

INFECTION CONTROL

Good clinical care

- History, examination and record keeping skills
- Appropriate time management and decision making
- Understanding and applying the basis of good quality care and ensuring and promoting patient safety
- **Knowing and applying the principles of infection control**
- Understanding and applying the principles of health promotion and public health
- Understanding and applying the principles of medical ethics and other legal issues

Maintaining good medical practice

Relationships with patients and communication

Working with colleagues

Teaching and training

Professional behaviour and probity

Acute care

Defintion of infection

- ▣ The entry and development or multiplication of a disease – causing agent in the body.

Patient may acquire infection before admission to a hospital known as **Community acquired infection.**

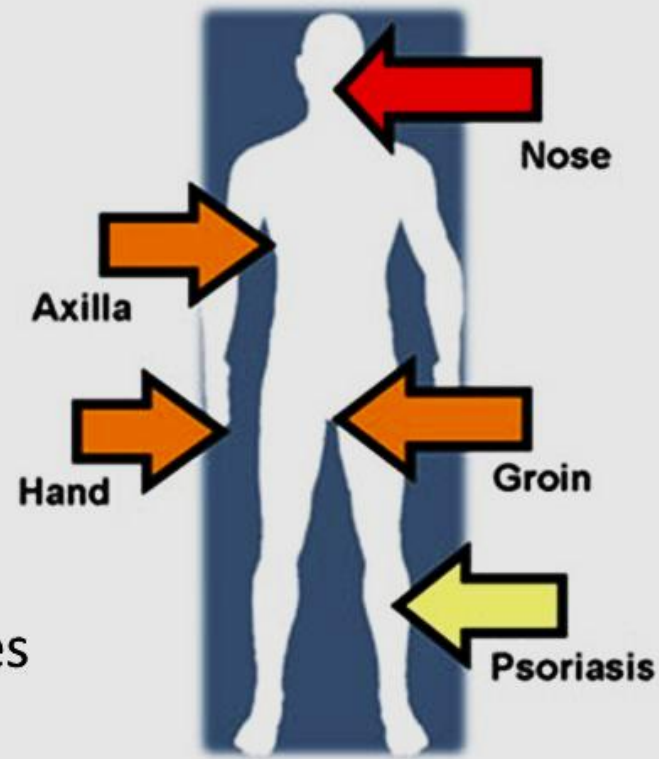
- Patient may get infection inside the hospital known as **Nosocomial Infection/ Healthcare Associated Infections (HAIs).**

Colonization

- ▣ whereby microorganisms are present in the host but do not invade or cause an associated host response.

MRSA Colonization

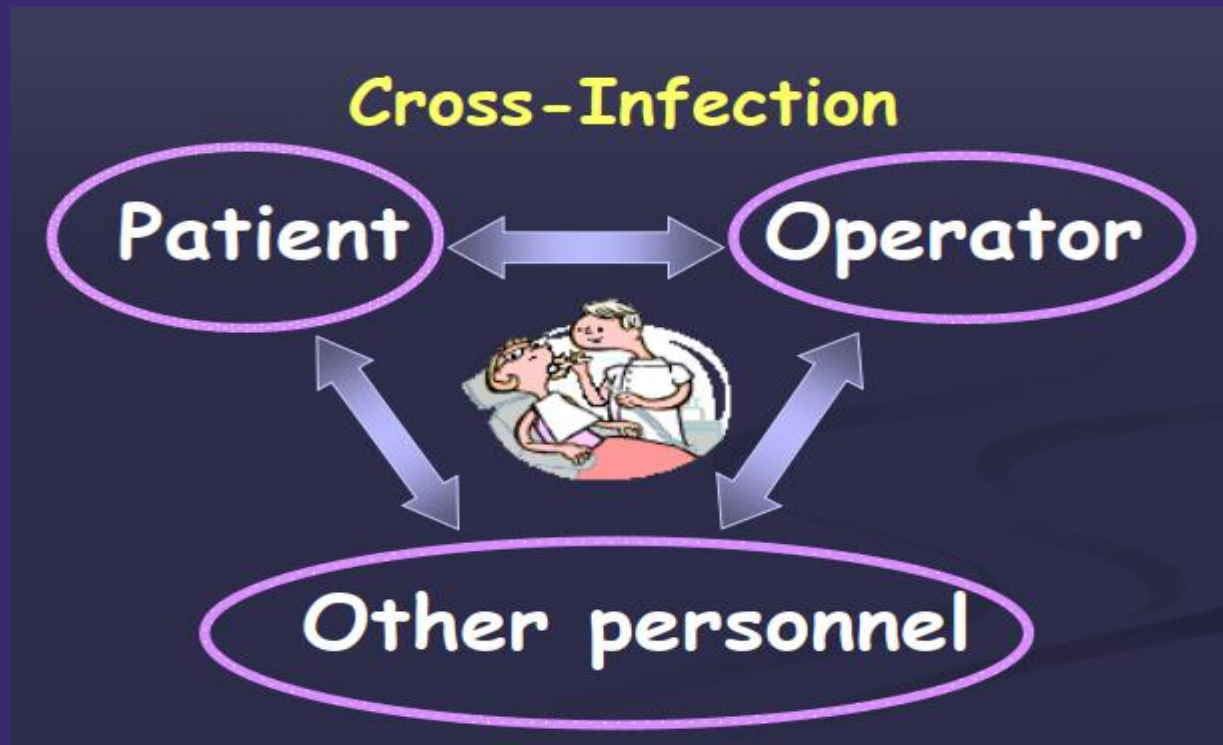
- Identifying patients with MRSA colonization may guide initial antibiotic treatment and isolation measures
- MRSA swabbing is a standard method for screening in many facilities for MRSA screening



