Hand Hygiene

CDPH
California Department of Public Health

Infection Prevention Strategies: Basics

Many healthcare-associated infections (HAIs) may be prevented by implementing simple actions that require minimal resources, such as **hand hygiene, environmental and equipment cleaning and disinfection, personal protective equipment (PPE), and isolation precautions.**

The objectives of this presentation are to:

- Describe the role of hand hygiene.
- List the five steps of hand contamination.
- Discuss hand washing versus use of alcohol-based hand rub (ABHR).
- List indications for hand hygiene.
- Describe the correct hand hygiene technique.
- Discuss glove use and hand hygiene.

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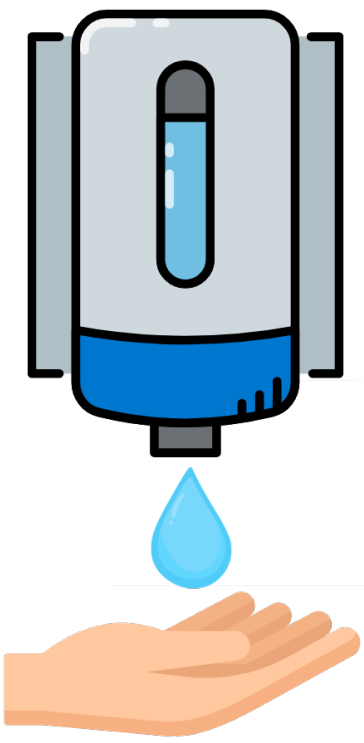
Infection Prevention Strategies: Basics



Hand Hygiene

Cleaning and Disinfection

Personal Protective Equipment and Precautions

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Hand Hygiene

There are a few ways to perform hand hygiene.

- One way is **handwashing using plain soap and water.**

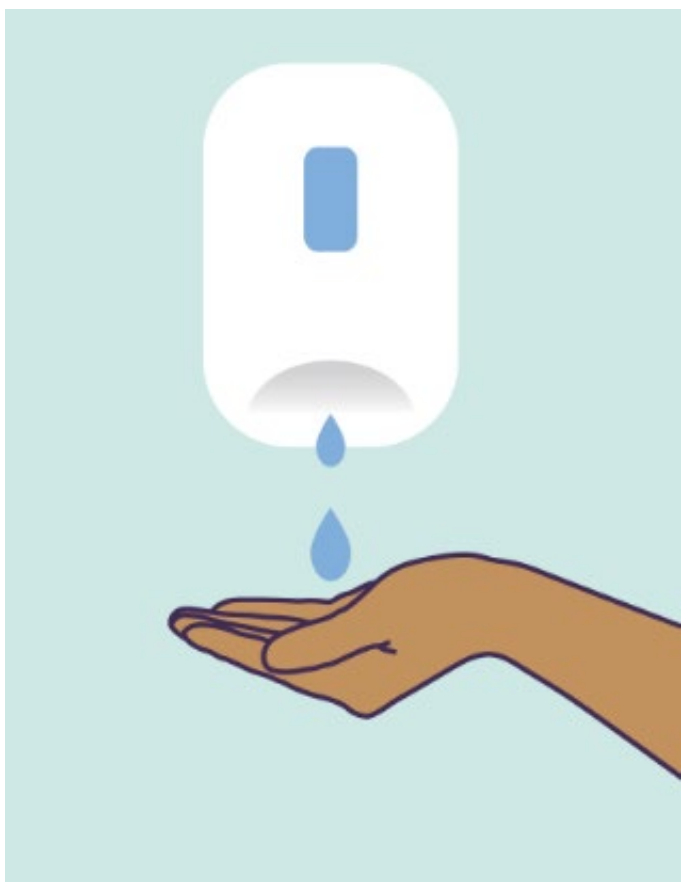
- Another way is **handwashing using an antiseptic soap and water.** This is called an antiseptic hand wash.

- The third way is **rubbing hands with an alcohol-based hand rub or ABHR**.

