

ADDIE'S STORY VIDEO QUESTIONS

Answer the following questions as you watch the Frontline episode, *Hunting the Nightmare Bacteria*.

1. What did they find in Addie's lungs?

- a. Blood
- b. Water
- c. Pneumonia

2. What did the doctor think was most likely happening to Addie?

- a. A staph bacterium was causing septic shock.
- b. Her pneumonia had spread.

3. Why are Gram-negative bacteria so hard to treat with antibiotics?

They have a protective armor, the cell wall, to prevent antibiotics from getting in to kill them.

4. What does it mean if a bacterium is *pan-resistant*?

- a. It is resistant to a few different kinds of antibiotics.
- b. It cannot be treated with any antibiotics. It is resistant to them all.

5. Addie had "community acquired" resistant staph. How did Addie get this infection?

- a. A previous hospital visit
- b. Picking at scabs
- c. Contaminated food
- d. A fall on the playground

6. When Addie became sick, what was her first symptom?

- a. Difficulty breathing
- b. Nausea/vomiting
- c. Pain in her hip
- d. Diarrhea



7. What does *pan-resistant* mean?

- a. Bacteria resistant to all antibiotics
- b. Bacteria resistant to most antibiotics
- c. All bacteria resistant to antibiotics
- d. Resistant to pans

8. Which treatment was Addie's best chance for survival?

- a. Iron lung
- b. Permanently remaining on ECMO
- c. Lifetime of antibiotics
- d. Lung transplant

9. What is NDM-1 and why is it so dangerous?

It is an enzyme that is resistant to any antibiotics.

10. How was David injured while in India?

- a. Bitten by a dog
- b. Run over by a train
- c. Cut his hand on some metal
- d. Skinned his knee during a fall

11. How many surgeries did David have to remove infections?

- a. 1
- b. 2
- c. 4
- d. 8

12. Because David's infection could not be cured, which treatment was most effective?

- a. Lung transplant
- b. Amputation of both legs
- c. Amputation of the left arm
- d. Amputation of more of the right leg

13. In the end, how many people were infected with KPC? How many died? Choose an answer in the form of (# that were infected/# that died).

- a. 2/2
- b. 28/18
- c. 18/6
- d. 18/18

14. Where do large numbers of Gram-negative bacteria live in the body?



- a. In the digestive system
- b. On the skin
- c. In the reproductive system
- d. In the respiratory system

15. KPC (*K. pneumoniae* carbapenemase) is a “homegrown” enzyme from the United States. In which city was it predominantly located at the time the video was made?

- a. Boston, MA
- b. Portland, OR
- c. Los Angeles, CA
- d. New York, NY

16. Despite following strict quarantine protocols, what happened five weeks after the first patient was released from the hospital?

- a. The patient died
- b. A staff member was diagnosed with the infection
- c. The bacteria were found on some equipment
- d. A second patient was admitted with the infection

17. Read the following passage and respond to the questions below:

Notice, at the 34-minute mark of this film, the Petri dish shows a resistance test. Each white disc is a piece of paper infused with a different antibiotic. The clear area around the center disc demonstrates that the disc’s antibiotic is effective against the bacteria being tested. The left disc’s antibiotic is partially effective. The lack of a clear area around the other discs indicates that the bacteria are resistant to those antibiotic samples. The bacteria around those discs have grown enough to touch the discs.

What percentage of antibiotic use in the United States is estimated to be either unnecessary or inappropriate?

- a. 25%
- b. 50%
- c. 75%
- d. 100%

18. The _____ bacteria are exposed to the antibiotic, the _____ likely the bacteria are to develop antibiotic resistance.

- a. more/less
- b. more/more
- c. less/more
- d. less/less

19. Nearly ____% of antibiotic use is thought to be unnecessary or inappropriate.



a. 80

b. 75

c. 50

d. 25

20. What term is used to describe the ability of any organism, such as bacteria in Addie's story, to change over time in order to increase its chances of survival?

Adaptation

Adapted from: Young, R. (Producer). (2017). Hunting the nightmare bacteria (Season 2013, Episode 14) [TV series episode]. In Frontline. Public Broadcasting Services (PBS).