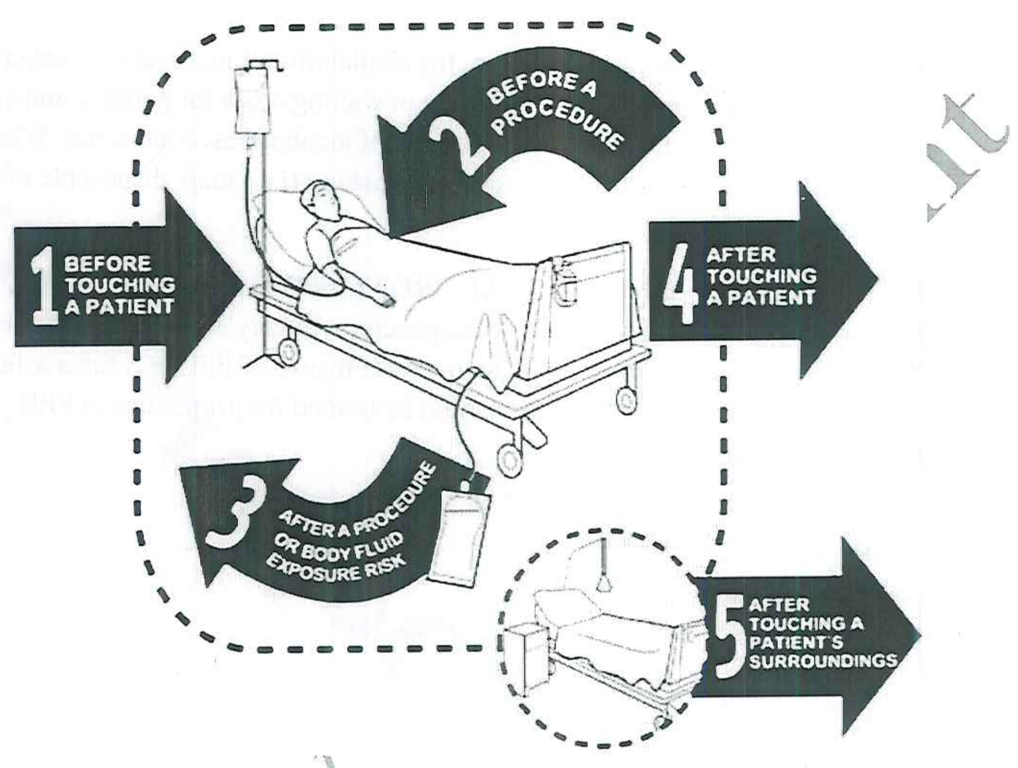
FIVE MOMENTS OF HAND HYGIENE

This approach recommends health-care workers to clean their hands



- Before touching a patient
- Before doing a procedure
- After doing a procedure
- After touching a patient
- After touching patient surroundings

SOCIAL DISTANCING

Avoid contact with someone who shows symptoms of possible COVID-19.

Avoid non-essential travel and use of public transport.

Avoid public places, crowd and large family get-togethers.

Keep in touch with friends and relatives using phone, internet, and social media.

Avoid routine visits to hospitals / Labs. For minor problems, contact hospital over phone or use helpline number if possible.

If you are regularly checking INR and adjusting blood thinning medicines, please contact the doctor over phone if possible and try and avoid a hospital visit as much as possible.

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RESPIRATORY HYGIENE / COUGH ETIQUETTE

Cough etiquette is designed to reduce the spread of respiratory illness to others.

- Cover your mouth and nose with a tissue when coughing or sneezing
- Use the nearest waste receptacle to dispose of the tissue after use
- Perform hand hygiene (e.g., hand washing with soap and water or alcohol-based hand rub) after having contact with respiratory secretions and contaminated objects/materials.
- Healthcare facilities should ensure the availability of materials for adhering to Respiratory Hygiene/Cough Etiquette in waiting areas for patients and visitors
- Provide conveniently located dispensers of alcohol-based hand rub. Where sinks are available, ensure that supplies for hand washing (i.e., soap, disposable towels) are consistently available

APPROPRIATE USE OF PERSONAL PROTECTIVE EQUIPMENT (PPE)

PPE should be used based on the risk of exposure; will vary according to the setting and type of personnel and activity. The overuse/misuse of PPE will have a further impact on supply shortages. All staff should be trained for proper use of PPE.

PPE components

1. Head Cap: In order to protect our hair from contamination.
2. Shoe cover
3. Gloves (Nitrile Gloves)
4. Gown
5. N-95 Mask
6. Goggles
7. Face shield

Guidelines for the use of mask

Procedure of wearing triple layer surgical mask

- Before putting on a mask, clean hands with alcohol-based hand rub or soap and water
- Unfold the pleats; make sure that they are facing down
- Place over nose, mouth and chin. Fit flexible nose piece over Nose Bridge.
- Secure with tie strings (upper string to be tied on top of head above the ears and lower string at the back of the neck.)
- Ensure there are no gaps on either side of the mask, adjust to fit.
- Avoid touching the mask while using it; if you do, clean your hands with alcohol- based hand rub or soap and water.
- Do not let the mask hanging from the neck
- Change the mask after six hours or as soon as they become wet. Replace the mask with a new one as soon as it is damp
- Disposable masks are never to be reused
- To remove the mask: remove it from behind (do not touch the front of mask); While removing the mask, great care must be taken not to touch the potentially infected

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outer surface of the mask. To remove mask, first untie the string below and then the string above and handle the mask using the upper string

- Disposal of used masks: Used mask should be considered as potentially infected medical waste. Discard the mask in a closed bin immediately after use. Clean hands with alcohol-based hand rub or soap and water.

Remember: Masks are effective only when used in combination with frequent hand hygiene with alcohol based hand rub or soap and water. Also use and dispose mask properly.

Procedure for wearing N-95 Respirator

- Wash your hands thoroughly before putting on and taking off the respirator
- Inspect the respirator for damage. If your respirator appears damaged, DO NOT USE IT. Replace it with a new one
- Do not allow facial hair, hair, jewelry, clothing, or anything else to prevent proper placement or come between your face and the respirator
- Position the respirator in your hands with the nose piece at your fingertips
- Cup the respirator in your hand allowing the headbands to hang below your hand. Hold the respirator under your chin with the nosepiece up
- The top strap (on single or double strap respirators) goes over and rests at the top back of your head. The bottom strap is positioned around the neck and below the ears. Do not crisscross straps

Leak Test

- Place both hands over the respirator, take a quick breath in to check whether the respirator seals tightly to the face
- Place both hands completely over the respirator and exhale. If you feel leakage, there is not a proper seal.
- If air leaks around the nose, readjust the nosepiece as described. If air leaks at the mask edges, re-adjust the straps along the sides of your head until a proper seal is achieved.

