



Document Name: Infection Prevention & Control Policy Manual of DUHS

Document Number: DUHS / RO/ SOP / 22

## DOW UNIVERSITY OF HEALTH SCIENCES



### STANDARD OPERATING PROCEDURE

## Infection Prevention & Control Policy Manual of DUHS & Affiliated Hospitals (CLAUSE 1.1 OF ISO 9001:2008)

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### DISTRIBUTION LIST

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- Pro-Vice Chancellor(s)
- Registrar, DUHS
- Director QEC-DUHS
- Principal Dow Medical College
- Principal Dr. Ishrat UI Ebad Khan Institute of Oral Health Sciences
- Principal Dow International Dental College.
- Principal Dow Dental College.
- Medical Superintendent, Dow University Hospital
- Medical Superintendent Dr. Ruth K.M.Pfau, Civil Hospital, Karachi
- Head of Departments of Basic and Clinical Sciences of Dow University of Health Science
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### TERMS AND DEFINITIONS\*

TERMS	DEFINITION
Airborne transmission	Transmission of infectious agents by either airborne nuclei or particles of <5 mm in size.
Antimicrobial	A chemical agent that, on application to living tissue or by systemic administration, will selectively kill or prevent the growth of susceptible organisms. This definition includes antibacterial, antivirals, antiprotozoal, antifungals, antiseptics, and disinfectants.
Antisepsis	The destruction or inhibition of microorganisms on living tissues, having the effect of limiting or preventing the harmful results of infection.
Antiseptic	A chemical agent which, when applied to <i>living tissue</i> , will destroy or inhibit the reproduction of microorganisms.
Asepsis	The prevention of microbial contamination of living tissues or sterile materials by removal, exclusion, or destruction of microorganisms.
Aseptic technique	A technique in which the instruments, drapes, and the gloved hands of the healthcare worker are sterile when performing surgery or invasive procedures.
Contact	An exposed individual who might have been infected through transmission from another host or the environment.
Decontamination	The use of physical or chemical means to remove, inactivate, or destroy pathogenic microorganisms from a surface or item to the point where they are no longer capable of transmitting infectious particles and the surface or item is rendered safe for handling, use, or disposal. This term is used to cover cleaning, disinfection, and sterilization.
Disinfectant	A chemical agent which, under defined conditions, is capable of disinfection. A substance that is recommended by its manufacturer for application to an inanimate object to kill a range of microorganisms.
Droplet nuclei	Particles produced when aqueous droplets of a suitably small size are dispersed in air. Larger droplets expelled from the nasopharynx can only travel about 1 meter (~ 3 feet) at most before impaction by gravity. Small droplets or nuclei (after surface evaporation) can travel quite a large distance.
Endogenous infection	Microorganisms originating from the patient's own body which may cause infection in another body site.
Exogenous infection	Microorganisms originating from a source or reservoirs, which are transmitted to a person, i.e. contact, airborne, droplet, ingestion, inoculation, vertical, sexual, or vector-borne.
Exposure-prone procedures (EPPs)	They are defined where the worker's gloved hands may be in contact with sharp instruments, needle tips, or sharp tissues inside a patient's



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	open body cavity, wound, or confined anatomical space, where the hands or fingertips may not be completely visible at all times. However, other situations, such as pre- hospital trauma care, should be avoided by HCWs restricted from performing EPPs, as they could also result in the exposure of the patient's open tissues to the blood of the worker. The definition of EPPs given above embraces a wide range of procedures, in which there may be very different levels of risk of 'bleed- back' i.e. where injury to the HCW could result in the worker's blood contaminating the patient's open tissues. For further information, please refer to the Public Health England document which outlines three categories of EPPs with increasing risk of bleed- back (Public Health England, 2017).
Healthcare Associated Infections	They refer to infections associated with healthcare delivery in <i>any setting</i> (e.g. hospitals, long- term care, and ambulatory settings). This term reflects that some patients are going through various healthcare facilities and it is not always possible to establish, with certainty, when the primary source of infection was acquired by these patients. This term replaces both <i>Hospital- acquired infections</i> and <i>nosocomial infections</i> .
Index Case	The first case to be recognized in a series of transmissions of an infective agent in a host population.
Outbreak	An increased occurrence of an incident and/ or infection <i>above</i> the usual or expected frequency within a specific geographical area and over a defined period of time. In some cases, even an emergence of a novel or an unusual pathogen with a single case may constitute an outbreak (e.g. viral hemorrhagic fever).
Respirator	Special type of closely fitted face covers with the capacity to filter particles to protect the wearer against inhaling infectious droplet nuclei, e.g. tuberculosis. The N95 respirator has a filter efficiency level of 95% or more against particulate aerosols free of oil when tested against 0.3 µm particles. The 'N' denotes that the mask is not resistant to oil; the '95' refers to a 95% filter efficiency. The FFP2 respirator has a filter efficiency level of 94% or more against 0.4 µm particles and is tested against both an oil and a non- oil aerosol.
Seroconversion	The development of antibodies not previously present, resulting from a primary infection.
Sharps	Any objects capable of inflicting penetrating injury, including needles, scalpel blades, wires, trochors, auto lancets, stitch cutters, etc.
Surveillance	Systematic collection, analysis, and interpretation of data on specific events (infections) and disease, followed by dissemination of that information to those who can improve the outcomes.

\* National Infection Prevention & Control guidelines, Pakistan, 2019 (ahead of printing).




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### LIST OF ABBREVIATIONS

- ABHR: Alcohol Based Hand Rub (sanitizer)
- AIIR: Airborne Infection Isolation Room
- AIDS: Acquired Immunodeficiency Syndrome
- AMR: Antimicrobial Resistance
- BBF: Blood and Body Fluid
- CCHFV: Crimean-Congo Hemorrhagic Fever Virus
- CRE: Carbapenem Resistance Enterobacteriaceae
- HCP: Health Care Professionals
- ICC: Infection Control Committee
- IPC: Infection Prevention & Control
- ICN: Infection Control Nurse
- OPD: Out Patient Department
- PPE: Personal Protective Equipment
- PEP: Post Exposure Prophylaxis
- SACP: Sindh AIDS Control Programme
- SARS-Cov: Severe Acute Respiratory Syndrome Corona virus.
- SPs: Standard Precautions
- WHO: World Health Organization



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## **Hand Hygiene Policy**

### **1. Definition of Hand Hygiene:**

Hand Hygiene is a general term that applies to hand washing with soap and water, hand rub with sanitizer, or surgical hand antisepsis.

### **2. Purpose:**

The aim of this policy is to provide students, faculty and other healthcare professionals, including hospital administrators and college administrators with a thorough guideline on infection control and hand hygiene in healthcare, with specific recommendations for improving practices and reducing the transmission of pathogenic microorganisms to patients, employees, visitors and other healthcare workers, including students of Dow Medical College, Dow Dental College at Dr. Ruth K. M. Pfau, Civil Hospital (Karachi), OPD of Dow International Dental College, Dow Dental College and Dow University Hospital attached with Dr. Ishrat Ul Ibad Khan Institute of Oral Health Sciences. Also, attached with Dow Dental College are the medical and surgical wards of Shaheed Mohtarma Benazir Bhutto Trauma Center, Karachi (SMBBTC).

### **3. Responsibility:**

- 3.1 Principal is responsible to disseminate the policy to each student of Dow Medical College and Dow Dental College, Dr. Ishrat Ul Ebad Khan Institute of Oral Health Sciences, and Dow International Dental College, as per their orientation procedure and before they enter into any healthcare facility, or affiliated hospital of DUHS.
- 3.2 Head of each ward/unit in the healthcare facility or affiliated hospital/ center is responsible to implement this policy.
- 3.3 Hospital Medical Superintendent / Medical Director is responsible for the availability of sink with clean water, liquid soap, paper towel, hand sanitizer and wall mounted hand hygiene posters.
- 3.4 Infection control team will be responsible for monitoring, audit and quarterly data presentation.

### **4. Policy:**

- 4.1 Hand hygiene is a critical component for patients, visitors and employees safety. Hand hygiene is well researched and uncontroversial, and has been found to be the single most effective practice for



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preventing healthcare associated infection. Contaminated hands have been shown to be an important route of transmission of infection.

4.2 Sinks with clean water, liquid soap and paper towel should be easily accessible in all clinical units.

4.3 Alcohol based hand rubs (ABHRs) should be available at nursing counters, at the entrance of male wards, female wards, HDU, ICU and will be wall mounted between two to four beds in arms reach location.

#### 4.4 Indications of Hand Washing with Soap and Water:

Wash hands with soap and water:

- a) Hands are visibly dirty/soiled with blood, body fluids and secretions
- b) After exposure to patient infected with spore forming organism such as *Clostridium Difficile*.
- c) When there is an infectious diarrhea outbreak in your unit / hospital
- d) Before eating.
- e) After using the washroom facilities/ toilet.

4.5 General Principles of Hand Washing: Wet your hands with clean water, apply small amount of liquid soap and rub for 10 seconds to cover all surfaces then rinse with clean water. Dry hands with paper towel, close faucet with paper towel and discard in dust bin with foot operated lid. Avoid hot water as repeated exposure may cause dermatitis.