S. aureus/MRSA
Colonization Hotspots

Cross infection

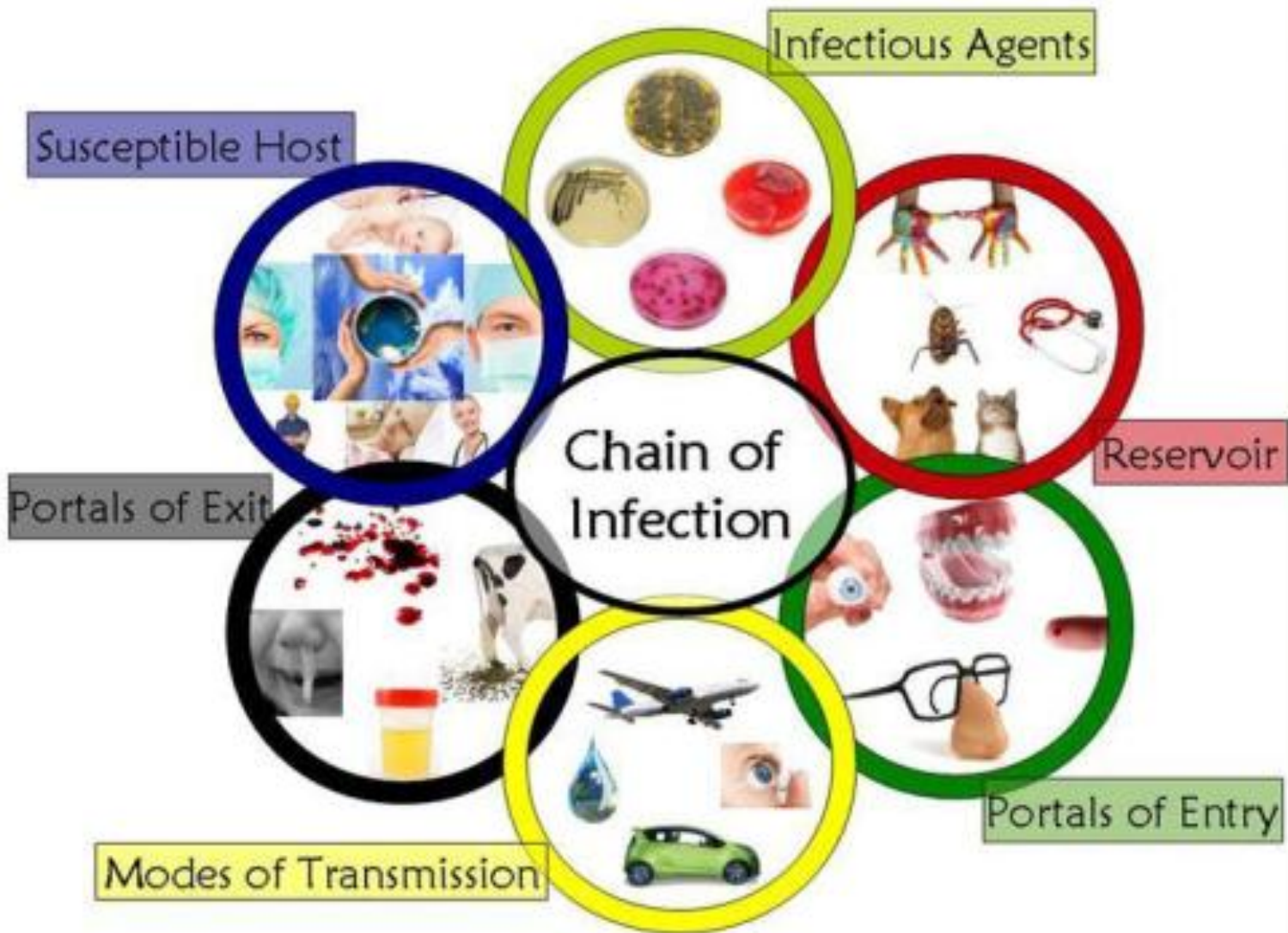
- ▣ The transmission of infectious agents between patients and staff



Protecting

- ▣ Ourselves.
- ▣ The patient
- ▣ Other patients
- ▣ Otherstaff
- ▣ Our famillies.