ARTICLES, STEPS AND SPECIAL INSTRUCTIONS FOR DONNING AND DOFFING

Donning area Requirements

- One chair/ stool
- Hand rub/ hand washing facility
- Articles:- cap, 3 layer mask, surgical gloves, face shield, PPE Kit(N-95 mask, goggles, shoe cover, nitrile gloves, coverall)
- Micropore / adhesive tape.
- Check list for donning.
- Mirror

Donning Steps

- Hand wash

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- Head Cap
- N-95 Mask
- Shoe cover
- Hand rub
- Nitrile Gloves (Inner gloves)
- Coverall
- Goggles
- 3 layer mask
- Face shield
- Outer Gloves (Surgical Gloves)

Special Instructions

- Hydrate well
- Eat well before donning
- Use wash room if needed before donning
- Hair should be tied up well
- Spectacles should be tied well before donning
- Avoid personal things like jewelry including wedding ring, watch, mobile phone, etc.
- Adjust PPE before going to patient side.
- Range of motion to be checked prior and do show yourself in the mirror or to a buddy before moving to the patient side.
- Minimize the touch in the patient care environment and other places.

Doffing Area Requirement

- Two chairs/ stool-one dirty chair and one clean chair
- Hand rub/ hand wash facility
- Extra gloves
- Check list for doffing
- Biomedical Waste Collection Containers (Red and Yellow bucket)
- Mirror

Doffing steps

- Hand rub----- Outer Gloves (Surgical Gloves)
- Hand rub----- Face shield
- Hand rub----- Goggles
- Hand rub----- 3 layer mask
- Hand rub----- Coverall
- Hand rub----- Shoe cover

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- Hand rub----- Inner gloves (Nitrile Gloves)
- Hand rub----- N 95 Mask
- Hand rub----- Head Cap
- Hand Wash

Special Instructions

- Do not make a hurry to doff
- Sit in the dirty chair if needed before doffing
- If you are not feeling well call for a buddy/assistant to help in doffing. Buddy must be in full PPE
- Hand rub should be used in between each step of doffing
- Do fold the gown inside out while removing and put it in the yellow bucket itself
- Sit in a clean chair to remove shoe cover if needed
- The removed PPE must not lie on the floor.
- Take a bath after the removal of PPE.
- Always use a foot operating sanitizer stand for taking the hand rub
- All the plastic waste and rubber waste items should discard in the red bucket and the others in the yellow bin

3. CLEANING AND DISINFECTION PROTOCOL

Routine environmental cleaning

Cleaning is essential prior to disinfection. Organic matter can inactivate many disinfectants. Cleaning removes organic and inorganic substances allowing the disinfectant to work. Removal of germs such as the virus that causes COVID-19 requires thorough cleaning followed by disinfection. The length of time that SARS-COV-2 (the cause of COVID-19) survives on inanimate surfaces will vary depending on factors such as the amount of contaminated body fluid – such as respiratory droplets – present and environmental temperature and humidity. In general, corona viruses are unlikely to survive for long time, once droplets produced by coughing or sneezing.

Cleaning agents and disinfectants

1. Freshly prepared 1% Sodium Hypochlorite can be used as a disinfectant for cleaning and disinfection
2. Biguanid Flache N: 5% for cleaning of all surface area like office room/ staff rooms, ICUs and Wards and also for toilets.
3. Alcohol (e.g. isopropyl 70% or ethyl alcohol 70%) can be used to wipe down surfaces where the use of bleach is not suitable, e.g. metals

Preparation Of 1% Hypochlorite Solution Requirements

- Utility Gloves
- Disposable Plastic Apron
- Goggles
- Mask

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- Bucket
- Container
- Bleaching Powder
- 30gm measuring cup

Steps

1. Don appropriate PPE
2. Take adequate amount of water in a bucket
3. Take sufficient quality of bleaching powder (30gm for 1 liter) in a container
4. Pour small quality of water and make it into a paste and transfer it to a bucket
5. Add more water to make it 1 percent bleach solution, appears as a milky white solution.
6. Wait for sedimentation.
7. Colorless odorless highly disinfectant 1% bleach solution is ready to use
8. Close the bucket of solution with the lid
9. Maximum time for prepared bleach is 6 hours

1% Bleaching Powder	Water
30gm	1L
300gm	10L
600gm	20L
1 kg/1000gm	33L

Cleaning Guidelines

Use a checklist to promote accountability for cleaning responsibilities

Instructions for Cleaning Staff

- Housekeeping staff should be trained regarding donning and doffing
- They must attired in suitable PPE (heavy duty/disposable gloves, disposable long-sleeved gowns, eye goggles or a face shield, and a N95 respirator, shoe cover), when handling and transporting used patient care equipment and while cleaning/disinfecting corona ward
- Disposable gloves should be removed and discarded if they become soiled or damaged, and a new pair worn
- Cleaning staff should be informed to avoid touching their face, especially their mouth, nose, and eyes when cleaning
- They should do hand hygiene before putting on and after removing gloves
- If there is visible contamination with respiratory secretions or other body fluid, the cleaners should wear a full length disposable gown in addition to the surgical mask, eye protection and gloves
- Housekeeping staff should wash their hands with soap and water immediately after removing the PPE, and when cleaning and disinfection work is completed
- Discard all used PPE in a double yellow -bagged biohazard bag, which should then be securely sealed and labelled

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- The staff should be aware of the symptoms, and should report to their occupational health service if they develop symptoms

General Instructions

The environment must be thoroughly cleaned by applying the following general principles.

- Avoid cleaning methods that produce mists or aerosols or disperse dust, for example dry sweeping (brooms, etc.), spraying or dusting. Brooms should never be used. Dry mopping using microfiber floor mops. Wash microfiber with detergent and dry well before next use
- Wash the mop under running water before doing wet mopping. Wet mopping of the walls and floors should be done in three shift with 1% Sodium hypochlorite. Prepare fresh disinfectant solution and change disinfectant solution more frequently, especially after cleaning heavily contaminated areas & managing blood spills and body fluids
- After cleaning, all equipment used for cleaning including mop head should be washed with soap and water; followed by decontamination with 1 %hypochlorite for 10 min and then dry it in sunlight. It should be dried thoroughly before reuse. Clean the buckets with detergent and warm water and keep them inverted for drying
- Blood spills should be treated with 1% sodium hypochlorite and allow 20 minutes contact time
- Waste segregation should be done according to the hospital waste management guidelines. Empty the waste and sharp disposal boxes when the containers are three-fourth full
- Housekeeping staff should wash their hands with soap and water immediately on leaving the room
- Thorough cleaning and disinfection of surface according to the cleaning protocol is more beneficial than fumigation

Frequency of cleaning of the surfaces:

- Frequently touched surfaces- Door handles, bedrails, tabletops, light switches, telephone. It must be cleaned 2nd hourly.
- Minimally touched surface-floors, ceilings, walls require routine cleaning that is in each shift.

