

INFECTION PREVENTION & CONTROL (IPC)

संक्रमण निवारण एवं नियंत्रण (आईपीसी)

Quality and Patient Safety Division
NHSRC



Standard Precautions

मानक सावधानियां



हाथ स्वच्छता
Hand Hygiene



व्यक्तिगत सुरक्षा उपकरण
Personal Protection



उपकरण प्रसंस्करण
Instrument Processing

Standard Precautions मानक सावधानियां



पर्यावरण नियंत्रण
Environmental Control



इंजेक्शन सुरक्षा
Injection Safety & Sharp Injury



बायोमेडिकल अपशिष्ट प्रबंधन
Biomedical Waste Management

Additional Precautions अतिरिक्त सावधानियाँ

Airborne Precautions (वायुवाहित सावधानियाँ)



- Implement standard precautions (मानक सावधानियों को लागू करें)
- Place patient in a single isolation room (रोगी को एकल (अलग) पृथक कक्ष में रखें)
- Keeps door closed (कक्ष का दरवाजा बंद रखें)
- Anyone who enters room must wear a special , high filtration particular respirator(e.g.N95) mask (जो भी व्यक्ति कक्ष में प्रवेश करे, उसे विशेष उच्च-फिल्ट्रेशन वाला रेस्पिरेटर मास्क (जैसे N95) अवश्य पहनना चाहिए)

Additional Precautions अतिरिक्त सावधानियाँ

Droplet Precautions (बूंद जनित सावधानियाँ)



- Implement standard precautions (मानक सावधानियों को लागू करें)
- Place patient in a single room or with the same infected person (रोगी को एकल कक्ष में रखें या समान संक्रमण वाले व्यक्ति के साथ रखें)
- Wear surgical mask when working within 1-2 meters of the patient (रोगी से 1-2 मीटर की दूरी के भीतर काम करते समय surgical mask पहनें)
- Place a surgical mask on the patients if transport is required (यदि रोगी को परिवहन करना आवश्यक हो, तो उसे शल्य चिकित्सा मास्क पहनाएँ)

Additional Precautions अतिरिक्त सावधानियां

Contact Precautions (संपर्क सावधानियाँ)



- Implement standard precautions (मानक सावधानियों को लागू करें)
- Place patient in a single room or with the same infected person (रोगी को एकल कक्ष में रखें या समान संक्रमण वाले व्यक्ति के साथ रखें)
- Wear clean non-sterile gloves when entering room (कक्ष में प्रवेश करते समय स्वच्छ, गैर-निष्फल दस्ताने पहनें)
- Limit the moment and transport of the patient from the room (रोगी की कक्ष से बाहर आवाजाही और परिवहन को सीमित रखें)

HAND HYGIENE हाथ की स्वच्छता

PREFERRED MEDIUM OF HAND HYGIENE

- Soap and Water (Hand Wash)
- Alcohol-based Hand Rub

How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

Duration of the entire procedure: 20-30 seconds



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



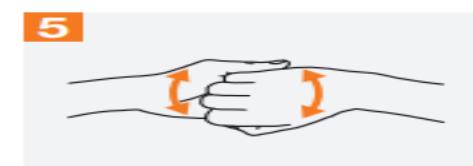
Rub hands palm to palm;



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



Palm to palm with fingers interlaced;



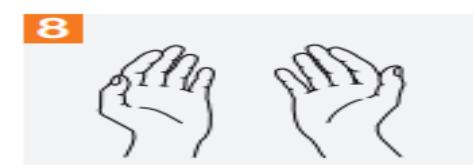
Backs of fingers to opposing palms with fingers interlocked;



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



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



Once dry, your hands are safe.

Hand Hygiene Technique with Soap and Water

Duration of the entire procedure: 40-60 seconds



Wet hands with water;



Apply enough soap to cover all hand surfaces;



Rub hands palm to palm;



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



Palm to palm with fingers interlaced;



Backs of fingers to opposing palms with fingers interlocked;



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



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



Rinse hands with water;



Dry hands thoroughly with a single use towel;

