

# **N.C. Nurse Aide I Curriculum**

## **MODULE B**

### **Infection Prevention**

# Objectives

- Relate the chain of infection to the work of a nurse aide in long-term care facilities.
- Explain the concept of breaking the chain of infection and its importance to infection prevention.
- Compare Standard Precautions and Transmission-base Precautions.
- Discuss the use of Personal Protective Equipment by the nurse aide.
- Explain why residents in long-term care facilities are at risk for infection.

# Infection Prevention

All of the things that people do to control and prevent the spread of infection



# Infection

A disease or a condition when harmful germs get into the body and grow in numbers

**EXAMPLES**

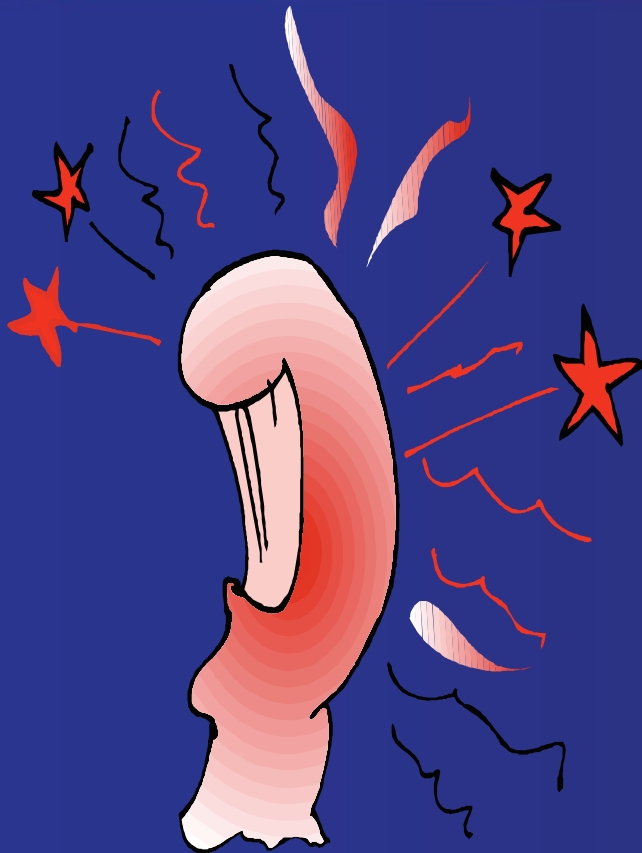
Two Types

1. Localized
2. Systemic



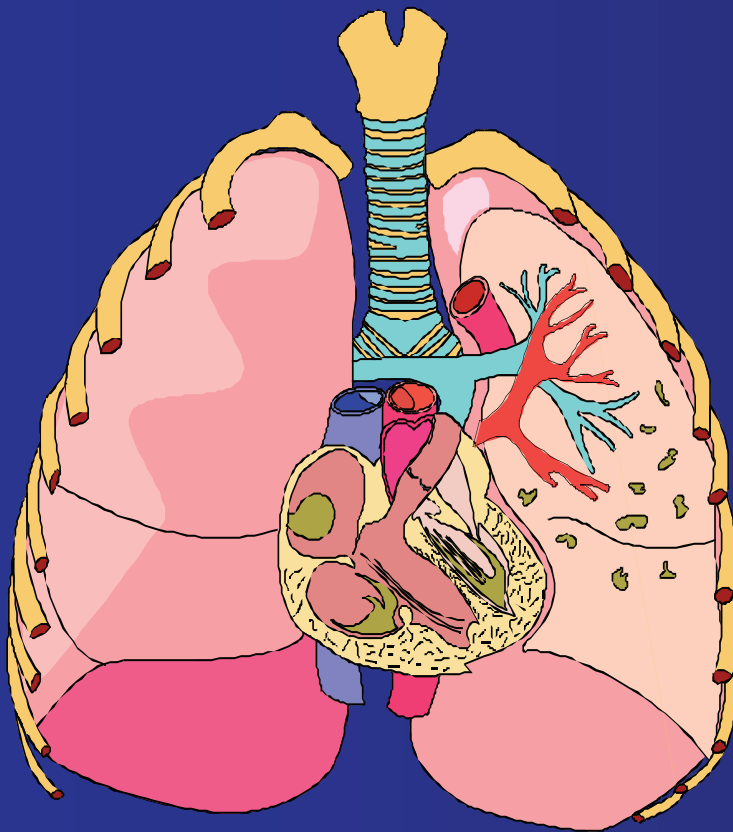


# Localized Infection



- One body part and symptoms limited
- Example – infected finger
- Symptoms – painful, red, hot, puffy, drainage

# Systemic Infection



- Entire body part or system
- Symptoms are fever, chills, fatigue, nausea, vomiting, other specific symptoms
- Example?



# How do you feel when someone coughs or sneezes on you?



# How do you feel when someone hands you a moist, crumpled up, used tissue with yellow, thick, slimy globs of mucus on it to throw away?

**What kind of symptoms do you think a female resident would have if she had.....**



**a bladder infection?**

# Bladder Infection - Symptoms

- Fever and chills
- Pain when using bathroom
- Urine will smell bad and might look like it contains blood
- “My urine stinks and it hurts when I have to go to the bathroom”



# A Person with a Stomach Infection will Probably.....



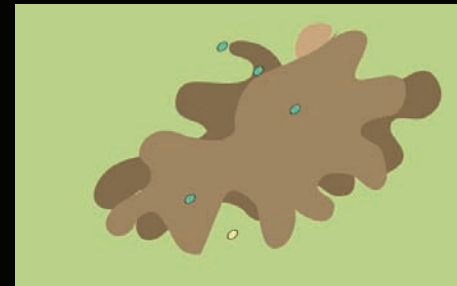


**Have you ever  
had someone  
vomit on you?**

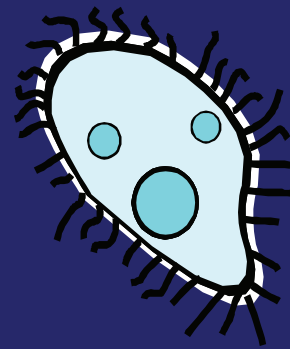
**Have you ever had to clean up  
after someone has vomited?**

**How did you feel if you got the  
vomited liquid on your hand?**

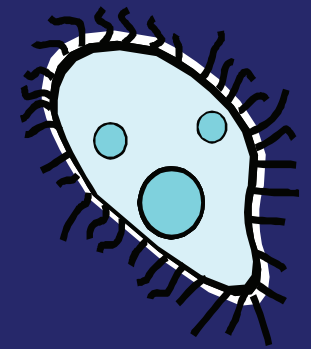
**What did you do?**



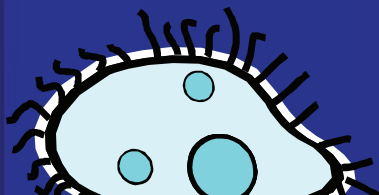
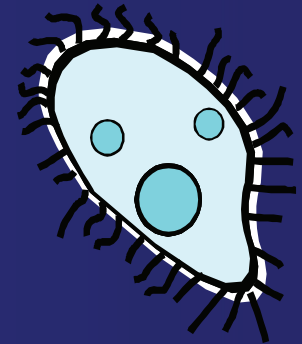
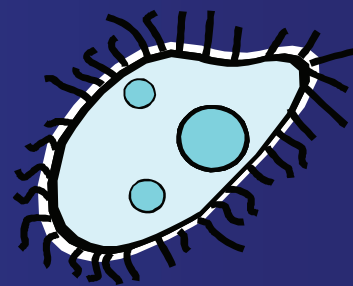
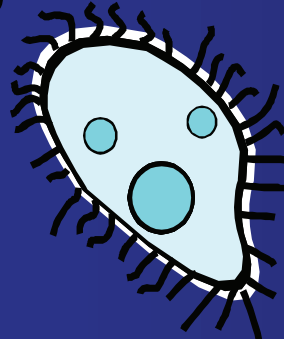
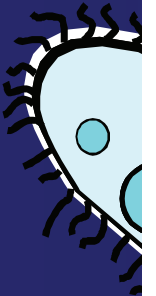
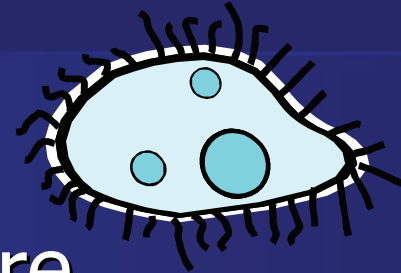




# Microorganisms



- Also called germs
- Live almost everywhere
- Some help people and others harmful
- Requirements to survive?
- Examples?

