

# NOSOCOMIAL INFECTION

## Prevention of Nosocomial Infection

Three fundamental principles govern the measures that should be taken in order to prevent the transmission of Hospital-acquired infections in health-care facilities:

✦ Identify and separate/segregate from other patients:

- Known infected patients,
- Patients with certain symptoms or behaviors (e.g., poor hygiene),
- Patients with high potential for contamination of the environment (uncontained, draining surgical wound)

✦ Eliminate or minimize potential routes of transmission from sources of microorganisms (e.g., use aseptic technique when inserting IV catheters);

✦ Use basic barrier techniques to eliminate or minimize the risk of transmitting infectious agents from patient to patient, from patient to caregiver, and from caregiver to patient. Presume all patients are infected until proved otherwise

### Isolation Precautions for Known, Infected Patients

The policy for managing patients with suspected or known infection is referred to as isolation precautions. The method is based on a two-tier precautions system.

✦ Tier One: Routine or Standard infection control precautions that are designed for the care of all

patients regardless of their diagnosis or presumed infectious status.

✦ Tier Two: The second tier of precautions is based on the route of transmission of infectious agents. It is designed to supplement the routine infection control precautions, which should be used for patient known or suspected to be infected or colonized with transmissible or epidemiologically important microorganisms.

### The following points are common to all categories of isolation precautions:

✦ All patients with suspected or proven infection should be isolated as much as possible from other patients. If a private room is not available, seek advice from a member of the Infection Control team regarding patient placement. In some cases they may suggest that the patient be nursed on an open ward provided that the specific precautions are followed meticulously, but this is the least favorable option. Placement of the patient at one end of the ward close to the wash hand basin and rinse may minimize traffic and may increase staff awareness of the need for hand hygiene. If more than one patient is affected (e.g., in an outbreak caused by a similar microorganism), the Infection Control team may recommend segregating patients in a single cubicle/area with care provided by nursing staff assigned only to infected patients. In other instances the Infection Control team may advise that for shared or multi-patient rooms the infected or colonized patient be placed with others who do not have indwelling devices, e.g., urinary catheters, or recent surgical incisions.

- ✦ All visitors must report to the nurse-in-charge before entering the room of a patient in isolation and must be instructed on protective clothing and other precautions, such as hand hygiene.
- ✦ Staff should use hand hygiene, e.g. wash hands, immediately after leaving the room to avoid the transfer of microorganisms to other patients or to the environment.
- ✦ If possible, the nursing staff should attend the patient in isolation last, after dealing with all non-infected patients.
- ✦ If common equipment is unavoidable, then items must be adequately cleaned and appropriately disinfected or sterilized (e.g., autoclaved) before use on another patient.
- ✦ The room should be cleaned after discharge of the patient.
- ✦ It is important to consider the psychological effect of isolation on patients and a member of the Infection Control team should discuss concerns expressed by the patient or by their family members.

## Protective Clothing

Personal protective equipments (PPE) should be

worn by health care personnel to protect themselves against exposure to microbes and to minimize potential for contamination of their clothing.

[For more information see chapter “Personal Protective Equipment”]

## Standard Precautions

Standard precautions (SP) are required for all care in the health care facility in order to prevent transmission of communicable diseases and Hospital-acquired infections. Standard precautions should be part of standard health care practice for all patients in all levels of health care services. Before embarking on extensive and complex infection control (IC) policies and procedures, all health care facilities should have the following six procedures in place. The first role of the Infection Control team is to assess the status of these procedures and, if they are not adequate, to ensure that provisions are made to improve adherence and application.

Table-7: Standard precautions used in the care of all patients irrespective of whether or not they are infectious

Hand hygiene	✦ ✦ ✦	Wash hands after touching blood, secretions, excretions, and contaminated items, and after removal of gloves. Use plain soap for routine hand washing. Use an antimicrobial cleaning agent for specific circumstances.
Personal protective equipment (PPE)	✦	Use appropriate barrier equipment designed to shield the employee from blood and body fluid contamination. This equipment includes gloves, fluid resistant masks and gowns, splash shields, and eye protection, and is used whenever there is a risk of exposure to blood or other potentially infectious material.
Aseptic techniques	✦	Aseptic techniques refer to the practices performed just before or during a clinical or surgical procedure in order to reduce the patient's risk of infection by reducing the likelihood that microorganisms will enter areas of the body where they can cause infection. These practices include:  ✦ Surgical attire, ✦ Surgical scrub and gloving, ✦ Establishing and maintaining a sterile field, ✦ Using good surgical technique, and ✦ Employing measures to minimize contamination of medical devices during insertion, care and maintenance.
Reprocessing of instruments/ Sterile services	✦	Ensure that reusable equipment is not used for the care of another patient until it has been cleaned and reprocessed appropriately. Proper QC of reusable instruments must be ensured and regularly monitored.
Environmental cleaning	✦	Ensure that the hospital has adequate procedures for the routine care, cleaning, and disinfection of environmental surfaces.
Proper sharps and waste disposal	✦ ✦	Take care to prevent injuries when using needles, scalpels, and other sharp instruments and devices.  Manage health care waste properly to prevent exposures to infections, and toxic effects and injuries to health care personnel, waste handlers, and the community.