1. What is the name of the bacteria that Timothy Walsh found in the patient’s urine?

2. This bacteria was insensitive to the “drugs of last resort”. What is the name of these drugs?

3. Can genes move from one bacterial species to another?

4. When was the first antibiotic (penicillin) released to the marketplace.

5. How long did it take for the global spread of penicillin-resistance bacteria?

6. Have bacteria developed a resistance to other antibiotics. Name two of these antibiotics.

7. Which type of bacteria exchange DNA more readily, Gram-Positive or Gram-Negative?

8. Which type of bacteria have a double-membrane, making them harder to kill with antibiotics?

9. Describe how the use of antibiotics exert a “selective pressure” that favours antibiotic resistant populations of bacteria.
10. Does exposure to the antibiotic lead to the “random fortunate mutation” or was it already present in the population of bacteria?

11. In what year was the last new antibiotic licensed for gram-negative infections.

12. What does KPC stand for? What class of molecule is this (look at the last three letters of the last word)?

13. When and where was the first sighting of KPC made?

14. There was an outbreak of bacteria with the KPC gene in New York in the year 2000. Since so many drugs were ineffective at treating the infection, what was the only option left?

15. By 2010, what percentage of Chicago Hospitals reported the presence of KPC?

16. What are the 2 drugs that still have some effect on carbapenem-resistant organisms?

17. Describe the limitations of each of these drugs.

18. Has a KPC-Fortified E. coli population ever been found outside of a hospital setting?