Hand Hygiene

Handwashing:
Washing hands with plain soap and water

Antiseptic hand wash:
Washing hands with water and soap containing an antiseptic agent



Alcohol-based hand rub (ABHR):
Rubbing hands with an alcohol-containing agent

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Hand Hygiene Product Efficacy

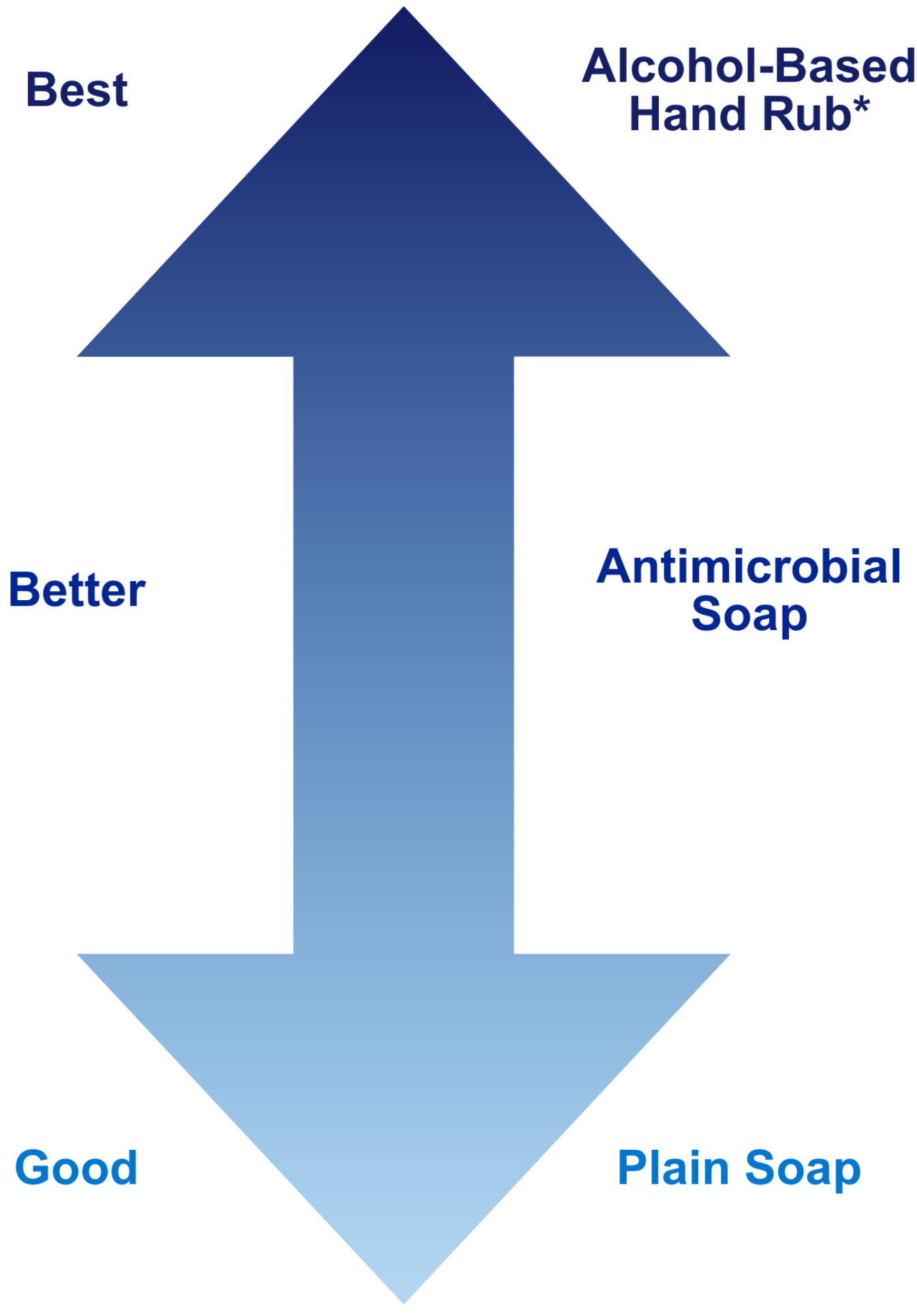
- As this picture shows, the best method of hand hygiene is to use ABHR.

- Use ABHR every time there is an indication for hand hygiene, unless your hands are visibly soiled.

- According to the Centers for Disease Control and Prevention (CDC), alcohol-based solutions are more effective than washing hands with plain soap and water. Alcohol-based solutions reduce bacterial counts on the hands more than antimicrobial soaps or detergents.

- When you take care of a patient with spore-forming organisms, such as *C. difficile*, wash your hands with plain or antimicrobial soap and water.

Hand Hygiene Product Efficacy



*Less effective in the presence of organic material

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Transmission Can Occur via Healthcare Worker Hands

- Transmission is a way germs (such as viruses, bacteria, or other microbes) are moved from a person or object to another person.
- Germs don’t move themselves.
- Germs depend on people and the environment, including medical equipment, to move in healthcare settings.
- **Healthcare worker hands are the most common way that germs are spread.**
- Hand transmission from one patient to another requires the following five steps.