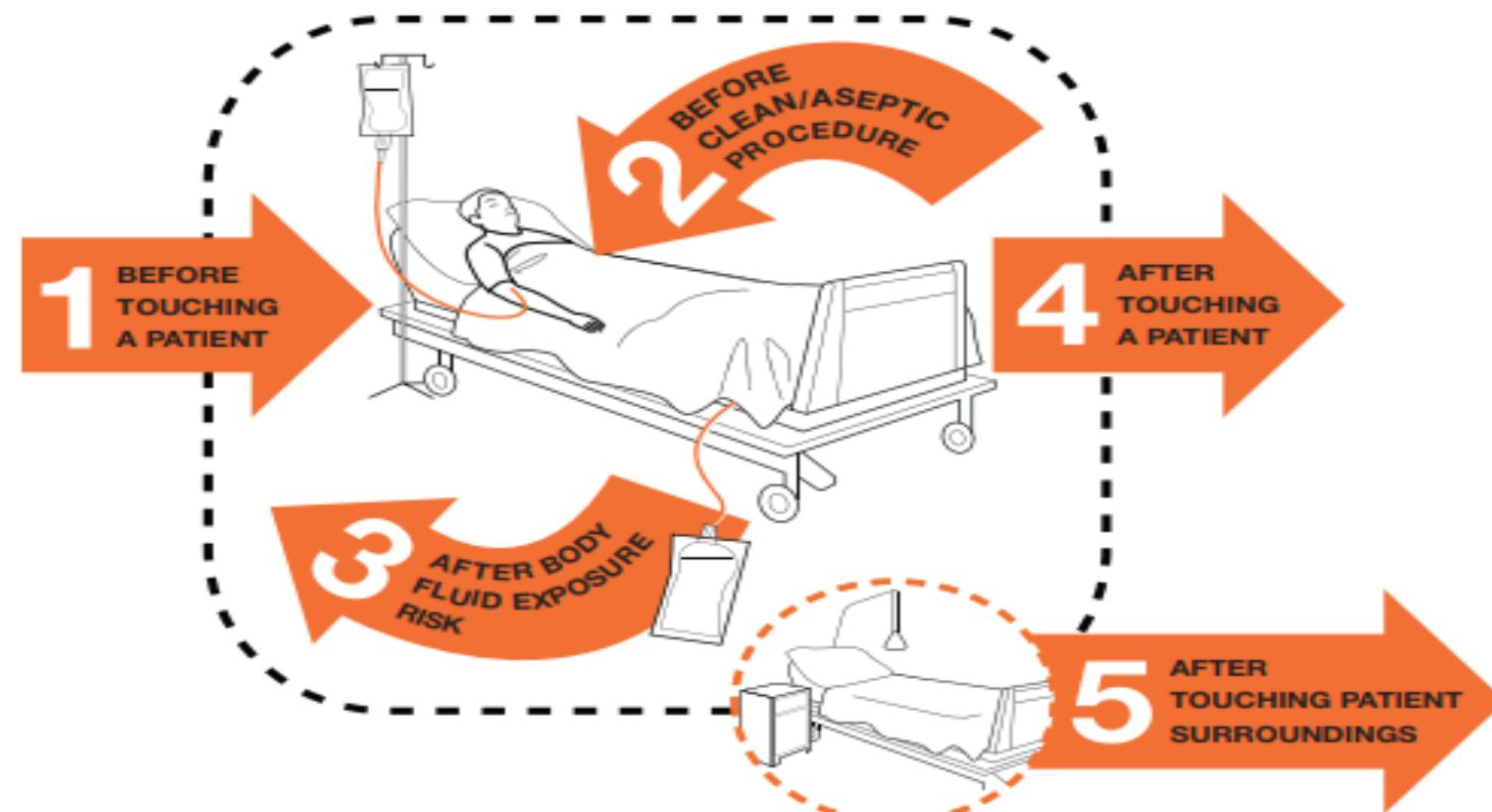


Use towel to turn off faucet;



Your hands are now safe.

Your 5 Moments for Hand Hygiene



Surgical Handrubbing Technique

- Handwash with soap and water on arrival to OR, after having donned theatre clothing (cap/hat/bonnet and mask).
- Use an alcohol-based handrub (ABHR) product for surgical hand preparation, by carefully following the technique illustrated in Images 1 to 17, before every surgical procedure.
- If any residual talc or biological fluids are present when gloves are removed following the operation, handwash with soap and water.



1



2

Put approximately 5ml (3 doses) of ABHR in the palm of your left hand, using the elbow of your other arm to operate the dispenser.

Dip the fingertips of your right hand in the handrub to decontaminate under the nails (5 seconds).



