



District Health Department #10



## REPORT TO THE BOARDS OF HEALTH

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Mid-Michigan District Health Department, Wednesday, May 25, 2016  
Central Michigan District Health Department, Wednesday, May 25, 2016  
District Health Department #10, Friday, May 27, 2016

### Antibiotic Overuse

Antibiotic-resistant infections affect 2 million Americans and are associated with 23,000 deaths annually. At least 30 percent of antibiotics prescribed in the United States are unnecessary, according to new data published this month in the *Journal of the American Medical Association* (JAMA) by the Centers for Disease Control and Prevention (CDC.) The study analyzed antibiotic use in doctors' offices and emergency departments throughout the United States. Most of these unnecessary antibiotics are prescribed for respiratory conditions caused by viruses, including common colds, viral sore throats, bronchitis, and sinus and ear infections, which do not improve with antibiotics. With overuse, bacteria change and find ways to resist antibiotics. Antibiotics are also given to farm animals for a variety of reasons; it is estimated that 1 out of 5 antibiotic resistant infections in humans are linked to animals or food in some way. Antibiotic use can also create a pathway for overgrowth of other organisms, such as yeast or *Clostridium difficile*, a serious and sometimes deadly cause of diarrhea.

In 2015, the White House released The National Action Plan for Combating Antibiotic-Resistant Bacteria (CARB), which set a goal of reducing inappropriate outpatient antibiotic use by at least half by 2020. Congress has recognized the urgent need to combat antibiotic resistance. In fiscal 2016, Congress appropriated \$160 million in new funding for CDC to implement its activities listed in the [National Action Plan for Combating Antibiotic-Resistant Bacteria](#). With this funding, CDC is fighting the spread of antibiotic resistance by:

- Accelerating outbreak detection and prevention in every state.
- Enhancing tracking of antibiotic use and resistance mechanisms and resistant infections.
- Supporting innovative research to address gaps in knowledge.
- Informing providers and the general public about antibiotic resistance and appropriate antibiotic use.
- Improving antibiotic use by supporting expansion and development of new programs and activities at the local level.

Information on antibiotic stewardship and appropriate antibiotic use for health care providers and patients can be found at [www.cdc.gov/getsmart](http://www.cdc.gov/getsmart).

**REASONS ANTIBIOTIC PRESCRIBING GUIDELINES ARE NOT FOLLOWED**

- Belief that non-recommended agents may be more likely to cure an infection**
- Concern for parent or patient satisfaction, a common method by which clinicians are evaluated**
- Fear of infection complications and related negative consequences**

[www.cdc.gov/getsmart](http://www.cdc.gov/getsmart)

Sanchez GV, et al. Effects of primary care provider knowledge, attitudes, and practices on antibiotic drug selection, United States. *Emerg Infect Dis.* 2014;20:2041-7. 11/2014

## Elizabethkingia Infections

Since January, there have been two outbreaks of infections caused by *Elizabethkingia anophelis* in the Midwest. *Elizabethkingia* is a common organism in the environment but rarely causes infections. Testing of samples from patients and a variety of potential sources, including healthcare products, water sources and the environment has been done to find the source of the bacteria but to date, there has been no source found for these infections.

Wisconsin had six cases between December 29, 2015 and January 4, 2016. They have since had numerous additional cases. On February 29, 2016, the MDHHS Bureau of Laboratories received an *Elizabethkingia* from a recently submitted blood sample and forwarded the isolate to CDC for additional testing, where it was determined to match the bacteria causing the outbreak in Wisconsin. Illinois has also had one isolate that has matched the bacteria causing the outbreak in Wisconsin. Technological advancements in laboratory testing have allowed scientists to differentiate *Elizabethkingia anophelis* from other types of *Elizabethkingia* and to identify patient clusters within this species.

The majority of the patients who have had *Elizabethkingia* infections as part of this outbreak are over the age of 65 years, and all have had serious underlying health conditions. It has not been determined whether the deaths associated with this outbreak were caused by the bacterial infection, the patients' underlying health conditions, or both. Many of these individuals have presented to the hospital already ill and have lived in a widespread area of Wisconsin and been admitted to many different hospitals. Many of them had had some kind of health care exposure within the week before their infection occurred. Approximately one out of three patients infected with *Elizabethkingia anophelis* during these outbreaks have died.

*Elizabethkingia* (previously referred to as *Chryseobacterium* or *Flavobacterium*) is commonly found in water. In healthcare settings, when it has been found, it is most often in sinks or contaminated saline solution. It has been an emerging source of disease outbreaks in farmed fish. Strains that previously were only found in fish from Africa, Asia and Europe have more recently been identified causing illness in fish of the Great Lakes. While these are not the same strains involved in this outbreak, it is an interesting observation.

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Current Case Counts  
As of May 11, 2016

State	Number of confirmed cases (includes deaths)	Number of deaths among confirmed cases
Wisconsin	60	18
Michigan	1	1
Illinois	1	1

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## Suggested Recommendations of the Boards of Health

1. Promote and support local efforts to encourage appropriate antibiotic prescribing and use. This year, **Get Smart About Antibiotics Week** is November 14 to 20, 2016.
2. Be aware that not only is antibiotic resistance an issue, but emerging infectious diseases continue to be an ever present problem.

## References

- Centers for Disease Control and Prevention. Antibiotic resistance threats in the United States, 2013. Accessed on line at <http://www.cdc.gov/drugresistance/threat-report-2013/> on May 6, 2016.
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- Tonozi, Angela. "Epidemiology Crucial to Cracking Elizabethkingia Crisis." *Journal of Patient-Centered Research and Reviews* 3.2 (2016): 64-65
- Loch, Thomas P., and Mohamed Faisal. "Polyphasic characterization reveals the presence of novel fish-associated *Chryseobacterium* spp. in the Great Lakes of North America." *Diseases of aquatic organisms* 113.2 (2015): 113.
- Jean, ShioShin, et al. "Elizabethkingia meningoseptica: an important emerging pathogen causing healthcare-associated infections." *Journal of Hospital Infection* 86.4 (2014): 244-249.