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Transmission Can Occur via Healthcare Worker Hands

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Step 1: Germs on Patient Skin and Environment

- Germs are present on patients' skin. Nearly 1 million dead skin flakes containing viable germs are shed daily from normal skin to a patient's immediate surroundings, such as the bed linen and furniture. These and other objects in the environment become contaminated by patient germs.

- Surrounding patient surfaces may be contaminated by a patient's own germs or by other people's germs and by inanimate objects.

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Step 1: Germs on Patient Skin and Environment

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Step 2: Healthcare Worker Hand Contamination

- Patient germs contaminate healthcare worker hands by direct and indirect contact.

- Healthcare worker hands become contaminated by touching germs present on patients, medical equipment, and high-touch surfaces. Healthcare workers carry the germs on their hands and can spread germs when proper hand hygiene is not performed.

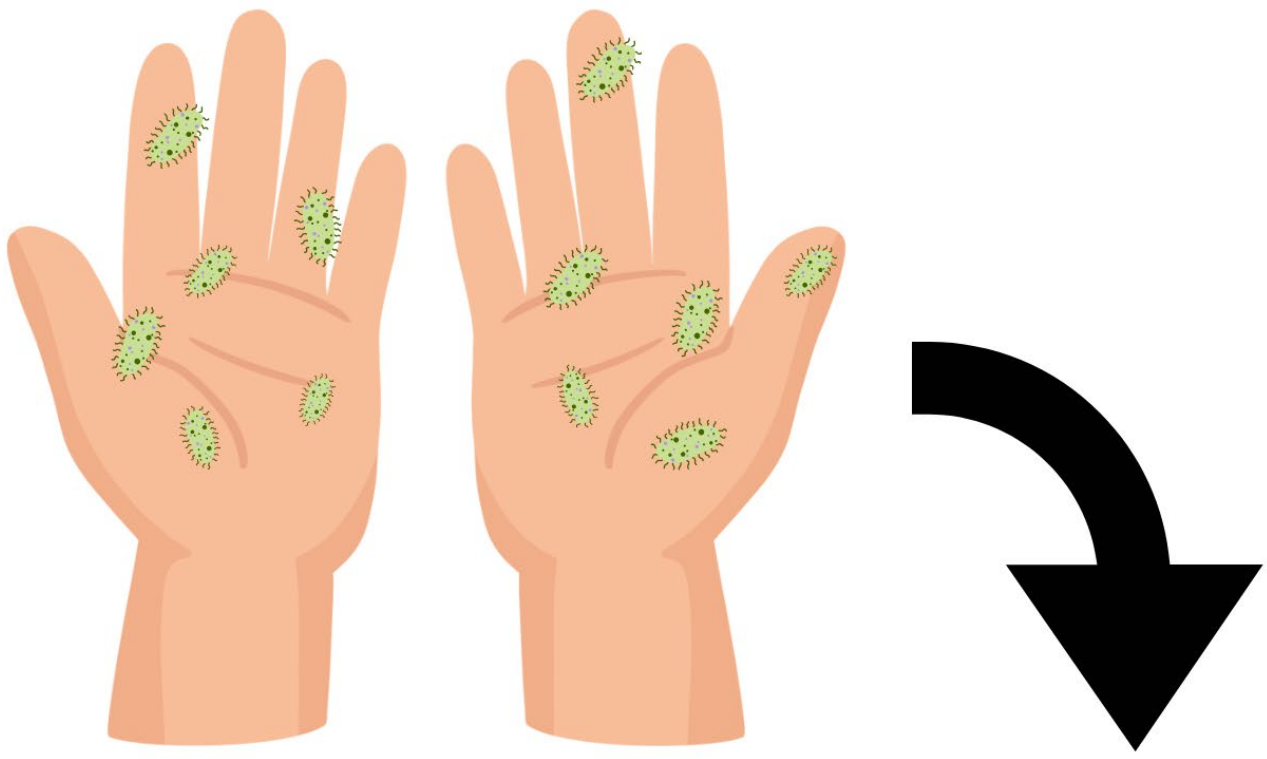
Step 2: Healthcare Worker Hand Contamination

- Patient germs contaminate healthcare worker hands by direct and indirect contact.

Step 3: Germs Survive and Multiply on Healthcare Worker Hands

- When proper hand hygiene is not performed after contact with patients or their environment, germs can survive and increase in number on healthcare worker hands.

Step 3: Germs Survive and Multiply on Healthcare Worker Hands



Step 4: Hands Remain Contaminated if Hand Hygiene is Missed or Poorly Performed

- When hand hygiene opportunities are missed or when hand hygiene is performed poorly, hands remain contaminated with germs.
- Poor hand hygiene occurs when an insufficient amount of product is used or when there is an insufficient duration of hand hygiene action.
- Transient microorganisms are still recovered on hands following handwashing with soap and water, whereas hand rubbing with an alcohol-based solution has been proven to be significantly more effective.

