Lab 8: Fomite Transmission

Learning Objectives:

- Define fomite and how bacteria are transferred via fomites.
- Explain the role of fomite transmission in the hospital.
- Define nosocomial infections, HAIs (hospital acquired infections), and Iatrogenic infections.

Introduction:

Fomites are inanimate objects or materials that may contain and harbor bacteria, fungi, or viruses. There are many microorganisms in the environment that may or may not be pathogenic. Microorganisms become pathogenic when they enter areas of the body where that microorganism doesn't normally reside (not part of the normal microbiota). In microbiology, the transfer of pathogenic organisms from one host to another through an inanimate object is known as indirect contact transmission. As a healthcare professional, you will come in contact with many inanimate objects and it will be important to remember that these objects could compromise the health of your patients. You will need to be aware of your surroundings and be aware of how you can transfer harmful pathogens to your patients. For example, setting a patient's chart down on their bed could result in a nosocomial (hospital acquired) infection for your patient. That chart has been touched by many people who could be spreading microorganisms. To help you understand the plethora of microorganisms found in the environment, we will examine a number of fomites found in the laboratory, school, and your home.

Note: Do not do skin swabs or swab of any internal surfaces such as mouth, or throat. Only the inanimate objects should be used for this experiment. Use personal protective equipment (PPE) at all times and do not leave the lab area to swab plates.

Materials: Agar plate, Marker, ruler, sterile swabs

Method:

1. Obtain one nutrient agar and divide the back of the plate into 8 sections using ruler and marker. Label each section 1-8.
2. Using a new sterile swab, swab 8 different inanimate objects found in the lab area and streak the agar plates.
3. Record the name of the swabbed objects in the lab report.
4. Incubate the agar plates at 37 ˚C for 24-48 hours.
5. Seal the plates with parafilm and <u>do not</u> open the plates.
6. Make observations using <u>sealed plates only</u>.
7. Use lab safety protocol at all times while observing each sections for growth on the scale of 0-5. If there is no growth, report it as zero. Report excessive growth as 5.
8. On the lab report, describe observations regarding appearance, color, shape and size of the colonies.