Antimicrobial Resistance and Infection Control Programme

National Hand Hygiene Programme for Healthcare Workers in Acute Hospitals

RESIST

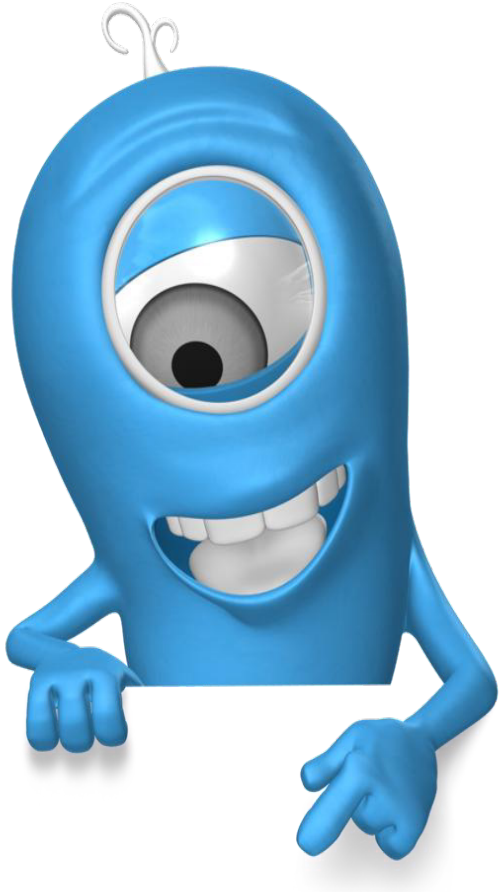
Seirbhís Sláinte Níos Fearr á Forbairt | Building a Better Health Service

(1.) What is the Hand Hygiene Train the Trainer Programme?

Train the Trainer overview overview

You will understand:

- The importance of a national trainer programme for hand hygiene in the acute hospital setting
- Develop confidence and skills to teach hand hygiene and influence behaviour locally
- Bring education and resources to healthcare workers in the workplace



Who can become a trainer?

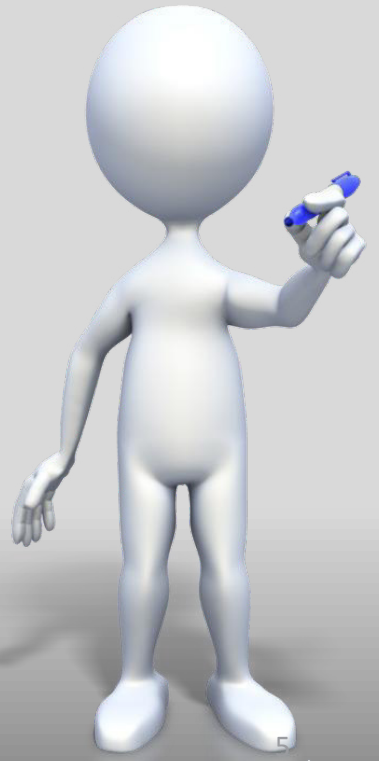
Hand Hygiene Trainers will be considered to be more effective if they have:

- Experience in providing formal or informal education or influence in making healthcare improvement
- Been nominated with agreed support from Service/ Facility Manager as outlined in the Hand Hygiene Trainer Agreement

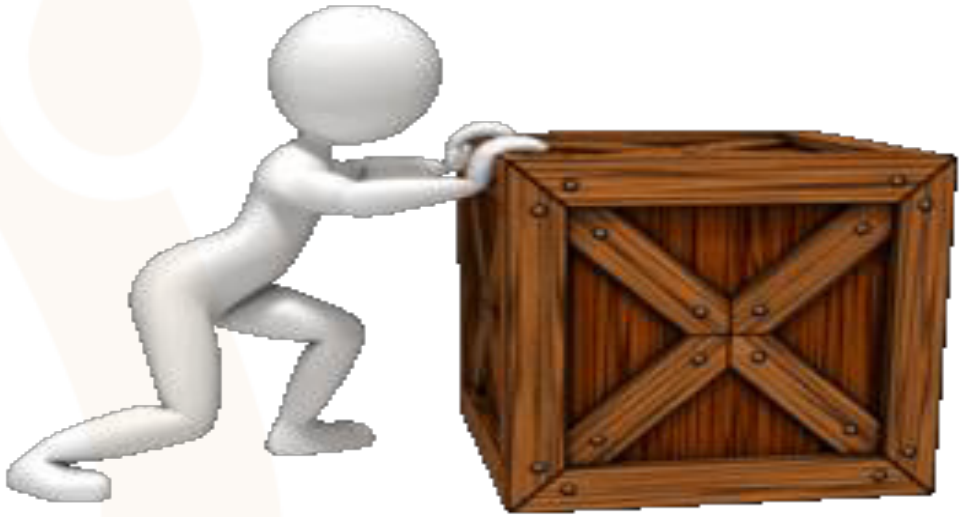
Getting started as a Hand Hygiene Trainer

Starting Essentials:

- Interested in educating peers in hand hygiene
- Complete HSELand e-learning module on Hand Hygiene and Chain of Infection
- Undertake 'Train the Trainer` education programme and provide local training using the standardized materials and knowledge learnt
- Become a role model for Hand Hygiene in your workplace

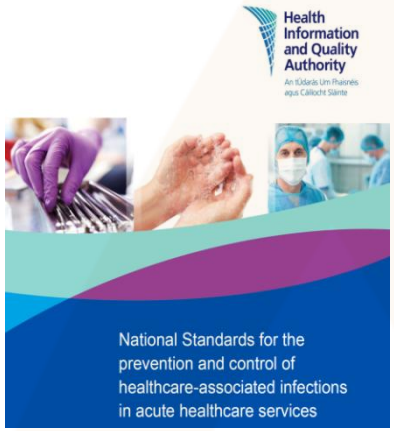


Let’s not make it difficult!



Any burning issues you wish to clarify around the Hand Hygiene Trainer role and commitment?

Meeting the standard



Standard 3.4

Service providers adhere to hand hygiene practices to minimise the risk of acquiring or transmitting infection.

3.4.2 Staff adhere to the World Health Organization's (WHO's) 'five moments of hand hygiene[¥] principles' or any emerging best practice.

3.4.3 Staff adhere to the national 'bare wrist'[≠] recommendations in order to achieve effective hand hygiene practice when providing clinical care.

3.4.4 Leaders at all levels support and encourage colleagues to adhere to good hand hygiene practices by leading by good example.

Guidelines for hand hygiene in Irish healthcare settings

Update of 2005 guidelines
January 2015

National IPC Guidelines currently in development by NCEC IPC Committee and will replace the current guidelines

(2.)What are Health Care Associated Infections and Antimicrobial resistant Organisms?

How do they cause harm?

What are Healthcare Associated Infections?

Healthcare associated infections (HCAIs) are infections that develop as a result of healthcare interventions

This may include medical or surgical treatment or following contact with any healthcare setting

What are Antimicrobial Resistant Organisms (AMROs)

- Antimicrobial resistant organisms (AMROs)
- Multidrug resistant organisms (MDROs)
- Antibiotic resistant organisms (AROs)
- **All mean more or less the same thing which is that antibiotics used to kill this type of bacteria (bug) 10 or 20 years ago no longer work. Some people call these "superbugs"**
- Examples

  MRSA (methicillin-resistant *Staphylococcus aureus*)

  VRE (vancomycin-resistant-Enterococcus)

  ESBL (extended spectrum beta-lactamase producer)

  CPE (carbapenemase producing Enterobacterales)

MDROs which are predominantly bacteria, are resistant to multiple classes of antimicrobial agents. Antimicrobial resistance increases the morbidity and mortality associated with infection and contributes to increased costs of care due to prolonged hospital stay and other factors, including the need for more expensive drugs. MDROs include meticillin resistant *Staphylococcus aureus* (MRSA) vancomycin resistant enterococci (VRE) and multi drug resistant gram-negative bacteria (MDRGN) amongst others

Examples of Healthcare Associated Infections (HCAIs)

- John is admitted to hospital for surgery. After the operation he develops a wound infection
- Mary is admitted with a heart attack and she has an IV line put in. She gets a blood stream infection from the IV line
- Anne lives in a nursing home. She has a urinary catheter in place. She gets a urinary tract infection and blood stream infection related to the urinary catheter
- Sheila is admitted to hospital with pneumonia and she is treated with antibiotics. 5 days later she develops severe diarrhoea caused by **C.diff infection**