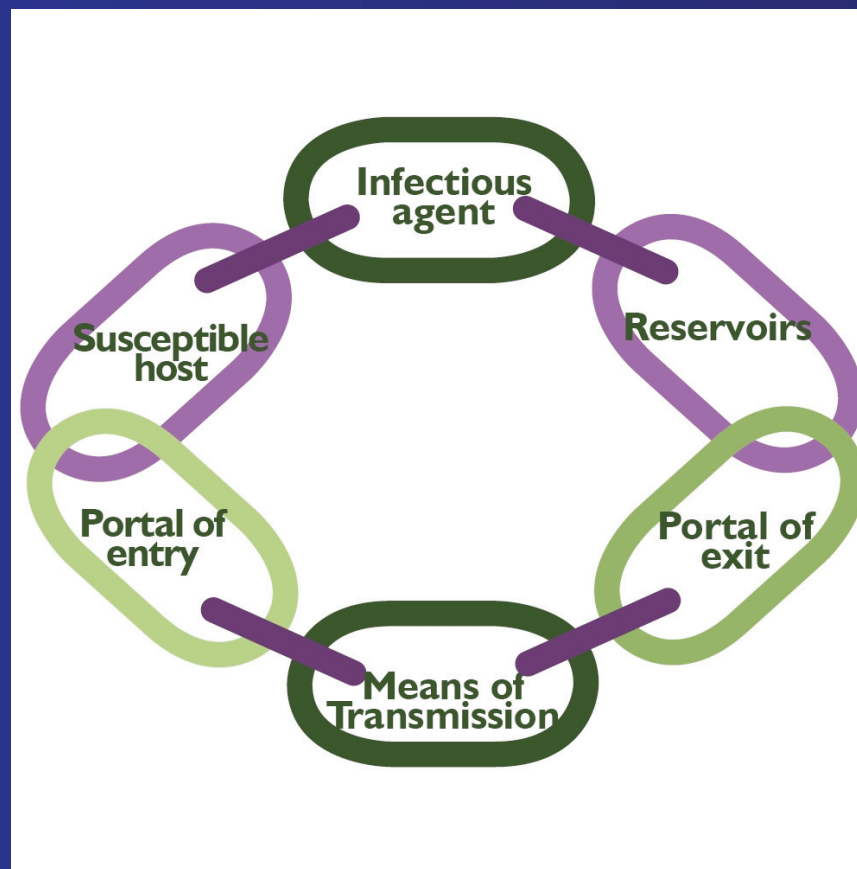


# Medical Asepsis

- Also called clean technique
- Used to remove or destroy microorganisms and prevent spread



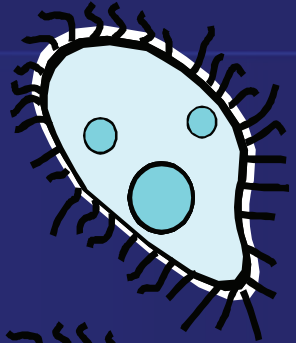
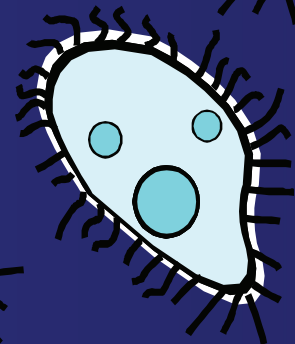
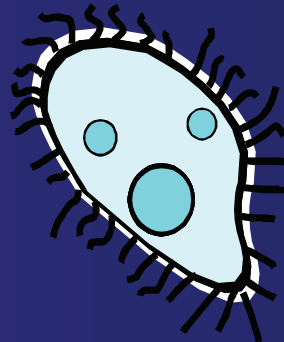
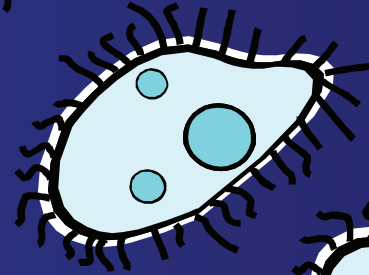
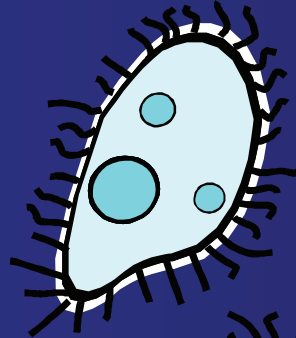
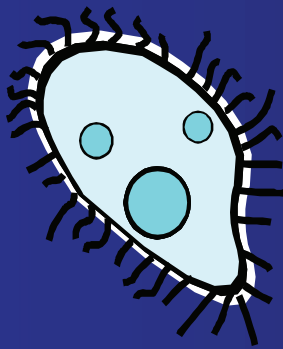
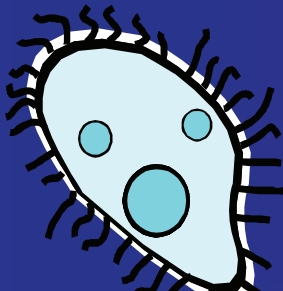
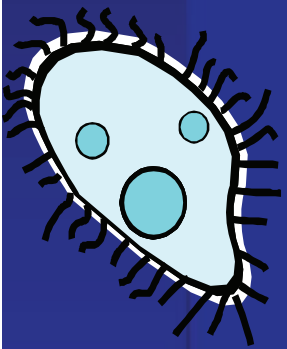
# Chain of Infection





# 1<sup>st</sup> Link – Infectious Agent

- A harmful germ that causes an infection
- Can be bacteria, a virus, a fungus, or a parasite





## 2<sup>nd</sup> Link - Reservoir



- Place where harmful germs live, grow, and increase in number
- Can be a person; an animal; or dirt, water, or other places in the environment



## 2<sup>nd</sup> Link - Reservoir

When reservoir is a person, some places where harmful germs may be living include:

- Blood
- The skin
- Digestive tract
- Respiratory tract



## 2<sup>nd</sup> Link - Reservoir

Can you look at a person and  
**ALWAYS** tell if he has an  
infection?

**“NO, NOT ALWAYS!”**

# 2<sup>nd</sup> Link - Reservoir

People as reservoirs for harmful germs

- 1<sup>st</sup> group – not infected
- 2<sup>nd</sup> group – infected and showing symptoms
- 3<sup>rd</sup> group – carriers; are not showing symptoms, but can still infect you




An iceberg floating in a blue ocean under a clear blue sky. The tip of the iceberg is above the water line, while the much larger, jagged base is submerged below the surface. Sunlight rays are visible breaking through the water near the submerged part of the iceberg.

