EPIDEMIOLOGY CASE STUDY: ROLE-SPECIFIC INFORMATION

Instructions: The information provided below represents the key points that should be communicated to *Investigators* based on character role. This information is not all-inclusive and *Case Individuals* should expect *Investigators* to ask questions that are not answered below. As an example, you may asked you to "take me through your day." As the character, attempt to answer such questions to the best of your ability – in most instances, as long as you are not making up test results, symptoms, or scenarios where you used a chemical, you should be fine. If an *Investigator* asks a question that you feel could impact the case study negatively, simply state that you do not have access to that information, but will try to gather the necessary data. If necessary, you can step outside of your character role in these situations. In addition to the key points, recognize that you are playing a character role and it is acceptable to "act" the role (i.e. if you are a child, be a child). That said, there is a fine line between acting a role and taking things entirely too far. The *Investigators* need to be able to gather information – avoid creating a frustrating and potentially damaging situation that could impact the investigation.

Note: If the *Investigator* asks for select information that a *Case Individual* may not have access to, you may provide some additional guidance on who would have that information (i.e. laboratory technician). The individual portraying this role should remind fellow *Case Individuals* that an *Investigator* asking about laboratory test results should be referred to the *Laboratory Technician: Lucas Klumper* in a role appropriate manner. **Example** if lab results are requested or mentioned to a *Case Individual*, the response could be, "What do you mean lab tests? My daddy said they had guys up at the school checking stuff – do you mean that?" This should prompt the *Investigator* to check with the appropriate individual.

EPIDEMIOLOGY CASE STUDY: ROLE-SPECIFIC INFORMATION

Instructions: The information provided below represents the key points that should be communicated to *Investigators* based on character role. This information is not all-inclusive and *Case Individuals* should expect *Investigators* to ask questions that are not answered below. As an example, you may asked you to "take me through your day." As the character, attempt to answer such questions to the best of your ability – in most instances, as long as you are not making up test results, symptoms, or scenarios where you used a chemical, you should be fine. If an *Investigator* asks a question that you feel could impact the case study negatively, simply state that you do not have access to that information, but will try to gather the necessary data. If necessary, you can step outside of your character role in these situations. In addition to the key points, recognize that you are playing a character role and it is acceptable to "act" the role (i.e. if you are a child, be a child). That said, there is a fine line between acting a role and taking things entirely too far. The *Investigators* need to be able to gather information – avoid creating a frustrating and potentially damaging situation that could impact the investigation.

Note: If the *Investigator* asks for select information that a *Case Individual* may not have access to, you may provide some additional guidance on who would have that information (i.e. laboratory technician). The individual portraying this role should remind fellow *Case Individuals* that an *Investigator* asking about laboratory test results should be referred to the *Laboratory Technician: Lucas Klumper* in a role appropriate manner. **Example** if lab results are requested or mentioned to a *Case Individual*, the response could be, "What do you mean lab tests? My daddy said they had guys up at the school checking stuff – do you mean that?" This should prompt the *Investigator* to check with the appropriate individual.

A. School Custodian: Chad DeJong

- The custodian did not do anything out of the ordinary on October 20th, except restart the boiler.
- The school's boiler had been dormant for the previous two months. It was serviced in August with commercial conditioner fluid and had not been started until the morning of October 20th.
- If asked what the conditioner fluid contains, the custodian should tell them that he/she will check and they should check back with him later.
- The commercial conditioner fluid contained nitrite and sodium metaborate.
- If asked if it is possible that the conditioner fluid got into the drinking water, the custodian can reveal the following information:
    - The boiler acts as a tankless water heater; there is a backflow check valve in place which **prevents** backflow of water from the boiler to the potable water.
    - The backflow check valve has not been checked in several years.
    - If asked, the custodian can agree to "check" the backflow check valve, and report back information later.
        - After a check, the backflow check valve on the boiler proved to be faulty and was stuck in the open position.

B. Principal: Francis Gordon

- Total Number of Students by Grade:
    - Grade 9: 77 (22 were Ill)
    - Grade 10: 75 (19 were Ill)
    - Grade 11: 82 (11 were Ill)
    - Grade 12: 70 (21 were Ill)
    -
- The meal schedule at the elementary school is as follows:
    - 11:30AM – 12:10PM: First Lunch Period
    - 12:00PM – 12:40PM: Second Lunch Period
    - 12:30PM – 1:10PM: Third Lunch Period
- All students with methemoglobinemia ate during the third lunch period.
- The soup was prepared from a commercially canned product that was taken directly from the can and heated before being served.
- The hot water boiler was serviced in August. The principal is unsure if any type of chemical was added.
- The boiler had not been started since August (until the morning of the incident).
- The boiler acts as a tankless water heater; there is a backflow check valve in place which prevents backflow of water from the boiler to the potable water.
- The backflow check valve has not been checked in several years.

