You learn that the picnic was held at the park next to the school, and lasted from 12 noon to 5 pm. The food, which was contributed by members of the community, was spread out on a table and consumed throughout the afternoon.

You are able to interview 75 of the 80 people who attended the supper. Your findings on food and beverage consumption are detailed in the attached line listing, along with the time of onset of symptoms for people who became ill. Unfortunately, only about half of those who became ill reported the time when they had eaten.

A doctor treated approximately 20% of the sick people. 5 fecal specimens were obtained for bacteriologic testing.

5. **What number will you use for the population at risk in this study? Why?**

**Answer:**
Even though 80 people attended the dinner, for your analysis the correct population at risk is 75. You can include only people for whom data have been collected.

**Information:**
An Epidemic curve plots cases of illness against some other factor, usually time of onset, in hours, days, months or years.

6. **As soon as epidemiologists have the necessary data, they develop an epidemic curve. How does an epidemic curve help in an investigation?**

**Answer:**
Epidemic curves are a basic tool of field epidemiologist because they provide a simple, easily understood visual of the magnitude of an outbreak provide clues to the pattern of disease spread in a population depict where you are in the course of an outbreak (still on the upswing, on the down slope, or past the outbreak, and indicate outliers (cases that do not fit into the body of the cure), which, if they are part of the outbreak, may point directly to the source.
7a. Group Activity: Using data from the attached line listing, graph the cases by time of onset of illness, to create an epidemic curve. Label the axes and add an appropriate title.

Teacher’s Note:
Because time, which is plotted on the x-axis, is continuous, an epidemic curve is drawn as a histogram (no gaps between adjacent columns), not as a bar chart. If data are available from the pre-outbreak period, the x-axis should begin well before the onset of the outbreak. The pre-outbreak period illustrates the background, or usual number of cases, and for a disease with a human host, like hepatitis A, may include the source case of the outbreak.

For this graph cases can also be graphed using incubation period in hours.
7b. What does this epidemic curve tell you? What might you learn from the outliers?

Answer:
The Yourtown epidemic curve rises sharply, peaks, and then declines rapidly, suggesting common source exposure with a moderately long incubation period. The peak and decline of the curve indicate an end to the outbreak. There are a few outliers – the early cases are particularly important because it suggests that these individuals are particularly susceptible, or that they might have been exposed to the disease-causing agent earlier than the rest of the group. The late outliers may indicate later exposure. Since most people did not get sick right away, a preformed toxin such as the one produced by *Staphylococcus* is unlikely.