Welcome to Disease Detectives. Before you get started, here are a couple of reminders:

1. Teams are only permitted ONE 8.5” x 11” page of notes (2 sided) and a non-graphing calculator - no other resources.

2. You may separate the test, but make sure to reach the test before turning it in.

3. Timekeepers will be selected questions within the test.

4. You will have 60 minutes to complete the test. You may turn your test in early.

5. Use your time wisely. Try not to spend all of your time on just one part.

6. Good luck!

DO NOT OPEN TEST PACKET UNTIL INSTRUCTED TO DO SO!!!
5. Develop suitable recommendations and interventions for controlling the problem. (7pts each)

4. Establish a case definition based on the information provided above. (4pts)

3. Develop and specify probable hypotheses to explain the cause, source, and spread of the outbreak. (7pts each)

2. Briefly describe the initial steps that you would take in investigating this problem. Indicate the type of data needed to accomplish each step and give examples of such data in a community. (7pts)

1. Explain why you might consider this problem important enough to investigate. Give at least three reasons. (8pts)

Questions

The investigation and had voluntarily halted food service for the time being.

At the time of the report, health officials were still looking for the source of the outbreak. The hotel was cooperating in

The hotel's lunch menu included roast chicken, roast beef, and a vegetable pasta dish. Because some of the people who

official noted that all of the patients had eaten lunch at the same hotel.

On June 6th, 2016, at least 70 people attending a national conference at the Dallas Convention Center in Dallas, Texas

Outbreak Summary

"Dozens Sickened by Apparent Food Poisoning"

Case #1

Studies
Case #2
“Picnic in the Park”
A group of people developed a variety of intestinal problems a day after attending a picnic. The variety of foods they ate appear below.

<table>
<thead>
<tr>
<th>Food Consumed</th>
<th>Number eating this food</th>
<th>Number developing symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green salad and sliced Chicken</td>
<td>100</td>
<td>73</td>
</tr>
<tr>
<td>Noodles and black beans</td>
<td>80</td>
<td>21</td>
</tr>
<tr>
<td>Noodles and egg salad</td>
<td>50</td>
<td>24</td>
</tr>
<tr>
<td>Egg salad and sliced chicken</td>
<td>40</td>
<td>0</td>
</tr>
</tbody>
</table>

6. What food is the most likely source of the problems? (2pts.)

7. Which food, noodles and beans or noodles and egg salad had the greatest percentage of people getting sick? (1pt.)

8. Which percentage was the highest? (1pt.)

9. Describe three ways that the suspected food may have become contaminated. (6pts.)

10. What term is used to describe a sudden increase in a disease? (1pt.)

Case #3
“4th of July Barbeque”
The information in the table below was acquired from information gathered from individuals who attended a BBQ in July of 2016. Use the information in the table to answer the questions below.

<table>
<thead>
<tr>
<th></th>
<th>Ate watermelon</th>
<th>Did not eat watermelon</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>72</td>
<td>115</td>
<td>187</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>122</td>
<td>127</td>
</tr>
<tr>
<td>Total</td>
<td>77</td>
<td>237</td>
<td>314</td>
</tr>
</tbody>
</table>

11. Calculate the odds ratio for the information above. (2 pts.)
15. Based on the information you calculated name the food that was most likely associated with this outbreak.

14. Calculate the relative risk for each food above (2pts each food)

13. Calculate the odds ratio for each of the foods above (2pts each food)

12. Calculate the attack rate for each of the foods above (2pts each food)

Use the table to report

<table>
<thead>
<tr>
<th>Pumpkin Pie</th>
<th>Peas</th>
<th>Dressing</th>
<th>Turkey</th>
<th>Foods</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>45</td>
<td>77</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>22</td>
<td>105</td>
<td>28</td>
<td>77</td>
</tr>
<tr>
<td>26</td>
<td>11</td>
<td>121</td>
<td>33</td>
<td>88</td>
</tr>
<tr>
<td>25</td>
<td>23</td>
<td>133</td>
<td>36</td>
<td>97</td>
</tr>
</tbody>
</table>

Number of persons who ate food

Number of persons who did not eat foods

Use the information provided in the table gathered from guests at a wedding banquet to answer the questions below.

"My Big Fat Dick Wedding"
Case Study #4
31. Ebola
30. Poliomyelitis
29. Japanese Encephalitis
28. Influenza
27. Rabies
26. Malaria
25. Rocky Mountain Spotted Fever
24. Campylobacter
23. Kawasaki Disease
22. Lyme Disease
21. West Nile Virus
20. E. coli 0157:H7
19. HIV
18. Hepatitis B
17. Hepatitis A

Match the disease with mode of transmission (1 pt. each)
32. The following is a list of steps that are completed for an outbreak investigation. Number the statements so that they are in the correct order, 1 point per statement (12 points total).

A. Determine if legal action is required
B. Notify local public health department
C. Result comparison
D. Determine whether an outbreak has occurred
E. Meta-analysis of samples and ingredients from manufacturer
F. List of ingredients and food products
G. Formulate hypothesis to establish the cause of the outbreak
H. Collection and analysis of human and food samples
I. Develop a case definition
J. Determine the scope of the outbreak and call in other governmental agencies as required
K. Verify human (clinical) diagnosis
L. Obtain product samples from manufacturer

33. On your answer sheet put an 'X' next to each organism in which the characteristic applies. You will receive 2 pts.

<table>
<thead>
<tr>
<th>Characteristic of Organism</th>
<th>Organism</th>
<th>Virus</th>
<th>Bacteria</th>
<th>Fungi</th>
<th>Protist</th>
<th>Animal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has a cell wall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can infect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can act as a vector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A source of certain diseases caused by the other organism listed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Match the disease or disease causing organism with the appropriate disease causing agent. (1 pt. each)

a. Virus
b. Bacteria
c. Fungi
d. Prion
e. Protist
f. Worm