3



4



5



6



7

Images 3-7: Smear the handrub on the right forearm up to the elbow. Ensure that the whole skin area is covered by using circular movements around the forearm until the handrub has fully evaporated (10-15 seconds).



8



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12

Put approximately 5ml (3 doses) of ABHR in the palm of your left hand as illustrated, to rub both hands at the same time up to the wrists, following all steps in images 12-17 (20-30 seconds).

Cover the whole surface of the hands up to the wrist with ABHR, rubbing palm against palm with a rotating movement.



13

Rub the back of the left hand, including the wrist, moving the right palm back and forth, and vice-versa.



14

Rub palm against palm back and forth with fingers interlocked.



15

Rub the back of the fingers by holding them in the palm of the other hand with a sideways back and forth movement.



16

Rub the thumb of the left hand by rotating it in the clasped palm of the right hand and vice versa.



17

When the hands are dry, sterile surgical clothing and gloves can be donned.

Repeat this sequence (average 60 sec) the number of times that adds up to the total duration recommended by the ABHR manufacturer's instructions.
This could be two or even three times.

Personal Protective Equipment

व्यक्तिगत सुरक्षा उपकरण

- Gloves/ दस्ताने
- Face masks/ चेहरे का मास्क
- Aprons/ एप्रन
- Gowns/ गाउन
- Eye wear/ आँखों का चश्मा
- Boots/ जूते / बूट
- Shoe cover/ जूता कवर
- Caps/Hair cover/ टोपी / बाल कवर
- Eye protection wherever required/ जहाँ आवश्यकता हो, वहाँ



Wear gloves during activities that may involve exposure to blood and other body fluids (उन गतिविधियों के दौरान दस्ताने पहनें जिनमें रक्त या अन्य शारीरिक द्रवों के संपर्क की संभावना हो)

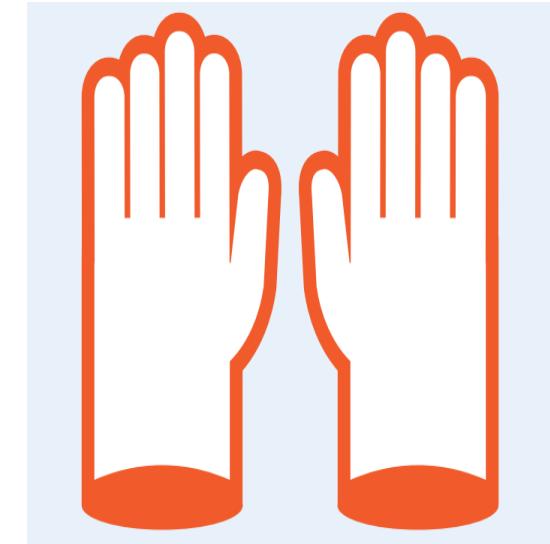
Gloves/
दस्ताने

Remove gloves after caring for a patient – the same pair of gloves should not be worn for the care of more than one patient (रोगी की देखभाल पूरी करने के बाद दस्ताने हटा दें – एक ही जोड़ी दस्ताने एक से अधिक रोगियों की देखभाल के लिए उपयोग नहीं की जानी चाहिए)

Change gloves between tasks and procedures if moving from a contaminated body site to another body site on the same patient (यदि एक ही रोगी के शरीर के संक्रमित भाग से किसी अन्य भाग पर जा रहे हों, तो कार्य या प्रक्रिया के बीच दस्ताने बदलें)

Wear sterile gloves for aseptic procedures, such as surgery or catheter insertion (शाल्य चिकित्सा या कैथेटर डालने जैसी निष्क्रम (aseptic) प्रक्रियाओं के लिए निष्फल (sterile) दस्ताने पहनें)

Do not reuse gloves after reprocessing or decontamination, as this is not recommended (दस्तानों को पुनः प्रसंस्करण (reprocessing) या डी-कंटैमिनेशन (decontamination) के बाद दोबारा उपयोग न करें, क्योंकि यह अनुशंसित नहीं है)



Technique for donning and removing non-sterile examination gloves

When the hand hygiene indication occurs before a contact requiring glove use, perform hand hygiene by rubbing with an alcohol-based handrub or by washing with soap and water.