Daily cleaning

- ICU door should be closed all time and clean the door handle with 1% Hypochlorite solution
- In the beginning of each shift, high touch areas to be cleaned by nursing assistant
- ICU bed rails should be cleaned with 1% Hypochlorite solution hourly
- Door handle, phone, fridge door, table, chair, stair rails, sink & tap are high touch areas
- Second hourly cleaning as per cleaning checklist for isolation areas
- Patient room, equipment, bed, mattress and including washroom must be cleaned in every shift
- Separate bucket and mop for cleaning each room. After cleaning, all equipment used for cleaning including mop head should be washed with soap and water; followed by

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decontamination with 1% hypochlorite 10 minute and then dry it in sunlight. It should be dried thoroughly before reuse. Clean the buckets with detergent and warm water and keep them inverted for drying

Terminal Cleaning

Terminal cleaning is a complete and enhanced cleaning procedure that decontaminates an area following discharge or transfer of a patient with an infectious/communicable disease, sometimes also referred to as an 'infectious clean'. Terminal cleaning requires both thorough cleaning and disinfection for environmental decontamination

- Do not spray or fog occupied or unoccupied rooms with disinfectant – potentially dangerous practice that has no proven benefits
- Cleaning should be followed by or combined with a disinfectant process
- Ensure room is prepared prior to cleaning; remove medical equipment and patient used items.
- Cleaning staff should be attired in suitable PPE (heavy duty/disposable gloves, disposable long-sleeved gowns, eye goggles or a face shield, and a N95 respirator, shoe cover).
- Change bed screens and curtains (including disposable curtains/screens) that are soiled or contaminated
- Damp dust all surfaces, furniture and fittings
- Clean windows, sills and frames
- Clean all surfaces of bed and mattress
- Mop floor with 1% hypochlorite solution. Wipe down all accessible surfaces of walls from top to bottom as well as blinds with 1% bleach solution
- Discard cleaning items made of cloth and absorbent materials and linen into double-bagged yellow bags and seal it properly
- Ensure no spillage occurs during handling and transit of bio-medical waste. Untreated bio-medical waste must not be stored >48 hrs
- Never carry soiled linen against body; place soiled linen in a leak-proof bag or bucket
- All other disposable PPE should be removed and discarded after cleaning activities are completed
- Hands should be washed with soap and water immediately after PPE is removed.
- Dishes and eating utensils used by a patient with known or suspected infection: No special precautions other than standard precautions such as hand hygiene and wearing gloves when handling patient trays, dishes and utensils

Area	Disinfectant	Contact time	Frequency
High touch surfaces	Hypochlorite 1%	10 min	2 hourly
Floor	Clean with detergent (soap & water)and then Hypochlorite 1%	10min	8th hourly
Wall, ceiling	Hypochlorite 1%	10min	Once daily

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Corridor	Hypochlorite 1%	10min	8th hourly
Linen	Hypochlorite 0.1%	30 min	As on when
Toilet	Clean with detergent (soap & water)and then Hypochlorite 1%		4th hourly
Non-critical equipment (stethoscope, BP cuff, thermometer etc)	Alcohol wipes		After each use

4. BIOMEDICAL WASTE MANAGEMENT FOR COVID-19

In order to deal with COVID-19 pandemic, State and Central Governments have initiated various steps, which include setting up of quarantine centers/camps, Isolation wards, sample collection centers and laboratories.These guidelines are based on current knowledge on COVID-19 and existing practices in management of infections waste generated in hospitals while treating viral and other contagious diseases like HIV, H1N1, etc

COVID-19 Isolation Ward:

- Healthcare Facilities having isolation wards for COVID-19 patients need to follow these steps to ensure safe handling and disposal of biomedical waste generated during treatment;
- Keep separate bins/bags/containers (yellow colour) in isolation wards and maintain proper segregation of waste as per BMWM Rules, 2016 as amended and Central Pollution Control Board (CPCB) guidelines for implementation of BMW Management Rules.
- As precaution double layered bags (using 2 bags) should be used for collection of waste from COVID-19 isolation wards so as to ensure adequate strength and prevent leaks;
- Collect and store biomedical waste separately prior to handing over the same to Common Biomedical Waste Treatment and Disposal facility (CBWTF). Use a dedicated collection bins labeled as "COVID-19" to store COVID-19 waste and keep separately in temporary storage room prior to handing over to CBWTF. Biomedical waste collected in such isolation wards can also be lifted directly from ward into CBWTF collection van
- In addition to mandatory labeling, bags/containers used for collecting biomedical waste from COVID-19 wards, should be labeled as "COVID-19 Waste". This marking would enable CBWTFs to identify the waste easily for priority treatment and disposal immediately upon the receipt
- Mixing of COVID-19 waste with the biomedical waste from other wards,

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general waste etc. should be avoided.

- General waste other than bio medical waste should be disposed as per Solid Waste Management (SWM) Rules, 2016 only after proper disinfection.
- Maintain separate record of waste generated from COVID-19 isolation wards. - Use dedicated trolleys and collection bins in COVID-19 isolation wards. A label "COVID-19 Waste" to be pasted on these items also
- The (inner and outer) surface of containers/bins/trolleys used for storage of COVID-19 waste should be disinfected with 1% sodium hypochlorite solution

Duties Of Common Biomedical Waste Treatment Facility (CBWTF):

- Report to SPCBs/PCCs about receiving of waste from COVID-19 isolation wards/quarantine camps/quarantined homes/COVID-19 testing centers
- Operator of CBWTF shall ensure regular sanitization of workers involved in handling and collection of biomedical waste
- Workers shall be provided with adequate PPEs including N95 respirators. Splash proof aprons/gowns, nitrile gloves, gum boots and safety goggles
- Use dedicated vehicle to collect COVID-19 ward waste. It is not necessary to place separate label on such vehicle
- Vehicle should be sanitized with 1% sodium hypochlorite or any appropriate chemical disinfectant after every trip
- COVID-19 waste should be disposed-off immediately with high priority upon receipt at facility
- In case it is required to treat and dispose more quantity of biomedical waste generated from COVID-19 treatment, CBWTFs may operate their facilities for extra hours, by giving information to SPCBs/PCCs
- Operator of CBWTF shall maintain separate record for collection, treatment and disposal of COVID-19 waste
- Do not allow any worker showing symptoms of illness to work at the facility. May provide adequate leave to such workers and by protecting their salary
- Food waste generated in Covid-19 Isolation area is disinfected with 2%hypochlorite solution wait 30mts disposed

Waste Disposal Timing

6am

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5. COVID-19 PROTOCOLS WHILE ADMITTING PATIENTS

COVID-19 Patient Admission Criteria

- Covid-19 positivity from PKDAS Hospital- Confirmation has to be done through RTPCR from Kiosk. Patient and bystanders will be informed by casualty doctor/nurse
- DNS informed and counseling regarding availability of rooms and wards given. Room rates and ward rates will be explained and if patient is willing for admission mode of payment will be discussed
- NEFT/RTGS/DEBIT CARD /CASH options discussed and advance payment to be made
- Account details into which money has to be transferred to be given.
- If patient is not willing for admission LAMA consent in affidavit form is taken from the patient with proper signature, name date and time and kept filled safely in casualty

1. Shifting of patient from the casualty to WARD/ROOM/ICU

- If the patient is able to walk:
  If the patient is coming in their own vehicle, they have to reach CFLTC through the way in front of the canteen
  If they have no vehicle, then they will be accompanied and carried by an attender in PPE from casualty to the CFLTC-WARDS/ROOMS.
- If the patient is unable to walk, then the patient is shifted through an ambulance and there to the lift in the general hospital side. This lift is fully dedicated only for transferring COVID-19 patients.
- If the patient condition is unstable /sick, then the patient is shifted through an ambulance and there to the lift in the general hospital side Also all the labour patients to be shifted in the same lift.

