

## N.C. Nurse Aide I Curriculum

### MODULE B Infection Prevention

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## 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-based 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.

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## Infection Prevention

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



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# Infection

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

**EXAMPLES**

1. Localized
2. Systemic



## EXAMPLES

## 1. Localized

## 2. Systemic



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[illegible]

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## An anatomical diagram of the human respiratory system. It shows the trachea (windpipe) at the top, branching into the bronchi (main airways) which lead into the lungs. The lungs are depicted with internal branching structures representing the bronchioles and alveoli. The diagram is a grayscale illustration with some shading to indicate depth.

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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?

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



**a bladder infection?**

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## 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"



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



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**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?**



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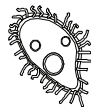
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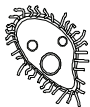
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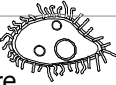


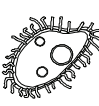


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## Microorganisms



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

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## Medical Asepsis

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



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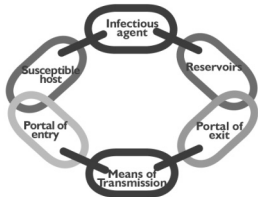
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## Chain of Infection



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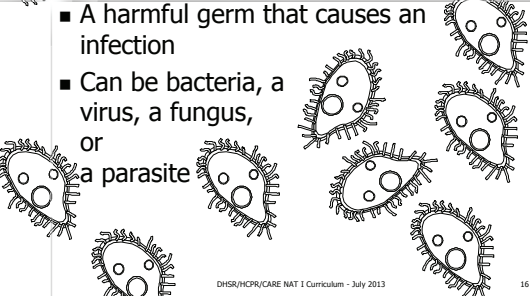
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## 1<sup>st</sup> Link – Infectious Agent

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



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## 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

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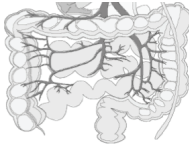
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## 2<sup>nd</sup> Link - Reservoir

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

- Blood
- The skin
- Digestive tract
- Respiratory tract



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18

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

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

**"NO, NOT ALWAYS!"**

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## 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

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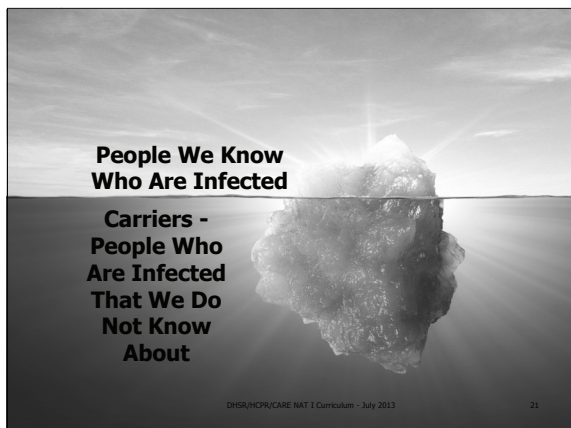
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**People We Know  
Who Are Infected**

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



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## 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.

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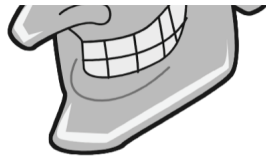
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## 3<sup>rd</sup> Link – Portal of Exit

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

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



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23

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



How germs get around from place to place

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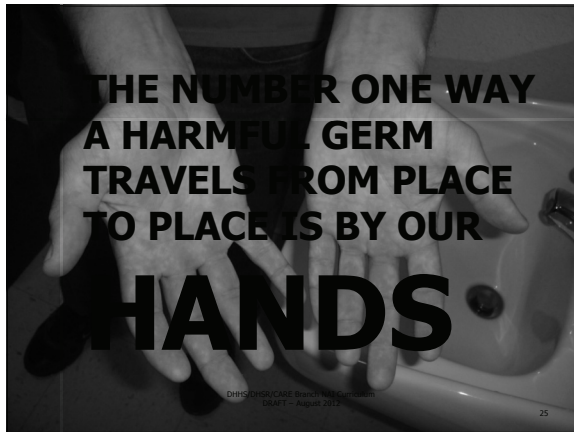
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	<h3>4<sup>th</sup> Link – Mode of Transportation</h3>
	<div style="text-align: center;">  </div> <p style="text-align: center;">How do our hands provide transportation for germs?</p> <p style="text-align: right; font-size: small;">DHHS/HRP/CARE NAT I Curriculum - July 2013 26</p>

