

AMD Projects

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CDC's Advanced Molecular Detection (AMD) initiative fosters scientific innovation to transform public health and protect people from disease threats.

AMD Projects: Detecting Intestinal Diseases

Advancing detection of cyclosporiasis (*C. cayetanensis*) using genomics-based laboratory surveillance and reference diagnostics

Since the 1990s, CDC has conducted several large, multi-state outbreak investigations in which food items were found to be potential sources of the parasite *Cyclospora cayetanensis*. The multi-state outbreak of cyclosporiasis during the summer of 2013 was one of the largest and most complex cyclosporiasis outbreak investigations conducted in the United States. CDC and state officials investigated 631 cases, with 49 hospitalizations, in 25 states. The majority of the cases were reported from Iowa, Nebraska, and Texas. Overall, the majority of cases nationwide could not be linked to a specific food source.

About 2 months after the investigation began it became clear that the cases were not all part of the same outbreak. Federal and state scientists suspected more than one source of infection. Investigators could have reached this conclusion faster if they had laboratory tools that could tell whether different strains of the parasite were present and help determine if cases were linked to each other.

To improve outbreak response and surveillance, CDC must gather data on the genetic diversity of this parasite. CDC will do this by sequencing the DNA of samples of the parasite that circulate in the US and different parts of the world. CDC also will analyze the DNA of parasites collected from individual outbreak-related cases—as well as cases not known to be linked to an outbreak—to identify potential genotyping markers and develop a new DNA-based surveillance system for cyclosporiasis.



Cyclosporiasis is a foodborne illness. CDC recommends safe food handling techniques for preparing fresh fruits and vegetables.

