



## Coopdeville's Annual Barbeque

**Annotation:** This is an activity that is geared towards food safety and epidemiology. The students are to use a scenario of a Barbeque where 500 people get sick from a mysterious food borne pathogen. They are to use the testimonies of 4 of the sick people who are now at the doctor's office very sick. They are to listen to the Doctor ask the sick patients key questions and use this data along with other information ("Food Pathogen index" and presentation) to find out what the culprit bacteria is and what food source it came from.

**Learning outcome:** Students will analyze information given to them in reference to a fictional cookout to identify the type of microorganism and what food item that has infected several people who attended the cookout.

### Assessed QCCs:

Grades: 9-10

Science

Biology

15.2 Describes common diseases caused by bacteria and their treatments.

15.3 Describes methods of bacterial control in food preparation, handling, and storage.

**Additional learning outcomes:** Students will infer which food caused the contaminant after hearing an account of each infected person during a role-play of an office visit.

### Materials:

1. **Picnic basket** with a representation of different food items typically found at a cookout (Must have all of the food that the patients ate and the food item that was contaminated). These food items do not have to be cooked and it is better that they are canned items from your own home. For example, if the culprit pathogen were *E. Coli* it would be recommended that a hamburger would be in the basket and discussed. The Pathogen Index gives information on the common food sources of each pathogen.
2. **Short Presentation on Background information**
3. **Food Pathogen indexes** to be used to identify the microorganism that causes the food borne outbreak.
4. **Four patient profiles sheet:** These are the sheets that the student actors use to answer the questions that the doctor will ask them during the skit. It has their names, age, food items eaten, symptoms etc. listed.
5. **The blank Patient Profile and Information Sheet** (the last sheet in Food Borne Case Study packet) that will be used by the students that are not acting to write down the information given during the role playing.

**Total duration:** 90 minutes

## **Procedure:**

### *Step 1: Background information:*

1. A short presentation on the activities that occurred at Coopdeville's Annual Barbeque will be done. Each food item that was eaten at the barbeque will be discussed. The four potential food borne pathogens listed in the "Food Pathogen Index" will also be discussed in detail in the presentation ( 30 minutes)
2. The teacher will select students to role-play different characters needed for the cookout and doctor's office visit. They will use the four patient profile sheets with the information of each patient listed and each student volunteer will have one patient profile. Students selected for specific parts will prepare for their role by reading over the material and going over the questions that will be asked.
3. During activity #4, the remaining students will compare the characteristics of the microorganisms that are listed in the "Food Pathogen Index" as possible culprits. These bacteria will include *E. Coli*, *Salmonella*, *Listeria Monocytogenes* and *Clostridium Botulinum* that were discussed earlier in the presentation.

### *Step 2: Role Playing*

4. The role-playing will be done with the teacher or student volunteer acting as the Doctor. The doctor will ask the patients the appropriate questions that are on Patient Profile and Information Sheet (the last sheet in Food Borne Case Study packet).
5. The students that are not acting in the skit will write down the information and answers to the question in the "Patient Profile and Information Sheet" as they hear them in the skit. For example, the students should write down all the food items eaten, the patient symptoms, the type of bacteria found in the stool (gram stain, size shape etc) and any other important clues that might be useful.

### *Step 3: Conclusion*

6. After the skit, the students will work together in their groups using the information gained in the presentation, each of the four patient profiles, and the "Food Pathogen index" to determine:
  1. Which of the pathogens caused the outbreak, which caused the four patients to get sick.
  2. What food item was contaminated with this pathogen?

#### Note:

They should compare all of the information given by reviewing all four of the patient profiles thoroughly and coming up with the common problems, symptoms, and food items etc. Then they should compare that data with the information given in the " Food Pathogen" index and come up with their recommendations.

## **Assessment**

7. Students will answer the questions that are on the Food Borne Case study sheet.