Strengthening of IPC in COVID facilities

"Quality Improvement Division"

National Health Systems Resource Centre

Agenda for the Session

1. **Hand Hygiene**
   - Hand Washing and Hand Rub
   - 5 Moments and 6 Steps

2. **PPEs**
   - Risk Assessment and Rational Use of PPEs.

3. **Respiratory Hygiene**
   - Etiquette for Respiratory Hygiene

4. **Safe injection practices**
   - Prevention of Needle Stick Injury

5. **Disinfection & Sterilization of Equipment**
   - Cleaning, Disinfection and Sterilization of Equipment

6. **Environment Cleaning**
   - Cleaning and disinfection Practices.

7. **Linen Management**
   - Collection, Transportation, Washing and storage

8. **Transmission Based Precaution**
   - Contact, Droplets and Air Borne with Administrative control

9. **Additional Things**
   - Cleaning Oxygen Concentrator
   - Intravascular Catheter-Related Infections
   - CAUTI

Strategies to Strengthen IPC

A. Standard precautions:-

- Hand hygiene
- Risk assessment & Rational Use of PPEs
- Respiratory hygiene
- Safe Injection Practices
- Prevention of needle stick injuries
- Instrument Processing
- Environmental cleaning
- Linen management
- Waste disposal

Strategies to Strengthen IPC

B. Transmission based precaution

Touching patient surroundings, droplet and airborne (aerosols inhalation) precautions for suspected cases of COVID-19

C. Administrative

Education of HCW, Policies, etc.

Standard Precautions

*The IPC precautions, to be used for **ALL patients in ALL patient care settings** are:*

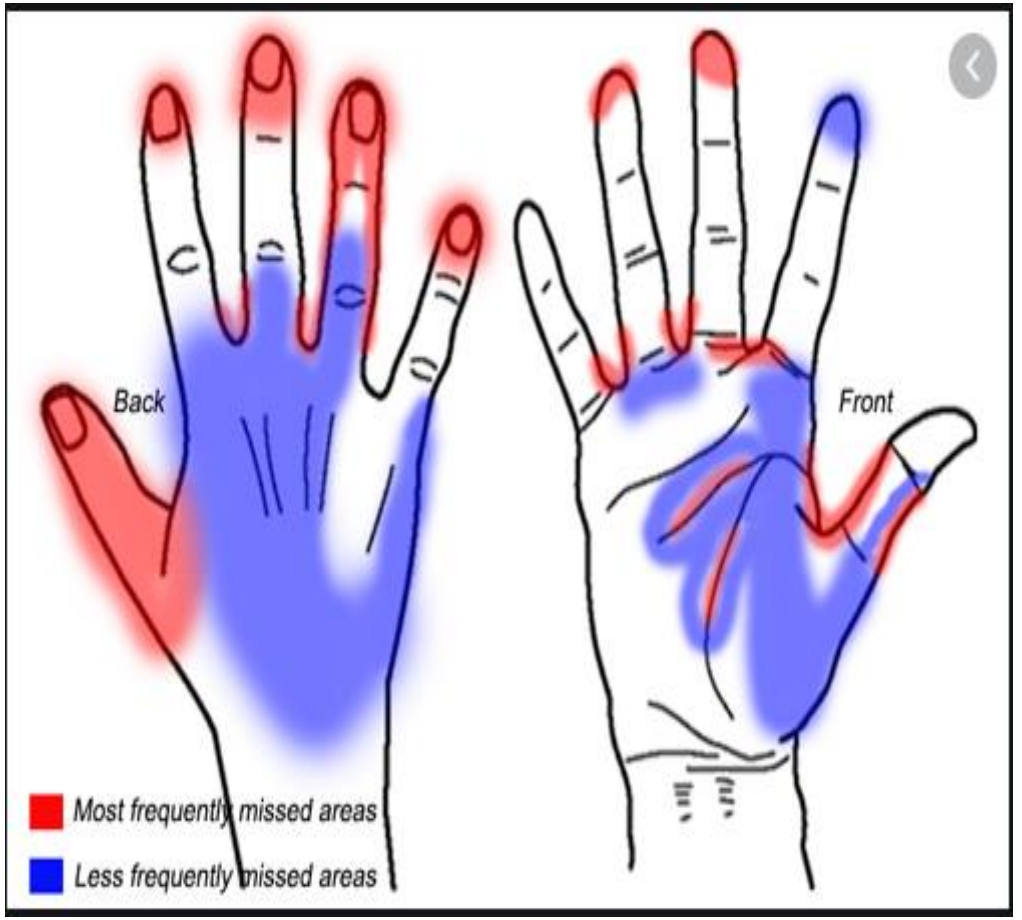
- *Hand washing*
- *Wearing PPE (patient must wear triple layer medical mask)*
- *Discard the mask when wet or dirty with secretion (as per BMW rules)*
- *Maintaining 1m distance from patient and between patients*
- *Avoid touching face, eyes, nose, external surface of mask and high touch surfaces*
- *Adequate ventilation*

Hand Hygiene

- Best way to prevent the spread of germs in the health care setting and community
- Our hands are our main tool for work as health care workers- and they are the key link in the chain of transmission

Do you know most neglected and missed areas after hand washing?

