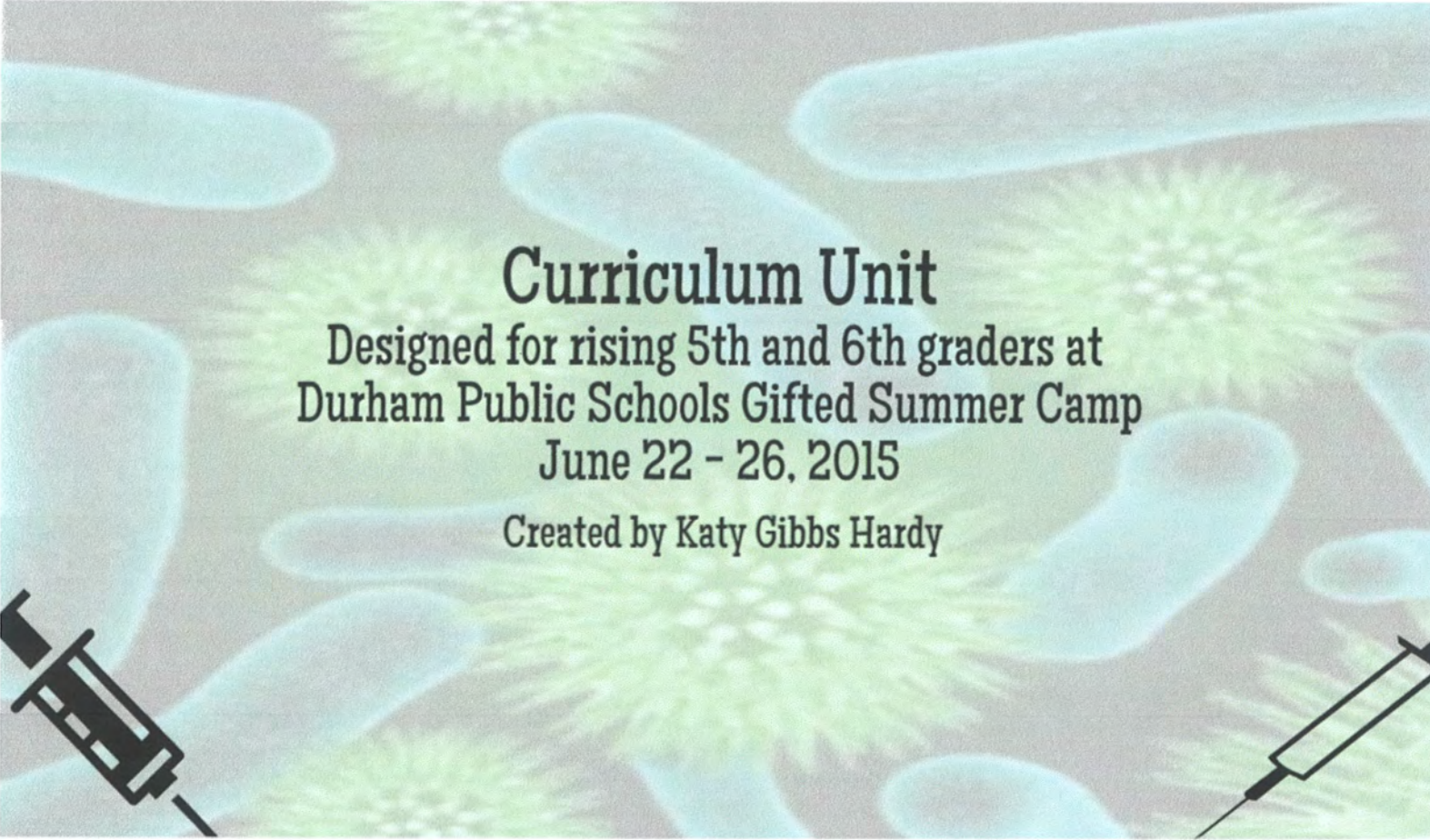




Contagion

Responsibility Influences Decisions



Curriculum Unit

Designed for rising 5th and 6th graders at
Durham Public Schools Gifted Summer Camp
June 22 - 26, 2015

Created by Katy Gibbs Hardy

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Rationale

Contagion is a unit that focuses on the social responsibility that comes along with making decisions related to public health, but with particular regard to contagious diseases. It is a unit with 4 main lessons, and 2-3 mini-lessons for each topic. This gives the educator the ability to determine the length of the unit and which supporting lessons to use for their specific group. Contagion aligns with the North Carolina Essential Standards for 8th grade science due to its focus on contagious diseases, but is appropriate for upper elementary to high school. Educators would be able to easily modify the lessons to fit their grade level focus. Contagion addresses standards in science, reading, and writing.

The overarching concept presented throughout these lessons is that responsibility influences decisions. Responsibility is a complex and abstract concept that can be used when teaching a multitude of curriculum topics and ideas. It is a layered concept that rarely leads to one correct answer, thus increasing the higher order thinking skills of students participating in each of these lessons. Gaining and understanding of responsibility and how it leads to people making decisions can be a powerful learning tool for students. In addition, the concept and curriculum work together to get students to begin thinking about their own health, as well as, their responsibility in those decisions.

Students are growing up in a world that is more interconnected than it has ever been, but with that comes the added level of responsibility for both the individual and society. Contagious diseases are able to spread around the globe faster and more efficiently than they ever have in the past. With the ability to travel around the globe in as little as a day, contagious diseases should be of utmost concern to society.

Differentiation

This unit is specifically designed to meet the learning needs of gifted students with emphasis on advanced curriculum, learning processes, and a self-directed final product. While this unit is designed primarily for gifted students, it could be easily adapted to a general classroom with little modification.

The curriculum for this unit was written for rising 4th – 6th graders, but the content is highly advanced and requires a large amount of background knowledge from the students. The North Carolina Essential Standards in science for this curriculum is addressed in 8th grade science class due to its complexity. The unit focuses on the transmission and spread of contagious diseases, and this content requires knowledge of body systems, cell

structures, as well as, geographical knowledge about areas around the globe. Body systems and cell structures is introduced in 5th grade and the remainder of the required background knowledge is usually taught throughout middle school. The articles written about this subject matter are more complex than the standard material read by 4th – 6th graders. The learning processes used were differentiated for gifted students and designed to increase higher order thinking skills through the use of open-ended questions and discussions. Students were required to synthesize information learned throughout the unit from the readings, videos, and discussions.

At the culmination of the unit, students are required to create an infographic about a contagious disease of their choosing. “An infographic (information graphic) is a representation of information in a graphic format designed to make the data easily understandable at a glance.”¹ Students were to use the knowledge learned throughout the week, as well as, what they researched to create an informative infographic that could easily convey the information about their specific disease. This is a self-directed final product that students were to create independently.

Gifted Population

The gifted population this unit was originally designed for were students identified as Academically and Intellectually Gifted in the Durham Public Schools system. It is a diverse group of students academically, ethnically, and socioeconomically with a wide range of interests. In this class, there was a wide range of academic ability, from slightly above grade level to extremely gifted.

Since this was a summer camp for gifted students, all of the students participating in this course were excited to be there and learn the content. Many of the students used their background knowledge of their own sicknesses to help them develop an understanding of how sicknesses spread, as well as, their own personal responsibility when they are sick.

These students were very interested in the ramifications regarding public health and were quite outspoken in their thoughts related to personal responsibility, in addition to the responsibility of their parents with regards to their own public health.

¹ <http://whatis.techtarget.com/definition/infographics>

Goals and Outcomes

Content Goal: To develop an understanding of infectious diseases and their impact on society.

Students will be able to...

- Gain information about specific contagious diseases of importance to the global community, such as ebola, the measles, or the flu.
- Explain how infections are transmitted and spread around the globe
- Use the knowledge of diseases and their transmission to help gain an understanding of the importance of vaccinations.
- Synthesize the information about infectious diseases to discuss the impact on society and the role of responsibility when making decisions regarding health.

Process Goal: To develop reasoning skills related to the application of science in relation to society.

Students will be able to...

- Compare and contrast, summarize, and make generalizations based on what they have read
- Explain cause and effect relationships that are present and how they affect the given topic
- Engage in cooperative groups while analyzing content to determine relevant information to present to the class
- Interpret information and generate questions regarding specific scientific content

Concept Goal: To understand the concept of responsibility

Students will be able to...

- Use information from the week to gain an understanding of the concept of responsibility
- Use prior experiences to help define responsibility
- Transfer knowledge about contagious diseases to understand the responsibility required to make decisions regarding public health
- Develop an understanding of how responsibility leads one to make decisions

Assessment Plan

Throughout the unit, students are given multiple opportunities to show evidence of their learning through think sheets, post-it note quick writes, assignments, and discussion. For each lesson there is the opportunity to formative assessments throughout to gain an understanding of what students are understanding and how their thinking is developing. Prior to most discussions, there is the opportunity for students to jot their thoughts down on

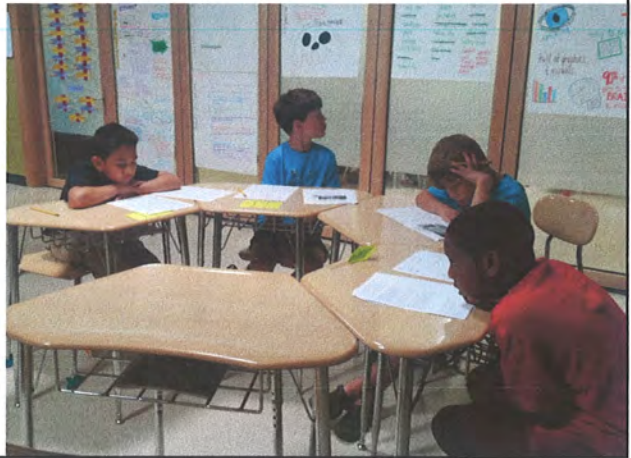
post-it notes to prepare. For each reading, students are asked to annotate and complete a close reading of the text, thus providing evidence of their individual thinking.

At the end of the first lesson, students are asked to write a quick paragraph synthesizing the information they learned throughout that lesson. Throughout the Taba lesson, students are asked to group, classify, and regroup on the learning sheet that they can then use to help aid in group discussion. During the Kohlberg moral dilemma lesson, students use the non-fiction article detective graphic organizer prior to participating in the class discussion. There are other similar examples of formative assessments that are used throughout the remainder of the lessons.

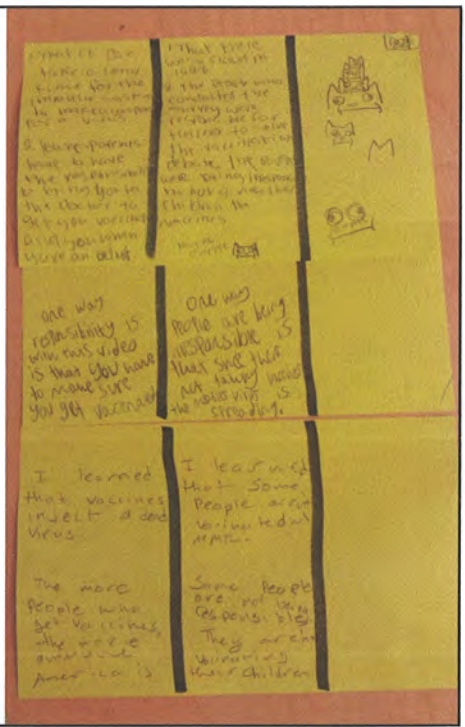
Students also work all week on a performance task that will serve as their summative assessment. The performance task requires students to use the knowledge that they gain throughout the lessons to create an infographic about a specific contagious disease. The infographic was to include basic information about the disease and how the responsibility of those infected and the surrounding community affect decisions regarding the disease.



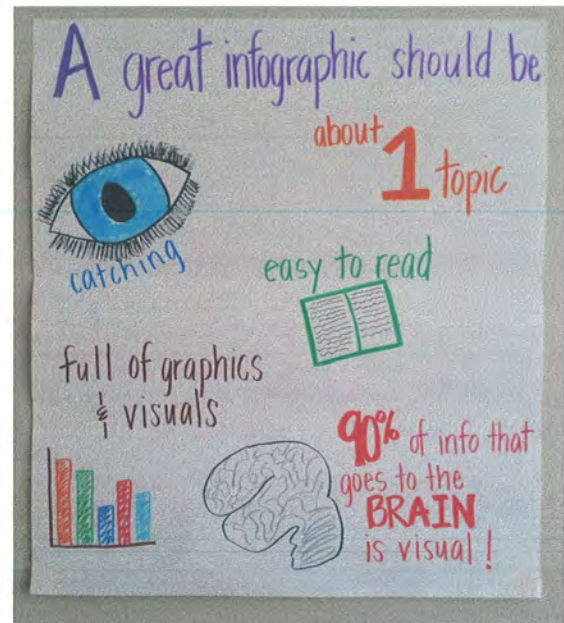
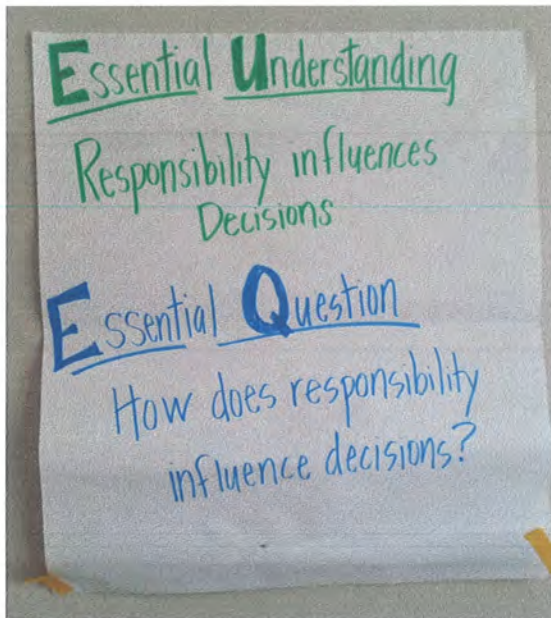
Students working independently and in groups during week of gifted camp, on performance task, moral dilemma, and research.



Formative assessments – post-it note responses to videos and discussions.

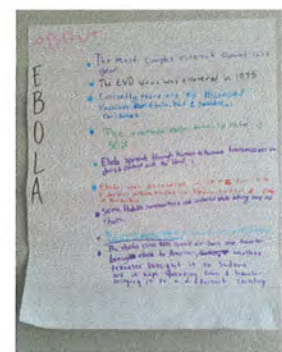
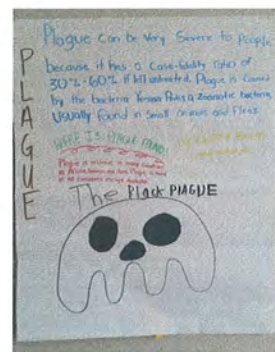
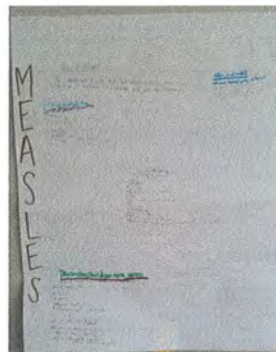


Teacher Made Anchor Charts



Anchor charts made by student groups after reading articles regarding their topic.

Anchor charts and presentations used as a formative assessment piece.



Infographic Performance Task Rubric

Components	Does Not Meet the Standard 0 Points	Partially Meets the Standard 1-2 Points	Meets the Standard 3-4 Points	Exceeds the Standard 5 Points	Score
Title and Labels 10 %	The title and labels are missing or do not represent the topic being covered.	The title and labels do not accurately convey the topic that is being covered.	The title and labels accurately represent the topic that is being covered.	The title and labels accurately and appropriately represent the topic that is being covered	
Accuracy of Information Presented 40 %	Information presented is not accurate, incomplete or contains many errors.	Information presented is partially completed, or is complete with errors.	Information presented is completed and accurate with appropriate support.	Information presented is complete and accurate with ample and appropriate support.	
Graphics and Illustrations 20 %	Graphics and illustrations are not appropriate for the topic or are missing.	Graphics and illustrations attempted but does not represent the topic or are partially completed.	Graphics and illustrations are appropriate and represent the topic.	Graphics and illustrations are appropriate, thoughtful, and go above and beyond to represent the topic.	
Formatting 20 %	60 % or more of the infographic is text Sizes, shapes, and colors are ineffective or inappropriate.	Approximately 50 % of the infographic is text and 50 % is graphics. Most sizes, shapes, and/or colors are effective and are representative of the topic.	Approximately 40 % of the infographic is text and 60 % is graphics. Sizes, shapes, and/or colors are effective and representative of the topic.	Approximately 30 % of the infographic is text and 70 % is graphics. Sizes, shapes, and/or colors are effective, attractive, and representative of the topic.	
Neatness 10 %	The infographic is sloppy and/or illegible.	The infographic is difficult to read.	The infographic is legible and generally neat.	The infographic is very neat and easy to read.	

Total Score: _____

Comments:

TEACHER NAME		Lesson #
Katy Gibbs		1
MODEL	CONTENT AREA	GRADE LEVEL
Questioning	Practicum Lesson Language Arts and Science	5-6
CONCEPTUAL LENS		LESSON TOPIC
Responsibility		The transmission of infectious diseases
LEARNING OBJECTIVES (from State/Local Curriculum)		
Language Arts – Common Core Curriculum – Informational Text 4.RI.1 – Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. 4.RI.2 – Determine the main idea of a text and explain how it is supported by key details; summarize the text. 4.RI.3 - Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text. Language Arts – Common Core Curriculum – Speaking and Listening Area SL.4.1 - Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly. SL.4.4 - Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace. Science Essential Standards 8.L1 – Understand the hazards caused by agents of diseases that affect living organisms. 8.L.1.1 – Summarize the basic characteristics of viruses, bacteria, fungi, and parasites relating to the spread, treatment, and prevention of disease. 8.L.1.2 – Explain the difference between epidemic and pandemic as it relates to the spread, treatment, and prevention of disease.		
THE ESSENTIAL UNDERSTANDING (What is the overarching idea students will understand as a result of this lesson?)		THE ESSENTIAL QUESTION (What question will be asked to lead students to “uncover” the Essential Understanding)
Responsibility influences decisions		How does responsibility influence decisions?
CONTENT KNOWLEDGE (What factual information will students learn in this lesson?)		PROCESS SKILLS (What will students be able to do as a result of this lesson?)
- Students will learn how a disease is defined. - Students will be able to differentiate between bacteria and virus. - Students will learn what constitutes a germ/disease and how it enters the body - Students will gain knowledge about ebola, the measles, and the plague. - How it is transmitted/spread - Effects of each disease - Vaccination, treatment, or currently untreatable.		- Students will be able to compare and contrast, summarize, and make generalization - Students will be able to classify a disease - Students will learn how germs invade the body and the resulting infections are fought. - Students will be able to explain the cause and effect relationships present. - Students will be able to read text appropriate to their reading levels. - Students will engage in cooperative groups analyzing content to determine relevant information. - Students will present to their peers in small groups - Students will participate in group discussion regarding specific topic of disease - Students will interpret information and generate questions

GUIDING QUESTIONS

What questions will be asked to support instruction?

Include both "lesson plan level" questions as well as questions designed to guide students to the essential understanding

Pre-Lesson Questions:	During Lesson Questions:	Post Lesson Questions:
- List as many diseases/sicknesses that you can think of. What do the items on the list have in common? Are there any commonalities? Differences? - How do people get sick? - What precautions do people take to avoid getting sick? - How does being/getting sick impact your life? What about your parents lives?	- How do people get sick? - What precautions do people take to avoid getting sick? - How does being/getting sick impact your life? What about your parents lives? - What did you have to consider when constructing your group's message? Why? - Why did we read and present on these 5 topics? - How are they connected? - Compare and contrast viruses and bacteria. - How are epidemics and pandemics related? - Which is more difficult for a society to handle overall, why? - If you get sick, do you feel isolated? Why do you think someone would feel this way? - Who is responsible for deciding what kids/adults can do when they are sick? Does it matter who is responsible? Why or why not?	- How would you define virus in your own words? Bacteria? - If you had to get sick, would you rather get sick by a virus or bacteria? Justify your answer - If we know that viruses and bacteria cause us to be sick and are contagious, then why do you think people would choose not to get vaccinated? - Who should be allowed to give input on how/when/who should get vaccinated? - How does being a more global society change the level of seriousness given to contagious diseases? - How can/should society handle epidemics and pandemics? Is that something society should prepare for? - Who is responsible from stopping the spread of contagious diseases? Why? - Responsibility influences the decisions that people make with regards to themselves, families, and society. How does a person's responsibility influence their decisions when based on public health or their own health? - Should the government or society require individuals get vaccinated? Why? Are there individuals that would not agree with this? Why? - It's never good to have an epidemic/pandemic; however, if one had to occur, would it be better for it to occur in 2015 or in 1815? - Who is responsible for ensuring that we do not have an epidemic/pandemic? Have their roles changed over the years? How and why? - What is a person's individual responsibility with regards to sickness? Does it change depending on your age? Why or why not?

DIFFERENTIATION

(Describe how the planned learning experience has been modified to meet the needs of gifted learners. Note: Modifications may be in one or more of the areas below. Only provide details for the area(s) that have been differentiated for this lesson.)

Content	Process	Product	Learning Environment
The reading and content is advanced for fourth grade and contains advanced vocabulary. Prior to reading the articles, the teacher will pre-teach several of the vocabulary words that appear in all articles. Students will also be given the choice to read independently or in a small group.	Students will be required to synthesize their content and material. As a group they will determine which information is required for the entire group to be knowledgeable about their reading. After synthesis, students will determine how to best get their information across to the other students. They will discuss as they read or when everyone is finished, depending on how the group chose to read.		Students are self-directed learners Teacher acts as a facilitator for the majority of the lesson

PLANNED LEARNING EXPERIENCES

(What will the teacher input? What will the students be asked to do? For clarity, please provide detailed instructions)

Engage and Connect - This phase focuses on piquing students' interest and helping them access prior knowledge. This is the introduction to the lesson that motivates or hooks the students.

Hook: When students arrive there images will be displayed on the smart board of different viruses and bacteria under the microscope. Students will spend the first few minutes examining the various pictures so that they can discuss these later in the lesson.

Teacher will ask students what they believe they are looking at and whether or not it is involved in their life. These images will be used to spark discussion and show the complexity and (beauty to some) of the viruses and diseases. It's often a juxtaposition to how a virus is perceived.

Students will take 1 minute and jot down as many diseases/viruses that they can think of on their own. We will make a list of the diseases on chart paper.

- How many students have contracted one of the sicknesses on the board? Which ones?
- Of the diseases/viruses that have been contracted, what do they have in common?
- Who is responsible for making sure you don't spread your sickness to your friends? Explain

Questions to discuss before moving on in the lesson:

- *How do people get sick?*
- *What decisions have to be made when you are sick? Who is responsible for making those decisions?*
- *What precautions do people take to avoid getting sick? Why do they take those precautions? Who tells them to take these precautions?*
- *How does your responsibility for containing your sickness affect those around you?*
- *How does being/getting sick impact your life? What about your parents lives?*

Explore - In this phase, the students have experiences with the concepts and ideas of the lesson. Students are encouraged to work together without direct instruction from the teacher. The teacher acts as a facilitator. Students observe, question, and investigate the concepts to develop fundamental awareness of the nature of the materials and ideas.

Looking at the concept of responsibility:

- How would you define responsible/responsibility?
- What are some examples of you being responsible? an adult? a community?

Teacher will present information to students regarding:

- How a disease is classified
- How germs invade the body
- How infections are fought in the body

Explain - Students communicate what they have learned so far and figure out what it means. This phase also provides an opportunity for teachers to directly introduce a concept, process, or skill to guide students toward a deeper understanding.

Students will be split up into 5 groups. Each group will be given an article about a specific topic. It will be up to the students to decide if they want to read the article independently or read it together.

Article Topics: virus, bacteria, ebola, measles, plague

After reading the article, each group will determine the information that they will present to the rest of the class. In addition, each group will need to demonstrate the role of responsibility in their topic, such as who is responsible, what they are responsible for, and why.

Each student will make a mini-poster to help them explain their concepts to the remainder of the students. Each group member needs to have similar posters so that each group is given the same information; however, each group may determine how they wish to convey their message.

- ***What did you have to consider when constructing your group's message? Why?***
- ***What decisions did you have to make as a group?***
- ***How did the role of responsibility factor into what you shared with other groups? Why?***

Students will then split up into 5 new groups, with 1 representative from each group forming the new group. Each student will then have time to present their knowledge to the new group. Students will ask questions of each other.

- ***Why did we read and present on these 5 topics?***
- ***How are they connected?***
- ***How is the role of responsibility the same for each topic? How is it different?***

Students will watch a short video differentiating between viruses and bacteria.

<https://www.youtube.com/watch?v=7D0eIsuZC3w>

- ***What is the difference between viruses and bacteria?***
- ***How does knowing the difference influence your decisions? The decisions of a community?***

Students will be encouraged to write any remaining questions they have on the post-its.

Teacher will explain the difference between an epidemic and a pandemic at this point, so that students will be able to synthesize their current knowledge to evaluate the impact of these diseases on groups of people.

- **Epidemic:** a widespread occurrence of an infectious disease in a community at a particular time.
- **Pandemic:** an epidemic of infectious disease that has spread through human populations across a large region; for instance multiple continents, or even worldwide.
- **How are epidemics and pandemics related?**
- **Which is more difficult for a society to handle overall, why?**
- **How do you feel when you get sick? What are your personal feelings?**
- **Who is responsible from stopping the spread of contagious diseases? Why?**
- **How does this responsibility influence the decisions that people make with regards to themselves, families, and society? Explain**
- **What decisions have to be made by the community when an epidemic or pandemic are occurring?**
- **How does responsibility affect or influence these decisions?**

Elaborate —Allow students to use their new knowledge and continue to explore its implications. At this stage students expand on the concepts they have learned, make connections to other related concepts, and apply their understandings to the world around them in new ways

After all student groups have shared the class will come back together for a follow-up discussion. The following questions will be posed during this discussion.

Discussion Questions:

- **How would you define virus in your own words? Bacteria?**
- **If you had to get sick, would you rather get sick by a virus or bacteria? Justify your answer**
- **If we know that viruses and bacteria cause us to be sick and are contagious, then why do you think people would choose not to get vaccinated? How is this choice related to responsibility?**
- **Who should be allowed to give input on how/when/who should get vaccinated?**
- **How does being a more global society change the level of seriousness given to contagious diseases?**
- **How can/should society handle epidemics and pandemics? How is that something society should prepare for?**
- **Who is responsible from stopping the spread of contagious diseases? Why?**
- **Does this responsibility influence the decisions that people make with regards to themselves, families, and society? Explain**
- **What responsibility does the government have in requiring individuals to get vaccinated?**
- **What role does a school have in requiring children to get vaccinated?**
- **Why might a person disagree with a rule/law requiring a person to get vaccinated?**
- **It's never good to have an epidemic/pandemic; however, if one had to occur, would it be better for it to occur in 2015 or in 1815?**
- **Who is responsible for ensuring that we do not have an epidemic/pandemic? Have their roles changed over the years? How and why?**
- **What is a person's individual responsibility with regards to sickness? Does it change depending on your age? Why or why not?**

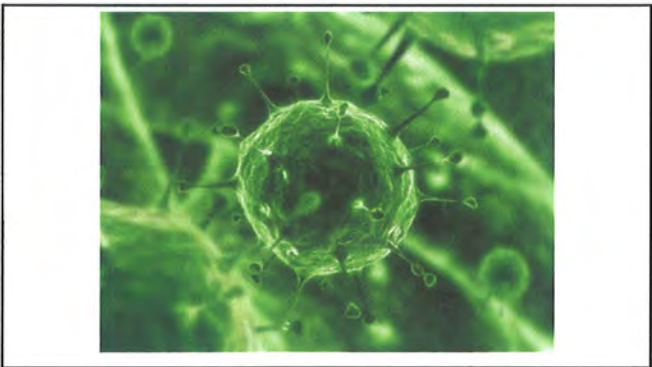
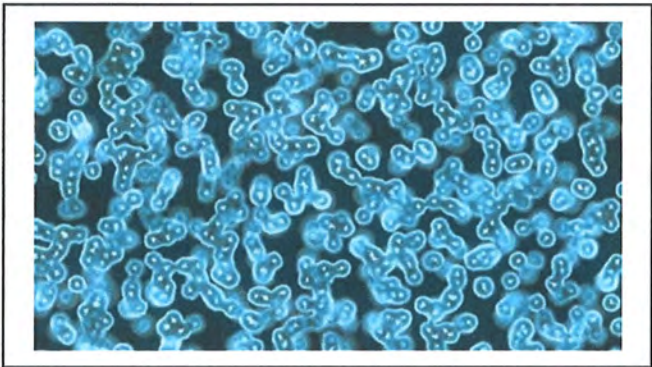
Evaluate: This phase assesses both learning and teaching and can use a wide variety of informal and formal assessment strategies.