**People We Know  
Who Are Infected**

**Carriers -  
People Who  
Are Infected  
That We Do  
Not Know  
About**



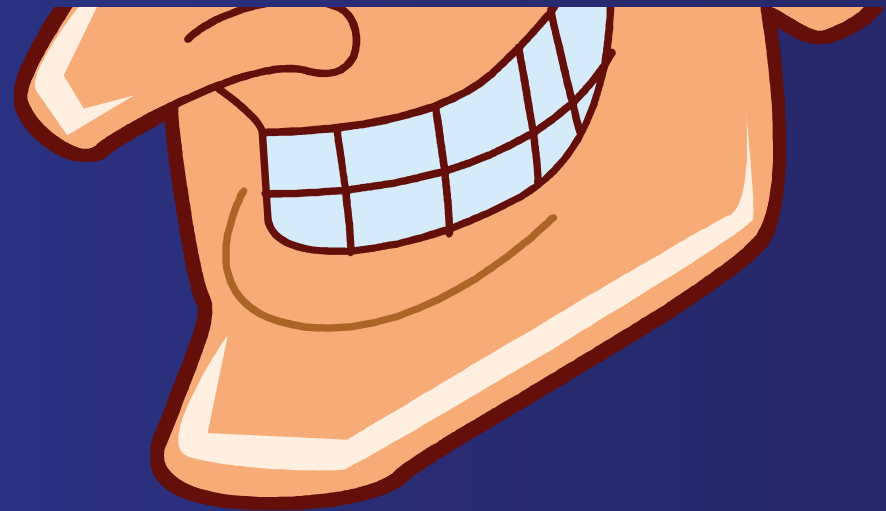
## 2<sup>nd</sup> Link - Reservoir

The  to prevent you, your co-workers, and your residents from getting infected is to treat everyone – EVERYONE – as possible reservoirs or hiding places for harmful germs.

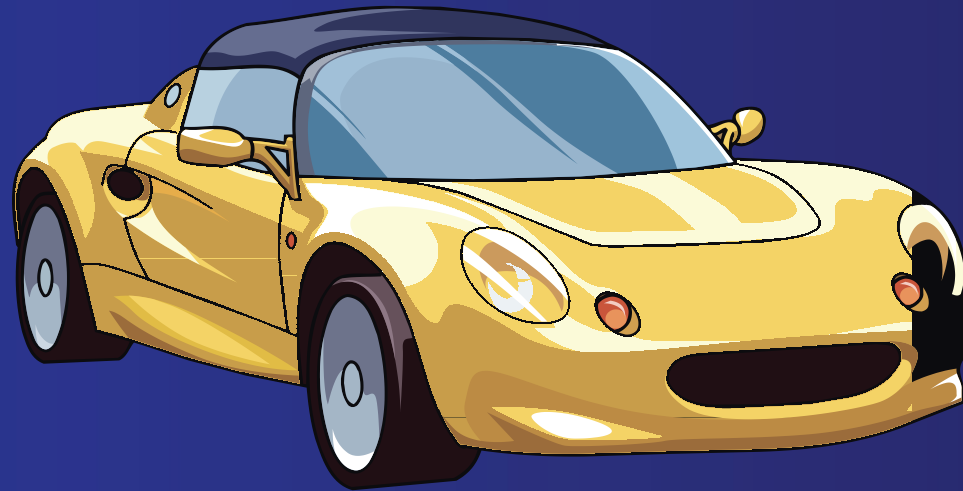
# 3<sup>rd</sup> Link – Portal of Exit

Any way that harmful germs escape from the reservoir and include:

- The nose and mouth
- The GI tract
- The skin



# 4<sup>th</sup> Link – Mode of Transportation



How germs get around from place to place

A photograph of a person's hands held out, palms up, over a white sink. The hands are positioned centrally, with fingers slightly spread. The background shows a portion of a person's torso in a blue shirt and dark pants, and the white ceramic of the sink with a chrome faucet. Overlaid on the image is large, bold, red text that reads: "THE NUMBER ONE WAY A HARMFUL GERM TRAVELS FROM PLACE TO PLACE IS BY OUR HANDS".

**THE NUMBER ONE WAY  
A HARMFUL GERM  
TRAVELS FROM PLACE  
TO PLACE IS BY OUR  
HANDS**

DHHS/DHSR/CARE Branch NAI Curriculum  
DRAFT – August 2012

## 4<sup>th</sup> Link – Mode of Transportation



How do our hands provide transportation for germs?

## 4<sup>th</sup> Link – Mode of Transportation

Harmful Germs Travel by **Direct Contact**  
With Body Fluids Where Germs Live

- Blood
- Saliva
- Sputum
- Stool
- Pus or wound fluid
- Vomit

Examples of Direct Contact?

## 4<sup>th</sup> Link – Mode of Transportation

Harmful Germs Travel by Indirect Contact  
With Body Fluids Where Germs Live

**INDIRECT CONTACT** means that the harmful germs were spread by an object that had touched body fluids from an infected person

Examples of Indirect Contact?





DROPLETS

DROPLETS


DROPLETS

DROPLETS

DROPLETS

DROPLETS

DROPLETS

The  to prevent you, your co-workers, and your residents from getting infected is to treat **ALL** body fluids as possible carriers of harmful germs



# th Link – Mode of Transportation



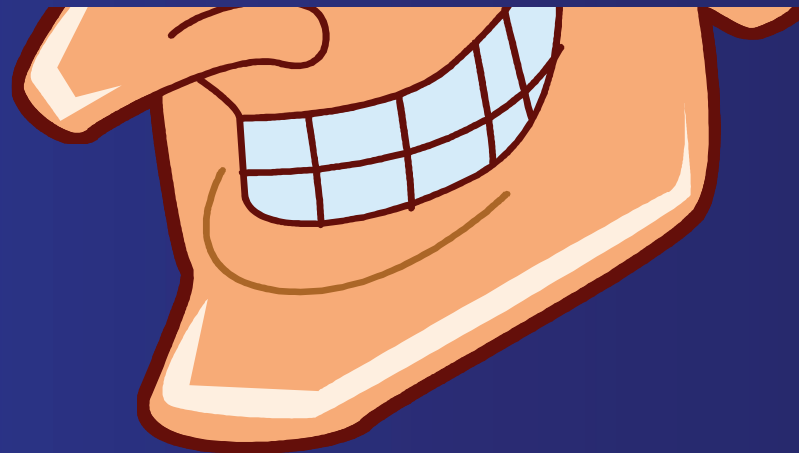
Other ways that germs travel or get  
around from place to place



# 5<sup>th</sup> Link – Portal of Entry

Any body opening on a person that allows harmful germs to enter into the body.  
Examples include:

- The nose and mouth
- The GI tract
- The skin



# 6<sup>th</sup> Link – Susceptible Host

A person who does not have an infection now, but is at risk for becoming infected from harmful germs