Step 4: Hands Remain Contaminated if Hand Hygiene is Missed or Poorly Performed

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Step 5: Transmission from One Patient to Another via Healthcare Worker Hands

- Transmission occurs when healthcare workers with contaminated hands come in direct contact with another patient or with an object that may come into direct contact with a patient.

- Touching invasive devices (for example, urinary catheters, IV lines, or respiratory tubes) with contaminated hands may lead to infections.

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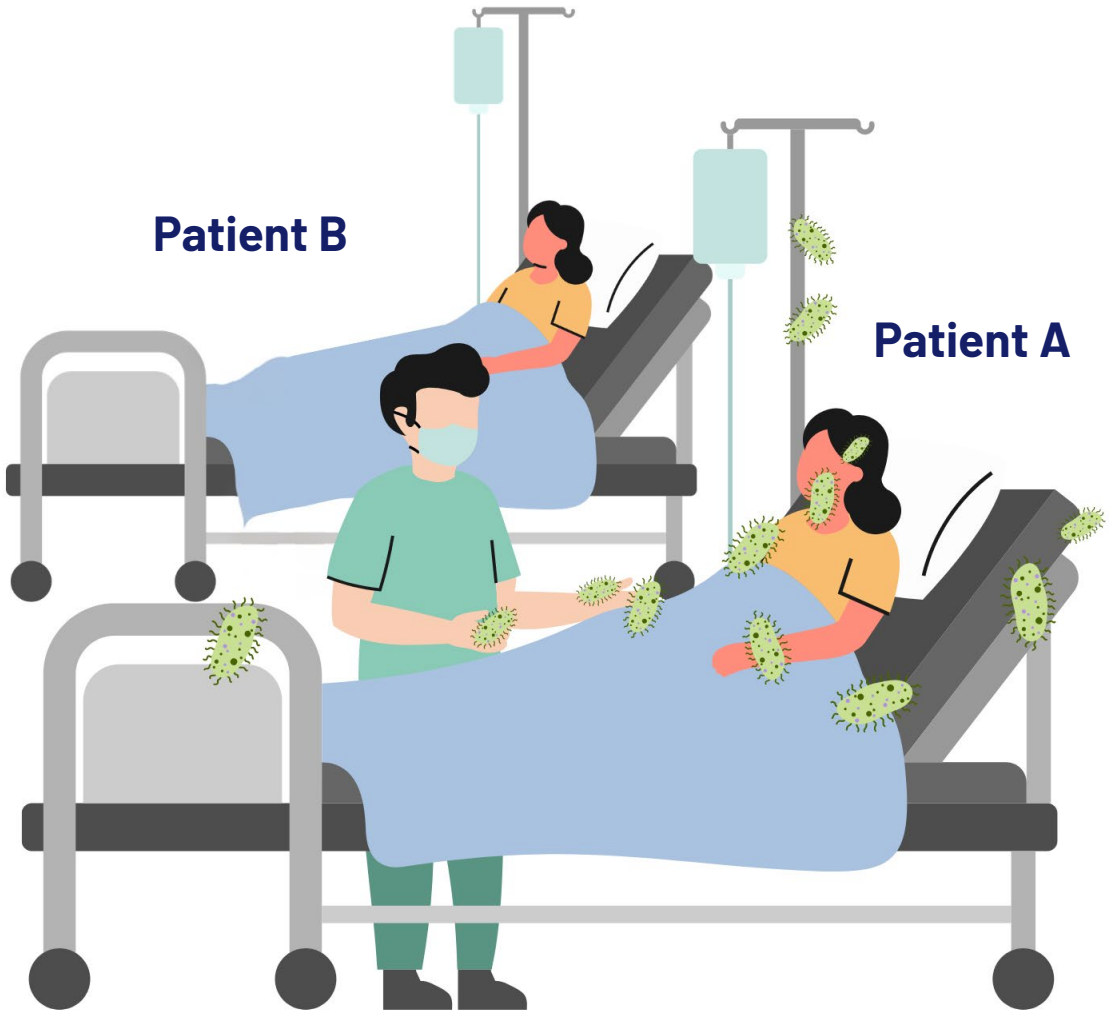
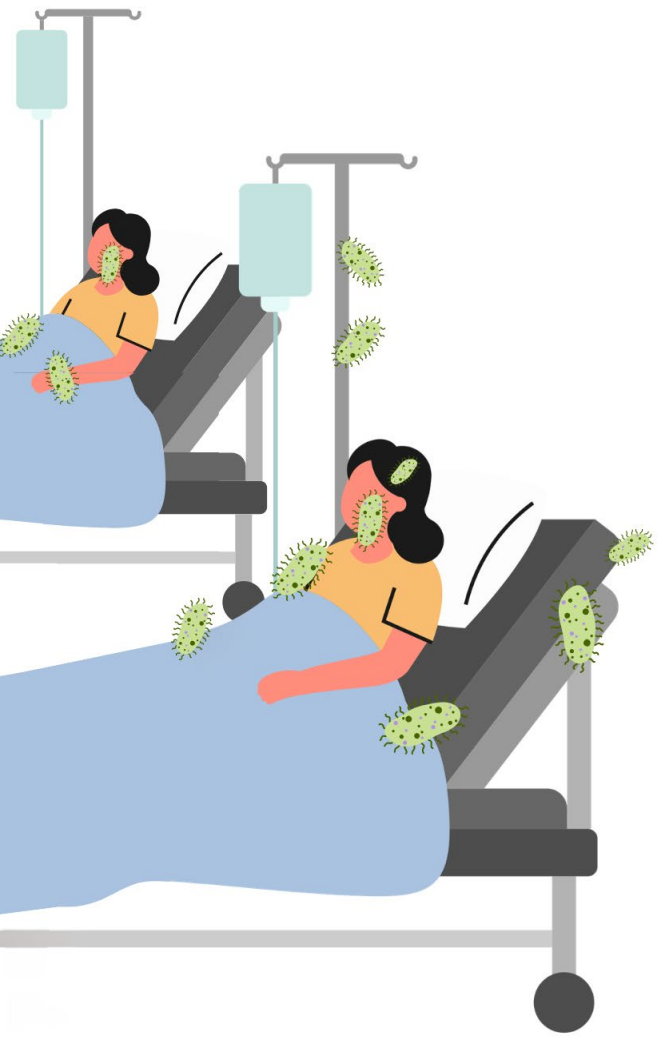
Step 5: Transmission from One Patient to Another via Healthcare Worker Hands