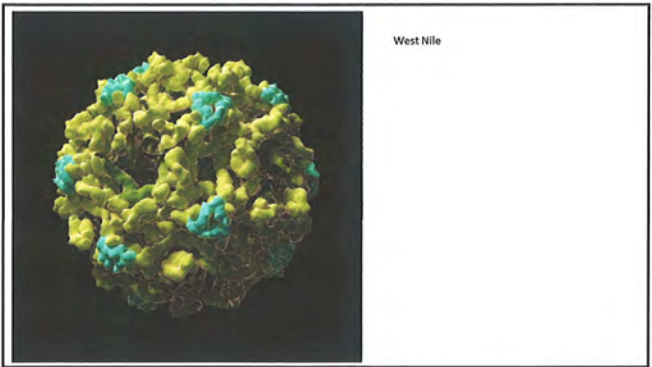
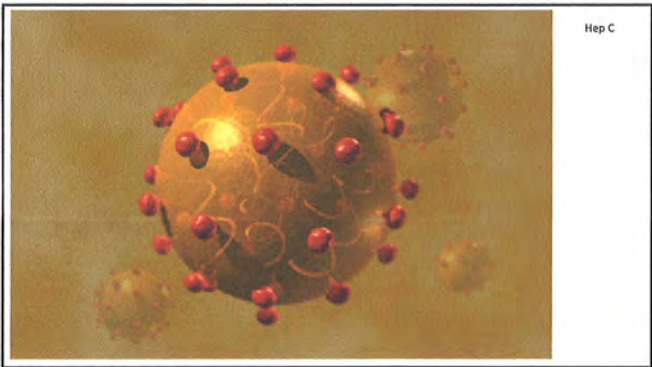
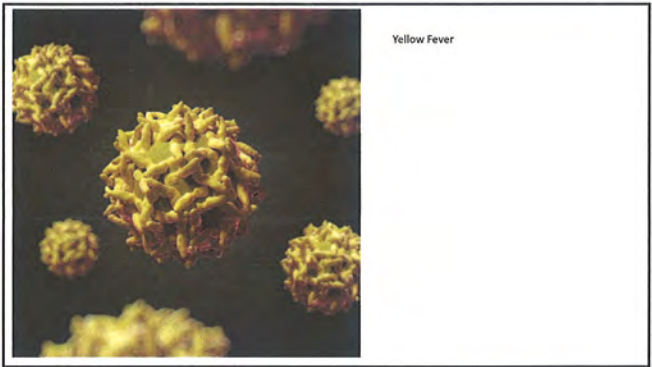
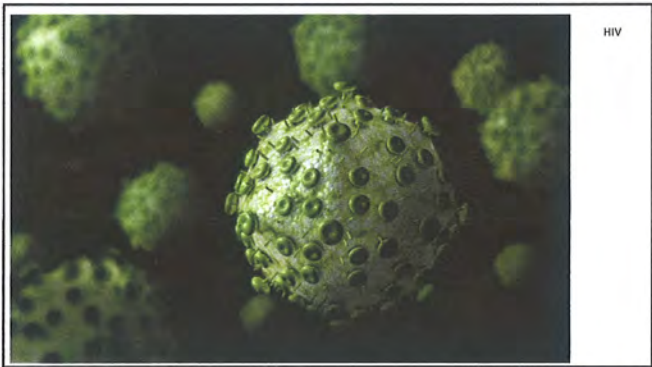
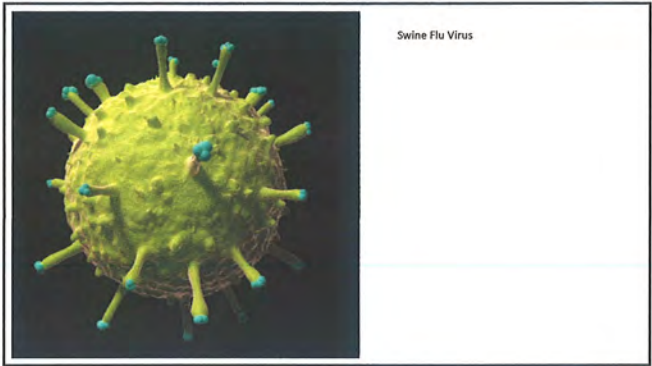
Students will write a quick paragraph answering the following questions:

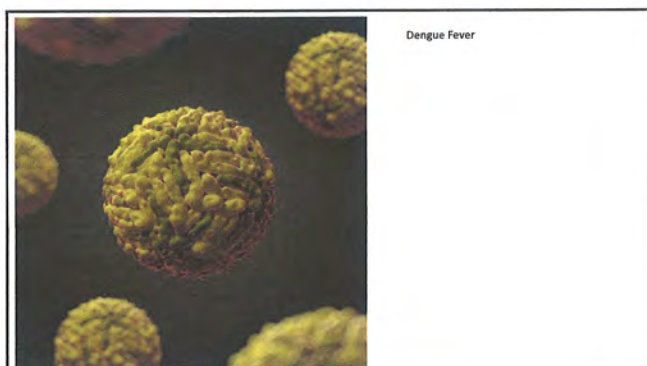
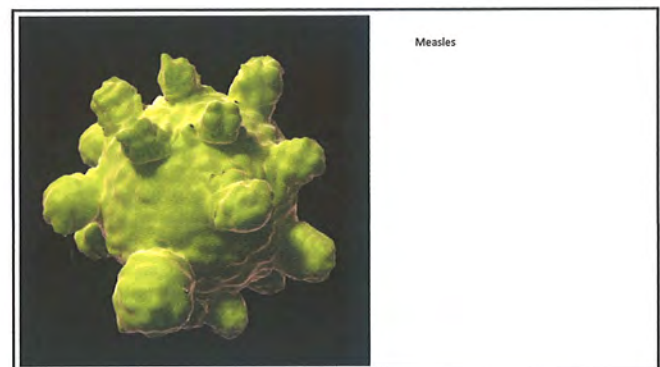
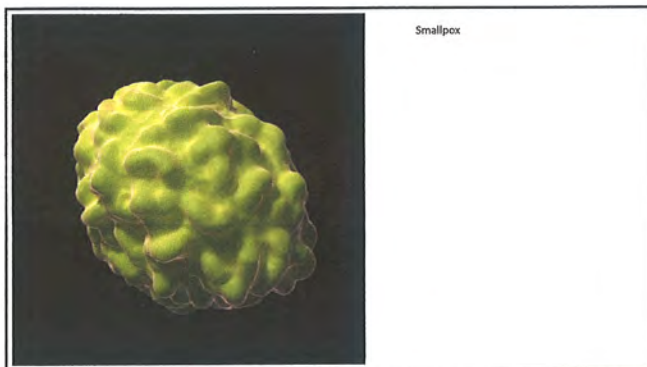
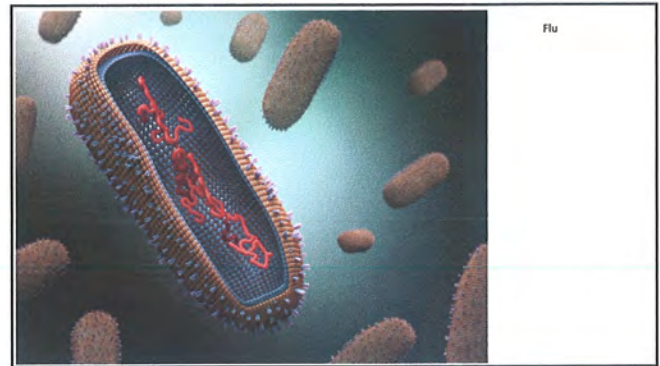
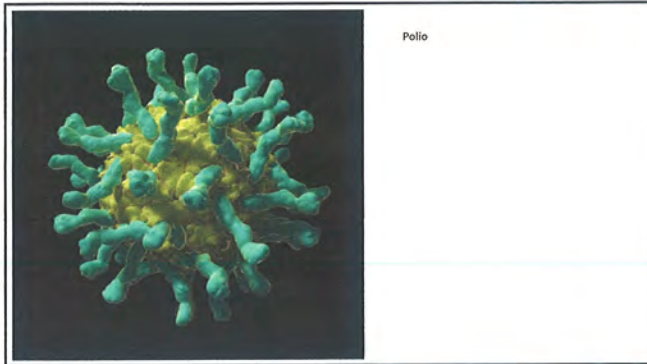
- **How has society been forced to change with epidemics/pandemics?**
- **How has the need to protect the healthy influenced those in power to make responsible choices? Are these choices fair? Why or why not?**
- **On a smaller scale, how is a teacher's responsibility of keeping his/her students safe affected when a child comes to school sick? If you were the teacher what would you do if a child came to school sick? Why would you do that?**
- **Is the teacher's decision affected by his/her responsibilities? Why or why not?**

- *How does responsibility influence your decisions? Provide an example of when this has happened to you.*

Performance Task will be introduced and we will go over examples and non-examples. Students will begin researching their topic and working independently.







Contagion

Responsibility Influences Decisions

Jot down as many diseases or sicknesses that you can think of all on your own.

- Looking at all we have listed on the chart paper, what do these diseases/sicknesses have in common?
- Who is responsible for making sure that you do not spread your sickness to your friends?

Talk with the individuals at your group about the following questions. Make sure that everyone gets a chance to speak and share.

- How do people get sick?
- What decisions have to be made when you are sick?
- Who is responsible for making those decisions?
- What precautions do people take to avoid getting sick?
- Why do they take those precautions?

How does being sick impact your life?
What about the lives of your parents?

How would you define responsibility?

What are some examples of you being responsible?

What about an adult or parent?

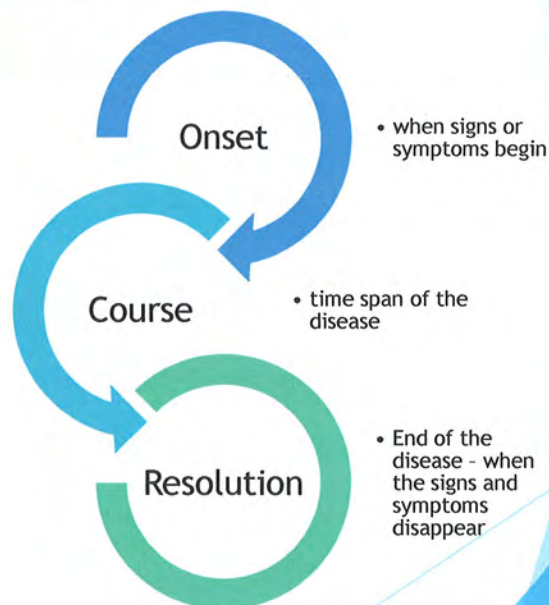
Now, think bigger, what about a community or an organization?

What is disease?

- ▶ A condition that does not allow the body to function properly
- ▶ Can affect all living things, not just people
- ▶ Hundreds exist in nature
- ▶ Every disease has a cause, with a particular set of signs or symptoms

Cycle of a disease

All diseases follow the same cycle, but what makes them different are the signs/symptoms and the duration of the cycle.



How is a disease classified?

- ▶ Epidemiology is a branch of science used by public health officials and governments around the world to study and manage the response to a disease.
- ▶ This looks and classifies diseases based on which population is affected and how the disease spreads.
- ▶ Other times disease is categorized as either
 - ▶ Infectious:
 - ▶ caused by living organisms, such as bacteria, viruses, etc.
 - ▶ spread among people or other living organisms
 - ▶ Noninfectious:
 - ▶ not caused by living organisms
 - ▶ not passed on to another person

What happens when you get sick?

Immune System

Kid Explanation

How are you responsible for maintaining your immune systems health?

How does this responsibility affect the decisions a person might make?

Reading to learn more

1. We are going to split up into 5 groups
2. Each group will read a different article, but each person in the group will read the same article
3. You will go to your group and read your article
 1. As you read, make sure that you write any questions or comments in the margins.
 2. Make sure that you read carefully to understand what you're reading.
4. Each group will need to determine what information they think is the most important from their article. This will be the information that you share with other groups.
5. Each group will use 1 piece of chart paper to put their information on to share with the class.
6. Be prepared - make sure that you know who is going to say what, etc.

Look at your name tent:

- Reds will read about ebola
- Oranges will read about bacteria
- Purples will read about viruses
- Blues will read about the plague
- Greens will read about the measles

Sharing to learn more

- What did you have to consider when constructing your group's message? Why?
- What decisions did you have to make as a group?
- How did the role of responsibility factor into what you shared with other groups? Why?
- Why did we read and present on these 5 topics?
- How are they connected?
- How is the role of responsibility the same for each topic? How is it different?

Virus versus Bacteria

[Virus and Bacteria](#)

[Ask Smithsonian](#)

What is an Epidemic?

- ▶ Epidemic: a widespread occurrence of an infectious disease in a community at a particular time
- ▶ Pandemic: an epidemic of infectious disease that has spread through human populations across a large region, for instances multiple continents or even worldwide
- ▶ What decisions have to be made by a community when an epidemic or pandemic are occurring?
- ▶ How has society been forced to change with epidemics/pandemics?
- ▶ How does this responsibility influence the decisions that people make with regards to themselves, families, and society?
- ▶ Who is responsible for ensuring that we do not have an epidemic/pandemic? How and why have their roles changed over time?

Discussion Questions

- ▶ Who is responsible for stopping the spread of contagious diseases? Why?
- ▶ Why would someone choose to not get vaccinated if they know it can help protect them?
- ▶ How has the need to protect the healthy influenced those in power to make responsible choices? Are these choices fair? Why or why not?
- ▶ On a smaller scale, how is a teacher's responsibility of keeping his/her students safe affected when a child comes to school sick? If you were the teacher what would you do if a child came to school sick? Why would you do that?
- ▶ Is the teacher's decision affected by his/her responsibilities? Why or why not?

Think about a time when you were sick, how did responsibility influence the decisions you made?

What are viruses?

Viruses are very small particles that can infect animals and plants and make them sick. Viruses are made up of genetic materials like DNA and are protected by a coating of protein.

Viruses hijack the cells of living organisms. They inject their genetic material right into the cell and take over. They then use the cell to make more viruses and take over more cells.

Are viruses alive?

Scientists differ on whether viruses are actually alive or not. Many people say they are non-living because they cannot reproduce without the aid of a host. Viruses also do not metabolize food into energy or have organized cells, which are usually characteristics of living things.

Characteristics of Viruses

- They do not have an organized cell structure.
- They have no cell nucleus.
- They typically have one or two strands of DNA or RNA.
- They are covered with a protective coat of protein called the CAPSID.
- They are inactive when not inside a living cell, but are active when inside another living cell.

Why are viruses bad?

When viruses invade a body's cells and begin to multiply, they make the host sick. They cause all sorts of diseases.

How do viruses spread?

Viruses are very small and lightweight. They can float through the air, survive in water, or even on the surface of your skin. Viruses can be passed from one person to another by shaking hands, touching food, through water, or through the air when a person coughs or sneezes.

Viruses can also be passed on by insect bites, animals, or through bad food.

Examples of Viruses

There are many viruses that can infect people and make them sick. One of the most common is influenza which causes people to get the flu. Other diseases caused by viruses include the common cold, measles, mumps, yellow fever, and hepatitis.

How to Avoid Getting Infected

There are things you can do to help reduce your chance of getting infected by a virus. Here are a few examples:

- Wash your hands (probably one of the most important ones).
- Don't put your hands or fingers in your mouth, nose, or eyes. Rubbing your nose or eyes can cause a virus on your hands to infect your body.
- Make sure your food is well-cooked, especially meat.
- Take your vitamins each day.
- Get plenty of sleep and exercise. This helps to strengthen your immune system to fight off viruses.

How are viruses treated?

There is little that doctors can do to treat viruses. In most cases our body's immune system fights off the virus. Scientists have developed vaccines that help our bodies to build up immunity to a specific virus. One example of a vaccine is the flu shot. The flu shot helps the body to develop its own defenses against the flu called antibodies.

Interesting Facts about Viruses

- Viruses are not classified in any of the five kingdoms of living things. This means they are not bacteria, fungi, protists, plants, or animals.
- Most viruses are so small they cannot be seen with an optical microscope.
- The word "virus" comes from the Latin word "virulentus" meaning "poisonous."
- Viruses can sometimes attack and kill bacteria.
- The first human virus discovered was the yellow fever virus in 1901 by Walter Reed.
- A virus that contains RNA instead of DNA is sometimes called a retrovirus.
- There are two main types of reproductive cycles for viruses: the lytic cycle and the lysogenic cycle.
- Diseases that are caused by a virus with a lytic cycle show symptoms much faster than viruses with a lysogenic cycle.

What are bacteria?

Bacteria are tiny little organisms that are everywhere around us. We can't see them without a microscope because they are so small, but they are in the air, on our skin, in our bodies, in the ground, and all throughout nature.

Bacteria are single-celled microorganisms. Their cell structure is unique in that they don't have a nucleus and most bacteria have cell walls similar to plant cells. They come in all sorts of shapes including rods, spirals, and spheres. Some bacteria can "swim" around using long tails called flagella. Others just hang out or glide along.

Are bacteria dangerous?

Most bacteria aren't dangerous, but some are and can make us sick. These bacteria are called pathogens. Pathogens can cause diseases in animals and plants. Some examples of pathogens are leprosy, food poisoning, pneumonia, tetanus, and typhoid fever.

Ebola

Ebola, previously known as Ebola hemorrhagic fever, is a rare and deadly disease caused by infection with one of the Ebola virus strains. Ebola can cause disease in humans and nonhuman primates (monkeys, gorillas, and chimpanzees).

Ebola is caused by infection with a virus of the family *Filoviridae*, genus *Ebolavirus*. There are five identified Ebola virus species, four of which are known to cause disease in humans: Ebola virus (*Zaire ebolavirus*); Sudan virus (*Sudan ebolavirus*); Tai Forest virus (*Tai Forest ebolavirus*, formerly *Côte d'Ivoire ebolavirus*); and Bundibugyo virus (*Bundibugyo ebolavirus*). The fifth, Reston virus (*Reston ebolavirus*), has caused disease in nonhuman primates, but not in humans.

Ebola viruses are found in several African countries. Ebola was first discovered in 1976 near the Ebola River in what is now the Democratic Republic of the Congo. Since then, outbreaks have appeared sporadically in Africa. The natural reservoir host of Ebola virus remains unknown. However, on the basis of evidence and the nature of similar viruses, researchers believe that the virus is animal-borne and that bats are the most likely reservoir. Four of the five virus strains occur in an animal host native to Africa.

People get Ebola through direct contact (through broken skin or mucous membranes in, for example, the eyes, nose, or mouth) with

- blood or body fluids (including but not limited to urine, saliva, sweat, feces, and vomit) of a person who is sick with or has died from Ebola,
- objects (like needles and syringes) that have been contaminated with body fluids from a person who is sick with Ebola or the body of a person who has died from Ebola,
- infected fruit bats or primates (apes and monkeys)

Symptoms of Ebola

- Fever
- Severe headache
- Muscle pain
- Weakness
- Fatigue
- Diarrhea
- Vomiting
- Abdominal (stomach) pain
- Unexplained hemorrhage (bleeding or bruising)

Symptoms may appear anywhere from 2 to 21 days after exposure to Ebola, but the average is 8 to 10 days.

Recovery from Ebola depends on good supportive clinical care and the patient's immune response. People who recover from Ebola infection develop antibodies that last for at least 10 years.

Treatment

No FDA-approved vaccine or medicine (e.g., antiviral drug) is available for Ebola. Symptoms of Ebola and complications are treated as they appear. The following basic interventions, when used early, can significantly improve the chances of survival:

- Providing intravenous fluids (IV) and balancing electrolytes (body salts).
- Maintaining oxygen status and blood pressure.
- Treating other infections if they occur.

Experimental vaccines and treatments for Ebola are under development, but they have not yet been fully tested for safety or effectiveness.

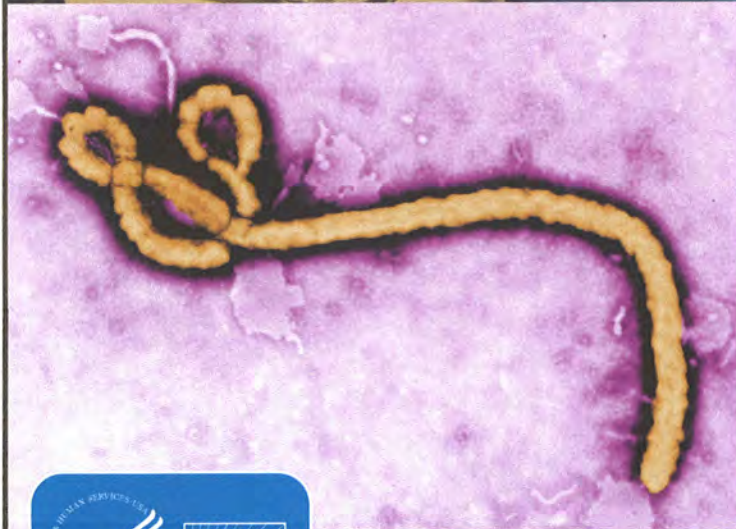
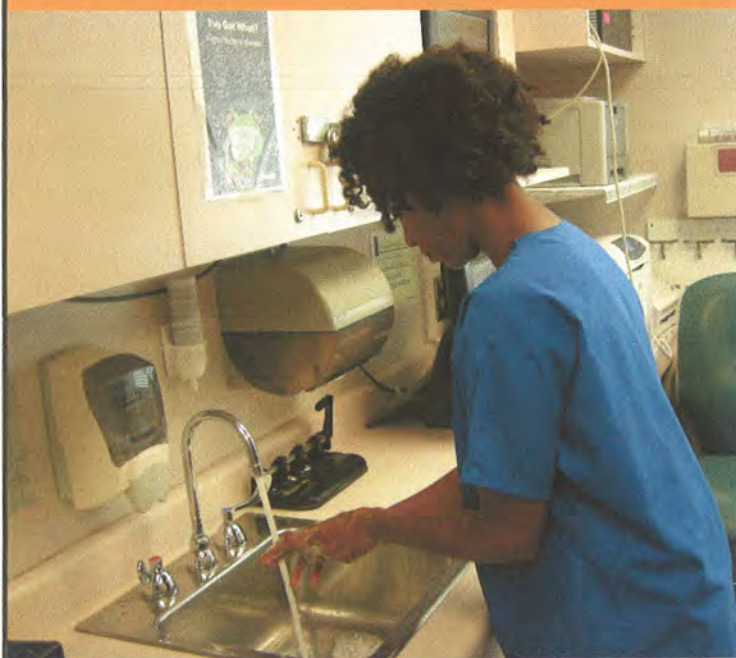
Recovery from Ebola depends on good supportive care and the patient's immune response. People who recover from Ebola infection develop antibodies that last for at least 10 years, possibly longer. It is not known if people who recover are immune for life or if they can become infected with a different species of Ebola. Some people who have recovered from Ebola have developed long-term complications, such as joint and vision problems.

What You Need to Know about Ebola

The 2014 Ebola epidemic is the largest in history

The outbreak is affecting multiple countries in West Africa. Two imported cases, including one death, and two locally acquired cases in healthcare workers have been reported in the United States.

CDC and partners are taking precautions to prevent the further spread of Ebola within the United States.



A person infected with Ebola is not contagious until symptoms begin

The time from exposure to when signs or symptoms of the disease appear (the incubation period) is 2 to 21 days, but the average time is 8 to 10 days. Signs of Ebola include fever and symptoms like severe headache, fatigue, muscle pain, vomiting, diarrhea, stomach pain, or unexplained bleeding or bruising.

Ebola is spread through direct contact with blood and body fluids

Ebola is spread through **direct contact** (through broken skin or mucous membranes) with

- Blood and body fluids (like urine, feces, saliva, vomit, sweat, and semen) of a person who is sick with Ebola.
- Objects (like needles) that have been contaminated with the blood or body fluids of a person sick with Ebola.
- Possibly, semen from a man who has survived Ebola.

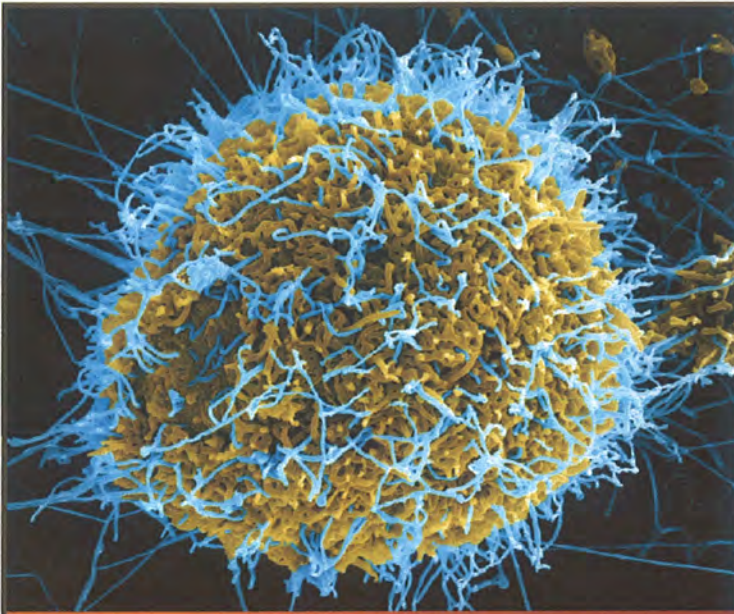
Ebola is **not** spread through the air, water, or food.

Protect yourself against Ebola

There is no FDA-approved vaccine available for Ebola. Experimental vaccines and treatments for Ebola are under development, but they have not yet been fully tested for safety or effectiveness.

- **DO** wash your hands often with soap and water or use an alcohol-based hand sanitizer.
- Do **NOT** touch the blood or body fluids (like urine, feces, saliva, vomit, sweat, and semen).
- Do **NOT** handle items that may have come in contact with a sick person's blood or body fluids, like clothes, bedding, needles, or medical equipment.
- Do **NOT** touch the body of someone who has died of Ebola.





"The sooner the world comes together to help West Africa, the safer we all will be. We know how to stop this outbreak." – CDC Director Tom Frieden, MD, MPH

What to do if you travel to an area with an Ebola outbreak

If you have traveled to an area with an Ebola outbreak, you may be at risk if you

- Had direct contact with blood or body fluids or items that came into contact with blood or body fluids from a person with Ebola.
- Touched bats or monkeys or blood, fluids, or raw meat prepared from these animals.
- Went into facilities where Ebola patients were being treated and had close contact with the patients.
- Touched the body of a person who died of Ebola.
- Had contact with semen from a man who survived Ebola (for example, by having oral, vaginal, or anal sex).