- The tips of the **fingers**
- Palm of the **hand**
- and the **thumb**.



WHO- 5 Moments for Hand Hygiene

How to do Hand Hygiene?

- Hand Washing:-
  - Use soap, running water and single use towel
  - Wash hands for 40–60 seconds

- Hand Rub:-
  - An alcohol-based hand rub product, when hands are not visibly soiled
  - Rub hands for 20–30 seconds

- *Let's see the Hand Hygiene video to understand the process*

How to Handwash?

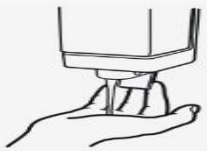
WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

Duration of the entire procedure: 40-60 seconds

0

Wet hands with water;

1



Apply enough soap to cover all hand surfaces;

2

Rub hands palm to palm;

3

Right palm over left dorsum with interlaced fingers and vice versa;

4

Palm to palm with fingers interlaced;

5

Backs of fingers to opposing palms with fingers interlocked;

6

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

7

Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;

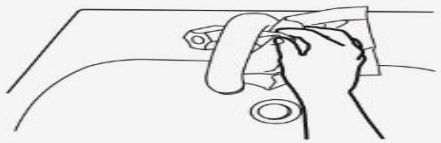
8

Rinse hands with water;

9

Dry hands thoroughly with a single use towel;

10



Use towel to turn off faucet;

11

Your hands are now safe.

World Health Organization | Patient Safety — A World Alliance for Safer Health Care | SAVE LIVES Clean Your Hands

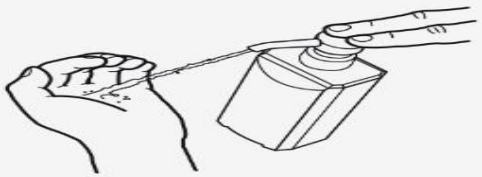
May 2009

How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

Duration of the entire procedure: 20-30 seconds

1a



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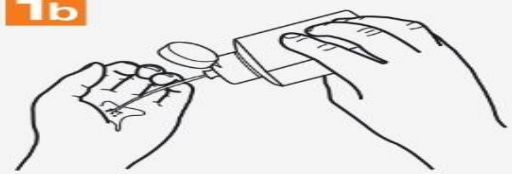


Apply a palmful of the product in a cupped hand, covering all surfaces;

2

Rub hands palm to palm;

3

Right palm over left dorsum with interlaced fingers and vice versa;

4

Palm to palm with fingers interlaced;

5

Backs of fingers to opposing palms with fingers interlocked;

6

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

7

Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;

8

Once dry, your hands are safe.

World Health Organization | Patient Safety — A World Alliance for Safer Health Care | SAVE LIVES Clean Your Hands

WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.

May 2009

PPEs

HAZMAT suits

Apron

Plastic Coverall

Nitrite Gloves

Masks

Goggles

Face- Shield

Gum Boots

How to Select PPEs

- It should be based on Risk assessment:
  - ➢Risk of exposure
  - ➢Extent of contact anticipated with blood, body fluids, respiratory droplets, and/or open skin

https://www.mohfw.gov.in/pdf/GuidelinesonrationaluseofPersonalProtectiveEquipment.pdf

NOTE: Perform hand hygiene according to the WHO "5 Moments" and steps of hand washing

AND

Should be done for each patient, each time.

Risk Assessment for using PPEs

	Hand Hygiene	Medical Mask	Gloves	Gown	Eye Wear
					
Always before and after patient contact, and after contaminated environment	★	★			
If direct contact with blood and body fluids, secretions, excretions, mucous membranes, non-intact skin	★	★	★		
If there is risk of splashes onto the health care worker's body	★	★	★	★	
If there is a risk of splashes onto the body and face	★	★	★	★	★

Recommended PPEs used at Point of Entry

S. No.	Setting	Activity	Risk	Recommended PPE	Remarks
1	Health Desk	Provide information to travellers	Low risk	Triple layer medical mask Gloves	Minimum distance of one meter needs to be maintained.
2	Immigration counters, customs and airport security	Provide services to the passengers	Low risk	Triple layer medical mask Gloves	Minimum distance of one meter needs to be maintained.
3	Temperature recording station	Record Temperature with hand held thermal recorder.	Low risk	Triple layer medical mask Gloves	
4	Holding area/ Isolation facility of APHO/ PHO	Interview & Clinical examination by doctors/ nurses	Moderate Risk	N-95 masks Gloves	

Recommended PPEs used at Point of Entry

5	Isolation facility of APHO	Clinical management (doctors, nurses)	Moderate Risk	N-95 masks Gloves	
		Attending to severely ill passenger	High risk	Full complement of PPE	When aerosol generating procedures are anticipated
5	Sanitary staff	Cleaning frequently touched surfaces/ Floor/ cleaning linen	Moderate risk	N-95 mask Gloves	
6	Administrative staff	Providing administrative support	No risk	No PPE	No contact with patients of COVID-19. They should not venture into areas where suspect COVID-19 cases are being managed.