Colonisation with AMROs

Colonisation: the bacteria just sits there doing no harm. But bacteria can multiply, grow and spread to other patients, equipment or the environment

Examples of colonisation:

- MRSA sitting in the nose but causing no symptoms
- ESBL sitting in the urine but causing no symptoms
- CPE sitting in the bowel but causing no symptoms

But **colonisation** can develop into **infection**

Colonisation developing into infection

Jane comes to hospital for chemotherapy

CPE gets carried to Jane on the hands of a healthcare worker who forgot to clean their hands

The CPE is just sitting in the colon causing no problems

Jane has a urinary catheter inserted

Three days after the catheter is inserted, CPE is found in Jane`s urine but she has no symptoms

Ten days later, after Jane`s first cycle of chemotherapy the CPE has invaded the blood stream

Most of the common antibiotics won’t treat the CPE blood stream infection

Example of a Preventable HCAI

Catheter Associated Urinary Tract Infection

- Reduce the number of people who have urinary catheters
- Reduce how long urinary catheters stay in for
- Reduce the number of people who access and manipulate the catheter
- Ensuring that those who access the catheter, use the correct aseptic technique every time

Good hand hygiene practices will help reduce the risk of infection for people with a catheter in place

Spread of micro-organisms (bacteria, virus and fungi)

- Most micro-organisms spread by contact. In healthcare this means getting carried from one place to another, on people or on things

- Almost any type of micro-organism can be carried from one place to another. We are especially concerned about AMROs and flu virus getting carried

- **Hands** are the main way micro-organisms spread in hospitals. But they can also travel on patient equipment including commodes and stethoscopes and can survive in the environment

World Health Organization

Evidence of hand hygiene to reduce transmission and infections by multi-drug resistant organisms in health-care settings

The most common bacteria causing HCAIs are those which have become resistant to antibiotics

- MRSA (Meticillin resistant staphylococcus aureus
- VRE (Vancomycin-Resistant Enterococci)
- ESBL (Extended-spectrum β-lactamases)
- CPE (Carbapenem producing enterobacterales)

HCAI & Patients Rights Perspective

People that carry /infected with HCAIs have an equal right to health and healthcare

People who need healthcare have a right to expect that we take reasonable care to reduce the risk that they will get a HCAI

RESIST

The impact of HCAI on our patients

HCAI can cause:

- More serious illness
- Prolonged stay in a health-care facility
- Long-term disability
- Excess deaths
- High additional financial burden to health services
- High personal costs to patients and their families

So how could we spread harmful micro-organisms?

- From person- to- person directly from the healthcare workers hands
- From the environment or equipment if they are contaminated

Stop and think of ways how HCAIs could spread in our own service

Is this avoidable?

How can you pass infection from your hands?

Each trainer to reflect for 2 minutes on what acts or omissions of practice can potentially assist in the spread of micro-organisms to cause HCAIs

Trainers should now share their reflections with the person next to them for 2 minutes

List all answers on a flip chart through group feedback

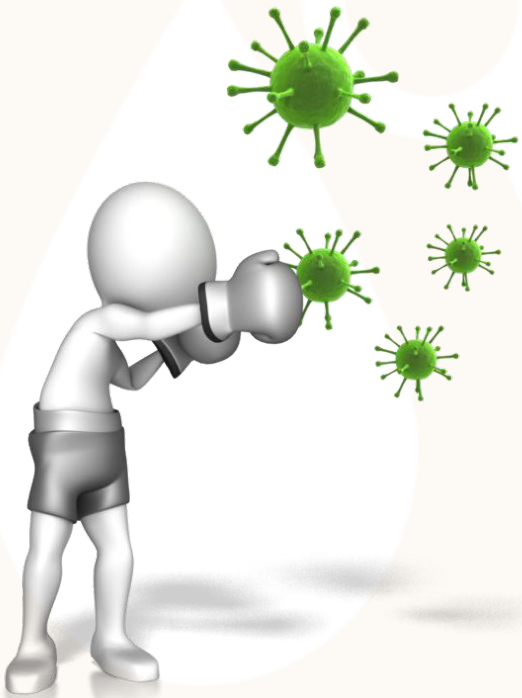
How can you pass infection from your hands?

- Read each point from the flip chart of practice that can cause Micro-organisms to spread and potentially cause a HCAI

- Put an X beside any practice that could be avoided or corrected

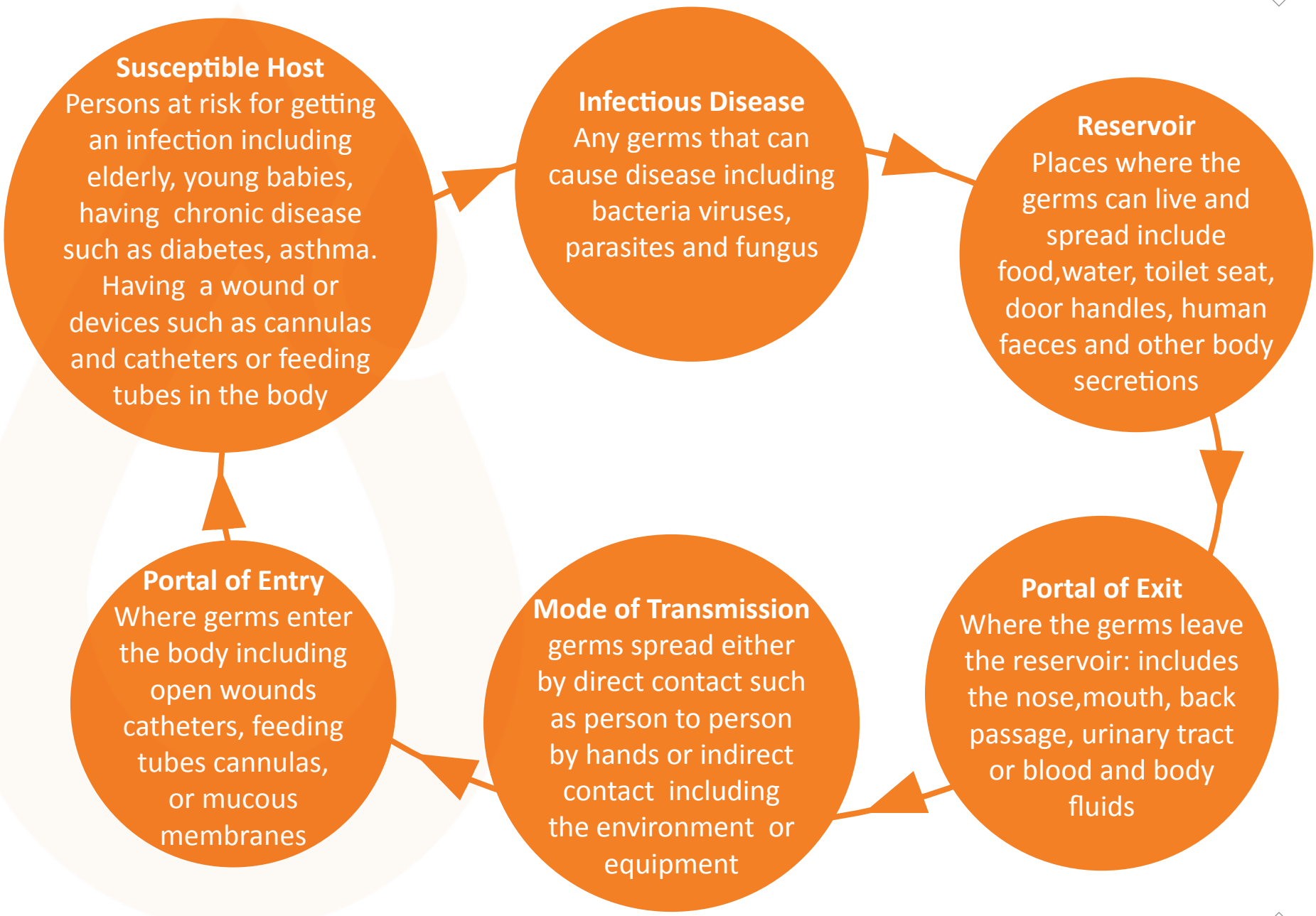
What we perceive to cause healthcare associated infections can be avoided in many situations or reduced- discuss

How are HCAIs reduced?