**What are some reasons why a person's body cannot fight off an infection?**

# 6<sup>th</sup> Link – Susceptible Host

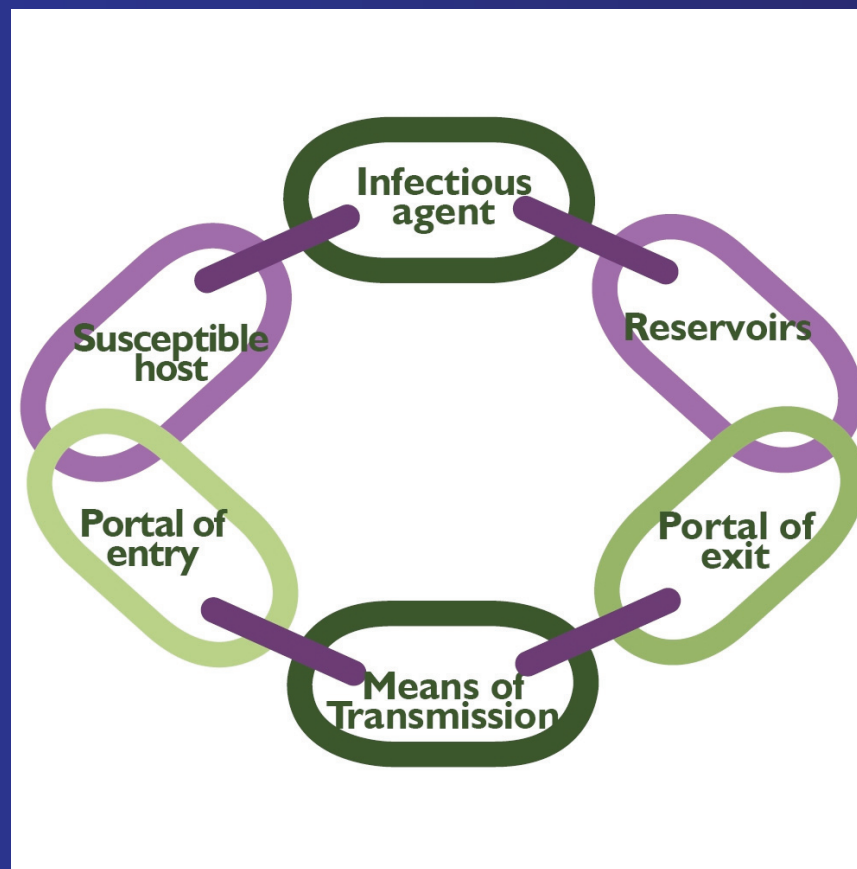


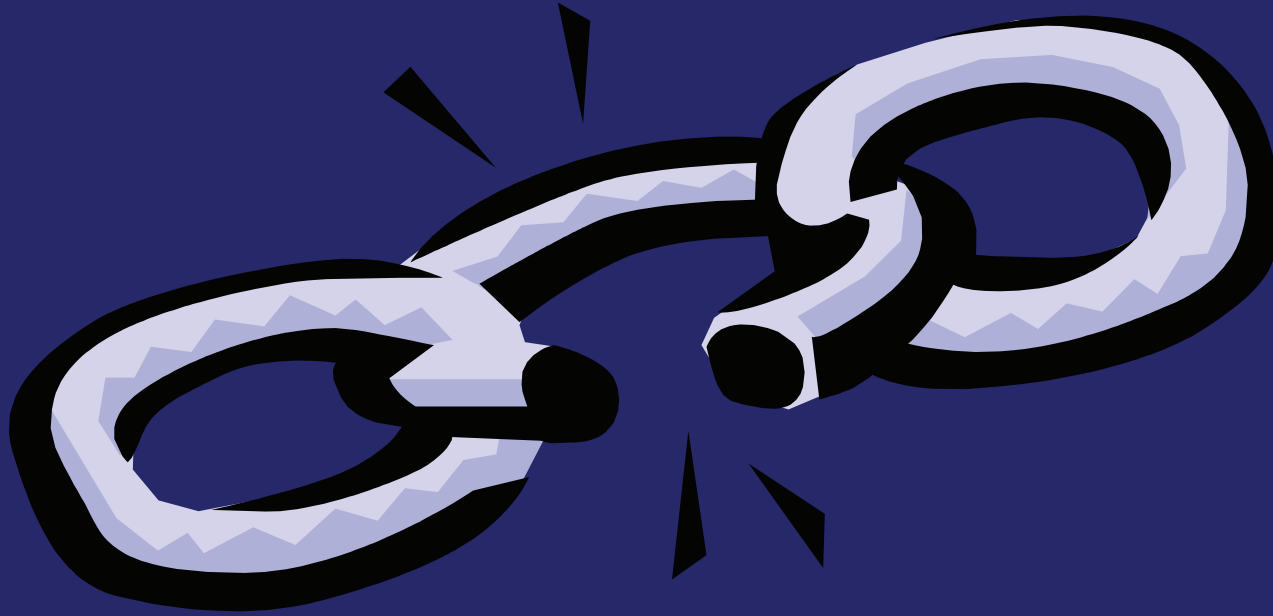
**RESIDENTS LIVING IN LONG-TERM CARE  
FACILITIES ARE MORE LIKELY TO GET AN  
INFECTION THAN OTHER PEOPLE WHO  
LIVE IN OUR COMMUNITY**

*Why?*



# Chain of Infection

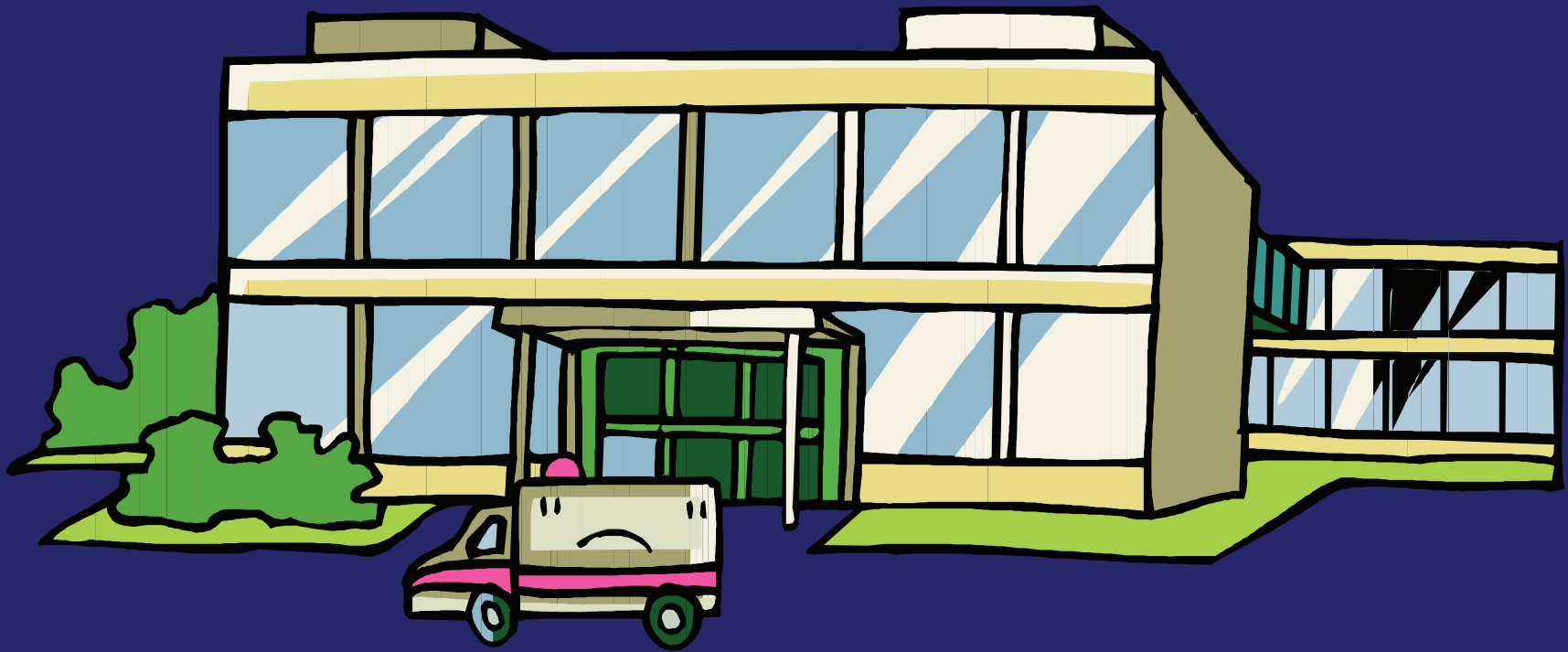




If **YOU** can break any link in the Chain of Infection, **YOU** can prevent the occurrence of a new infection



# Congratulations



# Healthcare-associated Infection

# Centers for Disease Control and Prevention

## The CDC

- Agency of the federal government
- In charge of control/prevention of disease
- Two-tiered way to protect the public



Two tiers are Standard Precautions  
and Transmission-based Precautions

# Standard Precautions

- 1<sup>st</sup> level to prevent and control infection
- The basic tasks health care workers do when caring for **EACH** and **EVERY RESIDENT** in order to prevent and control the spread of infection

# Review of Terms

BODY  
FLUIDS

NON-INTACT  
SKIN

MUCUS

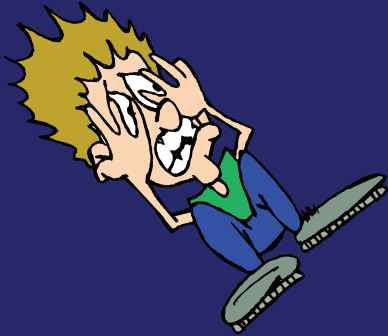
MEMBRANES

ALL body fluids, non-intact skin, and  
mucus membranes  
must be treated as if they were infected





Why must Standard Precautions be used  
with **EACH** and **EVERY RESIDENT**?