Recommended PPEs used in Emergency

S.No	Setting	Activity	Risk	Recommended PPE	Remarks
1	Emergency	Attending emergency cases	Moderate risk	N 95 mask Gloves	When aerosol generating procedures are anticipated
2		Attending to severely ill patients of SARI	High risk	Full complement of PPE	Aerosol generating activities performed.

Recommended PPEs used in OPD Area

S. No	Setting	Activity	Risk	Recommended PPE	Remarks
1	Triage area	Triaging patients Provide triple layer mask to patient.	Moderate risk	N 95 mask Gloves	Patients get masked.
2	Screening area help desk/ Registration counter	Provide information to patients	Moderate risk	N-95 mask Gloves	
3	Temperature recording station	Record temperature with hand held thermal recorder	Moderate Risk	N 95 mask Gloves	
4	Holding area/ waiting area	Nurses / paramedic interacting with patients	Moderate Risk	N 95 mask Gloves	Minimum distance of one meter needs to be maintained.

Recommended PPEs used in OPD Area

5	Doctors chamber	Clinical management (doctors, nurses)	Moderate Risk	N 95 mask Gloves	No aerosol generating procedures should be allowed.
6	Sanitary staff	Cleaning frequently touched surfaces/ Floor/ cleaning linen	Moderate risk	N-95 mask Gloves	
7	Visitors accompanying young children and elderlies	Support in navigating various service areas	Low risk	Triple layer medical mask	No other visitors should be allowed to accompany patients in OPD settings. The visitors thus allowed should practice hand hygiene

Recommended PPEs used in IPD Area

S. No.	Setting	Activity	Risk	Recommended PPE	Remarks
1	Individual isolation rooms/ cohorted isolation rooms	Clinical management	Moderate risk	N 95 mask Gloves	Patient masked. Patients stable. No aerosol generating activity.
2	ICU/ Critical	Critical care	High risk	Full complement of	Aerosol generating
	care	management		PPE	activities performed.

Recommended PPEs used in IPD Area

3	ICU /critical care	Dead body packing	High risk	Full complement of PPE	
4	ICU/ Critical care	Dead body transport to mortuary	Low Risk	Triple Layer medical mask Gloves	
5	Sanitation	Cleaning frequently touched surfaces/ floor/ changing linen	Moderate risk	N-95 mask Gloves	
6	Other Non-COVID treatment areas of hospital	Attending to infectious and non-infectious patients	Risk as per assessed profile of patients	PPE as per hospital infection prevention control practices.	No possibility of exposure to COVID patients. They should not venture into COVID-19 treatment areas.
7	Caretaker accompanying the admitted patient	Taking care of the admitted patient	Low risk	Triple layer medical mask	The caretaker thus allowed should practice hand hygiene, maintain a distance of 1 meter

Key Points to remember for PPEs

- Always clean your hands before and after wearing PPE
-
- Wear correct size PPE, as per risk and indication
- Always put on before touching or contacting patient
- Remove PPE immediately after completing the task and/or leaving the patient care area

Key Points Cont..

- Change PPE immediately, if it becomes contaminated or damaged
- Never touch your face while wearing PPE
- Always remove carefully to avoid self-contamination (from dirtiest to cleanest)
- NEVER reuse disposable PPE
- Clean and disinfect reusable PPE between each use

Re-use of N-95 Mask

- Reuse of N-95 should only be considered during a crisis capacity situation during a declared public health emergency.
- The number of times N-95 mask may be reuse depends upon:-
  - Fit
  - Filtration performance
  - Contamination and soiling
  - Damage
- *N-95 visibly contaminated with blood, respiratory or nasal secretions, or other bodily fluids should be discarded and not reused.*
- *If damaged (e.g. broken straps, broken nose piece), malformed, or are unable to pass a fit check should also be discarded and not reused.*
- ***AIIMS Video-*** ***https://www.youtube.com/watch?v=vH9i2oFYSew***

How to do a positive pressure user seal check

- Once the particulate respirator is properly donned, place your hands over the face piece, covering as much surface area as possible. Exhale gently into the face piece. The face fit is considered satisfactory if a slight positive pressure is being built up inside the facepiece without any evidence of outward leakage of air at the seal. Examples of such evidence would be the feeling of air movement on your face along the seal of the facepiece, fogging of your glasses, or a lack of pressure being built up inside the facepiece.
- If the particulate respirator has an exhalation valve, then performing a positive pressure check may be impossible. In such cases, a negative pressure check should be performed.

How to do a negative pressure user seal check

- Negative pressure seal checks are typically conducted on particulate respirators that have exhalation valves.
- To conduct a negative pressure user seal check, cover the filter surface with your hands as much as possible and then inhale. The facepiece should collapse on your face and you should not feel air passing between your face and the facepiece.