Chain of Infection



Infection Control

Identifying and reducing the risk of infections developing or spreading.

Types of exposure

- ▣ Penetrating skin by sharps.
- ▣ Mucous membrane eye nose mouth and non intact skin –exposure to patient body fluids.splash.



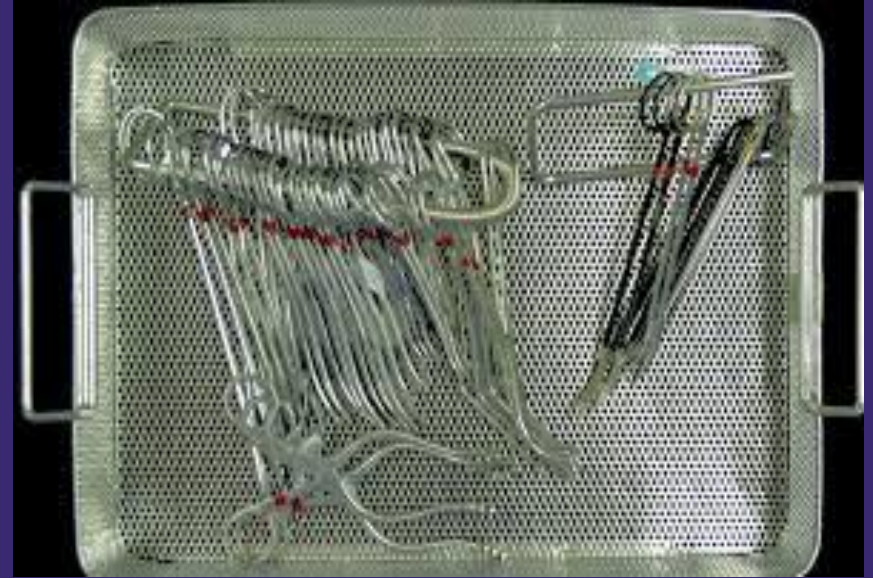
- ▣ Hepatitis B vaccine for all health workers and students.
- ▣ Comprehensive medical history for all patients



- ▣ Instrument packaging: instruments should be well packaged individually to prevent contamination after use.
- ▣ Disinfection of all non-sterilizable instruments, equipments and surfaces. surface asepsis using a “Spray- wipe- Spray” technique.
- ▣ Appropriate waste disposal system.
- ▣ Appropriate sharp disposal system
- ▣ Wash and Heat sterilize all instruments immediately after use.

Instrument packaging





Before:



After:



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Autoclave tape, pouches, and steam indicator test strips may only be used in an autoclave

SINGLE USE ②



Iris Scissors

Art No. Size

| | | |
|-------|--------|----------|
| S-024 | 11.5cm | Straight |
| S-025 | 11.5cm | Curved |

Single-use Bronchoscope of MDH Endoscope



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Price US\$ 400 ~ 500

Min Order Quantity 1000 Set

Supply Ability 50,000sets per year

Port Zhuhai/Shenzhen/HK

Delivery Lead Time subject to discussion

Required Quantity

[✉ Inquire Now](#)

* Send an Inquiry to this supplier.

[▶ Start Order](#)

* Name your price

* Start order doesn't mean buying now



Gloves:

- ▣ Fresh pair should be used for each patient
- ▣ Sterilized gloves should be used for every procedures
- ▣ Heavy- duty gloves should be used for cleaning instruments .

- ▣ Nylon gloves should be avoided as much as possible except in extreme cases of allergy to latex gloves. It can only be used in routine examination where the examiner will have the least contact with body fluids.

- ▣ Torn or punctured gloves should be changed immediately.
- ▣ Gloves should not be worn outside the OR.
- ▣ Avoid touching surfaces to prevent contamination.

Face mask:

Face masks should have a complete line of filtration-efficiency, fluid-resistant and comfortable-to-wear models to help reduce exposure to potentially infectious particles which are borne in air (breathe of the patients) or fluid splashes (saliva or blood).

All masks should comply with Guidelines for Isolation Precautions when worn properly and in combination with face shield or other eye protection.

