Watch the Frontline episodes “The Trouble with Antibiotics” and “Outbreak at NIH” The episode is available at <http://www.pbs.org/wgbh/pages/frontline/trouble-with-antibiotics/>.

1.)a.)Why do industrial farms use antibiotics in animal feed and water?

b.) What percent of antibiotics that are sold in the U.S. go to farms?

2.) At a Flagstaff, AZ hospital, doctors are having trouble treating patients with urinary tract infections (UTIs). Which organism is the cause of the UTIs and why is it difficult to treat?

3.) Dr. Lance Price and his team of researchers sampled turkey, chicken and pork from grocery stores for over a year.

a.) What hypothesis was Price testing?

b.) After culturing *E. coli* from his meat samples, what did he find regarding the pathogenicity and antibiotic-resistance of his isolates?

c.) When Price compared the gene sequences of *E. coli* isolated from urinary tract infections with the gene sequences of *E. coli* isolated from meat samples, what did he find?

4.)a.) What question were scientists Joan Casey and Brian Schwartz addressing in their MRSA (methicillin-resistant *Staphylococcus aureus*) study?

b.) What were their findings?

c.) Schwartz mentioned two ways in which MRSA could travel from manure to people. What are they?

5.) Guy Loneragan and Morgan Scott were concerned about cephalosporin use in farm animals. Why?

6.) A direct link between antibiotic use on farms and human diseases caused by antibiotic-resistant bacteria has not yet been shown? Which data are missing to confirm this link?

7.) An outbreak of KPC (*Klebsiella pneumoniae* carbapenemase-producing bacteria) bacterial infections occurred in an NIH hospital. After genetic analyses, geneticists were able to determine how the infection was transmitted. What did they determine?

8.) Since KPC infections are resistant to numerous antibiotics, doctors had to resort to alternate therapeutics. What drug therapies did they try?

9.) What measures did the hospital take to contain the KPC outbreak?

10.) How many patients were infected with KPC and how many died?

11.)a.) What drug were they using to treat Troy Stulen’s KPC infection?

b.) Why did it stop working?

12.)a.) Is it known how Troy Stulen came in contact with KPC?

b.) Is KPC gone from the NIH hospital?

For more patients’ stories of antibiotic-resistant infections, I recommend that you watch the Frontline episode “Hunting the Nightmare Bacteria” that aired October 2013: http://www.pbs.org/wgbh/pages/frontline/hunting-the-nightmare-bacteria/.