4.6 Hand Washing Technique: As demonstrated below.

### Hand Hygiene Technique with Soap and Water

**0** 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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4.7 Hand hygiene with alcohol based hand rub (hand disinfectant):

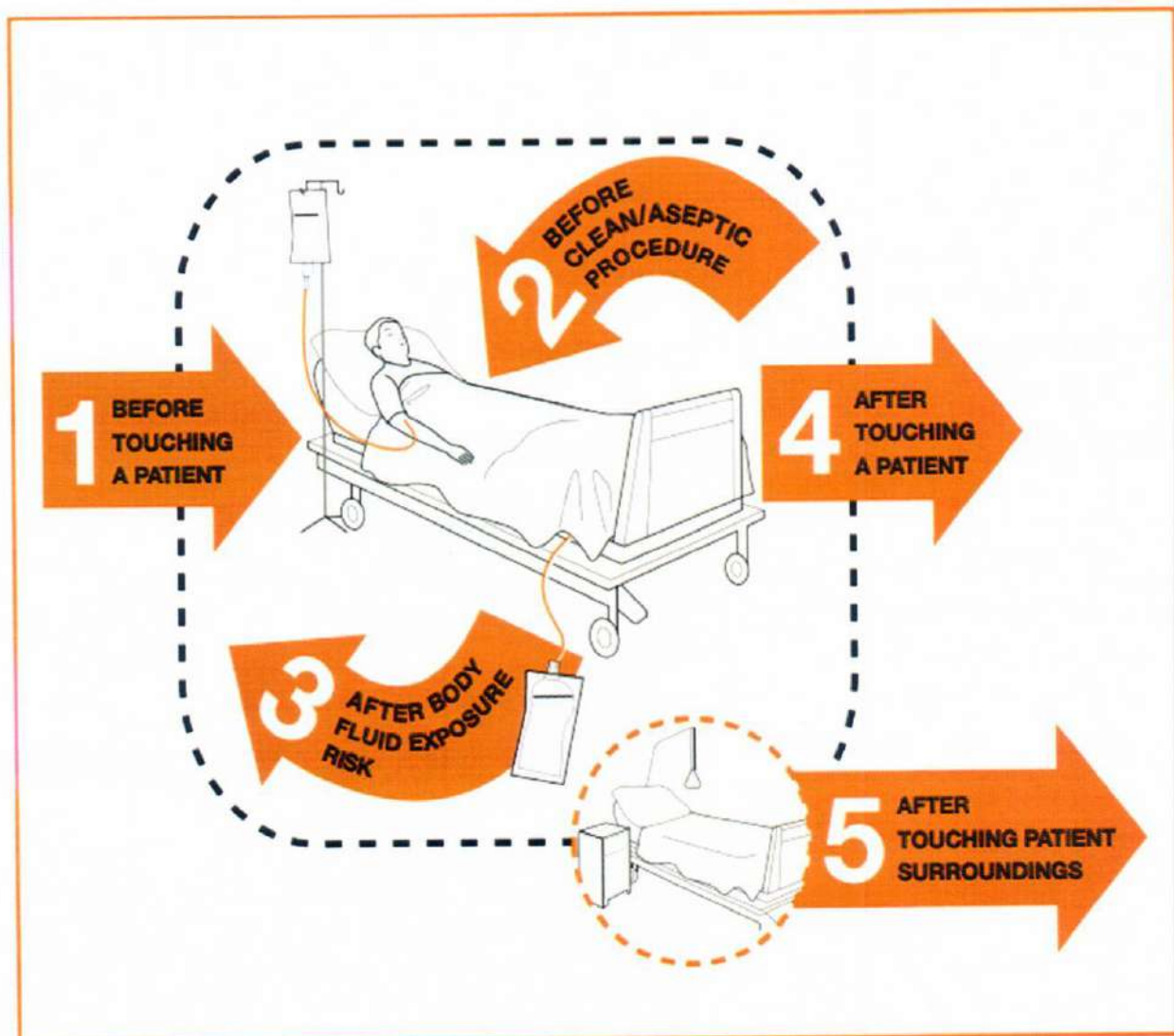
Hand disinfectant should be used for hand hygiene in following situations.

- a) Before and after contact with patient (e.g., taking pulse or blood pressure etc).
- b) Before donning sterile glove
- c) Before inserting invasive devices
- d) After removing gloves.
- e) After contact with objects and equipment in the patient's immediate vicinity or within the patient care unit.
- f) Between procedures (when moving from a contaminated body site to a clean body site during patient care).





4.8 World Health Organization (WHO) My Five moments for Hand Hygiene:





#### 4.9 Technique of Hand Hygiene:

### Hand Hygiene Technique with Alcohol-Based Formulation

**⌚** Duration of the entire procedure: 20-30 seconds

**1a**



Apply a palmful of the product in a cupped hand, covering all surfaces;

**1b**



**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**



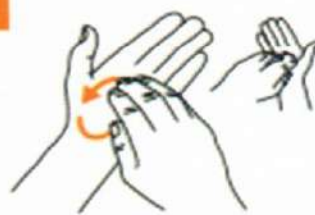
Backs of fingers to opposing palms with fingers interlocked;

**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.



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#### 5. Education and Training of employees/students (Undergraduate and Postgraduate trainees):

- 5.1 All health care workers (Nurses, Paramedical Staff, and Doctors) will attend education and training session of IPC at the time of induction, competency maintenance training yearly.
- 5.2 Continuing education via bed site teaching by ICNs, sharing of audit reports and wall mounted charts within the facility.

#### 6. Monitoring and Adherence:

- 6.1 Hand Hygiene audit will be conducted on a quarterly basis by Infection Control Team (Infection Control Nurses and Infection Control monitors from all departments).
- 6.2 Infection control nurses will conduct daily clinical rounds in different departments of the hospital.
- 6.3 Non-compliance with hand hygiene policy will be communicated to the head of department with identity of employee involved, for the purpose of corrective action.
- 6.4 Feedback from staff will be gathered through a survey in case of poor compliance.

#### 7. Other Aspects of Hand Hygiene:

- 7.1 Keep nails short less than ¼ inch, do not wear artificial nails and avoid nail polish
- 7.2 Wear gloves when contact with blood or other potentially infectious materials, mucous membrane, and non-intact skin is expected.
- 7.3 Remove gloves after caring for a patient and perform hand hygiene. Use new pair of gloves for each patient. (Do not wear the same pair of gloves for the care of more than one patient; do not wash gloves between uses with different patients).

#### 8. References:

1. H. Jannet, Hand Hygiene; APIC TEXT of Infection Control and Epidemiology, Chapter 27: 7<sup>th</sup> Edition.
2. Hand Hygiene Technical Reference Manual: WHO 2009.



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## Standard Precautions Policy (SPs)

### 9. Definition:

Minimum set of interventions required to prevent transmission of microorganisms in the healthcare facility. These precautions are based on the premise that any patient can be potentially infectious, and it is not possible to test all patients for all possible infectious pathogens.

### 10. Purpose:

The purpose of the standard precaution policy is to prevent transmission of known and unknown pathogens in the healthcare facility, so as to protect healthcare workers, patients and the community.

### 11. Responsibility:

- 11.1 Each unit/ward head of department is responsible to implement this policy.
- 11.2 Hospital Medical Superintendent (MS) or Medical Director is responsible to provide adequate and consistent supply of PPE and human resources to guarantee implementation of these policies.

### 12. Policy of Standard Precautions:

12.1 Standard precautions (SPs) constitute Hand hygiene, respiratory hygiene and cough etiquette, appropriate use of PPE, safe work and injection practices and environmental cleaning.

12.1.1. SPs are the first step to break the cycle of pathogens transmission in healthcare facility. These should be applied to ALL patients, ALL the time whether patients are known to be infected or uninfected.

12.1.2. **Hand Hygiene – see detailed policy**

12.1.3. **Appropriate use of PPE – see Transmission based precautions policy**

#### 12.1.4. Personal Protective Equipment (PPE):

12.1.4.1. Used to protect healthcare workers and patient from infections

12.1.4.2. Selection of PPE depends on the type of infection and anticipated level of exposure

12.1.4.3. **Gloves:** clean gloves should be available in adequate amount. They should be used when anticipated contact with blood or body fluid is expected. Polyethylene (transparent plastic) gloves should not be used.

#### 12.1.5. Masks:





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- I. Surgical Mask: wear when caring for patients with droplet infections or during sterile procedures like surgery, lumbar puncture and insertion of CVP lines.
- II. N-95 Mask: wear while caring for patients with airborne infections like pulmonary tuberculosis, measles, chickenpox or Ebola virus hemorrhagic fever.
- III. Goggles for face shield: wear when anticipated splashes with blood or body fluids is expected.
- IV. Gowns: Disposal gowns should be worn when caring for patients with MRSA, VRE or multi-drug resistant bacteria. Fluid resistant gowns when expected splashes/sprays with blood and body fluids (BBF).
- V. Change of shoes or shoe covers are not recommended in ICUs, HDUs or Nursery. While changing shoes hands get contaminated and HCWs can transmit environmental bacteria to their patients.

#### **12.1.6. Respiratory hygiene and cough etiquette:**

1. To limit the spread of infectious pathogens from persons with cough, rhinorrhea and increased respiratory symptoms.
2. Nose and mouth should be covered with tissue paper or piece of cloth, dispose of in dust bin and perform hand hygiene. If tissue paper or piece of cloth is not available, cover your nose and mouth with your arm. Do not put hands on nose and mouth while coughing or sneezing, as hands get contaminated and risk of transmission increases if hand hygiene not performed.
3. Education of healthcare workers by ICNs, patients and visitors for respiratory illness via posters displaying prevention signs at waiting areas and OPD entrances.
4. Easy availability of surgical masks, tissue papers and hand disinfectants at OPD counters.
5. HCP with respiratory symptoms should avoid direct patient contact and wear surgical mask.

#### **12.2 Safe Injection practices:**

1. Essential to ensure safety of healthcare workers and patients.
2. Always use a sterile syringe, packing should be opened immediately prior to use.
3. Syringe should be single use, syringe and needle should be disposed of in a puncture proof sharp box.

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4. Never re-cap, bend or cut the needle. If re-capping is necessary use single hand (scoop technique).
5. Never throw needle or other sharps into dustbin.
6. Single dose vials should be used whenever feasible.

### 13. Environmental Cleaning policy:

#### 13.1.1. General Principles of Environmental Cleaning:

- 13.1.1.1. Clean environment in the healthcare facility is necessary to provide effective healthcare delivery and to decrease hospital acquired infections (HAI). Hospital premises including corridors and waiting areas should be cleaned twice a day and as per need.
- 13.1.1.2. Trash bins with foot operated lid covers should be available in sufficient quantity and should be emptied when filled, they should be rinsed with detergent water after use.
- 13.1.1.3. Cleaning staff will be trained at the time of induction and trained yearly.
- 13.1.1.4. Low risk areas (corridors, waiting areas) cleaning:
  1. Remove the trash with soft broom or wiper; then wet mop with detergent solution.
  2. Two bucket system is recommended for optimal cleaning.
  3. Should be done at least twice daily.
- 13.1.1.5. High risk areas (HDU, ICU, OR and laboratory, In-patient wards) cleaning:
  4. Do not use soft broom, use dry mop, followed by cleaning with wet mop with detergent solution, then disinfection with chlorine solution (1 Haz-Tablet in 1 liter water will give 1:1000 ppm concentration).
  5. Clean these areas at least twice per day and additionally as per need.
  6. Curtains: if made of cloth material should be washed after each patient discharge. If made of plastic or parachute material wipe with alcohol daily and change monthly.
  7. Hospital toilets: clean with detergent using plastic brush at least three times per day and as per need. Supervisor should monitor and document cleaning daily.
  8. Construction and renovation: Inform infection control department prior to construction & renovation. Clinical areas should be separated with physical barriers to prevent dust and mold exposure of patients and health care workers.





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9. Water: Clean water should be provided for hand hygiene, hemodialysis or surgical scrub. Reverse osmosis (RO) plant or chlorination of water tanks can be utilized to provide clean water in the hospital.

13.1.1.6. Spill Management: Manage exposure to spillage of blood or body fluids poses risk of infection to exposed persons.

