



INDIA'S FIRST ON-THE-JOB TRAINING COURSE
FOR GI ENDOSCOPY TECHNICIANS.

INFECTION CONTROL & BASIC MICROBIOLOGY

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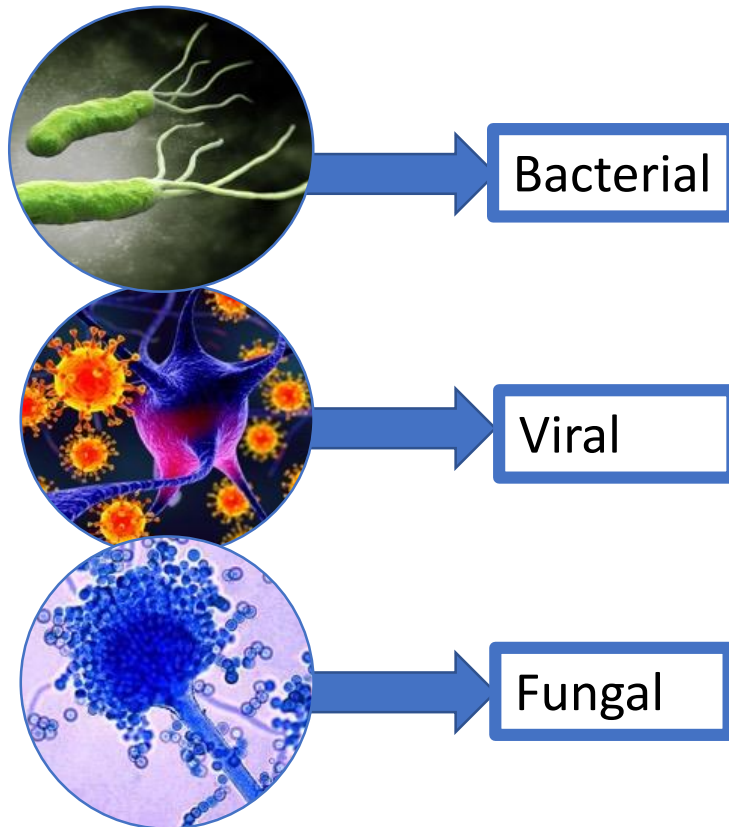
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Any patient can be a
source of infection

Practice standard
precautions

Various infections can be transmitted during endoscopy



Bacteria, virus and fungi – The difference

Bacteria, Virus & Fungus

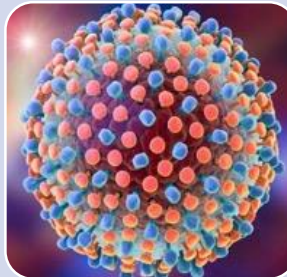
	Bacteria	Virus	Fungus
Structure	Unicellular	Genetic material enclosed in a shell	Unicellular or multicellular
Size	Medium (0.3-2 μ)	Smallest (0.02-0.3 μ)	Largest (3-10 μ)
Antibiotics	Effective	Not effective	Not effective

Some clinically relevant organisms



Bacteria

H Pylori
E Coli
V.Cholera
Tuberculosis



Virus

Hepatitis
HIV
Influenza
(Flu)
Chicken
Pox
Polio



Fungus

Candida
Aspergillus

Common infections that can be transmitted during endoscopy procedures

Bacterial				
Salmonella (Enteric infection)	Pseudomonas (Causes Blood stream infections)	H Pylori (Causes ulcer)	Clostridium Difficile (Causes Pseudomembranous colitis)	Others Klebsiella, Enterobacter, Serratia and Staphylococcus

Viral Infections

Hepatitis B

Hepatitis C

HIV

Other infections

Fungi

- No documented reports of endoscopic transmission

Parasites

- Rare
- Only once reported on strongyloides transmission

Factors leading to transmission of infections



Insufficient Pre cleaning, shortening of immersion & brushing times, insufficient channel flushing, inadequate drying before storage



Unsterilized irrigation water bottle attached to the endoscope



Lack of cleaning and drying of the air- water and/or the elevator channels of duodenoscopes

No transmission of HBV,
HCV or HIV through
endoscopy when current
guidelines are followed

Key components of Standard Precautions

Assume all patients and body fluids as
potentially infectious

Hand
Hygiene



Personal
Protective
Equipment



Hand Hygiene

Wash hands when visibly dirty or visibly soiled with blood or body fluids
Use alcohol-based hand rub if hands not visibly soiled
 Decontaminate hands after removing gloves

