

A decorative background featuring a network diagram with nodes and edges. The nodes are represented by circles of varying sizes and colors (gray, blue, and white with a blue outline). The edges are thin gray lines connecting the nodes. The network is more dense on the left and right sides of the slide, with the central area being mostly white space containing the title.

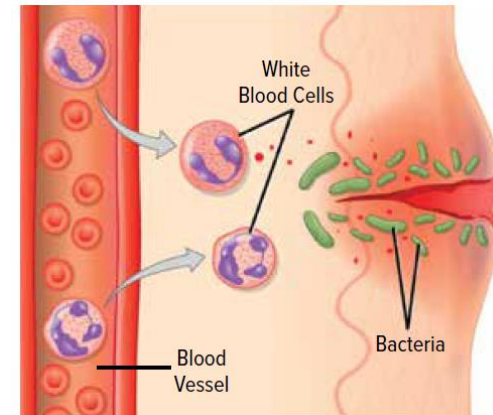
1.5 - Spread of Diseases

Immune System

- ◎ Immune System:
body system - defends against pathogens & infection
- ◎ 3 Lines of Defense

Immune System

- ◎ 1st Line of Defense: skin, internal linings, hairs (cilia), mucus
- ◎ 2nd Line of Defense: white blood cells
- ◎ 3rd Line of Defense: specialized white blood cells



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LOCK DOWN
Emergency Inside Building - Intruder/Imminent Threat





Has anyone gotten sick/the flu in the past few weeks?

What are some examples of epidemics/outbreaks/pandemics you have seen in the news?

Describing Disease Occurrence

OUTBREAK

- More cases than 'normal'
- For rare diseases, even 1 case can be an outbreak
- Outbreaks can be seasonal (e.g. flu season)
- Usually limited affected area (e.g. one building, one city)
- [COVID outbreaks](#)
- May or may not prompt public health measures

EPIDEMIC

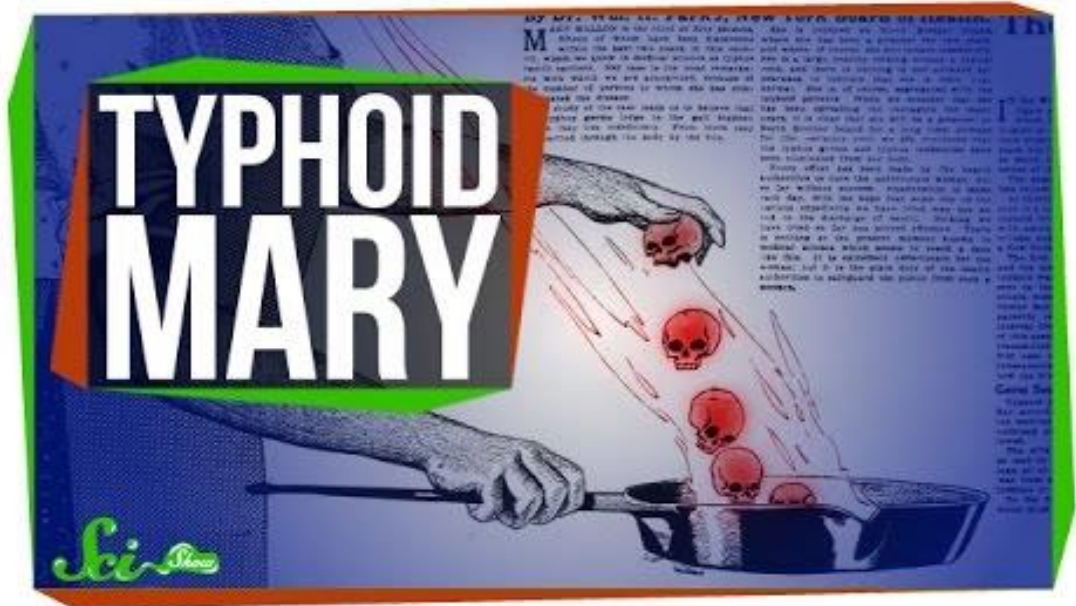
- More cases than 'normal'
- Population in a clearly defined area (e.g. Greater Vancouver area or [Ontario](#))
- *Rapid, uncontrolled* spread of infectious disease to many people
- Requires public health response

PANDEMIC

- An epidemic that has spread over several countries/continents, or around the world (global)
- Requires coordinated global response

<https://www.webmd.com/cold-and-flu/what-are-epidemics-pandemics-outbreaks#1>

https://apic.org/monthly_alerts/outbreaks-epidemics-and-pandemics-what-you-need-to-know/



Historical Example: Typhoid Mary



“

*What are some ways pathogens
can spread from one person to
another?*

Investigation Activity: Modelling the Spread of Disease

A decorative network diagram in the top right corner, consisting of various sized grey circles (nodes) connected by thin grey lines (edges). Some nodes are solid grey, while others are hollow with a grey outline. The connections form a complex, interconnected web.

SAFETY:

- ⦿ No eating or drinking.
- ⦿ If you spill liquid on your hand, tell teacher and wash off with lots of water.
- ⦿ No gloves or goggles required.
- ⦿ Clean up after yourself.

Investigation Activity: Modelling the Spread of Disease

*Instructions: *do not proceed unless told to**

1. Find a partner.
 - a) Write down partner's name on your contact sheet.
 - b) Partner 1 will use the dropper to transfer 3 drops of your liquid into Partner 2's container.
 - c) Partner 2 transfers 3 drops to Partner 1.
2. Repeat step 1a-c two more times for Contact 2 and Contact 3.



Investigation Activity: Modelling the Spread of Disease

Clean-up

1. Rinse beaker multiple times.
2. Fill beaker with water and use it to fill the dropper multiple times with water to rinse the inside out. Rinse the outside of the dropper with water multiple times.
3. Return materials as specified by your teacher.

End of slideshow.