**13.1.1.7. Steps of Spill Management:**

1. Spill should be dealt with immediately by trained staff.
2. Trained staff should block the area for other passer bys until disinfection and clean-up process is complete.
3. Gather all necessary equipment to deal with the spillage. Ideally a "Spill Kit" should be readily available.
4. Personal protective equipment should be utilized by spilled staff, such as disposable latex gloves are essential, goggles, masks/visor, apron or gown should also be worn if there is a risk of splashing to eyes, mouth and/or body depending on the size of spill.
5. Cover the spillage with paper towels or an adsorbent material such as newspaper. Cotton is very expensive, and it should be kept in mind that the cotton crop requires large amounts of water, a precious resource, for growth, so cotton should be used sparingly.
6. Gently, avoiding splashing, pour bleach solution (10 Haz-tablets to 1 liter of water to make 1:10,000 ppm chlorine concentration) onto all contaminated areas of the surfaces. Let the bleach solution remain on the contaminated area for 10 minutes.
7. Use a scoop to collect the material if there is any danger of sharps injury.
8. Wipe up the spill and place in the correct plastic garbage bag, which should be red bag for infectious waste. The waste receptacle should be close on hand for doing this immediately and safely. Never leave material behind on any other surface.
9. All remaining items used should also be disposed of into the correct garbage bag.
10. Personal protective equipment worn should then be removed and disposed of into the same bag.
11. Wash area with detergent and water.
12. Thoroughly wash hands with soap and water.



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#### 14. Monitoring and adherence:

Infection control department will monitor implementation of policy and present this data quarterly in the Infection Control Committee (ICC) meeting.

#### 15. Education and Training:

All employees at the time of induction will be educated for standard precautions and annual training will be conducted to maintain competency.

#### 16. References:

1. T. Wiksten, Standard Precautions; APIC TEXT of Infection Control and Epidemiology, Chapter 28: 7<sup>th</sup> Edition.
2. Siegel JD, Rhinehart E, Jackson M, et al, Healthcare Infection Control Practices Advisory Committee; Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings, June 2007.



Figure 1: Steps of spill management



Figure 2: Home-made spill kit





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### Transmission-Based Precautions (Isolation Precautions)

#### 17. Definition:

Use of personal protective equipment (PPE) and single patient room during care of the patient constitutes isolation precautions. This type of care is also called barrier nursing. Isolation precautions include contact precautions, droplet precautions, airborne precautions and protective environment.

#### 18. Purpose:

To prevent spread of highly transmissible, multi-drug resistant or epidemiologically important pathogens, isolation precautions are recommended.

#### 19. Responsibility:

- 19.1 Each unit/ward head of department is responsible to implement this policy.
- 19.2 Hospital medical superintendent or medical director is responsible to provide adequate supply of PPE
- 19.3 Infection control department will monitor implementation of policy, gather data of multi-drug resistant or reportable pathogens and present quarterly in ICC meeting.

#### 20. Policy of Transmission Based Precautions.

- 20.1 Single or combination of contact, droplet and airborne precautions can be applied depending on the mode of spread of pathogen. Details of each precaution are given below:
- 20.2 **Contact Precautions:**
  1. To prevent transmission of pathogens via direct or indirect contact with patient or patient's environment.
  2. Contact precautions should be applied for following infections/conditions: methicillin resistant staphylococcus aureus (MRSA), vancomycin resistant enterococcus (VRE), multi-drug resistant organisms (MDROs) gram negative bacteria such as klebsiella, acinetobacter and pseudomonas etc, clostridium difficile infection and any patient with rash of unknown etiology or draining wounds and profuse diarrhea.
  3. Patient placement: ideally single patient room but can cohort patients (share the same room/cubicle) with same disease or pathogen, if single room not available.
  4. PPE: perform hand hygiene. Wear clean disposable gloves and gown upon entry into patient room or patient zone. After leaving patient area dispose of gloves and gown. Hand hygiene should be done before and after glove use.
  5. Patient Transport: potentially infectious body fluids should be covered and receiving department should be informed beforehand to be prepared for handling the patient. Ideally there should be two transporters. One





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transporter should be primarily responsible for patient handling, if needed, during transportation, and should be wearing clean gloves and gown. However, this transporter must not touch elevator buttons, door handles, and monitors, with his gloved hands. This should be performed, if necessary, by second transporter.

6. Environmental Measures: high touch surfaces like door knobs, bed railing, I/V stands, infusion pumps etc should be disinfected daily by nurse or nurse assistant. Use of chlorine solution with 1 tablet in 1 liter of water for dilution is recommended for most surfaces. However, monitor screens, ventilators, and other equipment are not generally compatible with bleach solution and a disinfectant agent recommended by the manufacturer should be used.
7. Discontinuation of Contact Precautions: generally contact precautions are discontinued when signs and symptoms of disease are resolved. For multi-drug resistant gram negative bacteria, MRSA, VRE and C.Difficile precautions should be continued throughout the duration of stay in hospital as these patients remain colonized and still can transfer these bacteria to non-infected patients.

### 20.3 Droplet Precautions:

1. For pathogens which spread by large droplets while coughing, sneezing or talking. Diseases transmitted by droplet route include Influenza, B. pertussis, bacterial meningitis due to *Neisseria meningitidis* and Crimean-Congo hemorrhagic fever virus (CCHFV). In general, patients with respiratory syndrome should be placed on droplet precautions while investigations are pending.
2. Patient Placement: Single patient room is preferred or patients with same disease/pathogen can be placed in same room (cohorting). Patients must be spatially separated by at least 6 feet and privacy curtains should be drawn.
3. Patient transport: Notify the receiving department, patient should wear surgical mask. Transporter does not need to wear the mask if the patient is wearing mask.
4. Environmental cleaning: Daily disinfection of high touch surfaces with chlorine solution. Cleaners should wear surgical mask if within 6 feet of the patient.
5. Discontinuation of droplet precautions: When signs and symptoms are resolved.

### 20.4 Airborne Precautions:

1. These precautions are used to prevent spread of pathogens that are transmitted by air flow. These organisms remain suspended in air and travel long distances due to their small size <5 microns.



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2. Following infections can transmit via airborne route; pulmonary and laryngeal TB, measles, chickenpox, disseminated herpes zoster, avian influenza, small pox and severe acute respiratory syndrome (SARS) coronavirus as well as MERS coronavirus.
3. Patient placement: Ideally patient should be in single room with negative pressure and 6-12 air exchanges via high efficiency particulate air (HEPA) filter. Air should be exhausted outside. Keep the door shut
4. Note: In facilities where airborne infection isolation room (AIIR) is not available, keep the patient in single room with door closed, place patient so that window is behind the patient, open the window and keep the pedestal fan at the foot of the patient with air flow towards the window. Window should open in the environment where traffic of people is low.
5. PPE: Wear appropriately fitted, N-95 mask before entering patient room, this mask can be re-used till it fits well and laces are not loose. Healthcare professionals (HCP) that are known to be immune to or previously infected with measles or chickenpox don't need to wear N-95 mask.
6. Patient transport: limit patient transport when only necessary, patient should wear surgical mask and transporter does not need to wear mask. Inform receiving department for appropriate arrangements.
7. Environmental measures: routine cleaning of high touch surfaces are as per standard recommendations, cleaner should wear N-95 mask. After patient discharge room should remain empty for at least one hour to allow complete air exchange.

### **21. Monitoring and Adherence:**

Infection control team will monitor the appropriate use of PPE.

### **22. Education and Training:**

Employees and students will be educated for appropriate use of PPE at the time of induction or before clinical postings and yearly training for competency maintenance.

### **23. References:**

1. C. Berends, Isolation Precautions (Transmission-Based Precautions); APIC TEXT of Infection Control and Epidemiology, Chapter 29: 7<sup>th</sup> Edition.
2. Siegel JD, Rhinehart E, Jackson M, et al, Healthcare Infection Control Practices Advisory Committee; Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings, June 2007.





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## Hospital Waste Management policy

### 24. Definition:

The process of waste minimization, segregation, collection, transport, storage and disposal is called hospital waste management. Hospital waste is a potential reservoir of pathogenic microorganisms and requires appropriate and safe handling

### 25. Purpose:

To prevent the transmission of pathogens in healthcare workers, patients and community by disposal of hospital waste as per national and international guidelines.

### 26. Responsibility:

- 26.1 Hospital medical superintendent/medical director or his/her representative is primarily responsible to supervise and monitor waste disposal and to ensure that staffing and supplies of cleaning agents are maintained at all times.
- 26.2 Each unit/ward head of department is responsible to implement this policy.
- 26.3 Each unit/ward head nurse is responsible to ensure that policy is being implemented

### 27. Policy of Hospital Waste Management

#### 27.1 General principles

27.1.1. Ensure janitorial staff safety.

27.1.2. Segregate infectious, non-infectious waste and sharps at site of production. It is the responsibility of person who produces waste items, regardless of his/her position in the hospital.

27.1.3. If waste item classification is uncertain, as a safety measure it should be disposed of as an infectious waste.

27.1.4. Waste containers should be labeled with details of medical area, date and time of closure of container, and name of the labeling person.

27.1.5. Transport waste in a dedicated trolley.

27.1.6. Store waste in specified areas with no access of rodents, rats, cats or mosquitos.

27.1.7. Put sharps in sharps containers





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## 27.2 Protection of Janitorial Staff

- 27.2.1. They all must be vaccinated against Hepatitis B.
- 27.2.2. They must be provided training in methods of cleaning, disinfection and waste handling.
- 27.2.3. They must be provided training to protect themselves from infectious agents.
- 27.2.4. They must receive training in the principles of waste segregation and management.
- 27.2.5. They must be provided clean uniforms of cotton material, at least 03 every 6 months with facility for laundering.

## 27.3 Waste Segregation

### 27.3.1. Red Bags Lining Containers for Infectious Waste:

- 27.3.1.1. Human tissues, Blood bags and all blood products, Soiled bandages, gauze, Urinary catheter tubing and bag, IV tubing, Surgical drains and bags, NGT, ET tube, Used IV and arterial catheters and Diapers.
- 27.3.1.2. In all clinical areas, all waste bins must be lined with red bags for the disposal of waste since all waste in clinical areas will be considered infectious waste.
- 27.3.1.3. Red bags must be sealed when  $\frac{3}{4}$  full.
- 27.3.1.4. These bags should then be transferred to a dedicated container/trolley, marked as Infectious Waste in Red writing, which should transport the waste to incinerator area. This should be done every shift.
- 27.3.1.5. Incinerator will operate four times per day and if waste exceeds capacity, then number of cycles can be increased. The resulting incinerated ash will be land filled. Log of waste incinerated should be maintained.