How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

⌚ Duration of the entire procedure: 20-30 seconds



How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

⌚ Duration of the entire procedure: 40-60 seconds



Personal Protective Equipment (PPE)

“Specialized clothing or equipment, worn for protection against infectious materials “



Gloves – Protect hands



Gowns /Aprons – Protect skin / clothing



Mask – Protect mouth / nose

Respirators – Protect resp tract from airborne infection



Face shield – Protect face, mouth, nose
and eyes

Points to remember regarding PPE

Select PPE based on the anticipated exposure



Avoid touching face or environmental surface
with contaminated gloves



Change gloves - if torn , when heavily soiled
& after each procedure



Personal prescription lenses not a substitute for
goggles ; face shield can be used as a substitute to
wearing a mask or goggles

PPE – For staff involved in the reprocessing procedure



Chemically resistant single use gloves



Protective eye wear



Face mask



Surgical hair cap



Respiratory protective equipment when handling chemicals especially disinfectants containing respiratory sensitizers

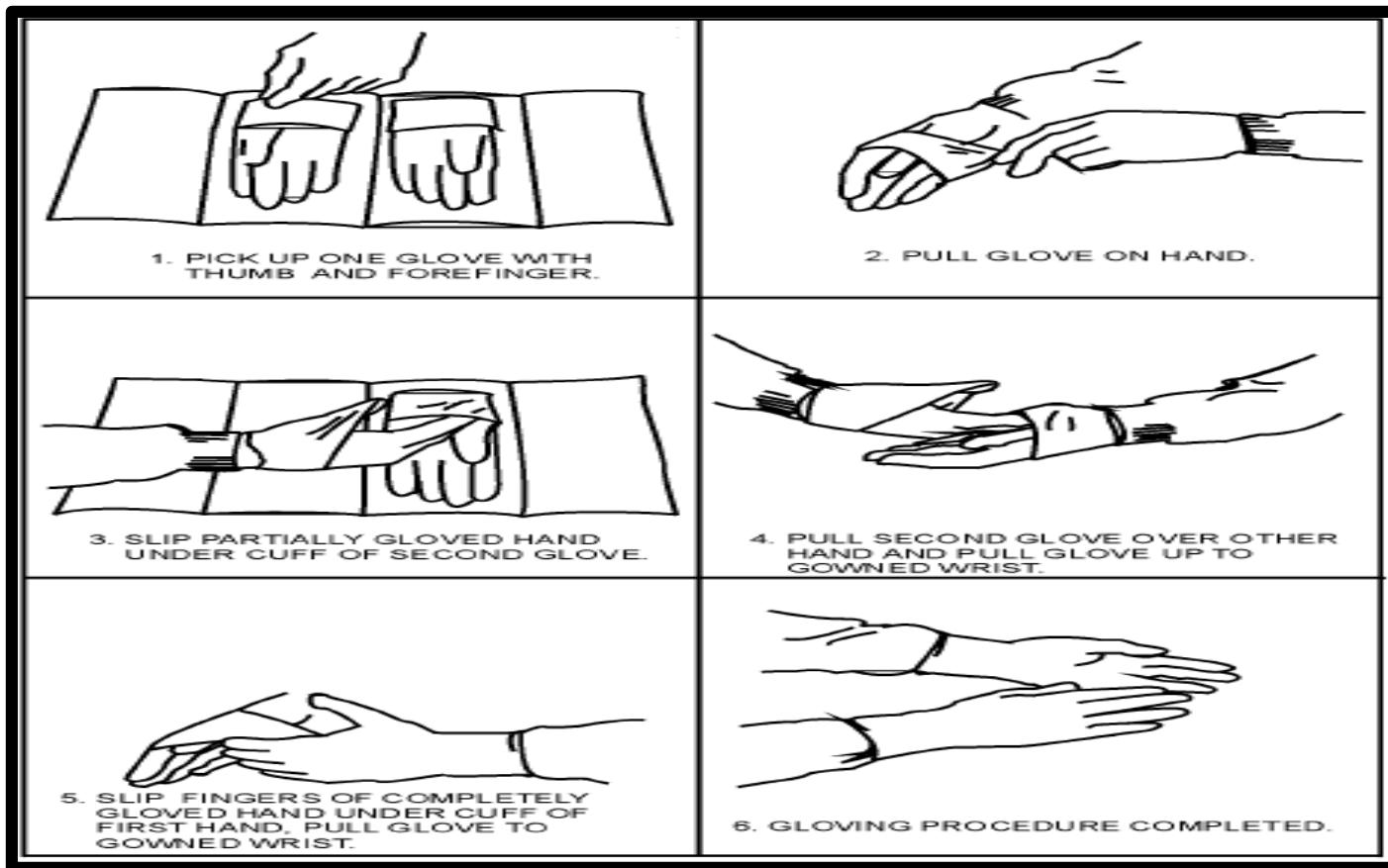


Long sleeved moisture resistant protection gowns

Sequence of donning PPE



Wearing gloves - Steps

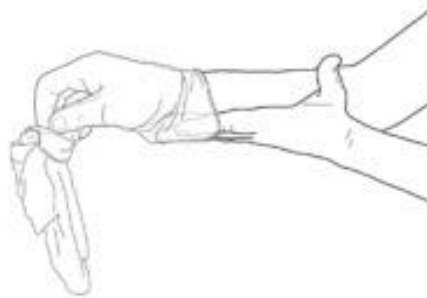


Removing gloves - Steps

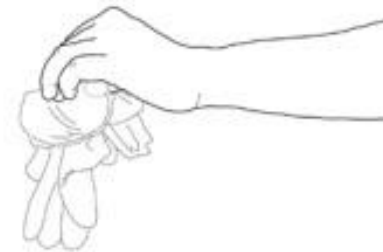
II. HOW TO REMOVE GLOVES:



1. Pinch one glove at the wrist level to remove it, without touching the skin of the forearm, and peel away from the hand, thus allowing the glove to turn inside out



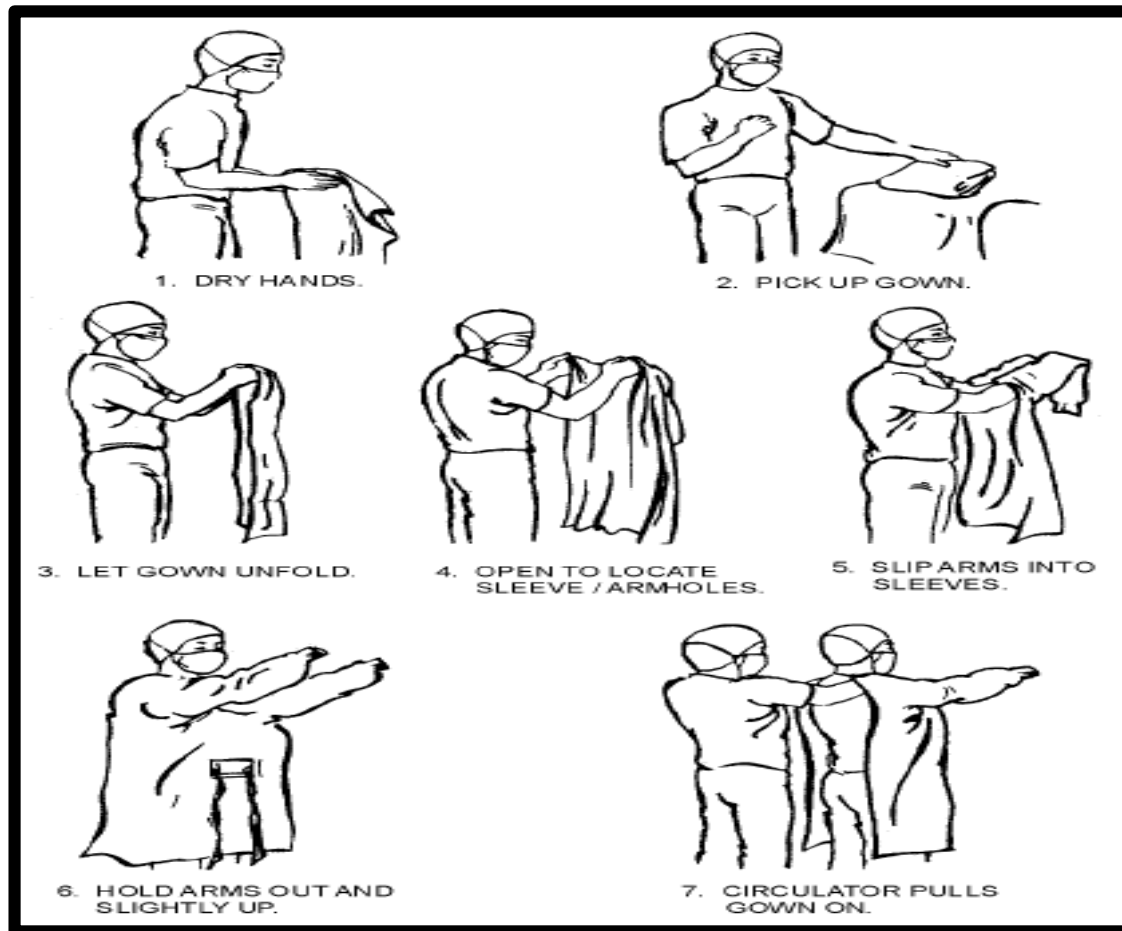
2. Hold the removed glove in the gloved hand and slide the fingers of the ungloved hand inside between the glove and the wrist. Remove the second glove by rolling it down the hand and fold into the first glove