2. Receiving the patient from outside the hospital:

If the affected patient is from another hospital, then the patient is received from the academy side entrance through the academy gate.

Transportation

- If the transportation is through the ambulance, then the ambulance driver should wear the PPE (Coverall).
- Patient will be shifted to the lift with the help of the ambulance driver along with attender using a patient trolley/wheel chair.
- After each shifting, the lift has to be fumigated .Fumigation to be done by

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the OT staff.

- Security staff is assigned to ensure the safe transfer of the patient from the lift to the ward/room /ICU.
- To prevent ordinary people from accessing the floors, close the entrance to the ramps (level3&level6)
- The lift spare key , rooms in level & ramp 3&6 gate key properly labeled &to be given to the Nursing supervisors in NS office.

COVID 19 PATIENTS POSITIVE FROM OUTSIDE HOSPITAL

(1) Information received including patient phone number is collected and informed to DNS. He then telephonically discusses the available facilities in the hospital as well as the average cost of hospitalization.
(2) If RTPCR is not done then RTPCR should be done in PKDAS Hospital Lab.
(3) Covid-19 centre is telephonically informed about the patient and their details.
(4) Patient is received from the academy side entrance where the ambulance is told to come through academy gate.
(5) If they are ward patients attender donned with PPE Kit receives the patient and shifts the patient to Covid-19 centre at level 3.
(6) Room patients are received in level 6 through MCI lift or ramp as per the severity of patient s condition. Attender donned in PPE Kit will accompany the patient from ground floor through lift or ramp.
(7) The patient is received by the Covid-19 duty staff both at level 3 and level6.The patient is then accompanied in to the allotted wards or rooms.
(8) Covid 19 patients in labour may be shifted via MCI lift to the designated covid 19 labour room.
(9) Patients for surgery is received at level 3, prepared for surgery and the shifted to Covid19 OT at level 3.

COVID CENTRE AT LEVEL 3

- Total ward beds-Male-26
  Female ward-28
- General rooms with attached bathrooms, NO TV-4
- 2 Bedded Room-1(with common bathroom)
- 3 Bedded Room-1(with common bathroom)
- ICU -5 Bedded
- Operation theatre-1
- Labour Room-1

COVID ROOMS AT LEVEL 6

- Super deluxe rooms- 9
- Suit rooms- 4

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ADMISSION PROCEDURE

(1)After the patient comes to Covid-19 centre all admission details are given to the front office telephonically and IP/OP generated is entered in the case sheet. Patient identification sticker can be sent to the Covid-19 centre to stick on file.

(2)After admission the patient is provided with the Rooms or wards using disposable sheets and all facilities available are explained to the patient mainly.

(a) Pantry room

(b)TV with Remote

(c) Recreation room including Caroms, chess, Ludo

(d)Magazines /books

(e)Toilet and Bath room facilities.

(f)Washing machine for washing clothes

(g)Music system with speaker and Bluetooth

(3)Patient kit consisting of one towel (thorth),tooth paste , comb, hair oil, steel glass one dhoti for males & one maxi foe females.

(4)Doctor to be telephonically informed about patient status and instructions carried out as per order.

(5)Video calling if required may be arranged by the staff so that patient and doctor can communicate to each other.

(6)Video calling with Psychiatrist, if patient is stressed , anxious and wants to communicate his or her feelings Psychological counselling can be arranged at 3pm daily with the psychiatrist so that patients can be free to speak and daily mental status of patient can be assessed.

(7)Laboratory tests will be collected in sample bottles put zip lock pouch .this is kept in the vaccine carrier bag which is used for transporting specimens to lab. Attender standing outside will carry the specimens in the bag and back. All routine samples to be collected at one time in a day after morning rounds so that transportation can be minimized.

RADIOLOGY

Portable X-ray machine is available inside the covid19 centre. As per requirement the X-ray technician is telephonically called and X-ray done after covering the cassette with plastic sheet.PPE Kit donned and doffed properly by the technician. All X-rays required can be planned at one time 11am, except emergencies.

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LABOUR ROOM

When a Covid-19 patient in labour is admitted the labour staffs is well informed as information is received. Nursing staff, gynaecologist and paediatrician has to be available as per duty schedule of the day .Labour room staff to maintain record of all the items used in Labour room maintaining accurate account of all the items used separately for each patient.

OPERATION THEATRE

PPE KIT and disposable sheets to be indented and consumption shown as per case. All other OT items to be purchased by providing photo of the prescription to the concerned pharmacy .patient bills are collected and kept in patient file.

Waste disposal to be done strictly as per IMAGE s protocols as per poster put up in the Covid19 centre.

SAFF DUTY LIST

Every day staff duty list for Covid-19 centre should be prepared by the Covid19 help desk and displayed in group for all staffs information.

Staff duty will include daily duties of Doctors, Nursing staff, attender, housekeeping staff, call duties of X-RAY technicians, operation theatre staff, labour room staff and paediatrician on call.

COVID HELP DESK

Responsibilities

1. To have all the details of the patients admitted in Covid19 centre, which should be kept strictly confidential.
2. Liaison with staff inside covid19 centre for any requirements related to food, medicines and any other area.

(3)To maintain a record of all items that is used for covid19 patients, including billing sheet and for documents for insurance purpose. There should be accountability for all that has been spent on patient from admission to discharge.

(4)To communicate with bystanders daily and give feedback regarding patient status.

(5)To ensure that all staff working in covid19 centre get proper food and rest rooms and to ensure that their problems are looked into.

(6)Help desk will maintain duty of all staff posted and details of consultation done every day in a separate register.

GENERAL POINTS

- All doctors and staff should follow PPE donning and doffing protocols strictly Classes are being given regularly by the quality department in this regard.

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- Before donning all staff to have adequate water and empty bladder as per protocol.
- Using of hand sanitizers before and after touching patients to be strictly adhered to.
- Not to use gloved hands to touch face or rub nose etc.
- Only dry mopping to be done inside Covid19 centre.
- No wet mopping to be done and no sweeping also.
- In case of Covid-19 death, death protocols to be followed as per guidelines.
- Food will be demanded as per patient's requirement from dietician incharge of nutrition for Covid-19 patient.
- Food required for breakfast, lunch and dinner should be informed at least 3hrs prior by the allocated staff.
- Along with the food 2litre water bottles to be given to the patient.
- Additional water can be arranged as per requirement of the patient.

7. Covid-19 Dead body management

1. Scope of the document.

- There are currently over 100 laboratory confirmed cases and two deaths due to Novel Corona virus disease (COVID-19) in India. Being a new disease there is knowledge gap on how to dispose of dead body of a suspect or confirmed case of COVID-19.
- This guideline is based on the current epidemiological knowledge about the COVID-19. India is currently having travel related cases and few cases of local transmission. At this stage, all suspect /confirmed cases will be isolated in a health care facility .Hence the document is limited in scope to hospital deaths.

Key Facts.

- The main driver of transmission of COVID – 19 is through droplets there is unlikely to be an increased risk of COVID-19 infection from a dead body to health workers or family members who follow standard precautions while handling body.
- Only the lungs of COVID patients, if handled during an autopsy, can be infectious.

Standard Precautions to be followed by health care workers while handling dead bodies of COVID.

Standard infection prevention control practices should be followed at all times.