### 27.3.2. Black Bags Lining Containers for Non-Infectious Waste:

- 27.3.2.1. Plastic drips, Paper and packaging, Foods, fruits and vegetables, Juice and Food Boxes, Injectable, Glass bottles (but not broken glass), Office material of paper/pens.
- 27.3.2.2. These black bags should then be placed in large containers/trolleys, marked in black as Non-Infectious waste. These containers should be transported to a designated storage area for pick up.



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### 27.3.3. Yellow Container:

- 27.3.3.1. Radioactive waste, cytotoxic waste, and outdated materials should be sealed in yellow containers.
- 27.3.3.2. Pharmaceutical waste such as drugs, vaccines, bottles should all be sent in closed containers to pharmacy from the clinical units where they are logged and sealed in yellow containers.
- 27.3.3.3. Chemical waste such as mercury, cadmium, reagents used in laboratories, chemicals used in experimental work should also be sealed in yellow containers.
- 27.3.3.4. These boxes will not be placed in all clinical areas but will be in the designated areas only where such waste is generated such as radiology and pharmacy.
- 27.3.3.5. There should be a system whereby all yellow box contents should be returned to supplier for further treatment.

### 27.3.4. Sharp Box or Danger Box:

- 27.3.4.1. Needles, Scalpels, Knives, Blades, Broken Glass must be disposed in Danger Box.
- 27.3.4.2. All sharps should be thrown in puncture proof sharp container.
- 27.3.4.3. These containers should not be over filled.
- 27.3.4.4. They should be transported and incinerated when 3/4th full.
- 27.3.4.5. Don't cut or break the needles. Don't re-cap the needles. Don't pass sharps to others.

Non-infectious waste will be given to Karachi Municipal Corporation (KMC) for appropriate disposal.

Infectious waste will be sent for incineration / steam sterilization at Civil Hospital Karachi.


**28. Monitoring and Adherence:** Infection control department will monitor implementation of policy and present data quarterly in ICC meeting.

**29. Education and Training:** Employees will be educated by infection control team regarding hospital waste disposal and injection safety at the time of induction and annual training will be ensured to maintain competency.

### **30. References:**

1. Safe management of wastes from health-care activities; WHO: 2<sup>nd</sup> edition, 2014
2. Sindh Hospital Waste Management Rules, 2014.



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## Needle Stick Injury (NSI) Policy

### 31. Purpose of Needle Stick Injury Policy:

To provide needle stick injury prevention and management policy for employees, patients and visitors of Dow Medical College, Dow Dental College, Dow International Dental College, Dr. Ishrat Ul Ebad Khan Institute of Oral Health Sciences, along with attached affiliated hospitals of Dr. Ruth K M Pfau, Civil Hospital Karachi and Dow University Hospital.

### 32. Responsibility:

- 1.1.1. Head of each ward/unit is responsible to implement this policy.
- 1.1.2. Hospital Medical Superintendent is responsible to ensure the availability of hepatitis B vaccine and hepatitis b immunoglobulin (if required) to the employees of their hospitals and make sure the vaccination of nursing students from CHK nursing school and other affiliated schools students coming at CHK

### 33. Policy for Needle Stick Injury:

#### 33.1 First Aid (Immediately at location where exposure occurred):

- 33.1.1. Inform your team leader, In charge nurse or admin RMO.
- 33.1.2. Contaminated Intact Skin: Wash the area with soap and water.
- 33.1.3. Contaminated Eyes: Gently rinse with eyes open with Saline or clean water.
- 33.1.4. Contaminated Mouth: Spit out any fluid. Rinse the mouth and spit out again.

#### 33.2 Management of Health Care Worker(HCW)/ Patient at the DMC or CHK:

- 33.2.1. After the First Aid, victim of NSI should get OPD slip in the morning and inform the infection control nurse / infectious diseases doctor or in the evening and night should go to the Emergency Department and report injury to the senior doctor on duty.

#### 33.3 Emergency Doctor should follow the protocol below:

- Register patient and document in detail the location, time, type and risk level of exposure.
- Order baseline HIV, Hepatitis B Surface antigen (if not vaccinated), Hepatitis C antibody, ALT (SGPT) of NSI victim.
- Order HBV surface antibody titer of NSI victim if he/she is vaccinated for hepatitis B but does not know the immune status.



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- Obtain source patient's HBV, HCV and HIV status. If not tested / not known previously order HBsAg, Anti HCV and HIV antibody for source patient, if possible.
- Assess risk of transmission of infection to exposed person and initiate treatment accordingly.

#### 33.3.1. Risk of HIV transmission:

- If the source patient is known to be HIV positive or is high risk such as an injecting drug user, then exposed person should be given counseling and offered Post Exposure Prophylaxis (PEP).
- PEP is with antiretroviral drugs that should be given within 1-2 hours and up to a maximum of 72 hours (3 days) following the exposure. The earlier PEP is commenced, the more effective it is. Give 5 day supply and schedule follow up with SACP.

##### 33.3.1.1. Before giving PEP:

- Make sure patient is not pregnant (get pregnancy test if in child bearing age) to give PEP accordingly.
- If prescribing PEP obtain baseline CBC, renal and hepatic panel, repeat at 2 weeks and 4 weeks.
- Check patients are not on drugs that cause QT prolongation if prescribing Lopinavir/Ritonavir.

##### 33.3.1.2. Counsel the Patient that:

- Only 1 in 300-400 needle-stick injuries will transmit HIV (0.3%).
- However, best to take PEP for HIV if injury has been judged to be high risk for HIV.
- PEP is for 4 weeks only.
- PEP can cause side effects but they are not major. Report side effects to SACP.
- Do not miss any doses of PEP. However, if not tolerating PEP, report to SACP.
- Avoid pregnancy and practice safe sex for 3 months from exposure.
- Follow up is required within 5 days with the Sindh AIDS Control Program office in Civil Hospital, next to cardiac OPD, if PEP given, in order to receive remaining supply of ART to complete 4 weeks.
- HIV retesting will be performed at 6 weeks, 12 weeks and 6 months, whether PEP given or not.

##### 33.3.1.3. Refer to the infectious diseases consultant if special situations such as:

- Pregnancy
- Renal impairment
- Source patient is known to have received antiretroviral therapy.





33.3.1.4. Risk of HBV transmission:

- Risk of transmission of HBV is higher than HCV and HIV, susceptible HCW have the 23-62% chance of HBV transmission after single NSI from HBV positive source.
- Emergency Room doctor should follow Hepatitis B Exposure Prophylaxis Protocol as in Table below:

Exposed Person Status	Exposure Source Status		
	Hepatitis B Surface Antigen Positive	Hepatitis B Surface Antigen Negative	Status unknown, source not available
Never vaccinated for HBV	Give Hepatitis B Immunoglobulin (HBIG) 0.06ml/kg IM.	Initiate HBV Vaccination (Dose at 0, 1 and 6 months).	For occupational HCW Exposure: Give Hepatitis B Immunoglobulin (HBIG) 0.06ml/kg IM.
	Initiate HBV Vaccination at different site (Dose at 0, 1 and 6 months).		Initiate HBV Vaccination at different site (Dose at 0, 1 and 6 months).
			For Non-occupational exposure: Hepatitis B vaccine only (Dose at 0, 1 and 6 months).
Vaccinated for HBV (irrespective of how long ago)	Order HB antibodies on exposed person. If titer >10 IU/ml, then no treatment required. If titer <10 IU/ml,	No treatment required.	Order HB antibodies on exposed person. If titer >10 IU/ml, then no treatment required. If titer <10 IU/ml,



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	give HBIG + initiate HBV vaccination.		initiate HBV vaccination.
History of Hepatitis B infection, whether acute or chronic.	No treatment required.	No treatment required.	No treatment required.

- Inform HCW to schedule completion of vaccination series at OPD #8 of Civil Hospital which is open from Mondays to Saturdays between 8:00 a.m. to 1p.m.
- Vaccination card with documentation of completion of Hepatitis B vaccination should be submitted to Human Resources Department / AMS general office.
- 1-2 months after Hepatitis B vaccination, HB Surface antibody titers should be checked. Documentation of antibody titers, if >10 IU/ml, should be submitted to Human Resources/AMS general office as a proof of immunity to HBV.
- Repeat Hepatitis B Surface Antigen at 2 months, then 6 months.

33.3.1.5. Risk of HCV Transmission:

- There is no recommended post exposure prophylaxis for HCV exposure.
- Risk of transmission is low with NSI, 1.8% (0-7%)
- If source patient is known HCV positive or source was unknown then:
- Perform HCV antibody at baseline, at 2 months and at 4-6 months after exposure.
- Perform HCV antibody, ALT (SGPT) and HCV RNA PCR at 6 weeks if early diagnosis is desired.

34. Education and Training of employees/students (undergraduate and postgraduate):

- All health care workers (Nurses, Paramedical Staff, and Doctors) will attend education and training session for the NSI prevention and management at the time of induction and yearly certification.
- Continuing education via bed site teaching by ICNs, sharing of audit reports and wall mounted charts within the facility.

35. **Monitoring and adherence:** NSI data will be kept by the ICNs and will be shared with concerned departments every three monthly.

36. **References:**

1. Sanford antimicrobials guidelines; 2019
2. WHO best practices for injections and related procedures toolkit; March 2010.





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### **Operation Room (OR) Policy**

37. **Purpose:** To prevent infection transmission in surgical patients, doctors and other Healthcare workers (HCWs). Applicable to all nursing staff, doctors, and paramedical staff of Dow Medical College, Dow Dental College, Dow International Dental College and Dr. Ishrat Ul Ebad Khan Institute of Oral Health Sciences, and affiliated hospitals.

#### 37.1 **Guidelines for HCWs:**

##### 37.1.1. **Dress Code in Operating Theatres (OT):**

- All workers will change into freshly laundered uniforms when entering into OT premises.
- Wear well-fitting caps, completely covering the hair.
- Staff having beard must cover it completely by special beard mask.
- Remove street shoes and wear OT shoes.
- Wear masks, covering the nose and mouth both upon entering into the OT.
- OT scrub suits, OT slippers, cover gowns are restricted outside the OT and will be strictly monitored by management.
- A high standard of personal hygiene should be maintained by all working staff in the OT. Refer to Dress Code policy for further information.
- Street shoes and clothes are allowed up to the changing rooms and OT reception area only.
- HCWs/attendants of patients can only visit Recovery room with freshly laundered gown / uniforms and OT Shoes.

