## Lesson Plan

**Subject(s):** Public Health (Communicable Diseases)  
**Unit(s):** Social Sciences  
**Grade(s):** 9-12

### Lesson Elements

1) **Learning Standards Addressed**  
- Analyze content concerning the nature and spread of various communicable diseases across the globe in order to understand some key components of public/global health and development  
- Practice critical thinking and discussion skills by comparing and contrasting disease profiles

2) **Learning Targets**  
- Students will be exposed to an array of current issues in the field of public health and disease prevention  
- Students will exercise critical thinking skills in order to identify factors related to the spread and containment of diseases (Ebola, HIV/AIDS, Malaria, Dengue)  
- Students will engage in constructive discussion in order to better understand social, cultural, and environmental factors that impact public health issues

3) **Relevance/Rationale**  
- Encourage informed citizenry and build youth knowledge base of health-related global issues

4) **Formative Assessment Criteria for Success**  
- Instructor assessment of student participation and presentations that breakdown the content of their respective cases (Depending on the size of the class, students may work in pairs or small groups.)

5) **Activities/Tasks**  
- Read the case write-up or article assigned to your pair or group  
- Using the worksheet supplied, analyze the content of the case material provided  
  (*This can be a collaborative process for students – provide supplemental materials like butcher paper and markers for notes or diagrams to be used during presentation/talk-back, if appropriate)*  
- Each small group or pair gives a summary of their case and the factors they identified as important.  
- Have students discuss the various themes, similarities/differences that they heard during group presentations (This could be done in small groups or as a full class)

6) **Resources/Materials**  
- WAC-DC Webinar: Understanding the Ebola Crisis  
  [https://www.youtube.com/watch?v=6jKq_PiD870](https://www.youtube.com/watch?v=6jKq_PiD870)  
- Disease Overviews and Case Articles (See below)

   National Institutes of Health (NIH) Curriculum Supplement Series on Infectious Disease  

7) **Equity and/in Access**

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1 Lesson plan created/compiled by WAC-DC Spring 2015 Global Education Graduate Associate, Tony Harris. Neither the author nor WAC-DC claim ownership over materials cited from non WAC-DC external sources. This resource has been made publicly available explicitly for noncommercial educational purposes only.
- Design groups/pairs in a way that enables bilingual exploration of materials, if appropriate/necessary
- If the group’s reading comprehension skills are collectively weak, an instructor (or two) could work directly with student group(s) to review the information and conduct a joint analysis.

8) Modifications/Accommodations
- Written disease overviews could be replaced with instructional YouTube video clips to make the activity/work flow more suitable for auditory learners.
- If students aren’t able to effectively engage in group discussion (or if there is not enough time to facilitate a larger dialogue), the group discussion questions could be slightly modified and serve as prompts for students to write personal reflections.

Supporting Materials

Cases/Diseases to be covered…

1) Ebola

*Overview*

Ebola is one type of viral hemorrhagic fever. The Ebola virus may be transmitted from animals or bats to people or from people to people. Symptoms usually begin to show between seven and nine days after original contact with the virus; however, symptoms have been known to begin as early as two days or as late as twenty-one days after contact. Symptoms include fatigue, fever, headache, muscle/joint pain, vomiting, diarrhea, rash, and often abdominal pain. Cases that result in excessive internal bleeding and/or organ failure are likely to be fatal. Currently, there is no vaccine for Ebola. Those that are infected may be given supportive treatment in the form of IV fluids, blood transfusions, additional oxygen, and antibiotics (if there is a bacterial infection; antibiotics will NOT treat the virus). The massive outbreak of Ebola in West Africa (namely Liberia, Sierra Leone, and Guinea) has led to increased research on experimental, curative treatments. Effective prevention relies upon widespread diagnoses procedures, quarantining/isolating the infected, and rigorous sanitation practices (amongst professionals and the general public). (Adapted from: https://www.internationalsos.com/ebola/index.cfm?content_id=400&language_id=ENG)