Multimodal approach:

- Hand hygiene education
- Hand hygiene culture in the workplace
- Easy access to alcohol based hand rubs hand wash sinks
- Having reminders in the workplace (hand hygiene posters)
- Information leaflets for patients and families
- Monitoring and feedback to staff

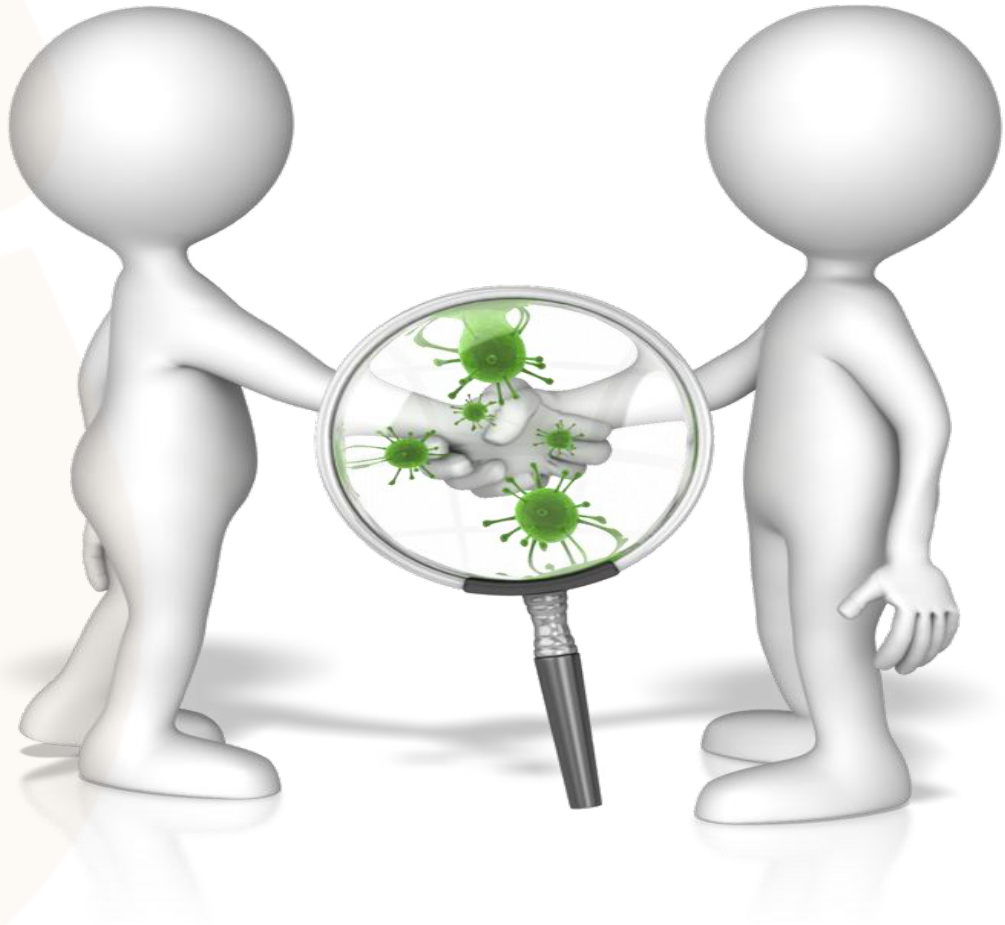

Susceptible Host
Persons at risk for getting an infection including elderly, young babies, having chronic disease such as diabetes, asthma. Having a wound or devices such as cannulas and catheters or feeding tubes in the body
Infectious Disease
Any germs that can cause disease including bacteria viruses, parasites and fungus
Reservoir
Places where the germs can live and spread include food,water, toilet seat, door handles, human faeces and other body secretions
Portal of Exit
Where the germs leave the reservoir: includes the nose,mouth, back passage, urinary tract or blood and body fluids
Mode of Transmission
germs spread either by direct contact such as person to person by hands or indirect contact including the environment or equipment
Portal of Entry
Where germs enter the body including open wounds catheters, feeding tubes cannulas, or mucous membranes

For an infection to develop, each link of the chain must be **connected**.

Breaking any link of the chain can **stop** the transmission of infections

Failure to clean hands during patient care can result in within –patient –cross contamination

(3.) Hand Hygiene and How it Works



What is hand hygiene?

Hand Hygiene includes cleaning hands with an alcohol based hand rub(ABHR) or hand washing with soap and water in order to remove micro-organisms

How Does Hand Hygiene Work?

Alcohol-based hand rub (ABHR) removes micro-organisms and is the gold standard of care for hand hygiene practice in heal thcare settings

Hand hygiene with soap and water done correctly, removes micro-organisms and is essential when **hands are not visibly clean**

Why hand hygiene is so important

- Good hand hygiene remains one of the single most effective measures for preventing the spread of infection and HCAIs
  - It protects the patient against germs from your hands
  - It protects yourself and the health care environment from harmful germs that can spread HCAIs

So why do we clean our hands?

- Hand Hygiene is one of the **single most effective measures** for preventing the spread of infection and HCAIs

Hand Hygiene **done properly,** can be highly effective in preventing infection from spreading by:

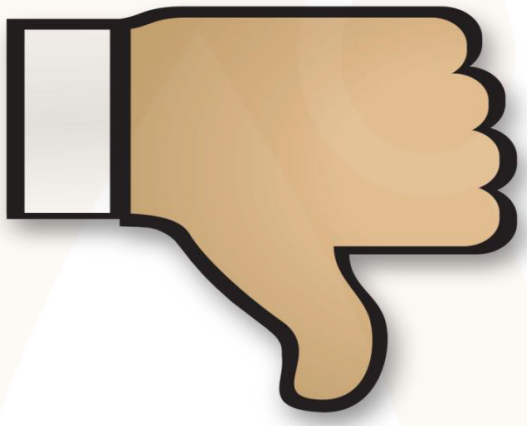
- **Protecting patients** from harmful germs carried on your hands or present on their skin that can spread HCAIs

- **Protect yourself, equipment and the environment** from **harmful germs** that can spread HCAIs

What are the challenges with hand hygiene in our workplace?

Group activity: each trainer reflects individually and shares within the group what they consider to be challenges with proper hand hygiene practice in the local workplace

So why do we not practice hand hygiene when we should?



- Too busy and it takes too long
- Staff shortages
- Not a priority
- Poor role model
- Irritating to our skin
- Poor access to hand hygiene facilities
- Wearing gloves seen as protection
- Lack of education.

Time constraint Is considered a major obstacle for hand hygiene

- Adequate hand washing with water and soap requires **40 -60 seconds**

- Average time usually adopted by health-care workers: **<10 seconds**

Alcohol based hand rub (ABHR): approximately 20–30 seconds

The duration of hand hygiene measures (20 seconds generally recommended for ABHR).

Time Spent Cleansing Hands

- One nurse per 8 hour shift
- Hand washing with soap and water: *56 minutes*
  - Based on seven (60 second) hand washing episodes per hr
- Alcohol-based hand rub: *18 minutes*
  - Based on seven (20 second) hand rub episodes per hr

~ Alcohol-based hand rubs reduce time needed for hand hygiene ~

Voss A and Widmer AF, *Infect Control Hosp Epidemiol* 1997:18;205-208.