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My 5 Moments for Hand Hygiene

- Perform hand hygiene:
    - **Before** entering a patient room and touching a patient.
    - **Before** performing clean or aseptic tasks; **between** moving from a dirty to a clean site.
    - **After** contact with blood, body fluids, mucous membranes, or non-intact skin or wounds.
    - **After** touching a patient or their surroundings.
    - **Before** leaving a patient room.

- When using PPE, hand hygiene should be performed:
    - **Before** donning PPE and after removal of PPE.

- Gloves are **not** a substitute for performing hand hygiene.

My 5 Moments for Hand Hygiene

2. Before any clean or aseptic procedure

1. Before entering a patient room and touching a patient

3. After contact with bodily fluids

5. Before leaving a patient room

4. After touching a patient or their surroundings

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Perform Hand Hygiene Before Entering a Patient's Room and Touching a Patient

- Perform hand hygiene before entering a patient room and touching a patient to protect them against harmful germs carried on your hands.
- Examples of direct contact include:
    - Shaking hands
    - Stroking a child’s forehead
    - Helping a patient move around/get washed
    - Applying an oxygen mask
    - Giving physiotherapy
    - Taking pulse, blood pressure, chest auscultation, or abdominal palpation
    - Recording an electrocardiogram (ECG/EKG)

