




**UPDATED SOP**  
**INFECTION CONTROL AND PREVENTION**  
**PROGRAM**  
**HITEC-IMS**  
**(Effective 1 January 2021)**

	<b>HITEC-Institute of Medical Sciences</b>		
	<b>SOP Infection Control and prevention program</b>		
	<b>DOCUMENTS#: SA SOP-9</b>	<b>ISSUE # 01</b>	<b>ISSUE DATE: 20-05-2021</b>

1. **Function:** The Infection Control Committee (ICC) is responsible for developing policies and procedures related to infection control in HIT Hospital for patients and students.
2. **Epidemiology of Nosocomial Infections:**  
 Nosocomial infections known also as hospital-acquired infections, are infections that are not present in the patient at the time of admission to hospital but develop during the course of the stay in hospital.
  - a. These may be self-infections, in which the patients' own flora may cause disease due to development of antibiotic resistance.
  - b. They may also be cross-infections in which the organism is derived from health care professionals, other patients or hospital environment.
  - c. The source of most hospital epidemics is infected patients, i.e. patients contaminated with pathogenic microorganisms. These microorganisms are often released into the environment in very high numbers, and contaminate other patients who subsequently develop hospital-acquired infections.
3. **Organisms commonly involved in nosocomial infections:**
  - a. **Bacteria:** Staphylococcus aureus, Salmonella, Shigella, Escherichia coli, Klebsiella, Serratia, Pseudomonas aeruginosa, enterococcus, Mycobacterium tuberculosis, atypical mycobacteria, Acinetobacter, Streptococcus agalactae, Clostridia.
  - b. **Fungi:** Nocardia, Candida, Pneumocystis carinii .
  - c. **Viruses:** Hepatitis A and B viruses, Covid 19.
4. **Prevention of Nosocomial Infections:** Two basic principles govern the main measures that should be taken in order to prevent the spread of nosocomial infections in health-care facilities:
  - a. **Isolation of the patients:** The first essential measure is isolation of infected patients. The strictest form of isolation is applied in case of very infectious diseases (e.g. Covid 19, haemorrhagic fever, diphtheria); less stringent precautions can be taken in case of diseases such as tuberculosis, other respiratory infections, infectious diarrhea and Hepatitis A.
  - b. **Cut off any route of transmission.**

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- i. **Cleaning:** The principal aim of cleaning is to remove visible dirt. It is essentially a mechanical process: the dirt is dissolved by water, diluted until it is no longer visible, and rinsed off. Thorough cleaning will remove more than 90% of microorganisms. However, careless and superficial cleaning is much less effective; it is even possible that it has a negative effect, by dispersing the microorganisms over a greater surface and increasing the chance that they may contaminate other objects.
- ii. **Central Sterile Supply Department** The responsibilities of the Central Sterile Supply Department are as follows:
  1. Sterilizing articles by autoclaving and making them available to the hospital at the required time and place contributing to the reduction of hospital infections, which might occur due to usage of contaminated devices.
  2. Before autoclaving the instruments should be manually cleaned (scrubbed using detergents and appropriate brushes).
  3. All instruments with dried secretions should be soaked in detergent water to loosen up the debris as these will affect the efficiency of the sterilization process.
  4. After washing, each instrument should be inspected for cleanliness, functionality, breakage or defects and then appropriately assembled.
  5. All instruments should be properly dried after washing as moisture impairs sterilization processes.
  6. Wrapping of the articles before sterilization should be done in such a manner that tenting and gapping should be avoided.
  7. The sterilizer should be loaded in accordance to the manufacturers recommendations. Ensure that all the physical and chemical parameters are checked before and during the sterilization cycle.
  8. The autoclave cycles are 121 C for 30 minutes or 132 C for 4 minutes.

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9. Following sterilization, all sterile items should be moved aseptically to the sterile area for the storage of items. The area should be a limited access area with controlled temperatures 75 F and relative humidity (30-60%).
10. A commercially available Bowie-Dick type test sheet should be placed in the center of the pack.
11. All sterile items should be kept in the sterile area till they are supplied to the clinical areas.
12. The CSSD workers in the decontamination area should wear household-cleaning-type rubber or plastic gloves when handling contaminated instruments and items. Face mask, eye protection such as eye shields/goggles, appropriate gowns should be worn when exposure to blood or body fluid may occur.
13. A record of the date of sterilization, physical parameters of sterilization cycle and microbiological tests reports should be maintained for each batch.
14. Procedures being carried out in the CSSD should be continuously validated.