What to do if air leaks

- In the case of either type of seal check, if air leaks around the nose, use both hands to readjust the nosepiece by placing your fingertips at the top of the metal nose clip. Slide your fingertips down both sides of the metal strip to more efficiently mold the nose area to the shape of your nose.
- Readjust the straps along the sides of your head until a proper seal is achieved.
- *If you cannot achieve a proper seal due to air leakage, you may need to be fit tested for a different respirator model or size.*

Key Steps for respiratory Hygiene

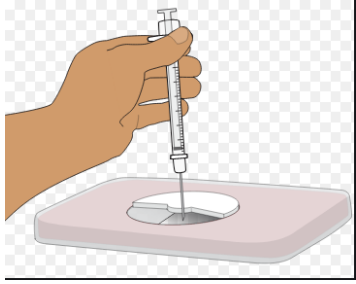
- Turn head away from others when coughing/sneezing
- Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow
- Throw used tissues in the trash
- Immediately wash your hands with soap and water or with alcohol-based hand sanitizer

Make People aware about Respiratory Hygiene

- Encourage handwashing for patients with respiratory symptoms

- Provide masks and tissues for patients with respiratory symptoms
- Maintain at least 1m distance from patients
- Post visual aids reminding patients and visitors with respiratory symptoms to cover their mouth

Safe injection Practices



- Always use sterile injection equipment
- Syringe package is intact, and check that there is no moisture inside
- Only syringes and needles from new packets should be used.

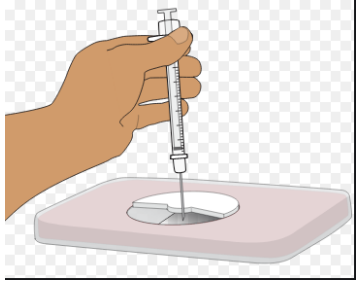
1. Clean Workplace
2. Hand Hygiene
3. Sterile Safety engineered Syringe
4. Sterile vial of medication and diluent
5. Skin cleaning and antisepsis
6. Appropriate collection of sharps
7. Waste Management

- Identity of information
- Prepare in clean, hygiene area
- Hand hygiene
- Disinfect the patient's skin using a 60-70% alcohol-soaked swab

- When preparing a medication vial, wipe the rubber septum (or stopper) with a cotton swab or ball soaked with 60-70% alcohol.
- Do not touch, fan, or wipe off the disinfectant;
- allow the septum to air dry.
- Pierce the septum of the vial with a new and sterile syringe and needle.

- Immediately place syringes and un-capped needles into a sharps container.
- Never recap a needle.
- Do not bend, break, manipulate, or manually remove the needle or syringe.
- A sharps container must be within arm's reach of where sharps are used (at the point of care).

Waste Management- Glass and Sharps



Processing of Instruments

1. Decontamination
2. Cleaning
3. Sterilization or HLD
4. Storage.

Steps of processing instruments and other items

Decontamination

(Soak in 1% chlorine solution 10 minutes)

Cleaning with brush, detergent and water

Preferred Method

Sterilization

- **Autoclave** 15lbs/In2 pressure 121ºC, (250ºF) 20 min/30 min
- **Chemical soak** in Glutaraldehyde (2%) for 8 hrs, Rinse with sterile water

Acceptable Method

HLD

- **Boiling** Lid on 20 minutes
- **Chemical** Soak in Glutaraldehyde (2%) for 20 min. Rinse with boiled for 20 min

Cool, dry and Store

Preparation of Chlorine solution

I. Using hypochlorite solution: apply the following formula

$$\frac{\text{\% chlorine in hypochlorite solution}}{\text{\% chlorine desired}} - 1 = \text{Total parts* of water for each part bleach}$$

Example: To make a 0.1% chlorine solution from 5%

$$\frac{5\%}{0.1\%} - 1 = 4900 \text{ ml of water for each part bleach}$$

Therefore, you must add 100 ml 5% bleach to 4900 ml water to make a 0.1% chlorine solution.

**** "Parts" can be used for any unit of measure (e.g., litre or gallon) or any container used for measuring, such as a cup.***

https://www.cdc.gov/hai/prevent/resource-limited/chlorine-disinfectant.html

Preparation of Chlorine solution

II. Using bleach powder: apply the following formula

$$\frac{\%\ \text{chlorine desired}}{\%\ \text{chlorine in bleach powder}} \times 1000 = \text{Grams of bleach powder for each litre of water}$$

Example: To make a 0.1% chlorine solution from 30%

$$\frac{0.1\%}{30\%} \times 1000 = 3.3\ \text{Grams of bleach powder for each litre of water}$$

Therefore, you must dissolve 3.3 grams of bleach powder in each litre of water used to make a 0.1% chlorine solution.

https://www.cdc.gov/hai/prevent/resource-limited/chlorine-disinfectant.html

Guidance for preparation of Chlorine solution

Material	% Chlorine	% Chlorine desired	Vol of Hypo solution (ml)	Vol of water (ml)
Hypochlorite solution	5%	0.1%	100 ml	4900 ml
	5%	0.5%	500 ml	4500 ml
Material	**% Chlorine**	**% Chlorine desired**	**Amount of Bleaching powder (grams)**	**Vol of water (ml)**
Bleaching powder	30%	0.1%	3.3 grams	1000 ml
	30%	0.5%	16.6 grams	1000 ml

https://www.cdc.gov/hai/prevent/resource-limited/chlorine-disinfectant.html

Storage of bleaching powder

- Bleaching powder should be stored in clean and dry area
- Freshly prepared Chlorine solution should be used

Cleaning of Instruments

- You cannot sterilize or disinfect without cleaning; thorough cleaning is essential because it removes:
  - Microorganisms, blood, body fluids and organic matter;
  - Organic matter which attach to the instrument and protect microorganisms during disinfection and sterilization; and
  - Organic matter that can inactivate disinfectants.