These include:

1. Hand hygiene.

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2. Use of personal protective equipment (e.g. water resistant apron, gloves, masks, eyewear).
3. Safe handling of sharps.
4. Disinfect bag housing dead body; instruments and devices used on the patient.
5. Disinfect linen. Clean and disinfect environmental surfaces.
6. Training in infection and prevention control practices.

All staff identified to handle dead bodies in the isolation area, mortuary, ambulance and those workers in the crematorium/burial ground should be trained in the infection prevention control practices.

Removal of the body from the isolation room / Area.

- The health worker attending to the dead body should perform hand hygiene, ensure proper use of PPE(water resistant apron , goggles, N95,mask ,gloves)
- All tubes, drains and catheters on the dead body should be removed.
- Any puncture holes or wounds (resulting from removal of catheter, drains tubes, or otherwise) should be disinfected with 1% hypochlorite and dressed with impermeable material.
- Apply caution while handling sharps such as intravenous catheters and other sharp devices. They should be disposed in to a sharps container.
- Plug oral, nasal orifices of the dead body to prevent leakage of body fluids.
- If the family of the patient wishes to view the body at the time of removal from the isolation room or area they may be allowed to do so with the application of standard precautions.
- Place the dead body in leak proof plastic bag. The exterior of the body bag can be decontaminated with 1% hypochlorite .The body bag can be wrapped with a mortuary sheet or sheet provided by the family members.
- The body will be either handed over to the relatives or taken to mortuary.
- All used/soiled linen should be handled with standard precautions, put in bio-hazard bag and the outer surface of the bag disinfect with hypochlorite solution.
- Used equipment should be autoclaved or decontaminated with disinfectant solutions in accordance with established infection prevention control practices.
- All medical waste must be handled and disposed of in accordance with Bio-medical waste management rules.
- The health staff who handled the body will remove personal protective equipment and will perform hygiene.
- Provide counseling to the family members and respect their sentiments.

5. Environmental cleaning and disinfection
   - All surfaces of the isolation area floors ,bed ,railings ,side tables ,IV stand ,etc should be wiped with 1% hypochlorite solution allow a contact time of 30mts and then allowed to air dry.

7. Handling of dead body in Mortuary.

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- Mortuary staff handling Covid-19 dead body should observe standard precautions.
- Dead bodies should be stored in cold chambers maintained at approximately 4degree Celsius.
- The mortuary must be kept clean. Environmental surfaces, instruments and transport trolleys should be properly disinfected with 1%Hypocholrite solution.
- After removing the body, the chamber door, handles and floor should be cleaned with sodium hypochlorite 1%solution.
- Embalming of dead body should not be allowed.

Transportation.

- The body secured in a body bag, exterior of which is decontaminated poses no additional risk to the staff transporting the dead body.
- The personal handling the body may follow standard precautions (surgical mask, gloves)
- The vehicle, after the transfer of the body to cremation/Burial staff, will be decontaminated with 1% Hypochlorite.

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Nehru College of Nursing is a unit of P.K Das Institute of Medical Science , a second entry level NABH accreditated in 2023-2025 and NABL accreditated Hospital . It is 665 bedded hospital. The hospital is enhanced with quality of health care services in excellence and follows infection control and patient safety practices by staffs and students rendering health care in hospital. The B.Sc Nursing students receive training from the hospital as they get exposure to various sections of the hospital, especially different ward settings and critical care areas. The students and staff follow personal protective equipments while doing procedures.

Infection Control And Patient Safety Session

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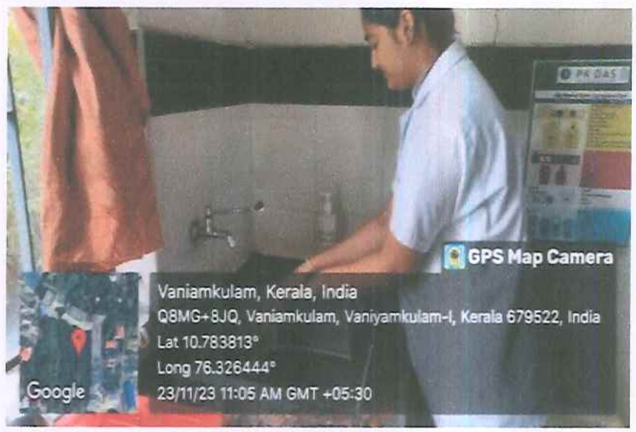

Handwashing technique practiced in surgical ward

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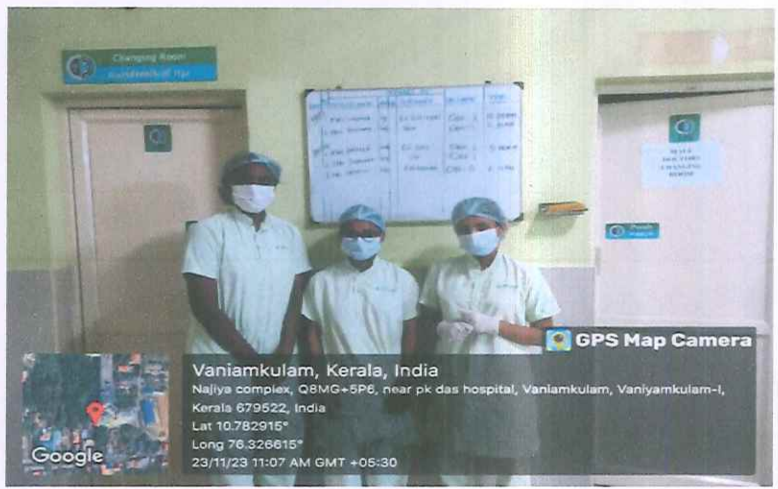
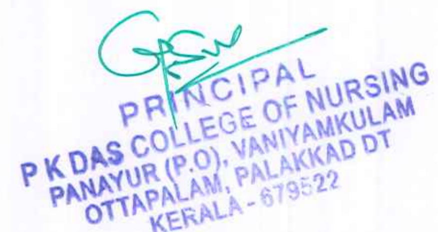


Students in Surgical ICU with Infection Control and Patient Safety Measures



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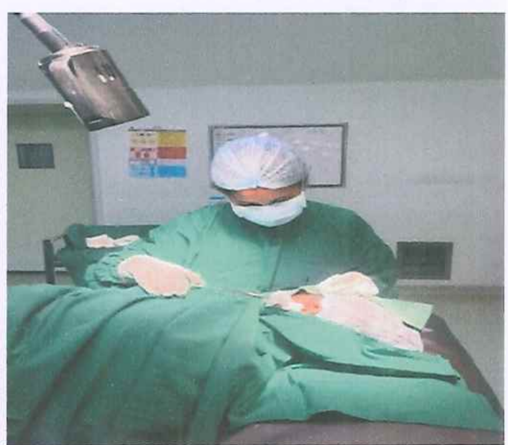