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	<h3>4<sup>th</sup> Link – Mode of Transportation</h3>						
	<p>Harmful Germs Travel by <b>Direct Contact</b> With Body Fluids Where Germs Live</p> <table style="width: 100%;"> <tr> <td>■ Blood</td> <td>■ Saliva</td> </tr> <tr> <td>■ Sputum</td> <td>■ Stool</td> </tr> <tr> <td>■ Pus or wound fluid</td> <td>■ Vomit</td> </tr> </table> <p>Examples of Direct Contact?</p> <p style="text-align: right; font-size: small;">DHHS/HRP/CARE NAT I Curriculum - July 2013 27</p>	■ Blood	■ Saliva	■ Sputum	■ Stool	■ Pus or wound fluid	■ Vomit
■ Blood	■ Saliva						
■ Sputum	■ Stool						
■ Pus or wound fluid	■ Vomit						

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#### 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?

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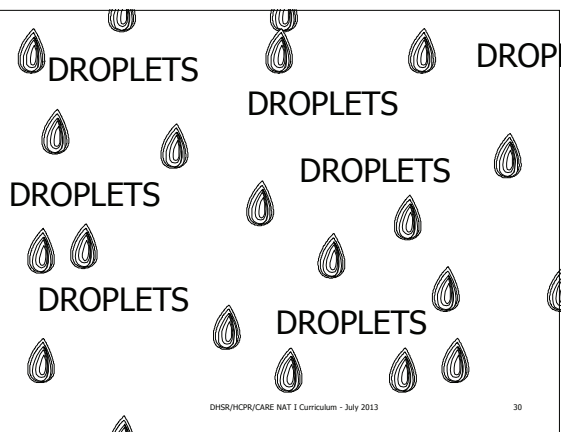
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The  to prevent you, your co-workers, and your residents from getting infected is to treat **ALL** body fluids as possible carriers of harmful germs

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



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



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### 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



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## 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?**

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34

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



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35

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

*Why?*

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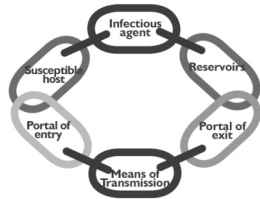
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## Chain of Infection



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

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39

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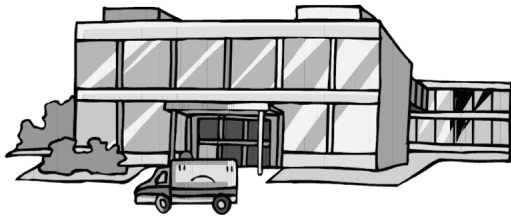
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## Healthcare-associated Infection

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### 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

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41

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## 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

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42

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## Review of Terms

**BODY  
FLUIDS  
MUCUS  
MEMBRANES**

**NON-INTACT  
SKIN**

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

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43

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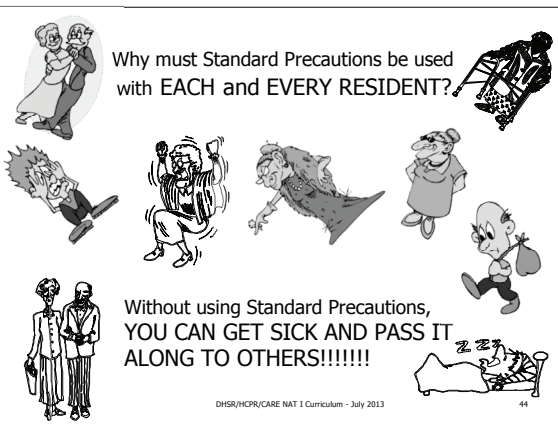
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## Nurse Aides Must.....

Follow Standard Precaution Rules to Protect

- Self
- Co-workers
- Residents

**FROM GETTING  
INFECTIONS**

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## Hand Hygiene



The CDC defines hand hygiene as washing your hands with:

- Soap and water
- Alcohol-based hand rubs

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## Performing Hand Hygiene



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

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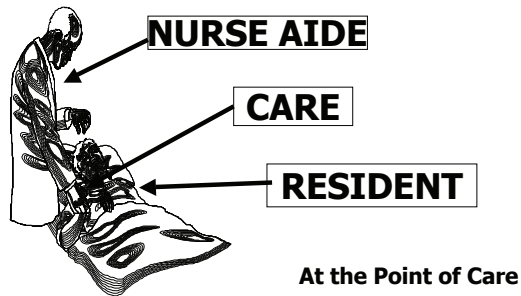
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## Nurse Aide Should Perform Hand Hygiene.....



