

# INFECTION CONTROL PRACTICES FOR SMALL HEALTHCARE SETUP

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## Next Sick Person

*(Susceptible Host)*

- Babies
- Children
- Elderly
- People with a weakened immune system
- Unimmunized people
- Anyone



## Germ

*(Agent)*

- Bacteria
- Viruses
- Parasites



# Chain of Infection

## How Germs Get In

*(Portal of Entry)*

- Mouth
- Cuts in the skin
- Eyes



## Where Germs Live

*(Reservoir)*

- People
- Animals/Pets (dogs, cats, reptiles)
- Wild animals
- Food
- Soil
- Water



## Germs Get Around

*(Mode of Transmission)*

- Contact (hands, toys, sand)
- Droplets (when you speak, sneeze or cough)



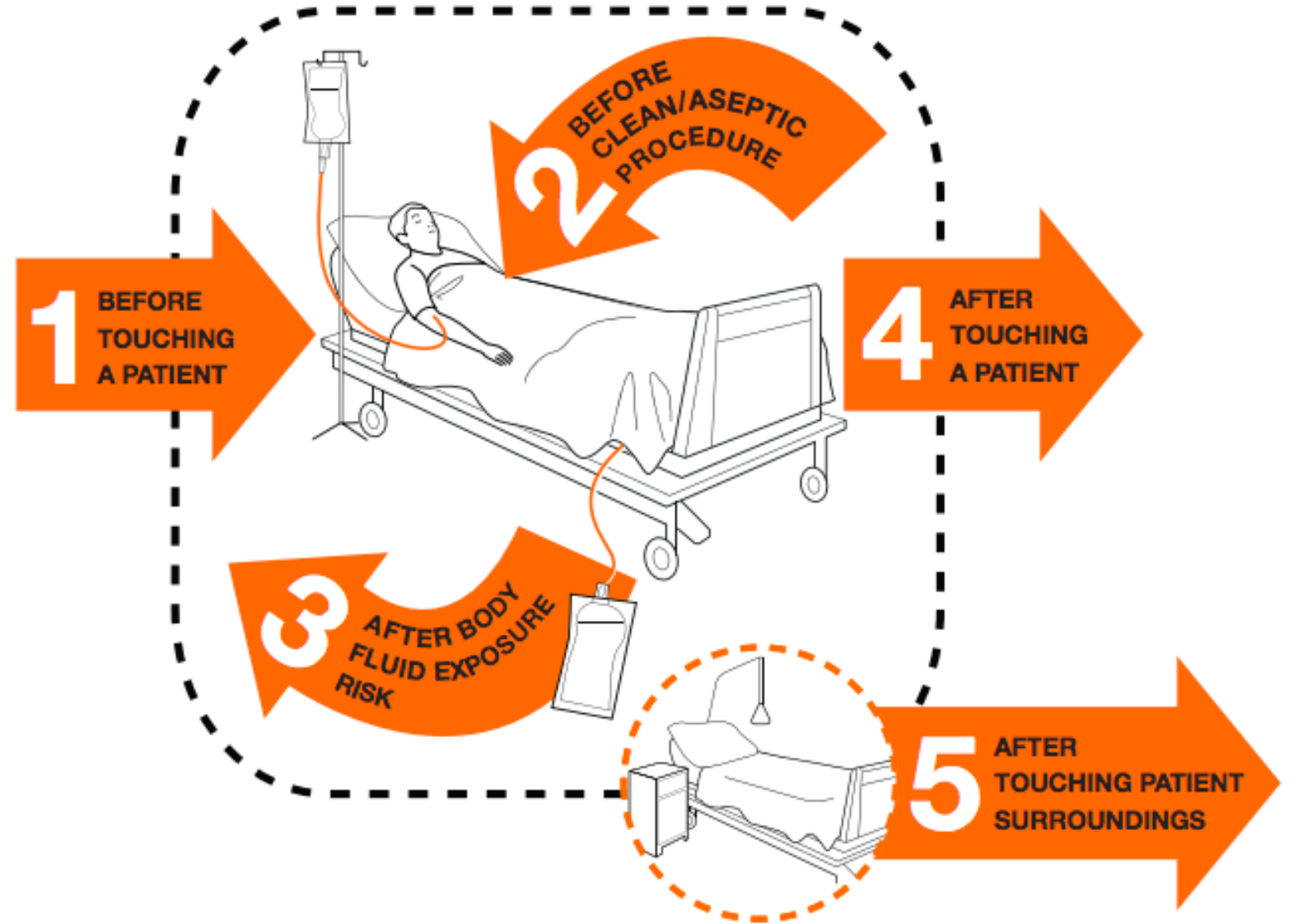
## How Germs Get Out

*(Portal of Exit)*

- Mouth (vomit, saliva)
- Cuts in the skin (blood)
- During diapering and toileting (stool)