Eye wash station



Handling sharps:

- ▣ All needles and ampules should be disposable and should not be reused under any circumstances.
- ▣ Care should be taken when needles need to be recapped. Capping of the needle should not be done while holding the needle. It can be done using the needle- holding forceps or re-capped on the tray.

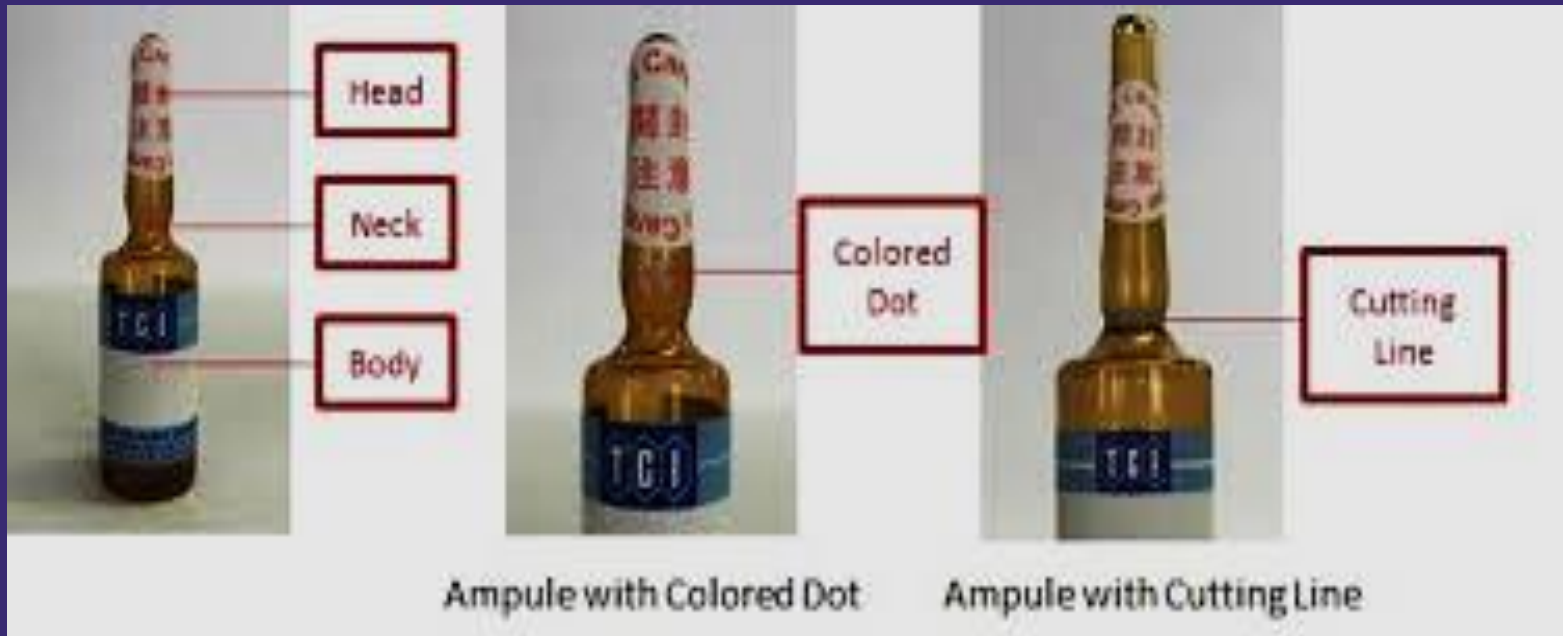


sharps

- ▣ any needles, syringes with needles, scalpels, blades, broken ampules or other articles that could cause wounds or punctures to personnel handling them.
- ▣ Must be discarded into special containers without risk to disposal personnel.

| Risk of seroconversions due to sharps injury | |
|---|--------|
| HBV | 10-30% |
| HCV | 3% |
| HIV | 0.3% |

