

“Day Care Dilemma” – Formal Lab Report

You are in charge of purchases for a large day care facility, which takes care of small children between the ages of 1 and 4 years old. You have been asked to purchase an effective antiseptic soap for the children, care givers and food preparation workers. Knowing that children are more susceptible to bacterial infections than adults you want the most effective antiseptic on hand. You also know that infections are part of being a child, therefore, you also need to know that any sick children are getting the best antibiotics for the infection they have. Your job is to determine which antiseptic and which antibiotic is most effective so that you can make a recommendation to your supervisor.

The effectiveness of an antibacterial agent (antiseptic or antibiotic) can be tested by spreading a lawn of bacteria (see attached instructions) onto a nutrient agar plate using a known culture of bacteria, a sterile pipette and a flamed inoculating loop. A small filter paper disc that has been soaked in the test substance or pre-treated with an antibiotic is then placed in the middle of a quadrant of the petri dish and the bacteria are incubated in a warm place for 1-2 days.

If the antibacterial agent is effective then bacteria will not appear to grow within a certain diameter of the filter disc. This area of no growth is called a zone of inhibition.

As the day care purchaser you have the following materials to use to make your recommendation with regards to the antiseptic and antibiotic that should be purchased.

- 2 nutrient agar plates

- Bunsen burner

- 2 different liquid cultures of bacteria

 - * (Group 1,2,3 – *Escherichia coli*) (Group 4,5,6 *Micrococcus luteus*)

- A sterile pipette for each different culture

- Sterile filter paper discs

- 3 types of pre-treated filter paper discs

 - Ampicillin - Tetracycline - Chloramphenicol

- 3 different antiseptic agents (bleach, dish detergent, PineSol)

- Grease pencil and tape

- Incubator

As a formal lab report you must design an experiment complete with data tables and graphs to determine which of the antiseptics and the antibiotics you should recommend. Write up your recommendation for the day care center using your team's data and the class data for support of your recommendation.