# 5 moments of hand hygiene



# Precautions you must be already taking

- Basic Hand Hygiene-Hand wash or hand rub?
- Uses of PPE wherever required-SP
- Sterility in OT & Procedures-Laminar air flow/Restricted entry
- Following Instrument Sterilization/disinfection
- Biomedical Waste Segregation

# What might be Lacking

- Have a Yearly Budget
- Analysing Yourself
- Monitoring the data-HAI rates (Including Post Discharge Infections)
- Occupational Hazards, Vaccination and PEP
- Antibiogram Analysis
- Surgical Antibiotic Prophylaxis and Antibiotic policy
- Restricted use of Reserve Antibiotics
- Maintaining Data

# Basic Infection control standards

The 3 basic standards which every nursing home and small clinic has to follow.

## 1. Hospital IC Manual/Protocols-

- Cleanliness & basic hygiene facility-Soap & water is best
- Follow standard precautions-written protocols and checklists
- Equipment cleaning, disinfection and sterilization.
- BMW Segregation and storage
- Laundry/linen/managing infected & clean linen-segregation, separation, storage & distribution.
- References-
  - Centers for Disease Control and Prevention (CDC) guidelines
  - Occupational Safety and Health Administration (OSHA) regulations
  - State and local health department requirements-NABH

# What are Standard Precautions (SP) -

SP apply to all patients receiving care in hospitals regardless of their diagnosis or presumed infection status.

SP has to be followed when there are chances of exposure to -

- (1) Blood;
- (2) All body fluids, secretions, and excretions
- (3) Non intact skin and
- (4) Mucous membranes.

- Hand Hygiene
- Personal protective equipments:
  - Masks, gloves, respiratory protection, eye protection, face shields, gowns and protective apparel
- Patient-care equipment and articles
- Safe injection practices
- Linen and laundry
- Environmental cleaning
- Biomedical waste management
- Placement & transport of patients

# Scenario

- PLHA patient admitted in your hospital

Which room to admit

What SP






# Difference Between Sterilization & Disinfection

- Disinfection is the process of eliminating or reducing harmful microorganisms from inanimate objects and surfaces.
- Sterilization is the process of killing all microorganisms.
- **SUD- Reuse of single use devices**
- Expensive, heat labile material.

Methods	Examples
Sterilization	Autoclaving
High level disinfection	>2% glutaraldehyde/Hydrogen peroxide, Peracetic acid
Intermediate level disinfection	Quaternary ammonium compounds
Low level disinfection	Alcohol,- iodophores etc

# Instrument Disinfection-Spauldung classification

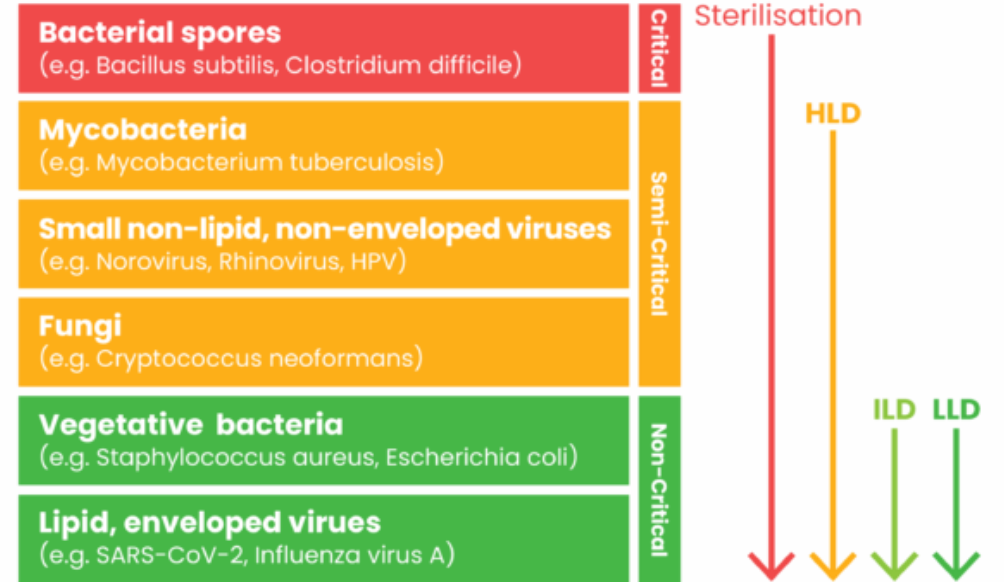
Patient Contact	Examples	Device Classification	Minimum Disinfection Level
Intact Skin		Non-Critical	Low Level or Intermediate Level Disinfection
Mucous Membranes or non-intact skin		Semi-Critical	High Level Disinfection
Sterile areas of the body, vascular system		Critical	Sterilization