Without using Standard Precautions,  
**YOU CAN GET SICK AND PASS IT  
ALONG TO OTHERS!!!!!!!**





# Nurse Aides Must.....

Follow Standard Precaution Rules to Protect

- Self
- Co-workers
- Residents

**FROM GETTING**  
**INFECTIONS**



# Hand Hygiene



The CDC defines hand hygiene as washing your hands with:

- Soap and water
- Alcohol-based hand rubs

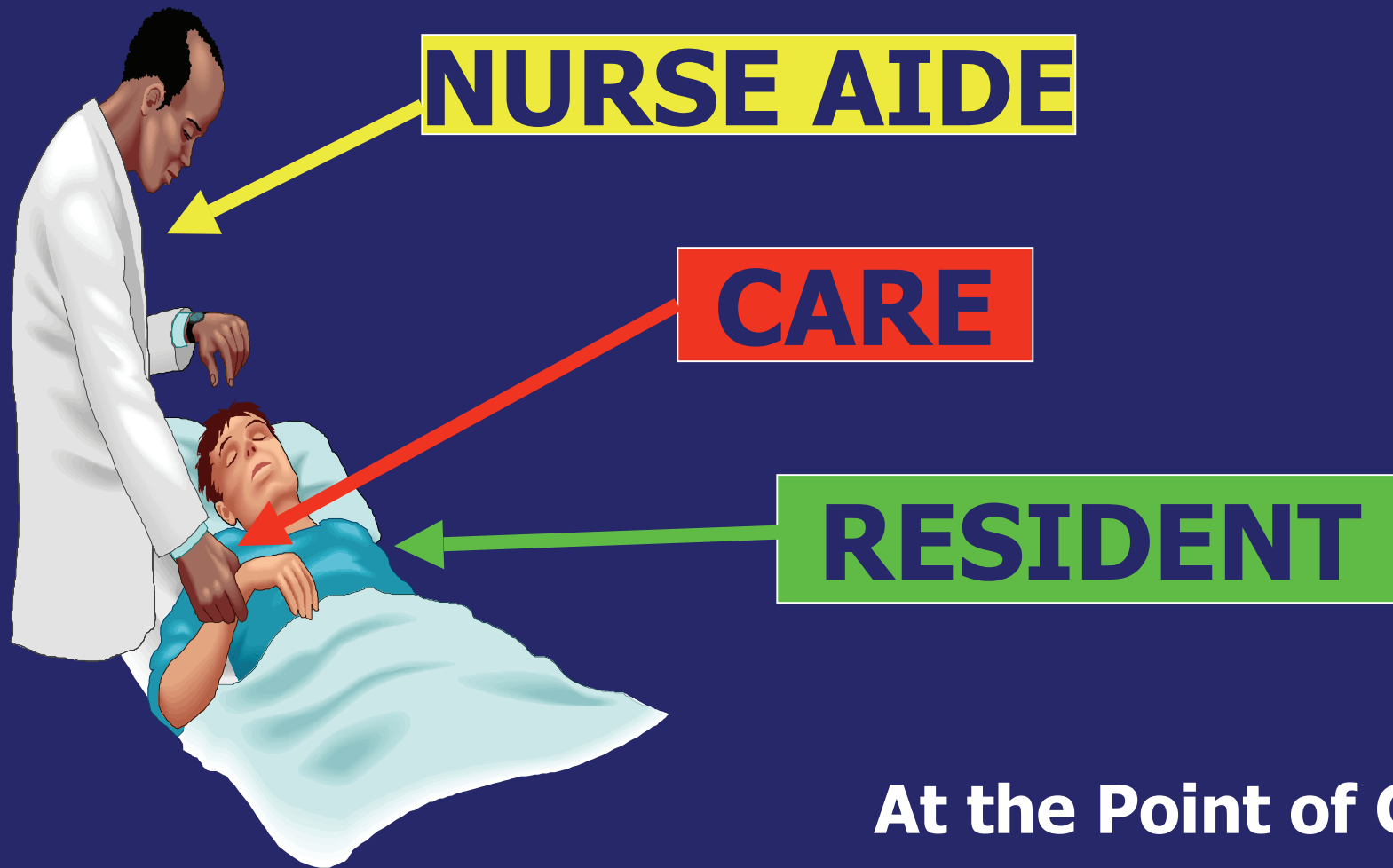


# Performing Hand Hygiene



**is the number 1 way to stop the transmission of infections!**

# Nurse Aide Should Perform Hand Hygiene.....



**At the Point of Care**

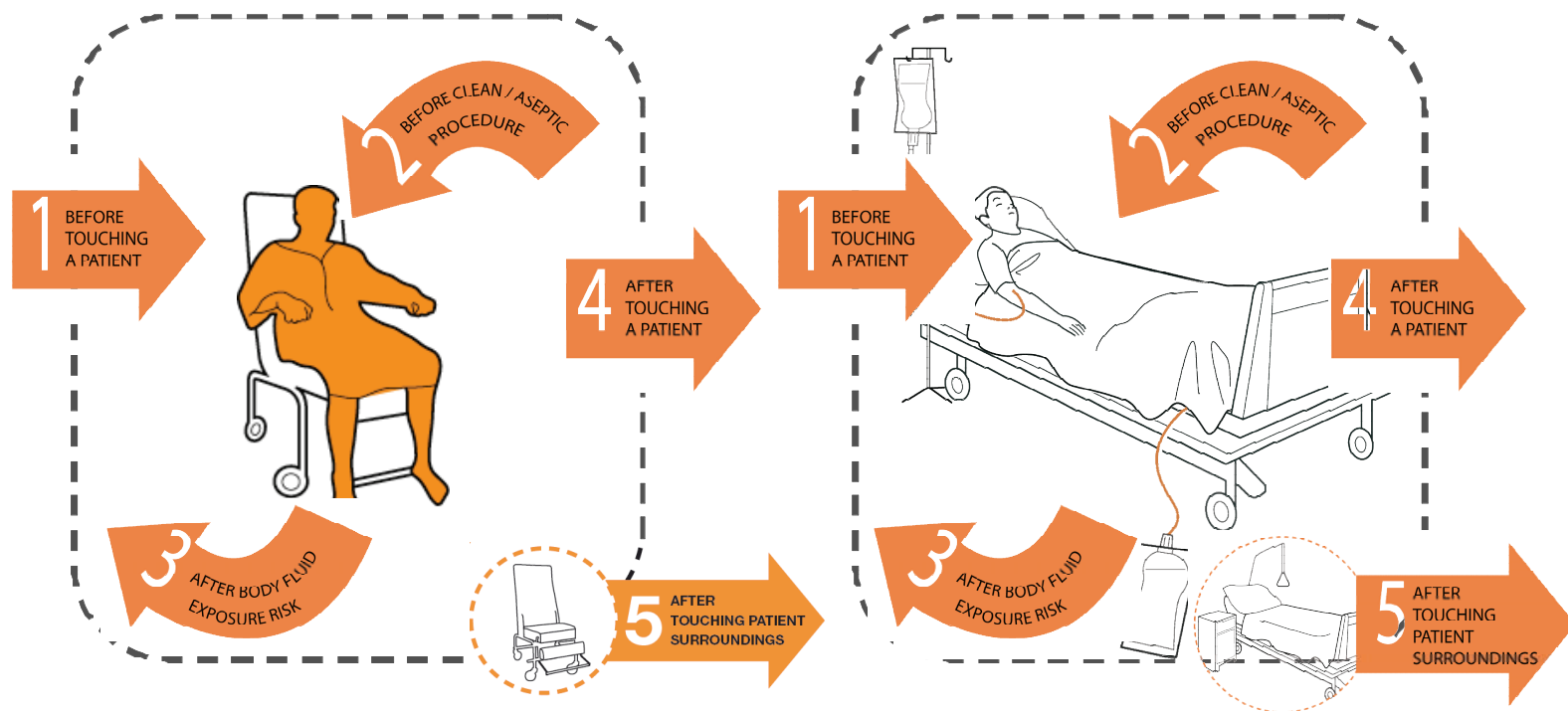
# Your 5 Moments for Hand Hygiene [WHO]