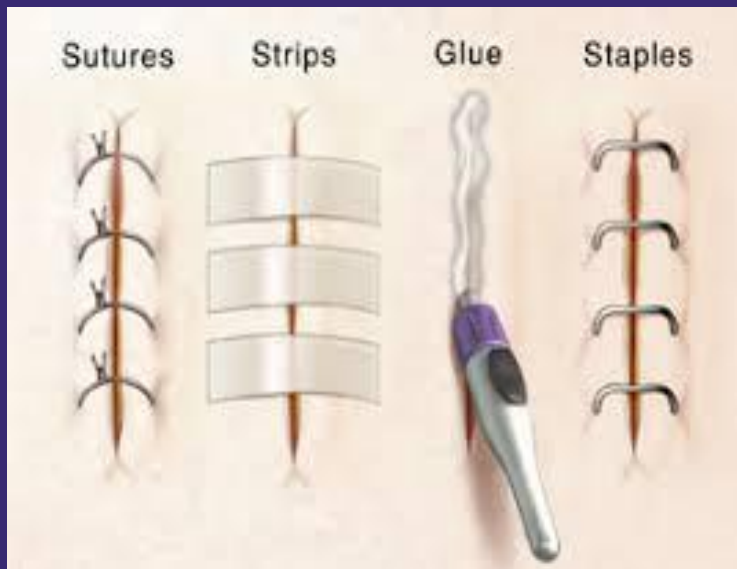
HBV RISK FOR NON VACCINATED****







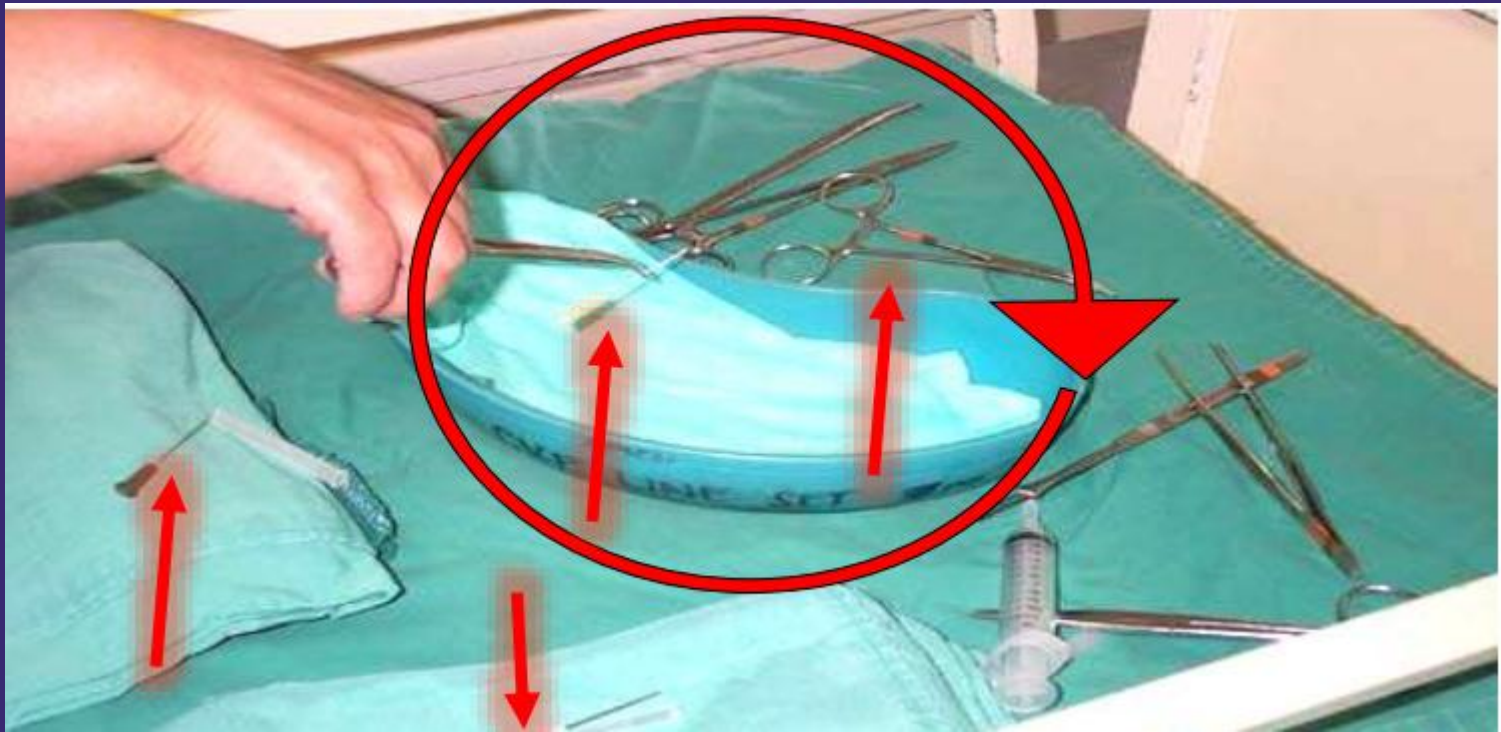
Stapling device



Adhesive strips











The most effective way for health-care providers to protect themselves, their family and their patients from influenza is to:

- a) Wear a surgical mask at all times at work
- b) Stay at home if they have respiratory symptoms
- c) Get an annual flu shot and encourage their family, co-workers and patients to get the flu vaccine annually
- d) Not go to work from November to April.
- e) Wear gloves during clinical examination.