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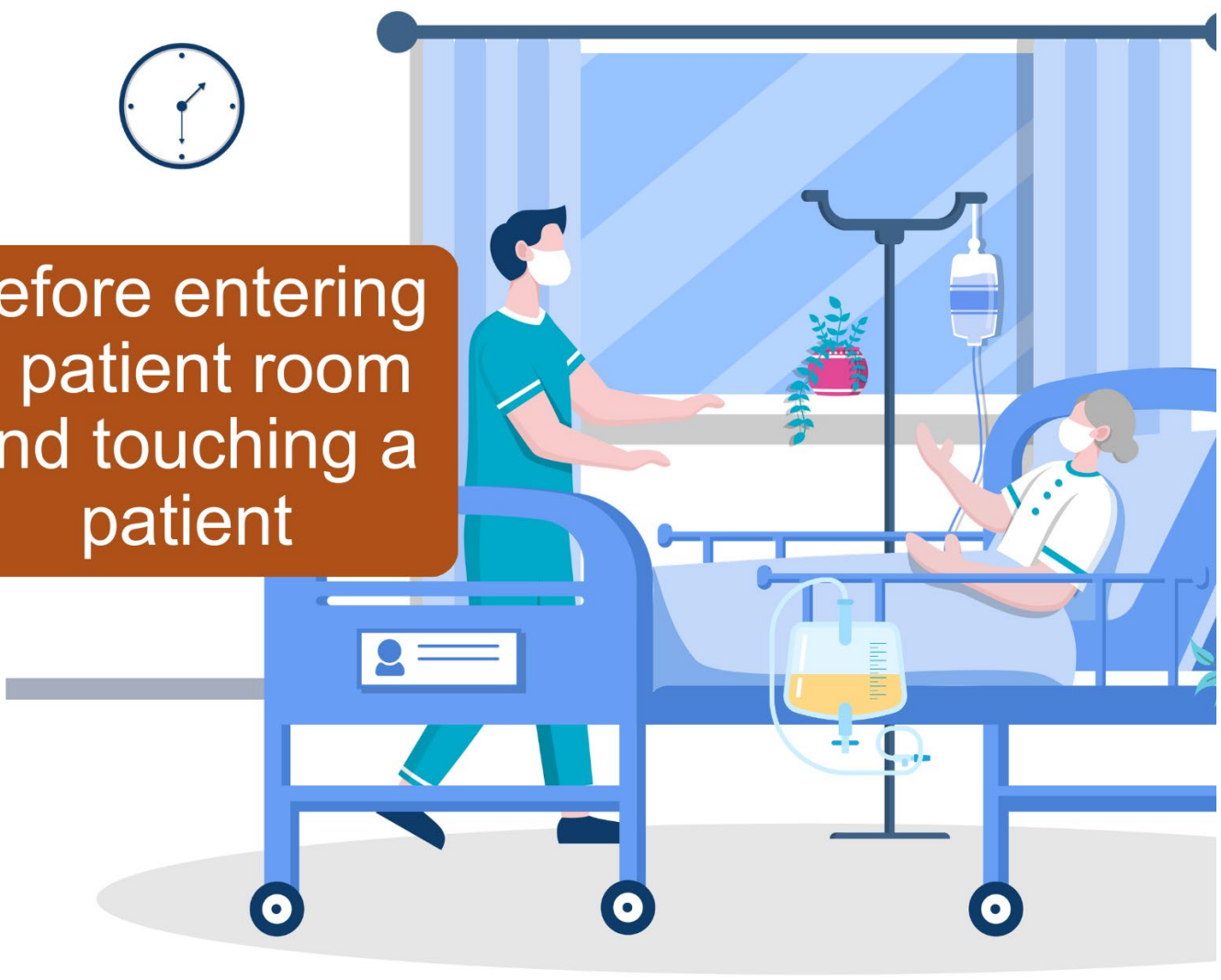
Perform Hand Hygiene Before Entering a Patient's Room and Touching a Patient



Clean your hands before entering a patient room and touching a patient to protect them against harmful germs carried on your hands.

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Perform Hand Hygiene Before Clean / Aseptic Procedures

- Clean your hands before accessing critical sites with infectious risk for the patient to protect the patient against harmful germs, including the patient's own, entering their body.
- Examples of clean/aseptic procedures include:
  - Brushing the patient's teeth
  - Instilling eye drops
  - Skin lesion care
  - Wound dressing
  - Subcutaneous injection
  - Catheter insertion
  - Opening a vascular access system or a draining system
  - Secretion aspiration
  - Preparation of food, medication, pharmaceutical products, sterile material

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Perform Hand Hygiene Before Clean / Aseptic Procedures

2. Before any clean or aseptic procedure

Clean your hands before accessing critical sites to protect the patient against harmful germs.

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Perform Hand Hygiene After Body Fluid Exposure Risk

- Clean your hands as soon as a task involving exposure risk to body fluids has ended and after glove removal, to protect yourself and the healthcare environment from harmful germs.
- Examples of body fluid exposure risk include:
  - Brushing the patient's teeth
  - Instilling eye drops
  - Secretion aspiration
  - Skin lesion care
  - Wound dressing
  - Subcutaneous injection
  - Drawing and manipulating any fluid sample
  - Opening a draining system
  - Endotracheal tube insertion and removal
  - Clearing up urine, feces, vomit
  - Handling waste (including bandages, napkins, and incontinence pads)
  - Cleaning of contaminated and visibly soiled material or areas (such as soiled bed linen, bathroom, urinal, bedpan, and medical instruments)