##### 37.1.2. **Environmental Safety:**

- Regular cleaning and filter replacement of air conditioning ducts should be done as per maintenance plan i.e. once in a month is mandatory. Records should be maintained with HVAC department.
- Microbiological analysis when commissioning, construction and renovation of old / new OT and if any suspicion of association of OT in an outbreak situation.
- Prompt transportation of all used surgical instruments to CSSD in assigned trolleys.
- Identified infectious/Dirty cases should be taken at the end of the list if possible.
- Specimens for pathological examination must be sealed in appropriate containers, labeled and sent to the laboratory or handed over to the patient attendant along with the requisition slip with detailed history and name, designation of requesting surgeon.



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- Movement of staff in and out during case should be as limited as possible.
- Shaving increases post-operative infection risk and should not be done, use of trimmers is preferred.

### **37.1.3. Waste Management and OR Cleaning Protocols:**

- After each case, OT table and trolleys used for any purpose should be cleaned first before second procedure.
- Open side of wound need to be protected by a sterile barrier during radiology procedure.
- Eatables are strictly prohibited in Operation theaters.
- Morning first case will be starting with no dusting as it will spread dust particle that can be harmful for patients.
- All waste should be removed from Operation Theatre including used linen before next case.
- Liquid waste should be discarded on time in designated main holes and basins where washing is not performed by HCWs.
- Equipment and floor should be free of blood and body fluids all the time.
- At the end of the day, terminal cleaning will be done with detergent and disinfectants.
- Fortnightly cleaning and disinfection of floor and walls by housekeeping staff is mandatory.

### **37.1.4. Medications:**

- All medications should be labeled in the OT

### **37.1.5. Disinfection protocols:**

- Indicated precautions should be taken while handling equipment.
- Standard precautions should be practiced for all patients regardless of their infectious status.
- All staff assisting during the operation must be oriented with proper scrubbing, gowning and aseptic techniques as per medical guidelines.
- Instrument packs must be checked and care must be taken to avoid contaminating the sterile instruments.
- Personal surgical equipment are not allowed, if permitted under consideration, should be submitted to Operation Theatre management to send CSSD department a prior to use.
- For cleaning, disinfection and sterilization please see detailed policy.
- All the respiratory equipment must be clean and disinfected between each patient and will be changed on each patient.





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### 37.1.6. Dress Code Policy:

1. Policy statement: All staff in OT must be in OT dress at all times while in operating room, to minimize infection transmission to the patients.
2. Applicable to: all HCWs, faculty, students and other authorized personnel within the OT or in the recovery room.

### 37.1.7. Regulations:

- HCWs will ensure high level of personal cleanliness; male staff must shave daily before coming on duty. If beard is worn, must be enclosed with mask.
- OT staff will wear scrub suits all times within the restricted / semi restricted area of operation theatre.
- HCWs will wear clean operating room slippers at all times within the restricted / semi restricted area. If operating room slippers / shoes get contaminated with spillage of blood / body fluids, they must be washed after the case.
- OT staff will wear clean cap at all times within the restricted areas.
- HCWs will completely cover the nose and mouth and beard with a mask in following conditions:
  - When sterile instruments are being opened.
  - During surgery
- OT staff will dispose of used mask:
  - When it gets contaminated.
  - At the end of the day.
- Female OT staff may wear the following items in the operating room:
  - Ear studs and nose studs
  - A watch
  - A ring
  - A chain (must be inside the scrub shirt)

### **NOTE: Watches and rings should be removed prior to scrubbing**

- Wearing ID card is mandatory for all OT staff.
- All HCWs nails must be clean, short, well-trimmed and free from nail varnish.
- OT staff will wear over shoes / street shoes and will cover the scrub suit with a clean gown in following situations:



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- Leaving OR to transfer the patient
- Attending crash call in another area.
- Over shoes can be worn over the street shoes if OT slippers are not available.
- Over shoes cannot be worn as inner shoes but it can be worn over OT slippers if there is threat of blood & body fluid spill.
- Recovery Room staff can leave cap and mask while in recovery room.

### **38. Guest Relations in OR, Recovery Room and Surgical Day Care OT:**

38.1 Policy statement: To build trusting relationship with patients and their attendants and ensure that they have understood the information and instructions given to them.

38.2 Applicable to all Nursing staff in the premises.

### **39. Regulations:**

39.1 Nursing staff will greet all patients politely and will introduce themselves at their first encounter.

39.2 Nursing staff will wear ID cards so they can be easily identified by patients and their attendants.

39.3 Nursing staff will call all patients by name.

39.4 It is mandatory for nursing staff to use simple and clear language while providing information / instruction to patients and their relatives.

39.5 Nursing staff will explore patient's knowledge regarding the surgical procedure.

39.6 Recovery room nursing staff will inform the family while shifting the patient from recovery room to the unit/ ward.

39.7 Proper announcement will be made at time of patient shift from recovery room to ward.

39.8 In case of prolonged waiting time in the holding area i.e. more than one hour, announcement will be done to inform patient/family.

39.9 Nursing staff will provide the following information to patient and relatives at the time of arrival of patient in Operating Room.

- Estimated waiting time in the holding area.
- Estimated time duration of surgery.





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39.10 **Guest Relations in OR, Recovery Room and Surgical Day Care OT:** Purpose is to provide a comfortable environment and effective, efficient, reliable and safe operational services to users, employees and patients/visitors.

39.11 **Scope:**

- 39.11.1. Utilities
- 39.11.2. Fumigation and Pest Control
- 39.11.3. Hazardous solid waste handling/transport and Incineration
- 39.11.4. Transport operations
- 39.11.5. Photocopying Services
- 39.11.6. Power generation

39.12 **Responsibility:**

- Electric department is ultimately responsible for effective, safe, reliable and prompt operation of services under its scope.
- Electric department is responsible for the utilities and power plant operations.
- Housekeeping department is responsible for timely Fumigation and Pest control services.
- Housekeeping and Electric department are responsible for the hazardous solid waste transport and Incineration respectively.
- IT Department is responsible for internal software (HMIS), PC management in OTs and photocopying services.

39.13 **Application: Utilities**

The following utilities system is under the scope of administrative division:

- Electrical Distribution System
- Emergency Power System
- Vertical and Horizontal Transport (elevators)
- Air Conditioning Systems
- Plumbing and Water Delivery Systems
- Boilers and Steam Delivery Systems
- Medical Gas Distribution
- Medical and Surgical Vacuum and Air Delivery Systems



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- Sewage Removal Systems
- Power Generation
- The Utility Systems Management Program is designed to assure operational reliability, optimum utilization, reduce potential hazards, thus promoting a safe, controlled and comfortable environment for patients, staff and visitors.
- Maintenance of utility systems is carried out as per the asset maintenance policy to ensure optimum and safe operations.

#### 39.14 **Fumigation and Pest Control Services**

- On call fumigation and pest control services will be provided to ensure that the building and grounds including patient care areas are free from rodents, bugs and insects (crawling and flying).

#### 39.15 **Hazardous Solid Waste Handling**

- Housekeeping department carries out hazardous solid waste handling and transportation from generation point to incineration area as per their department procedures. These activities are carried out in line with the institutional waste disposal plan.

#### 39.16 **HMIS, PCs and Photocopying**

- Smooth day to day operations, attendance management, filling patient demographics and proformas and easy accessibility, prompt and cost effective photocopying and copy printing services are provided to employees, visitors and doctors as per the departmental procedure.

### **40. Policy of Safe Transfer Of Post-Operative Patients To Recovery Room**

- 40.1 Policy statement: OT staff is responsible for the safe transfer of all post-operative patients from OT table to recovery room.
- 40.2 Applicable to: All nursing staff of OT complex.

#### **41. Regulations:**

- 41.1 The circulating nursing staff will ensure that the anesthetist has given the order for transfer.





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- 41.2 Nursing staff will ensure that Recovery stretcher and OR table are locked before transferring the patient.
- 41.3 The circulating nursing staff will ensure that all monitory equipment has been turned off and detached from patient before shifting.
- 41.4 The circulating nursing staff will ensure that anesthetists standing at the head and one person on each side of the patient.
- 41.5 The circulating nursing staff will ensure that the patient's head is extended to facilitate open airway.
- 41.6 Prior to transfer of patient from OT table to recovery room stretcher, nursing staff will assess patient for following:
- Level of consciousness
  - Open airway
  - Ability to breath and cough
  - Color of skin
  - Purposeful movement, i.e. movements to command.
- 41.7 **Documentation:**
- The circulating nursing staff will ensure that the OT "out" time and recovery "in" time are documented on the OT form.
  - The recovery nurse will document following in the nursing notes:
    - Date and time patient received from OR
    - Check and record the vital signs upon receiving the patient.
    - Respiratory status of the patient
    - Level of consciousness

42. **Pre-Op Check In Operating Room:**

- 42.1 Policy statement: To check all patients thoroughly for appropriate preparation and complete records before being taken into the assigned operating room.
- 42.2 Applicable to: OT scheduler, OT coordinator and OT staff are responsible for taking over of patients at the counter for pre-op checks.

43. **Regulations:**

- Ensure correct identification of patient by checking patient's record, ID band against OT list. Ask the



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patient's name and further details.

- Consent form will be checked for signature of consenting person, procedure to be done and date.
- Ensure that all record forms are present and complete e.g. important reports and record, confidential file and Bedside folder.
- Patient's file will be checked for the name of surgeon and crosschecked against OT list.
- Nursing staff ensures that the patient is NPO since 6 hours prior to the surgery.
- Ensure that patients entering operating theater room are appropriately dressed, with hair covered by a cap or other adequate covering.
- Ensure that the nail polish, prosthesis, physical aids (dentures, contact lens) and under garments are removed.
- Ensure that the information regarding allergies and infection conditions if any, are recorded on patient's file.
- Ensure that the patient's belongings are removed and handed over to their attendants.
- Assigned OT nursing staff will record all discrepancies on Pre-op checklist, OT checklist and OT coordinator will report it to the in charge nurse of the unit.

#### **44. Traffic Control in Operating Room (OR)**

1. Policy statement: Control and identification of persons entering in OR suite is essential for patients' confidentiality and for prevention of Infection Control.
2. Applicable to: All surgeons, anesthetists & OR staff.

#### **45. Regulations:**

- 45.1 Approved visitor control policy should be followed by all personnel.
- 45.2 Make sure that no books, bags are carried in operating rooms.
- 45.3 Ensure that doors of operating rooms should be closed while surgery is in progress.
- 45.4 Ascertain that while local anesthesia case is in progress the traffic is restricted and signage of "Restricted Entry" or "Patient is awake" is visible on the door.
- 45.5 Make sure that movement of personnel in and out of the OR is kept minimum while surgery is in progress which include total 11 personnel as follows:
  - SURGEON TEAM: (04)





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- Surgeon (01), Resident (01) & Medical student (02).