After you return, check for signs and symptoms of Ebola for 21 days

- You will be connected to a health department in your final destination.
- A public health worker will ask you to take your temperature twice a day and watch for Ebola symptoms like severe headache, fatigue (feeling very tired), muscle pain, vomiting, diarrhea, stomach pain, or unexplained bleeding or bruising.

If you get sick with a fever or other Ebola symptoms

- Get medical care right away.
- Do NOT go out in public until you talk to a public health worker.
- Do what your public health worker told you to do if you got sick.
- If you are not able to speak with someone right away, call:
 - Your state or local health department
 - CDC (1-800-232-4636)
 - 911 if it is a medical emergency and tell them you were in a country with Ebola

Measles

In the 9th century, a Persian doctor published one of the first written accounts of measles disease. Francis Home, a Scottish physician, demonstrated in 1757 that measles is caused by an infectious agent in the blood of patients.

In 1912, measles became a nationally notifiable disease in the United States, requiring U.S. healthcare providers and laboratories to report all diagnosed cases. In the first decade of reporting, an average of 6,000 measles-related deaths were reported each year.

In the decade before 1963 when a vaccine became available, nearly all children got measles by the time they were 15 years of age. It is estimated 3 to 4 million people in the United States were infected each year. Also each year an estimated 400 to 500 people died, 48,000 were hospitalized, and 4,000 suffered encephalitis (swelling of the brain) from measles.

Vaccine Development

In 1954, John F. Enders and Dr. Thomas C. Peebles collected blood samples from several ill students during a measles outbreak in Boston, Massachusetts. They wanted to isolate the measles virus in the student's blood and create a measles vaccine. They succeeded in isolating measles in 13-year-old David Edmonston's blood.

In 1963, John Enders and colleagues transformed their Edmonston-B strain of measles virus into a vaccine and licensed it in the United States. In 1968, an improved and even weaker measles vaccine, developed by Maurice Hilleman and colleagues, began to be distributed. This vaccine, called the Edmonston-Enders (formerly "Moraten") strain has been the only measles vaccine used in the United States since 1968. Measles vaccine is usually combined with mumps and rubella (MMR), or combined with mumps, rubella and varicella (MMRV). Learn more about measles vaccine.

Measles Elimination

In 1978, CDC set a goal to eliminate measles from the United States by 1982. Although this goal was not met, widespread use of measles vaccine drastically reduced the disease rates. By 1981, the number of reported measles cases was 80% less compared with the previous year. However, a 1989 measles outbreaks among vaccinated school-aged children prompted the Advisory Committee on Immunization Practices (ACIP), the American Academy of Pediatrics (AAP), and the American Academy of Family Physicians (AAFP) to recommend a second dose of MMR vaccine for all children. Following widespread implementation of this recommendation and improvements in first-dose MMR vaccine coverage, reported measles cases declined even more.

Measles was declared eliminated (absence of continuous disease transmission for greater than 12 months) from the United States in 2000. This was possible thanks to a highly effective vaccination program and better measles control in the Americas region. For more information, see Frequently Asked Questions about Measles in the U.S. The symptoms of measles generally appear about seven to 14 days after a person is infected.

Symptoms

Measles typically begins with

- high fever,
- cough,
- runny nose (coryza), and
- red, watery eyes (conjunctivitis)

Two or three days after symptoms begin, tiny white spots (Koplik spots) may appear inside the mouth.

Three to five days after symptoms begin, a rash breaks out. It usually begins as flat red spots that appear on the face at the hairline and spread downward to the neck, trunk, arms, legs, and feet. Small raised bumps may also appear on top of the flat red spots. The spots may become joined together as they spread from the head to the rest of the body. When the rash appears, a person's fever may spike to more than 104° Fahrenheit.

After a few days, the fever subsides and the rash fades.

Transmission of Measles

Measles is a highly contagious virus that lives in the nose and throat mucus of an infected person. It can spread to others through coughing and sneezing. Also, measles virus can live for up to two hours in an airspace where the infected person coughed or sneezed. If other people breathe the contaminated air or touch the infected surface, then touch their eyes, noses, or mouths, they can become infected. Measles is so contagious that if one person has it, 90% of the people close to that person who are not immune will also become infected.

Infected people can spread measles to others from four days before through four days after the rash appears. Measles is a disease of humans; measles virus is not spread by any other animal species.

Measles and the Vaccine (Shot) to Prevent It

Last updated February 2015

The best way to protect against measles is to get the measles-mumps-rubella shot (called the MMR shot). Doctors recommend that all children get the MMR shot.

Why should my child get the MMR shot?

The MMR shot:

- Protects your child from measles, a potentially serious disease (and also protects against mumps and rubella)
- Prevents your child from getting an uncomfortable rash and high fever from measles
- Keeps your child from missing school or childcare (and keeps you from missing work to care for your sick child)

Is the MMR shot safe?

Yes. The MMR shot is very safe, and it is effective at preventing measles (as well as mumps and rubella). Vaccines, like any medicine, can have side effects. But most children who get the MMR shot have no side effects.

What are the side effects?

Most children do not have any side effects from the shot. The side effects that do occur are usually very mild, such as a fever or rash. More serious side effects are rare. These may include high fever that could cause a seizure (in about 1 person out of every 3,000 who get the shot) and temporary pain and stiffness in joints (mostly in teens and adults).

Is there a link between the MMR shot and autism?

No. Scientists in the United States and other countries have carefully studied the MMR shot. None has found a link between autism and the MMR shot.

What is measles?

Measles is a serious respiratory disease (in the lungs and breathing tubes) that causes a rash and fever. It is very contagious. In rare cases, it can be deadly.

What are the symptoms of measles?

Measles starts with a fever that can get very high. Some of the other symptoms that may occur are:

- Cough, runny nose, and red eyes
- Rash of tiny, red spots that start at the head and spread to the rest of the body
- Diarrhea
- Ear infection



Doctors recommend that your child get 2 doses of the MMR shot for best protection. Your child will need one dose at each of the following ages:

- 12 through 15 months
- 4 through 6 years

Infants 6 months to 11 months old should have 1 dose of MMR shot before traveling abroad.

Is it serious?

Measles can be dangerous, especially for babies and young children. From 2001-2013, 28% of children younger than 5 years old who had measles had to be treated in the hospital.

For some children, measles can lead to:

- Pneumonia (a serious lung infection)
- Lifelong brain damage
- Deafness
- Death

How does measles spread?

Measles spreads when a person infected with the measles virus breathes, coughs, or sneezes. It is very contagious. You can catch measles just by being in a room where a person with measles has been, up to 2 hours after that person is gone. And you can catch measles from an infected person even before they have a measles rash. Almost everyone who has not had the MMR shot will get measles if they are exposed to the measles virus.

Where do measles cases in the United States come from?

Measles disease can come into this country when unvaccinated U.S. residents travel internationally or foreign visitors to the United States are exposed to measles in another country and travel into the United States. The risk of getting measles may be very high for unvaccinated U.S. residents who travel abroad. The reason for this high risk is because measles is common in other parts of the world, including countries in Europe, Asia, the Pacific, and Africa. Worldwide, about 20 million people get measles each year. When people with measles travel into the United States, they can spread the disease to unvaccinated people including children too young to be vaccinated.

How many measles cases are there in the United States each year?

From 2001 to 2013, the number of measles cases reported in the United States ranged from 37 to 220. However, in some years like 2014, there were more measles cases than usual. In 2014, 644 people from 27 states were reported as having measles. Most of these people got measles in the United States after being exposed to someone who got measles while in another country. So far in 2015, more than 100 people in the U.S. have been reported to have measles. Most of these cases are part of a large, ongoing outbreak linked to an amusement park in California. For more information, see <http://www.cdc.gov/measles/cases-outbreaks.html>.

Where can I learn more about the MMR shot and my child?

To learn more about the MMR shot, talk to your child's doctor, call 1-800-CDC-INFO, or visit www.cdc.gov/vaccines/parents.

The Centers for Disease Control and Prevention, American Academy of Family Physicians, and American Academy of Pediatrics strongly recommend children receive all vaccines according to the recommended schedule.

Plague

Plague is a disease that affects humans and other mammals. It is caused by the bacterium, *Yersinia pestis*. Humans usually get plague after being bitten by a rodent flea that is carrying the plague bacterium or by handling an animal infected with plague. Plague is infamous for killing millions of people in Europe during the Middle Ages. Today, modern antibiotics are effective in treating plague. Without prompt treatment, the disease can cause serious illness or death. Presently, human plague infections continue to occur in the western United States, but significantly more cases occur in parts of Africa and Asia. Symptoms

Plague symptoms depend on how the patient was exposed to the plague bacteria. Plague can take different clinical forms, but the most common are bubonic, pneumonic and septicemic.

Forms of plague.

Bubonic plague: Patients develop sudden onset of fever, headache, chills, and weakness and one or more swollen, tender and painful lymph nodes (called buboes). This form usually results from the bite of an infected flea. The bacteria multiply in the lymph node closest to where the bacteria entered the human body. If the patient is not treated with the appropriate antibiotics, the bacteria can spread to other parts of the body.

Septicemic plague: Patients develop fever, chills, extreme weakness, abdominal pain, shock, and possibly bleeding into the skin and other organs. Skin and other tissues may turn black and die, especially on fingers, toes, and the nose. Septicemic plague can occur as the first symptom of plague, or may develop from untreated bubonic plague. This form results from bites of infected fleas or from handling an infected animal.

Pneumonic plague: Patients develop fever, headache, weakness, and a rapidly developing pneumonia with shortness of breath, chest pain, cough, and sometimes bloody or watery mucous. Pneumonic plague may develop from inhaling infectious droplets or may develop from untreated bubonic or septicemic plague after the bacteria spread to the lungs. The pneumonia may cause respiratory failure and shock. Pneumonic plague is the most serious form of the disease and is the only form of plague that can be spread from person to person (by infectious droplets).

Diagnosis & Treatment

Plague is a plausible diagnosis for people who are sick and live in, or have recently traveled to, the western United States or any other plague-endemic area. The most common sign of bubonic plague is the rapid development of a swollen and painful lymph gland called a bubo. A known flea bite or the presence of a bubo may help a doctor to consider plague as a cause of the illness.

In many cases, particularly in septicemic and pneumonic plague, there are no obvious signs that indicate plague. Diagnosis is made by taking samples from the patient, especially blood or part of a swollen lymph gland, and submitting them for laboratory testing. Once plague has been identified as a possible cause of the illness, appropriate treatment should begin immediately.

Treatment

Plague is a very serious illness, but is treatable with commonly available antibiotics. The earlier a patient seeks medical care and receives treatment that is appropriate for plague, the better their chances are of a full recovery.

People in close contact with very sick pneumonic plague patients may be evaluated and possibly placed under observation. Preventive antibiotic therapy may also be given, depending on the type and timing of personal contact.

If you live or have recently traveled to the western U.S. or any other plague endemic area and have symptoms suggestive of plague, seek health care immediately.

Protect yourself from plague



What is plague?

Plague occurs naturally in the western United States, particularly Arizona, California, Colorado, and New Mexico. The plague bacterium (*Yersinia pestis*) is transmitted by fleas and cycles naturally among wild rodents. Plague can also infect humans and their pets.

How do people get plague?

- Bites of infected fleas
- Touching or skinning infected animals (such as prairie dogs, squirrels, rats, and rabbits)
- Inhaling droplets from the cough of an infected person or animal (especially sick cats)

Common forms of plague

Bubonic plague is the most common form of plague. It usually occurs after the bite of an infected flea. The key feature of bubonic plague is a swollen, painful lymph node, usually in the groin, armpit or neck. Other symptoms include fever, chills, headache, and extreme exhaustion. A person usually becomes ill with bubonic plague 1 to 6 days after being infected. If not treated early, the bacteria can spread to other parts of the body and cause septicemic or pneumonic plague.

Septicemic plague occurs when plague bacteria multiply in the bloodstream. Symptoms include high fever, exhaustion, light-headedness, and abdominal pain. Septicemic plague can quickly cause shock and organ failure.

Pneumonic plague occurs when plague bacteria infect the lungs. Symptoms include high fever, chills, cough, difficulty breathing, and coughing up bloody mucus. Pneumonic plague is almost always fatal if not treated rapidly.

If you develop symptoms of plague, see a health care provider immediately.

Plague can be treated successfully with antibiotics, but an infected person must be treated promptly to avoid serious complications or death.

Protect yourself if you live in an area where plague occurs:

Protect you and your family

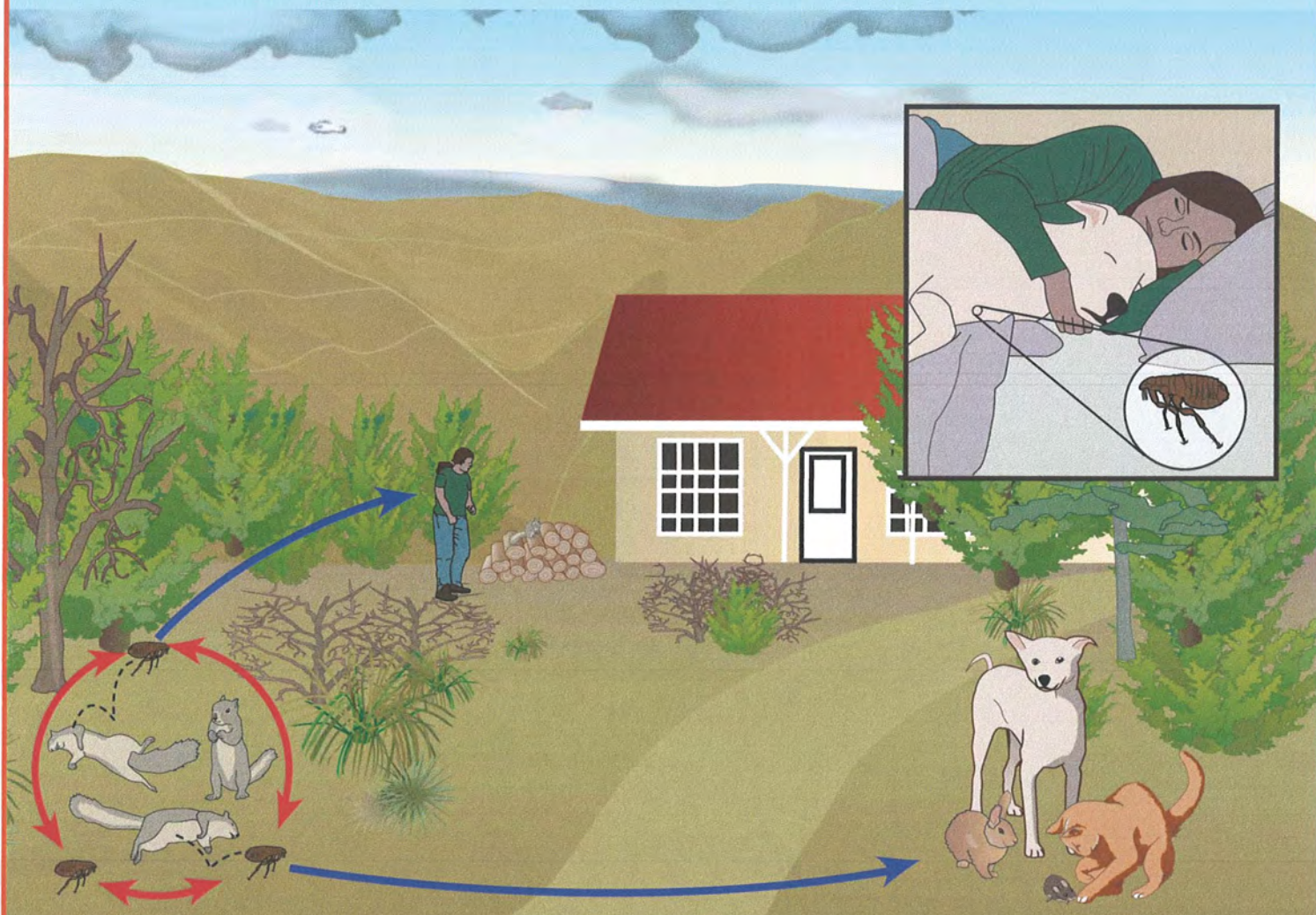
1. Eliminate nesting places for rodents around homes, sheds, garages, and recreation areas by removing brush, rock piles, trash, and excess firewood.
2. Avoid picking up or touching dead animals.
3. Wear gloves if you must handle sick or dead animals.
4. Report sick or dead animals to the local health department or law enforcement officials.
5. Do not let pets sleep in the bed with you. This has been shown to increase your risk of getting plague.
6. Use insect repellent that contains DEET to prevent flea bites.

Protect your pets

1. Treat dogs and cats for fleas regularly.
2. Keep pet food in rodent-proof containers.
3. Take sick pets to the veterinarian promptly.
4. Do not allow pets to hunt or roam in rodent habitat, such as prairie dog colonies.

Plague in Humans

Human plague is often preceded by an outbreak or “epizootic” in which large numbers of susceptible rodents die. When this happens, hungry infected fleas leave the dead rodents and seek blood from other hosts, including humans and domestic pets. Studies suggest that in the southwestern U.S. epizootics are more likely to occur during cooler summers that follow wet winters.



Humans and domestic animals that are bitten by fleas from dead animals are at risk for contracting plague, especially during an epizootic. Cats usually become very ill from plague and can directly infect humans when they cough infectious droplets into the air. Dogs are less likely to be ill, but they can still bring plague-infected fleas into the home. In addition to flea bites, people can be exposed while handling skins or flesh of infected animals.

For more information, please contact:

Centers for Disease Control and Prevention

3156 Rampart Road, Fort Collins, CO 80521

Telephone: 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348

Web: www.cdc.gov

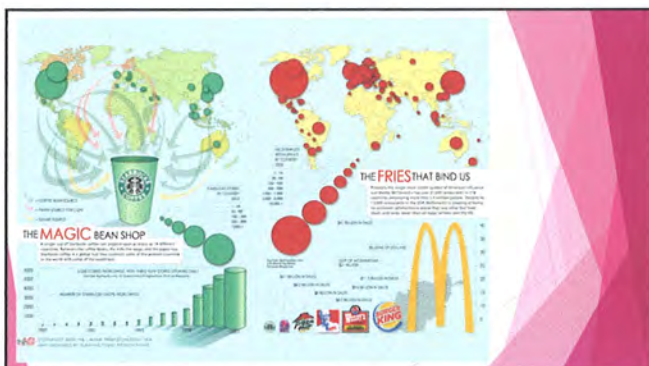
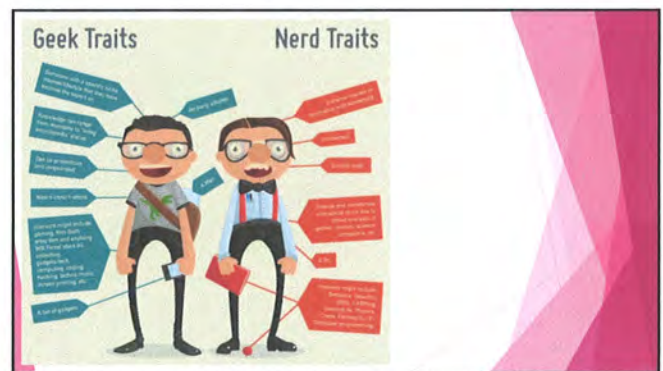
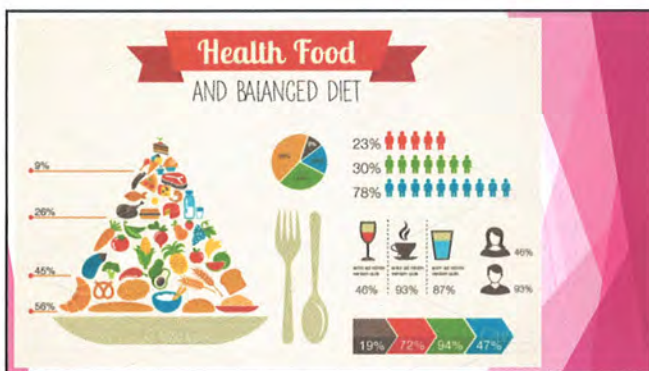
You are an epidemiologist working at the Center for Disease Control (CDC) in Atlanta, Georgia. The CDC has partnered with the World Health Organization (WHO) to create a team of epidemiologists, virologists, and other scientists to study and inform the public about the dangers of contagious diseases.

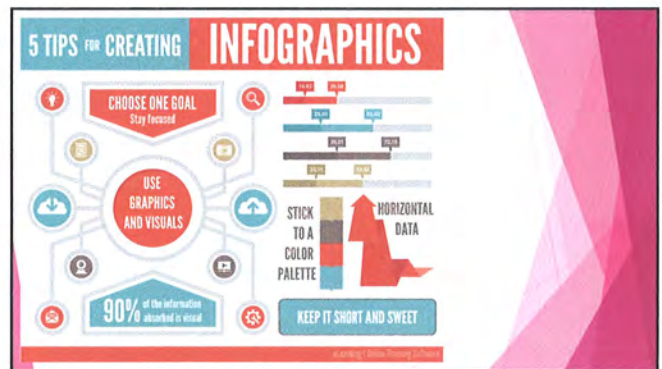
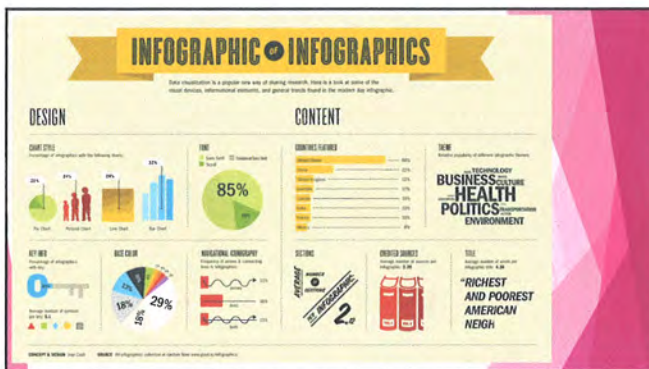
After meeting, the team decided that the public needs to be made aware of the symptoms, causation, and transmission of specific contagious diseases. Each epidemiologist on the team will be responsible for creating an infographic that can be used to quickly and efficiently inform the public of the dangers of each sickness, as well as, be eye-catching and easy to read. Be sure to include a section that informs the public how they can responsibly make decisions regarding their health.

Each infographic will be translated and used around the globe to help inform the public.

Potential Topics:

- ▶ Ebola
- ▶ Measles
- ▶ Polio
- ▶ Flu
- ▶ Common Cold
- ▶ Dengue Fever
- ▶ Yellow Fever
- ▶ Smallpox
- ▶ Bubonic Plague
- ▶ Avian Flu
- ▶ Chickenpox
- ▶ West Nile Virus
- ▶ Vaccination
- ▶ Sanitation





Topic: _____

Most Important Facts about my Topic:

Where my topic is of most concern:

Why my topic is of concern:

What responsibility has to do with my topic: (Who, what, why, when those involved are responsible)

Additional Information I want to include:

Topic: Ebola

Most Important Facts about my Topic:

- * Scientists believe the virus transmits from person to person or person to animal
- * Symptoms may appear anywhere from 2-21 days
The average is 8-10 days
- * The average fatality rate is 50%.

Where my topic is of most concern:

It is of most concern in West Africa

Why my topic is of concern:

Because it is a very deadly disease

What responsibility has to do with my topic: (Who, what, why, when those involved are responsible)

Always stay away from people no matter what.

Additional Information I want to include:

- Symptoms:
- Fever
 - Severe Headache
 - Muscle pain
 - Weakness
 - Fatigue
 - Diarrhea
 - Vomiting
 - Abdominal pain
 - unexplained hemorrhage

Topic: polio

Most Important Facts about my Topic: polio is also called paralysis or poliomyelitis. Polio infects you rarely by eating foods.

Where my topic is of most concern: for kids

Why my topic is of concern: it's a disease

What responsibility has to do with my topic: (Who, what, why, when those involved are responsible) You need to be responsible to get a vaccine for polio so you don't get polio.

Additional Information I want to include: a person who gets polio is immune to future infection from the virus type that caused the polio.

Topic: Yellow Fever

Most Important Facts about my Topic:

spread by the mosquito *Aedes Aegypti*
 There is a vaccine
 incubates in as little as 72 hours
 no cure if not vaccinated

Where my topic is of most concern:

'Sierra Leone 'Chad
 factfish-com
 Yellow fever cases for all countries

Why my topic is of concern:

There is no cure
 The disease is lethal

incubation

What responsibility has to do with my topic: (Who, what, why, when those involved are

responsible) Your responsibility is to prevent being
 given the yellow fever by mosquitos.
 By wearing proper clothing
 being aware of peak mosquito hours
 use insect repellent

Additional Information I want to include:

Symptoms: pain in the abdomen, muscles, or back
 Whole body: nausea, fever, loss of appetite, malaise, chills,
 fatigue
 Also common: vomiting, headache, yellow skin and eyes,
 bleeding, or delirium

Topic: Smallpox

Most Important Facts about my Topic: Spreads easily, Sometimes fatal, gives you skin rash, 30% people die, also survivors of smallpox have permanent scars on large parts of their body especially the face. Spreads mainly through direct contact, but sometimes through virus in the air. The symptoms start with high fever, head and body aches, vomiting, A rash follows that spreads and progresses to raised bumps and pus filled blisters that crust, scab.