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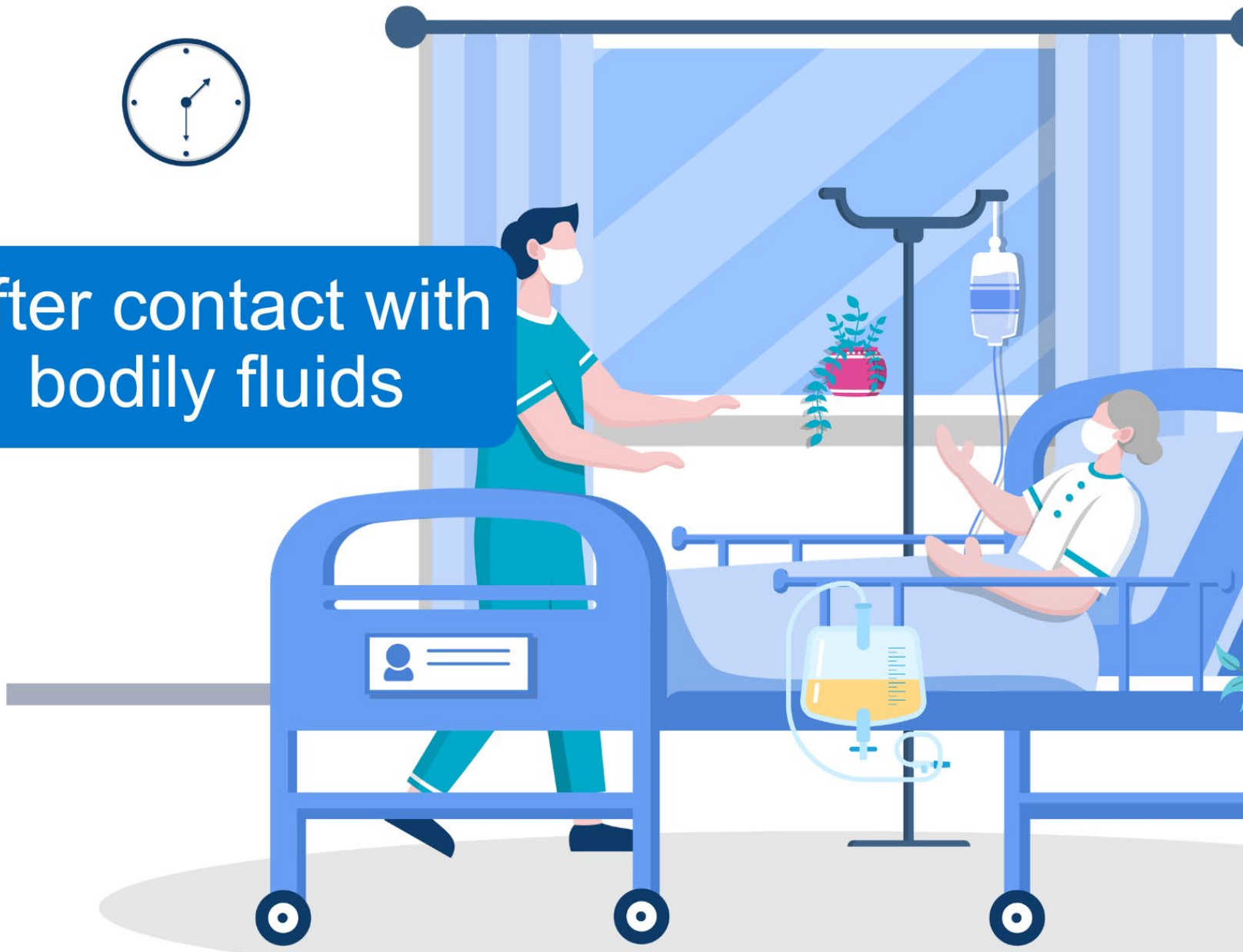
Perform Hand Hygiene After Body Fluid Exposure Risk

3. After contact with bodily fluids



Clean your hands after body fluid exposure risk to protect yourself and the healthcare environment from harmful germs.

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Perform Hand Hygiene After Touching a Patient or their Surroundings

- Clean your hands when leaving the patient's side, including after touching a patient and his/her immediate surroundings, to protect yourself and the healthcare environment from harmful germs.
- Examples of direct contact include:
    - Shaking hands
    - Stroking a child's forehead
    - Helping a patient move around
    - Washing a patient
    - Applying an oxygen mask
    - Giving physiotherapy
    - Taking pulse, blood pressure, chest auscultation, abdominal palpation
    - Recording ECG/EKG
- Clean your hands after touching any object or furniture in the patient's immediate surroundings, even if you haven't touched the patient, to protect yourself and the healthcare environment against germ spread.
- Examples of contact with patient surroundings include:
    - Changing bed linen, with the patient out of the bed
    - IV perfusion adjustment
    - Monitoring alarm
    - Holding a bed rail, leaning against the bed
    - Clearing the bedside table

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Perform Hand Hygiene After Touching a Patient or their Surroundings

Clean your hands after touching a patient or any object or furniture in the patient's surroundings even if you haven't touched the patient.

