

# Simulating the spread of an infectious disease

## How are infectious diseases spread?

Direct human-to-human disease transmission can result from direct contact (touching, bodily fluids) or indirect contact (touching an infected surface). Diseases spread through direct transmission include the common cold, influenza (flu), and acquired immune deficiency syndrome (AIDS).

Norovirus is caused by a virus. People become infected with norovirus by:

- Eating food or drinking liquids contaminated by an infected person.
- Eating uncooked shellfish that has been harvested from contaminated waters.
- Touching contaminated surfaces or objects and then touching their mouth or eating without washing their hands first.

We are going to simulate how fast a disease spreads, in which exposure to other infected people's germs can lead to infection. The germs will be in test tubes, and ONE person has entered the room with this infection.

## Materials

- Test tube (or small paper cup) with body fluid
- Dropper

## Procedure

1. When instructed to do so, walk around the room with your test tube and dropper.
2. When the teacher says "stop," exchange one drop of fluid from your test tube with the person closest to you.
3. Write down the name of the person you exchanged with below.
4. Continue walking around to interact with different people, listening for the next time to stop and exchange drops (at least two additional times).
5. Write down the names of the other people with whom you exchange drops on a notecard or scrap piece of paper.
6. Hold up your test tube to be tested for the imaginary infection.

## Data

Record with whom you exchanged cup contents.

- |          |          |
|----------|----------|
| 1. _____ | 5. _____ |
| 2. _____ | 6. _____ |
| 3. _____ | 7. _____ |
| 4. _____ | 8. _____ |

## Reflection

1. How many people were infected with Norovirus variant GII.4 or common stomach virus at the end of the simulation?
2. Was that number surprising?
3. How might you graphically represent how the disease spread?
4. What actions might you take to prevent getting this infection?