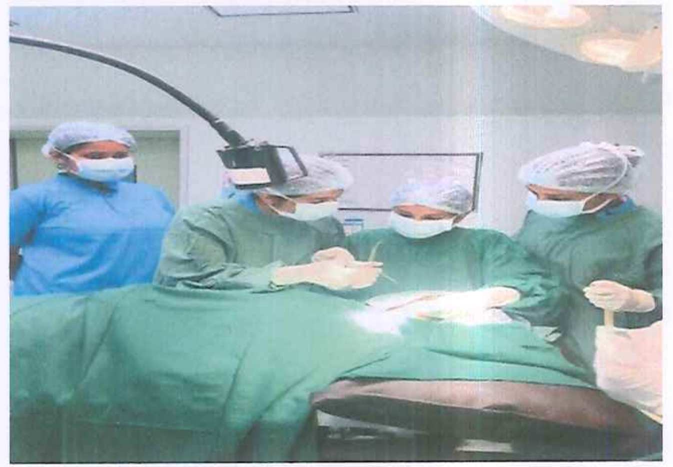

Students with Infection Control Measures in Surgical OT

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Training Attendance Sheet (STUDENTS)

Date: 02.08.21 Time: 10-12 pm Location: PKDIMS Hospital

Topic: SAFETY PRACTICES

SL.NO	Name of the student	Course/Year	ID Number	Signature
1	ABHIRAMI	I yr. B.Sc.Nsg 2020-2021	20201616	[signature]
2.	AJEESH KRISHNA.V	"	20201722	[signature]
3.	ALBY MARIYA MATHEW	"	20203964	[signature]
4.	ALEENA BINS	"	20203422	[signature]
5.	ALEENA JAIMON	"	20203950	[signature]
6.	AMALA ROSE	"	20202741	[signature]
7.	ANEENA ANTO	"	20203954	[signature]
8.	ANEESHA C.B	"	20202804	[signature]
9.	ANITTA JOY	"	20203421	[signature]
10.	ANITTA SARA SAJSEN	"	20202729	[signature]
11.	ANJANA C.R	"	20203952	[signature]
12	ANJANA T.S	"	20201975	[signature]
13	ANJANA UNNI	"	20204240	[signature]
14	ANN AUGUSTINE	"	20200855	[signature]
15	APARNA K	"	20202878	[signature]
16	ARDRA R	"	20203947	[signature]
17	ARIFA N.A	"	20202958	[signature]
18.	ARYA AJAYAN	"	20202875	[signature]
19.	ASHLINE BABU	"	20202957	DISCONTINUED
20	ASWATHI A.M	"	20204095	[signature]
21	ASWATHY N.V	"	20203966	[signature]

Name & Signature of Trainer: Reshma P.R. [signature]

PKDIMS/HRM 04/HR 28a Rev.00 16-02-2021

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Training Attendance Sheet (STUDENTS)

Date: 02.08.21 Time: 10-12 pm Location: P.K. Das Hospital

Topic: SAFETY PRACTICES

SL.NO	Name of the student	Course/Year	ID Number	Signature
22.	BILSSY BIJU	I yr BSc NSG 2020-21	20201759	
23.	DEVIKA S	"	20203958	
24.	DIVYA JOHNY	"	20204238	
25.	DIVYA K.K	"	20203951	
26.	FATHIMA SALAM	"	20202050	
27.	GOWRI NANDANA	"	20204235	
28.	HARITHA HARIKUMAR	"	20204329	
29.	JENSIYA SAMUEL	"	20203960	
30	JESNA JOHNSON	"	20204239	
31	JOSNA JOSEPH	"	20201315	
32	JOYCE JOY	"	20203091	
33	K.M PRANAVYA DAS	"	20204330	
34	LINYA C WILSON	"	20203955	
35	LIYA JOSE	"	20201119	
36	MIDHYA SARA THOMAS	"	20204097	
37	MOHAMMED THARIQUE	"	20202037	
38	MRUDULA	"	20204328	
39	NANDANA P	"	20204236	
40	NIDAL P V	"	20201976	
41	NIYA K BENNY	"	20201491	
42.	PADMAJA K	"	20203953	

Name & Signature of Trainer: Reshma P.R.

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Training Attendance Sheet (STUDENTS)

Date: 02.08.21 Time: 10-12 pm Location: P.K. DAS HOSPITAL

Topic: SAFETY PRACTICES

SL.NO	Name of the student	Course/Year	ID Number	Signature
43	RASNA K.P	IV B.Sc NSG 2020-21	20203959	Rasna
44	RESHMA M	"	20203951	[signature]
45	RIYA N.B	"	20201617	DISCONTINUED
46	SABITHA SIBI	"	20203956	[signature]
47	SANDRAMOL S	"	20203949	[signature]
48	SHABNAM	"	20202876	Shabnam
49	SHASIYA S	"	20204234	[signature]
50	SILPA M	"	20201615	[signature]
51	SNEHA S	"	20203967	[signature]
52	SONY MARIAM SAM	"	20201136	[signature]
53	SREELAKSHMI V.M	"	20204412	[signature]
54	SRUTHY A	"	20201619	[signature]
55	SURYA GAYATHRI K	"	20204098	[signature]
56	SURYA P.S	"	20203948	[signature]
57	SWETHA K	"	20201613	Swetha
58	THASLEEMA V.K	"	20204096	[signature]
59	VINITHA K.V	"	20202877	[signature]
60	VYSHNAVI S	"	20200741	[signature]

Name & Signature of Trainer: Reshma P.R. [signature]

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P K DAS Institute of Medical Sciences

Training Attendance Sheet (STUDENTS)

Date: 9.06.22 Time: 10:30 - 12:10 Location: PKDIMS. Hospital

Topic: Patient Safety Practices

SL.NO	Name of the student	Course/Year	ID Number	Signature
1.	AADIL RAYZ. I	I Sem	20215002	[signature]
2.	AARYA T.S.	I Sem	20213782	[signature]
3.	ABDUL RASHEED. A	I Sem	20215024	[signature]
4.	ABHIJITH. K	I Sem	20214984	[signature]
5	ABHINAYA. A	I Sem	20214940	[signature]
6.	ADIL MUHAMMED A.R	I Sem	2021	[signature]
7.	ADILA ROSHNI	I Sem	20212715	[signature]
8	ADITHYA. P.U	I Sem	20214944	[signature]
9.	AGAL SABU	I Sem	20214942	[signature]
10.	AISWARYA. P.	I Sem	20214886 ~~210060952~~	[signature]
11.	AISWARYA .S	I Sem	20214446	[signature]
12.	AISWARYA. V	I Sem	~~210060954~~ 20214947	[signature]
13	AKHILA M	I Sem	20215004	[signature]
14	ALEENA ANTONY	I Sem	20214948	[signature]
15	ALEENA JOMON	I Sem	20210156	[signature]
16	ALEESHA P. JOY	I Sem	20215006 ~~210060958~~	[signature]
17	ALENTA. M	I Sem	20214983	[signature]
18	ALISHA. ALEX	I Sem	20212445	[signature]
19.	AMAL SHEREEFA SUBIL	I Sem	2021 ~~4~~761	[signature]
20.	AMEGHA HARIDASAUNNI	I Sem	20215005	[signature]
21	ANAGHA. M M	I Sem	20214950	[signature]

Name & Signature of Trainer: BINOY P BENNY [signature]

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INSTITUTE OF MEDICAL SCIENCES Vaniamkulam Ottapalam Palakkad Dist. Kerala St. Pin - 679 522