Where my topic is of most concern: ~~It spreads easy, It is fatal, leaves behind bad scars if you survive~~

Whole world

Why my topic is of concern: 1

It spreads easy, it is ^{sometimes} fatal, leaves behind bad scars if you survive

What responsibility has to do with my topic: (Who, what, why, when those involved are responsible) We had to be vaccinated

Additional Information I want to include:

Nope

Topic: Flu Flu

Most Important Facts about my Topic:

Symptoms of the Flu

- Cough/sore throat
- Runny nose or stuffy nose
- headaches/body aches
- chills
- fever

Flu infects
the
respiratory system
spreads
through the
air

can be contagious
one day before
symptoms appear

Where my topic is of most concern:

- all throughout the world
- Flu season lasts from October to May in Northern Hemisphere
- Flu season lasts from April to September in the Southern Hemisphere
- in tropical countries, flu can be spread year-round

Why my topic is of concern:

- Highly contagious
- spreads by contact

What responsibility has to do with my topic: (Who, what, why, when those involved are responsible)

- washing your hands
- not touching/being in contact with infected/sick people

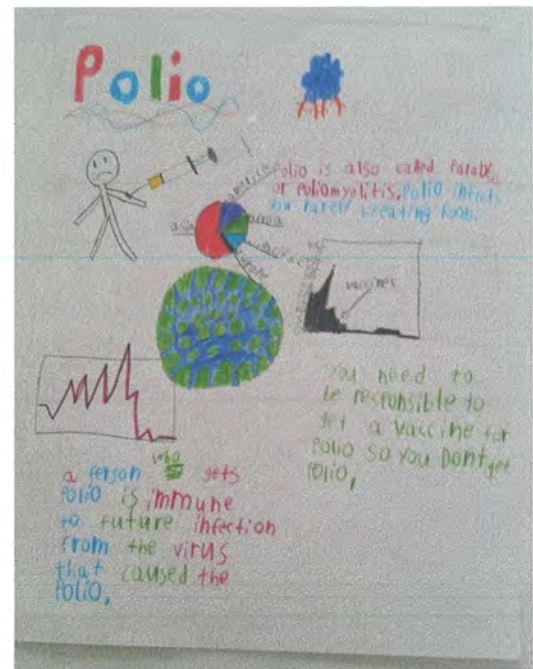
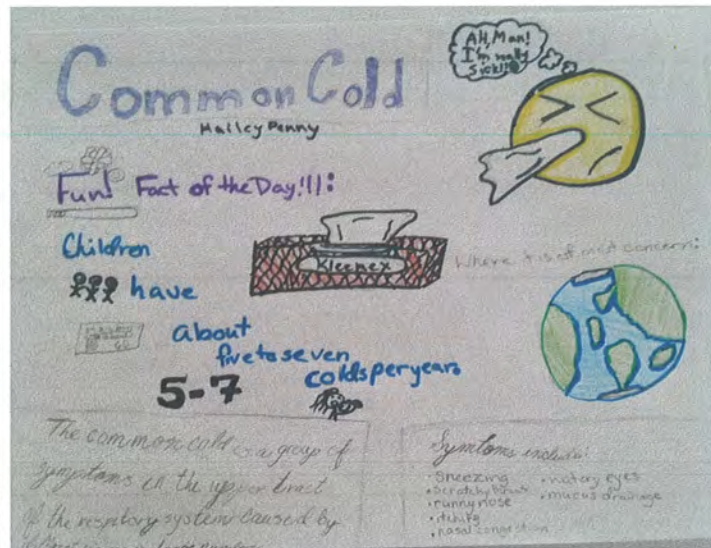
Additional Information I want to include:

- also called Influenza
- Influenza A, B, C, are flu types
- don't take aspirin if you think you have the flu

you can still get
a shot after the
season starts

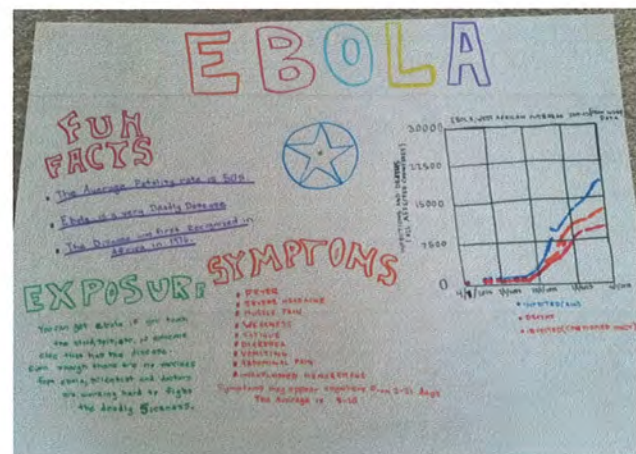
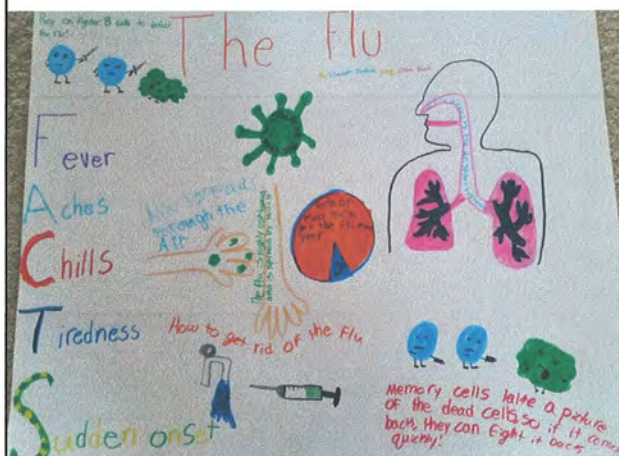
Performance Task Examples 1

Part of Summative Assessment

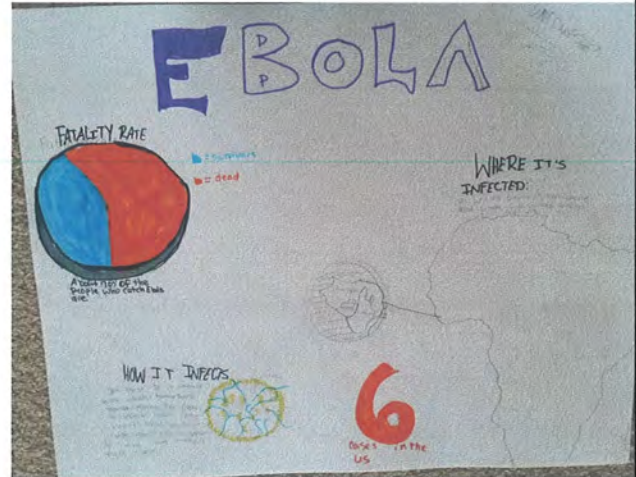
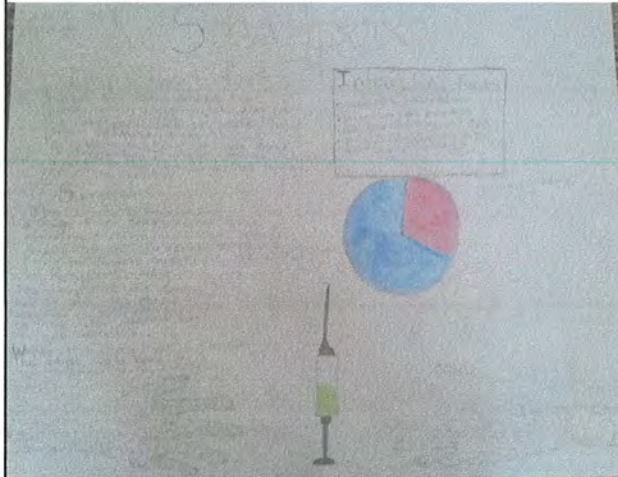


Performance Task Examples 2

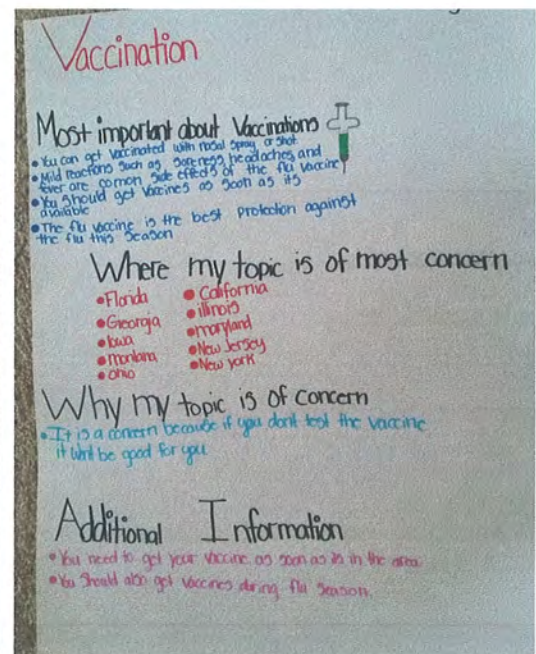
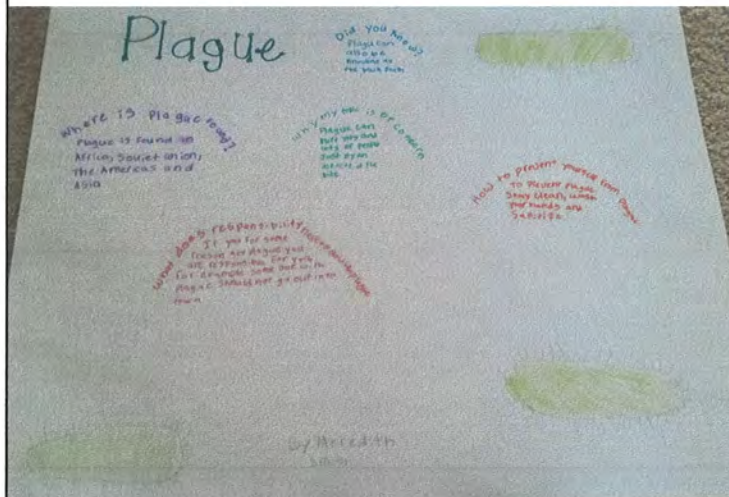
Part of Summative Assessment



Performance Task Examples 3 Part of Summative Assessment



Performance Task Examples 4 Part of Summative Assessment



Infographic Performance Task Rubric

Components	Does Not Meet the Standard 0 Points	Partially Meets the Standard 1-2 Points	Meets the Standard 3-4 Points	Exceeds the Standard 5 Points	Score
Title and Labels 10 %	The title and labels are missing or do not represent the topic being covered.	The title and labels do not accurately convey the topic that is being covered.	The title and labels accurately represent the topic that is being covered.	The title and labels accurately and appropriately represent the topic that is being covered	
Accuracy of Information Presented 40 %	Information presented is not accurate, incomplete or contains many errors.	Information presented is partially completed, or is complete with errors.	Information presented is completed and accurate with appropriate support.	Information presented is complete and accurate with ample and appropriate support.	
Graphics and Illustrations 20 %	Graphics and illustrations are not appropriate for the topic or are missing.	Graphics and illustrations attempted but does not represent the topic or are partially completed.	Graphics and illustrations are appropriate and represent the topic.	Graphics and illustrations are appropriate, thoughtful, and go above and beyond to represent the topic.	
Formatting 20 %	60 % or more of the infographic is text Sizes, shapes, and colors are ineffective or inappropriate.	Approximately 50 % of the infographic is text and 50 % is graphics. Most sizes, shapes, and/or colors are effective and are representative of the topic.	Approximately 40 % of the infographic is text and 60 % is graphics. Sizes, shapes, and/or colors are effective and representative of the topic.	Approximately 30 % of the infographic is text and 70 % is graphics. Sizes, shapes, and/or colors are effective, attractive, and representative of the topic.	
Neatness 10 %	The infographic is sloppy and/or illegible.	The infographic is difficult to read.	The infographic is legible and generally neat.	The infographic is very neat and easy to read.	

Total Score: _____

Comments:

TEACHER NAME		Lesson #
Katy Gibbs		2
MODEL	CONTENT AREA	GRADE LEVEL
Taba	Practicum Lesson Language Arts and Science	5-6
CONCEPTUAL LENS		LESSON TOPIC
Responsibility		Factors that Impact Health
LEARNING OBJECTIVES (from State/Local Curriculum)		
Language Arts – Common Core Curriculum – Informational Text 4.RI.1 – Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. 4.RI.2 – Determine the main idea of a text and explain how it is supported by key details; summarize the text. 4.RI.3 – Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text. Language Arts – Common Core Curriculum – Speaking and Listening Area SL.4.1 – Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly. Science Essential Standards 8.L1 – Understand the hazards caused by agents of diseases that affect living organisms. 8.L.1.1 – Summarize the basic characteristics of viruses, bacteria, fungi, and parasites relating to the spread, treatment, and prevention of disease. 8.L.1.2 – Explain the difference between epidemic and pandemic as it relates to the spread, treatment, and prevention of disease.		
THE ESSENTIAL UNDERSTANDING (What is the overarching idea students will understand as a result of this lesson?)		THE ESSENTIAL QUESTION (What question will be asked to lead students to “uncover” the Essential Understanding)
Responsibility influences decisions		How does responsibility influence decisions?
CONTENT KNOWLEDGE (What factual information will students learn in this lesson?)		PROCESS SKILLS (What will students be able to do as a result of this lesson?)
Students will learn: • That there are many factors that impact public health, such as, sanitation, type and cleanliness of food, how food is prepared, how people live, etc. • Basic information regarding India and Syria, such as location, population, climate, etc. • Causation, symptoms, and treatment of polio		Students will be able to: • Read 2 non-fiction articles related to polio in India and Syria • Analyze the factors that impact public health • Determine how these factors affect the responsibility of those making health decisions, such as parents, businesses, communities, etc. • Compare and contrast the information provided about India and Syria to make generalizations about the spread of polio • Work collaboratively with a group • Participate in both small and whole group discussions

GUIDING QUESTIONS

What questions will be asked to support instruction?

Include both "lesson plan level" questions as well as questions designed to guide students to the essential understanding

Pre-Lesson Questions:	During Lesson Questions:	Post Lesson Questions:
- Where is India located? Syria? - What information and knowledge do you have about India/Syria? Based on Hook Slideshow: - Do you know where the images were taken? What can you learn from looking at these images? - What do you notice about the images you've seen?	- What in the article is a factor that would impact a person's health? - Where in the article do you see examples of a decision or factor that affects a person's health? - What in India caused polio to remain widespread? - What changed in India to allow it to become polio free? - What in Syria caused polio to remain widespread? - How would you categorize the factors that impact public health? - How do these factors weigh on the responsibilities of those making decisions? - What decisions were made that impact public health?	- How does a community impact public health? - What similarities exist between India and Syria? - What differences exist between India and Syria? - How were/are decisions made in India alike/different from the decisions that were made in Syria? - How do these factors impact the decisions that have to be made by government, parents, and communities? - How do the responsibilities of those in India/Syria differ from those in the United States when making decisions regarding personal health? What similarities exist? - How can you use the similarities/differences in India/Syria and the United States to make generalizations about public health? - What generalizations can be made about the responsibilities of public health officials?

DIFFERENTIATION

(Describe how the planned learning experience has been modified to meet the needs of gifted learners. Note: Modifications may be in one or more of the areas below. Only provide details for the area(s) that have been differentiated for this lesson.)

Content	Process	Product	Learning Environment
This reading and content is difficult for fourth grade, and is usually written for middle or high school grades.	Students think critically and deeply examine an abstract concept. Students will be comparing public health decisions and the responsibilities of those involved in India, Syria, and the United States.		Student focused with students leading the discussion. Teacher acts as a facilitator

PLANNED LEARNING EXPERIENCES

(What will the teacher input? What will the students be asked to do? For clarity, please provide detailed instructions)

Engage and Connect - *This phase focuses on piquing students' interest and helping them access prior knowledge. This is the introduction to the lesson that motivates or hooks the students.*

Hook: Students will enter the classroom and a Power point slide show will be going showing pictures of India and Syria. As students watch the slideshow the following question will be posted on the board:

- What do you notice about the images you've seen?
- Do you know where the images were taken? What can you learn from looking at these images?

We will create a list of observations that students make about the images that they've seen.

- Where is India located? Syria?
- What information and knowledge do you have about India/Syria?
- What opinion(s) have you created about the countries based on the images that you've seen?

Explore - *In this phase, the students have experiences with the concepts and ideas of the lesson. Students are encouraged to work together without direct instruction from the teacher. The teacher acts as a facilitator. Students observe, question, and investigate the concepts to develop fundamental awareness of the nature of the materials and ideas.*

READING

The students will read the articles (2 short-medium long) articles. As they read they will look for places in the text for evidence of factors or decisions that impact public health. Students will circle/underline examples of evidence from the text.

Both articles discuss how polio has affected India and Syria and the steps that were taken to help stop/limit the spread of polio.

LISTING

Students will look at what they circled/underlined previously. The class will be split up into 4 groups. The groups will list examples from the article that show factors or decisions that impact public health.

Student groups will share their lists and the teacher will compile a comprehensive list on the board.

Students communicate what they have learned thus far. The teacher will facilitate discussion regarding the difference between personal and public health.

Questions to ask during discussion:

- What in the article is a factor that would impact a person's health?
- What decisions were made that impact public health?
- Where in the article do you see examples of a decision or factor that affects a person's health?
- What in India caused polio to remain widespread?
- What changed in India to allow it to become polio free?
- What in Syria caused polio to remain widespread?
- How would you categorize the factors that impact public health?
- How do these factors weigh on the responsibilities of those making decisions?

Explain - *Students communicate what they have learned so far and figure out what it means. This phase also provides an opportunity for teachers to directly introduce a concept, process, or skill to guide students toward a deeper understanding.*

GROUPING AND LABELING

1. Students will use the comprehensive list on the board and will work together in their group to create smaller word lists based on similarities (with their assigned group of approximately 4 students). Groups of students will work together in order to decide which items in the comprehensive list go together because they are alike in some aspect of being a decision or factor that impacts public health.

Students will be given the following three rules:

1. Minimum of at least 3 different classifications
 2. At least 3 items must be in each group
 3. Item cannot be used in more than 1 group
2. The teacher will move throughout the classroom checking in with student groups. The teacher will guide students as necessary with questions but will allow the student groups to come to their own conclusions. As students finish, the teacher will instruct students to label the newly made groups. Students will need to develop a justification for each label.

As the class comes back together, student groups will share out several of their group labels and make-up of groups. Students will need to be able to describe the similarities and differences between each group.

Elaborate —*Allow students to use their new knowledge and continue to explore its implications. At this stage students expand on the concepts they have learned, make connections to other related concepts, and apply their understandings to the world around them in new ways*

SUBSUMING, REGROUPING, AND RENAMING

Students will examine the groups that they made previously, determine if they still fit, and adjust if necessary. Then students will then be challenged to regroup items. The new groups must be new categories.

Rules for regrouping as follows:

1. *Items can be used again*
2. *Categories must be new*
3. *Each category must have at least 4 items*

Reminder: Categories must be based on factors or decisions that impacted public health

Again, as the class comes back together, student groups will share out several of their group labels and the make-up of groups. Students will need to be able to describe the similarities and differences between each group.

Questions to ask during final discussions:

- How does a community impact public health?
- What similarities exist between India and Syria?
- What differences exist between India and Syria?
- How were/are decisions made in India alike/different from the decisions that were made in Syria?
- How do these factors impact the decisions that have to be made by government, parents, and communities?
- How do the responsibilities of those in India/Syria differ from those in the United States when making decisions regarding personal health? What similarities exist?
- How can you use the similarities/differences in India/Syria and the United States to make generalizations about public health?
- What generalizations can be made about the responsibilities of public health officials?

Evaluate: *This phase assesses both learning and teaching and can use a wide variety of informal and formal assessment strategies.*

The teacher will wrap up the lesson by asking the class to explain the relationship between factors and decisions that impacted public health and responsibility. Students will then be expected to write a well-thought out and detailed paragraph explaining how a person's responsibility (as a parent, government official, etc.) affects the decisions that they make. Students will use the article as justification and evidence of their thinking.

Students will be assessed throughout the lesson during small group and full class discussions. At the end of the lesson, students will details of they learned in a paragraph that will be submitted to the teacher.

Performance Task will be introduced and we will go over examples and non-examples. Students will begin researching their topic and working independently.

Contagion

Responsibility Influence Decisions

Taba Lesson

India and Syria

- ▶ What do you notice about the images you've seen?
- ▶ What information and knowledge do you have about India and Syria?
- ▶ What opinion or opinions have you created about the countries based on the images that you've seen?

Reading

Today we are going to read 2 short articles, one about India and one about Syria.

While you are reading, you will need to circle or underline places in the text where you see factors that impact public health.

- | | |
|--|---|
| 1. India the perfect storm for polio | A. Continue with vaccination campaign |
| 2. Unsanitary living conditions | B. Takes 3 years to be considered polio free |
| 3. Dense population | C. Spread through sneezing, coughing, and human waste |
| 4. Many dirty places | D. Wash hands often |
| 5. Many migrate | E. Spreads when people are not vaccinated |
| 6. Weak public health system | F. Outbreak of polio in Syria |
| 7. Polio causes paralysis, deformation, and possibly death | G. Disease spreads through communities |
| 8. Vaccine campaign | H. Civil war means children haven't been getting vaccinated |
| 9. Hike to remote villages | I. Medical supplies can't reach some places in Syria because of the war |
| 10. Wander throughout the country giving shots to children | J. War zones create unsanitary conditions |
| 11. India wants to be an emerging world power | K. No way to stop polio without getting vaccinated |
| 12. Polio is a disease associated with poverty | L. Vaccination cease-fire |
| 13. India is an example of progress | |
| 14. Determination | |

Grouping

- ▶ We are going to split up into 4 different teams
- ▶ Each member of the team will have their own paper and will do their own writing.
- ▶ In your team, you need to look at all of the factors we listed on the board and put them all into groups.

Grouping

RULES:

1. Must have at least 3 groups
2. Each group must have at least 3 factors, can have more but no less than 3
3. Factors can only go into 1 group

Put a title on it!

- ▶ You should have your groups made and now you need to give each group a title
 - ▶ Think about what makes up each group
 - ▶ What do they have in common?
- ▶ What titles and groups did your team make?
- ▶ How did you categorize the factors that impact public health?
- ▶ How do these factors weigh on the responsibilities of those making decisions?

New Groups?!?

- ▶ Your team needs to look at the groups that you made the first time.
- ▶ This time, you need to make completely new and different groups. You are going to have to think outside the box. See how else you can put things together. Once you have made new groups, please relabel them and give them new titles.

RULES:

1. Categories must be new - you can't just put a new title on an old group
2. Each group must have at least 4 items

Final Discussion

- ▶ How does a community impact public health?
- ▶ How were/are decisions made in India alike/different from the decisions that were made in Syria?
- ▶ How do the responsibilities of those in India/Syria differ from those in the United States when making decisions regarding personal health? What similarities exist?
- ▶ What generalizations can be made about the responsibilities of public health officials?

Tell Me Your Thoughts

- ▶ On the back of the grouping paper you used earlier, there are a bunch of lines. Please use this side of the paper to write your response to this question.
- ▶ Think about what we talked and read about in class today. How can a person's responsibility affect the decisions that they make?

City street in India



River in India



Intersection of streets in a city in India



Food market in India



City in India



Home in village in India



Village in India

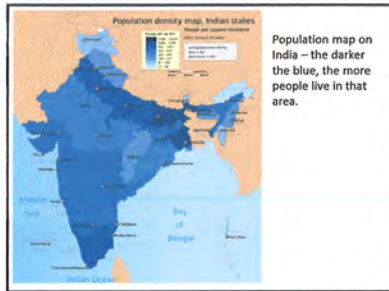


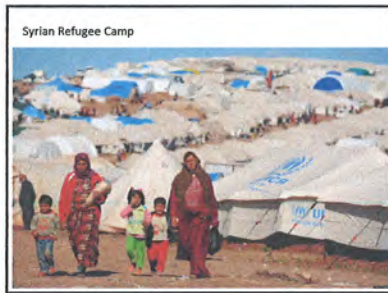
Rural village in India



Taj Mahal - palace in India







The Push Against Polio

Article

PAGE 1

NEW DELHI, India (Achieve3000, February 2, 2012). On January 13, 2012, India celebrated a full year since its last reported case of polio, or poliomyelitis. Assuming officials don't discover any more cases of the crippling disease, India will no longer be considered polio endemic. It's a huge boost for India. The nation is trying to establish a reputation as a growing world power.

"This is a game changer in a huge way," said Bruce Aylward. He is head of the World Health Organization's global polio campaign.

Until recently, India had been seen as "the perfect storm of polio." Polio is a virus that usually infects children who live in unsanitary conditions. India has a dense population, and many places are not clean. There are high levels of migration and a weak public health system. These factors have made it difficult for the nation to fight polio, which attacks a person's central nervous system. Sometimes it causes paralysis, weakened muscles, deformation, and in some cases, death. For decades, the number of reported polio cases in India was in the thousands each year.

However, officials in India have not received any reports of polio since January 2011, when there was a single case. It was the only reported case of polio in India that year. In recent years, the number of cases in the nation had been falling steadily. In 2009, India had 741 cases of polio. That plunged to 42 in 2010.

What accounts for this success? The World Health Organization (WHO) has been working with India's government. A \$300 million-a-year campaign to stop polio has been run. Twice a year, 2.5 million workers fan out across the country to give the polio vaccine to 175 million children. They hike to remote villages, wander through trains to reach migrating families, and stop along roadsides to vaccinate the homeless. Health officials have also organized to quickly hit areas of outbreaks with emergency vaccinations.

Considerably reducing the rate of polio is a big achievement. It has boosted the morale of health supporters and donors. They had begun to lose hope of ever defeating the stubborn disease. The success also helps India, which bills itself as one of the world's emerging powers, to shed its link to a disease associated with poverty. Polio was once common across the globe, but most wealthy nations, including the U.S., conquered it after the vaccine was introduced in 1955. One by one, poorer nations also began to control and then rid themselves of polio.

Bill Gates, who runs a foundation that has made the elimination of polio one of its goals, hailed India's achievement. Gates said it was an example of the progress that can be made on difficult development problems.



Photo credit: AP/Matias Cadi
Millions of children in India have been given a vaccine to prevent them from getting polio. In January 2012, India celebrated a full year since its last reported case of polio.

"Polio can be stopped when countries combine the right elements: political will, quality [vaccination] campaigns, and an entire nation's determination," Gates said. "We must build on this historic moment and ensure that India's polio program continues to move full-steam ahead until [the virus is wiped out]." Polio is still endemic in Pakistan, Afghanistan, and Nigeria. Elsewhere, it no longer exists.

India's government cautiously welcomed its achievement as proof of its commitment to fighting the disease.

"We are excited and hopeful. At the same time, [we are watchful] and alert," Health Minister Ghulam Nabi Azad said.

Azad warned that India needs to push forward with its vaccination campaign. This will ensure the elimination of any remaining virus and prevent the import and spread of the virus from abroad. While no one in India is reported to have suffered from polio in a year, the virus, which travels through human waste, could still be lingering.

India will not be considered completely polio-free until at least three full years pass without a case.

The Associated Press contributed to this story.

PAGE 2

Dig Deeper

In March 2014, the World Health Organization (WHO) declared India polio-free, after the nation went for three years with no new cases. WHO said the milestone means the entire Southeast Asian region, home to a quarter of the world's population, is considered free of the disease. Polio (short for "poliomyelitis") is now limited to only a few countries. This is a good thing, since it can be a dangerous disease that has no cure.

Polio is a disease that infects mostly children under age 5. Many people who get polio have no symptoms, although a small number experience a flu-like illness for up to 10 days. Their symptoms include fever, sore throat, headache, vomiting, back and neck pain, and muscle weakness. In rare cases, polio can be much more serious. It can cause severe muscle weakness, paralysis, and deformity. If polio affects the lungs, it can also be fatal. Some people develop "post-polio syndrome." Years after contracting the illness, these people experience weakness and other problems.

Polio is highly contagious. Since the virus lives in an infected person's throat and intestines, it can be spread through sneezing, coughing, or having contact with human waste. Health experts advise people in places where polio is still a problem to wash their hands often to prevent spreading the virus.

At one time, polio was a problem in many countries because there was no way to prevent it. As with the flu and other viruses, outbreaks of polio would spread quickly, with devastating results. Parents feared that their children would catch the virus and suffer permanent effects. Many well-known people survived polio, including singer Joni Mitchell and actor Alan Alda. When he was in his 30s, future President Franklin D. Roosevelt developed paralysis that required him to use a wheelchair for the rest of his life. Some people believe his paralysis was caused by polio.

In the U.S. and many other countries, younger generations haven't had to worry about polio. In 1955, a polio vaccine, developed by Jonas Salk, became available in the United States. Other countries soon began vaccinating their children as well. The results were dramatic. Where the vaccine was available, cases of polio dropped markedly. In the 1960s, an oral vaccine was developed.



Photo credit: AP/Muhammed Muhsen
This Pakistani child is vaccinated against polio by a health worker in Islamabad, Pakistan, in 2013.

Today, polio is limited to a handful of countries in Africa and the Middle East. Still, there is concern about the future. Health experts say they have seen polio in countries that had previously been declared polio-free. They believe the spread is occurring because some people are not being vaccinated. Health officials are continuing to distribute the vaccine in an effort to wipe out polio worldwide.

