The Spread of Disease: HIV Transmission

Most contagious diseases are caused by **pathogens** such as bacteria, viruses, or protozoa. Spread of these diseases is by direct contact with someone who is infected or by indirect contact, as with water or objects contaminated by an infected person's body fluids or wastes (blood, saliva, feces).

The dangerously rapid spread of Acquired Immune Deficiency Syndrome (AIDS) has caused a great deal of concern. Human Immunodeficiency Virus (HIV), the virus that causes AIDS, attacks and weakens the immune system. Although recent studies indicate that the number of newly infected people in the United States is on the decline, AIDS continues to be the "Number 1" killer among young people ages 20-25, especially young women. The spread of HIV, which is transmitted from one person to another by the exchange of body fluids (blood, semen, vaginal secretions, mothers milk) has slowed among the homosexual community but, the rate of infection among heterosexuals is alarmingly high.

In this activity, we will explore how contagious diseases spread so rapidly and attempt to understand other factors which may put us at greater risk of contracting HIV or other contagious diseases.

RULES OF THE ACTIVITY

1. Each student gets a cup filled with a small amount of fluid. The fluid represents body fluids (for, example, blood, semen, or vaginal secretions). One of the vials contains fluid infected with the ''HIV virus'' (a special simulation chemical) and the rest contain uninfected body fluids (water).

2. A role card is attached to each cup. This identifies a behavioral role (telling when and with whom you can exchange body fluids). You must keep this secret throughout the activity.

3. When you exchange body fluids, use pour a small amount of your fluid into the cup of another person. You should receive back an equal amount of their fluid. This is the simulation of having shared body fluids (having sex or sharing needles)

4. You must ask the other person for permission to exchange fluids. You may NOT tell the other person what your role is.

5. You must keep track of who you exchanged body fluids with. Write your history in the table on the next page.

6. You can exchange fluids only if the exchange is in keeping with your behavioral role, as stated on your role card. You cannot act out of character.

7. After a short period of time exchanging fluids (5 times), it will be time to ''get tested for HIV.'' The teacher will assume the role of a doctor who will administer an ''AIDS test'' to each student.

8. Repeat the activity but this time ignore your roles and exchange fluids with anyone.

SAFETY PRECAUTIONS:

- DO NOT DRINK FROM THE CUPS.
- Rinse hands well with plain water if "bodily fluid" liquid spills on you.

FIRST TRIAL (WITH ROLES)

	Partner
1	
2	
3	
4	
5	

SECOND TRIAL (WITHOUT ROLES)

	Partner
1	
2	
3	
4	
5	

Questions

1. In trial 1, did you test positive for HIV?
2. In trial 1, were you able to trace the route of infection back to its original source?
3. In trial 1, what was your behavioral role?
4. In trial 1, what was the behavioral role of the person who directly infected you?
5. In trial 1, what was the behavioral role of the person who started the infection in the community?
6. In trial 2, did you test positive for HIV?
7. In trial 2, were you able to trace the route of infection back to its original source?
8. Was there a difference between the number of people infected in trial 1 vs. trial 2?
9. Were you surprised at the number of people infected from the one original infected person?
10. Why is HIV so successful in infecting humans?
11. Why did animals have to evolve an immune system?
12. Name 4 different ways the human body protects itself.
13. Describe what **antigens** are and what purpose they serve in the body.
14. Describe what **antibodies** are and what cells produce them.
15. Explain what antibodies do to fight off pathogens.
16. Explain what vaccines are and how they work in the body to protect you from diseases.

Adapted from Kim Foglia