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P K DAS Institute of Medical Sciences

Training Attendance Sheet (STUDENTS)

Date: 9-06-22 Time: 10:30 - 12:30 Location: PKDIMS Hospital

Topic: Patient Safety Practices

SL.NO	Name of the student	Course/Year	ID Number	Signature
22	ANGELA AGINAS ASHOK	I Sem	20211849	[signature]
23	ANISHA V.R	I Sem	20214958	[signature]
24	ANJANA K	I Sem	20211531	[signature]
25	ANJANA SAJEEVAN	I Sem	2021412	[signature]
26	ANJANA T	I Sem	20214982	[signature]
27	ANJUMOL M.S	I Sem	20214361	[signature]
28	ANOKKA JIJU	I Sem	20214598	[signature]
29	APARNA G. NAIR	I Sem	20214401	[signature]
30	APARNA K.L	I Sem	20215007	[signature]
31	ARDRA P. SHAJI	I Sem	20214663	[signature]
32	ARYA K.A	I Sem	20214969	[signature]
33	ARYANANDA AJAYAKUMAR	I Sem	20214945	[signature]
34	ASHITHA SHAJU	I Sem	20215016	[signature]
35	ASWATHI K	I Sem	20211855	[signature]
36	ASWATHI AJITH	I Sem	20214968	[signature]
37	ASWATHI S	I Sem	20215023	[signature]
38	ATHIRA PRAKASH	I Sem	20215008	[signature]
39	AVANTHIKA V	I Sem	20214938	[signature]
40	BESSY BABY	I Sem	20215022	[signature]
41	CHRISTEENA JUBY	I Sem	20214464	[signature]
42	CHRISTY SEETHAL SABU	I Sem	20214520	[signature]

Name & Signature of Trainer: BINOY P BENNY [signature]

P K DAS Institute of Medical Sciences

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Training Attendance Sheet (STUDENTS)

Date: 9.06.22 Time: 10.10 – 12.20 Location: PKDIMS Hospital

Topic: Patient Safety Practices

SL.NO	Name of the student	Course/Year	ID Number	Signature
43	FARZANA ASHARAF P.A	I Sem	20213136	Farzana Ashraf
44	GAURI PARVATHI ACHARYA	I Sem		
45	GOPIKA. N	I Sem	20213498	[signature]
46	GOPIKA. R.K	I Sem	20215018	Gopika
47	GOPIKA. T	I Sem	20214981	Gopika T
48	GOWARY NANDHANA. K.S	I Sem	20213852	Gowry Nandhana
49	HARSHA. K.M	I Sem	20214999	[signature]
50	IZABEL MARY FERIA	I Sem	20213413	Izabel Mary
51	JANET JOHNY. C	I Sem	20211670	Janet
52.	JISNA JINSON	I Sem	20214973	Jisna
53	JHONS. ALIAS	I Sem	20214949	Johns
54	JOSNA. K. GEORGE	I Sem	20212465	Josna
55	JOTHIKA JEEVAN. V	I Sem	20213935	Jothika
56	JYOTHIKA T. SHAJI	I Sem	20215021	Jyothika Shaji
57	KARTHIKA. P	I Sem	20215000	Karthika
58	KEVIN. LI VINCENT	I Sem	20214980	[signature]
59	KRISHNA PRIYA. P.A	I Sem	~~21006/001~~ 20214951	[signature]
60	LAVANYA SIVAN	I Sem	20215017	[signature]
61	LEKSHMY. S	I Sem	20215011	[signature]
62	M. KAILAS	I Sem	20212669	Kailas
63	MARIYA THERESA SINESH	I Sem	~~21006/006~~ 20213979	[signature]

Name & Signature of Trainer: Binoy P. Benny [signature]

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Training Attendance Sheet (STUDENTS)

Date: 9.06.23 Time: 10:30-12:30 Location: PKDIMS Hospital

Topic: Patient Safety Practices

SL.NO	Name of the student	Course/Year	ID Number	Signature
64	MARINA DANTY	I Sem	20211850	Marina
65	MARIYA DANTY	I Sem	20211854	Mariya
66	MEENAKSHI K SHIJU	I Sem	20214451	Meenakshi
67	MOHAMMED FAYAS	I Sem	20214979	[signature]
68	NAJIYA NASRUDEEN	I Sem	20214878	Najiya
69	NANDANA K	I Sem	20214865	[signature]
70	NAYANA JAYAMON THOP	I Sem	20214241	[signature]
71	NIRANJAL L. GOVIND	I Sem	20210852	[signature]
72	PRANAV PRAKASH	I Sem	20214992	[signature]
73	PRIYA SARA	I Sem	20214736	Priya
74	RAMSHIJA M.A	I Sem	20214978	[signature]
75	RESHMA DAVIS	I Sem	20210842	[signature]
76	ROBINSON GEORGE	I Sem	20214946	[signature]
77	SANDRA P.R	I Sem	20214977	Sandra
78	SANIKA S	I Sem	20214606	Sanika
79	SARANYA LAKSHMANAN	I Sem	20211857 ~~21061021~~	Saranya
80	SHIFANA P.K	I Sem	20215009	Shifana
81	SHILPA S NAIR	I Sem	20214962	[signature]
82	SIVALAYA SAGAR	I Sem		
83	SIYA BAJI	I Sem	20212308	Siya
84	SNEHA THOMAS	I Sem	2021897	Sneha

Name & Signature of Trainer: BINOY P BENNY [signature]

P K DAS Institute of Medical Sciences

Vaniamkulam, Ottapalam

Training Attendance Sheet (STUDENTS)

Date: 9.06.23 Time: 10.30 - 12.30 Location: PKDIMS Hospital

Topic: Patient Safety Practices

SL.NO	Name of the student	Course/Year	ID Number	Signature
85	SNEHA. K	I Sem	20214976	[signature]
86	SREEKUTTY. K.B	I Sem	20214943	[signature]
87	STEPHY. K. BIJU	I Sem	20211846	[signature]
88	SURYA T M	I Sem	20212137	[signature]
89	VINEETHA. V.P	I Sem	20214941	[signature]
90.	VISHNU PRIYA	I Sem	20214994	[signature]

Name & Signature of Trainer: BIJOY P BENNY [signature]

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Training Attendance Sheet (STUDENTS)

Date: 03.2.23 **Time:** 1.30-3.30P **Location:** PK Das Hospital

Topic: PATIENT SAFETY PRACTICES.