Equipment needed for Cleaning

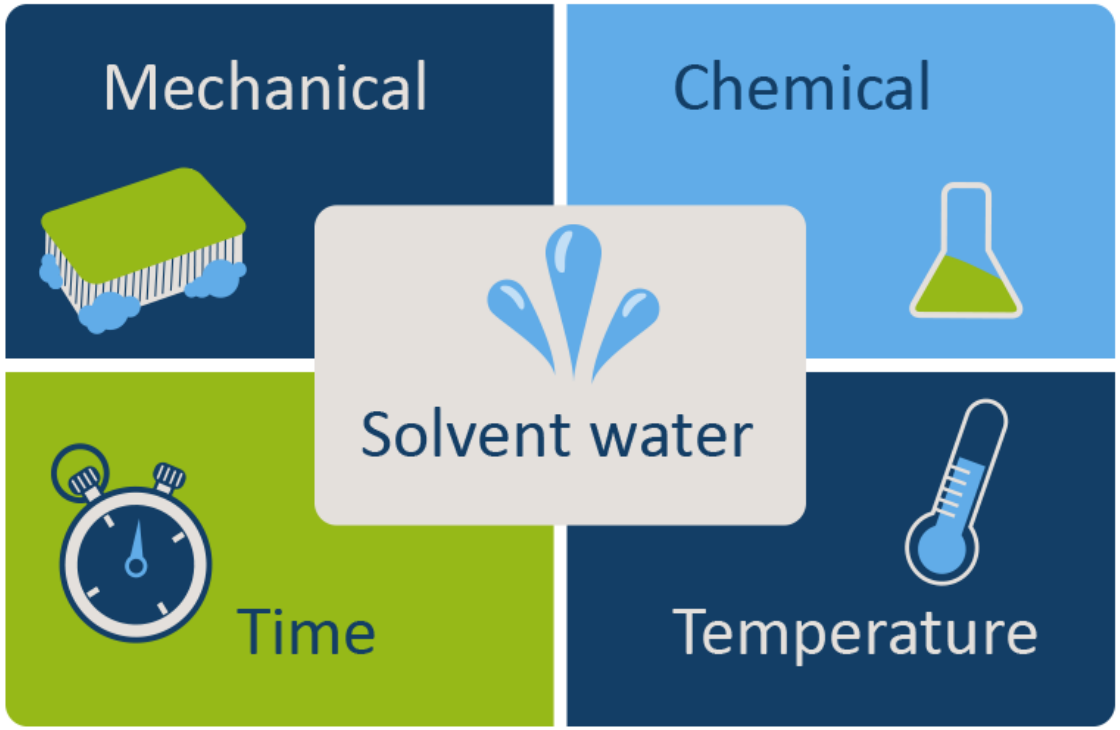
Ensure following for effective cleaning of instruments:-

1. Cloths:- It should be soft and disposable; it can also be recycled and laundered.
2. The brushes: Two One flat and one bottle and must have soft nylon bristles, don't use brushes with metal or wire bristles.
3. The spray guns should contain pressurized air or water, large syringes can be used if spray guns are not available.

Ensure that the HCWs must wear gloves (long domestic-style rubber gloves); aprons (plastic/waterproof); visors (eye covering); and closed-toe shoes or boots during Cleaning process

Cleaning of equipment

This is best accomplished by using soft nylon brushes, which do not damage equipment surfaces. Use wiping, flushing, brushing and spraying actions.



Water alone is not an effective cleanser; enzymatic detergent that attracts and holds organic matter is necessary. Be sure to use a detergent that is recommended for use with medical devices.

The recommended contact time for detergent to interact with the various surfaces must be adhered to. Do not rush.

Heat improves detergent performance, but not at temperatures over 45 °C. Make sure the temperature is not too high or materials with protein will coagulate

Availability of good-quality water is essential; the water should be soft (with low mineral and salt content). Water-softening systems are available.

Sterilization Method

Sterilization	Soaking in Chemicals
•**Wet /Steam Sterilization:** Sterilize the wrapped items for 30 min at 121°C and 15 lbs/In^2or 20 min for unwrapped items. •**Dry Sterilization:** Exposure to **160°C for 120 min or 170°C for 60 min** •**Emergency sterilization (flash sterilization)** **132º C at 30 lbs of pressure for 3min**	•**Chemical Sterilization**: Used when instruments or other items are heat sensitive or when heat sterilization is unavailable. • Items can be sterilized by soaking in 2% Gluteraldehyde for at least 8-10hrs followed by thorough rinsing with sterile water.