## Indicates What Level of Disinfection Eliminates all Microbe Groups<sup>1-4</sup>

More resistant to disinfectant



Less resistant to disinfectant



References: **1.** ASUM/ACIPC, Guidelines. Australasian Journal of Ultrasound in Medicine, 2017. **2.** WFUMB, Guidelines. World Federation for Ultrasound in Medicine & Biology, 2017. **3.** ESR Guidelines, European Society of Radiology Ultrasound Working Group, 2017. **4.** Rutala WA, Weber DJ. HCPAC, www.cdc.gov

Source: Healthcare Purchasing News (June 2014)

# How to select a disinfectant agent?

Based on the following criteria-

- Intended use and appropriateness
- Degree of disinfection required
- Spaulding's classification
- Safety
- Turn around time

## **OBSOLETE!!!! STOP USING IT!**

- Formalin Chamber use between surgeries – toxic and ineffective and can't be validated.
- Flash Sterilisation of instruments between surgeries-Not an option

## 2. Prevention of HAI in Patients & Staff-

### How to do it? Do you have sufficient time/interest?

- Pre & post exposure prophylaxis for staff-Hep B vaccination /ab titre & Tetanus vaccination at least,
- Prevention of needle stick injury-single use, no recap, proper disposal
- Bundle care of your patients- ‘a collection of interventions that may be applied to the management of a particular condition”. WHO checklist can help, easy to follow
- Prevention of HAI infections (SSI post discharge at least for 1 month)
- Set protocols
- Follow govt. instructions
- Notifiable disease

Example of  
Checklists to  
prevent  
Hospital Acquired  
Infections

Maintenance Bundle for Ventilator Care										
Day	Adherence to hand hygiene	Assessment of Readiness to Extubate (Done or not)	PUD prophylaxis Needed or not	DVT prophylaxis Given or not	Daily oral care with Chlorhexidine			Suspected VAP	Signature	
					6 am	12 noon	6 pm		Doctor	Nurse
1										
2										
3										

Maintenance Bundle for Central line Care								
Day	Daily Catheter Care by Aseptic technique			Any local signs of infection	Whether Dressing changed or not	CVC still required or not	Signature	
	Alcohol hub decontamination during handling	Hand hygiene before handling	Chlorhexidine gluconate 2% for insertion site dressing changes				Doctor	Nurse
1								
2								
3								

Maintenance Bundle for Urinary Catheter Care							
Day	Daily Catheter Care by Aseptic technique			Closed Drainage system (Yes/No)	Drainage bag above floor & below bladder level (Yes/No)	Catheter Needed (Yes/No)	Signature
	(Vaginal care/ Meatal care) + Perineal care						
	6 am	12 noon	6 pm				
1							
2							
3							

# Infection Prevention/Control Team

## Infection prevention/control team

- ICN
- IC Officer
- Microbiologist

## IC Committee- Administrator, Surgeon, Anaesthetist, Senior Nurse/OT Nurse

At least have a formal meeting **every month-**

Observations of team

Compliance report

Antibiogram 6 monthly or yearly

Antibiotic uses data

### 3. Bio Medical Waste Segregation-

- Segregation at time of generation/collection/transport & disposal by approved authority.
- Wearing PPE while handling.

# Surveillance and Outbreak Management

- Identifying and isolating infected residents. Implementing infection control measures
- Communicating with healthcare professionals and public health authorities

## Education and Training

- Emphasize the need for ongoing education and training of staff members.

## Topics to cover.

- Infection control principles and practices.
- Proper use of PPE
- Hand hygiene techniques
- Cleaning and disinfection procedures



# Cleaning & Disinfection of OT

- Disinfection & Cleaning-Daily and in between cases.
- Deep cleaning and fogging-Weekly
- Top to down, Clean to dirty, unidirectional flow
- Should not use saline to wipe instrument-corrosion
- Don't use hypochlorite solution too much-not compatible with vinyl flooring.
- Selection of disinfectant solution.

# Validation of sterility

1	<b>Glutaldehyde (Cidex)</b>	Can use up to 14 days, but before each use check with chemical strip for efficiency.
2	<b>Autoclave</b>	Biological indicator-weekly – most sensitive
		Bowie dick test
		<b>Chemical indicators – simplest way</b>
		Calibration yearly
3	<b>ETO machine</b>	Chemical indicator
		Biological indicator-weekly

# Take Home Message

## Benefits-

- Cost control and Patient Satisfaction,
- Better Practices Improve Patient Outcome,
- Less Antibiotics,
- Decrease ALOS of Patients,
- Controlled Bill and Overall Satisfaction.

## What should be done-

- Monthly meeting
- Self awareness
- Train your staff for IC practices
- Ask for Antibigram and discuss if any changes needed
- Control on reserve antibiotics
- Validation of sterility

Thank You For Your Kind  
Attention!