

NEWS BREAK

Sunday's News Break selects an article from Sunday, May 29, 2016 of The Seattle Times e-Edition for an in-depth reading of the news. Read the selected article and answer the attached study questions. **Please remember to always preview the content of the article before sharing with your students.**

Article: Pressing issues surround antibiotics, superbugs (Main, A9)

Pre-Reading and Vocabulary

- ***Just from the title, what do you think the article will be about? What are antibiotics? What are superbugs? How are they interrelated? What issues do you think surround antibiotics and superbugs?***

Vocabulary: Match the words to the numbered definitions in the chart below.

A. antibiotic	1. the action or fact of complying with a wish or command
B. bacteria	2. likely or liable to be influenced or harmed by a particular thing
C. compliance	3. waste (something, especially money or time) in a reckless and foolish manner
D. infectious	4. something widely feared as a possible unpleasant or dangerous occurrence
E. intravenous	5. looking or sounding bizarre or unfamiliar
F. outlandish	6. a medicine (such as penicillin or its derivatives) that inhibits the growth of or destroys microorganisms
G. rein	7. (of a disease or disease-causing organism) likely to be transmitted to people, organisms, etc., through the environment
H. specter	8. the ability to limit or control something
I. squander	9. a member of a large group of unicellular microorganisms that have cell walls but lack organelles and an organized nucleus, including some that can cause disease
J. susceptible	10. existing or taking place within, or administered into, a vein or veins

Comprehension

1. Last week, U.S. military researchers said they had identified the first patient in the United States to be infected with what?
2. The patient has recovered, but the case raised the specter of superbugs that could cause what?
3. The idea of people dying from infections once easily cured may seem outlandish. Approximately how many people are dying in the United States each year?
4. Experts warn that things will get worse. Why?
5. The article states that we have ourselves to blame. Why?
6. What is antibiotic resistance?
7. What is CRE?
8. How has antibiotic resistance changed medicine?
9. Why aren't there more new antibiotics?
10. What can you do to protect yourself?
11. Is there any real harm in taking an antibiotic for a cold?
12. Why are antibiotics given to livestock?
13. How can the use of antibiotics in animals pose a risk to humans?
14. Has the FDA regulated the use of antibiotics in agriculture?

Additional Activities

For some years, infectious disease doctors have been warning that unless we rein in use of antibiotics in both people and livestock, there will come a day when they will be powerless against the most ferocious bugs, turning the clock back to the early years of the 20th century.

- Did you know about these issues before reading this article?
- How does it make you feel?
- What will drug companies have to do to create a strain of antibiotics to fight this?

The article states that we, as humans are to blame for this? Do you agree or disagree? Use facts to support your answer.

How do you feel about antibiotics being given to livestock? Do your parents buy organic meats? Why or why not?

The idea of people dying from infections once easily cured may seem outlandish, but it's happening. Why aren't more people talking about this issue?

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Answer Key to Vocabulary

- A. 6
- B. 9
- C. 1
- D. 7
- E. 10
- F. 5
- G. 8
- H. 4
- I. 3
- J. 2

Answer Key to Comprehension Questions

1. Bacteria resistant to an antibiotic that was the last resort against drug-resistant germs.
2. Untreatable infections
3. 23,000 people
4. Because bacteria are becoming resistant to antibiotics faster than we can make drugs to fight back.
5. For overusing the drugs in people and squandering them on livestock.
6. It used to be infectious diseases were the biggest killers of Americans, illnesses such as tuberculosis and pneumonia. The invention of antibiotics, which were developed for medical use in the 1940s, changed that. But they became overused, and the bugs they were invented to fight started to develop ways of resisting them.
7. CRE, which stands for carbapenem-resistant Enterobacteriaceae, is the most fearsome family of germs because it is resistant even to last-resort antibiotics. The patient was successfully treated, but if that gene makes its way into a strain of CRE, the bug would be unstoppable. "We depend on colistin for the worst of the worst," said Dr. James Johnson, a professor of medicine and an infectious-disease expert at the University of Minnesota. "If it is knocked out, in most cases we really have nothing."
8. Johnson says the spread of resistant bugs means doctors are having to blast patients' infections with increasingly stronger antibiotics. That has led to more patients coming in with infections caused by *C. difficile*, a gut germ that flourishes when the patient has taken a lot of antibiotics. (The germ was estimated to cause almost half a million infections in the United States in 2011, and 29,000 people died within 30 days of the initial diagnosis.) Doctors now frequently send patients home with setups for intravenous antibiotics because pills no longer do the trick. Sometimes the specter of resistant infections can delay or cancel surgeries.
9. Most drug companies are not eager to make them. Compared with other drugs, antibiotics are not big moneymakers, and some manufacturers have gotten out of the business.

Most people take antibiotics just once in a while, for a short time — unlike drugs for blood pressure, high cholesterol or diabetes, which most patients will take every day for the rest of their lives.

10. A few simple steps can help reduce your risk of picking up a dangerous bug, says Dr. Brad Spellberg, chief medical officer for Los Angeles County/USC Medical Center. Wash your hands frequently. If you get sick, try not to use antibiotics. “What you should be doing is saying to the doctor, ‘Do I really need these antibiotics?’ ” he said. Since hospitals are incubators of dangerous germs, if you end up in one, try to get out as fast as you can. As for whether to avoid meat raised with antibiotics, Spelling says there is some evidence that such meat is more likely to have resistant germs, but those are avoidable with proper cooking.
11. There are several risks. An important one is based on the fact that healthy people normally carry billions of bacteria in their noses, throats, skin, genitals and gut. Antibiotics change the balance of those microbes, killing off susceptible ones and allowing drug-resistant ones to flourish. Even after a person finishes a course of antibiotics, the excess of drug-resistant bacteria can persist for months. If those drug-resistant bacteria find their way into the urinary tract, they can cause a drug-resistant infection that may be difficult to treat. In addition, people constantly pass bacteria to their close contacts, so they may put others at risk.
12. The vast majority of antibiotic use in the United States is in livestock — cows, pigs, chickens, sheep, even farmed fish — either for medical reasons, such as treating or preventing disease, or to promote growth. Most antibiotics used for humans are also used for livestock, said Dr. Karin Hoelzer, a veterinarian and microbiologist at the Pew Charitable Trusts who has studied antibiotic resistance.
13. There are several ways. The genes that produce resistance to antibiotics can be easily transferred between bacterial species. So resistant bacteria can pass their resistance to other strains. Humans can come in contact with resistant bacteria through eating insufficiently cooked meat or other food products. Manure from animals fed antibiotics is commonly used as fertilizer for crops. Farmworkers and people who work in slaughterhouses may also come in contact with the bacteria, providing an opportunity for genes to be exchanged.
14. Under FDA policies that will take effect Jan. 1, antibiotics considered “medically important” for humans will no longer be approved for use to promote growth in livestock. The policies also require that a veterinarian supervise the use of antibiotics in feed or water for livestock. Many of the drugs are sold over the counter and do not require the involvement of a veterinarian.