Dictionary

deformation (*yoym*) unusual or incomplete growth of part of the body

elimination (*noim*) removal

morale (*noim*) how happy or confident someone feels

paralysis (*noim*) a loss of voluntary movement in a body part, caused by injury or disease of the nerves, brain, or spinal cord

polio endemic (*ad/ve/ive*) having to do with an area where the disease polio is present

TEACHER NAME		Lesson #
Katy Gibbs		3
MODEL	CONTENT AREA	GRADE LEVEL
Moral Discussion/Dilemma	Practicum Lesson Language Arts and Science	5-6
CONCEPTUAL LENS		LESSON TOPIC
Responsibility		Vaccinations
LEARNING OBJECTIVES (from State/Local Curriculum)		
Language Arts – Common Core Curriculum – Informational Text 4.RI.1 – Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. 4.RI.2 – Determine the main idea of a text and explain how it is supported by key details; summarize the text. 4.RI.3 – Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text. Language Arts – Common Core Curriculum – Speaking and Listening Area SL.4.1 - Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly. Science Essential Standards 8.L1 – Understand the hazards caused by agents of diseases that affect living organisms. 8.L.1.1 – Summarize the basic characteristics of viruses, bacteria, fungi, and parasites relating to the spread, treatment, and prevention of disease. 8.L.1.2 – Explain the difference between epidemic and pandemic as it relates to the spread, treatment, and prevention of disease.		
THE ESSENTIAL UNDERSTANDING (What is the overarching idea students will understand as a result of this lesson?)		THE ESSENTIAL QUESTION (What question will be asked to lead students to “uncover” the Essential Understanding)
Responsibility influences decisions		How does responsibility influence decisions?
CONTENT KNOWLEDGE (What factual information will students learn in this lesson?)		PROCESS SKILLS (What will students be able to do as a result of this lesson?)
- Students will gain an understanding of how a vaccine works to protect the body. - Students will understand that there are many different views and opinions with regards to vaccinations. - Students will gain an understanding of how vaccinations have changed over time – timeline. motivate		- Students will be able to compare and contrast, summarize, and make generalization - Students will be able to explain the cause and effect relationships present. - Students will be able to read text appropriate to their reading levels. - Students will engage in cooperative groups analyzing content to determine relevant information. - Students will participate in group discussion regarding the moral dilemma of required vaccinations.

GUIDING QUESTIONS

What questions will be asked to support instruction?

Include both "lesson plan level" questions as well as questions designed to guide students to the essential understanding

Pre-Lesson Questions:	During Lesson Questions:	Post Lesson Questions:
• How many of you have had vaccinations in the past? • What are your thoughts/feelings regarding your own vaccinations? • Should there be exceptions to the rules? • What is a vaccination? • What do you believe is the importance of having vaccinations? • Explain your experiences related around getting vaccinations.	• What are your immediate/gut reactions to the news clip? What makes you feel that way? • What causes parents and individuals to question the effectiveness of a vaccine? • Why do people choose not to vaccinate? • What impact has the measles or any outbreak have on people who are unable to get vaccinated due to medical reasons? • Do you think that first world countries, like the United States, have a different outlook on vaccinations? Why or why not? • How does where you are from or your culture change your outlook on vaccinations? • How would the beliefs or thoughts of a person from the United States differ from someone from Kenya? • How do immunizations affect communities?	• Should those that choose not to vaccinate be held accountable (in some way) for spreading diseases/viruses? • What are the consequences of choosing not to vaccinate? • How do those that do not participate in vaccinations impact society? • How do families come to decisions regarding vaccinations? • Who is responsible for protecting the public and keeping them safe? • How are the responsibilities of Disneyland different from Margaret's responsibilities? • What would be required for you to change your stance? • What if the consequence was different? Would that change your position?

DIFFERENTIATION

(Describe how the planned learning experience has been modified to meet the needs of gifted learners. Note: Modifications may be in one or more of the areas below. Only provide details for the area(s) that have been differentiated for this lesson.)

Content	Process	Product	Learning Environment
The reading and content is advanced for fourth grade and contains advanced vocabulary. Prior to reading the articles, the teacher will pre-teach several of the vocabulary words that appear in all articles.			Students are self-directed learners and will lead the discussion. Teacher acts as a facilitator for the majority of the lesson

PLANNED LEARNING EXPERIENCES

(What will the teacher input? What will the students be asked to do? For clarity, please provide detailed instructions)

Engage and Connect - This phase focuses on piquing students' interest and helping them access prior knowledge. This is the introduction to the lesson that motivates or hooks the students.

Hook: When students arrive, the following video clip will be cued up, and it will be watched as soon as students arrive.
<http://abcnews.go.com/Health/measles-continue-spread-reaching-154-cases-17-states/story?id=29169273>

Discussion Question: What are your immediate/gut reactions to the news clip? What makes you feel that way?

Explore - *In this phase, the students have experiences with the concepts and ideas of the lesson. Students are encouraged to work together without direct instruction from the teacher. The teacher acts as a facilitator. Students observe, question, and investigate the concepts to develop fundamental awareness of the nature of the materials and ideas.*

Students will be given 4 articles related to vaccinations. They will work with a partner to read all 4 articles. Each article is approximately 1 page typed.

Article titles:

- CBS News poll on vaccines and the measles outbreak
- Five babies near Chicago get measles, a disease that can be dangerous – Pulled from www.newsela.com
- What's Up With Parents Who Don't Vaccinate Their Children? – pulled from NPR website
- The Top 7 Reasons Parents Tell Me They Don't Want to Vaccinate – pulled from Huffingtonpost.com

As students are reading they will be asked to jot down their thinking and questions that come to mind as if they were doing a close reading.

Explain - *Students communicate what they have learned so far and figure out what it means. This phase also provides an opportunity for teachers to directly introduce a concept, process, or skill to guide students toward a deeper understanding.*

Discussion Questions:

- What causes parents and individuals to question the effectiveness of a vaccine?
- How does where you are from or your culture change your outlook on vaccinations?
- How would the beliefs or thoughts of a person from the United States differ from someone from Kenya?
- What is a parent's responsibility in terms of deciding about vaccines?
- Why do people choose not to vaccinate? Can this be viewed as a part of parental responsibility?
- What impact has the measles or any outbreak have on people who are unable to get vaccinated due to medical reasons?
- Do you think that first world countries, like the United States, have a different outlook on vaccinations? Why or why not?
- How do immunizations affect communities?
- What is the responsibility of a community to ensure its members are vaccinated? Why would this matter?
- Are those that choose not to vaccinate responsible for the spread of disease?
- What is the responsibility of the community?
- What role does the school play in making these decisions?
- What factors would you include if you were making this decision for yourself? Does it change if you think about it in terms of your children? Why or why not?

Students will read the following moral dilemma for today's discussion.

The dilemma:

Margaret is going to be travelling with her family to California so that they can go visit Disneyland. Margaret has two children, Steve and Sarah that she will be taking with her on the trip. Her children have always wanted to visit Disneyland. Steve got all of his vaccinations before he started school, but Sarah has not had her measles vaccine because she is getting treatment for leukemia and is unable to get this vaccine at this time. Sarah has been battling leukemia for the past year, and her prognosis is not looking good. Sarah has only ever wanted to go one place, Disneyland.

At this time, Disneyland is requiring that all visitors show their proof of measles immunization (with no exceptions being made) before they are allowed to enter the park at this time, in response to a recent measles outbreak. Margaret wrote a letter to Disneyland asking for a waiver since Sarah can't get immunized for medical reasons, but at this time Disneyland has said no. Margaret has already paid for her family's planned trip and doesn't know what to do. She has a friend that is a pediatrician that has agreed to forge documentation for Margaret saying that Sarah has been immunized so they can go on the trip. Margaret is considering forging documentation to make Sarah's wish come true. If anyone finds out that Margaret has lied, she could be arrested and go to jail for at least 3 years.

Students will immediately write their thoughts and position down on a sheet of paper before discussing with the class.

Students will split up into small groups to share their reasons for their position. After about 5 minutes of discussion that has allowed students to put their thinking out there, the class will discuss the main points of the dilemma. Students will determine what the main points of the argument are and will think about where they fall on the issue.

Elaborate — *Allow students to use their new knowledge and continue to explore its implications. At this stage students expand on the concepts they have learned, make connections to other related concepts, and apply their understandings to the world around them in new ways*

Students will break up into the major groups the class identified after reading the dilemma. They will discuss, not debate, their individual positions and thoughts regarding the dilemma.

The teacher will act as a facilitator.

Possible questions to aid discussion:

- Should Disneyland be allowed to take these steps? What affect does this have on its guests? What about from a business standpoint?
- What responsibility does Disneyland have to its guests? Employees?
- Is the pediatrician being a responsible doctor? Why or why not?
- Should the pediatrician responsible for following their professional duty, even in their personal lives?
- As a member of the society, what responsibility does Margaret have to the community at large? To her daughter?
- What makes a parent responsible?
- Do you think that Margaret is capable of making a responsible decision? Why or why not?
- By Disneyland choosing to follow these steps, how does it affect their role in the community?
- How does this decision or how could it potentially affect Disneyland's profit? Why would profit be considered?
- What are the issues/sides of this argument?
- What is the perspective of the participants/you in the story? What affects your perspective?
- Do you think your opinion would be different if you had children?

After discussion continues, students will be asked to switch sides of the argument. Students will discuss how switching their perspective changes the dilemma.

Evaluate: *This phase assesses both learning and teaching and can use a wide variety of informal and formal assessment strategies.*

Students will be asked to think about the discussion and then determine what they would do if they were Margaret.

Writing Prompt: *If you were Margaret, what would you do? What is your responsibility in this moral dilemma and how does your responsibility influence your decision?*

Additional Questions for Written Response:

- What would be required for you to change your stance?
- What if the consequence was different? Would that change your position?

Performance Task will be introduced and we will go over examples and non-examples. Students will begin researching their topic and working independently.

Contagion – Day 3

Responsibility influences decisions

You may choose to sit in any seat that has a pencil and a post-it.

Please do not move the pencils and post-its!

Today's Plan

- Vaccination Videos
- Small Group Reading Jigsaw
- Moral Dilemma Discussion
- Journal Response
- Work on our performance task

Factors that Impact Public Health:

- Housing
- Income
- Access to clean water
- Ability to see qualified medical professionals
- Quality food
- Sewage treatment facilities
- Access and willingness to vaccinate
- Personal education
- Political situations/Conflict/War
- Travel
- Climate



Vaccines

- What is a vaccination?
- What do you believe is the importance of getting vaccinations?

How do vaccines work???

Measles Outbreak

1998 Measles Fraud

As you are watching these videos please think about how these videos demonstrate the concept of responsibility.

After each video, on your post-it, please write your feelings about the video and how it is or is not demonstrating responsibility.

Short Reading and Sharing

- Today we are going to read at our groups. Each person in the group will read a different short article
- Once you finish reading, please fill in your graphic organizer
- Please share what your article was about with your group
- Make sure that everyone in the group gets a good understanding of what you read about

Short Reading Talk

- How does where you are from of your culture change your outlook on vaccines?
- What is the responsibility of a community to ensure its members are vaccinated? Why would this matter?
- What consequences, if any, should be given to individuals who choose not to get vaccinated?

Real World Situation

Margaret is going to be travelling with her family to California so that they can go visit Disneyland. Margaret has two children, Steve and Sarah that Margaret will be taking on the trip. Her children have always wanted to visit Disneyland. Steve got all of his vaccinations before he started school. However, Sarah has not had her measles vaccine because she is getting treatment for leukemia, and is unable to get this vaccine at this time. Sarah has been battling leukemia for the past year, and her prognosis is not looking good. Sarah has only ever wanted to go one place, Disneyland.

In response to a recent outbreak of measles in California, Disneyland is requiring that ALL visitors show proof of a measles vaccination (with NO exceptions being made) before the visitors are allowed to enter the park. If appropriate vaccination documentation cannot or will not be shown, Disneyland is refusing to admit those persons to the amusement park.

Margaret wrote a letter to Disneyland asking for a waiver since Sarah can't get immunized for medical reasons, but at this time Disneyland has said no. Margaret has already paid for her family's planned trip and doesn't know what to do. She has a friend that is a pediatrician that has agreed to forge documentation for Margaret saying that Sarah has been immunized so they can go on the trip. Margaret is considering forging documentation to make Sarah's wish come true. However, if Margaret were to get caught lying, she could be arrested, fined \$1000.00 and potentially go to jail for at least 3 years.

Real World Situation: What would you do???

- Should Disneyland be allowed to take these steps? What affect does this have on its guests?
What about from a business standpoint?
- What responsibility does Disneyland have to its guests? Employees?
- Should the pediatrician be responsible for following their professional duty, even in their personal lives?
- As a member of the society, what responsibility does Margaret have to the community at large?
To her daughter?
- Do you think that Margaret is capable of making a responsible decision? Why or why not?
- How does this decision or how could it potentially affect Disneyland's profit? Why would profit be considered?
- How do you think your opinion would be different if you had children?

Real World Situation: What would you do???

- On the back of your paper, there is a journal writing prompt for you to answer.
- Please make sure that you answer the questions completely with answers that make sense.
- Ensure that you use correct spelling and grammar whenever possible.

Writing Prompt: If you were Margaret, what would you do? What is your responsibility in this moral dilemma? How does your responsibility as a parent influence your decision?

Babies near Chicago get measles; experts tell people to get their shots

By Chicago Tribune, adapted by Newsela staff on 02.08.15
Word Count 596



Healthcare worker (right) talks with patient (left) 37, holding her 18-month-old son (left), after being vaccinated with the measles-mumps-rubella vaccine (MMR) at his pediatrician's office. Photo: AP Photo/Dan D'Amico

Five babies have come down with the measles at their day care center.

All five of them are under the age of 1.

Health officials are trying to figure out how the babies caught the disease. The babies all go to KinderCare Learning Center in Palatine, Illinois. Measles can cause severe health problems. It spreads quickly from child to child.

About a week ago, Illinois discovered a case of the measles. An adult had the disease. It was the first case of measles this year. Health officials said it was an adult who lives near Chicago. The person visited a Palatine health center and grocery store. Palatine is where the day care center is located.

People Sick At Disneyland Too

Officials do not know if the babies caught the measles from the adult. They also do not know if the Illinois outbreak is connected to Disneyland. This winter, more than 100 people caught the disease at the California theme park.

There is a shot that keeps most people from getting the measles. The shot is called a vaccine. Doctors say children should get the first shot at 12 to 15 months old. Children are supposed to get the second shot at 4 to 6 years old, before starting kindergarten. Measles used to be very common. Because of the vaccine, it is rare. Most doctors have never even seen a case of it.

The shot works and is safe, experts say. Still, some parents choose not to get their children vaccinated. Some say it is against their religion. Others worry that it could be dangerous.

Too Young For The Shots

The babies at the day care were too young to be vaccinated.

Colleen Moran is the spokeswoman for KinderCare. She said that day care students and workers who did not get the vaccine must stay home. KinderCare runs 1,500 centers in the United States.

"We just want everyone to recover quickly and to stay safe," Moran said.

Measles symptoms can include a high fever. People with the measles get a red rash. The illness is spread through coughing and sneezing. It can remain in the air and on surfaces for up to two hours. The measles is catching from four days before the rash to four days afterward.

In the United States, nearly all children receive the vaccine. Still, one child in 12 does not get it on time.

Shots Protect Kids "For Life"

If a child only gets the first shot of the vaccine, he can still get the measles. That is why a second dose is necessary, said Dr. Tina Tan. She is a doctor at Lurie Children's Hospital in Chicago.

Children also need to get both vaccines at the right age. Then they are "protected for life," Tan said.

A child who does not get the vaccine is much more likely to catch the measles. The child also can spread it to others.

Stopping The Disease

If even six children out of 100 do not get the shot, the disease spreads faster and faster.

Last month, Heather Robinson took her 15-month-old daughter for the measles shot. The girl broke out into a rash that covered every inch of her body. "It was even in her ears," said Robinson. She lives near Chicago. "I was totally freaking out."

Robinson thought her daughter had come down with the measles. The rash was not the disease. But it was caused by the shot. Still, Robinson is glad she had her daughter vaccinated.

"I have friends who don't vaccinate," she said. "They're depending on others to be responsible."

CBS News Poll on Vaccines and the Measles Outbreak

vaccines and the measles outbreak



A measles poster is seen at Venice Family Clinic in Los Angeles, February 5, 2015.

By Sarah Dutton, Jennifer De Pinto, Anthony Salvanto, and Fred Backus

Two-thirds of Americans (⁶⁶ percent) think parents should be **required to vaccinate** their children, and a similar percentage (⁶⁴ percent) say children who are not vaccinated should not be allowed to attend public school.

Nearly nine in 10 Americans think vaccines for measles are safe. Most do not think they are likely to cause disorders such as autism, but a quarter of the public thinks this is at least somewhat likely.

A majority says the recent **outbreak** of measles is a serious problem -- but more call it somewhat serious (⁴⁴ percent) than very serious (³² percent). Sixty-six percent of Americans say parents should be required to vaccinate their children against diseases like **measles, mumps and rubella** (MMR), while nearly a third (³² percent) think parents should be able to decide.

Majorities across all ages and education levels, as well as across the political spectrum, think vaccinations such as MMR should be required, but there are some differences. Americans under age ⁴⁵ are more likely than those who are older to think parents should be able to decide about vaccinating their children.

And while most Republicans think vaccines should be required, ³⁸ percent think that should be the parents' decision, a higher percentage than either Democrats or independents.

In addition, most Americans think children who have not been vaccinated should not be allowed to attend public school.

CBS News Poll on Vaccines and the Measles Outbreak

And while every state requires children to be vaccinated to attend school, ⁴⁸ states allow exemptions for religious reasons. The poll found that majorities of all religious groups think vaccinations should be required.

Americans express support for the idea of "**herd immunity**" -- when vaccinating a large portion of the population provides a measure of protection for those who may not have immunity. More than nine in ten Americans think parents have a responsibility to vaccinate their children for diseases like the measles in order to prevent other people from getting sick. Views are similar across demographic groups, including parents of children under age ¹⁸.

Vaccine Safety

Most Americans think vaccines are safe, including ⁶¹ percent who feel they are very safe. Perceptions of vaccines' safety are widespread among the public, but younger Americans and those without a college degree are somewhat less inclined to say vaccines are very safe.

Seventy percent of Americans think it is unlikely that vaccines can cause neurological illnesses like autism. A quarter say that link is likely (but just ³ percent say it is very likely). Americans with a college degree (¹³ percent) are less likely than those without a college degree (²⁸ percent) to hold that view.

The recent measles outbreak

Three in four Americans think the recent outbreak of measles is a serious problem, but more describe it as somewhat serious (⁴⁴ percent) than very serious (³² percent). Twenty-two percent thought it was not too serious.

In addition, ⁶⁵ percent of Americans express at least some concern that measles will become widespread in the U.S., but just a quarter say they are very concerned about that.

June 23, 2015

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Pediatrician, Boston Children's Hospital, Harvard Medical School

The Top 7 Reasons Parents Tell Me They Don't Want to Vaccinate

Posted: 06/04/2014 4:33 pm EDT | Updated: 06/04/2014 6:59 am EDT



Just last week, the Centers for Disease Control and Prevention (CDC) reported that between January 1 and May 23 of this year, there were 288 cases of measles reported in the U.S. That's more than the total number of cases in any year since 2000, when measles was eliminated in the U.S.

We have got to get more people immunized.

Essentially all of the cases were linked to "importations," cases brought in from other countries where measles is common. Most of the cases were in people who weren't immunized. Of the 195 U.S. residents who caught measles and weren't immunized, 85 percent chose not to be immunized — as opposed to being too young or having a medical reason that prevented getting the vaccine.

It got me thinking about the families I see who choose not to immunize their children. While I think that vaccines are a great idea and have immunized my children, I respect every family's right to make the medical decisions that they think best for their children. And while I think that the recommended vaccine schedule is safe, I am always willing to work with families if they really want to do something different. Better to have some vaccinations, or vaccinations on a different schedule, than none at all.

But when I read about the resurgence of vaccine-preventable diseases like measles, polio or pertussis, I worry — and wish that there wasn't so much fear about vaccines. Here are the most common reasons I hear for refusing or delaying vaccines:

1. These illnesses are rare.

This one is so interesting, because it's actually a testament to the effectiveness of vaccines. Many illnesses are rare purely because of vaccines. And when lots of people are vaccinated, it protects those who can't be or choose not to be vaccinated. We have a name for that: "herd immunity." But that herd immunity can break down when more people start choosing not to vaccinate — and in our global society, illnesses like measles or polio are just a plane ride away. Even if you or your friends don't travel, you just can't know where the family next to you in the elevator or waiting room or food court has been.

2. These illnesses aren't all that bad.

I hear this one often in comments on blogs I write about immunizations. It's certainly true of many vaccine-preventable illnesses that they aren't always serious (except perhaps for illnesses like meningococemia — that's pretty much always bad). But they all have the possibility of being serious. Measles, for example, can lead to many complications, including brain complications, and can be fatal. Of the U.S. cases

this year, 43 were hospitalized, five got pneumonia and three had other complications. Many have died in the measles outbreak in the Philippines. The risk of getting really sick from the disease is always going to be higher than the risk of getting really sick from the vaccine. That's an important point that sometimes gets lost in the discussion. The other point that often gets lost is that while you or your child might weather chicken pox or measles or whatever just fine, if the newborn next door or your ailing grandmother catches it from you, they might not. Vaccines affect the health of entire communities. I wish it were just a personal decision, but it's not.

3. Vaccines cause autism.

I really, really wish that we knew what causes autism. It is heartbreaking to work with the families of autistic children and not be able to give them an explanation. And when they have a new baby, it's truly terrifying to be on the journey with them, starting at that child, wondering what, if anything, we should do differently. But we've looked at this, again and again, and we just can't find any solid evidence to show that vaccines cause autism. For more details and information about this, check out the [latest report from the Institute of Medicine](#).

4. Vaccines have side effects.

Yes, they do. But that's true of any and all medical treatments: vaccines are no different and no worse. Most of the time, the side effects are mild and go away quickly. Sometimes, rarely, they are more serious — and what's hard is that we can't really predict who will have the more serious side effects. But as I said, that's true of every medication, every surgery, every procedure, everything we do. It's important to look carefully at the numbers when it comes to side effects, as serious ones truly are rare. You can find more information at the website of the Vaccine Adverse Effects Reporting System.

5. The preservatives in vaccines are dangerous.

I used to hear this only about thimerosal — which was likely never dangerous in the first place, but is no longer in any of the vaccines we give routinely to young children (the flu vaccine has thimerosal-free formulations). Now I'm hearing it about other things that are added to vaccines to make them safe and make sure they work. I hear it about aluminum, which is added to make some vaccines more effective — but babies get more exposure to aluminum in breast milk than they do in vaccines. Lots of what is put in vaccines is found in other medications or in foods. So while it's totally appropriate to want to know everything that's in a vaccine (for more information on additives, with a link to a list of all the additives in each vaccine, check out this [fact sheet](#)), please talk to your doctor and ask questions before you refuse a vaccine because of one of them.

6. It's a conspiracy — the pharmaceutical companies and government are keeping secrets from us.

This one puzzles me. Not that I trust every single person that works for a pharmaceutical company or the government, but the conspiracy would also have to include lots of researchers, doctors, nurses and other health workers — who don't stand to gain in any meaningful way from vaccines. Also, the number of people who would have to be sworn to secrecy, and be amazingly good liars and equally good at creating fake data, well, it's mind-boggling. And impossible.

7. I trust my family, friends and community more than my doctor.

This one makes me really sad. Clearly, my colleagues and I need to do a better job of building trust and communicating. The whole purpose of our job is to get and keep people healthy. If people don't believe that, or don't think we can be clear-thinking advocates for them, then we need to do some real soul-searching — and some real talking with people about how we can better help and serve them.

We are at a crossroads: International travel and lower vaccination rates are coming together to make those diseases we wiped out come back. Please, let's find a way to have some productive, thoughtful conversations, conversations in which both sides are heard, before more people get sick.

Remember, it's the young, the old and those that are already sick that are most likely to get into trouble from vaccine-preventable diseases. They need us to take care of them.

Follow Claire McCarthy, M.D. on Twitter: [@DrMcCarthy](https://twitter.com/DrMcCarthy)

NOTE: Immunizations: Pediatrician, Boston Children's Hospital, Harvard Medical School, Vaccine Research Center, Vaccine Safety, Vaccine Truth About Vaccines, Vaccine Myths

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6/23/2015

What's Up With Parents Who Don't Vaccinate Their Children? : Goats and Soda : NPR



goats and soda

daily life food & culture girls/boys health money new stuff

Health

What's Up With Parents Who Don't Vaccinate Their Children?

MARCH 26, 2015 9:52 AM ET

SUSAN BRINK



Aminu, age 4, was paralyzed by polio in August 2012. In the photo above, his father, Ado Ibrahim, carries the youngster through the village of Minjibir in northern Nigeria.
David Gray/NPR

A decade ago in Nigeria, rumors spread that polio vaccines were surreptitious sterilization efforts. That led to a boycott of the vaccine in 2003 and a resurgence in the poliovirus three years later.

The story points up a key point about vaccines: Confidence is critical.

A new study of more than 20,000 people in five countries looks at why people aren't confident in vaccines. The reasons vary, from a belief the vaccine isn't safe to a bad experience with a previous vaccination.

And the results can be devastating.

<http://www.npr.org/sections/goatsandsoda/2015/03/26/395345147/whats-up-with-parents-who-dont-vaccinate-their-children>

1/4

6/23/2015

What's Up With Parents Who Don't Vaccinate Their Children? : Goats and Soda : NPR

Reasons Parents Were Hesitant To Vaccinate

Confidence: Doubt the safety or efficacy of vaccines, or prefer traditional healing
Convenience: Vaccination is inconvenient, distant or costly
Complacency: Vaccination is unimportant, or the risk of infection is low
Other



Source: Heidi J. Larson et al. "Measuring Vaccine Confidence: Introducing a Global Vaccine Confidence Index"
Credit: Alyson Hart/NPR

In the U.S., the U.K. and other parts of the developed world, a single discredited scientific study linking vaccines to autism led to more than a decade of reduced vaccination rates — a circumstance largely blamed for the Disneyland-centered outbreak of measles that began in December.

The vaccine study was published today in *PLOS Current Outbreaks*. Lead author Dr. Heidi Larson, of the Department of Infectious Disease Epidemiology at the London School of Hygiene and Tropical Medicine, spoke about the findings.



Measles Vaccination Rates:
Tanzania Does Better Than U.S.

What were the five countries chosen for the survey, and why those countries?

The countries were Georgia, India, Nigeria, Pakistan and the U.K. All those countries have historically had an issue with a confidence breakdown regarding vaccines, for different reasons: discredited science, rumors or false reports of bad outcomes. In the case of Pakistan, it's a political football. There's [effectively] been a ban by the Taliban on the polio vaccine until the drone strikes stop.

People have to trust not only the vaccine, but the person giving the injection and the system requiring immunization. What exactly do people mistrust?

We asked people about their confidence in their health systems, in health programs, in family planning programs. We saw pretty consistent correlation between high confidence in the health care system and high confidence in immunization programs. It's not just about the product — the vaccine. It's also about the interaction around it.

So people hesitate for a variety of reasons.

<http://www.npr.org/sections/goatsandsoda/2015/03/26/395345147/whats-up-with-parents-who-dont-vaccinate-their-children>

2/4

5/23/2015

What's Up With Parents Who Don't Vaccinate Their Children? : Goals and Soda : NPR

That's right. Sometimes, it was less about the specific vaccine and more about the eradication effort. With polio, for example, children are repeatedly vaccinated. And to really eradicate the disease, you can't take the risk of not covering all children. So in really poor areas, with lots of other poor health indicators, people question repeated rounds of polio vaccine when they see more pressing problems. They might be hesitant for one more round of polio vaccine. They're saying: We're tired of this; we don't see much problem; why the same vaccine again; and why do you bring this one to our door?

According to the *PLOS* paper: "In 1998, the U.K. was the epicenter of perhaps the most infamous confidence crisis in recent memory, which led to widespread anxieties, declines in vaccine acceptance and consequent measles outbreaks, following the publication of the now-debunked research by Andrew Wakefield suggesting links between the MMR [measles, mumps and rubella] vaccine and autism." How damaging has that been to public confidence in vaccines?

What was very interesting to me was that the U.K. had the highest rate of hesitancy [of the five countries surveyed]. Almost a quarter of parents surveyed in the U.K. reported that they were hesitant to have their children immunized, though most of the hesitant parents, 73 percent, ultimately went on to have their children vaccinated. It took over 15 years to get back to pre-Wakefield levels of coverage. It's gotten better, but the issue still hovers.

What helps to build confidence in vaccination programs?

