

# Salmonella Outbreak Traced to Tomatoes in Salsa

BY HEIDI SPLETE  
Senior Writer

ATLANTA — Hold the salsa—tomato-related *Salmonella* outbreaks are a growing problem.

A multicounty outbreak of *Salmonella enteritidis* in the San Francisco Bay area of California in 2005 was traced to overripe tomatoes sold by a single grower. This is the first evidence of *S. enteritidis* associated with tomatoes in California, Dr. Jean W. Yuan reported at the International Conference on Emerging Infectious Diseases.

The number of *Salmonella* isolates in California increased significantly—by nearly threefold—in 2005 compared with 2004, noted Dr. Yuan of the Centers for Disease Control and Prevention and the California Department of Health Services. “We noticed a statewide increase in *S. enteritidis*, and we identified two restaurant clusters with *S. enteritidis* in geographically distinct loca-

tions with no common food handler,” Dr. Yuan said. “We wondered if there was a common source for the statewide increase and the restaurant clusters.”

Overall, 67% of the patients had eaten fresh salsa in restaurants, compared with 23% of controls, based on a case-control study of 79 patients who developed *S. enteritidis* from July 1 to July 18, 2005. These patients were significantly more likely than controls to have eaten in one of two affected Mexican restaurant chains.

The outbreak was especially noteworthy because it involved phage type 30, “a rare phage type that we had not detected in California residents before,” Dr. Yuan said. “The only previous phage type 30 outbreak had been attributed to raw almonds from California.”

The investigators examined the salsa ingredients and found that tomatoes and cilantro were significantly associated with illness. No common source was identified for cilantro, but a traceback investigation of the suspected tomatoes identified a common tomato grower and packer who supplied tomatoes to the affected restaurants.

“This grower-packer sells tomatoes in cash transactions only, when they are too ripe to sell to regular customers,” Dr.

Yuan said. “Many Mexican restaurants prefer the cheaper, riper tomatoes because of the high volume of tomatoes they use on a daily basis.”

“Uncooked tomatoes are an integral and nutritious part of the American diet, and the potential for future outbreaks is a concern,” Dr. Yuan added. ■

**‘This grower-packer sells tomatoes in cash transactions only, when they are too ripe to sell to regular customers.’**

## Viruses Overtake Bacteria as No. 1 U.S. Cause of Foodborne Illnesses

ATLANTA — Viruses surpassed bacteria as the pathogen group responsible for the most foodborne disease outbreaks in the United States in 2004, Rachel Yelk Woodruff reported in a poster at the International Conference on Emerging Infectious Diseases.

She and her colleagues at the Centers for Disease Control and Prevention in Atlanta reviewed data on 9,034 foodborne outbreaks collected through the Foodborne Outbreak Reporting System from 1998 to 2004.

Overall, the number of foodborne disease outbreaks remained stable during the study period, but the median number of illnesses per outbreak increased steadily, from a median of six illnesses per outbreak during 1998-2000, to seven illnesses per outbreak during 2001-2003, and eight illnesses per outbreak in 2004, Ms. Woodruff and her associates said.

In 2004, viral pathogens caused more outbreaks than did bacterial

pathogens (249 vs. 208). In contrast, foodborne disease outbreaks caused by bacterial pathogens outnumbered those caused by viral pathogens during 1998-2003.

However, the median number of illnesses per viral outbreak decreased from 32 in 1998 to 22 in 2004, while the median number of illnesses per bacterial outbreak was fairly stable: 12 in 1998 and 11 in 2004.

*Salmonella* was the predominant bacteria, accounting for 9%-12% of all bacterial outbreaks. Shiga toxin-producing *Escherichia coli* (STEC) was the second most common, accounting for 1%-2% of all reported outbreaks. The total number of *Salmonella* outbreaks did not change significantly from 1998 to 2004 (125 vs. 117).

The number of STEC outbreaks decreased from 26 to 16, and the number of outbreaks of unknown origin decreased from 946 in 1998 to 801 in 2004.

—Heidi Splete

## Less-Common *E. coli* Isolates Identified in Foodborne Cases

ATLANTA — Certain serogroups of non-O157 shiga toxin-producing *Escherichia coli* may be especially virulent in cases of foodborne illness, Bridget J. Anderson, Ph.D., reported at the International Conference on Emerging Infectious Diseases.