Infection control committee

- ▣ Recommend actions.
- ▣ Establish guidelines.
- ▣ Approve procedures etc
- ▣ Review measures .
- ▣ Investigate incidents.

- ▣ REPORTING INFECTIONS AND
- ▣ INFECTION CONCERNS

Principles of infection control

- ▣ These include standard precautions (hand hygiene, PPE, injection safety, environmental cleaning, and respiratory hygiene/cough etiquette) and transmission-based precautions (contact, droplet, and airborne).

Infections control precautions:

- Standard Precautions
 - Should be applied for ALL patients
- Transmission-based Precautions*
 - Contact
 - Droplet
 - Airborne

Standard precautions

- Hand hygiene.
- Respiratory hygiene/cough etiquette.
- Use of personal protective equipment (PPE).
- Prevention of needle sticks/sharps injuries.
- Cleaning and disinfection of the environment and equipment.

Droplet precautions

- Use for protection against respiratory pathogens transmitted by large droplets
 - In addition to Standard Precautions:
 - Use a surgical/medical mask
 - Maintain a distance ≥ 1 meter between infectious patient and others.
 - Place patient in a single room or cohort with similar patients.
 - Limit patient movement.
- You can leave door open.
No special air handling.

Droplets occur during

- ▣ Talking
- ▣ Coughing.
- ▣ Sneezing.
- ▣ During suction of secretions and procedures like bronchoscopy.

- ▣ Droplets travel up to 1.5 meters.

Droplets more than 5 micron

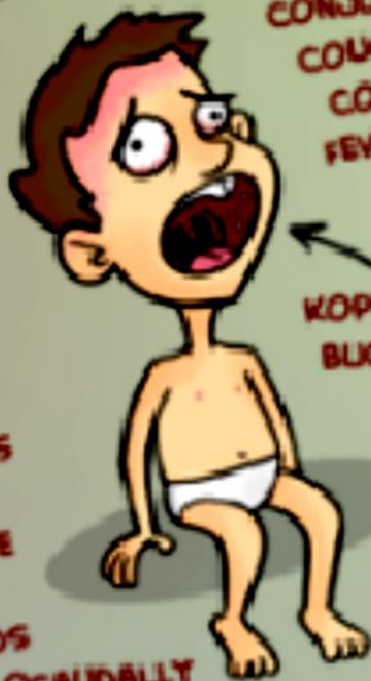
- ▣ N meningititides.
- ▣ Epiglottitis, due to Haemophilus influenzae type b
- ▣ German measles (rubella)
- ▣ Influenza
- ▣ Mumps (infectious parotitis)

MEASLES

CONJUNCTIVITIS
COUGH
CORYZA
FEVER

KOPLIK SPOTS ON
BUCCAL MUCOSA

RASH
APPEARS
AT THE
HAIRLINE
AND
SPREADS
CEPHALOCAUDALLY
OVER 3 DAYS



RUBELLA

GERMAN MEASLES

HEADACHE
LOW GRADE FEVER
SORE THROAT
CORYZA

FORCHHEIMER SPOTS
ON SOFT PALATE

LYMPHADENOPATHY

RASH BEGINS
ON THE FACE
AND SPREADS
CEPHALOCAUDALLY







Contact precautions:

- Use for protection against infections which spread by contact
- In addition to Standard Precautions:
 - Use non-sterile, clean, disposable gloves, gown, apron (only if gown is not impermeable)
 - Use disposable or dedicated reusable equipment (which must be cleaned and disinfected before use on other patients)
 - Limit patient contact with non-infected persons
 - Place patient in a single room or cohort with similar patients

Airborne precautions

- Use for protection against inhalation of tiny infectious droplet nuclei (less than 5 micron)
- In addition to Standard Precautions:
 - Use particulate respirator / N 95 mask
 - Place the patient in adequately ventilated room (≥ 12 air changes per hour) (place patient in negative pressure room. door should be closed).
 - Limit patient movement
- Use airborne precautions during performing of any aerosol-generating procedures associated with risk pathogen transmission like bone cutting, dental procedures.