I think the relationship between the provider and the parent is still the most important dynamic. People need to feel they can trust the information they're getting. When a parent does not feel respected, it really can turn a hesitant parent into a refusing parent. Providers need to be open to dialogue, to having respect for questions. After all, for new parents, it's a very complex vaccine environment. It's reasonable that they ask questions. In the U.K. since that whole MMR saga, providers have made an effort to listen to parents.

measles polio vaccines

OLDER
Don't Torpedo The Dam, Full Speed Ahead For Ethiopia's Nile Project
March 26, 2015

NEWER
Ebola Is Not Mutating As Fast As Scientists Feared
March 26, 2015

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<http://www.npr.org/sections/goatsandsoda/2015/03/26/395345147/whats-up-with-parents-who-dont-vaccinate-their-children>

5/23/2015

What's Up With Parents Who Don't Vaccinate Their Children? : Goals and Soda : NPR

SHANE



NON-FICTION ARTICLE DETECTIVE!

DETECTIVE: _____

ARTICLE TITLE: _____

SOURCE: _____

WHAT IS THE MAIN IDEA OF THE ARTICLE?



EVIDENCE

EVIDENCE

EVIDENCE

WHAT IS YOUR OPINION OF THE ARTICLE? DO YOU AGREE OR DISAGREE? WHY?



Non-Fiction Article Detective!

Detective: Wuzzzzzz

Article Title: Babies near chicago get measles

Source: NewsELA

What is the main idea of the article?

Sometimes vaccines are necessary,
even if the children are too young,
or it has side effects



Evidence

15 month old daughter
got the shot,
got a rash that
covered every inch
of her body, but
was caused by
the shot. Didn't catch
the measles

Evidence

A child who does
not get the vaccine,
is much more likely
to catch the measles

Evidence

The disease spreads
very quickly, and
can stay on a
surface or in the
air, for up to 2
hours!

What is your opinion of the article? Do you agree or disagree?

I agree with this Why?
articles because if people hadn't gotten their
shots it could spread very quickly and could
take over



Non-Fiction Article Detective!

Detective: Wm

Article Title: CBS News poll on vaccines

Source: A

What is the main idea of the article?

What America thinks of the recent measles outbreak.



Evidence

It shows various polls

Evidence

It shows percentages

Evidence

It gives opinions of American citizens.

What is your opinion of the article? Do you agree or disagree?
Why?

I agree with parent being required to vaccinate their children so the rest of us don't die of measles.



Non-Fiction Article Detective!

Detective: Wm

Article Title: _____

Source: _____

What is the main idea of the article?

Parents need to vaccinate
their children



Evidence the
text says that
you can't take
risk of not vaccin-
ing all children

Evidence the text
says that people
have to trust
the injection

Evidence the
text says that
people should
trust the information
they are getting

What is your opinion of the article? Do you agree or disagree?

Why?

I agree because if you
have the chance to vaccinate you should



Non-Fiction Article Detective!

Detective: _____

Article Title: _____

Source: _____

What is the main idea of the article?

The main idea is that how the vaccine is said to be giving people Autism and other bad stuff so a lot of people haven't been getting vaccinated. Also how parents aren't trusting that the vaccine works or is a good thing so a lot of people haven't gotten vaccinated.



Evidence

A new study of more than 20,000 people in five countries looks at why people aren't confident in vaccines.

Evidence

Almost a quarter of parents surveyed in the UK reported they were hesitant to have their children immunized.

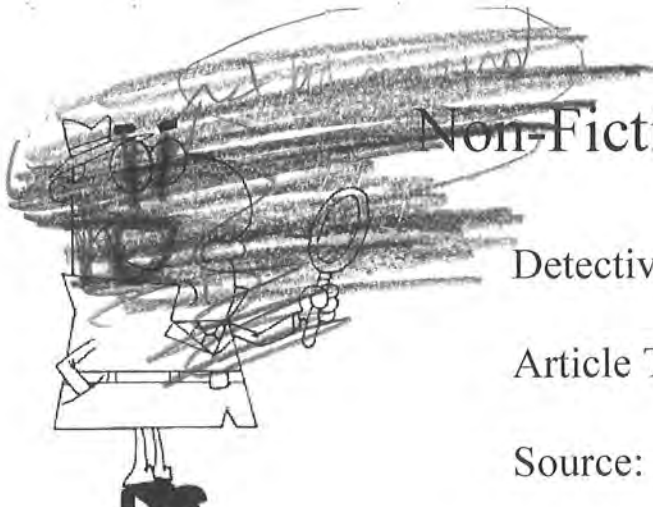
Evidence

In the U.S., the U.K. and other parts of the developed world, a single discredited scientific study linking vaccines to Autism.

What is your opinion of the article? Do you agree or disagree?

Why?

I agree that you should take the vaccine because having the measles can kill you while you would stay alive with the vaccine!



Non-Fiction Article Detective!

Detective: mm

Article Title: Babies near Chicago get measles

Source: Article (dvh)/NEWSILA

What is the main idea of the article?

That the measles virus is starting to come up again. Most people have been vaccinated, though some people haven't because of parents refusing to get their child vaccinated or they didn't get vaccinated enough in time.



Evidence

"Five babies have come down with measles at their day care center."

Evidence

"In the United States, nearly all children receive the vaccine. Still, one child in 12 does not get it in time."

Evidence

"I have friends who don't vaccinate, she said."

What is your opinion of the article? Do you agree or disagree?

Why?

My opinion of the article is that I don't get that why parents don't get vaccinated for their children. Vaccines are totally safe. Even though that little baby got rashes everywhere, they soon disappeared. That's only because the baby's immune was very-very weak.

Kohlberg Moral Dilemma - Where do you stand?

Margaret is going to be travelling with her family to California so that they can go visit Disneyland.

Margaret has two children, Steve and Sarah that Margaret will be taking on the trip. Her children have always wanted to visit Disneyland. Steve got all of his vaccinations before he started school. However, Sarah has not had her measles vaccine because she is getting treatment for leukemia, and is unable to get this vaccine at this time. Sarah has been battling leukemia for the past year, and her prognosis is not looking good. Sarah has only ever wanted to go one place, Disneyland.

In response to a recent outbreak of measles in California, Disneyland is requiring that ALL visitors show proof of a measles vaccination (with NO exceptions being made) before the visitors are allowed to enter the park. If appropriate vaccination documentation cannot or will not be shown, Disneyland is refusing to admit those persons to the amusement park.

Margaret wrote a letter to Disneyland asking for a waiver since Sarah can't get immunized for medical reasons, but at this time Disneyland has said no. Margaret has already paid for her family's planned trip and doesn't know what to do. She has a friend that is a pediatrician that has agreed to forge documentation for Margaret saying that Sarah has been immunized so they can go on the trip. Margaret is considering forging documentation to make Sarah's wish come true. However, if Margaret were to get caught lying, she could be arrested, fined \$1000.00 and potentially go to jail for at least 3 years.



Name: _____

Grade Level: _____

June 24, 2015

If you were Margaret, what would you do?

What is your responsibility in this moral dilemma and how does your responsibility influence your decision?

How does your responsibility as a parent influence your decision?

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Name: 

Grade Level: _____

June 24, 2015

If you were Margaret, what would you do?

What is your responsibility in this moral dilemma and how does your responsibility influence your decision?

How does your responsibility as a parent influence your decision?

I would not let Sarah go and would turn in this doctor or pediatrician since she can't be trusted and is doing bad criminal things. My responsibility is to bring her and possibly make a lot of people at Disney sick with measles or do the opposite, but make Sarah mad and sad. I know the law and people's health is more important than one girl having her dream come true so that influences my decision or supports it.

Name: _____



Grade Level: _____

5

June 24, 2015

If you were Margaret, what would you do?

What is your responsibility in this moral dilemma and how does your responsibility influence your decision?

How does your responsibility as a parent influence your decision?

If I was Margaret, I would ask for my money back & tell Sarah that she couldn't go to Disney world because of her condition. My responsibility as a citizen would influence my decision because I would not want to get people sick. As a parent, I would comfort Sarah and tell her we can go somewhere else.

Name: [scribble]

Grade Level: _____

June 24, 2015

If you were Margaret, what would you do?

What is your responsibility in this moral dilemma and how does your responsibility influence your decision?

How does your responsibility as a parent influence your decision?

1Q If I was Margaret I would just say HMM well there are lots of places in the world I can take her and then once her timesa passes maby I can take her back to disny land. 2Q Your resposibililty when your a paret is very siros first if you lie then it would be a Bad influence on your children Becose then when they grow up they could lie and grow up to be criminals. ~~Resposibility comes with desion~~

Name: William

Grade Level: _____

June 24, 2015

If you were Margaret, what would you do?

What is your responsibility in this moral dilemma and how does your responsibility influence your decision?

How does your responsibility as a parent influence your decision?

If I was Margaret, I wouldn't take the risk, because it could damage your reputation in the community, and you might lose your job. My responsibility is to keep the park safe. My responsibility influences my decision, because I want to keep ~~my~~ Sarah from getting the measles, and to keep others from catching the disease. I want to keep ~~my daughter~~ Sarah safe.

Name: _____



Grade Level: _____

June 24, 2015

If you were Margaret, what would you do?

What is your responsibility in this moral dilemma and how does your responsibility influence your decision?

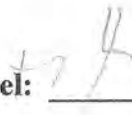
How does your responsibility as a parent influence your decision?

I would not lie because you could
get other people sick and pay a fine.
It is a responsibility to keep your
child vaccinated. this would influence as
a parent because I would vaccinate my
child so he/she could go to Disneyland.

Name: _____



Grade Level: _____



June 24, 2015

If you were Margaret, what would you do?

What is your responsibility in this moral dilemma and how does your responsibility influence your decision?

How does your responsibility as a parent influence your decision?

If I were Margaret I would forge the documentation because since Sarah was fighting Leukemia she might not make it to have another chance at this. My responsibility in this moral dilemma is a parent and doing everything I can for my children. My responsibility as a parent influences my decision by me caring so much for my children.

Name: Wm

Grade Level: _____

June 24, 2015

If you were Margaret, what would you do?

What is your responsibility in this moral dilemma and how does your responsibility influence your decision?

How does your responsibility as a parent influence your decision?

If I were Margaret, I wouldn't ask my friend to forge the papers, seeing as it could get me in jail and her fired. Instead I would write a proposition to Disneyland that only one non-vaccinated person could be allowed in the park at a time, with a maximum of a week. I wouldn't stop pushing until they allowed me to follow through with the new rule. My responsibility as a parent would be to make sure my child gets to Disneyland, my responsibility morally is to not get my friend fired, as well as to not get everyone in Disneyland infected.

Name: Wm

Grade Level: 6

June 24, 2015

If you were Margaret, what would you do?

What is your responsibility in this moral dilemma and how does your responsibility influence your decision?

How does your responsibility as a parent influence your decision?

If I were Margaret I would not go through with forging a document and I would get permission from Disneyland and then when they are leaving Disneyland put Sarah in quarantine for a week to ensure she doesn't have measles.

Your responsibility as a parent is to keep your kid as safe and healthy as possible. So you should always consider that in your decision.

To prevent myself and others from getting sick. And consider others safety when I make decisions.

TEACHER NAME		Lesson #
Katy Gibbs		4
MODEL	CONTENT AREA	GRADE LEVEL
Simulation	Practicum Lesson Language Arts and Science	5-6
CONCEPTUAL LENS		LESSON TOPIC
Responsibility		Who gets sick – how it spreads
LEARNING OBJECTIVES (from State/Local Curriculum)		
Language Arts – Common Core Curriculum – Speaking and Listening Area SL.4.1 - Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly. SL.4.4 - Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace. Science Essential Standards 8.L1 – Understand the hazards caused by agents of diseases that affect living organisms. 8.L.1.1 – Summarize the basic characteristics of viruses, bacteria, fungi, and parasites relating to the spread, treatment, and prevention of disease. 8.L.1.2 – Explain the difference between epidemic and pandemic as it relates to the spread, treatment, and prevention of disease.		
THE ESSENTIAL UNDERSTANDING (What is the overarching idea students will understand as a result of this lesson?)		THE ESSENTIAL QUESTION (What question will be asked to lead students to “uncover” the Essential Understanding)
Responsibility influences decisions		How does responsibility influence decisions?
CONTENT KNOWLEDGE (What factual information will students learn in this lesson?)		PROCESS SKILLS (What will students be able to do as a result of this lesson?)
- Students will learn how a disease spreads - Students will learn how to use a pipette and disperse fluid correctly following scientific procedures. - Students will learn the term patient zero		- Students will be able to explain the cause and effect relationships present. - Students will engage in cooperative groups analyzing content to determine relevant information. - Students will participate in group discussion regarding the specific topic of disease - Students will interpret information and generate questions - Students will create a web or map tracing disease simulation - Students will be assigned a role to participate in the simulation. - Students will apply information they’ve learned as they participate in group discussion related to their assigned role.

GUIDING QUESTIONS

What questions will be asked to support instruction?

Include both "lesson plan level" questions as well as questions designed to guide students to the essential understanding

Pre-Lesson Questions:	During Lesson Questions:	Post Lesson Questions:
- What makes a disease contagious? - Why is it important for a community to be knowledgeable about outbreaks or the spread of diseases? Questions after Hook: - What meaning can you make from the displayed image? - How does looking at this map make you feel? - How could your role in society, i.e. government official, teacher, epidemiologist, parent, etc. affect the way you feel and see this map?	- What does this experiment tell us about contagious diseases? - How does this simple experiment relate to an outbreak of disease or even more common transmission of colds and flus? - How does this experiment change the way you manage your own health? - How could this experiment change the way you make decisions? - How could this experiment be used to educate parents and children about the importance of vaccinations and healthy habits, such as frequent hand washing? - Who does your group believe was patient zero? - How did you figure out patient zero? - Explain your strategy to the rest of the class - Why would it be important to track human interaction when look at the spread of a disease? - How could this information be helpful to the CDC or WHO? - Now that we have completed this part of the lesson, think back to the list you made when you first arrived. How is/could/would this information be important if there were an outbreak? - How does the importance of getting each individual written down change when the context changes and you are faced with an outbreak situation? - What was the level of responsibility you felt while playing your role? - How does that level of responsibility differ from how you feel in real life? - How are our decision making capacities challenged when provided with a specific context? - How did you feel about the role that you had to play? - How does your opinion/decision relate to the opinion/decision of the role that you played?	- What factors contribute to how a disease spreads around the globe/community? - If you were in charge of making a decision today, what would you decide to do to at the individual school level and in terms of the county as a whole? - How does being in charge of the entire school system affect the decision you would make? - What rights should a parent have when making decisions about their child? - When should exceptions be made to the vaccination rules? - How does the health of a community affect the lives of those living in the community? - How does health and vaccination records affect the health of the globe? - What role does the CDC and the WHO have in protecting our globe? - What factors impact the decisions that individuals on this planet make with regards to their personal health? - How does responsibility influence decisions?

DIFFERENTIATION

(Describe how the planned learning experience has been modified to meet the needs of gifted learners. Note: Modifications may be in one or more of the areas below. Only provide details for the area(s) that have been differentiated for this lesson.

Content	Process	Product	Learning Environment
The content and concept is advanced for elementary grades and contains advanced vocabulary.	Students will be required to synthesize information that has been learned throughout the week to their opinion when participating in the simulation.		The teacher will act as a facilitator for the majority of the lesson.

PLANNED LEARNING EXPERIENCES

(What will the teacher input? What will the students be asked to do? For clarity, please provide detailed instructions)

Engage and Connect – This phase focuses on piquing students' interest and helping them access prior knowledge. This is the introduction to the lesson that motivates or hooks the students.

Hook: When students enter the classroom a disease map will be displayed on the board. A disease map is a web graphic organizer that shows the connections and how diseases have spread within a community.

Then students will be asked to list on a sheet of paper every single person that they have come into contact with over the past 2 days.

- What meaning can you make from the displayed image?
- What feelings did you have when you were attempting to list each person you'd come into contact with? Why do you think you had those feelings?
- How does looking at this map make you feel?
- How could your role in society, i.e. government official, teacher, epidemiologist, parent, etc. affect the way you feel and see this map?

Explore - In this phase, the students have experiences with the concepts and ideas of the lesson. Students are encouraged to work together without direct instruction from the teacher. The teacher acts as a facilitator. Students observe, question, and investigate the concepts to develop fundamental awareness of the nature of the materials and ideas.

Students will be given a clear plastic cup that contains about 1in of a clear liquid.

- 1 cup will contain the solution NaOH (similar to liquid Drano) – Depending on how the week goes, I will probably give this cup to either Monica or myself to ensure that no child has an accident while practicing how to use a pipette.
- The remaining cups in the classroom will be filled with tap water

Students will also be given a pipette and a tracking graphic organizer.

Each students will be taught to how to correctly use the pipette and will practice sucking up some liquid from their cup and putting it back into their cup. **They will be explicitly told not to mix the ingredients in their cups. That one of their cups is different from all the others and that there is no way to tell which is different.**

Experiment Procedure:

1. Students will gather their cup and pipette and will partner with 1 student in the classroom, including me.
2. Students will stand near each other
3. Fill your pipette with liquid from your cup
4. Place you pipette OVER (**NOT IN – OVER**) the cup of the partner and squirt your solution into their cup.
5. The person you partnered with will do the same as the first person.
6. Each person will record the name of the person on their paper with whom they exchanged liquids.

Mrs. Dobson and I will model this procedure to ensure that there is not any confusion and to make sure that the experiment is run correctly.

Students will exchange fluids with a total of three different people and will record each exchange on their graphic organizer.

Once exchanges have been completed, I will go around with a pipette and a cup of phenolphthalein solution (lye) and will place a drop into each student's cup.

A bright pink color indicates an infected cup.

Questions:

- What does this experiment tell us about contagious diseases?
- How does this simple experiment relate to an outbreak of disease or even more common transmission of colds and flus?
- How does this experiment change the way you manage your own health?

- How could this experiment change the way you make decisions?
- How could this experiment be used to educate parents and children about the importance of vaccinations and healthy habits, such as frequent hand washing?

Explain - *Students communicate what they have learned so far and figure out what it means. This phase also provides an opportunity for teachers to directly introduce a concept, process, or skill to guide students toward a deeper understanding.*

The teacher will list on the board the students that had an infected cup.

We will begin to make a disease map, basically a web graphic organizer, in an attempt to determine where the infection/disease started. In order to do this, we will list who each person traded liquids with.

Students will be split up into three groups, a random mix, and each group will be asked to use the information on the board to determine who was patient zero. After being given time to discuss, students will share out who they believe to patient zero, but will also need to share out and explain how they arrived at that solution.

Questions:

- Who does your group believe was patient zero?
- How did you figure out patient zero?
- Explain your strategy to the rest of the class
- Why would it be important to track human interaction when look at the spread of a disease?
- How could this information be helpful to the CDC or WHO?
- Now that we have completed this part of the lesson, think back to the list you made when you first arrived. How is/could/would this information be important if there were an outbreak?
- How does the importance of getting each individual written down change when the context changes and you are faced with an outbreak situation?

Elaborate — *Allow students to use their new knowledge and continue to explore its implications. At this stage students expand on the concepts they have learned, make connections to other related concepts, and apply their understandings to the world around them in new ways*

After we have determined patient zero, we will leave the disease mapping on the board. Students will then draw a card from the stack. The card that they draw will provide the students with the role and a little background about them.

The situation is thus, the infection that we have located has taken place at a local elementary school. The students and teachers are getting sick at an alarming rate. Parents are calling the principal each day, and hundreds of kids are out sick. Several of the students have been admitted to the hospital. Two other schools close by also had students out sick today with the same illness. The local area newspaper and nightly news have reporters camped out at the school day and night. The superintendent and the school board are having an emergency meeting tonight at 5pm to determine what to do about this situation. The meeting will be open to the public at 5pm, but at 7pm the public will be asked to leave and the meeting will become a private meeting as they come to a consensus.

The students will have a few minutes to read more about their role and their roles background. The students will simulate the meeting. Specific roles will have instructions about how to begin the meeting/discussion. Five – ten minutes will simulate 1 hour, with a 3 minutes break and then another 5-10 minutes for the second hour. At that point, the only positions that will continue to participate in the discussion will be the superintendent and the school board members. The remainder of the students will observe the discussion. At the end of 5 minutes, the superintendent and school board will have to make a final decision and will take a vote. The decision will be read out by the superintendent.

Roles:

- 1 superintendent
- 4 school board members
- 3 principals
- 2 news reporters – 1 newspaper; 1 nightly news correspondent
- 3 teachers
- 1 pediatrician
- 1 pediatrician that focuses on natural remedies
- 5 parents – 3 women, 2 men

Questions:

- What was the level of responsibility you felt while playing your role?
- How does that level of responsibility differ from how you feel in real life?
- How are our decision making capacities challenged when provided with a specific context?
- How did you feel about the role that you had to play?
- How does your opinion/decision relate to the opinion/decision of the role that you played?

Evaluate: *This phase assesses both learning and teaching and can use a wide variety of informal and formal assessment strategies.*

The students will synthesize all of the information that they learned this week to end with the following discussion questions. (Questions will be related to the closure of this lesson, as well as, closure for the week.)

- If you were in charge of making a decision today, what would you decide to do to at the individual school level and in terms of the county as a whole?
- How does being in charge of the entire school system affect the decision you would make?
- What rights should a parent have when making decisions about their child?
- When should exceptions be made to the vaccination rules?
- How does the health of a community affect the lives of those living in the community?
- How does health and vaccination records affect the health of the globe?
- What role does the CDC and the WHO have in protecting our globe?
- What factors impact the decisions that individuals on this planet make with regards to their personal health?
- How does responsibility influence decisions?

Spread of Infection Activity

INTRODUCTION:

This is a hands-on activity that simulates the spread of a disease.

STUDENT/CLASS TIME REQUIRED:

40 minutes

MATERIALS (for a class of 24):

- (24) 3oz paper or plastic cups
- (24) disposable pipettes (If pipettes are unavailable, students can carefully pour a small amount of the liquid between cups.)
- 10 mL of 0.1 M NaOH (0.4 grams of NaOH dissolved in enough water to make 100 ml of solution) **or** 10 mL of 10% solution of Liquid Drano (10 mL of Drano plus 90 ml of water)
- water
- phenolphthalein solution (indicator for basic solutions)

TEACHER PREPARATION:

- Fill 23 of the cups with 10 mL of water.
- Fill the last cup with 10 mL of NaOH solution. Keep track of this cup but do not mark it in any way. This is the “infected” cup.

TEACHER PROCEDURE:

1. Hand out cups and pipettes. Keep track of which student receives the NaOH but do not indicate to the student that this cup is different from the other.
2. After students have made exchanges of fluids, walk around and place several drops of phenolphthalein solution into each student's cup. A bright pink color indicates an infected cup.

STUDENT INSTRUCTIONS:

1. Obtain a cup with fluid from your teacher.
2. To simulate the possible spread of infection through sneezing or coughing, you will exchange a small amount of fluid with a classmate by doing the following:
 - a. Place the pipette in your cup and fill it with solution.
 - b. Place your pipette OVER (not in) the cup of the person you are exchanging with and squirt your solution into the other cup.
 - c. Record the name of the person with whom you exchanged fluids in the table below.
3. Repeat step 2 with two other students.
4. After you have exchanged fluids with three other classmates, your teacher will place phenolphthalein into your cup. If your cup turns pink, you are infected.

First Exchange	
Second Exchange	
Third Exchange	

ANALYSIS:

Originally, there was only one infected cup. As a class, share infection and exchange data to determine who had the original infected cup.

Hardyville Public School (HPS) District Information:

- Mission statement: The mission of Hardyville Public Schools is to collaborate with stakeholders to provide a safe, caring, rigorous, and engaging learning environment that prepares all students to be career and college ready.
- Vision Statement: Hardyville Public Schools' students will reach their full potential and become successful, responsible citizens in a diverse, global society.
- School district has 206,000 residents
- Broadly based economy supported by a thriving tourist and widely diversified industry, including service
- 11th largest out of 115 school systems in the state
- 25,500 students are served in 42 schools (elementary, middle, and high schools)
- 55% of students in the Hardyville School District receive free or reduced lunch – a 12% increase over the past 3 years
- 65 different languages are spoken in the homes of HPS students
- AIG (academically and intellectually gifted) population is 16%
- Exceptional Children (special education services) population is 14%
- Over 99% of teachers are considered to be highly qualified based on state standards
- 61% of teachers are Nationally Board Certified – the highest teaching certification possible
- Considered to have low funding because even though HPS has a \$218 million operating budget, it is ranked 85th in the state in per student funding, even though it's the 11th largest system in the state
- HPS has fewer people working in its central office than all but 9 other school systems
- 80% of students graduate high school in 4 years – equal to the state average
- Test Data for Grades 3-8
 - 71.2% of students passed reading last year
 - 82.8% of students passed math last year
- Average SAT Performance Data
 - HPS – 1,049 average total score
 - State – 997 average total score
 - Nation – 1,010 average total score

Simulation Roles – Roles have been planned for 20 participating students

1. Superintendent

- a. Born and grew up in the school district that they are currently serving
- b. Moved away for their professional career, but returned 2 years ago to become superintendent
- c. There are 3 years remaining on the contract within this school district
- d. The approval ratings for this superintendent are as follows:
 - i. Parents – 61% approve; 39% disapprove
 - ii. Teachers – 71% approve; 29% disapprove
 - iii. School Board Members – split 50% approve; 50% disapprove
- e. Taught middle school for 10 years prior to becoming an administrator.
- f. Principal Experience:
 - i. Elementary School – 2 years
 - ii. High School – 4 years
- g. Assistant Superintendent in neighboring school district for 3 years
- h. Superintendent in neighboring state for 6 years
- i. Age: 47 years old
- j. Gender: Male
- k. Race: Latino
- l. Religious Beliefs: Methodist
- m. Parent of 2 children, one in 8th grade, the other a junior in high school

2. School Board Member 1

- a. Represents part of the district where students are sick
- b. School community represented has 43% of families in poverty
- c. Retired teacher – taught for 36 years in school district
- d. Taught elementary school
- e. Served as a homebound teacher for seriously ill children for the last 4 years of teaching experience
- f. Earned a Bachelor of Arts in Education from Western Carolina University
- g. Born, raised, and has lived in the community for the duration of life
- h. Age: 61 years old
- i. Gender: Female
- j. Race: White
- k. Religious Beliefs: Methodist

- l. Mother of 3 children, all grown; grandmother of 2 young children, 1 entering kindergarten this upcoming school year

3. **School Board Member 2**

- a. Represents a part of the district where students are not sick.
- b. Appointed by the school board to fill a vacant seat
- c. School community represented has 61% of families in poverty
- d. Owner and founder of local real estate company
- e. Previously worked in the consumer banking industry
- f. Former commissioner in small town located within his district
- g. Earned a Bachelor of Art degree from Davidson College and a Master of Business Administration (MBA) from Northwestern University.
- h. Born, raised, and has lived in the community for the duration of his life
- i. Age: 57 years old
- j. Gender: Male
- k. Race: White
- l. Religious Beliefs: Baptist
- m. Father of 2 children; one attends HPS high school and the other attends UNC Wilmington
- n. Wife is a local reporter for the life section of the newspaper

4. **School Board Member 3**

- a. Represents part of the district where students are not sick
- b. School community represented has 73% of families in poverty
- c. Respiratory Therapist at local hospital
- d. Graduated from Columbus State University
- e. Born and raised in New York City; moved to Hardyville upon graduating from college in 1990
- f. Age: 47 years old
- g. Gender: Female
- h. Race: Asian American
- i. Religious Beliefs: Buddhist
- j. Mother of 1 child, a son that attends a local HPS elementary school
- k. Husband also works at the local hospital as an accountant

5. **School Board Member 4**

- a. Represents part of the district where students are sick
- b. School community represented has 42% of families in poverty
- c. Born, and raised in Hardyville

- d. Attended a local high school, then graduated with a degree in special education and a Master's in Public School Administration from Western Carolina University
- e. Taught special education students for 3 years before going to work for the family business
- f. Family has been in business in Hardyville for 50 years and owns a small chain of local grocery stores
- g. Age: 65 years old
- h. Gender: Male
- i. Race: African-American
- j. Religious Beliefs: Methodist
- k. Father of 3 grown children that all attended Hardyville Public Schools.

