

Outbreak timeline analysis activity

Activity Description (worksheet below)

Student goals:

1. To analyze news reports of an outbreak in order to perform a rudimentary epidemiological survey.
2. To analyze news reports and identify human behavioral/organizational contributors and responses to an infectious disease outbreak
3. To propose hypotheses for the the impact of human behaviors and responses to outbreaks on the spread and containment of a disease.
4. To identify important gaps in media coverage of an outbreak and consider the implications of these gaps.

Background for Activity 1: Reingold, 1998. (optional)

Article link: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2627658/pdf/9452395.pdf>

Assignment in preparation for the activity (to be assigned in class 04)

- Break students into groups to cover the entire outbreak or a significant portion of the outbreak timescale. For example, with a class of 25 and an outbreak of 6 months, make one group for each month (5 groups of 4, 1 group of 5)
- Assign each group a time period.
- For each time period, each student must collect 5 individual news reports. The news reports can be from any source and can be about anything related to the outbreak. Encourage the groups to work together so that no one overlaps with each other. Become familiar with the articles and bring electronic or paper copies of the articles to class.

In-Class Activity

Activity 1: follow the spread of the disease through news reports (learning goal 1: 20-30 minutes)

- Students will read their articles and report back to the small group to create a short time line on a piece of butcher paper. Include each major event covered by the articles on the timeline.
- Include in the timeline analysis the following points (worksheet?)
 - How many people are infected?
 - Where are the infected people?
 - Is the infection spread or contained?
 - Are there specific behaviors associated with the spread of the disease?
 - Using the information in your articles, what hypotheses can you make about the source and/or of the outbreak? How would you test these hypotheses?
 - Do the articles provide enough information for you to recommend an intervention to stop the outbreak? If so, what do you recommend? If not, what additional information would you like to be able to make a recommendation?

Activity 2: Analyze the behavioral contributors to the spread or containment of the disease. Identify cultural, societal, economic etc fallout of the disease (learning goal 2: 45-60 minutes)

- The goal for each of articles is to come up with a summary statement of how human behavior and interaction/interference can negatively and/or positively impact the spread of the disease. In addition the goal is to identify human behavioral responses to the outbreak and then to predict how those responses might either be health-promoting, health-hindering, or neutral.
- Quantitative analysis
 - The students can also come up with a scoring rubric for each of the articles and attempt to quantify the types of behaviors or responses associated with the outbreak. For example, the students might predict that there is a significant economic burden to the population as a result of the outbreak. To test this hypothesis, the students could ask each group to count the number of articles within each group to see how many specifically address economic outcomes or contributors the spread of the disease.
 - Because of the complexity of outbreaks, there are likely to be a number of varied factors, and the class as a whole can come up with some of these factors. Other potential categories include cultural beliefs, religious beliefs and practices, political unrest, public health, global governmental function/dysfunction, NGO response, infrastructure,
 - Once each group has tallied the number of articles from each time period that is related to each of the factors chosen, enter each tally into a spreadsheet or statistics software program to create a bar graph of the month-by-month media focus.

Discussion points - (worksheet below)

- How would you categorize the media coverage of the outbreak during your timeperiod of interest? Identify major themes within the articles, and use specific examples from your articles to support your categorizations.
- Why do you think the themes in media coverage in the previous question were predominant during your outbreak analysis period?
- According to the graph of the entire outbreak coverage, what is the pattern or trend of media focus this outbreak? How does this compare to what you expected the media coverage of an outbreak to focus on?
- What are the pressures (due to the outbreak or peripheral to the actual biology of the outbreak) that you think contribute to any shifts in coverage focus that you saw across the months?
- What are the limitations of your analysis? What are the limitations of the media coverage during your time period? How do these limitations negatively and positively impact the public response to the outbreak?

Ebola Outbreak Timeline Analysis

Part 1: Using the articles that you and your group collected, reconstruct an epidemiological profile of the outbreak during your time window. Provide the following information:

How many people are infected?

What are the characteristics and demographics of the groups of people who are infected?

Where are the infected people? Is there anything unique about the location of the infected people?

Are there specific behaviors associated with the spread of the disease?

Using the information available in your articles, what hypotheses can you make about the outbreak? For instance, can you make any hypotheses about the mode of transmission or the source of the outbreak? How would you test these hypotheses?

Do the articles provide enough information for you to recommend an intervention to stop or slow the outbreak? If so, what do you recommend? If not, what additional information would you like to be able to make a recommendation?

Part 2: Quantify the behavioral contributors to or outcomes of the outbreak. As a group, identify 2-3 themes that are covered in the articles. Use specific examples from your articles to support your categorizations.

Why do you think the themes in media coverage were predominant during your time period?

Part 3: With the rest of the class, choose 3-4 themes of media coverage and quantify the number of articles from your time period that fit into those categories. As a class, prepare a graph representative of the profile of media coverage of the outbreak. Use the graph to answer the following questions:

What is the pattern or trend of media focus on this outbreak? How does this compare to what you expected the media coverage of an outbreak to focus on?

What are the pressures that you think contribute to any shifts in the focus of the media coverage?

What are the limitations of the media coverage during the outbreak? How do these limitations negatively and positively impact the public response to the outbreak?