Monitoring the effectiveness of sterilization

- Mechanical indicators: Record, observe time, temperature and pressure reading during sterilization cycle, Maintain an Autoclave logbook.
- Chemical indicators : tapes with lines that changes color. Pellets in glass tube, indicator strips
- Biological Indicators: Bacterial endospores (weekly or monthly)

Storage of instruments

- Sterilized instruments should be stored in a dry, clean and dust-free environment, with no water tapping points.
- The room temperature should be 20 °C.
- Store the devices away from direct sunlight and label them well (with name, expiry date, sterilization indicator).
- To allow air to circulate, do not pile the devices on top of each other.
- Medical devices should not touch the ground, walls or ceiling, and should not be placed on wooden shelves.
- Sterilized pack can be store for maximum of 7 days.
- Once the pack is opened, instruments should not used be beyond 24 hours.

Environment Cleaning

- Dedicated cleaning supplies
- Twice daily or as needed
- Clean from high areas to low areas, low touching to high touching surfaces
- Damp dusting and wet mopping using clean water
- Last clean of the day
- Regularly clean high-touching surfaces like switch board, mattresses, bed, bed railing, doorknobs etc. with clean water and detergent solution
- Followed by a disinfectant; either 0.1% (1000ppm) sodium hypochlorite or 70-90% ethanol

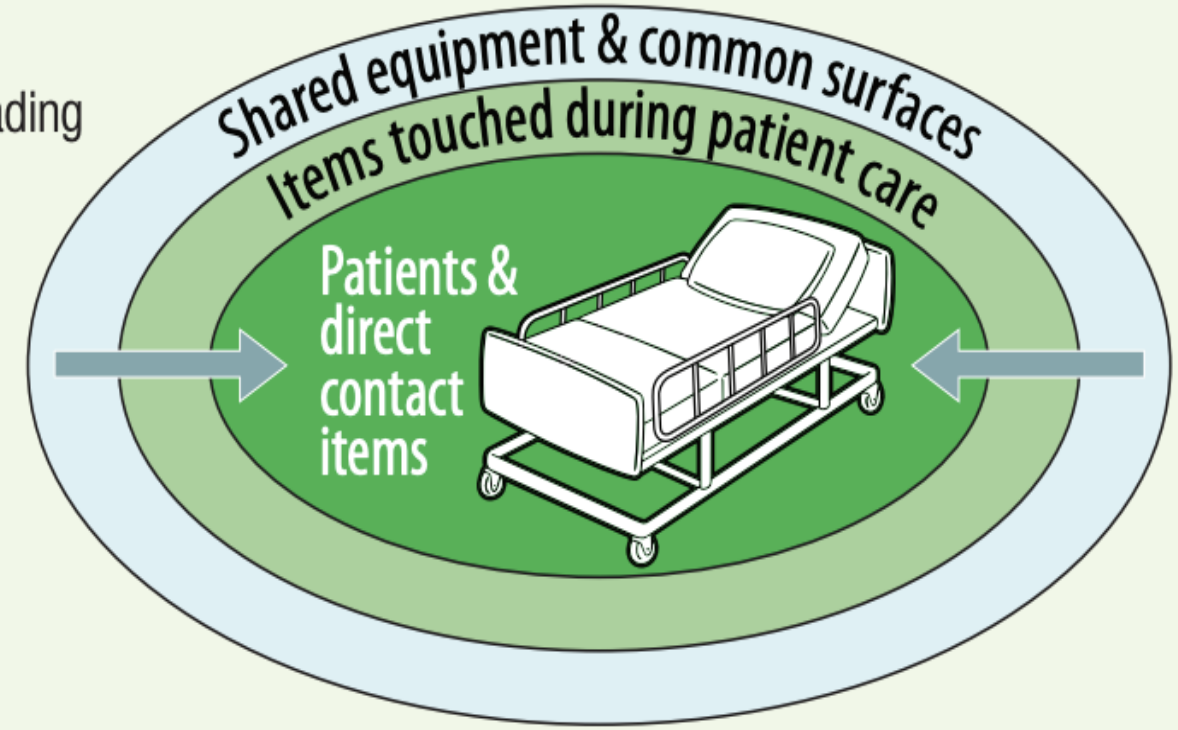
1. https://www.who.int/publications/i/item/WHO-2019-nCoV-IPC-2020.4
2. https://www.cdc.gov/hai/pdfs/resource-limited/environmental-cleaning-RLS-H.pdf

Environment Cleaning

Proceed From Cleaner To Dirtier

Proceed from **cleaner to dirtier** areas to avoid spreading dirt and microorganisms. Examples include:

- During terminal cleaning, clean low-touch surfaces before high-touch surfaces.
- Clean patient areas (e.g., patient zones) before patient toilets.



Key Points- Cleaning

- Cleaning with water and detergents, mechanically
- Clean patient care equipment between each patient use
- Dedicated cleaning supplies in higher risk areas (e.g., isolation, delivery, and operating rooms)

Points to remember during cleaning

- Always move from cleanest area to dirtiest area
- Clean from high areas to low areas
- Clean isolation areas last
- Damp dusting and wet mopping in dirty and dusty areas
- Use clean water for cleaning
- Use three bucket system of cleaning

3-bucket system for cleaning

- The first bucket should contain water with detergent used in the beginning.
- The mop is then rinsed in the second bucket, and
- dipped in the third bucket which contain a disinfectant and the mopping done again.