The geographical perception of the transmission risk

Important things to understand:

- What a patient zone means
- What a healthcare zone means
- What does the point of care mean

Definitions of patient zone and health-care area

To understand this you see the health-care setting as divided into two virtual geographical areas

- Patient zone may be the room/bed space belonging to the individual who requires care and in which their equipment and personal items are kept
- Health-care area is the environment directly outside of the patient zone

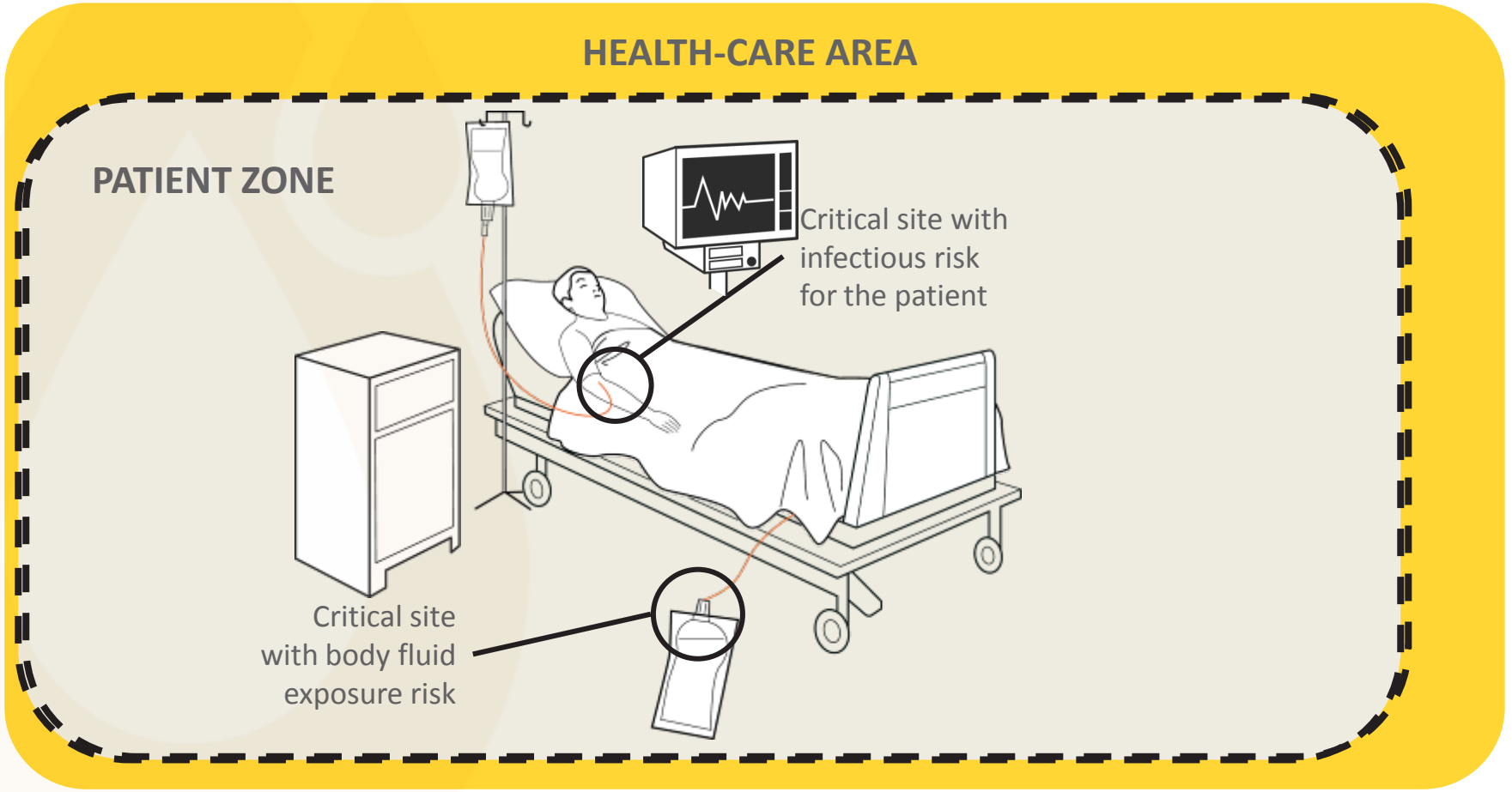
Definitions of patient zone and health-care area

- **Health-care area**: it contains **all surfaces in the health-care setting outside the patient zone**

Examples include:

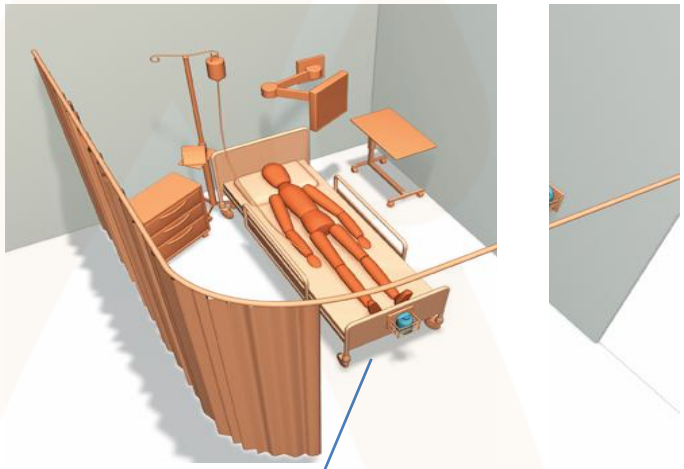
- Sluice clean
- Utility reception desk
- Wider environment outside of the patient zone