6. School Board Member 5

- a. Represents a part of the district where students are not sick
- b. School community represented has 27% of families in poverty
- c. Currently a realtor for a successful, local real estate firm; previously worked for 20 years in college athletics
- d. Received undergraduate and graduate degrees in Physical Education from the University of West Georgia
- e. Age: 58 years old
- f. Gender: Male
- g. Race: Latino
- h. Religious Beliefs: Catholic
- i. Daughter graduated from HPS public schools
- j. Wife and daughter are employees of Hardyville Public Schools

7. School Board Member 6

- a. Represents a part of the district where students are not sick
- b. School community represented has 46% of families in poverty
- c. Department chair of the Emergency Medical Services program at the local community college
- d. Trained paramedic and volunteers for the local fire department
- e. Born, raised, and has lived in the community for his entire life
- f. Age: 49 years old
- g. Gender: Male
- h. Race: White
- i. Religious Beliefs: Baptist
- j. Wife from Hardyville and also graduated from the local public school system
- k. Three children attend local HPS schools

8. School Board Member 7

- a. Represents a part of the district where students are sick
- b. School community represented has 68% of families in poverty
- c. Has managed non-profits and small businesses for the past 10 years
- d. Currently manages a local non-profit that is committed to helping families manage their finances and plan for the future
- e. Born and raised in a neighboring town
- f. Bachelor's degrees in English and Philosophy from Guilford College, and a Master's degree in English from UNC-Chapel Hill
- g. Age: 43 years old
- h. Gender: Female
- i. Race: Latina
- j. Religious Beliefs: Non-Denominational Christian
- k. Son attends local middle school and husband works in finance at a local bank

9. Principal 1

- a. The infection started at this elementary school
- b. 51% of the families at this school are in poverty
- c. Teacher for 12 years, assistant principal for 4 years, and principal for the past 8 years
- d. Age: 47 years old
- e. Gender: Female
- f. Race: Asian-American
- g. Religious Beliefs: Christian – Unspecified
- h. Has held meetings at the school explaining the disease to parents
- i. Has partnered with the local public health department to make a plan of action
- j. Many parents have called and more than 50% of the student body did not come in to school today
- k. The disease started approximately 2 weeks ago
- l. Newspaper reporters and tv journalist are camping out at the front of the school
- m. Many teachers have expressed their concern
- n. Mother of 2 children

10. Principal 2

- a. Students at this middle school were out sick today
- b. 63% of the families at this school are in poverty
- c. Teacher for 12 years, assistant principal for 7 years, and principal for the past 12 years

- d. Age: 53 years old
- e. Gender: Male
- f. Race: White
- g. Religious Beliefs: Unspecified
- h. Students from this middle school attended the elementary school where the disease began
- i. Parents have started calling, and 30% of the student body did not come in to school today
- j. Many teachers have expressed their concerns
- k. Father of 1 child

11. Principal 3

- a. Students at this elementary school are not sick
- b. 44% of the families at this school are in poverty
- c. Age: 39 years old
- d. Gender: Male
- e. Race: Latino
- f. Religious Beliefs: Catholic
- g. Many parents have started calling worried about the spread of disease
- h. Father of 2 small children

12. Newspaper Reporter

- a. Has been working for the local newspaper for the past 5 years, since graduating from college
- b. Graduated from UNC-Charlotte with a degree in journalism
- c. Born and raised in Raleigh
- d. Moved to Hardyville upon graduating from college
- e. Age: 26 years old
- f. Gender: Female
- g. Race: White
- h. Religious Beliefs: None
- i. Recently got married

13. Nightly News Correspondent

- a. Has worked for the local news station for the past 35 years, and has been on the main news deck for the past 15 years
- b. Graduated from the University of Tennessee with a degree in broadcast journalism
- c. Born and raised in eastern Tennessee, but moved to Hardyville after graduating
- d. Age: 51 years old
- e. Gender: Male

- f. Race: African-American
- g. Religious Beliefs: Methodist
- h. Father of 4 children – 3 of them attend a Hardyville Public School system, 1 is attending college at Appalachian State University

14. Teacher 1

- a. Infection first appeared in this teacher's classroom
- b. 51% of the families at this school are in poverty
- c. This teacher has taught elementary school for more than 20 years, and is currently teaching 3rd grade, but has taught in every elementary grade level.
- d. More than half of the classroom has been out sick
- e. The teacher is worried about coming down with this infection
- f. Parents are very worried
- g. The teacher is concerned because at this point, educating the children is not the priority, it's keeping the children healthy
- h. Age: 46 years old
- i. Gender: Female
- j. Race: White
- k. Religious Beliefs: Baptist
- l. Mother of 2 children that attend local middle schools

15. Teacher 2

- a. Students at this middle school were out sick today
- b. 63% of the families at this school are in poverty
- c. Middle school teacher, teaching 7th grade language arts
- d. Parents and teachers at this school are very concerned about the sickness
- e. This teacher also coaches the boys and girls soccer teams
- f. Age: 38 years old
- g. Gender: Male
- h. Race: Latino
- i. Religious Beliefs: Christian – Unspecified
- j. Father of 1 child that attends local elementary school

16. Teacher 3

- a. Students at this elementary school are not sick
- b. 44% of the families at this school are in poverty
- c. Elementary school teacher, teaching kindergarten for the past 5 years

- d. This is the first school this teacher has ever worked at, and has taught kindergarten since graduating from college
- e. Age: 28 years old
- f. Gender: Female
- g. Race: Cuban
- h. Religious Beliefs: Unknown
- i. Single, no children

17. Pediatrician

- a. Lives in district 5, but works in downtown Hardyville
- b. Established a large family practice in Hardyville with 3 other physicians. Hardyville Family Medicine has been in place for 20 years and is known throughout the county for providing excellent care.
- c. Graduated from East Carolina University and received their medical degree from UNC-Chapel Hill
- d. Age: 62 years old
- e. Gender: Female
- f. Race: White
- g. Religious Beliefs: Unknown
- h. Married with 2 children that are in high school at a renowned private school in town

18. Pediatrician – Focused on Natural Remedies

- a. Lives in district 3, but is a member of a practice located in district 4
- b. Works at a small local practice that focuses on natural remedies, but has been growing in the community for the past 10 years
- c. Graduated from UNC-Charlotte and received their medical degree from Georgia Tech
- d. Age: 40 years old
- e. Gender: Female
- f. Race: African-American
- g. Religious Beliefs: Baptist
- h. Married, expecting first child next month

19. Parent 1

- a. From: Hardyville
- b. Education Level: Bachelors of Nursing from UNC-Chapel Hill
- c. Occupation: Surgical Nurse
- d. Age: 48

- e. Gender: Male
- f. Race: Latino
- g. Religious Beliefs: Catholic
- h. Family: wife and 3 kids – elementary, middle, and high school

20. Parent 2

- a. From: Virginia, but moved to Hardyville when he married his wife
- b. Education Level: Associate's Degree from local community college
- c. Occupation: Plumber – Works for local plumbing company, employed there for the past 22 years
- d. Age: 53
- e. Gender: Male
- f. Race: White
- g. Religious Beliefs: Methodist
- h. Family: Married to a teacher at a local middle school; they have 2 children – middle school age

21. Parent 3

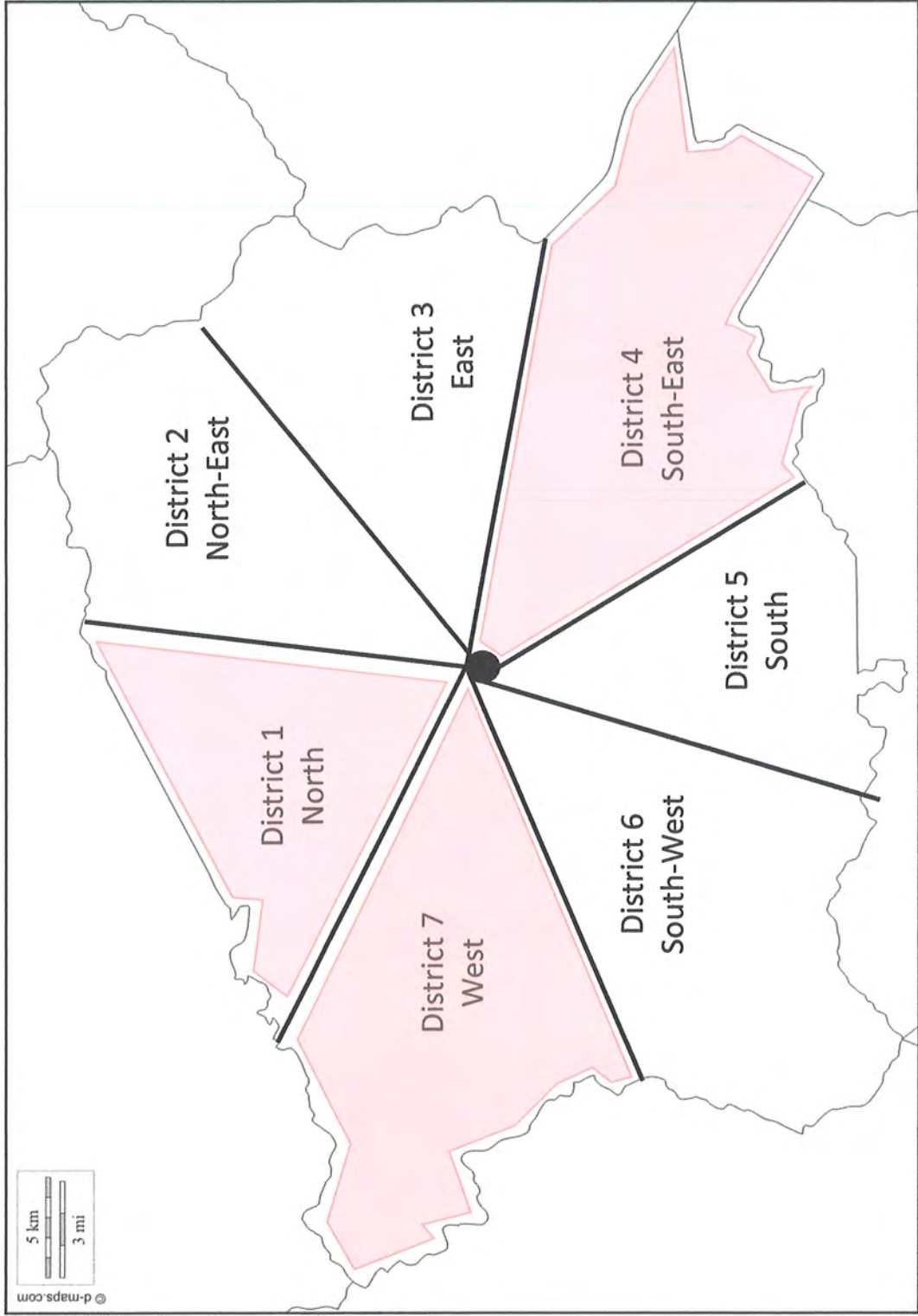
- a. From: Hardyville
- b. Education Level: Bachelor's degree in architecture from NC State
- c. Occupation: Architect – working at a local architecture firm
- d. Age: 35
- e. Gender: Female
- f. Race: White
- g. Religious Beliefs: Catholic
- h. Family: Married with 1 child that will start kindergarten the upcoming year

22. Parent 4

- a. From: Hardyville
- b. Education Level: Associates degree in cosmetology from the local community college, and a business degree from UNC-Charlotte
- c. Occupation: Hair Stylist – Owner of local hair salon
- d. Age: 27
- e. Gender: Female
- f. Race: White
- g. Religious Beliefs: Unknown
- h. Family: Single parent household with 1 child in first grade

23. Parent 5

- a. From: Atlanta, Georgia
- b. Education Level: Bachelor of Arts and a Masters of Business Administration from the University of Georgia
- c. Occupation: Salesman – Works for a national company and was transferred to Hardyville 2 years ago, has worked for the company for 18 years
- d. Age: 45
- e. Gender: Female
- f. Race: African-American
- g. Religious Beliefs: Baptist
- h. Family: Married with 2 children, one attends the local public elementary school and the other attends the local private all girls middle school



Contagion – Day 4

Responsibility Influences Decisions

Today's Plan:

- Review vaccines
- Finding Patient Zero
- Working on Performance Task

Questions to get your brain thinking:

- What is a vaccine?
- What factors influence public health?
- What is your responsibility when making decisions about your health?
- When you make decisions about your health, how does that influence or affect other people?

On the post-it on your desk, please write down every place you went when you left camp yesterday, and every person that you came into contact with.

We will need this information later, so please don't destroy your post-it before we talk about it.

Patient Zero

Patient Zero:

the first person that indicates an outbreak of a disease

Patient Zero in the [Ebola](#) outbreak, researchers suspect, was a 2-year-old boy who died on Dec. 6, just a few days after falling ill in a village in Guéckédou, in southeastern [Guinea](#). Bordering [Sierra Leone](#) and [Liberia](#), Guéckédou is at the intersection of three nations, where the disease found an easy entry point to the region.

A week later, it killed the boy's mother, then his 3-year-old sister, then his grandmother. All had fever, vomiting and diarrhea, but no one knew what had sickened them.

Two mourners at the grandmother's funeral took the virus home to their village. A health worker carried it to still another, where he died, as did his doctor. They both infected relatives from other towns. By the time Ebola was recognized, in March, dozens of people had died in eight Guinean communities, and suspected cases were popping up in Liberia and Sierra Leone — three of the world's poorest countries, recovering from years of political dysfunction and civil war.

Snippet of article pulled from the NY Times

Patient Zero

How Ebola Spread

A report in The New England Journal of Medicine traces the spread of the recent Ebola outbreak from Guéckédou, Guinea, to towns nearby.

MELIANDOU VILLAGE, GUÉCKÉDOU, GUINEA

1 DEC. 6, 2013

The suspected first case, a 2-year-old child living in Meliandou Village, Guéckédou, dies after being sick for four days.

2 DEC. 13, 2013 TO FEB. 2, 2014

The child's sister, mother and grandmother die. The village midwife is hospitalized in Guéckédou and also dies.

MACENTA, GUINEA

3 FEB. 10, 2014

A health care worker from Guéckédou hospital dies at Macenta hospital after being sick for five days.

4 FEB. 24, 2014

A doctor at Macenta hospital who treated the health care worker dies. His funeral is held in Kissidougou.

NZÉRÉKORÉ, GUINEA

5 FEB. 28, 2014

A relative of the Macenta hospital doctor dies in Nzérékoré.

KISSIDOUGOU, GUINEA

6 MARCH 7 AND 8, 2014

Two of the Macenta doctor's brothers die in Kissidougou.

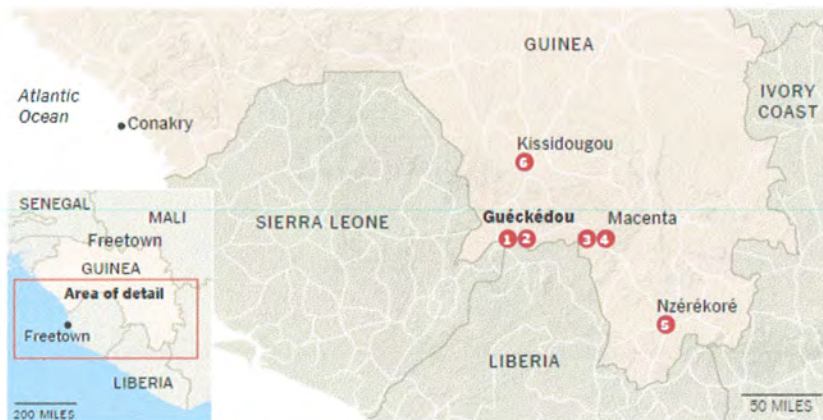
DECEMBER

JANUARY
2014

FEBRUARY

MARCH

Patient Zero



New England Journal of Medicine
THE NEW YORK TIMES

Why would it be important to locate patient zero?

Patient Zero Activity

Today we are going to simulate finding patient zero in our classroom. It is going to be very important that you follow directions today! Please listen carefully!

Materials – Each person will have

- Clear plastic cup of clear liquid
 - All are water and one is water with a specific chemical added
- Post it with numbers 1, 2, and 3 on it
- A plastic pipette

Patient Zero Activity

Steps for the activity:

1. Make sure you have all of your materials – do not touch the materials that belong to the people around you
2. Place your pipette in your cup and squeeze it to fill with the solution.
3. Place your pipette with your liquid **OVER, NOT IN** the cup of the person you are exchanging with and squirt your liquid in their cup – your first partner will do the same thing
4. Write down the name of the person you exchanged fluids with on your post-it

Ms. Gibbs will model how to use your pipette
and how to exchange fluids.

Patient Zero Activity

Now to find patient zero...

We will map out who is infected and who they exchanged their liquid with in an effort to find the first infected person.

Patient Zero Discussion Questions

- What does this experiment teach us about contagious diseases?
- How could this experiment change the way that you make health decisions?
- How could we use this experiment to educate parents and children about the importance of vaccination and healthy habits?
- Now that we have completed the experiment, look at the list of people and places you wrote down when you first arrived. How is/could/would this information be important if there was an outbreak?
- How does your responsibility influence the decisions that you make?

Performance
Task
Time

Unit Resources

World Health Organization (WHO) Website – www.who.int

Fact Sheets for major diseases and topics that students were researching for the performance task. Each fact sheet contains key facts, signs and symptoms, information regarding the population at risk, transmission, and treatment information if available.

- Avian (Bird) Flu: <http://www.who.int/mediacentre/factsheets/fs103/en/>
- Chikungunya: <http://www.who.int/mediacentre/factsheets/fs327/en/>
- Cholera: <http://www.who.int/mediacentre/factsheets/fs107/en/>
- Crimean-Congo Haemorrhagic Fever: <http://www.who.int/mediacentre/factsheets/fs208/en/>
- Dengue and Sever Dengue: <http://www.who.int/mediacentre/factsheets/fs117/en/>
- Ebola: <http://www.who.int/mediacentre/factsheets/fs103/en/>
- Influenza (Flu): <http://www.who.int/mediacentre/factsheets/fs211/en/>
- Lassa Fever: <http://www.who.int/mediacentre/factsheets/fs179/en/>
- Malaria: <http://www.who.int/mediacentre/factsheets/fs094/en/>
- Measles: <http://www.who.int/mediacentre/factsheets/fs286/en/>
- Meningococcal Meningitis: <http://www.who.int/mediacentre/factsheets/fs141/en/>
- Middle East Respiratory Syndrome (MERS): <http://www.who.int/mediacentre/factsheets/mers-cov/en/>
- Plague: <http://www.who.int/mediacentre/factsheets/fs267/en/>
- Rubella: <http://www.who.int/mediacentre/factsheets/fs367/en/>
- Tuberculosis: <http://www.who.int/mediacentre/factsheets/fs104/en/>
- West Nile Virus: <http://www.who.int/mediacentre/factsheets/fs354/en/>
- Yellow Fever: <http://www.who.int/mediacentre/factsheets/fs100/en/>
- Fact sheet regarding sanitation: <http://www.who.int/mediacentre/factsheets/fs100/en/>

Center for Disease Control (CDC) Website – www.cdc.gov

This website provides invaluable information for both the educator and the students. Do to the fact that it is a United States based agency, its primary focus is on health issues related to life in the United States. It does stay abreast on world issues, but is primarily focused on the United States.

News ELA Articles – www.newsela.com

This site requires an educator email to login for full access, but at this time it remains free of charge.

News ELA is an online resource for students and educators focused on news articles related to current events. With the ever increasing news coverage of contagious diseases, there are many articles related to the topic available. Several titles have been pulled and are listed below, hard copies follow this paper. Some of the articles have corresponding quizzes that could be used as a formative assessment for the article if needed or wanted. The article titles are listed below:

- Ebola curfew makes many angry in Sierra Leone
- Winning the measles battle
- Liberia celebrates the end of Ebola, but people are still on guard
- Scientists are more hopeful on Ebola drugs, now that virus has slowed
- Pro/Con – US troops in West Africa to help fight Ebola
- Five babies near Chicago get measles, a disease that can be dangerous
- New Ebola rules in New York and New Jersey

Ebola curfew makes many angry in Sierra Leone

By Los Angeles Times, adapted by Newsela staff on 09.24.14
Word Count 794



A health worker (left) sprays disinfectant around the area where a man suspected of suffering from the Ebola virus lies with a man in the background, before loading him into an ambulance at Freetown, Sierra Leone, Sept. 24, 2014. Photo: AP Photo/Michael Duff

JOHANNESBURG, South Africa — Bodies of people who died from the deadly Ebola virus were in the streets of Sierra Leone last week as the country's round-the-clock curfew began. The curfew asked everyone in the West African nation to stay indoors for three days. It was designed to halt the spread of the Ebola virus.

However, people were angry about being told to stay inside. Sierra Leone is an area where rumors and conspiracy theories are widely believed. Some people don't want to be alone, even if they have the disease, which is highly contagious.

People attacked a team that was wearing biohazard suits. The team's job was to bury the bodies. The angry crowd forced the burial team to abandon the bodies and run.

The curfew was in the second of its three days. It closed much of the country and forced everyone but essential services workers and health volunteers to stay at home.

President Asks People To Help

"Today, the life of everyone is at stake, but we will get over this difficulty if we all do what we have been asked to do," Sierra Leone President Ernest Bai Koroma said. He addressed the country on television last Thursday, just before the curfew was supposed to start. "These are extraordinary times, and extraordinary times require extraordinary measures."

The incident east of Freetown, the capital, was a bad sign. It was only the latest indication of poor communication on Ebola. The information from governments and global health agencies has made people suspicious and resentful. Rumors are flying that the virus is a plot by outsiders to kill people. At least 562 people are believed to have died from Ebola in Sierra Leone.

About 30,000 volunteers are supposed to visit every household in the country by Sunday. They operate in teams of four, each expected to see 20 households a day. After visiting a house, a team makes a chalk mark on the outside. That shows that people living there had been seen.

Can A Lockdown Really Work?

The aim of the project was to find Ebola sufferers who refused to go into isolation treatment wards. Their refusal puts others at risk. The effort is also meant to lower fear and distrust. To do that, volunteers plan to share information about the disease with the country's 6 million citizens.

However, some people have said that the program's goal is not realistic. Humanitarian workers have said the effort could do more harm than good. They worry that it could harm relationships between the population and health care workers.

"It has been our experience that lockdowns and quarantines do not help control Ebola," the medical charity Doctors Without Borders said. It issued a statement when the curfew was proposed. Quarantines lead to families hiding people who might have Ebola. It ends up spreading the disease further."

Most people remained at home Saturday. But news agencies reported some people ran off to avoid the curfew.

Saturday's attack on a team trying to bury five dead followed several attacks on health workers in the nearby country of Guinea. There was one deadly case last week. Eight members of a health care group trying to help the Ebola patients were killed by villagers. The Sierra Leone team eventually did manage to bury the five bodies with the help of a police escort.

The government's emergency Ebola operation center had received 102 calls by Saturday afternoon. Each call meant they had found a new suspected Ebola case. Steven Gaoja told reporters. Gaoja runs the operation center.

"On the whole we came out successful. We feel confident that the initial problems we encountered have been slashed," he said.

They Have A Tough Job Ahead

Sierra Leone is not the only nation adopting tough measures. The number of people infected with Ebola has soared in West Africa. The Liberian government sealed off an entire neighborhood in the capital, Monrovia. It forced more than 50,000 residents to stay inside for more than a week.

Governments in five West African countries have reported more than 5,300 suspected and confirmed Ebola cases. There have been 2,600 deaths, according to figures released by the World Health Organization. Liberia, Sierra Leone and Guinea make up most of the cases.

The people going door to door in Sierra Leone are sometimes quickly trained volunteers. They will likely have a difficult job working out which families are hiding sick people. But some people living in Sierra Leone support the campaign. They hope that it will stop the disease from spreading so fast.

"It will protect our country from this dangerous virus. Many of our people have died, nurses and doctors too," Ishmail Bangura said. "So if they ask us to stay home for three days, for me it is not bad."

Winning the measles battle

By Los Angeles Times, adapted by Newsela staff on 01.28.15
Word Count 719



People take pictures with Disney characters at Disneyland Thursday, Jan. 22, 2015, in Anaheim, California. A major measles outbreak traced to Disneyland has brought criticism down on the small but vocal movement among parents to opt out of vaccinations for their children. Photo: AP Photo/Lae C. Hong

SANTA ANA, Calif. — An outbreak of measles that started at Disneyland in Southern California continues across the state. As a result, some students are being kept home from school to prevent the very contagious disease from spreading to even more people.

Most people get a vaccine, or a shot, to prevent measles when they are young. Students who did not get the vaccine are more likely to get measles and spread it to others. Two dozen students at one school in California were told to stay at home until they could show they had been vaccinated.

The measles outbreak that started in Disneyland is the worst in California in 15 years, health officials said. More than 70 people now have the disease across California, six other states and Mexico.

Cover Those Coughs And Sneezes!

Measles causes a rash that first appears on the head and then spreads to the rest of the body. Other symptoms include fever, red eyes and a runny nose. The disease can sometimes be serious.

Because the measles is spread by coughing and sneezing, the disease can be extremely contagious. It can be spread four days before the rash appears and four days after.

Experts believe this measles outbreak began in December. It has drawn attention to parents who choose not to vaccinate their children for personal reasons.

Scientists and doctors say the vaccines are safe. Still, some parents do not want their children to get them. They worry that the shots may cause children to become autistic or have other health problems. Scientific studies have shown that the shots do not cause autism.

In Orange County, California, there are some wealthy areas where many parents choose not to give their children the shots.

Measles Spreads Quickly In Schools

Experts say if 8 or more people out of a group of 100 are not vaccinated, then the disease can begin to spread faster and faster.

In California, about 3 out of every 100 kindergartners have not had the measles vaccine.

In some elementary schools in Southern California, the rate is more like 10 or 11 out of 100 children.

"The vaccine is safe," Dr. Eric Handler said. He is the Orange County public health officer. "We can prevent this disease if people get vaccinated."

Handler said that when a school has one case of measles, it is important to be very careful. All children who have not had the measles shot must be kept out of school for 21 days. This keeps the disease from spreading, he said.

One person with measles walking through a group of unvaccinated people can infect 12 or more of them, experts say.

Vaccine Isn't New

The measles vaccine has been around since 1963 in the United States. Still, there were still major outbreaks of the disease nationwide in 1976-77 and 1989-91.

In 1977, about 50,000 students in Los Angeles County were told to stay home from school. These students either had to get the shot, or prove they had gotten it before. Within days, most returned to school, and the number of measles cases dropped quickly.

Today, with measles spreading in California, some parents are rethinking their decision to not vaccinate their children.

Many Concerns

One mother at a park in Newport Beach said she chose what shots to give to her 2 1/2-year-old daughter. She did not follow the official schedule. Instead, she took the advice of "The Vaccine Book" by Dr. Robert Sears, which skips or delays some shots.

"I didn't want to flood her system with a bunch of chemicals all at once. I wanted to be informed and not trust what medical professionals said," said the mother, Stephanie, who did not want to give her last name.

The outbreak worries her though, and she said she is going to get her daughter vaccinated next month. "It was a hard decision," she said.

Some parents who did vaccinate their children are concerned by the risk caused by those who did not.

"It scares me," said Julie Angus, a mother who is 40 years old. She talked about her fear of measles while walking her 4-year-old and 8-year-old home from school.

"They're making a decision for their child that affects other children. I personally feel that if that's your choice you should home-school your child," Angus said.