*Liberia Case/Article (May 2014 onward)*

https://www.internationalsos.com/ebola/index.cfm?content_id=397&language_id=ENG (Focus on Background section; students may browse maps/updates if time permits)

2) HIV/AIDS

*Overview*
HIV stands for Human Immunodeficiency Virus. AIDS stands for Acquired Immunodeficiency Syndrome. The human immune system is not able to get rid of the HIV virus. HIV attacks key cells (CD4 and T cells) in one’s immune system. The virus uses these cells to reproduce itself and progressively destroys one’s immune system overtime. Left untreated, HIV may develop into AIDS. AIDS is understood as a syndrome because it is a complex condition that may include/exhibit multiple symptoms and complications. Though no cure for HIV currently exists, antiretroviral therapies (ARTs) have been developed in order to combat HIV and prevent its progression. HIV/AIDS is a major global health issue that affects countless people around the world. In the United States, HIV/AIDS affects approximately three times more Hispanics and seven times more African-Americans than whites. (Adapted from: http://www.niaid.nih.gov/topics/hivaids/understanding/Pages/Default.aspx)

Cambodia Case/Article (December 2014)

3) Malaria

Overview

Malaria is a disease caused by a parasite (plasmodium) that lives part of its life in mosquitoes and part of its life in humans. Malaria is a communicable disease responsible for more than one million human deaths each year. There are between 350 and 500 million cases of malaria across the globe every year. This disease thrives in tropical areas of Latin America, Asia, and Africa. Though malaria has essentially been eradicated in the United States and other regions with temperate climates, it affects hundreds of those that travel to malaria-endemic areas of the world each year. Malaria is most commonly transmitted to humans by mosquitoes, though the parasite may also be transmitted through blood transfusions and organ transplants. The three primary symptoms of malaria (chills, fever, and sweating) take place on a cyclical or recurrent basis. Those that survive malaria often gradually build immunity to the disease; since they carry the infection, however, they may also act as reservoirs for further transmission. Medicines that prevent malaria are largely popular amongst those that travel to malaria-endemic areas. There are also a wide range of measures that may be taken to prevent malarial transmission. (Adapted from: http://www.niaid.nih.gov/topics/malaria/documents/malaria.pdf)

Lao PDR (Laos) Case/Article (June 2014)
http://www.who.int/malaria/areas/greater_mekong/lao-pdr-outbreaks-remain-worrisome/en/

4) Dengue
Overview

Dengue is a mosquito-borne infection that is prevalent in tropical and sub-tropical regions across the globe. Severe dengue, or Dengue Hemorrhagic Fever, first emerged in South Asia more than sixty years ago. Dengue remains a significant threat to the health and well-being of people (both residents and visitors) in Asian and Latin American countries. Four variations of the dengue virus exist; some variations are more popular in particular regions of the world than others. Proper hydration and medical monitoring are crucial to successfully treating dengue fever. Though there is currently no vaccine for dengue, there are multiple steps that can be taken to prevent/minimize its spread. Such methods include: proper waste disposal, application of insecticides, maintenance of water storage containers, and use of personal/household protection devices (window screens, mosquito netting, etc.). (Adapted from: http://www.who.int/mediacentre/factsheets/fs117/en/)

Tokyo Case/Article (September 2014)

Guiding Analysis Questions (Student Analysis Worksheet)
1) In what context is your case located? (Be as specific as possible. Does the article mention local areas, or just country names? Does it reference a particular timeframe?)

2) Who are some of the actors involved in combatting the disease profiled in your article?

3) Does the article mention challenges encountered by these actors in their efforts to prevent the spread of disease? If so, what are some of these challenges?

4) Are any particular groups of people identified as vulnerable or susceptible in your article? If so, what groups? Why do you think these groups may be more vulnerable than others?

5) What other questions do you have about your article? About the disease mentioned in your article? Where might you go to find more information?

Guiding Questions for Group Discussion

1) What are some similarities and differences amongst the cases that we reviewed?

2) Which disease were you most familiar with before this activity? Why might you be more familiar with one disease over another?
3) Are any of these diseases impacting our own communities? If so, which ones? How might we get more informed and/or more involved?