Airborne infection

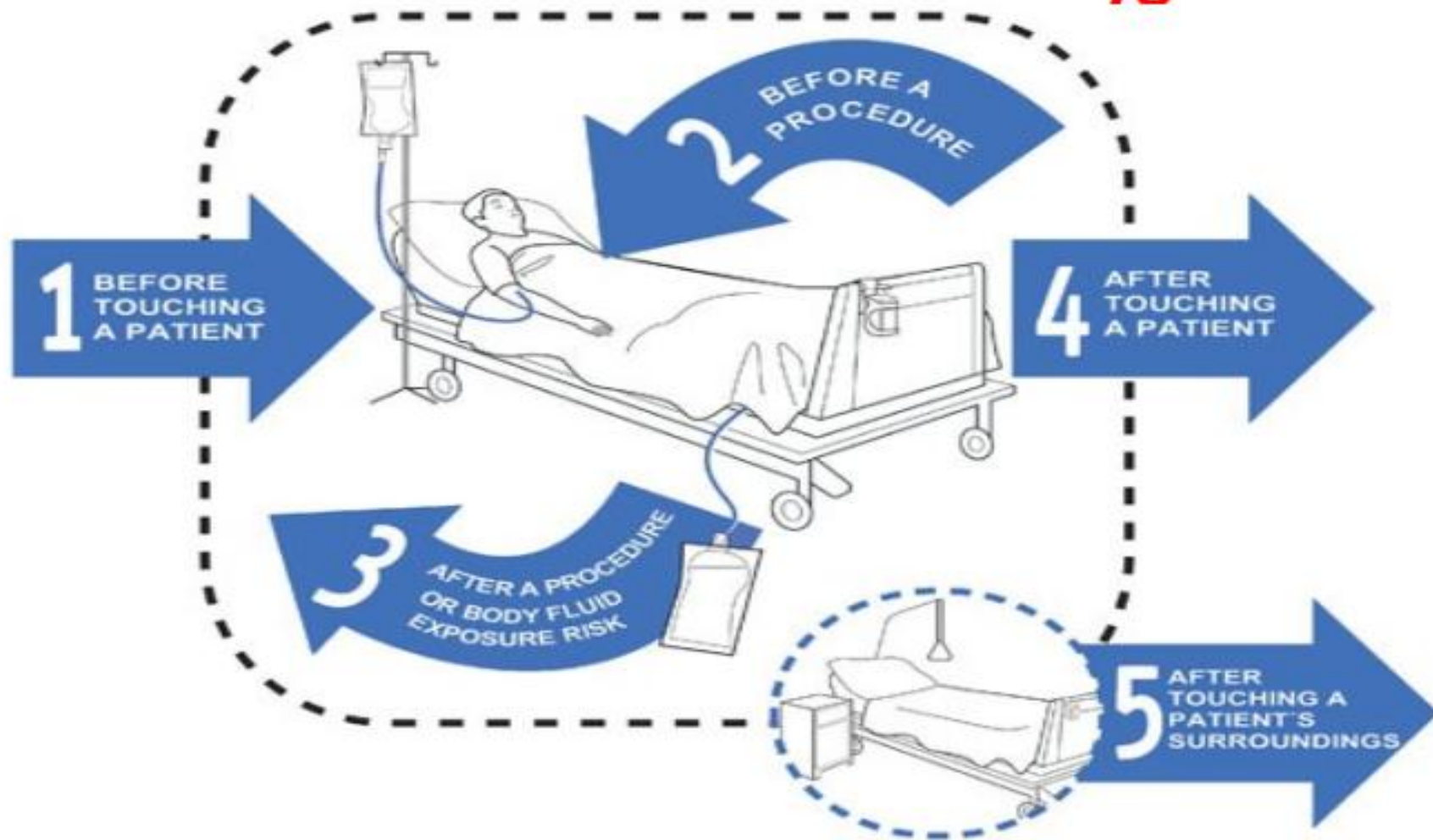
- ▣ TB.
- ▣ Chickenpox
- ▣ Measles.
- ▣ Sars covid
- ▣ during certain circumstances like close contact and procedures like suction.





HAND HYGIENE IS THE CORNERSTONE OF INFECTION CONTROL

WHO Five Moments of Hand Hygiene



TYPES OF HAND HYGIENE

- Routine Hand wash with plain soap & water is the mechanical removal of soil and transient bacteria.
- Aseptic hand wash is removal & destruction of transient flora using anti-microbial soap & water .
- When hands are visibly soiled do wash hands with soap and water.
- Alcohol hand rub 2cc gel is use (for 15-20 sec).when hands are not visibly soiled.
- Surgical hand scrub: removal / destruction of transient flora and reduction of resident flora using anti-microbial soap with effective rubbing (for least 3-5 min).