Although O157 is the most common serogroup implicated in severe illness, non-O157 serogroups “are being recognized with increasing frequency in persons with diarrheal illness,” Dr. Anderson wrote in a poster focusing on the epidemiology of non-O157 infections. An analysis of Foodborne Diseases Active Surveillance Network data from 214 cases of non-O157 shiga toxin-producing *Escherichia coli* (STEC) in New York, Connecticut, and Minnesota during 2000-2004 showed that the non-O157 serogroups O145, O111, and O45 may be more virulent than other non-O157 serogroups.

The federally supported Foodborne Diseases Active Surveillance Network program seeks to link foodborne illnesses to specific foods and settings in selected U.S. locations.

Ms. Anderson, of the New York State De-

partment of Health, in Albany, and her colleagues identified 27 non-O157 serogroups among the 214 cases. Of these, O111 was the most common and contributed to 37% of the cases. The O111 serogroup caused 31 cases (14%) in a single outbreak of foodborne illness. Overall, 14% of the patients were hospitalized, for a median of 3 days. Four patients developed hemolytic uremic syndrome, but no deaths were reported.

Hospitalization was more common among cases associated with O145 than among those associated with other non-O145 serogroups (36% vs. 13%). Cases of O45 also were more likely to involve hospitalization, compared with all other non-O45 cases (30% vs. 12%).

Clinical data were available for 75% of the cases. The age of the patients ranged from 1 month to 88 years, with a median age of 13 years. The most common symptoms of illness were diarrhea (98%), abdominal cramping (83%), and bloody stool (50%). Symptoms lasted for a median of 7 days, and 27% of the patients received antibiotics.

—Heidi Splete

## Three More Vaccine-Related Guillain-Barré Cases Reported

BY MARY ANN MOON  
Contributing Writer

Three additional cases of Guillain-Barré syndrome related to the Menactra MCV4 meningococcal conjugate vaccine have been reported, according to the Centers for Disease Control and Prevention, Atlanta.

Even with these additional cases, the incidence of this adverse effect does not exceed the incidence that might be expected to occur by chance alone, so the CDC has not changed its recommendations regarding the vaccine. However, the timing of the onset of Guillain-Barré syndrome (GBS) within 2-5 weeks of vaccination “is still a concern,” so

monitoring continues and controlled clinical trials are planned, the CDC said.

Clinicians are advised to share information about the CDC investigation with adolescents and parents before administering the vaccine. Fact sheets for patients and for health-care workers are available at [www.cdc.gov](http://www.cdc.gov).

The CDC alerted physicians to a possible association between the Menactra MCV4 vaccine and GBS in October 2005, based on five cases in teenagers that were reported to the Vaccine Adverse Events Reporting System. The vaccine manufacturer, Sanofi Pasteur Inc., and the Food and Drug Administration updated the package insert, listing previ-

ous GBS as a new contraindication to the vaccine and warning clinicians of a possible temporal relation with GBS. At that time the CDC and the FDA also advised clinicians to report any cases of GBS occurring in patients who had received the vaccine. As of February 2006, three additional cases had been reported to VAERS and confirmed.

GBS, a serious neurologic disorder involving demyelination of the peripheral nerves, is characterized by numbness or tingling in the feet or hands which often progresses to the legs and arms and is accompanied by muscle weakness or paralysis and loss of deep tendon reflexes.

The CDC provided details on

two of the three newly reported cases that occurred since October 2005. Both involved teenage males who were hospitalized and treated with intravenous immunoglobulin. Both patients recovered fully (MMWR 2006; 55:364-6).

The third case is undergoing detailed clinical investigation but meets the provisional case definition for GBS, the CDC said.

The CDC continues to advise that people with a history of GBS should not be vaccinated with the Menactra MCV4 vaccine unless they are at high risk for meningococcal disease. The vaccine is still recommended for others at risk, including first-year college students, military re-

cruits, travelers, scientists who are exposed to meningitis, patients with anatomic or functional asplenia, and patients with terminal complement deficiency. Also, in February 2005, the Advisory Committee on Immunization Practices recommended routine vaccination of adolescents at the preadolescent health-care visit (at ages 11-12 years). For persons not previously vaccinated, the committee recommended vaccination before high-school entry (at approximately 15 years of age).

To report adverse events related to the MCV4 or any vaccine, clinicians should go to [www.vaers.hhs.gov](http://www.vaers.hhs.gov), send a fax to 877-721-0366, or call 800-822-7967. ■