Health care area and patient zone



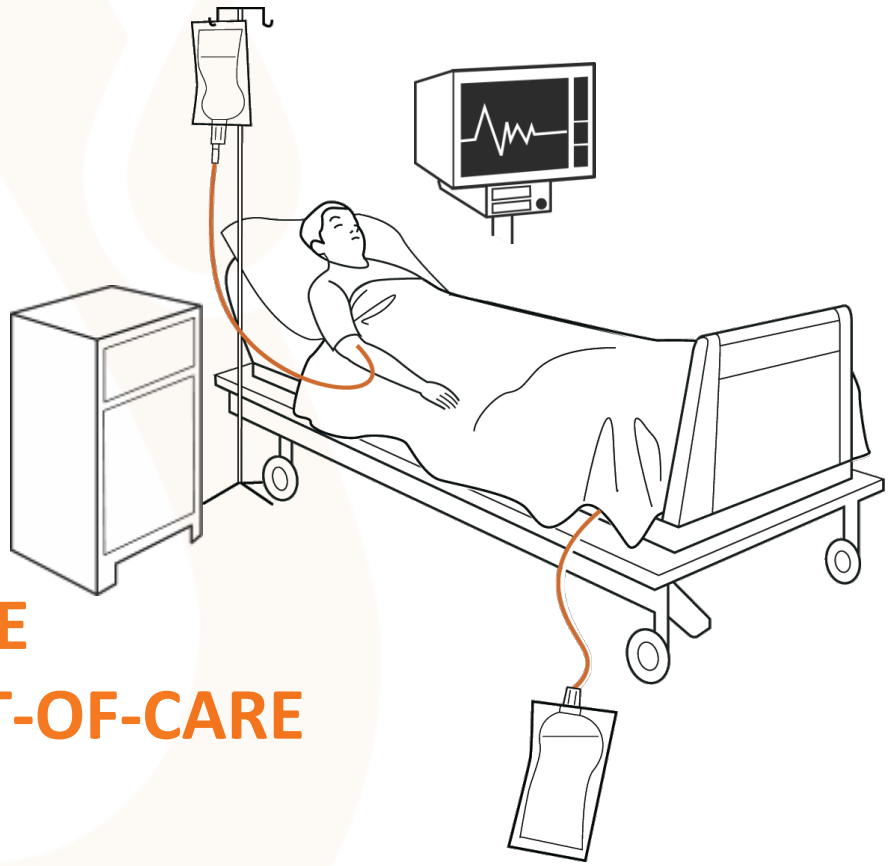
The Patient Zone

Single room



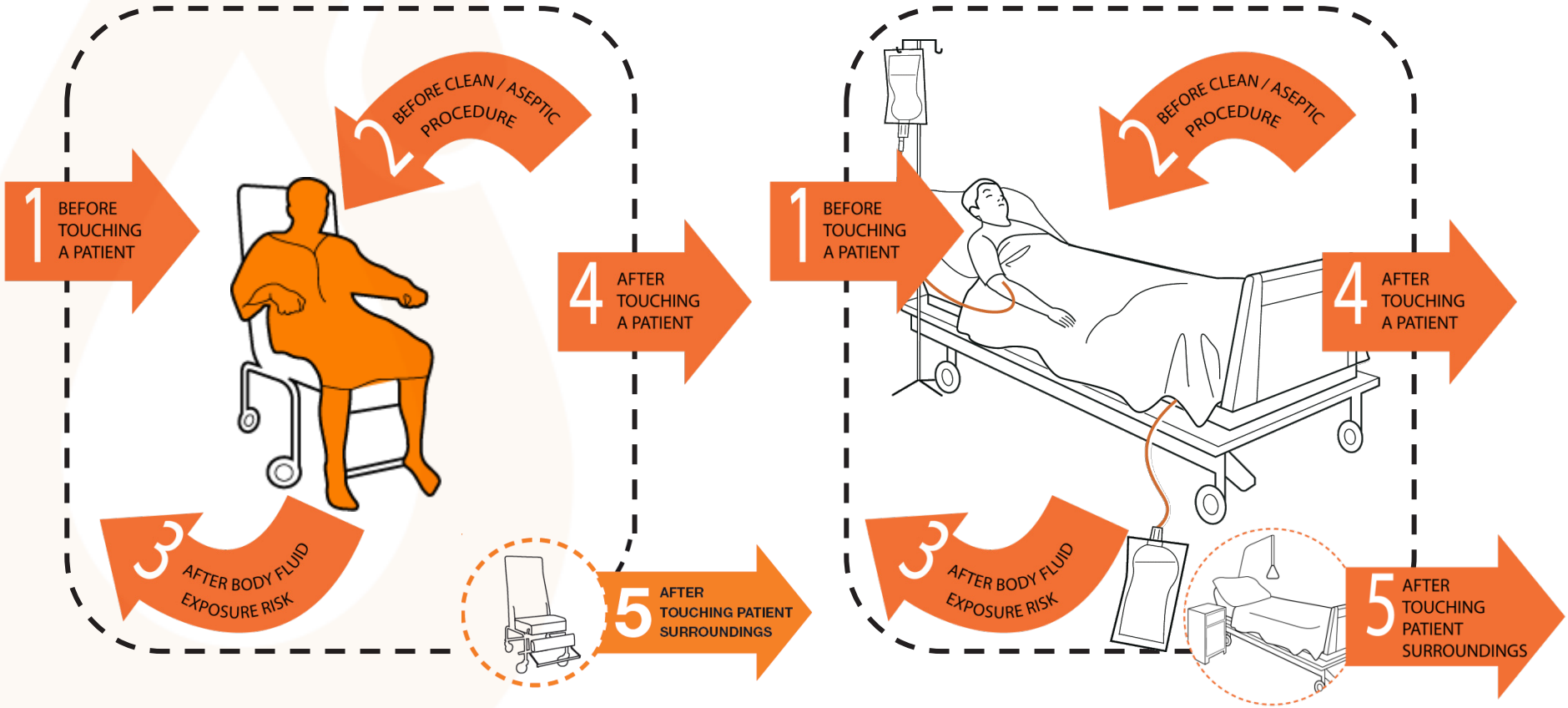
Multi resident room

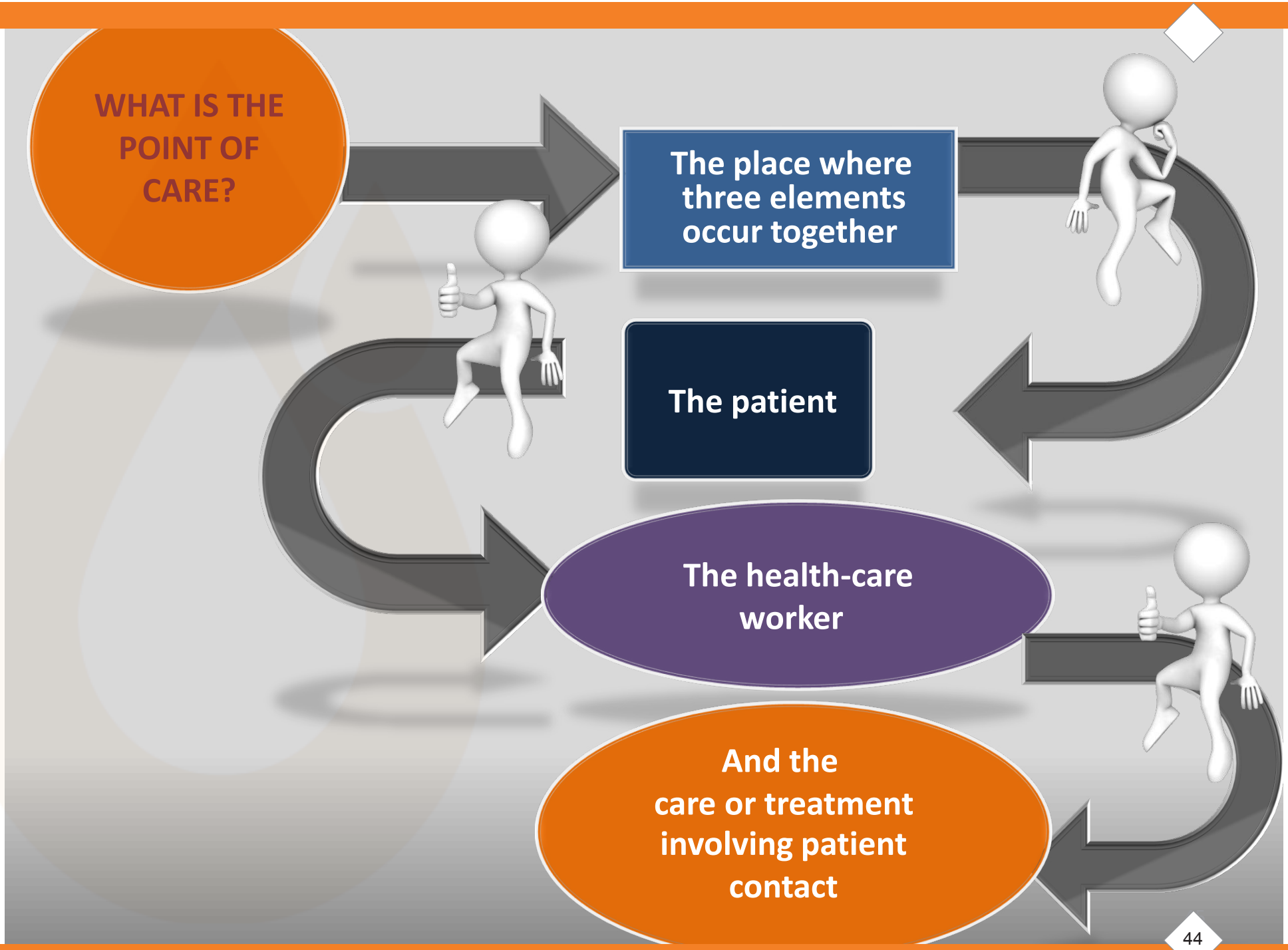
HAND HYGIENE SHOULD BE PERFORMED



AT THE POINT-OF-CARE

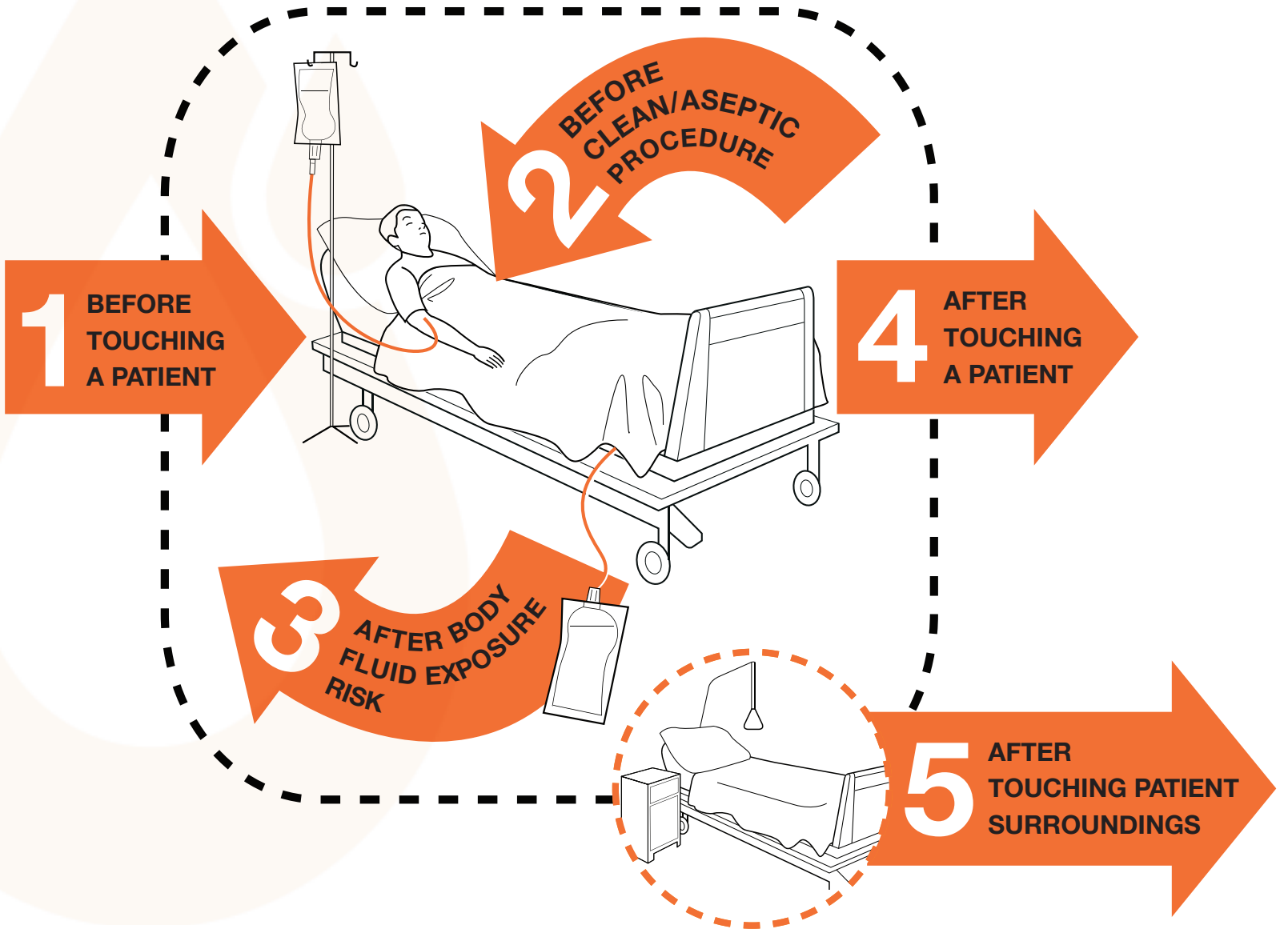
The 5 Moments apply to any setting where health care involving direct contact with patients takes place




WHAT IS THE POINT OF CARE?
The place where three elements occur together
The patient
The health-care worker
And the care or treatment involving patient contact

Getting to grips with ‘The 5 Moments for Hand Hygiene’ in the acute hospital

My “5 Moments” for Hand Hygiene



My “5 Moments” for Hand Hygiene

Moment 1 -Before Touching the patient

When- clean the hands before any patient contact

Why- to protect the patient from harmful micro-organisms carried on the HCW hands

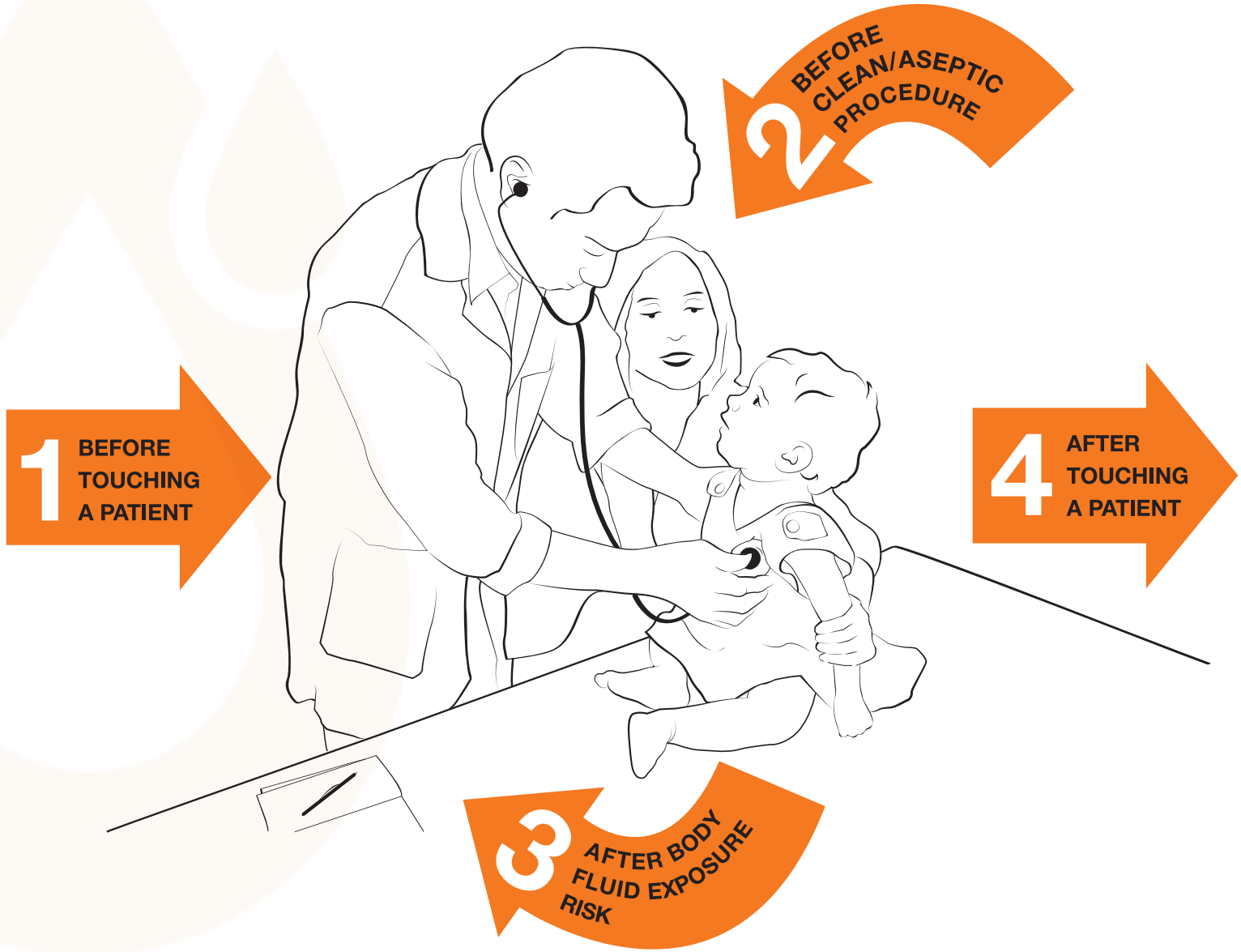
Examples

- Assisting with personal care, assistance with eating
- Before checking an IV line
- Taking a pulse or blood pressure, examination of skin and abdominal palpation

Discuss other examples

FIGURE 3

Example of Moment 1 occurrence in a paediatric consultation



