**PU520, Epidemiology, Unit 6 Assignment**

**Background – Today is Tuesday, August 21st**

It is a Tuesday evening at 4:59pm and you are leaving the local health department where you serve as the lead epidemiologist. The phone rings, when you answer, it is the Health Services director at a local, retirement community. Several dozen residents have reported to the on-site health clinic with nausea, vomiting, stomach cramps and diarrhea. The first person reported to the clinic yesterday at 6:15pm, by 8:30pm, the clinic had seen 3 dozen cases. There are 500 residents living in the community.

You quickly make a list of suspected agents.

**Question 1:** For each of the following infectious agents, provide the required information.

|  |  |  |  |
| --- | --- | --- | --- |
| **Disease** | **Type of Agent - bacteria, fungus, virus etc.** | **Common Source of Exposure** | **Clinical Signs and Symptoms** |
| Salmonella |  |  |  |
| Campylobacter |  |  |  |
| Staph aureus |  |  |  |
| Bacillus cereus |  |  |  |
| Norovirus |  |  |  |
| E. coli |  |  |  |
| Listeria |  |  |  |
| [Clostridium botulinum](https://www.cdc.gov/botulism/) |  |  |  |
| [Shigella](http://www.cdc.gov/shigella/index.html) |  |  |  |
| [Toxoplasma gondii](http://www.cdc.gov/parasites/toxoplasmosis/) |  |  |  |
| [Vibrio vulnificus](http://www.cdc.gov/vibrio/vibriov.html) |  |  |  |

**APA reference list for Q1: (input reference list for above chart in this space):**

**Question 2:** Calculate the current attack rate of the disease? (show your work)

**UPDATE: Wednesday, August 22nd  8am**

You arrive back at work to learn that an additional 42 residents have reported ill to the on-site clinic between Tuesday at 8pm and Wednesday at 2am. Seven of those were sent to the local hospital due to advanced symptoms. In addition, you have learned that at least one person, who was visiting someone in the facility, has reported to the urgent care clinic with similar symptoms.

You call the local hospital to get information regarding the seven people who went there and learn that all seven were admitted and are being treated with fluids. The hospital tells you it has collected samples and sent them to the lab for analysis.

While you do not yet have laboratory confirmation of the agent, you need to write a preliminary case definition.

**Question 3:** Provide a case definition

**UPDATE, Wednesday, August 22th, 3pm**

The hospital laboratory tested samples came back positive for Staphylococcus aureus, aka *Staphylococcal enterotoxin*.

**Question 4:** Provide an epidemiological overview of Staph, aureus.

|  |  |
| --- | --- |
| **Epidemiological Data** | **Hyperlink to your source** |
| **Symptoms:** |  |
| **Onset:** |  |
| **Source of illness:** |  |
| **Incidence per year in the USA:** |  |
| **Duration:** |  |
| **Fatal? YES/NO** |  |

**Question 5:** How many sick people are there total?

**Question 6:** What is the updated attack rate?

**Question 7:** Provide an updated case definition based on what you now know.

**UPDATE, Thursday, August 23rd, 8am**

You have had all those who reported ill tested for Staphylococcal enterotoxin. Lab results indicate that 71 of those ill tested positive including the one visitor.

**Question 8:** In order to determine the source of the outbreak you will need to conduct either a case-control or cohort study. Which would be the appropriate choice for this outbreak?

**UPDATE, Thursday, August 23rd, 3pm**

You have learned that there was a special “Speed Dating” event for single residents of the retirement community. The event was held outside by the pool and included a buffet. With the help of the Manager, you determine that 125 people attended the event. The visitor/outside person, that is ill did not attend the event. After conducting interviews, you discover that 60 of the total cases attended the speed dating event.

**Question 9**: calculate the risk ratio for those who attended. (show your work)

**Question 10**: calculate the odds ratio for those living in the residential community. (show your work)

**UPDATE, Friday, August 24th 11am**

You had samples from the buffet sent to the lab for testing and have confirmed that the pasta salad tested positive for Staph aureus. You conduct food safety training with the kitchen staff and will do a follow up surprise inspection in three weeks. Great work!