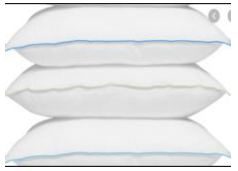
Recommended Cleaning Schedule for COVID-19

Patient area	Frequency	Person / staff responsible	Products/Supplies	Additional guidance
Triage area	At least daily, twice daily preferable	Environmental cleaning (EC) staff	Cleaning solution (neutral detergent and water); Disinfectant (alcohol, chlorine-based, other as approved*) Freshly made solutions, cloths, and mops for each cleaning session PPE: gowns and/or impermeable aprons, rubber gloves, medical mask, and eye protection (preferably face shield) DISINFECTANTS EFFECTIVE AGAINST COVID-19 (contact time 1 minute): Ethanol ≥70% Hydrogen peroxide 0.5% Hypochlorite from 0.1% (1,000 ppm) or 0.5% (5,000 ppm)	Focus on high-touch surfaces, then floors (last)
Inpatient rooms / cohort – occupied	At least daily, twice daily preferable	EC staff OR clinical staff if possible		Focuses on high-touch surfaces, starting with shared/common surfaces, then move to each patient bed; use new cloth for each bed if possible
Inpatient rooms – unoccupied (terminal clean)	Upon discharge/ transfer	EC staff		Low-touch surfaces, high-touch surfaces, floors (in that order); waste and linens removed, bed thoroughly cleaned and disinfected
Outpatient / Ambulatory Care rooms	After each patient visit and at least once daily terminal clean	Clinical staff (after each patient); Terminal clean (EC staff)		High touch surfaces to be disinfected after each patient visit; terminal clean as above (end of day)
Hallways / Corridors	At least daily, twice daily preferable	EC staff		High-touch surfaces (e.g., railings)
Patient toilets	Private (at least daily); Shared (at least three times daily)	EC staff		High-touch surfaces, including door handles, light switches, counters, faucets, then sink bowls, then toilets and finally floor (in that order)

Linen Management

Disposable Linen

Re-usable Linen



Linen Management

Wear PPE

Remove soiled linen (bed sheet, pillow cover)

Remove any solid excreta without shaking the sheet and discard it into toilet

Soiled linen are collected in covered bin/ bags

Transport the bin away from patient care area

Do not overfill the bag and bring them to laundry area

Machine washing

Mechanical washing

Store clean linen in a demarcated area

Provide fresh set of linen for new patient

Change linen when contaminated with blood

Discard visibly degraded linen

1 Collection

Hand wash

2 Transportation

Hand wash

3 Washing and Drying

Hand wash

4 Storage

Standard Precautions-Special Consideration

- Follow environmental cleaning and disinfection procedures consistently and correctly with

1. Mechanically-water and detergent
2. Disinfectants (such as sodium hypochlorite 0.1%, or ethanol 70%)

- Safe management of Medical devices, equipment, laundry, food service utensils and bio-medical waste
- Spray or fogging of disinfectants is strongly discouraged!

Contact Precautions

1. Hand washing

- Avoiding touching eyes, nose or mouth

2. PPE: gown + gloves

3. Equipment: cleaning, disinfection, and sterilization

4. Environmental cleaning :- Avoiding contaminating surfaces e.g., doorknobs, light switches, mobile-phones

Droplet Precaution

1. Hand washing

- Avoiding touching eyes, nose or mouth

2. Single room

- If single rooms are not available, separating patients from others by at least 1m

3. PPE :- Medical mask and Eye protection (goggles or face shield)

4. Limit patient movement in the room

5. Always ask patients to wear mask

Remember to Follow it……

To reduce the risk of transmission, follow these important precautions

Standard precautions

- *Hand washing*
- *Wearing PPE (patient must wear triple layer medical mask)*
- *Cover mouth and nose with flexed elbow or tissue, when coughing and sneezing*
- *Discard the mask when wet or dirty with secretion (as per BMW rules)*

Remember to Follow it……

To reduce the risk of transmission, follow these important precautions

Transmission-based precautions

- *Maintaining 1m distance between two patient beds (edge to edge distance)*
- *Avoid touching face, eyes, nose, external surface of mask and high touch surfaces*
- *Adequate ventilation*
- *Do not spit*

Airborne precautions (COVID-19)

Recommended ONLY for aerosol generating procedures:

- Bronchoscopy,
- Tracheal intubation,
- cardiopulmonary resuscitation
- Dental procedures

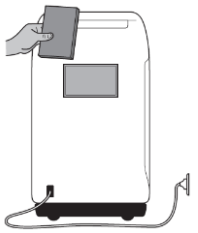
The following is required:

- Single room
- Adequate ventilation
- PPE: gown, gloves, N-95, or FFP2 or equivalent masks, eye protection (goggles or face shield)

Administrative Control-IPC

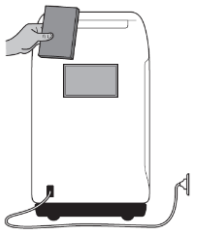
- Training for HCWs
- Adequate patient-to-staff ratio
- Surveillance for suspected COVID positive HCWs
- IEC to promote awareness on importance of promptly seeking medical care
- Monitoring HCW compliance with standard precautions and providing mechanisms for improvement

Cleaning and Disinfection of Oxygen Concentrator



- Follow the manufacturers recommendations and standard clinical practice
- The gross particle filter on a concentrator must be removed and cleaned weekly or more often if in a dusty or dirty environment.
- In general, the filter can be cleaned with a mild detergent, rinsed with clean water, dried and replaced.
- A spare filter is inserted if the concentrator is being used during cleaning.
- The gross particle filter may be reused after each cleaning but should be replaced if visible degradation occurs.