Proper Handwashing Procedure



1. Wet hands and wrist. Apply soap.



2. Right palm over left, left over right.



3. Palm to palm, fingers interlaced.



4. Back fingers to opposing fingers interlocked.



5. Rotational rubbing of right thumb clasped in left palm and vice versa



6. Rotational rubbing backwards and forwards with tops of fingers and thumb of right hand in left and vice versa.

True /false

- ▣ If you wear gloves while providing care, hand hygiene is not required.
- ▣ false

TYPES OF PPE USED IN HEALTHCARE

- Gloves – protect hands
- Gowns/aprons – protect skin and/or clothing
- Masks and respirators– protect mouth/nose
 - Respirators /N95 mask – protect respiratory tract from airborne infectious agents
- Goggles – protect eyes
- Face shields – protect face

Step 1: Hand hygiene ✓

Step 2: Gown ✓

Step 3: Mask ✓

Step 4: Eyewear ✓

Step 5: Gloves ✓

remove

Step 1: Gloves ✓

Step 2: Gown ✓

Step 3: Hand hygiene ✓

Step 4: Eyewear ✓

Step 5: Mask ✓

Step 6: Hand hygiene ✓

PPE FOR TRANSMISSION-BASED PRECAUTIONS

- Used in addition to Standard Precautions



+



- **Contact Precautions**

- Gloves
- Gown

- **Droplet Precautions**

- Surgical/Medical mask



- **Airborne Precautions**

- Particulate respirator/
N95 mask



COVID-19 Personal Protective Equipment (PPE) for Healthcare Personnel

Preferred PPE – Use N95 or Higher Respirator



Acceptable Alternative PPE – Use Facemask



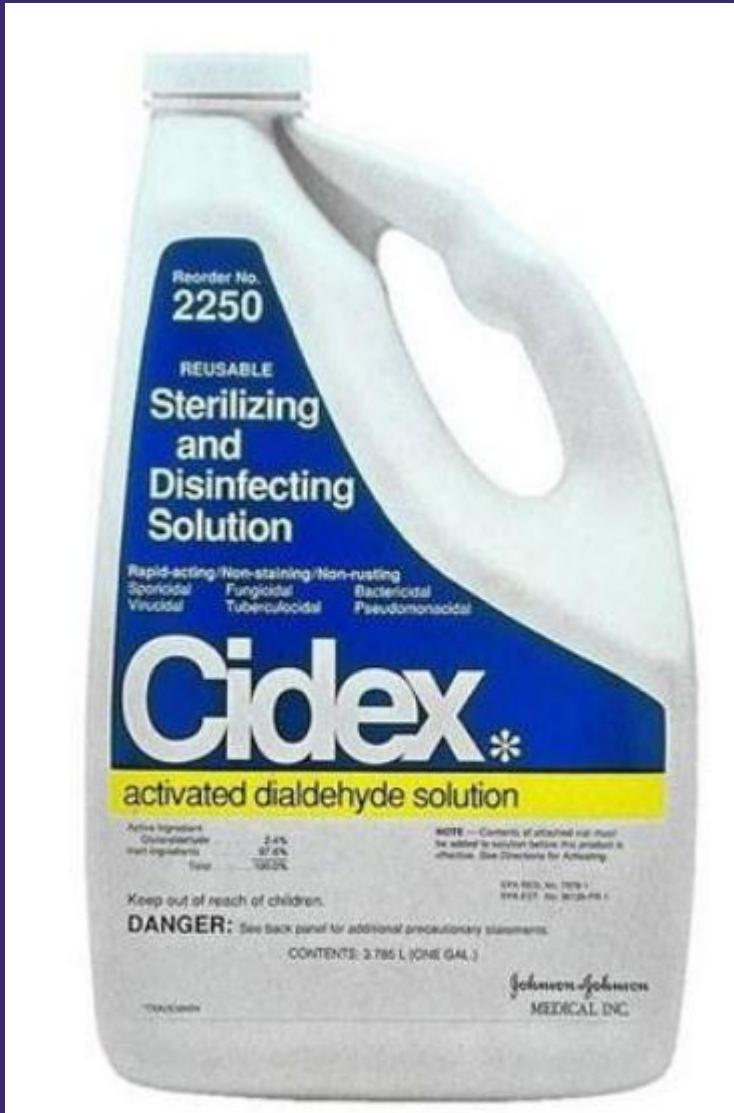
- ▣ what kind of solution is best suited to clean up bodily fluid spillages?
- ▣ Hypochlorite
- ▣ The CDC (Centers for Disease Control and Prevention) recommends a bleach solution of one part bleach to nine parts water.

- ▣ Wear gloves, a plastic apron and eye protection, such as goggles. Soak up the fluid with disposable paper towels, or cover the spill with a granular chlorine-releasing agent for a minimum of 10 minutes.

disinfection reduces the risk of healthcare-associated infections (HAIs)

- ▣ Quaternary Ammonium, Hypochlorite, Accelerated Hydrogen Peroxide, Phenolics, and Peracetic Acid.

- ▣ CIDEX® can be used to disinfect a wide range of medical instruments, made of aluminum, brass, copper, stainless steel, plastics and elastomers. CIDEX® Activated Glutaraldehyde Solution provides a wide spectrum efficacy against bacteria, mycobacteria, viruses and fungi.



▣ PATIENT ACCOMMODATION