**iii. Cleaning of Hospital Surfaces:**

1. Floors/ table-tops/ counters should be cleaned on a regular basis, when visibly soiled and when spills occur.
2. Cleaning may be done with detergent and hot water or with simple water. Ensure thorough physical wiping and scrubbing which is as effective as the use of disinfectant in reducing the bio-burden.
3. Use of a low/ intermediate level disinfectant is advocated in specific high-risk areas or when there is suspected spills of blood/ body substances/ MDR organisms).
4. The methods of cleaning non-porous floors include vacuum cleaning, wet mopping, dry dusting with electrostatic material and spray buffing.
5. Avoid dry mopping with brooms, which generate dust aerosols.
6. For wet mopping, use a two-bucket system. When a single bucket is used, change the solutions more frequently.

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7. Preferably use disposable mop heads or decontaminate mop head and cleaning cloths regularly to prevent contamination. This may be done by immersing the in hypochlorite solution (4000 ppm) for 2 minutes.


**5. Management of Spills of Blood and other Body substances:**

- a. For decontamination of small spills < 10 ml, use a 1:100 dilution of sodium hypochlorite solution .
- b. If spills involve large amounts e.g. >10ml of blood or involves a culture spill in the laboratory, use a 1:10 dilution of hypochlorite solution for first application. After the first application, remove the visible organic matter with absorbent material e.g. disposable paper towels and discard it into leak-proof, labeled container. Terminal disinfection with 1:100 sodium hypochlorite is done.

**6. Safety in the Laboratory:** The following measures should be taken by the students and laboratory staff to ensure their safety:

- a. Wearing of face masks to protect against transmission of Covid 19.
- b. Repeated washing of hands.
- c. Put on strong, protective gloves, overalls, stout shoes, and, if necessary goggles.
- d. Do not touch any needles or syringes . Use a pair of tongs or forceps to return the used equipment to a sharps container.
- e. Food and water / beverages must not be stored in refrigerators/ freezers where biological materials or laboratory kits are present.
- f. Eating or drinking are not permitted in laboratories where biological materials are handled and work is performed.
- g. Mouth pipetting is prohibited. Mechanical pipetting devices should be provided.
- h. Patients are not be allowed inside the laboratory areas.
- i. Laboratory personnel are to be offered appropriate immunizations (Hepatitis B vaccine) and a list shall be maintained in the file of laboratory staff.
- j. All work surfaces in daily use such as bench tops, sinks etc. must be disinfected at the end of each work shift using 1:10 solution of Household Bleach for this purpose.
- k. Protective equipment is mandatory for technicians working in the Covid 19 laboratory.

**7. Laboratory Accidents:** If an employee or student is exposed to blood or other potentially infectious materials by way of a needle stick, percutaneous injury, mucous membrane contact, or non-intact skin contact, the following procedures should be initiated:

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- a. Immediately report the accident to available consultant in the laboratory, who will assess the seriousness of the injury.
- b. In case of prick, wash the area liberally with running tap water. Press the point of injury, so that blood is drained from the needle-stick site. Subsequently, clean the area with alcohol swab.
- c. Do testing of HBsAg, anti-HCV and anti-HIV 6 weeks after the exposure. If the individual is already vaccinated, then give booster of HBV vaccine.
- d. If there is splash in the eye, then wash the eye with tap water available at the nearest place. Subsequently, report to the consultant, who may then refer the individual to the eye specialist, if there is any such need.

**8. Covid 19 SOPs for HIT Hospital:** The hospital shall have a separate Corona ward, where all Covid 19 patients who need admission shall be admitted. Similarly, a separate dedicated team of physicians will be marked to see the Corona patients. All the doctors of the hospital, and nursing staff shall wear the N95 mask. Other staff members will wear the surgical mask. Banners and notices shall be placed at various places of the hospital, instructing all visitors and patients to wear the face mask. Everyone will maintain social distancing, of at least 1 meter. The doctors who attend the Covid 19 patients shall wear the face shield, and the Personal Protective Equipment (PPE). All patients who are planned for procedures or operations, shall be tested for Covid 19 PCR at least 1-2 days before the surgery. If emergency testing is required, then Covid 19 Antigen testing will be carried out. Any Health care worker who has been exposed to Covid 19, or has fever / symptoms of fatigue and cough will be encouraged to stay at home, unless he or she needs hospital admission. Repeated hand washing will be encouraged. The hospital will maintain an adequate stock of Covid 19 PCR kits, Antigen tests, Covid 19 antibody tests, CRP, D-Dimer, and ferritin. Adequate stocks of first line and second line medicines will be maintained for Covid 19 patients. All hospital staff going on leave will be quarantined for 10 days after coming back to the hospital. HITEC-IMS shall remain open or closed in compliance to instructions issued by Federal Government from time to time.