➤ ANESTHESIA TEAM: (03)

- Anesthetist (01), Anesthesia Technician (01) & Medical student(01)

➤ OR STAFF: (04)

- Scrub nurse/technician (01), circulators (02) & nursing student(01)

#### **46. Utilization, Maintenance and Storage of Operating Theatre Equipment and Instruments**

##### 46.1 Policy statement:

- a. All safety measures will be employed when utilizing, maintaining and storing OT equipment and instruments.
- b. All equipment and instruments selected for use will meet the performance and safety criteria established by the practice setting.
- c. Bio-medical engineering staff will be responsible for the initial in-service instruction and planned preventive maintenance of OT equipment and instruments.
- d. All operating room and surgical day care staff will be accountable for the safe handling and care of OT equipment and instruments.
- e. CSSD staff will be responsible for sterile equipment accessories and instrument checking prior to sterilization.
- f. Applicable to: All OT & CSSD Staff

##### 46.2 **Regulations: Utilization**

- 46.2.1. All equipment and instruments must be used according to the manufacturer's written instructions.
- 46.2.2. Staff should demonstrate competency while using all equipment and instruments in the practice setting.
- 46.2.3. All equipment and instruments must be used in a manner that reduces the potential for injury to the patient and the user, as well as damage to the equipment.
- 46.2.4. All equipment and instruments would be used only for the specific purpose for which it is designed.

Note: Our instruments / equipment will not be allowed for outside use.



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#### 46.3 **Maintenance**

- 46.3.1. All equipment, reusable parts and instruments will be cleaned with care after use, according to manufacturer's instruction.
- 46.3.2. Each equipment will be assigned an identification / serial number.
- 46.3.3. Decontamination of instruments will be performed after completion of a surgical procedure.
- 46.3.4. Plan Preventive Maintenance (PPM) will be done by Bio-Medical service for electrical and medical integrity as recommended by the manufacturer.

#### 46.4 **Storage**

- 46.4.1. All equipment and instruments sets will be checked and documented properly against the equipment / instrument checklist.
- 46.4.2. All equipment will be in good working condition before storage.
- 46.4.3. All equipment will be counted against an inventory list once each year.
- 46.4.4. All equipment and instruments will be stored in a designated, well-ventilated and limited access area.
- 46.4.5. All equipment and instruments will be transported safely and according to manufacturer's instructions in order to prevent damage.

#### 46.5 **Responsibilities**

- Assigned staff will take proper over of assigned OR instruments / equipment, sets, sterilizer, microscope, ophthalmic instruments and any breakage from previous technician.
- Assigned staff will be responsible for scrubbing, proper handling of microscope, instruments and maintenance of sets and sterilizer.
- Assigned staff will be responsible for care, maintenance and handling of all equipment used during procedure.
- Assigned technician will be responsible for follow-up, maintaining record and documentation.

#### 46.6 **Waste Disposal Policy:**

1. Policy statement: To ensure that the various waste streams are segregated properly, disposed of and transported in the correct manner at Dr. Ruth K.M. Pfau, Civil Hospital Karachi.
2. Also, to identify the harm caused by waste, and to set appropriate control measures to minimize the risk.





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3. Applicable to: All housekeeping & OR staff.

47. Infectious Waste (Potential Risk of Infection/Hazardous):

47.1 Any waste that consists wholly or partly of human or animal tissue, blood, or other body fluids excretions, drugs or other pharmaceutical products, swabs, dressings, syringes, needles and other sharp instruments.

47.2 Waste generated by medical, nursing, dental, veterinary, pharmaceutical or other related activity which is poisonous or infectious, likely to cause injury to public health, or contains human tissue or body parts.

47.3 Clinical Waste can be divided into:

1. Waste which poses a risk of infection.
2. Medicinal waste.

47.4 **Non Infectious Waste:** The waste that has not been contaminated with blood or exudates from wounds.

47.5 **Color Coding of Waste Produce by CHK:**

- Clinical infectious waste should be placed in RED bag.
- Human disposal should be placed in YELLOW bag.
- Needles and sharps should be placed in DANGER box.
- All non-infectious waste should be placed in BLACK/GREY bag.

47.6 **Management of Clinical Waste:**

47.6.1. Segregation and Disposal of Waste:

47.6.1.1. Segregate waste at the point of production.


47.6.1.2. All healthcare workers are responsible for distinguishing between infectious and non-infectious waste and to dispose them in appropriate color coded bags.

47.6.1.3. Segregated waste should be placed in appropriate leak proof color coded bags.

47.6.1.4. All needles and sharps must be disposed of carefully in approved puncture resistant containers after use.

47.6.1.5. The sharps container should not be more than two thirds full, sealed and stored in a secure area awaiting collection.

47.6.1.6. Staff handling infectious waste must observe standard precautions at all times. Personal protective equipment must be appropriately used when dealing with infectious waste.

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47.6.1.7. Body fluids such as secretions after suction, urine and stool should be disposed of in cycle flush or a sanitary sewer system and flushed with water.

47.6.1.8. Broken glass containers and tins should be separated and disposed of in a leak and puncture proof sharp boxes.

47.6.1.9. All Staff involved in the process of handling infectious waste bags should wear:

- Heavy duty gloves.
- Sturdy shoes.

#### **47.6.2. Transportation of Clinical Waste:**

47.6.2.1. All infectious and non-infectious waste should be placed in appropriate color bags transported to ultimate disposal point in a designated trolleys and carts.

47.6.2.2. All non-infectious, non-hazardous waste should be transported in containers and should be placed at safe storage area for KMC trucks.

47.6.2.3. The transport carts should be cleaned and disinfected after collection rounds.

#### **47.6.3. Responsibility:**

47.7 All Healthcare Workers: All health care workers have the following responsibilities:

- Use of adequate personal protective equipment and clothing.
- Waste bags should be sealed properly and held away from face.

47.8 Housekeeping Staff:

47.8.1. To ensure the collection of infectious waste from wards/storage areas and deliver it to central storage areas.

47.8.2. To ensure that the designated site collection points are secure after collection of infectious waste.

47.9 Hospital:

47.9.1. Adequate facilities for washing, changing, storage and laundering of contaminated clothing.

47.9.2. Adequate personal protective equipment and clothing.

47.9.3. Adequate training for all Staff that handles infectious, non-infectious, hazardous and non-hazardous waste.

47.9.4. Suitable transport and storage units for infectious waste.

47.9.5. Mandatory hepatitis B vaccination of all staff involved in handling of all hospital waste.

#### **48. References:**





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- a. Association of PeriOperative Registered Nurses (AORN). Standards, Recommended Practices, and Guidelines. Denver: AORN, 2003.
- b. R.J.Murphy. Surgical Services; APIC TEXT of Infection Control and Epidemiology; Chapter 68, 7<sup>th</sup> Edition, 2017

**Employee Health Policy for Post Graduate Students, Nurses, Technicians, Ward Assistants and all Employees that will Have Direct Patient Contact**

**49. Purpose of Policy:**

- 49.1 It is recommended that there should be an employee health policy that serves healthcare workers and new employees and maintains records with strict confidentiality. This will be best served by a Department of Occupational Health.
- 49.2 The hospital and PGME should provide information on the risks and management of infectious diseases encountered during the course. Therefore, all PGs and new employees must receive IPC as a component of the orientation program. Department of Infectious Diseases will provide the IPC component during the orientation, of half a day.
- 49.3 The purpose of a robust Employee Health Policy is primarily to ensure that employees are well protected and safe, and in case of illness or exposure, they are promptly attended to.

**49.4 Responsibility of Implementation of the Policy:**

49.4.1. It is the responsibility of the University and its affiliated healthcare facilities to ensure that the Employee Health Policy is implemented and adhered to. Their healthcare workers must have access to personal protective equipment and safety measures at all times. These include:

- 1. Gloves
- 2. Gowns
- 3. Surgical Mask
- 4. N95 mask
- 5. Easy access to hand disinfectants or hand washing facilities.
- 6. Easy access to Danger Boxes when handling sharps.

**49.5 Procedure of Policy:**



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**49.5.1. Pre-employment History and Physical and Investigations:**

49.5.2. All employees should be registered at the Department of Occupational Health. In case of illness, exposure to blood and body fluids, or other medical conditions, the employee must report to the office of Employee Health.

49.5.3. The employee will be seen by the nurse, who will record the vitals and document the reason for presentation.

49.5.4. The designated doctor at Occupational Health will then further evaluate the employee and provide initial management.

49.5.5. Referral to specialty and further investigations will be generated by the Department of Occupational Health.

49.5.6. Sick leave will also be given to employees by the office of Employee Health, whether based on their own evaluation, or as per the recommendations of the concerned specialist.


49.5.7. All candidates will be required to undergo the following pre-employment history and physical by a designated physician, and investigations at designated, reliable laboratories:

49.5.8. A complete history should include a review of systems for symptoms of cough, fever and sweats suggestive of tuberculosis as well as family history of tuberculosis. Social history of drug use must be taken as well as any history of transfusion of blood and blood products.

**49.5.9. Investigations:**

1. Chest X-ray
2. Complete Blood Count
3. Urine DR
4. Fasting blood Sugar
5. Lipid Profile
6. Hepatitis B surface antigen or Hepatitis B antibodies if immunized for hepatitis B virus.
7. HCV antibody
8. HIV testing is optional.
9. Varicella antibody titers if indicated.
10. Quantiferon testing for tuberculosis



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- 49.5.10. Additional investigations or specialty referral as per history and physical should be requested.
- 49.5.11. Applicants must provide an Immunization Card. Following immunizations are required:
- a. Vaccination:
- 49.5.12. Hepatitis B
- 49.5.13. Immunization against hepatitis B is required unless there is a documented history of prior infection or immunization.
- 49.5.14. Those who have been previously vaccinated are required to provide evidence of anti-HBs antibody level >10 IU/mL following vaccination.
- 49.5.15. Post-vaccination serology should be performed 1-2 months after the third dose.
- 49.5.16. Those who fail to achieve a satisfactory anti-HBs antibody level after vaccination will be referred for further assessment and management.
- 49.5.17. Diphtheria, Tetanus and Pertussis
- 49.5.17.1. Diphtheria/tetanus toxoid is required if not boosted within the past 10 years.
- 49.5.18. Measles, mumps and rubella (MMR)
- 49.5.19. Immunization against measles, mumps and rubella (MMR) is required for all applicants, unless there is documented immunity or immunization with two doses of MMR.
- 49.5.20. A history of clinically diagnosed measles, mumps or rubella is unreliable in excluding the applicant from immunization.
- 49.5.21. MMR vaccine can be administered without serological testing in the absence of documented immunity or a history of immunization.
- 49.5.22. Varicella
- 49.5.22.1. Immunization against varicella is required unless there is a history of infection or immunization.
- 49.5.22.2. Candidates with a history of either chicken-pox or shingles do not require testing to document immunity.
- 49.5.23. Meningococcus: Meningococcal vaccine is recommended for those candidates who will be living in hostels.
- 49.5.24. Influenza: Influenza vaccination is recommended for all healthcare workers annually.