I. HOW TO DON GLOVES:



1. Take out a glove from its original box



2. Touch only a restricted surface of the glove corresponding to the wrist (at the top edge of the cuff)



3. Don the first glove

I. HOW TO DON STERILE GLOVES



2



3



4



5



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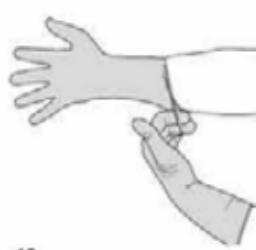
10



11



12



13

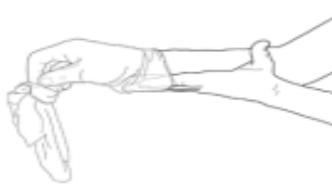


14

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

Gown / गाउन

Wear a gown to protect skin and prevent soiling of clothing during activities that are likely to generate splashes or sprays of blood, body fluids, secretions or excretions

Remove the soiled gown as soon as possible and perform hand hygiene



Medical Masks/ मेडिकल मास्क



Wear a medical mask (also known as a surgical or procedure mask) to protect mucous membranes of the nose and mouth against splashes or sprays of body fluids, respiratory secretions and chemicals

Wear a medical mask to protect the patient during aseptic procedures (e.g. during surgery or lumbar punctures)

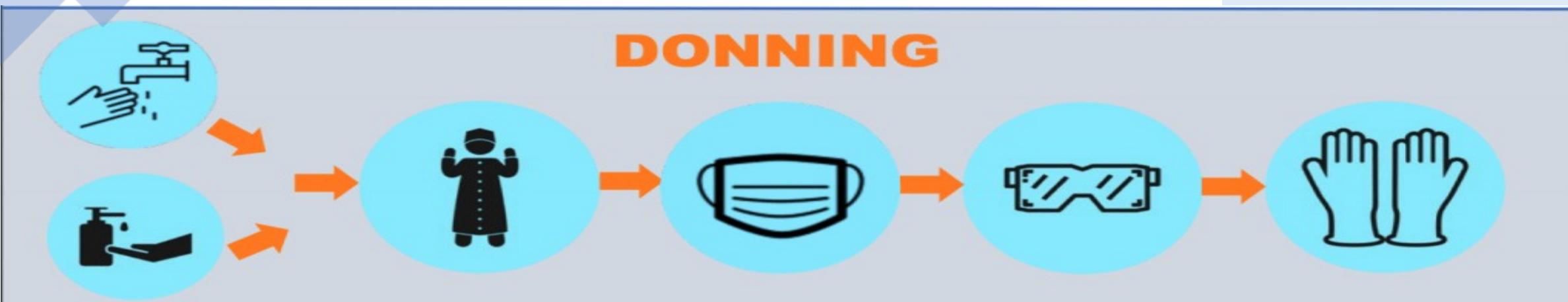
Eye Protection / नेत्र सुरक्षा

Wear either eye protection (eye visor, goggles) or a face shield to protect mucous membranes of the eyes during activities that are likely to generate splashes or sprays of blood, body fluids, secretions and excretion

Ensure that a face shield covers the forehead, extends below the chin, and wraps around the side of the face

