



PULSENET

THE NATION'S 'DNA FINGERPRINTING' NETWORK FOR TRACKING FOODBORNE DISEASE

Outbreaks of foodborne disease seem to be occurring more frequently than ever. One reason for the perceived increase is the ability of PulseNet, the nation's molecular subtyping network for foodborne disease surveillance, to detect outbreaks that in the past would have gone unnoticed. PulseNet has played a central role in detecting the outbreaks that have dominated news headlines, such as those due to contaminated peanut butter, jalapeño peppers, spinach and ground beef.

Since the creation of PulseNet in 1996, more than one-half billion pounds of contaminated food have been recalled due in part to PulseNet activities. Detecting outbreaks makes it possible to remove contaminated food from the marketplace before more people become ill. More importantly, many products and services are safer today because the data generated by PulseNet-triggered investigations stimulated production changes by industry and helped federal agencies create new or improved recommendations and regulations.

What is PulseNet, and why is it important?

PulseNet is a network of local, state and national public health and regulatory agency laboratories

using DNA "fingerprinting" methods to identify clusters of illnesses. Detection of PulseNet clusters is often the first indication that an outbreak is occurring. The program is coordinated by the U.S. Centers for Disease Control and Prevention (CDC).

Each PulseNet participant builds a local database from the isolates tested in their jurisdiction and connects to a national database housed at CDC to identify likely links between their cases and cases elsewhere in the U.S. PulseNet data are used by epidemiologists at the local, state and national levels to help determine what specifically is making people sick. They also work with regulatory agencies to find immediate and long-term solutions to the problems that cause outbreaks. Because it so effectively allows investigators to focus their efforts, PulseNet represents one of the most significant advances in epidemiology and public health in our lifetimes.

Isn't it better to prevent outbreaks before they happen?

Preventing outbreaks from occurring in the first place is the ultimate goal of food safety policies and programs, including good manufacturing practices, hazard analysis critical control points plans and safety inspections. However, because



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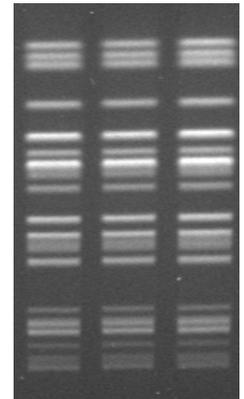
of the inherent complexity of food production, distribution and preparation, we will never be able to completely eliminate foodborne disease. PulseNet-enhanced foodborne disease surveillance is our most sensitive tool for the detection of unrecognized problems with our food safety systems, and represents a key element in our overall prevention programs.

How is PulseNet and Foodborne Disease Surveillance Funded?

Funding is provided to state participants by the CDC-managed Epidemiology and Laboratory Capacity Cooperative Agreement. State and local public health and agriculture agencies and national regulatory agencies also support the network to varying degrees. Substantial gaps remain in the system, with some states better-resourced than others.

PulseNet Awards

In 1999, PulseNet won the prestigious Ford Foundation Innovations in American Government Award as one of the 10 best programs of the year. In 2002, it was recognized as one of the 15 most significant government initiatives to have won the award.

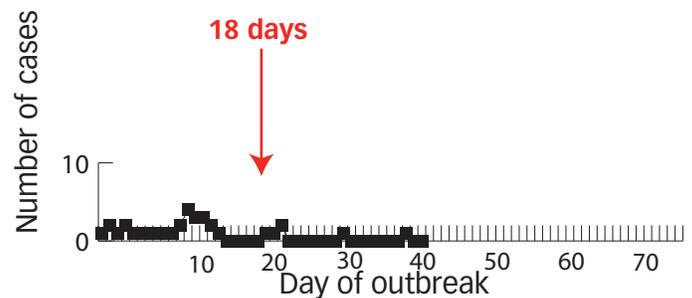
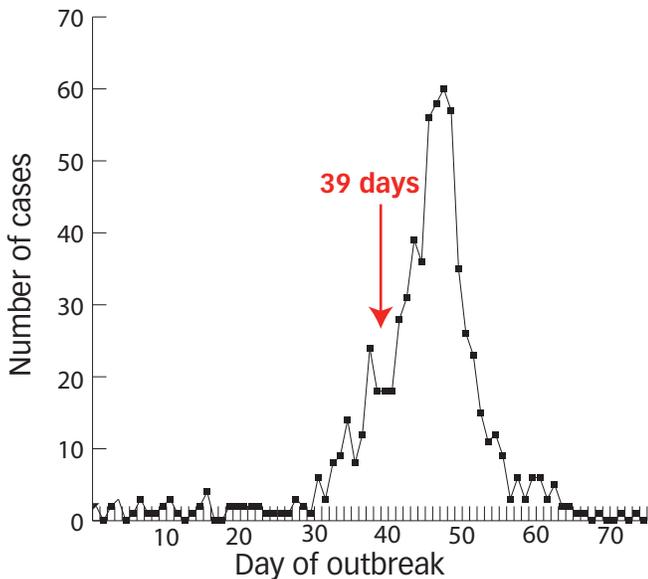


Portion of a PulseNet gel identifying a matching strain of *E. coli* 0157:H7 from three different patient specimens.

For More Information

For more information about APHL's food safety initiatives, visit www.aphl.org/foodsafety. For media inquiries, contact Jody DeVoll, director of strategic communications, at 240.485.2753 or jody.devoll@aphl.org.

Time to Outbreak Detection, Before and After PulseNet



In an *E. coli* 0157 outbreak in meat in Western states in 1993 (before PulseNet), the outbreak was detected in 39 days. There were 726 cases of illnesses and four deaths.

In an *E. coli* 0157 outbreak in meat that originated in Colorado in 2002, PulseNet detected the outbreak in 18 days. There were 44 illnesses and no deaths.