3. Discard the removed gloves

4. Then, perform hand hygiene by rubbing with an alcohol-based handrub or by washing with soap and water

Steps to wear a gown



Steps to remove gown



Sequence of removing PPE



Gloves removed first ; Mask last

Surface cleaning methods

Follow hospital protocol

Clean housekeeping on a regular basis, when spills occur, and when these surfaces are visibly soiled.

Disinfect (or clean) environmental surfaces on a regular basis and when surfaces are visibly soiled

Equipment	Recommendation
Patient Trolley (Endoscopy trolley)	Should be cleaned every day with 0.5 percent bacillocid solution.
Work surfaces	Should be disinfected by wiping with 2 percent bacillocid and then cleaned with detergent and water twice a day

Equipment	Recommendations
Bed ends and frames , Curtain rails	Mop with 1 percent sodium hypochlorite. Allow to dry
Bowls-Bedpans / Urinals / Kidney trays	Heat disinfection in a rinse temperature of minimum 82°C for 2 minutes If not possible, keep in 7% lysol for 24 hours or 3-5 percent sodium hypochlorite solution for 30 minutes; then with soap and water and dried in sunlight
Mattresses and Pillows (Should be covered with an impervious plastic cover)	Should be wiped with detergent and water if visibly contaminated. Clean and disinfect moisture-resistant mattress covers between patient uses by using bacillocid. Plastic and rubber covers of mattresses and pillows should be washed with soap and water, cleaned with a suitable disinfectant, Eg: 7 percent Lysol.

Blood spill - Management

Use PPE
When sharps are involved use forceps to pick up sharps, and discard these items in a puncture-resistant container



Cover the area immediately with any absorbent material like tissue paper, old newspaper, and gauze piece.



For large spills: flood the area with a 0.5-1.0 percent chlorine solution, mop up the solution, and then clean as usual with detergent and water.



Safe disposal protocols

Proper Disposal of Needles and Sharps

Do Not Recap Needles

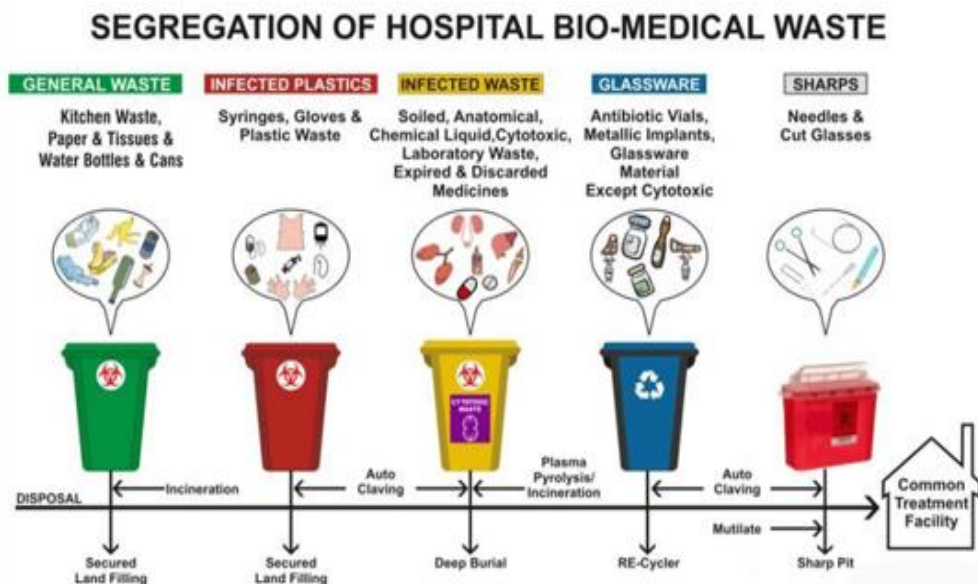


Principles of Waste Management

segregate clinical (infectious) waste from nonclinical waste in dedicated containers.

Transport waste in dedicated trolleys.

Different categories of waste are disposed of in different color coded bags as defined by the Pollution Control Board





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