C. Cafeteria Staff Member: Naomi Thompson

- Soup was prepared from ready-to-serve cans, which were diluted with water and enriched with a commercially prepared flavor enhancer.
- Water was added from the cold-water tap in the cafeteria.
- Other items served include cinnamon rolls, crackers, and salad.
- Two pots of soup were prepared for the three lunch periods. First Lunch period students were served the almost an entire pot of soup; Second and Third Lunch Periods were served from another pot of soup.
- Students stood in line and were served from a pot located in the front of the cafeteria.
- All students who asked for second helpings came through the line again.
- During the Third Lunch Period, the pot of soup ran low. To compensate, water was added to the soup remaining from the First Lunch Period. Water was added to the soup using the hot and cold-water tap in the cafeteria kitchen.
- As far as the cafeteria staff member is aware, nearly all students ate soup.

D. Cafeteria Manager: Jeremy DeFoe

- Soup was prepared from ready-to-serve cans, which were diluted with water and enriched with a commercially prepared flavor enhancer.
- Other items served include cinnamon rolls, crackers, and salad.
- Water was added from the cold-water and hot water taps in the cafeteria kitchen.
- All students with methemoglobinemia ate during the Third Lunch Period.
- During the Third Lunch Period, the pot of soup ran low. To compensate, water was added to the soup remaining from the First Lunch Period. Water was added to the soup using the hot and cold-water tap in the cafeteria kitchen.
- Students stood in line and were served from a pot located in the front of the cafeteria.

E. Physician: Dr. Askew

- The normal methemoglobin level in the blood is less than 2%.
- Of the 73 students, 31 were hospitalized with methemoglobin levels of greater than 20%; the highest level found was 47%. These students were treated with supplemental oxygen and intravenous methylene blue.
- The remaining 32 students had methemoglobin levels of less than 20%; these students were treated and sent home.
- Manifestation of symptoms among the 73 children included cyanosis (79%), nausea (69%), abdominal pain (68%), vomiting (66%), and dizziness (52%).
- All patients recovered fully within 36 hours with no complications.

F. Laboratory Technician: Lucas Klumper

The laboratory technician can provide Investigators with important laboratory test results of potential agents causing the disease outbreak. If there is important data that the Investigators require to formulate their hypothesis, they should specifically request this information.

The laboratory test results that are most likely to be requested include the following:

Analysis of Diluted Soup Served to Students on October 20th (left-over):
Nitrites Level: 459 parts per million
Sodium Metaborate: Trace amounts

Analysis of Undiluted Soup from the Original Container:
Nitrites Level: 2.0 parts per million
Sodium Metaborate: None

Analysis of Flavor Enhancer
Nitrites Level: 2.2 ppm

Water from the Hot Water Tap in the Cafeteria Kitchen:
Nitrites Level: 4 – 10 ppm
Sodium Metaborate: Trace amounts

Water from the Cold Water Tap in the Cafeteria Kitchen:
Nitrites Level: 0 ppm

Analysis of Backflow Check Valve on Boiler (Prevents backflow of water from the boiler to the potable water system)
Test Result: Valve is faulty and stuck in the open position.

These results will not be provided in paper format; please verbally communicate results to the *Investigator*.

G. Hospitalized Child 1: Ginger Rogers

- Student ate lunch from 12:30PM – 1:10PM.
- Student was at the front of the line.
- Student went back for a second bowl of soup.
- Student noticed that her second bowl of soup had a funny taste.
- Student is currently taking asthma medication.

H. Non-Hospitalized Child 2: John Wayne

- Student ate lunch from 12:30PM – 1:10PM.
- Student was in the middle of the line.
- Student went back for a second bowl of soup.
- Student noticed that his second bowl of soup had a funny taste.
- Student is currently taking an antibiotic for a sinus infection.

I. Teacher (10th Grade English): Perri Farr

- The lunch schedule at school is as follows:
  - 11:30AM – 12:10PM: First Lunch Period
  - 12:00PM – 12:40PM: Second Lunch Period
  - 12:30PM – 1:10PM: Third Lunch Period
- All students with methemoglobinemia ate during the Third Lunch Period.
- Teacher did not notice where the students were in the lunch line.
- None of the students that were ill were from the second lunch period.
- The students had not been ill prior to this event.

J. Non-Hospitalized Child 3: Adrian Monk

- Student ate lunch from 12:30PM – 1:10PM.
- Student was in the middle of the line.
- Was in line behind his friend, John Wayne and had to wait for Ms. Thompson to bring more soup.
- Said his soup had a funny taste.
- Student is not currently taking medication.

K. Hospitalized Child 4: Makayla Quinn

- Student ate lunch from 12:30PM – 1:10PM.
- Student was at a doctor's appointment and returned for lunch late; there was no line for her to wait in.
- Student did not ask for seconds.
- Student did notice that her bowl of soup had a funny taste.
- Student is currently taking asthma medication.