Cleaning and Disinfection of Oxygen Concentrator



Gross particle filter

-Cleaned weekly or often, if in a dusty environment

- Use spare filter, if concentrator used during cleaning

- Clean with mild detergent

- Rinse with clean water, dry and reuse

- Replace visibly degraded filter

Exterior of concentrator

- Disconnect from power supply

- Clean with mild detergent or cleaning agent

- Allow the solution to remain on the surface for 10 minutes

- Rinse off and dry

Nasal prongs

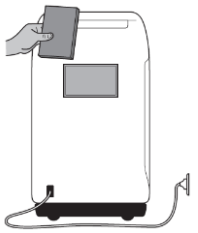
- Clean with soap and water

-Dry in room air

- Soak in dilute bleach solution

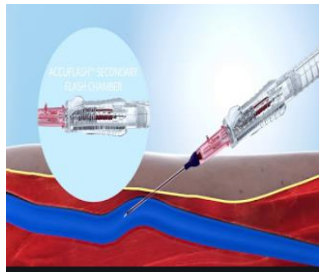
- Prepare undiluted bleach (from 5% to 5.25% sodium hypochlorite) to water in a ratio between 1 : 100 and 1 : 10

Cleaning and Disinfection of Oxygen Concentrator



- When humidifiers are used, they should have clean water replaced daily and be soaked in dilute bleach for 15 minutes weekly (and between patients), and then dried .

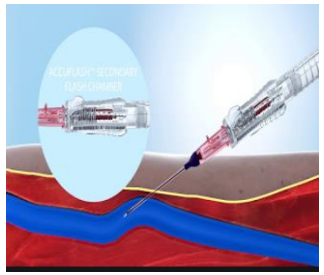
Prevention of Intravascular Catheter-Related Infections



Hand Hygiene and Aseptic technique:-

- Perform Hand hygiene before and after palpating catheter insertion sites as well as before and after inserting, replacing, accessing, repairing, or dressing an intravascular catheter.
- Do not palpate insertion site after the application of antiseptic
- Wear PPE (sterile gloves, mask, apron, cap, and drape the patient)
- Use a sterile sleeve to protect pulmonary artery catheters during insertion

Prevention of Intravascular Catheter-Related Infections

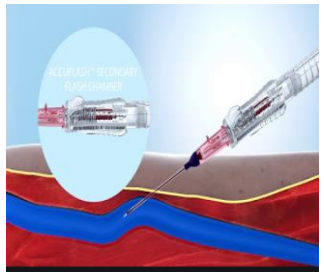


Skin Preparation:-

- Prepare clean skin with an antiseptic (70% alcohol, tincture of iodine, or >0.5% chlorhexidine gluconate solution)

- Antiseptics should be allowed to dry prior to placing the catheter

Prevention of Intravascular Catheter-Related Infections



Catheter Site Dressing Regimens

- Use either sterile gauze or sterile, transparent, semipermeable dressing
- Replace the dressing if becomes damp, loosened, or visibly soiled
- Do not use topical antibiotic ointment or creams on insertion sites, except for dialysis catheters.
- Monitor the catheter sites on a regular basis
- Encourage patients to report any changes at catheter site or any discomfort

Prevention of Catheter Associated Urinary Tract Infections (CAUTI)

- Perform hand hygiene before and after any procedure
- Staff is trained for aseptic catheter insertion and maintenance
- Use sterile gloves, drape, sponges, antiseptic solution for periurethral cleaning, and a single-use packet of lubricant jelly for insertion
- Properly secure indwelling catheters
- Keep the catheter and collecting tube free from kinking
- Keep collecting bag below the level of the bladder but not on the floor
- Avoid splashing while regularly emptying collecting bag

References

1. *Infection Prevention and Control (IPC) for COVID-19 Virus, Module 3: IPC in the context of COVID-19 Standard precautions, transmission-based precautions & COVID-19 specific recommendations, WHO*
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4. *https://www.mohfw.gov.in/pdf/GuidelinesonrationaluseofPersonalProtectiveEquipment.pdf*
5. *Technical specifications for Oxygen Concentrators WHO Medical Device technical series, WHO*
6. *Standard precautions: Injection safety and needle-stick injury management, WHO*
7. *Guidelines for the Prevention of Intravascular Catheter-Related Infections, 2011, CDC*
8. *Guideline for prevention of Catheter-Associated Urinary Tract Infections 2009, CDC*
9. *Guidelines For Implementation Of "KAYAKALP" Initiative, MoHFW*
10. *SWACHHTA Guidelines for Public Health Facilities*

Thank you