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49

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## 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

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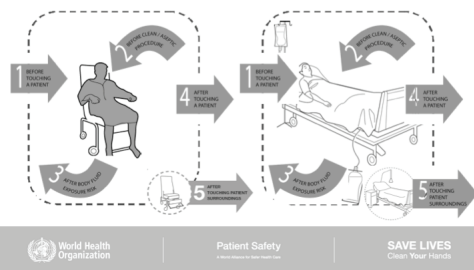
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The 5 Moments apply to any setting where health care involving direct contact with patients takes place



World Health Organization

Patient Safety

SAVE LIVES

Clean Your Hands

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51

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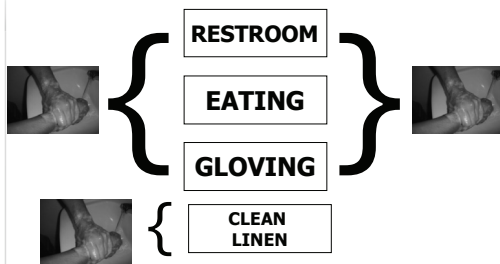
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## Perform Hand Hygiene



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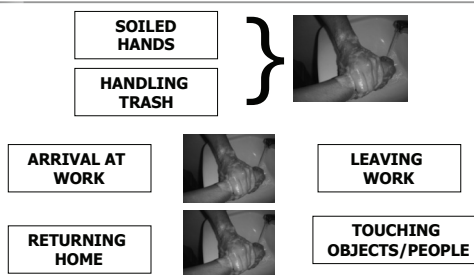
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## Perform Hand Hygiene



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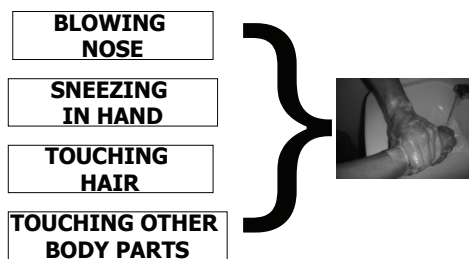
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## Perform Hand Hygiene



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## DO YOU HAND WASH?

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## MAY YOU HAND RUB?

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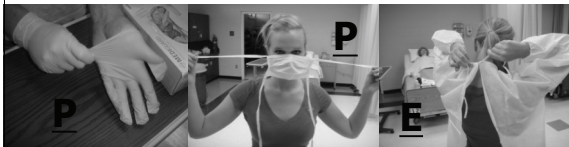
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## Personal Protective Equipment



**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

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57

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## 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

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58

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## Personal Protective Equipment

# How will I know which equipment I will need?

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59

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# Gloves

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60

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# G o w n



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61

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## Mask

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62

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**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



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63

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	<p><b>SPILLS on the floor... What do I do now?</b></p>
	<ul style="list-style-type: none"> <li>■ Put on gloves</li> <li>■ Absorb spill and clean area</li> <li>■ Discard waste in appropriate container</li> <li>■ Apply disinfectant to area</li> <li>■ Place a warning cone or sign in area</li> </ul>  <p style="font-size: small;">DHSR/HICPR/CARE NAT I Curriculum - July 2013</p> <p style="text-align: right; font-size: small;">65</p>

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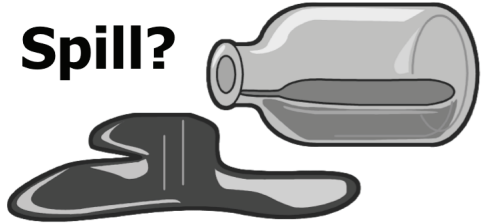
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<p><b>Spill?</b></p> 	<p>Why are spills on the floor involving body fluids especially dangerous in a long-term care facility?</p> <p style="font-size: small;">DHSR/HICPR/CARE NAT I Curriculum - July 2013</p> <p style="text-align: right; font-size: small;">66</p>
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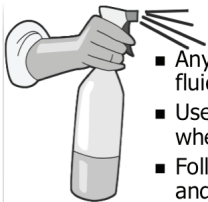
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## Clean all Surfaces...



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

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67

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## 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

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68

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## Contact Precautions

Purpose – prevent spread of harmful germs spread by direct contact

PPE = Standard Precautions + Gown + Gloves



Examples:

- MRSA
- Norovirus

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69

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## Droplet Precautions

Purpose – prevent spread of harmful germs that travel by

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

PPE?

Examples?