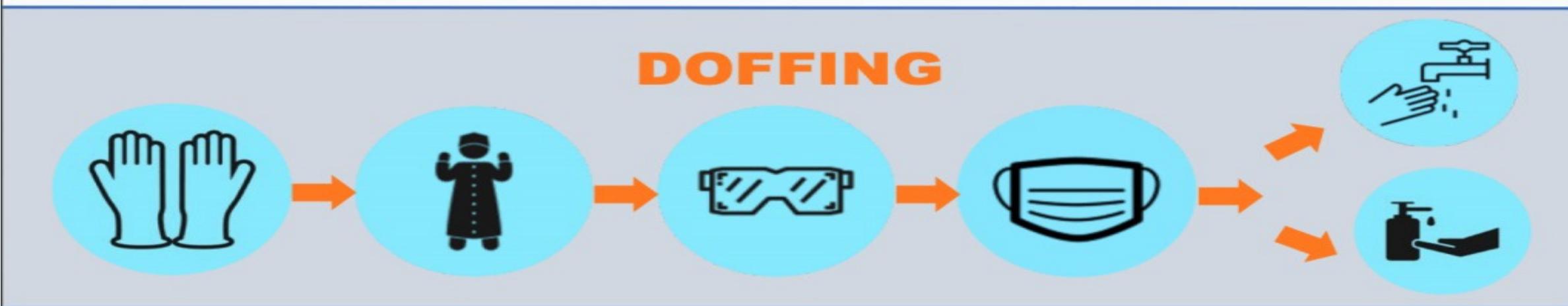


Donning and Doffing of Personal Protective Equipment



For respiratory protection use a surgical mask or above

For eye protection use goggles or a face shield



Safe Injections & Sharp Injury

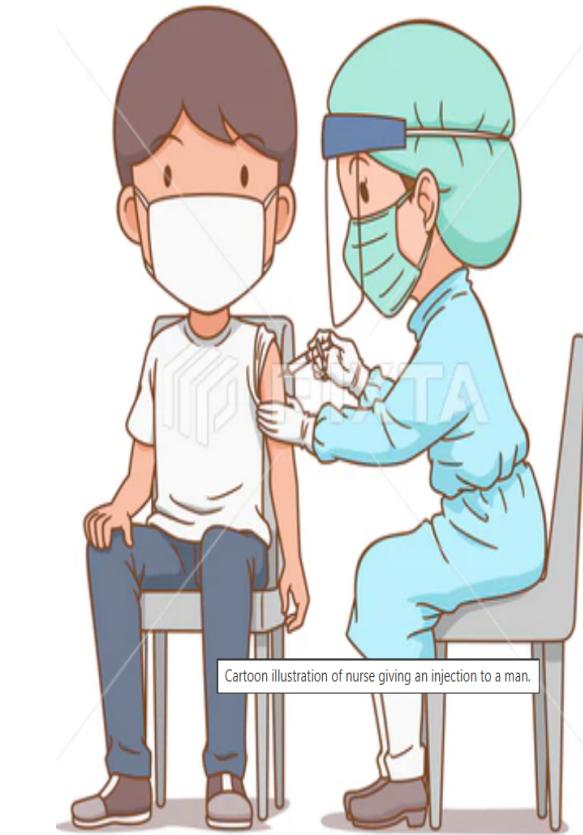
सुरक्षित इंजेक्शन और तेज चोटें

Prepare injections where there is low risk of contamination from blood, body fluid, splashes or sprays (इंजेक्शन उसी स्थान पर तैयार करें जहाँ रक्त या शारीरिक द्रवों के छींटे या फुहारों से संदूषण का जोखिम कम हो)

Always use a sterile syringe and needle to withdraw and reconstitute medications (दवाइयाँ निकालने या पुनर्गठित (reconstitute) करने के लिए हमेशा निष्कल (sterile) सिरिंज और सुई का उपयोग करें)

Avoid use of multi-dose vials or, if used, dedicate the vial for single-patient use (बहु-खुराक शीशियों (multi-dose vials) का उपयोग करने से बचें; यदि उपयोग आवश्यक हो, तो उसे केवल एक ही रोगी के लिए निर्धारित करें)

Label the multi-dose vial with the date opened, and discard according to the manufacturer's instructions (बहु-खुराक शीशी पर खोलने की तारीख लिखें और निर्माता के निर्देशों के अनुसार उसे निर्धारित समय पर नष्ट करें)



WHO Guideline

Safe Injections & Sharp Injury

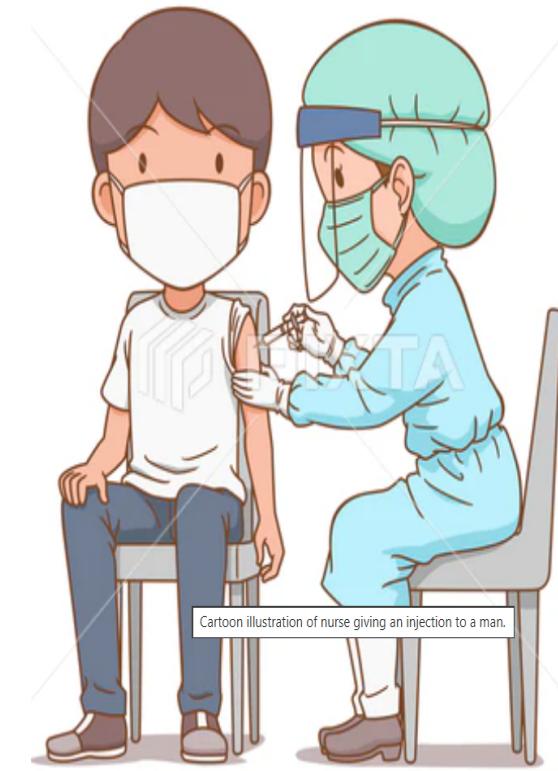
सुरक्षित इंजेक्शन और तेज चोटें

Clean the patient's skin with soap and water or disinfect with 60–70% alcohol prior to the procedure (प्रक्रिया शुरू करने से पहले रोगी की त्वचा को साबुन और पानी से साफ करें या 60–70% अल्कोहल से कीटाणुरहित (disinfect) करें)