1. Before touching a resident
2. Before clean/aseptic procedure
3. After body fluid exposure risk
4. After touching a resident
5. After touching resident surroundings



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



# Perform Hand Hygiene





# Perform Hand Hygiene

**SOILED  
HANDS**

**HANDLING  
TRASH**



**ARRIVAL AT  
WORK**



**LEAVING  
WORK**

**RETURNING  
HOME**



**TOUCHING  
OBJECTS/PEOPLE**

# Perform Hand Hygiene

**BLOWING  
NOSE**

**SNEEZING  
IN HAND**

**TOUCHING  
HAIR**

**TOUCHING OTHER  
BODY PARTS**



W

H

E

N



**DO YOU  
HAND WASH?**

W

H

E

N



**MAY YOU  
HAND RUB?**

# Personal Protective Equipment



**A group of items used to block harmful germs from getting on skin and clothes**

What nurse aides put on at work to keep blood, urine, stool, spit, and sputum off of the skin and clothes



# Personal Protective Equipment



Protect skin on hands



Protect skin & clothes



Protect mouth & nose

Plus goggles that protect eyes and face shields that protect whole face



# Personal Protective Equipment

**How will I know  
which equipment I  
will need?**

A close-up photograph showing a person's hands wearing blue nitrile gloves. The person is pulling the glove on their right hand over their left hand. In the background, a box of Mediguard nitrile gloves is visible, with the brand name and product details printed on it. The scene is set on a wooden surface.

# Gloves



# G O W n

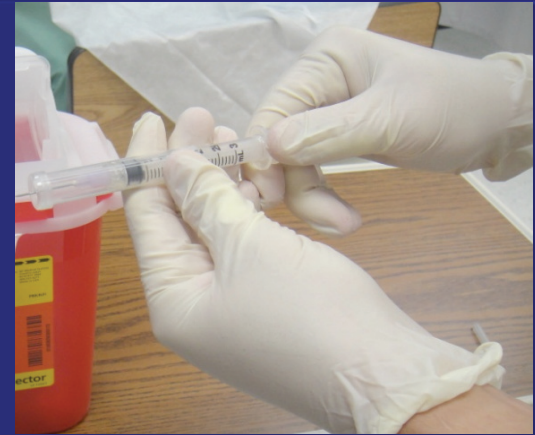




# Mask

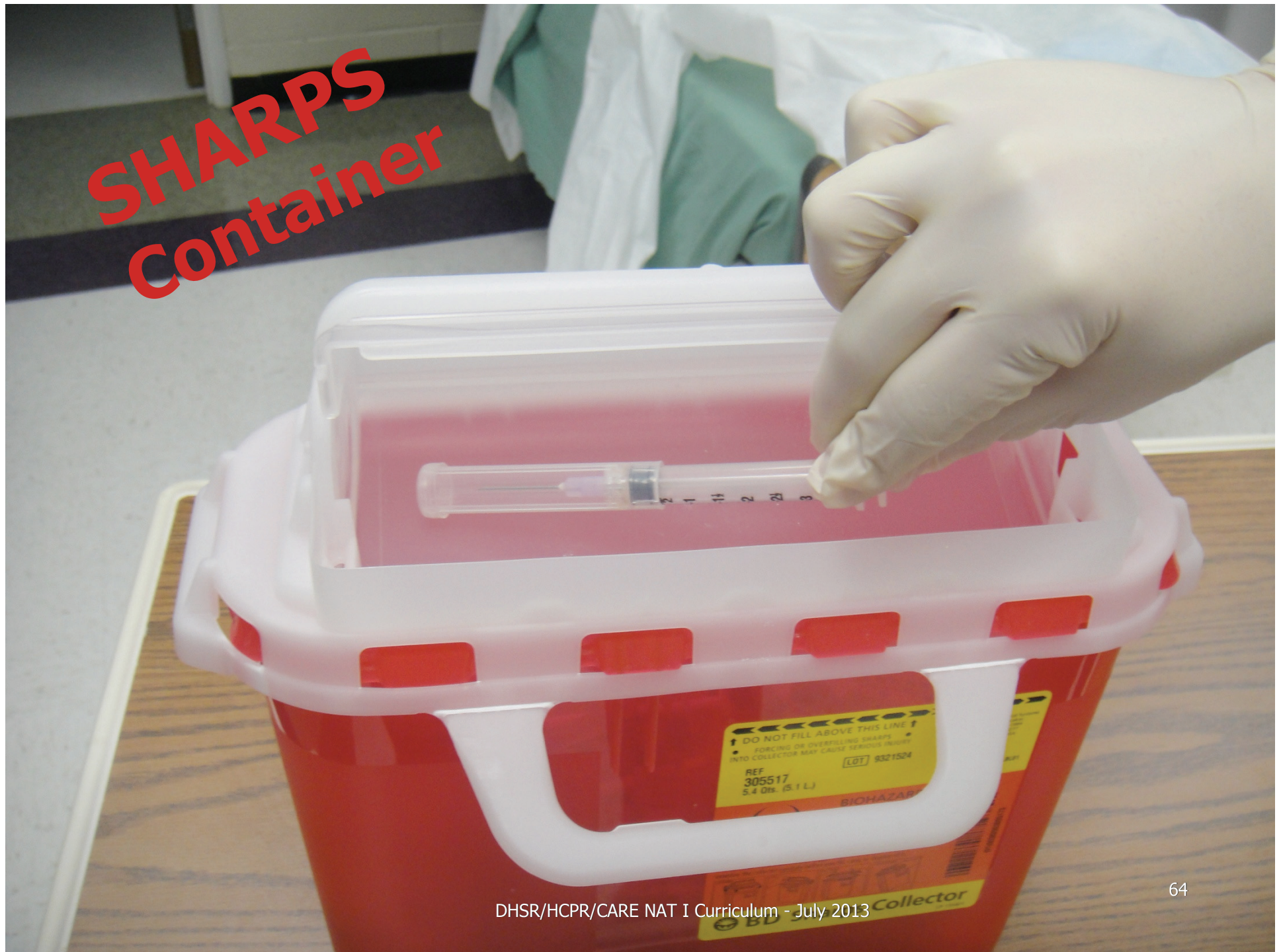
**Sharps** - items that have corners, edges, or projections that can cut or pierce the skin

- Wear gloves and be careful
- Do not cut self or resident during shaves
- Do not jab self when using sharps
- NEVER, EVER re-cap a needle or other sharp object
- NEVER, EVER put anything sharp in a regular trashcan