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70

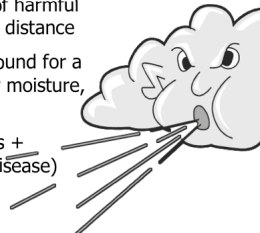
## Airborne Precautions

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?



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71

# "OUTBREAK!!!!!!"

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72





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

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73

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## The Flu



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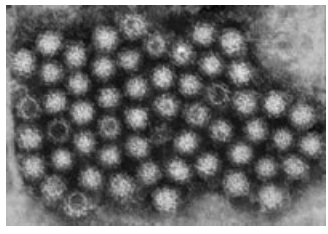
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## Norovirus



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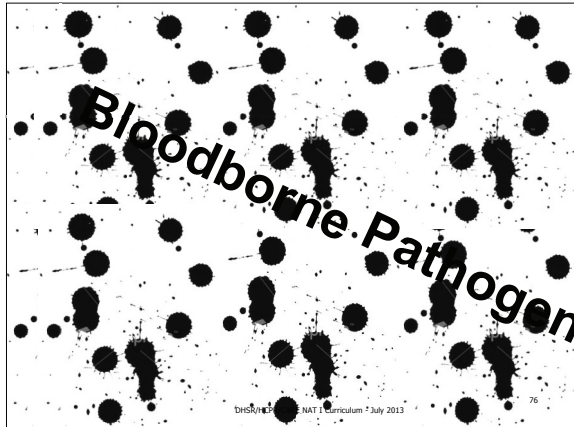
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	<h2>Hepatitis B Virus (HBV)</h2>
	<ul style="list-style-type: none"><li>■ Causes Hepatitis B, a disease of the liver</li><li>■ About 1/3 of persons infected with HBV do not show symptoms</li><li>■ Can live outside body on equipment and on surfaces like table tops or blood glucose meters for seven days; can infect others during that time</li><li>■ GREAT NEWS! Vaccine is available to prevent you from getting the disease</li></ul>

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77

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## 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



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## WHAT IS WRONG WITH THIS PICTURE?

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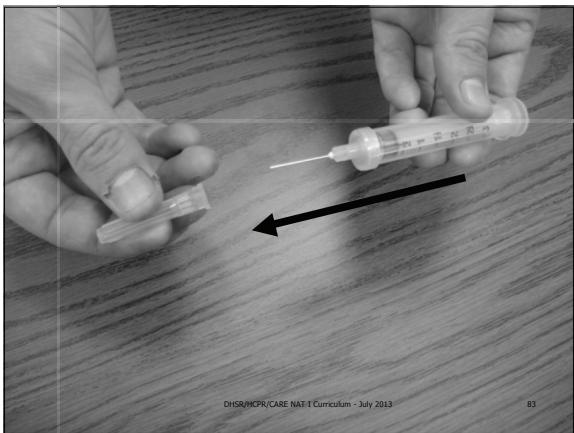
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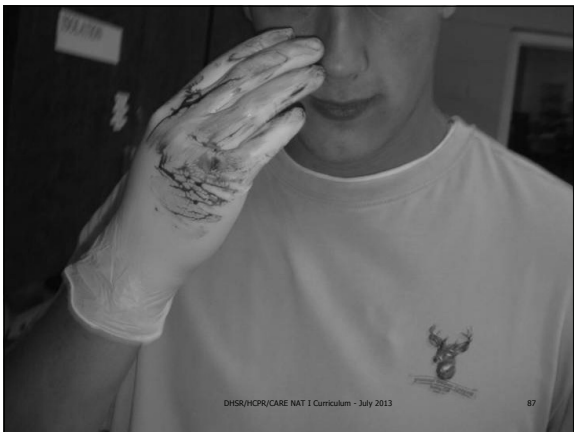
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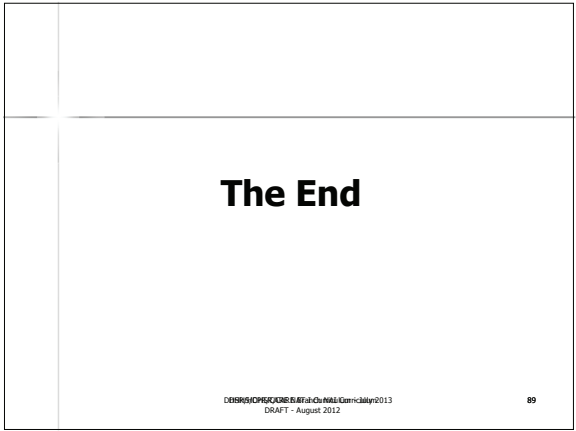
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