Provide a puncture-resistant sharps container for sharps disposal at the point of care (उपयोग की गई सुई या अन्य तीक्ष्ण वस्तुओं को निस्तारित करने के लिए रोगी देखभाल स्थल पर ही छेदन-प्रतिरोधी शार्प्स कंटेनर उपलब्ध कराएँ)

Not re-cap, bend, break, manipulate or manually remove the needle from the syringe (सुई को कभी भी पुनः कैप, मोड़ें, तोड़ें, हाथ से निकालें या किसी भी प्रकार से छेड़छाड़ न करें)

Discard the sharps container when it is three quarters full, seal it and store it in a secure area (जब शार्प्स कंटेनर तीन-चौथाई भर जाए, तो उसे सील कर दें और सुरक्षित स्थान पर संग्रहित करें)



Cartoon illustration of nurse giving an injection to a man.

[WHO Guideline](#)

Management of Sharps

शार्प का प्रबंधन

Needle Stick/Sharp Injury

Safety Measures

1. Safe Management of sharps (Needles, blades, knives and scissors).
2. Wear personal protective equipments (PPE)
3. Never recap the needle after use.
4. Decontamination of used sharps by 1% chlorine solution.
5. Always dispose the sharps appropriately in puncture proof box (Sharp container).
6. Don't overfill in the sharp container.
7. Don't put finger inside the sharp container.
8. Don't remove needle from the hub.
9. Vaccination against Hepatitis B and tetanus of all the staff.
10. Report all needle stick injuries promptly.



Management

- Encourage the wound to bleed, ideally by holding it under running water.
- Don't scrub the affected site
- Don't squeeze or suck the blood from the wound.
- Report the injury to their supervisor/ Infection Control Nurse (ICN).
- Immediately consult doctor on emergency duty.
- Find out the patient's HIV, Hep B and Hep C status
- First dose of post exposure prophylaxis (PEP) should be administered ideally within 2 hours (but certainly within the first 72 hours) of exposure and the risk evaluated as soon as possible.

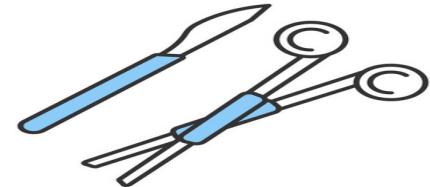


Cleaning & Decontamination

सफाई और परिशोधन

Dilution chart for liquid Sodium Hypochlorite

Original concentration	Dilution (prepared v/v)	Chlorine in ppm	Recommended use
Minimum 5% / न्यूनतम 5%	None/ कोई पतला करना नहीं	50,000 ppm	—
Minimum 5% / न्यूनतम 5%	1:10 (10%)	5,000 ppm	Disinfection of large blood/ body fluid spills/ बड़े रक्त/ शारीरिक द्रव फैलाव का कीटाणुशोधन
Minimum 5% / न्यूनतम 5%	1:100 (1%)	500 ppm	Wiping metallic surfaces on a regular basis, wiping after cleaning a small blood spill/ नियमित रूप से धातु की सतहों को पोंछना, छोटे रक्त फैलाव के बाद पोंछना
Minimum 5% / न्यूनतम 5%	1:1000 (0.5%)	50 ppm	Cleaning equipment disinfection / साफाई साफार्ट और



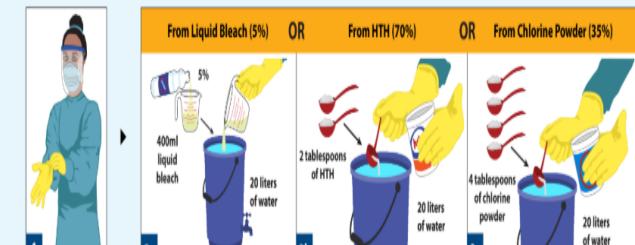
How to Make 0.1% Chlorine Solution to Disinfect Surfaces in Healthcare Settings

Accessible version <https://www.cdc.gov/coronavirus/2019-ncov/global-covid-19/make-chlorine-solution.html>

Use 0.1% (1,000ppm) chlorine solution to disinfect frequently touched surfaces and items.