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- 49.6 Recommendations for Management of Healthcare Workers with Blood-borne Viruses (HIV, HBV & HCV) or Latent or Active Tuberculosis.
- 49.6.1. Those healthcare workers with chronic HBV infection (manifest as circulating hepatitis B surface antigen) or with a positive test for antibody to HCV may not be able to perform exposure-prone procedures while such infection persists. They will be referred for further assessment and management.
- 49.6.2. Those healthcare workers with confirmed HIV infection may not be able to perform certain exposure prone procedures. They will be referred to the Sindh AIDS Control Program at Civil Hospital.
- 49.6.3. Those with a positive QuantiFERON Gold (TB) blood test and/or a chest X-ray suggestive of tuberculosis will be required to have a referral to an Infectious Diseases Consultant. "Clinical clearance" to enter work place and be on duty will be required from the Infectious Diseases Physician.
- 49.7 **Healthy Policy for Janitorial Staff and Laundry Workers:**
- 49.7.1. Janitorial staff and laundry workers are possibly amongst those at highest risk amongst all healthcare workers of exposure to infectious agents, since they are directly exposed to infectious material.
- 49.7.2. Janitorial are often those with the least education, and amongst the most discriminated against. Moreover, few professional cleaning services offer education and training of their employees regarding methodology of cleaning and disinfection in a healthcare facility, proper use of cleaning agents, as well as protection from exposure to infectious and hazardous agents.
- 49.7.3. Laundry staff is daily exposed to heavily soiled linen, OT scrubs and drapes. Moreover, it is a regular occurrence that needles, other sharps, instruments, diapers, menstrual pads are recovered from within the laundry loads. Therefore, their vaccination against Hepatitis B must be done and antibody response confirmed.
- 49.8 **Responsibilities of the Cleaning Service Provider, whether Private or Government:** It should be a mandatory pre-requisite of any janitorial service, whether privately contracted or governmental, that the following conditions are met:





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49.8.1. A training program that teaches employees about the correct uses, toxicities and handling of various cleaning agents, insecticides and fumigants. This will not only protect the cleaning and laundry staff, but also ensure that patients and other healthcare workers are not exposed to potentially harmful agents if incorrectly used by untrained persons.

49.8.2. A training program for the employees regarding the correct handling of infectious waste, sharps and hazardous materials that are generated in hospitals.

49.8.3. Full immunization against hepatitis B, with serological evidence of antibody titers >10 IU/ml

49.8.4. Provision of 3 cotton uniforms of good quality and appropriate design that are issued every 6 months, with laundry service included.

49.8.5. Provision of thick rubber household gloves, goggles, masks and boots, available when needed.

#### 49.9 Responsibilities of the Healthcare Facility:

49.9.1. To ensure that their janitorial staff have access to personal protective equipment and infection control precautions, when needed. These include:

- Disposable Gloves
- Gowns
- Surgical Mask
- N95 mask
- Hand disinfectants or hand washing facilities.
- Easy access to Danger Boxes when handling sharps.

49.9.2. To ensure that janitorial and laundry staff do not sustain a needle-stick injury and that needles and other sharps are always disposed of in Danger Boxes by medical and para-medical staff.

49.9.3. To ensure that waste is segregated at source into infectious and non-infectious by the use of red and black bags respectively, in all areas of the hospital.

49.9.4. Segregation is not the responsibility of the janitorial staff, and sorting of waste must not be done after disposal.

49.9.5. To ensure that hazardous materials are not left exposed, and have been disposed of in accordance with recommendations.

49.9.6. To ensure that laundry hampers are not used for general garbage, disposal of diapers and disposables.



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49.10 Infection Control Policy for Kitchen Staff: The hospital must ensure that they have a mechanism in place whereby the kitchen manager monitors the personal hygiene practices and general health of the kitchen staff.

- Kitchen staff should bathe daily, with clean, short nails, and wear clean clothes to work.
- Hand washing facilities with running water, soap and disposable towel should be available at the toilets at all times. Toilets should be functioning and clean. They should be washed with detergent and disinfected household bleach solution daily or twice daily as needed.
- Any person known or suspected to be suffering from, or to be a carrier of, a food borne disease or infection, including vomiting, diarrhea, skin infections, sores and open wounds, or having fever, should immediately be excluded from working with food pending medical evaluation by a physician/infectious diseases consultant.
- Hepatitis A vaccination should be considered for kitchen staff that has not already been exposed.
- Salmonella typhi vaccination is mandatory for food handlers, which includes kitchen staff as well as those that distribute and serve the food to patients. Presently, polysaccharide vaccine is available and should be given as single dose IM every 2 years. If conjugate vaccine is available, then single dose should be given IM every 3 years.

#### 49.11 **Education and Training of Employees**

- The Employee Health Policy will be distributed to all employees, through the Principal's office for Faculty, and through hospital administration to hospital employees, through Administration RMOs and Staff-in-Charges.
- Employee Health Policy should be a part of the Infection Prevention and Control mandatory course required for all employees.

#### 49.12 **Monitoring Adherence and Breach of Policy**

- Employees are expected to present to employee health within an appropriate time interval for any health issues or blood and body fluids exposures that may put themselves, their colleagues or patients in any danger. Failure to report on time will be considered as a serious breach of good practices. Employee health systems must be clearly defined, and employees must know who to contact in case of illness or





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blood and body fluid exposures.

- Employees must first inform their immediate supervisors.
- They should then be referred to office of Employee Health during the working hours of the day. In evening and night, employees should present to the Emergency Room, and to office of Employee Health the next morning at the earliest.
- All persons in this system will be held responsible if there is a breach or delay in the prompt management of employees.

#### 49.13 Records

- Records of employees must be maintained in the office of Employee health.
- Strict confidentiality must be maintained.

#### References:

1. Sebazco S, Occupational Health Chapter 100 APIC Text of Infection Control and Epidemiology, 7<sup>th</sup> Edition, 2017
2. Miller S, Occupational Exposure to Bloodborne Pathogens Chapter 101 APIC Text of Infection Control and Epidemiology, 7<sup>th</sup> Edition, 2017



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## Student Health Policy

### 50. Definition and Purpose of Student Health Policy

- A student health policy is designed to ensure that students are protected to prevent them from exposure to or spread of infectious diseases.

The following are definitions of community acquired infections that are of most concern in the setting of a medical college and hospital:

#### 50.1.1. Community Viral Infection:

- Measles
- Mumps
- Rubella
- Polio
- Varicella-Zoster Virus

#### 50.1.2. Community Bacterial Infections:

- Mycobacterium tuberculosis
- Methicillin-resistant Staphylococcus aureus (MRSA)
- Encapsulated Bacteria such as pneumococcus and meningococcus

#### 50.1.3. Blood Borne Viral Infections:

- Human Immunodeficiency Virus
- Hepatitis B Virus
- Hepatitis C Virus

Students are also vulnerable to psychological issues as well as substance abuse. There must be an assigned student psychologist and counselor available to students.

### 50.2 Responsibility and Procedure Details:

50.2.1. The college and the individual student have a duty of care towards both students and patients to prevent spread of infectious diseases.

50.2.2. College must ensure the safety of students and patients and to ensure that their policies are implemented and student compliance is achieved.






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### 50.3 Medical College Responsibilities

- 50.3.1. It is recommended that there should be an established a Department of Student Health which has designated doctors, nurses and counselors which are available to cater to the physical and psychological needs of the students, and is able to recommend referrals for more specialized care when the need arises.
- 50.3.2. The medical school should provide students with information on the risks and management of infectious diseases encountered during their studies. Therefore, all students must receive Infection Prevention and Control orientation on entry to Medical College or before the start of clinical postings. This should be a minimum of half day teaching, conducted under the guidance of the department of Infectious Diseases.
- 50.3.3. Infection Prevention and Control is now part of the Medical Curriculum with allocation of 25 hours of teaching over the years. All lectures on infectious diseases that are taught to students must incorporate Infection Control aspects of the disease.
- 50.3.4. It is the responsibility of the Medical College to ensure that when their students begin clinical rotations and come into contact with patients, they have access to personal protective equipment and safety measures. These include:
- Gloves
  - Gowns
  - Surgical Mask
  - N95 mask
  - Access to hand disinfectant or hand washing facilities at the point of patient care
  - Convenient access to Danger Boxes when handling sharps.
- 50.3.5. Medical schools must inform students, prior to enrolment, of their obligation to be aware of their own infective status for hepatitis B, hepatitis C and HIV.
- 50.3.6. The Medical College requires the results of serological testing for HBV and HCV whereas disclosure of HIV status is optional for the students.
- 50.3.7. The medical school must have available academic, personal and career counseling to students with infectious diseases and blood-borne viruses.

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50.3.8. Students will be required to provide a vaccination card to the Medical College.

50.3.9. Data collected by the service provider should be stored in a secure manner, ensuring confidentiality.

#### 50.4 Student Responsibilities

50.4.1. Students are welcome to discuss this policy with a designated physician and/or an Infectious Diseases consultant if there are any matters requiring clarification. All enquiries will be treated on a confidential basis.

50.4.2. Medical students have an ethical duty to be aware of their immunity or infectious status to ensure that they are not themselves at risk or do not place others at risk of infection. All students must arrange for serological testing and provide results of Hepatitis B Surface Antigen, Hepatitis B Surface antibody and hepatitis C antibody. If they have been vaccinated against hepatitis B, then they do not need to do hepatitis B Surface antigen testing but they must obtain hepatitis B Surface antibody titers.

50.4.3. All students that have no history of chicken pox, and have not received varicella vaccination, must obtain varicella antibody titers.

50.5 Students should provide an Immunization record. The Medical College requires the following immunizations:

##### 50.5.1. Hepatitis B

- Immunization against hepatitis B is required unless there is a documented history of prior infection or immunization.
- Students who have been previously vaccinated are required to provide evidence of anti-HBs antibody levels following vaccination. A level of >10 IU/mL is considered protective.
- Post-vaccination serology should be performed 1-2 months after the third dose.
- Students who fail to achieve a satisfactory anti-HBs antibody level after vaccination will be referred for further assessment and management.

##### 50.5.2. Diphtheria, Tetanus and Pertussis

- Students should have their adolescent dose of diphtheria/tetanus toxoid if not boosted within the past 10 years.

