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All Round Defense

How Germs Move and How We Stop Them
The Chain of Transmission



Ontario
Ministry of Health
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All Round Defense

- the (relative) positioning of defensive fighting positions that are supposed to give military units the ability "to repel an attack from any direction by being organized or sited for **all round defense**"

• Source: Wikipedia®

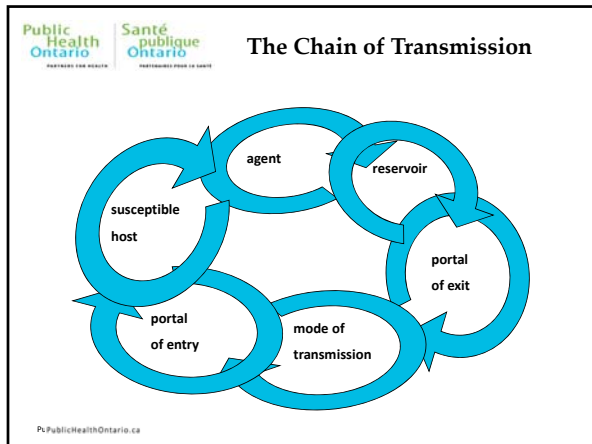
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- Everyone has "bugs" on them, all the time
- Some are normal, some are potentially harmful
- There will always be someone around who can get sick from bugs
- We can get sick or infected by bugs if they find a way thru our defenses:
 - Eyes, nose, mouth, breaks in the skin, etc.

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Causative agent "the Germ"

agent

- Comes from patient, Resident, staff, visitors
- Patients/Residents: Respiratory secretions, feces, wounds, other body fluids
- Staff: mouth, nose, hands
- Visitors: Respiratory secretions, hands

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Reservoir "Hiding Places"

- People
- Food
- Environment
- Animals

reservoir

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Portal of Exit "way out"

- Secretions
- Excretions
- Skin
- Blood
- Body fluids
- Mucous membranes

portal of exit

diarrhea

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Mucky Mucous

- One millilitre of saliva can have 100,000,000 bacteria and viruses in it!

www.HelloCrazy.com

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Is That The Only Issue?


- Each finger can have 1,000,000 bacteria
- Many are found under the nails and in the cuticle

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Wait, There's More!

- Feces has over 1,000,000,000,000 bacteria per gram (dry weight)
- Think of one microgram: still one million bacteria
 - Can't see it
 - Can't smell it

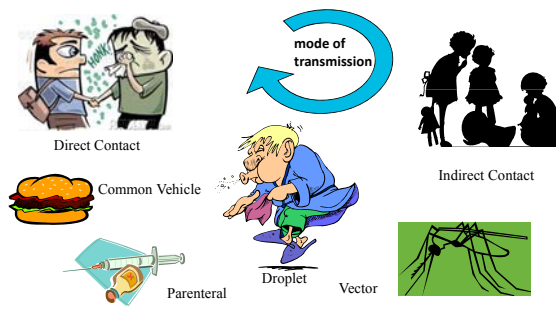


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Mode of Transmission

How micro organisms are spread



- Direct Contact
- Indirect Contact
- Common Vehicle
- Parenteral
- Droplet
- Vector

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Contact Transmission

- Direct contact
 - Shaking hands
 - Touching infected material
- Common vehicle
 - Shared patient care equipment

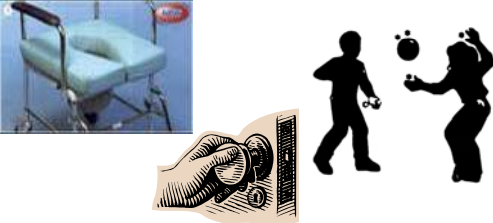


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Indirect Contact

- Sharing toys, equipment, devices
- Touching contaminated surfaces

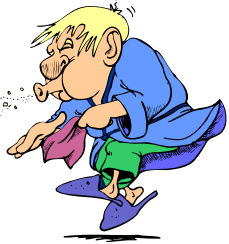


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Droplet Transmission

- Droplets from sneezes or coughs that travel short distances (approx 2 M) and then settle on surfaces (e.g. influenza, respiratory viruses)




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Airborne

- Tiny particles from cough or sneeze remain suspended in air » easily breathed into lungs (e.g. TB, Measles, Chicken pox)



> 1 metre


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Vector

transmission by insects or animals

- E.g.: West Nile Virus
Malaria
lime disease



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Parenteral Transmission

- The spread of an infectious agent through intact skin by sharp penetration

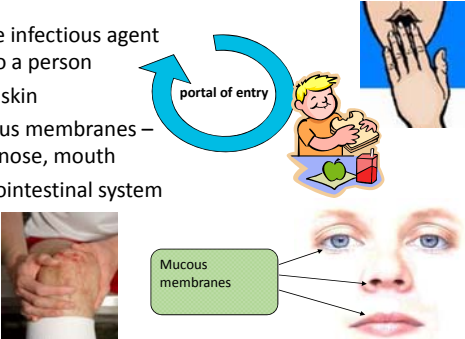


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Portal of Entry "way in"

- How the infectious agent gets into a person
 - Open skin
 - Mucous membranes – eyes, nose, mouth
 - Gastrointestinal system



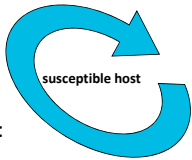

Mucous membranes

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Susceptible Host

- Someone with no immunity to the infectious agent
- Characteristics that affect susceptibility:
 - Age
 - Nutritional status
 - Disease history
 - Underlying illness





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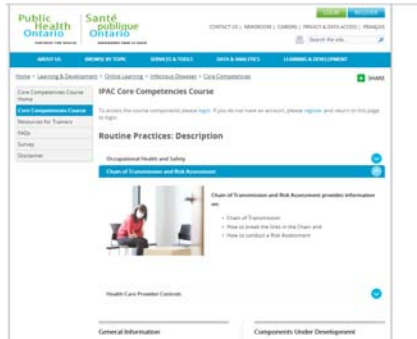
Breaking the Chain

- Interrupting 1 or more links breaks the chain of transmission
- This can be accomplished by the use of **routine practices**
 - Hand hygiene
 - Risk Assessment: Identifying infectious illness and its risk
 - Isolating those with an infectious illness
 - Cleaning and disinfection of environmental surfaces
 - Appropriate use of PPE



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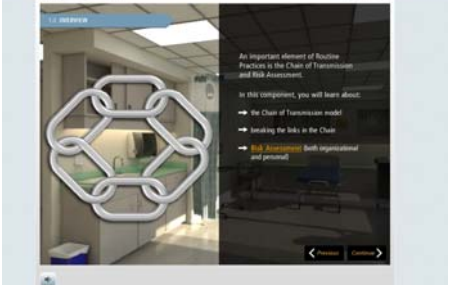
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IPBC Core Competencies
Critical Learning Objectives
Acquire Practical Skills
Level of Foundational & Risk Assessment competencies

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01 Introduction



An important element of Routine Practices is the Chain of Transmission and Risk Assessment.

In this compilation, you will learn about:

- the Chain of Transmission model
- breaking the links in the Chain
- Risk Assessment: both organizational and personal

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Exercise

- Find the “All Round Defense” cards on your table
- Discuss among tablemates
 - What is the causative organism
 - Where does it live
 - How does it move from where it lives
 - Who does it attack
- Using the booklet- build a chain for this organism
- Fill in the blanks on the chain and suggest how you might break this chain

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