Moment 2: Before a Clean/Aseptic Procedure

When- clean the hands **immediately** before performing an aseptic or clean procedure (even though you may have cleaned your hands before patient contact for other reasons)

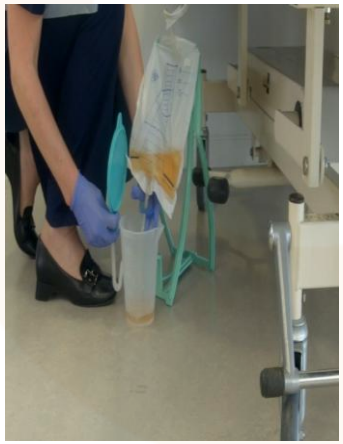
Why- to protect the patient from micro-organisms (including their own) entering their body during procedures

Examples

- Oral care, suctioning, instilling eye drops
- Surgical wound care,
- Urinary catheter care & insertion,
- Accessing an IV or enteral feeding system
- Taking samples of blood, sputum and urine

Discuss other examples

Moment 3: After Body Fluid Exposure Risk



When- clean the hands immediately after exposure to body fluids (and after glove removal)

Why- protects healthcare workers and the healthcare surroundings from acquiring micro-organisms from patients

Examples

- Clearing up urine, faeces, vomit, handling waste (dressings, incontinence pads)
- Cleaning soiled equipment or environment (bathroom, commode, sharps tray)
- Oral care and suctioning
- Skin lesion care, wound dressings, administering injections
- Taking blood and urine samples from a catheter (CSU), emptying urinary catheters