##### 50.5.3. Measles, mumps and rubella (MMR)





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- Immunization against measles, mumps and rubella (MMR) is required for all students, unless there is documented immunity or immunization with two doses of MMR. A history of clinically diagnosed measles, mumps or rubella is unreliable in excluding students from immunization. MMR vaccine can be administered without serological testing in the absence of documented immunity or a history of immunization.

#### 50.5.4. Varicella

- Immunization against varicella is required for all students, unless there is a history of infection or immunization. Students with a reliable history of either chicken-pox or shingles do not require testing to document immunity.

#### 50.5.5. Meningococcus

- Meningococcal vaccine is required for students who will be living in the hostel. However, it is recommended for all students, though not a mandatory requirement.

#### 50.5.6. Influenza

- Influenza vaccination is recommended, though optional, for all medical students annually.
- Students are required to comply with any additional screening requirements of the institution which may arise during their studies and clinical attachments or work e.g. testing for MRSA colonization or tuberculosis.

### 50.6 Recommendations for Management of Students with Blood-borne Viruses (HIV, HBV & HCV) or latent or active tuberculosis.

50.6.1. Students with chronic HBV infection (manifest as circulating hepatitis B surface antigen) will require medical assessment and advice as above, and may not be able to perform exposure-prone procedures.

50.6.2. The degree of infectiousness of hepatitis B carriers depends on their hepatitis Be antigen and antibody status, and their circulating concentration of hepatitis B viral DNA and possibly other investigations.

50.6.3. Students with a positive test for antibody to HCV may not be able to perform exposure-prone procedures while such infection persists. Curative treatment is now available for most of the people and against most of the serotypes of HCV.



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50.6.4. Students with confirmed HIV infection may not be able to perform certain exposure prone procedures.

50.6.5. Referral to an Infectious Diseases Consultant may be necessary. "Clinical clearance" (ability of the student to attend classes, to have usual patient contact and to perform exposure prone procedures) will be required from the Infectious Diseases Physician.

50.6.6. However, it must be understood that no student can be denied admission to medical college based on his HIV, HBV or HCV status.

50.7 **Education and Training of Medical Students:**

50.7.1. The Student Health Policy will be distributed to all employees, through the Principal's office.

50.7.2. It should be further reinforced by the Principals office and hospital administration when students start their clinical rotations.

50.7.3. Student Health Policy should be a part of the Infection Prevention and Control mandatory course required for all medical students.

50.8 **Monitoring Adherence and Breach of Policy**

50.8.1. Students are expected to present to the Department of Student health within an appropriate time interval for any health issues or blood and body fluids exposures that may put themselves, their classmates or patients in any danger.


50.8.2. Failure to report on time will be considered as a serious breach of good practices. Student health systems must be clearly defined, and students must know who to contact in case of illness or blood and body fluid exposures.

50.8.3. Students must first inform their immediate academic supervisors.

50.8.4. They should then be referred to office of Student Health during the working hours of the day. In case a student is working in the evening and night, students should present to the Emergency Room, and to office of Student Health the next morning at the earliest.

50.8.5. All persons in this system will be held responsible if there is a breach or delay in the prompt registration and management of students who present with an illness or exposure to blood and body fluids, hazardous material or infectious disease.




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50.9 **Record:**

- Records of students must be maintained in the office of student health.
- Strict confidentiality must be maintained.

**References:**

1. Miller S, Occupational Exposure to Blood borne Pathogens Chapter 101 APIC Text of Infection Control and Epidemiology, 7th Edition, 2017
2. Policy for Infectious Diseases Policy for Health Professional Students, University of Otego 2019

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## HOUSE KEEPING POLICY

### 50.10 Definition of House Keeping:

- Housekeeping policy is a policy that ensures a clean and safe environment of college premises and also seeks to protect housekeeping staff and all employees from environmental exposures of an infectious or hazardous nature.
- Housekeeping is not just cleanliness. It includes keeping work areas neat and orderly and removing of waste materials.

### 50.11 There are three types of waste in college premises:

- General (non-infectious) waste which will be disposed of in black bags.
- Infectious waste which will be disposed of in red bags.
- Sharps waste.

### 50.12 Infectious waste is generated in the Medical College in the following areas:

- Pathology Laboratory
- Physiology Laboratory
- Biochemistry Laboratory


### 50.13 This includes the following:

- Blood stained cotton or spirit swabs
- Pathology specimens
- Body fluids for analysis
- Sharps such as lancets, surgical blades

### 50.14 Responsibility:

- Effective housekeeping is an ongoing operation which needs good management and planning.
- Cleaning and waste disposal of Dow Medical College Campus and Ojha campus is outsourced.
- Cleaning of administrative areas and offices are done by Ron Don enterprises.



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- The areas that are not under their domain include the girls and boys canteen, pathology department and first floor of administration building.

#### 50.15 **Staffing and Supervision:**

- Vendor providing cleaning and waste collection and disposal at DMC, they have following staff for this purpose:
- One manager services, four supervisors, thirty nine male sanitary workers and ten female sanitary workers.

#### 50.16 **Housekeeping Procedures:**

An ongoing maintenance cleaning schedule must specify:

- The responsibility & accountability for specific jobs
- Work procedures, including instructions for special cleaning equipment, supplies, cleaning & storage of equipment
- Types of cleaning solutions & how frequently they should be changed
- Use of personal protective clothing

#### 50.17 **General Cleaning Schedule:**

Daily:

- a. All cleaning must be monitored by supervisor in each designated area.
- b. Cleaning schedules should be written and supervisor signs each area after inspecting.
- c. Cleaning with soft broom or dry mop should be done followed by detergent mopping of offices, college premises including corridors, staircases and lobbies.
- d. Cleaning should be done twice a day.
- e. Cleaning and washing of all toilets and washbasins should be done twice a day and as needed, with soapy detergent followed by household bleach.
- f. Cleaning of all glass windows and glass partitions and table tops should be done once a day, and if there are stains, glass cleaning agent can be used.
- g. Dusting of furniture is done daily.



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- h. Damp dusting of window ledges and other non-wooden areas that accumulate dust must be done daily.
- i. Wastebaskets (dustbin) must be emptied once a day or more often if needed, and washed with detergent once a week.

#### Weekly

- a. Thorough cleaning of glass windows.
- b. Removing of cobwebs.
- c. Removing of Stains.

#### Monthly

- a) Spot cleaning if any of walls which includes fungus, spittle, and water seepage marks
- b) Cleaning of false ceiling.
- c) Cleaning of water tanks.

#### 50.18 Collection, storage and disposal of garbage:

##### d. General waste:

- Waste from individual dust bins in black bags is collected by janitorial staff and placed in a large plastic trolley which is fluid and puncture resistant with lid.

##### e. Infectious waste:

- This is being transported in red bags in a designated trolley, which is fluid and puncture resistant with lid, to the Dr. Ruth K.M.Pfau, Civil Hospital incinerator.

##### f. Sharps:

- These are disposed of in sharp boxes. They are transported daily to Dr. Ruth K.M.Pfau, Civil Hospital incinerator.

#### 50.19 Material and Equipment:

- Contractor provides cleaning material required for the efficiently carrying out the foresaid job. (Except Ladder and Vacuum Cleaner which will be provided by college).





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## 50.20 Cleaning Agents:

### Phenolics:


- Can combine with detergent to clean floors. However soapy detergent alone is considered adequate for cleaning of floors.
- Cannot be used on rubber and plastics
- Phenolics, must not be used in newborn nurseries or food preparation areas because of toxicity
- Phenol causes skin irritation so do not use on items which come into contact with skin/mucous membranes.
- Dettol (for surface disinfectant) and Phenyl are Phenolics and are not needed in college environment. They are expensive compared to use of detergent alone.

### Chlorine/Bleach

- Highly active against bacteria and viruses.
- Rapid action. No toxic residues.
- Needs to be freshly prepared.
- Corrosive to metal, damaged plastic, rubber.
- Can cause bleaching fabrics, carpets.
- Causes irritation of skin, eyes and lungs
- Cleaning with bleach is essential in toilets and in laboratories where there is risk of spread of infectious material.

### **Material/Equipment needed is as under:**

- a) Detergent such as Surf
- b) Household bleach or bleach tablets. 1 tablet in 1 liter of water is sufficient for general disinfection. In case of a blood spill, then 10 tablets in 1 Liter dilution is recommended.
- c) Vim
- d) Wipers
- e) Dusters

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- f) Dry Mops
- g) Wet Mops
- h) 2 bucket system to separate clean and dirty water is essential.
- i) Carpet brushes
- j) Floor washing brushes
- k) Air freshener should be used sparingly since it is harmful to the environment and may exacerbate asthma.
- l) Phenyl Balls
- m) Soft and Hard Brooms

**Monitoring and Breach of Housekeeping Policy:**

- The outsourced agency will be further monitored by designated supervisor/s appointed by the office of the Principal of all colleges/ institutes.
- In case of any breach of good housekeeping, the supervisor/s and the outsourced agency will be held accountable.

**Education and Training of Housekeeping Staff:**

- The housekeeping staff must provide evidence of training of their staff on a regular basis.
- Staff must be well trained in the correct procedures of training, as well as be familiar in the properties of cleaning agents employed and the correct use of these agents. This includes proper dilutions, and quantities of cleaning agents.

**Record:**

- A daily cleaning record must be maintained at all times.

**References:**

- Chou Teresa. Environmental Services Chapter 107, APIC TEXT of Infection Control and Epidemiology 7<sup>th</sup> edition 2017





Document Name:	<b>Infection Prevention &amp; Control (IPC) Policy Manual of DUHS</b>
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## 51. Department of Anatomy

### Infection Control policy

- Fly proofing be done in windows & doors.
- Regular fumigation is performed in all rooms, bathrooms and stores.
- Environmental cultures will not be required routinely, and only considered if there is concern regarding contamination from infectious agents.
- Sewerage system is kept in good working condition.
- Cleaning and garbage disposal should be managed through housekeeping and through incinerator.
- Screening of faculty staff and student for blood borne diseases and infections is done periodically.
- Awareness should be instilled in the staff, faculty and students about regular hand washing regular bathing and wearing clean clothes to their work place.
- Awareness among students regarding infection control policy of the institution should be made.
- Vaccination programme for students should be initiated.



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## 52. Department of Biochemistry

Policy for Infection Prevention & Control and Biochemical Waste.

- Display on large board all the safety measures observe against electricity, glassware injury, chemical injury, fire injury.
- Fire stingier place on two places in lab and corridor of laboratory.
- All chemicals are disposed of after use by their MSDS log book procedure.
- A first aid box also present in case of emergency
- All the reagent bottles are labeled with their safety marks like if it has inflammable reagent we put mark on that.
- The register is maintained which showed the expiry of every reagent.
- If any glassware broken it is disposed in a plastic wrapper and then in waste basket for further disposal.