The Fatal Flu

These questions are meant to help you research the background information you will need to evaluate this current outbreak of severe pneumonia. Answer the following questions as you go through the Fatal Flu Case Study. We will not collect and grade this work sheet.

The case study can be found by going to:
http://instruct1.cit.cornell.edu/courses/biomi290/microscopycases/

Part 1 Questions

1.1 What are the symptoms of this "severe acute respiratory syndrome" ?

1.2 What types of pathogens could be responsible for community acquired pneumonia?

1.3 What tests are recommended for the diagnosis of this severe acute respiratory syndrome?

Part 2 Question:

2.1 In general, what information does a Gram stain give you?

2.2 Fill in the Gram stain results below.

	Patient 1	**Patient 2**	**Patient 3**	**Patient 4**
Sputum sample				

2.3 These results should help you narrow the list of potential pathogens. What pathogens can you rule out as a result of the Gram stain results?

Part 3 Questions

3.1 In general, what information does a direct fluorescent-antibody assay (DFA) test give you?

3.2 Fill in the direct fluorescent-antibody assay test results below.

	Human RSV	**Rhinovirus**	**Influenza**	**Human adenovirus**
Patient 1				
Patient 2				
Patient 3				
Patient 4				

3.3 What do these results indicate?

Part 4 Questions

4.1 In general, what information do Electron Micrographs give you?

4.2 Fill in the Electron Microscope results below.

	Cell culture line A	Cell culture line B	Cell culture line C
Patient 1			
Patient 2			
Patient 3			
Patient 4			

4.3 What do these results indicate?

Your Conclusion: What do you think is causing the outbreak? What is the evidence for your conclusion? Why are these results somewhat unexpected?

Time is running out-- the World Heath Organization (WHO) needs your recommendation now! As an epidemiologist, you must now write a report to the WHO on your research.

Your report should include the following:

- What did each set of results tell you? Do all the results agree?
- What do you think is causing the outbreak? Why is the culprit somewhat unexpected?
- Do you think these are conclusive results? If yes, explain why. If not, what would you recommend next to conclusively prove the etiological agent of this outbreak?
- Why did this pathogen spread so quickly? What do you recommend to control further spread?

Your answer should be thoughtful and well organized, and it must incorporate the results you obtained in this case study. That is, use the information from your results and in the references to support your final conclusion.