Discuss other examples

Moment 4 - After Touching the Patient

When: clean hands after touching the patient and moving on to another task/procedure

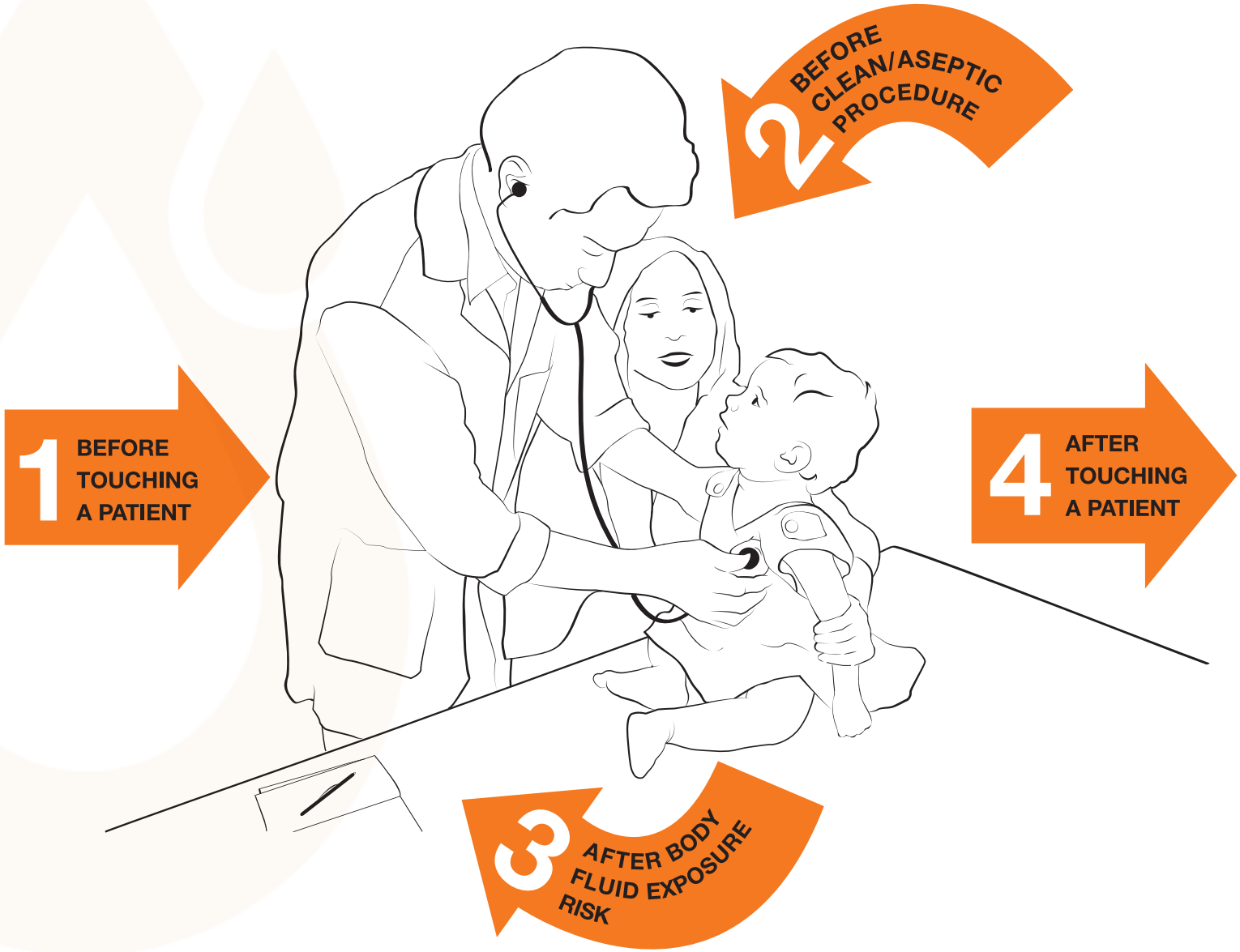
Why: protects healthcare workers and the healthcare surroundings from acquiring infectious microorganisms from patients

Examples :

- Assisting with personal care
- After taking a pulse, blood pressure or temperature

Discuss other examples

Example of Moment 4 occurrence in a paediatric consultation



Moment 5 -After Touching the Patient Surroundings

When: clean hands after touching any objects, furniture or personal items in the patient zone, even if there has been no direct contact with the patient

Why: to protect the HCW and the healthcare environment from micro-organisms

Examples

- Clearing the bedside table
- Touching patients personal items
- Touching equipment in the patient zone
- Handling a chart at the end of a patients bed
- Turning off a patient call bell

Discuss other examples

Moment 5 in Outpatient Setting (1)

In outpatient settings ,moment 5 applies where the patient is placed **in a dedicated space for a certain amount of time with dedicated equipment**

The environment will become contaminated and examples include:

Day ward area, colposcopy procedure area , shedding in a wound care clinic

Any suggestions from your local healthcare area?

Moment 5 in Outpatient Settings (2)

- In the outpatient setting the patient is considered the patient zone as the space and equipment is **not exclusively dedicated** to the patient for any prolonged time Examples include : vaccination clinic, antenatal clinic, OPD consultation room.

Any suggestions from your local healthcare area?

The **golden rules** for Hand Hygiene

Hand hygiene must be performed exactly where you are delivering health care to patients (at the point-of-care)

During health care delivery, there are 5 moments or indications when you must perform hand hygiene

To clean your hands, hand rubbing with an alcohol-based hand rub is preferred. It makes hand hygiene possible right at the point-of-care. ABHR is faster, more effective and better tolerated

You should always wash your hands with soap and water when visibly soiled

Perform hand hygiene using the correct technique and remember to cover all parts of the hands

Change on the way: Hand Hygiene Practice Recommendation

NCEC IPC guidance (2022) recommend using **alcohol hand rub or hand washing** following care delivery to someone with C.diff

What does this mean in practice?

Mary is a patient in an isolation room as she has been confirmed to have C. diff.

After delivering care to Mary, the nurse removes her gloves correctly and cleans her hands with an alcohol based hand rub (ABHR)

Further information can be found on the following resources:

Link https://bit.ly/3EbbY2P

Ref: https://www.nhmrc.gov.au/about-us/publications/australian-guidelines-prevention-and-control-infection-healthcare-2019

Support the person you are providing care to in attending their own hand hygiene

- Encourage anyone who is mobile to wash their hands with soap and water or use ABHR

- Alcohol hand rub or patient hand wipes are useful to assist in hand hygiene with someone who is less mobile

•The most important times to ensure that encouragement and assistance with hand is provided are:

- **After using the toilet**
- **Before meals**
- **After coughing/sneezing**

What measures are in place to support patients and families with hand hygiene- discuss

(4.) How we perform hand hygiene

How do we clean our hands?

- Handrubbing with alcohol-based handrub is the preferred routine method of hand hygiene if hands are not visibly dirty

- Handwashing with soap and water is essential when hands are visibly dirty

Before you begin "**Bare** the wrists"

- Remove any items from the wrist at the beginning of work including watches, jewellery, fitbits and pedometers
- Plain ring/band ***only*** to be worn
- Long sleeves should not be worn when delivering care
- Keep nails short
- Artificial nails /nail varnish or any nail enhancements should not be worn

Some other key issues to remember

- Keep cuts and abrasions covered with a waterproof dressing or plaster

- Thorough rinsing and drying of hands after washing will prevent skin irritation

- Use disposable paper hand towels for drying hands in clinical areas

- Apply hand cream frequently to prevent skin dryness

Practical Workshop:

Demonstration of hand hygiene technique

- Divide into groups. IPCN will demonstrate application of ABHR
- Each trainer will practice and demonstrate the technique until they can do it correctly
- Observation feedback from peers in group on the HCW demonstration is important
- Complete the same process for hand washing technique at a sink
- Self evaluation of trainers by applying ultraviolet cream/gel and observe areas of hands that have been missed using the hand hygiene inspection unit

Examples of hand hygiene products easily accessible at the point-of-care

(5.) Hand Hygiene and Glove use

Gloves can be the Enemy of Hand Hygiene

Wearing gloves unnecessarily can result in poor hand hygiene compliance. It also adds to unnecessary waste and cost

Wear gloves only when indicated, examples include:

- Any contact with blood and body fluids
- Touching broken skin including rashes and wounds
- Providing direct care to patients who require transmission based precautions
- Clean or aseptic procedures where direct touching of key parts and key sites cannot be avoided. Examples include cleaning a wound or changing an iv line

What should prompt you to wear gloves?

