Robert R. Redfield, MD
Director
Centers for Disease Control and Prevention
1600 Clifton Road, Atlanta, GA 30329

Dear Dr. Redfield,

The undersigned member and ally organizations of Keep Antibiotics Working write to call your attention to an opportunity for CDC to improve its risk communication on antibiotic resistant foodborne pathogens. Currently, CDC’s reporting on foodborne illness outbreaks includes—appropriately—information on the antibiotic resistance of outbreak isolates. Some recent reports, however, have inappropriately downplayed the risks associated with the identified resistance. In future reporting on outbreaks caused by antibiotic resistant pathogens, we urge CDC to include warnings for at-risk populations, and to describe the additional risks that antibiotic-resistant pathogens present to all consumers.

Consistent with these steps, CDC should take care that its reporting not indicate, without basis, that the identified resistance will not affect treatment. CDC’s recent reports on the Salmonella Reading outbreak associated with raw turkey included such an indication, despite the outbreak strain being resistant to antibiotics recommended for treatment of salmonellosis. More specifically, on July 19, 2018, CDC reported that the outbreak strain of Salmonella Reading was resistant to ampicillin. Its report went on, however, to say, “This resistance likely will not affect the choice of antibiotic used to treat most people since these antibiotics are not normally used to treat Salmonella infections.”

However, the CDC says, in its own Salmonella: Information for Healthcare Professionals and Laboratories webpage, that ampicillin is normally used to treat Salmonella infections. That page notes that the recommended treatments for serious Salmonella infections are fluoroquinolones, third-generation cephalosporins, and ampicillin. In fact, in the absence of resistance, the narrower spectrum ampicillin is preferred for its lower risk of significant side effects. Cephalosporins and fluoroquinolones are associated with increased risk of Clostridium difficile infection\(^1\) and extended-spectrum beta-lactamase resistant urinary tract infections\(^2\). Use of

---


fluoroquinolones is also associated with numerous other serious side effects such as tendinitis, tendon rupture, coma with hypoglycemia, and mental health effects.³

The initial report language thus ignores the important role of ampicillin as the treatment of choice for susceptible *Salmonella* infections. Later, when CDC updated the outbreak report on November 8, it indicated that isolates of the outbreak strain were also resistant to the other two common treatment options for *Salmonella* infections—fluoroquinolones and third-generation cephalosporins.⁴ Yet the updated report continues to downplay the significance of the resistance stating, “[m]ost of the infections in this outbreak are susceptible to the antibiotics that are commonly used for treatment, so this resistance likely will not affect the choice of antibiotic used to treat most people.”

CDC should acknowledge when outbreak isolates are resistant to treatments of choice, and indicate that using second- or third-choice drugs have associated costs and risks. In addition, CDC should inform the public about other potential risks associated with multi-drug resistant isolates.

In particular, CDC should warn people who have recently taken a course of antibiotics that they are more susceptible to infection from an antibiotic-resistant organism. The evidence for this heightened risk is well established. One 2002 study estimates that such antimicrobial resistance results in an additional 29,379 *Salmonella* infections and additional 17,668 *Campylobacter jejuni* infections yearly in the United States alone.⁵ Similarly, a 2010 Danish study found a significantly higher risk of resistant *Salmonella* infection in those patients that had taken fluoroquinolones within the last year.⁶ Given the broad scope of the outbreaks on which CDC is reporting, and the millions of people who might be exposed, including warnings for people who have recently taken antibiotics is an important step to help minimize morbidity and mortality from antibiotic resistant infections, not to mention an important means of increasing public awareness of the threat of antibiotic resistance.

CDC should also inform the public that certain types of resistance in *Salmonella* are also associated with increased virulence. For example, fluoroquinolone resistance in *S. Typhimurium* is associated with higher risk of invasive disease, and certain mutations conferring polymyxin resistance in *S. enterica* are associated with increased virulence in gastric infections.⁷ Simply stating that infections are still treatable in risk communications ignores the reality that antibiotic-resistant infections are often more dangerous, and may lead some people who are sick to underestimate the severity of an illness and delay seeking treatment.

In conclusion, CDC should improve its risk communication on antibiotic resistance by more precisely describing the implications of resistance for treatments of choice, warning at-risk

³ https://www.fda.gov/newsevents/newsroom/pressannouncements/ucm612995.htm
⁴ https://www.cdc.gov/salmonella/reading-07-18/updates.html
populations that have recently taken a course of antibiotics, and informing the public about the correlation between certain antibiotic resistance and virulence traits.

We appreciate your consideration of this request and would welcome the opportunity to meet with you to discuss it further.

Sincerely,

Food Animal Concerns Trust
Consumer Federation of America
Center for Food Safety
Government Accountability Project
Natural Resources Defense Council
Consumer Reports
Center for Biological Diversity
Center for Foodborne Illness Research and Prevention
Johns Hopkins Center for a Livable Future
Antibiotic Resistance Action Center, the George Washington University
US PIRG