

COLLABORATING TO IMPROVE PUBLIC HEALTH IN ARKANSAS

CDC helps investigate outbreaks of *Salmonella* infection in two state prisons



WELCOME TO ARKANSAS. "FEEL LIKE GOING TO A PRISON"?

This is how Rachel Gicquelais, MPH was greeted on her first day of work in August 2012 at the Arkansas Department of Health (ADH). Rachel was starting a **CDC/Council of State and Territorial Epidemiologists (CSTE) Applied Epidemiology**

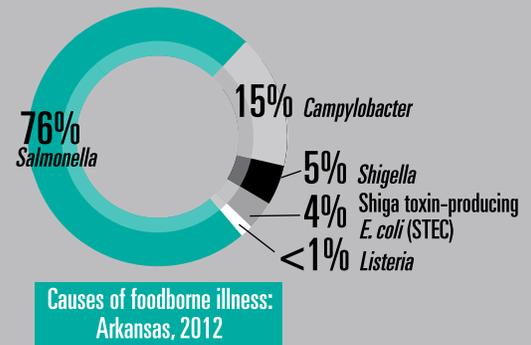
Fellowship, just as ADH was learning about an outbreak of diarrhea in more than 250 inmates at State Prison A. A few weeks later, a similar outbreak was reported at State Prison B.

A DIFFERENT TYPE OF FINGERPRINTING REVEALING CLUES TO THE OUTBREAK

Arkansas laboratorians confirmed that inmates in Prisons A and B had the same type of *Salmonella* infection—the most common cause of bacterial foodborne illness in the US and in Arkansas. The two outbreaks were clearly connected, but how?

The lab also identified important clues:

- CDC's PulseNet lab, which uses DNA "fingerprinting" of bacteria to connect cases of foodborne illness, confirmed that these outbreaks were not related to any others in the country.
- In total, 15 types of *Salmonella* were fingerprinted—more than ever seen in a US outbreak.



FINGERING THE FOOD CULPRITS ...THE CHICKEN OR THE EGG?

Rachel helped ADH and CDC interview more than 1,000 inmates and staff to identify the food—or foods—causing the outbreak. They discovered that chicken salad had been eaten by inmates at both prisons. But the investigation went beyond the kitchen—to Prison B's hen houses, which supplied eggs for several state prisons. The eggs, used in the chicken salad and other meals, tested positive for *Salmonella*.



WHAT'S WRONG WITH THIS PICTURE? KITCHEN VIOLATIONS CONTRIBUTE TO THE OUTBREAK

- Cooked chicken (for the chicken salad) was unrefrigerated for several hours.
- Kitchen workers were not properly trained (inadequate hand washing, not knowing safe methods for cooling/reheating food, preparing food when ill).
- Unsanitary kitchen conditions (infestations, mold).



FIXING THE PROBLEM LESSONS LEARNED



The ADH took quick action to stop the outbreaks:

- Sick inmates excluded from kitchen work.
- Provided food safety training.

To prevent similar outbreaks, ADH recommended:

- Food safety training for inmates working in the kitchen.
- Regular inspection of prison kitchens by sanitarians.

Outbreaks in state prisons require state resources to investigate and solve. ADH worked closely with Prisons A and B to:

- Address the issues that caused the outbreak.
- Recommend treatment for sick inmates.

National Center for Emerging and Zoonotic Infectious Diseases
Office of the Director