Any activity that involves a risk of contact with blood or body fluids

- Direct contact with broken skin including a rash or wound
- Handling equipment likely to be contaminated
- Direct contact with eyes, inside the nose or mouth
- Clean or aseptic technique

Remove gloves immediately after the task you needed to wear them for and carry out hand hygiene

Examples of when we wear gloves

Changing bed linen which is not soiled	Gloves recommended based on risk assessment as to whether suspected body fluids may be present
Handling soiled laudry	Recommended to always wear gloves
Assisting with personal care or wash	Gloves sometimes needed
Assisting with preparing meals or feeding	Gloves are not usually recommended
Caring for someone with diarrhoea	Gloves usually recommended
Undertaking a clients blood sugar test	Gloves recommended

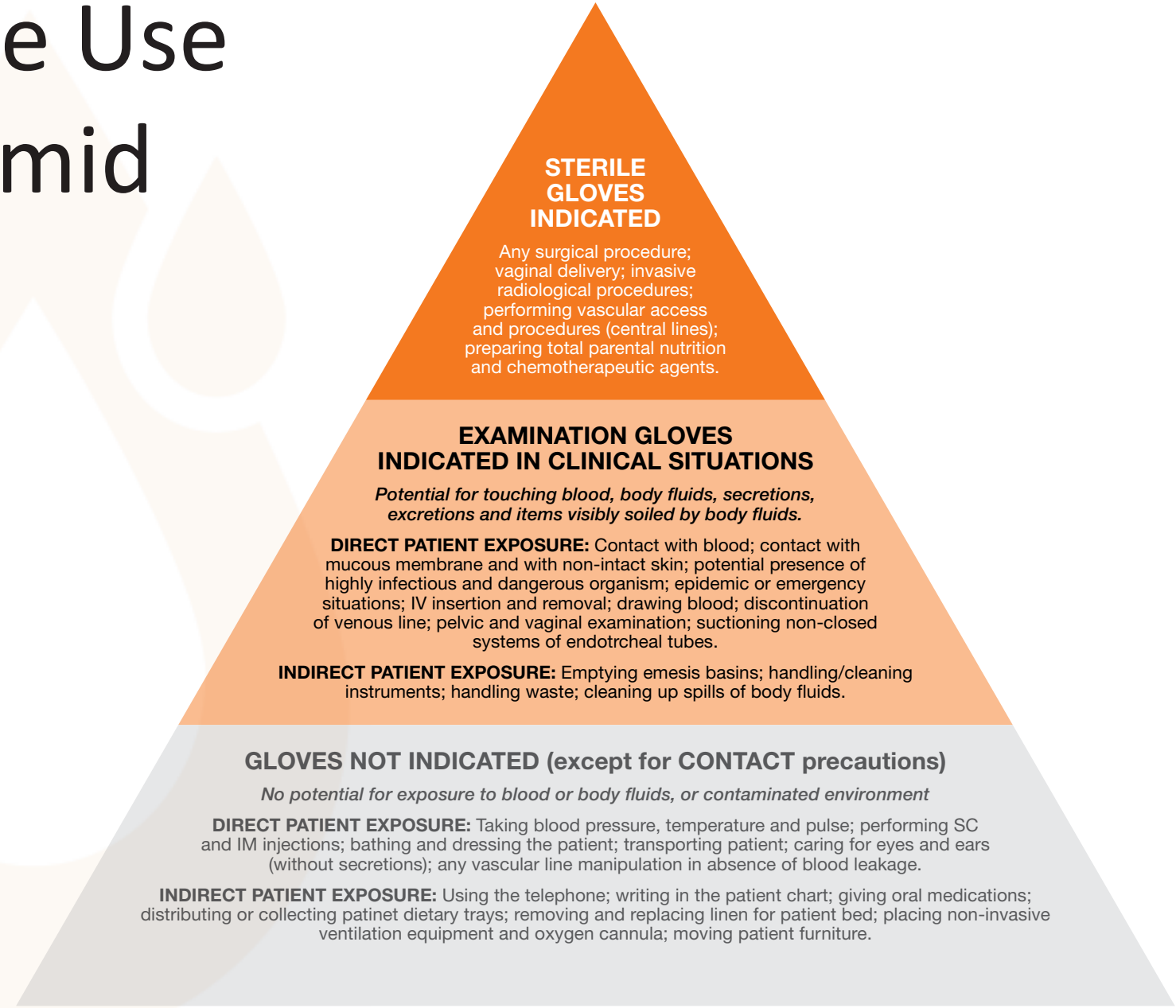
- Gloves are worn for self protection during procedures to prevent **you** from acquiring an infection

- If gloves are worn **when not required** or for multiple tasks, there is a high possibility that unwanted germs will spread to patients, equipment and the environment

Remember to clean your hands immediately before donning and immediately after removing gloves

Practice donning and removing gloves with the support of the IPCN in attendance

Glove Use Pyramid



(6.) Implementing the hand hygiene train the trainer programme

Option 1. Use the training folder materials and desktop easel provided

Hand Hygiene

Training Programme for Healthcare Workers in Acute Hospitals

RESIST

Option 2: download the presentation from the following website link: www.hse.ie/hcai

Hand hygiene training includes:

- Healthcare associated Infections
- The ‘5 Moments of Hand Hygiene’
- Hand Hygiene Technique – practical demonstration and self assessment
- Hand hygiene and glove use – if time permits you may teach staff in donning and removing gloves
- How to support patients to clean their hands

Workshop exercise for trainers to teach the 5 moments in hand hygiene

Each trainer is allocated **one** of the 5 moments in hand hygiene and a Hand Hygiene Trainer Folder

Each trainer will take time individually to reflect and demonstrate to the group how they propose to teach the one moment in hand hygiene as it applies in their area of work

Getting Started as a Hand Hygiene Trainer

- Get started as soon as possible from the training day with the support of you manager
- Liaise with your IPCN as necessary
- Resources: presentation easel /laptop and demonstration of hand washing and alcohol hand rub technique.
- Give time for staff to practice hand washing and applying the alcohol hand rub
- Ensure staff sign attendance record and give to Head of Service/Facility

Hand Hygiene Trainer Information

1. Staff must attend and participate in **both** the theory and practical session to have fully completed the training
2. Staff should record attendance **immediately after** each hand hygiene training session on the training template (which is in the training folder)
3. Keep a copy of attendance records in your local department/service and send a copy to management for central recording/ monitoring of training
4. Further information available for download on Hand Hygiene materials at www.hse.ie/infectioncontrol

Keep up the knowledge

- Hand Hygiene education is mandatory ***at least*** every 2 years and should start at induction to any job where healthcare is provided
- Infection prevention and control should be on everyone's agenda **at all levels** in the healthcare service
- **Everyone** is **responsible** for their own hand hygiene practices to keep people we care for safe
- Lack of appropriate hand hygiene facilities or resources to perform hand hygiene should be brought to your managers attention immediately

“If you see something - say something”

Embedding a Culture of hand hygiene

Helpful tips for hand hygiene assessors

- Put “hand hygiene” as an agenda item on your regular staff meetings
- Give people TIME to take on board what you are saying
- Come back another day or follow up at a later stage if you feel the person needs time to take on board
- Answer questions as they arise and have theory to back up your answers
- If you cannot answer on the spot - make a note of the question and link with your Infection Prevention and Control Nurse for additional support
- Encourage the staff you work with to jointly come up solutions with you, as to what works best in your own team/site

Suggested next step to improve practice

- Reflect on hand hygiene practice currently in your workplace
- Identify a change in practice you might start with to improve hand hygiene in your department
- Hand Hygiene Facility checklist is provided in the Trainer Folder which you may wish to use

Antimicrobial Resistance and Infection Control Programme

Thank You

RESIST

Seirbhís Sláinte Níos Fearr á Forbairt | Building a Better Health Service