Liberia celebrates the end of Ebola, but people are still on guard

By Los Angeles Times, adapted by News.ELA staff on 05.14.15
Word Count 685



A woman holds a sign as she and others celebrate Liberia being declared free of Ebola in Monrovia, Liberia, May 11, 2015. Photo: AP Photo/ Abbas Dulien

JOHANNESBURG — Liberia declared it was now free of Ebola, one year after the disease began spreading across West Africa.

During the world's worst outbreak, more people died of Ebola in Liberia than any other nation.

The World Health Organization (WHO) warned that neighboring countries in West Africa still struggle with the deadly disease. The risk remains high that infected people could cross into Liberia and spread Ebola all over again.

The Disease Spread Quickly

Ebola was first discovered in 1976. It is an extremely dangerous and contagious disease. The most recent outbreak began in Guinea in December 2013. Ebola then spread to nearby Sierra Leone and across the border into Liberia.

The first case in Liberia was reported in late March 2014. At first, the outbreak was small. But by June, Ebola had hit the capital, Monrovia. It marked the first time Ebola had ever spread to a big city with people living close together.

Thousands died. When the outbreak was at its worst in August and September, the country counted 300 to 400 more Ebola patients every week. For a while, health experts feared that the disease would spin out of control and become a horrible new part of everyday life in Liberia. In October, the number of infections finally began to drop. The last victim was buried on March 28, 2015.

Many Thousands Died

More than 11,000 in Africa are believed to have died from Ebola. More than 4,700, or over one-third, of those people were in Liberia.

In Guinea, Ebola killed 2,387 people. Sierra Leone recorded more than 3,900 deaths, according to numbers from the WHO.

One reason why the virus spread so rapidly was the large number of people crossing the borders. Also, in West Africa, it is the custom for friends and family members to touch the body before a person is buried. People traveled across borders to attend funerals and returned home with the illness, infecting other family members and neighbors.

Many of those who died were health workers, community nurses and healers who treated people without protection. In Liberia, 375 health workers came down with Ebola and 189 died. More than 860 health workers were infected in North Africa and more than 500 died.

Treatment Did Not Always Come On Time

After someone has been exposed to the virus, it can take up to 21 days to develop symptoms. A country can be declared free of Ebola only after 42 days have passed.

Patients often thought they had other illnesses, such as typhoid or malaria. Many of them tragically delayed seeking treatment, infecting others.

Treatment centers were swamped with cases, and patients often died at the gates. Often, there was no room inside the overcrowded centers to treat them safely.

Taxis bringing sick passengers for treatment may also have spread the disease. Entire families were killed. Sometimes children lost both of their parents to Ebola.

To help stop the spread of the virus, schools were closed and public gatherings were banned. Ambulances had a hard time reaching patients.

In September, the world was not yet responding to the spreading disease fast enough.

At one point, there were almost no hospital beds for Ebola patients available in Liberia, the WHO said.

Volunteers Made A Difference

Ending Ebola in Liberia was a huge achievement, the WHO said. Liberia's "determination to defeat Ebola never wavered, courage never faltered." Doctors and nurses continued to treat patients even when there were not enough gowns and masks to protect them from the disease.

The WHO also gave credit to local volunteers, who worked in treatment centers, on burial teams or as ambulance drivers. They "were driven by a sense of community responsibility and patriotic duty to end Ebola." The WHO said they brought hope back to people.

Ellen Johnson Sirleaf is the president of Liberia. She said that it will take a generation for the pain and grief to heal.

A U.S. government statement said the world must not let Ebola return to Liberia.

"We must not let down our guard until the entire region reaches and stays at zero Ebola cases," it said.

Scientists are more hopeful on Ebola drugs, now that virus has slowed

By Scientific American, adapted by Newsela staff on 03.31.15
Word Count 730



The Ebola virus was taken from a patient's blood sample in Mali in November 2014. Photo Courtesy: National Institute of Allergy and Infectious Diseases

A new study is good news for researchers testing Ebola vaccines. It shows that the deadly Ebola virus is changing more slowly than scientists thought.

A team of scientists discovered that the virus is not mutating especially quickly. As a virus mutates, its structure changes. Sometimes, this makes viruses become better and quicker killers and makes it harder for people to fight them

off. An earlier study suggested the Ebola virus might be changing twice as fast as in previous outbreaks. The new findings published in Science magazine show that the earlier study seems to be wrong.

The Virus Has Not Changed Much

Understanding the virus's mutation rate is important. Researchers must develop vaccines against Ebola as it is now. If the virus would dramatically change, the vaccines likely would not work.

The Ebola virus has killed more than 10,000 people in the past year in West Africa. For the new study, researchers analyzed DNA from several outbreaks of Ebola. DNA holds the information that tells your body how to grow and function and is passed on from parents to children.

The researchers compared the DNA of Ebola samples collected in Guinea in March 2014 with Ebola samples from Sierra Leone collected in June. They also compared those samples to newer Ebola samples from Mali collected last fall. The researchers were looking to see if there were differences among the samples.

This new snapshot of Ebola showed that there were surprisingly few differences. The changes mostly appeared to be minor. In fact, the researchers calculated that there was little change in the mutation rate between Ebola now and in earlier outbreaks.

Positive Vaccine Tests On Monkeys

The new study tracked changes in Ebola over a longer period than ever. This gives a fuller picture of the virus and its changes, said Heinz Feldmann, the main author of the study. He is a virus expert at the National Institute of Allergy and Infectious Disease.

The study means that it's "less likely than we thought that vaccines and treatment options will fail," Feldman said. Still, it may not be the final word. More samples of the virus taken in 2015 from other places in West Africa will give scientists a clearer picture, he said.

The results are much-needed good news in the fight against the deadly virus.

Currently, there is no proven vaccine to prevent Ebola. But several possible vaccines are being tested on people.

Recently, a vaccine was successful at preventing the disease in macaque monkeys. The monkeys often stand in for humans as test subjects.

"Findings in nonhuman primates are always significant," says Thomas Geisbert. He studies viruses at the University of Texas. Geisbert said the experts still have to see how the vaccine compares with others being tested in humans.

"The availability of a good and safe vaccine would make an immense difference. We are going to see future outbreaks of Ebola," said Keiji Fukuda. He is with the World Health Organization (WHO). Even if one drug is successful against Ebola, he said, researchers should continue to develop other drugs.

Stronger Health Systems Are Necessary

Meanwhile, experts are starting to think about how to combat future outbreaks of Ebola.

Victor Dzau is the president of the Institute of Medicine. The organization is bringing together a group of 15 experts. Their mission is to figure out the best way to use international aid money and create strong health systems.

Their conclusions will be especially important. During the current Ebola outbreak, the international community took months to organize the response. It took months to send doctors and set up hospitals, and countries did not send enough money.

Fewer Sick People

The number of Ebola cases has definitely slowed in West Africa. In total, 79 new cases of Ebola were reported to the WHO for the week of March 22. It was the lowest number of cases for a week in 2015 so far. Health experts are looking toward the day that Ebola will be gone from West Africa. Yet people in Sierra Leone and Guinea are still coming down with the disease.

In Liberia, which came close to being declared Ebola-free, a new case of Ebola was discovered last week.

As Ebola slows, the international health-care community may move on to other problems. Fukuda said he is terrified that Ebola will disappear from people's memories. He said that would be tragic.

Quiz

- 1 Choose the answer option below that BEST describes one central idea of the text.
 - (A) In a recent study, scientists found that the Ebola virus changed a lot between March and June.
 - (B) Scientists have tested an Ebola vaccine on macaque monkeys and had negative results.
 - (C) Because the Ebola outbreak has slowed, experts are no longer thinking about how to combat future outbreaks of Ebola.
 - (D) Scientists and experts are trying to better understand how Ebola changes over time so they can create cures and prepare for future outbreaks.
- 2 Read the section "Fewer Sick People." Which of the following sentences summarizes that section?
 - (A) Although the number of Ebola cases is decreasing in some places, it is still present and may be a concern to the health-care community in the future.
 - (B) Since the number of Ebola cases is decreasing, it would be silly for people to continue to invest time and money in finding a cure.
 - (C) The number of Ebola cases has gone down in Sierra Leone, Guinea, and Liberia.
 - (D) Since the number of Ebola cases is increasing rapidly, the health-care community must take action now to prevent the spread.
- 3 Which of the following paragraphs from the section "Stronger Health Systems Are Necessary" illustrates how people might work together to create strong health systems?
 - (A) "Positive Vaccine Tests On Monkeys."
 - (B) Recently, a vaccine was successful at preventing the disease in macaque monkeys. The monkeys often stand in for humans as test subjects.
 - (C) Currently there is no proven vaccine to prevent Ebola. But several possible vaccines are being tested on people.
 - (D) Findings in nonhuman primates are always significant.
- 4 Which of the following examples from the article introduces and explains the idea of animal testing in science?
 - (A) "Positive Vaccine Tests On Monkeys."
 - (B) Recently, a vaccine was successful at preventing the disease in macaque monkeys. The monkeys often stand in for humans as test subjects.
 - (C) Currently there is no proven vaccine to prevent Ebola. But several possible vaccines are being tested on people.
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Answer Key

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- (A) In a recent study, scientists found that the Ebola virus changed a lot between March and June.
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PRO/CON: U.S. troops in West Africa to help fight Ebola

By Tribune News Service, adapted by Newsela staff on 12.02.14
Word Count 1,148



U.S. Air Force personnel load boxes containing tents onto a truck at the airport in Monrovia, Liberia, Sept. 27, 2014. Six months into the world's worst ever Ebola outbreak, and the first to happen in an unprepared West Africa, the gap between what has been sent by other countries and private groups and what is desperately needed is huge. Photo: AP Photo/Lerone Dohay

PRO: Obama took the right action against Ebola

WASHINGTON — President Barack Obama was right to send U.S. troops to West Africa to help combat the Ebola outbreak. But he did it for the wrong reasons.

Obama called it a "national security" mission. It is definitely not that.

True "national security" issues are caused by the violent actions of humans, whether countries or extremist groups like al-Qaida. Their acts threaten the lives of Americans. Other types of challenges — be they bad bugs or bad weather — are just problems to be solved.

Helping West Africa deal with Ebola is really a humanitarian mission.

Assistance During Emergencies

It is, of course, absolutely appropriate for the U.S. to provide humanitarian aid when we can.

America sent large amounts of humanitarian aid to help after the 2004 Tsunami in Asia.

Further, the U.S. military undertakes these kinds of missions quite frequently. Our military is skilled at assisting in non-military emergencies. It sandbags rivers during storms to prevent floods. After disaster strikes, it delivers supplies and rescues people.

It is not the main job of our armed forces. But these are appropriate missions to be done when U.S. troops are needed and available.

Deciding when to launch these missions depends on if they are suitable, possible and acceptable.

Without question, the West African crisis is a suitable use of U.S. forces. The Pentagon can quickly send troops, experts and support to help people there stop the spread of the disease.

And it's in our own interest. The best way to keep more Ebola cases from reaching the U.S. is to help defeat the outbreak at its source. Containing the outbreak by banning travel is heavy handed.

Questions To Answer

Sending troops to West Africa also passes the "possible" and "acceptable" tests. However, the mission will be risky for our troops.

Even medical workers who try to take all the right safety steps have caught the disease. But, our troops should know the measures to take to lower their risk.

They understand the danger. They accept that as part of the job.

The White House should have called the operation a humanitarian mission.

Obama made a similar mistake when he called our fight against the extremist group Islamic State a "humanitarian" mission.

It suggests that Obama is confused about what are true national security risks and what is the proper use of our military.

It also raises concern about this mission. Has the White House sent enough troops to West Africa? Is the mission planned well? Or is the president simply sending troops so he can say he's done something?

ABOUT THE WRITER: A 25-year Army veteran, James Jay Carafano is vice president of Defense and Foreign Policy Studies for The Heritage Foundation, (heritage.org), a conservative think tank on Capitol Hill. Readers may write him at Heritage, 214 Massachusetts Ave. NE, Washington, DC 20002.

This essay is available to Tribune News Service subscribers. Tribune did not subsidize the writing of this column; the opinions are those of the writer and do not necessarily represent the views of Tribune or Newsela.

CON: Was Obama acting without thinking?

WASHINGTON — President Barack Obama is using American troops to combat Ebola. It shows the world he cares enough to send our best people. But he's putting them at risk.

Like many of Obama's foreign policy plans, his Ebola plan seems to be a case of acting without thinking.

Here are four reasons why sending our military isn't the best way to help:

Our military is already taking on too much. The president has decided to cut the Army from 570,000 soldiers to 440,000. The administration's Quadrennial Defense Review said this "strains our ability" to respond to more than one major problem at a time.

Keeping The Peace Too?

Then the president announced plans to send 4,000 soldiers to West Africa. And that number is sure to grow with the president's recent decision to call up National Guard soldiers waiting on reserve. Obama has also launched bombing missions against the extremist group Islamic State. Troops may need to be sent in to fight the group next.

In light of these challenges, Army Chief of Staff General Ray Odierno recently questioned the wisdom of continuing with the plan to reduce U.S. forces.

Sending troops to West Africa runs the risk that they'll get stuck there. Beside giving humanitarian aid, our military would likely have to keep the peace as well. The Council on Foreign Relations' Janine Davidson noted, "As the disease spreads, so does panic — and panic leads to violence." Keeping the peace in African countries could be risky.

For one, it would require significantly more troops in the future. The World Health Organization forecasts new Ebola cases could rise by 10,000 per week by December. That could cause a lot of panic and violence. Our troops would need to restore the peace.

For another, it could place our soldiers in an impossible position, such as one in which Liberian soldiers recently found themselves. They had to choose between their safety and the public's. Violent rioting triggered by a quarantine left four people wounded and one 16-year-old boy dead.

Imagine U.S. soldiers being forced to make the same choice: Having to shoot unarmed, possibly infected Liberians or allow Ebola to spread.

"Governments Could Fail"

The Centers for Disease Control (CDC) isn't ready. All of the Ebola patients who caught the disease on U.S. soil were health care workers. They caught Ebola while treating it and using the instructions of the CDC. The CDC is not ready to assist in Africa.

Bringing the military into humanitarian aid risks getting the U.S. dragged into disputes inside the West African countries. All three countries at the center of the Ebola outbreak have weak governments.

Sierra Leone and Liberia have just emerged from civil wars in the past few years. Guinea was ruled by the military until 2010. Both Liberia and Guinea have canceled upcoming elections. These countries could be so unstable that just banning U.S. travel there could cause chaos.

"You isolate them, you can cause unrest in the country," said the National Institutes of Health's Anthony Fauci. "It's conceivable that government could fail."

Meanwhile, the Obama administration still doesn't want to stop travel from West Africa. Yet, it's the one step that might give Americans some protection.

Our soldiers face enormous risk. And it's all because the president is unwilling stop the flow of possibly infected people from West Africa.

ABOUT THE WRITER: David A. Ridenour is president of the National Center for Public Policy Research (nationalcenter.org), a nonpartisan conservative think tank located on Capitol Hill. Readers may write him at NCPFR, 501 Capitol Court NE, Washington, DC 20006.

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Quiz

1 What sentence from the PRO article BEST shows the author's point of view?

- (A) Helping West Africa deal with Ebola is really a humanitarian mission.
- (B) Deciding when to launch these missions depends on if they are suitable, possible and acceptable.
- (C) The best way to keep more Ebola cases from reaching the U.S. is to help defeat the outbreak at its source.
- (D) It suggests that Obama is confused about what are true national security risks and the proper use of our military.

2 Read this passage from the PRO article:

Has the White House sent enough troops to West Africa? Is the mission planned well? Or is the president simply sending troops so he can say he's done something?

Which paragraph from the introduction (paragraphs 1-4) of the CON article shows that the author shares similar worries about the mission's planning?

- (A) President Barack Obama is using American troops to combat Ebola. It shows the world he cares enough to send our best people. But he's putting them at risk.
- (B) Like many of Obama's foreign policy plans, his Ebola plan seems to be a case of acting without thinking.
- (C) Here are reasons why sending our military isn't the best way to help.
- (D) Our military is already taking on too much. The president has decided to cut the Army from 570,000 soldiers to 440,000. The administration's Quadrennial Defense Review said this "strains our ability" to respond to more than one major problem at a time.

3 Which of the following sentences written by the PRO author shows evidence?

- (A) Containing the outbreak by banning travel is heavy handed.
- (B) Without question, the West African crisis is a suitable use of U.S. forces.
- (C) Even medical workers who try to take all the right safety steps have caught the disease.
- (D) The best way to keep more Ebola cases from reaching the U.S. is to help defeat the outbreak at its source.

4

All of the following are ways the CON author supports the claim that the three African countries dealing most with Ebola are unstable, EXCEPT one. Which one is more of an outcome?

- (A) a quote from a health expert on the countries' instability
- (B) recent history of wars and elections in the three countries
- (C) forecasts that increases in Ebola cases will lead to violence
- (D) expectations that U.S. troops would need to keep the peace

Answer Key

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Five babies near Chicago get measles, a disease that can be dangerous

By Chicago Tribune, adapted by Newsela staff on 02.08.15
Word Count 643



Two children (Charles Goodman from left) talk with patient Carmen Lopez, 37, holding her 18-month-old son Daniel after being vaccinated with the measles mumps rubella vaccine (MMR) at his practice in Northridge, Calif., in Jan. 2015. Photo: AP Photo/Damian Dovarganes

Five babies at a day care center near Chicago have come down with the measles.

All five babies are under the age of 1. Measles is extra dangerous for children that young. They are too young to get the measles shot to protect them from the disease.

Public health officials are trying to figure out how the babies caught the disease. They all go to KinderCare in Palatine, Illinois. Measles is a highly contagious disease that spreads quickly from person to person and can cause severe health problems. Measles used to be a common childhood disease. Because of the vaccine, it has become so rare that most doctors have never seen a case of it.

About a week ago, Illinois discovered its first case of the measles this year. Health officials said that the measles patient was an adult and lived near Chicago. In mid-January, the adult visited a health clinic and grocery store in the town where the day care center is located.

Measles At Disneyland Too

Health officials do not know if the five babies got the measles from the person. They also do not know if the outbreak in Illinois is connected to one at Disneyland. More than 100 people have caught the disease at the California theme park this winter.

There is a shot that keeps most people from getting the measles. The shot is called the MMR vaccine. It protects against three diseases: measles, mumps and rubella. Most children get two shots of the MMR vaccine. Doctors groups say children should get their first MMR vaccine at 12 to 15 months old. They should get the second shot at 4 to 6 years old, before starting kindergarten.

The shot works, and it is safe, experts say. Still, some parents choose not to give their children that shot, because of their religion or because they think it could be dangerous.

Colleen Moran is the spokeswoman for KinderCare, which runs 1,500 day care centers in the United States. She said that students and workers who did not get the vaccine must stay home from the day care center.

Shots Protect People "For Life"

"We just want everyone to recover quickly and to stay safe," Moran said.

Measles symptoms can include a high fever and red rash. It is spread through coughing and sneezing, and can remain in the air and on surfaces for up to two hours. People with measles are contagious, meaning they can spread the disease, from four days before the rash starts to four days afterward.

Nationally, 92 percent of children receive the MMR vaccine. Still, one child in 12 does not get the first dose of MMR vaccine on time.

If a child has only the first dose of the measles vaccine, the child may not be fully protected. That is why a second dose is necessary, said Dr. Tina Tan, a disease expert at Lurie Children's Hospital in Chicago.

Children who get both vaccines at the right age are "considered protected for life," she said.

More People Need Shots

An unvaccinated child is more likely to catch the measles and spread it to others, said Dr. Wendell Wheeler. He is a doctor at Ingalls Memorial Hospital in Illinois. If even six people out of 100 are not vaccinated, the measles spreads faster and faster.

Heather Robinson took her 15-month-old daughter for the MMR shot last month. After, the child broke out into a rash that covered every inch of her body. "It was even in her ears," said Robinson, who lives near Chicago. "I was totally freaking out."

Robinson said she thought it was measles.

The rash was not the measles. But it was caused by the shot. Still, Robinson is glad she had her daughter vaccinated.

"I have friends who don't vaccinate," she said. "They admit that they're depending on others to be responsible."



Go Away, Measles!

Article

WASHINGTON, D.C. (Achieve3000, September 7, 2011). Have you been vaccinated for measles? Most people who have attended public school in the U.S. have indeed received the preventative shots. Still, more cases of measles have been reported in the nation this year than in any other year in more than a decade.

Thanks to vaccinations, the U.S. normally sees only about 50 measles cases annually. By mid-June this year, however, there were already 156 cases of the disease. This was the highest number reported in the nation since 1996. Health officials are reluctant to make predictions about the final number of measles cases by year's end. Still, they acknowledge that the pace of reports is unusually high.

International health officials attribute this year's unusual number of measles cases to a failure to vaccinate all children. Of the 156 Americans who came down with measles this year, 133—or about 85 percent—were unvaccinated or had undocumented vaccinations.

The measles virus is highly contagious. It spreads easily through the air. Infected droplets are often coughed or sneezed into the air. In closed rooms, these droplets can linger for up to two hours after the sick person leaves. According to health experts, up to 90 percent of people exposed to an infected person catch measles. A small fraction of people who contract the disease become extremely ill. For every 1,000 children who get measles in developed nations, one or two will die. The most common symptoms of measles include fever, runny nose, cough, eye inflammation, and a rash.

"Measles is really the most contagious of the vaccine-preventable diseases," said Dr. Greg Wallace, Wallace works with the U.S. Centers for Disease Control and Prevention. "It has a knack for finding those who have not been vaccinated."

Fortunately, children in the U.S. have been getting vaccinated against measles for almost 50 years. Two doses of a measles vaccine are routinely recommended for all kids. A first dose is administered around age 1. A second dose is given around the time of preschool. These vaccinations are believed to last a lifetime.

Before the vaccine, nearly all children came down with measles by their 15th birthday. Epidemics cycled through the nation. These occurred every two to three years. The disease generally peaked in late winter or spring. In those days, about 450 to 500 Americans died from measles each year.

Vaccination campaigns dramatically reduced the toll of the disease. Today, roughly 90 percent of U.S. kids are protected from measles. There have been no measles-related deaths reported in the U.S. since 2003.

Measles cases are much more common overseas, however. In fact, 87 percent of measles cases reported in the U.S. this year were linked to travelers who brought the virus to the U.S. from another country. European countries,

especially France, have been flooded with measles outbreaks this year. More than 6,500 cases were reported in 33 nations by mid-April.

International health officials have posted an advisory urging travelers everywhere to obtain the measles vaccine before flying overseas. According to health officials, children as young as six months old can get a first dose if they're going to a country where they are at high risk of exposure.

"The risk of getting an infection is very high," said Dr. Cuauhtemoc Ruiz Matus. Matus works with the Pan American Health Organization.

Dr. Harry Keyserling is a pediatric infectious diseases specialist at the Emory University School of Medicine. Keyserling is concerned that an insufficient number of children receive the recommended vaccinations before traveling to countries in which measles is widespread.

"Parents often don't report to their physician that they are taking their child on an international trip," Keyserling said.

The Associated Press contributed to this story

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Dictionary

administer (verb) to give or apply

advisory (noun) a statement issued to warn or encourage people to act in a certain way

attribute (verb) to name as the cause for or source of something

epidemic (noun) widespread occurrence of a disease

inflammation (noun) swelling, redness, pain, or heat in the body caused by illness

New Ebola rules in New York and New Jersey

By Los Angeles Times, adapted by Newsela staff on 10.26.14
Word Count 867



The Oct. 24, 2014, file photo shows health alerts for travelers to and from West African countries posted in the main lobby entrance of Bellevue Hospital in New York City. New York health officials are known for flooding signs on traveling emergencies, and Ebola is no exception. Photo: AP Photo/Bebeto Matthews.

NEW YORK — Officials in New York had long worried that a patient with Ebola would eventually turn up in the city.

It could quickly become a public health disaster. New York is, after all, a city of 8.4 million people. Strangers sit close together on subway cars and people walking in the city bump into each other on crowded sidewalks.

The city got its first test last week. A doctor who had been treating Ebola patients in the West African nation of Guinea tested positive for the virus after returning to New York.

The first time people in the United States were found to have Ebola was in Dallas last month. Confusion and mistakes surrounded those cases, but they helped New York get ready.

The doctor, Craig Allen Spencer, was quickly separated from other people and placed in isolation. His fiancée and friends were quarantined, or forced into medical isolation. His apartment was sealed and decontaminated.

These Are The New Rules

New York and New Jersey announced new rules. Anyone traveling from three West African nations who has had direct contact with an Ebola patient would be quarantined. The quarantines include health care workers.

Ebola was too serious to trust people to voluntarily quarantine themselves, said New York Governor Andrew M. Cuomo.

Spencer had volunteered with the aid group Doctors Without Borders in Guinea. He called the group on Thursday morning to report that he had a fever.

New York Mayor Bill de Blasio and Dr. Mary Bassett, the city's health commissioner, said Spencer did not have signs of Ebola until Thursday morning. They said that he was not contagious during his outings earlier in the week.

Neighbors gathered outside Spencer's Harlem neighborhood apartment building. Crews there sealed the apartment and handed out Ebola information fliers in English and Spanish.

Cleaners wearing protective suits and boots carried blue plastic waste-collecting drums into the apartment. They would take hours to fully clean Spencer's apartment.

Some Neighbors Are Worried

Pedro Vanegas, who lives and works across the street from the apartment building, said he was not worried.

"The truth is that I was surprised and worried when I found out last night," Vanegas said. "But I think the government is doing the best they can. They started cleaning the apartment immediately."

Others were not reassured. Some echoed lawmakers' calls in Washington for a ban on people arriving from West Africa. Ebola has caused more than 4,800 deaths in that region.

"I don't like the idea that the country is letting people come and go from these West African countries like normal," said Kenneth Clarke, who lives in the neighborhood. "How many more people like him are walking around?"

Juan Perez's family lives down the block. He said his parents had not sent his younger sister to her school across the street out of fear she could catch Ebola.

"Everybody is scared," Perez said. He said that he wished local officials would hand out more information on Ebola prevention methods.

"And masks," Perez added. "I wish they would give people face masks."

The Mayor Says Not To Worry

The aid group alerted city health officials to Spencer's fever. The health department sent emergency medical services workers in full protective gear to Spencer's apartment.

Everything worked the way it was supposed to, de Blasio said at a news conference. He repeatedly reminded New Yorkers that Ebola is spread through direct contact with bodily fluids and is not airborne.

De Blasio sent a Twitter photograph of himself riding a crowded subway car. He did this to show that New Yorkers did not need to worry.

He and Bassett said they had confidence in the self-monitoring system recommended by the Centers for Disease Control and Prevention (CDC) for people returning from Ebola-hit areas. It advises them to isolate themselves for 21 days and to take their temperatures twice daily. It is believed that 21 days is the longest it can take Ebola to show up in a person.

But Cuomo and New Jersey Governor Chris Christie said later that the newest developments showed that voluntary self-isolation did not work. From now on, they said, health care workers and others who had direct contact with Ebola patients in West Africa will be required to spend 21 days in quarantine.

Better Checks For Possible Quarantine

Officials at area airports will conduct interviews with other passengers coming from Guinea, Liberia and Sierra Leone. Then they will decide whether there is reason to force those passengers into quarantine.

"He's a doctor," Cuomo said of Spencer, and even he did not follow the guidelines for the quarantine. "Let's be honest. So we have to do more."

"We are no longer relying on CDC standards," Christie said. "There are now New York-New Jersey standards on this."

It was not immediately clear how the quarantine would be enforced. In New York City, officials said they had placed Spencer's fiancée and two close friends under mandatory quarantine. Health officials will visit them each day to take their temperatures.

In addition, Bassett said that from now on, other people arriving in the city from the Ebola-afflicted region would be contacted by health officials each day. The officials will ask for their temperatures.