Make new 0.1% chlorine solution **every day**. Throw away any leftover solution from the day before.

Proceed with **only one** of the following: 2a or 2b or 2c



Make sure to wear required PPE.

Pour 400ml of liquid bleach into a 20-liter bucket, then fill with water to 20 liters (or pour 1 part liquid bleach and 49 parts water for every volume).

Add TWO tablespoons (30g) of high-test hypochlorite (HTH) (70%) to 20 liters of water in a bucket.

Add FOUR tablespoons (60g) of chlorine powder (35%) to 20 liters of water in a bucket.

Stir well for 10 seconds, or until chlorine powder/granules have dissolved.

Wait 30 minutes before use.

Label bucket "0.1% Chlorine Solution - Disinfecting."

Cover bucket with lid. Do not store in direct sunlight.

WARNING

Do NOT mix chlorine solution with other cleaning products.

Do NOT put chlorine solution in mouth or eyes.

CS164198

Supplies Needed

Tablespoon Measuring cup or 1-liter bottle Bucket with lid and spigot Water 5% Liquid bleach OR 70% HTH OR 35% chlorine powder Stick for stirring Label

Do NOT mix chlorine solution with other cleaning products.

Do NOT put chlorine solution in mouth or eyes.

Biomedical Waste Management



जैव चिकित्सा प्रबंधन अपशिष्ट

Treat waste contaminated with blood, body fluids, secretions and excretions as hazardous infectious waste, in accordance with local regulations (रक्त, शारीरिक द्रव, स्राव या उत्सर्जन से दूषित अपशिष्ट को स्थानीय नियमों के अनुसार **खतरनाक संक्रामक अपशिष्ट** के रूप में निपटाएँ)

Treat human tissue and laboratory waste that is directly associated with specimen processing as hazardous infectious waste (मानव ऊतक और प्रयोगशाला अपशिष्ट जो नमूनों के प्रसंस्करण से सीधे संबंधित हों, उन्हें भी **खतरनाक संक्रामक अपशिष्ट** के रूप में ही निपटाएँ)

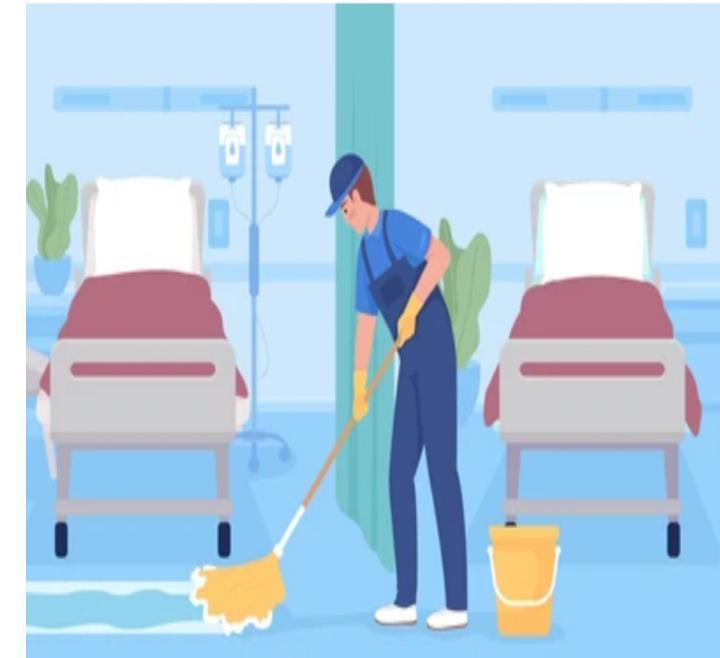
Environmental Control/ पर्यावरण नियंत्रण



Clean and disinfect patient care areas at least once a day, paying particular attention to frequently touched surfaces (रोगी देखभाल क्षेत्रों की रोज़ कम से कम एक बार सफाई और कीटाणुशोधन करें, विशेष रूप से उन सतहों पर ध्यान दें जिन्हें अक्सर छुआ जाता है)



Deal with spills of blood and body fluid/ substance as soon as possible, in accordance with local protocols (रक्त या शारीरिक द्रव/पदार्थ के छींटे या फैलाव को यथाशीघ्र स्थानीय प्रोटोकॉल के अनुसार साफ़ करें)





THANK YOU

Quality & Patient Safety Team
National Health Systems Resource Centre