# SHARPS Container



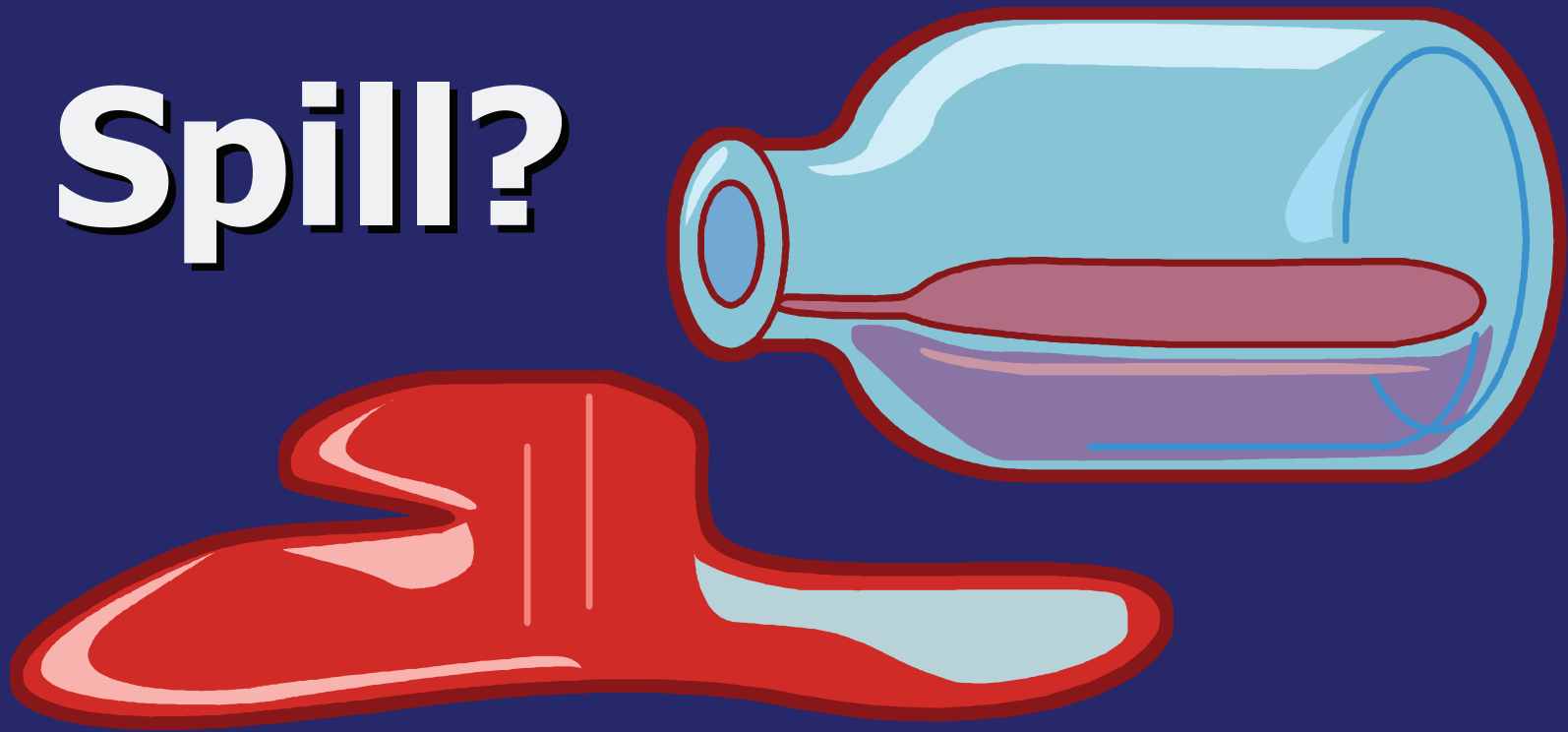
# **SPILLS on the floor...**

## **What do I do now?**

- Put on gloves
- Absorb spill and clean area
- Discard waste in appropriate container
- Apply disinfectant to area
- Place a warning cone or sign in area



# Spill?



Why are spills on the floor involving body fluids especially dangerous in a long-term care facility?



# Clean all Surfaces...



- Any time blood or body fluids get on any surface
- Use products available where you work
- Follow facility procedures and product instructions
- Examples?

# Transmission-based Precautions



- 2<sup>nd</sup> level to prevent and control infections
- Specific measures and tasks when caring for residents who are infected/may be infected with specific types of infections

## 3 Types

**1. Contact Precautions**

**2. Droplet Precautions**

**3. Airborne Precautions**



# Contact Precautions

Purpose – prevent spread of harmful germs spread by direct contact

PPE = Standard Precautions + Gown + Gloves



Examples:

- MRSA
- Norovirus

# Droplet Precautions

Purpose – prevent spread of harmful germs that travel by

Spread when an infected resident coughs, sings, sneezes, or laughs

PPE?

Examples?

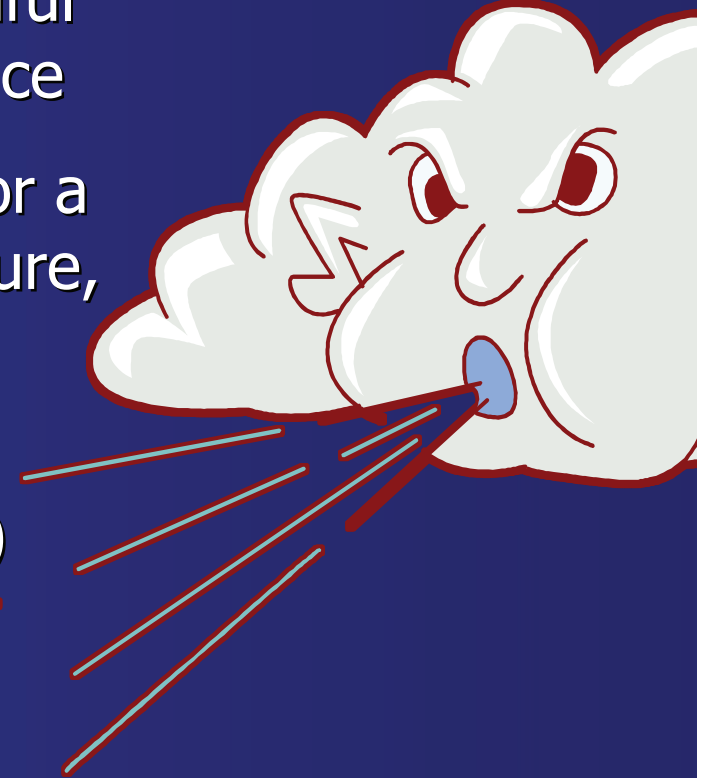
# Airborne Precautions

Purpose – prevent spread of harmful germs that travel in air at a distance

Harmful germs can float around for a while and can be carried by moisture, air currents, and dust

PPE = Standard Precautions +  
Respirator (depending on disease)

Examples?