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Perform Hand Hygiene Before Leaving a Patient Room

- Clean your hands before leaving a patient's room to protect yourself and the healthcare environment against germ spread.

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Perform Hand Hygiene Before Leaving a Patient Room

5. Before leaving a patient room

Clean your hands before leaving a patient's room to protect yourself and the healthcare environment from harmful germs.

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Performing Hand Hygiene with ABHR

To effectively reduce the growth of germs on hands, perform hand hygiene with ABHR following all of the illustrated steps.

1. Apply a palmful of the product in a cupped hand.
2. Rub in ABHR, covering all surfaces of your hands.
3. Rub hands palm to palm.
4. Rub right palm over left dorsum with interlaced fingers and vice versa.
5. Rub palm to palm with fingers interlaced.
6. Clean fingernails.
7. Rotational rubbing of left thumb clasped in right palm and vice versa.
8. Rotational rubbing, backwards and forwards of right hand on left wrist and vice versa.
9. Once dry, your hands are clean.

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Performing Hand Hygiene with ABHR

Apply ABHR to your palm

Rub in ABHR, covering all surfaces of your hands.

Rub from palm-to-palm

Palm-to-back on both hands & between fingers

Palm-to-palm with fingers interlaced

Clean fingernails

Clean thumbs

Don’t forget wrists

Once hands are dry and all ABHR is rubbed in, hands are clean

This takes 20–30 seconds.

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How to Perform Hand Hygiene with Soap and Water

To effectively reduce the growth of germs on hands, **scrub hands for at least 20 seconds** and perform the following illustrated steps.

1. Wet hands with water.
2. Apply enough soap to cover all hand surfaces.
3. Scrub hands palm-to-palm.
4. Rub right palm over left dorsum with interlaced fingers and vice versa.
5. Rub right fingernails on left palm and vice versa.
6. Rotational rubbing of left thumb clasped in right palm and vice versa.
7. Rotational rubbing of left wrist clasped in right palm and vice versa.
8. Rinse hands with water.
9. Dry hands thoroughly with a single-use towel and use towel to turn off faucet.

Your hands are now clean.

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How to Perform Hand Hygiene with Soap and Water

Scrub hands for at least 20 seconds.

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Nails

- Germs can live under fingernails and contribute to the spread of infections.

- Artificial nails and gel polishes should not be worn by healthcare workers.

- Polish may be worn but must be intact (not chipped).

- Nail tips should be kept to ¼ inch in length.

Nails

- Germs can live under fingernails and contribute to the spread of infections.
- Artificial nails and gel polishes should not be worn by healthcare workers.
- Polish may be worn but must be intact (not chipped).
- Nail tips should be kept to ¼ inch in length.

Hand Hygiene and Glove Use

- Glove use does not replace hand hygiene.
- When an indication for hand hygiene applies while gloves are on, gloves must be removed to perform hand hygiene, and a new pair of gloves should be worn if needed.
- Always wear gloves when contact with blood or infectious material is possible.
- Wear gloves only when indicated.
- Remove gloves after caring for each patient.
- Remove gloves, perform hand hygiene, and re-glove when transitioning care from a soiled to a clean area on the same patient.
- Perform hand hygiene upon removing gloves.
- Do not wash gloves.
- Do not reuse gloves.
- Do not apply ABHR to gloves.

Hand Hygiene and Glove Use

- Glove use does not replace hand hygiene.
- Always perform hand hygiene before putting on and after taking off gloves.
- Gloves must be removed to perform hand hygiene as required, and changed as needed.

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Glove use does not equal hand hygiene.

Summary

In summary:

- Hand hygiene reduces the incidence of healthcare-associated infections (HAIs).
- Remember your "5 Moments" of hand hygiene.
- Follow proper technique when performing hand hygiene.
- ABHR is the preferred method for hand hygiene.

To the instructor only:

- End by handing out the post-test activity to class participants. Give 5 minutes for participants to answer; then collect tests.

Summary

- Hand hygiene reduces the incidence of healthcare-associated infections (HAIs).
- Remember your “5 Moments” of hand hygiene.
- Follow proper technique when performing hand hygiene.
- ABHR is the preferred method of hand hygiene.

Instructor Notes

- On the front of this flipchart, you will find the subject to be discussed; the back of each picture and subject has a suggested script. The script will help guide the learning experience between you and your staff; it does not need to be followed exactly.

- Try to start a dialogue to involve your staff.

- You may start your session with a pre-test activity. Give 5 minutes for participants to answer; then collect tests.

- To begin, let participants know that this presentation will teach them the role of hand hygiene in infection prevention and control.