**9. Approved Chemical Disinfectants in HIT Hospital:**

**a. Alcohols:**

- i. Ethyl alcohol, isopropyl alcohol, methylated spirit.
- ii. Optimal Concentration: 60-90% in water; 100% concentration is not effective.

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- iii. Alcohols are intermediate level disinfectants and effective against viruses.
- iv. Alcohols/ alcohol impregnated wipes are used for disinfection of small, smooth, clean surfaces (e.g. trolley tops, lab equipment).
- v. They are also used for disinfection of rubbers stoppers of medication vials, thermometers, stethoscopes, scissors, manual ventilation bags, manikins, ultrasound instrument, and external surface electronic equipment and medication preparation areas. It is also a skin antiseptic
- b. Glutaraldehyde (2% activated alkaline solution)**
  - i. It is a High Level Disinfectant (HLD) and is used for sterilization of medical equipment like endoscopes, spirometry tubing, dialyzers, anesthetic and respiratory equipment.
- c. Formaldehyde: (37%; formalin)**
  - i. It shall be used for preservation of tissues and anatomic specimens, disinfection of internal fluid pathways and decontamination of laminar flow biologic safety cabinets.
- d. Hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) (3-7.5%)**
  - i. Commercially available 3-7.5% H<sub>2</sub>O<sub>2</sub> can be used for disinfecting ventilators, and endoscopes.
- e. Chlorine based disinfectants (Hypochlorite solution)**
- f. Disinfectants for pre-operative surgical scrub:** Surgical scrub hand wash should be for a minimum of 2 minutes. The following options shall be used for the surgical scrub:
  - i. Alcohol solutions are more effective than and preferable to aqueous solutions for skin preparation .They should be allowed to dry thoroughly.
  - ii. Chlorhexidine gluconate 0.5% w/w in spirit 70%.
  - iii. Povidone iodine 7.5%.
- g.** Any other commercial disinfectant will be approved by the hospital after conduction of trial in the appropriate environment, under supervision of concerned department

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#### 10. Hospital Infection Control Committee (ICC):

- a. Composition of infection control committee. The following shall be the members of the committee:
  - i. Head
    1. CO HIT Hospital
  - ii. Members:
    1. Dr Inam Ul Haq, Professor of Anaesthesia
    2. Dr Sabahat, AP Microbiology HITEC-IMS
    3. Dr Asif Saeed Professor of Surgery
    4. Lt Col Begum Jan, Infection Control Nurse
    5. CNO Salma Rani, OT In charge
- b. The Head of Infection Control Committee shall call periodic meetings of the members, as and when necessary.
- c. **Emergency meetings of ICC and outbreak control:** The Head of Committee may call an emergency meeting of ICC at any time and all members or their alternates are notified by telephone or through an Inter-Office Note. Emergency meetings are called for control of outbreak of infection, which is defined as:
  - i. Occurrence of 2 cases of Methicillin resistant Staphylococcus aureus (MRSA) infection in the hospital.
  - ii. Occurrence of one case of Diphtheria
  - iii. Occurrence of 10 consecutive cases of leg wound infection in ITC
  - iv. Occurrence of 3 consecutive cases of septicemia in ITC or in any other ward.

#### 11. Waste Disposal Policy: The waste is categorized as follows:

- a. **No Risk Waste:** General waste such as papers, unused tubing, packing of drugs, infusion bags, cooked food or food related waste.
- b. **Infected Waste:** This includes human blood, blood products, drains inserted in body cavities or operation sites, empty used syringes, used hypodermic needles, used infusion sets, glass ampoules, used nasogastric tubes and catheters, disinfectants and germicides after use, parts and parts of human body, placenta and waste from the Radiology department.
- c. All waste shall be separated according to color coding system. The no risk or non-infectious waste will be carried in **Black** colored polythene bag. The infectious waste will be placed in the **Red** colored polythene bag, before final disposal. Sharps are kept in boxes of cardboard, which are then put in **White** polythene bag.



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- d. **Disposal of Waste:** There are disposal points in different areas of the hospital, where waste is collected twice a day. The timings of collection of waste are 1000 hrs and 1800 hrs. All bags are collected from the whole hospital twice a day and placed at a centrally located waste disposal place, designated as Central Waste Storage Point (CWSP). Both blue and red coloured bags are separated by a partition. All the waste is incinerated in an incinerator at the back of the hospital and the ash is disposed off in the nearby city waste disposal facility.