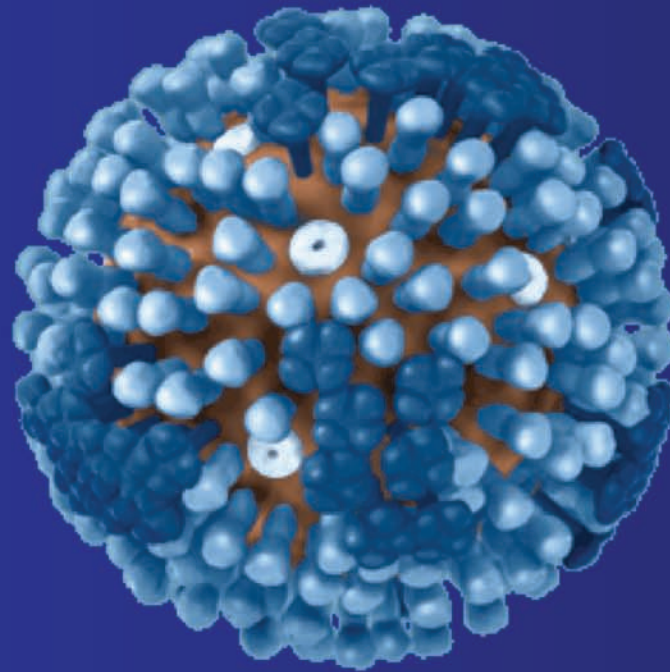


**"OUTBREAK!!!!!!"**

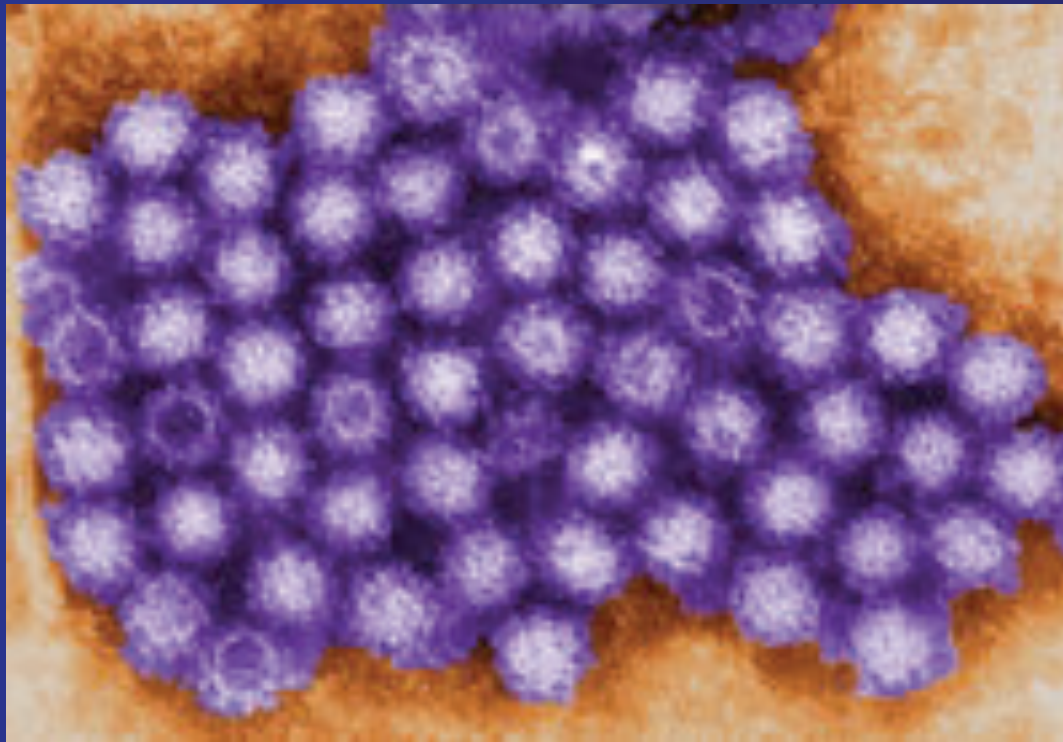


**Influenza &  
Norovirus are  
dangerous for  
people aged 65  
and older**

# The Flu



# Norovirus





The background of the slide is white, covered with numerous red splatters and particles of varying sizes. Some of the larger particles have a spiky, spherical appearance, resembling viruses or bacteria, while others are simple droplets or fine mist. The overall effect is one of a bloodborne pathogen spill.

# Bloodborne Pathogen



# Hepatitis B Virus (HBV)

- Causes Hepatitis B, a disease of the liver
- About 1/3 of persons infected with HBV do not show symptoms
- Can live outside body on equipment and on surfaces like table tops or blood glucose meters for seven days; can infect others during that time
- GREAT NEWS! Vaccine is available to prevent you from getting the disease

The background of the slide is white, covered with numerous red splatters and virus-like particles. These particles are depicted as red circles of varying sizes, many with small, thin lines radiating from them, resembling a microscopic view of a virus or a blood splatter pattern. The distribution is dense and somewhat chaotic, with some larger, more prominent splatters and many smaller, scattered dots.

# SEVEN DAYS

# Nurse Aide Should:

- Always wear gloves when there is a chance of exposure to blood
- Handle used sharps carefully and discard appropriately
- Follow facility's exposure plan if any part of body is exposed to blood or jabbed with contaminated sharp



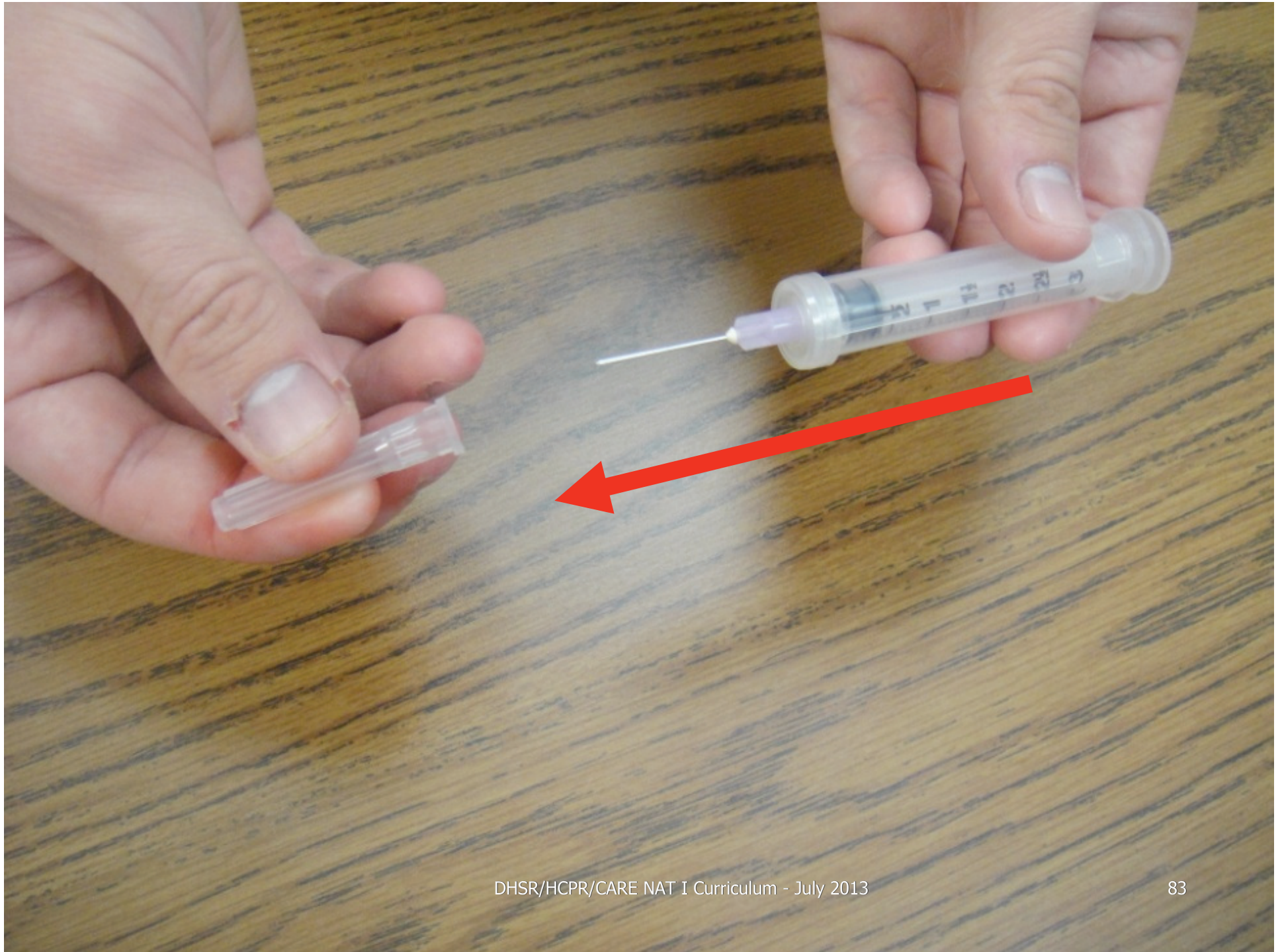
**WHAT IS  
WRONG  
WITH THIS  
PICTURE?**







**NEVER  
EVER DO  
THIS**







**NEVER  
EVER DO  
THIS**







A photograph of a person's arm, likely a forearm, with a white plastic bag tied around the wrist. The bag is heavily stained with bright red blood. The arm is positioned next to a dark wooden door with a silver metal handle and a keyhole. The text "NEVER EVER DO THIS" is overlaid in large, bold, red capital letters across the center of the image.

**NEVER  
EVER DO  
THIS**





A close-up photograph of a person's face, partially obscured by their hand. The hand is wearing a white latex glove and is covered in blood, with the fingers spread. The person is wearing a white t-shirt with a small logo on the chest. The background is slightly blurred, showing what appears to be a door or wall.

**NEVER  
EVER DO  
THIS**

# The End