Outbreak of Salmonella Newport Infections Linked to Cucumbers – United States, 2014

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Summary: What’s going on with your salad? An outbreak of Salmonella Newport linked to cucumbers was reported on the Delmarva Peninsula. Could this be a sign of recurring outbreak potential?

Abstract:

Background: Salmonella causes approximately 1 million foodborne infections and 400 deaths annually in the United States. In August 2014, PulseNet, the national molecular subtyping network for foodborne disease surveillance, detected a multistate cluster of Salmonella Newport (SN) infections with an indistinguishable pulse-field gel electrophoresis pattern. This strain has previously been linked to tomatoes from the Delmarva Peninsula of the Eastern US. We investigated to identify the source and prevent further illnesses.

Methods: A case was defined as an illness with the outbreak strain with onset from 5/20/2014-9/30/2014. Information was collected on travel, restaurant, and food exposures in the 7 days before illness onset using a structured questionnaire. Reported food frequencies were compared to the 2006-2007 FoodNet Population Survey. A non-regulatory traceback was performed to identify the source of food items consumed in illness sub-clusters. Whole genome sequencing (WGS) was conducted to further characterize relatedness of Salmonella isolates.

Results: A total of 275 cases from 29 states and DC were identified; 34% (48/141) were hospitalized and 1 death was reported. A significantly higher percentage of ill persons consumed cucumbers in the week before illness onset than expected, (62% vs. 46.9%, p=0.002). Traceback of 8 illness subclusters led to a common cucumber grower in the Delmarva region of Maryland. WGS analysis showed that genetic sequences of clinical isolates from MD and DE were highly related but distinct from a NY sub-cluster.

Conclusions: Epidemiologic and traceback evidence suggest cucumbers were a major source of illness in this outbreak. This is the first multistate outbreak of SN infections linked to a produce item from the Delmarva Peninsula other than tomatoes, suggesting an environmental reservoir may be responsible for recurring outbreaks.