SL.NO	Name of the student	Course/Year	ID Number	Signature
1.	ABHAYA SURAN	I Sem	20225513	[signature]
2.	ABHINA. A.S	I Sem	20225516	[signature]
3.	AGRAJA.T.G	I Sem	20222717	[signature]
4.	AISWARYA RAMESH	I Sem	20225486	[signature]
5.	AKHIL SHANTY	I Sem	20224553	[signature]
6.	AKSHAYA.K	I Sem	20224837	[signature]
7.	AKSHAYA.T	I Sem	20225773	[signature]
8.	ALAN SHANTY	I Sem	20224552	[signature]
9.	ALEENA JOLLY	I Sem	20224859	[signature]
10.	ALEENA.T	I Sem	20224928	[signature]
11.	ALENA SANTIAGO	I Sem	20224791	[signature]
12.	ALIN ALEX	I Sem	20224333	[signature]
13.	ALMA ISMAIL	I Sem	20225247	[signature]
14.	AMRUTHA. LAL	I Sem	20224990	[signature]
15.	AMRUTHA. S.R	I Sem	20224888	[signature]
16.	AMRU.MOHAMMED.USMAN.M	I Sem	20225952	[signature]
17.	ANAGHA PAUL	I Sem	20224455	[signature]
18.	ANAGHA.T.RAJESH	I Sem	20220028	[signature]
19.	ANAGHA LAKSHMI.J	I Sem	20225515	[signature]
20.	ANJEL M.J	I Sem	20225013	[signature]
21.	ANJANA. A.P	I Sem	20224600	[signature]

Name & Signature of Trainer: BINOY P BENNY [signature]

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Training Attendance Sheet (STUDENTS)

Date: 03-02-23 Time: 1-30 A to 3.30 Location: PK DAS Hospital

Topic: Patient Safety Practices

SL.NO	Name of the student	Course/Year	ID Number	Signature
22.	ANN MARIYA SYBIL	I Sem	20224400	[signature]
23.	ANN MARY SEBY	I Sem	20224823	[signature]
24	ANSABA . A	I Sem	20225493	[signature]
25	ANUSREE . M	I Sem	20224722	[signature]
26	ARATHY . N.U	I Sem	20225512	[signature]
27	ARCHANA . M. ANIL kumar	I Sem	20225496	[signature]
28	ARJUN . M	I Sem	20225528	[signature]
29	ARUN . SHANTY	I Sem	20224554	[signature]
30.	ARYA . V. R	I Sem	20224352	[signature]
31	ASHIQA . M. JALEEL	I Sem	20224587	[signature]
32	ASWATHY . P	I Sem	20225522	[signature]
33.	ASWIN . M	I Sem	20224065	[signature]
34	ATHIRA . MURALI	I Sem	20224307	[signature]
35	BILNA . M.S	I Sem	20225534	[signature]
36	BINCY . YACOB	I Sem	20223632	[signature]
37	BLENITO BABY	I Sem	20224794	[signature]
38	DONA BIJU	I Sem	20224718	[signature]
39.	DONA VIJEES . B	I Sem	20225772	[signature]
40	FATHIMA . FARSANA . P.T	I Sem	20225536	[signature]
41	FATHIMATHU SHERAHA SHERIN	I Sem	20225539	[signature]
42	FIDA SHERIN	I Sem	20225667	[signature]

Name & Signature of Trainer: BINOY P BENNY [signature]

[signature]
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Training Attendance Sheet (STUDENTS)

Date: 03.02.23 Time: 1-3.0 At 12.30 Location: PKDIMS Hospital

Topic: Patient Safety Practices

SL.NO	Name of the student	Course/Year	ID Number	Signature
43	FIDHA	I Sem	20224821	[signature]
44	GEORGEENA THOMAS	I Sem	20225815	[signature]
45	HEERA. K	I Sem	20225827	[signature]
46	JEETHU JOY	I Sem	20224852	[signature]
47	JESMI JOY	I Sem	20225238	[signature]
48	JESNA. K. SOMI	I Sem	20224740	[signature]
49.	K. ABHIRAM	I Sem	20225769	[signature]
50	KRISHNAPRIYA. R	I Sem	20225537	Krishna priya
51	LAKSHMIPRIYA. M.D	I Sem	20225524	[signature]
52.	LAKSHMI SAHADEVAN	I Sem	20224432	[signature]
53.	MEGHA. NAIR	I Sem	20225491	[signature]
54	MERITTA ELDHO	I Sem	20224655	[signature]
55	MOHAMMED ANSHID. C	I Sem	20223643	[signature]
56.	MUBASHIRA. N	I Sem	20225520	[signature]
57	N. SHAJIN	I Sem	20225540	[signature]
58	NAHLA SAKEER. N	I Sem	20225511	[signature]
59	NAJLA. K	I Sem	20225514	[signature]
60	NANDHANA. K.	I Sem	20220328	[signature]
61.	NANDANA. K.T	I Sem	20225518	[signature]
62	NANDANA. T	I Sem	20225669	[signature]
63	NANDHANA. M.C	I Sem		

Name & Signature of Trainer: BIJOY P BINNY [signature]

Vaniamkulam Ottapalam Palakkad Dist. Kerala St. Pin - 679 522

PRINCIPAL
P K DAS COLLEGE OF NURSING
PANAYUR (P.O), VANIYAMKULAM
OTTAPALAM, PALAKKAD DT
KERALA - 679522

P K DAS Institute of Medical Sciences
Vaniamkulam, Ottapalam - 679 522

Training Attendance Sheet (STUDENTS)

Date: 01-02-21 Time: 1.30 am to 3.30 Location: PKDIMS Hospital

Topic: Patient safety Practices

SL.NO	Name of the student	Course/Year	ID Number	Signature
64.	NASMIN . K. A	I Sem	20224601	[signature]
65	NAYANA . P.P	I Sem	20224723	[signature]
66.	NAYANA . SEBASTIAN	I Sem	20224891	[signature]
67.	NIKHILA UNNI	I Sem	20224725	[signature]
68	NIMISHA . KURUVILLA	I Sem	20224466	[signature]
69	NANDHANA . M	I Sem	20225768	Nandhana.M
70	NIYAS AHMED K.K	I Sem	20225668	[signature]
71.	P. CHANDANA	I Sem	20224567	[signature]
72.	PAVITHRA . P.M	I Sem	20225490	[signature]
73.	PRASHEE RAJ. P.R	I Sem	20225535	[signature]
74.	REKHA REMESH. M	I Sem	20225488	[signature]
75	RENJU RAMESH M	I Sem	20225489	[signature]
76	RESHMA RAJ. M	I Sem	20224606	ReshmaRaj
77	RIFA ANVAR. K.K	I Sem	20225519	[signature]
78	RINISHA MAJEED V.T	I Sem	20225869	[signature]
79	SANDRA. GIREESH	I Sem	20225812	[signature]
80	SATHPRIYA . S	I Sem	20225470	[signature]
81	SHAHALA. N. V	I Sem	20225521	[signature]
82.	SNEHA. A.P	I Sem	20225499	[signature]
83.	SONY . S	I Sem	20224315	[signature]
84	SREELAKSHMI. K.S	I Sem	20224991	[signature]

Name & Signature of Trainer: BIJOY K BENNY [signature]

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Training Attendance Sheet (STUDENTS)

Date: 03-02-23 Time: 1.30 P to 3.30 P Location: PKDIMS Hospital

Topic: Patient Safety Practices

SL.NO	Name of the student	Course/Year	ID Number	Signature
85	SREENAND . C . K	I Sem	20225497	[signature]
86	SREYA . P	I Sem	20223099	[signature]
87	SWINET JOBY	I Sem	20224746	Swinet
88	SHAHIRA . A	I Sem	20225951	[signature]
89	SHEJALAKSHMI C.P	I Sem	20224824	[signature]
90.	VAISHNAV PRAKASH	I Sem	20223868	[signature]
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Name & Signature of Trainer: Reddy P Reddy [signature]

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