

EPI CONNECTIONS

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A Bimonthly Newsletter of the Communicable Disease Division

Botulism Outbreak

In the U.S., foodborne botulism is usually associated with foods canned in the home. From 1950-2005, the Centers for Disease Control and Prevention (CDC) reported 405 events of foodborne botulism in which a food item was implicated. Of these, 92% were linked to foods processed in the home, and 8% were to foods processed commercially, including items prepared in restaurants. Only 12% of the outbreaks associated with commercially processed foods were associated with deficiencies in a commercial canning process. Although rare, any deficiency in a commercial canning process is a major public health concern because of the severity of botulism and the widespread distribution of canned products. In July 2007, the CDC reported the first U.S. foodborne botulism outbreak in 30 years associated with a commercial canning facility.

Public health officials in Texas reported two suspected cases of foodborne botulism in children who are siblings. On June 29, both patients had onset of illness that progressed to include cranial nerve palsies and symmetric, descending paralysis typical of botulism. The two children required mechanical ventilation, and botulinum antitoxin was administered. Initial stool cultures did not yield *Clostridium botulinum*, and patient stool and serum specimens, collected nine days after symptom onset, were also negative for botulinum toxin. The children had eaten chili sauce for lunch on June 28. The original can of chili sauce had been discarded; one unopened can of the product was tested, but toxin was not detected. One child remains hospitalized and is on mechanical ventilation. The second child has been removed from mechanical ventilation and has begun rehabilitation.

Public health officials in Indiana also reported two suspected cases of foodborne botulism in a married couple. The couple had onset of symptoms on July 7 and were hospitalized with cranial nerve palsies and symmetric, descending paralysis. They were placed on mechanical ventilation and administered antitoxin. Serum samples collected from the male patient on July 10 were positive for botulinum toxin type A. Botulinum toxin also was detected in the female patient's serum sample, but the sample volume was insufficient to determine the toxin type. CDC detected botulinum toxin type A in a chili mixture the patients had consumed. Both remain hospitalized and on mechanical ventilation.

Investigations conducted by state and local health departments revealed that all four patients from Texas and Indiana had eaten brands of Castleberry's hot dog chili sauce before illness began. Botulinum toxin type A was detected in patient serum and in a leftover chili mixture. As a result, the FDA implemented a major consumer recall of potentially contaminated product, including cans that were distributed to Boulder County.

The CDC is investigating a fifth botulism case caused by botulinum toxin type A with a potential link to this outbreak. California health officials reported that a female patient had onset of symptoms that progressed to include cranial nerve palsies and bilateral generalized weakness. She had consumed a recalled chili product a few days earlier. She was hospitalized on July 5, and botulinum antitoxin was administered. Botulinum toxin type A was detected from a serum sample, although the recalled product had been discarded and could not be tested. The patient was hospitalized for 10 days and is now recovering at home. CDC continues to investigate an additional suspect case in New Mexico.

Examination of the Castleberry canning facility in Georgia identified deficiencies in their canning processes that might have permitted spores of *C. botulinum* to survive. *C. botulinum* spores are in the environment and can be present in foods that have not been properly subjected to high temperature and pressure during canning. Anaerobic conditions, low acidity (pH>4.6), low salt and sugar concentrations, and temperatures >39.0°F allows germination of *C. botulinum* spores and subsequent production of botulinum toxin. The Food and Drug Administration (FDA) tested 17 swollen cans of Castleberry's hot dog chili sauce produced on May 8 in the same set of retorts as the cans associated with the Indiana and Texas botulism cases. Sixteen of the 17 cans were positive for botulinum toxin type A by ELISA; Castleberry's Food Company has since closed its Georgia canning facility.

In Boulder County, Boulder County Public Health (BCPH) Consumer Protection staff inspected over 100 facilities. While most product had been removed, recalled brands were found available for sale or donation in local food stores and a food bank. As the potentially contaminated canned products could have been sold or donated, and can be stocked on consumer shelves for years, clinicians should remain vigilant for symptoms of botulism, includ-





“Botulism,” continued from page 1

ing symmetric cranial nerve palsies, especially if accompanied by descending flaccid paralysis. Additional classic symptoms of botulism include double vision, blurred vision, drooping eyelids, slurred speech, difficulty swallowing, dry mouth, and muscle weakness. Infants with botulism appear lethargic, feed poorly, are constipated, have a weak cry and poor muscle tone. In foodborne botulism, symptoms generally begin 18 to 36 hours after eating a contaminated food, but they can occur as early as 6 hours or as late as 10 days. Health care providers are encouraged to inquire specifically about consumption of the recalled canned products as part of the food history of persons with suspected botulism.

Physicians may consider a diagnosis if the patient’s history and physical examination suggest botulism; however, diseases such as Guillain-Barré syndrome, stroke, and myasthenia gravis should be excluded. The most direct way to confirm the diagnosis is to demonstrate botulinum toxin in patient serum or stool by injecting serum or stool into mice and looking for signs of botulism. *C. botulinum* can also be isolated from the stool of persons with foodborne and infant botulism. These tests can be performed at CDC.

Botulism can result in death from respiratory failure; however, in the past 50 years, the fatality rate has fallen from about 50% to 8%. Patients who survive an episode of botulism poisoning may have fatigue and shortness of breath for years, and long-term therapy may be needed.

Suspected cases of botulism should be reported immediately to BCPH at 303-413-7503. On-call botulism specialists are available at the 24-hour CDC Emergency Operations Center at 770-488-7100.

References:

The Centers for Disease Control and Prevention. *Morbidity and Mortality Weekly Report Dispatch*, July 30, 2007/56;1-3.

The Centers for Disease Control and Prevention. *Botulism*, Division of Bacterial and Mycotic Diseases. Atlanta GA, 2007.

Epi-Eye

A Look Outside Our Community and Around the World

World Rabies Day, Sept. 8, 2007

Bats are the most common animal source of rabies in Colorado. In Boulder County, 13% of bats submitted in 2007 have tested positive for rabies, and 2 recent reports of rabid bats were found near a local playground and in a school classroom. Physicians should discuss rabies with patients when a possible bat bite or scratch has occurred (bat teeth are very sharp, and bites can occur that remain undetected, especially while a person is sleeping).

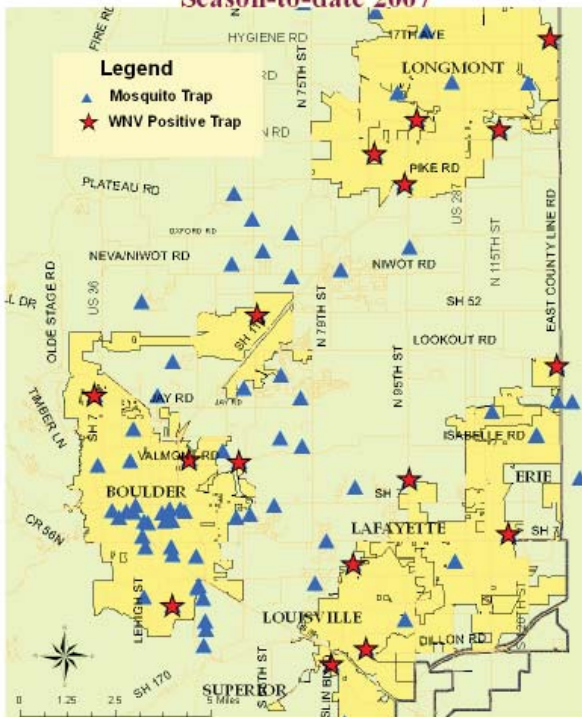
BCPH recommends the following precautions be taken to reduce the risk of exposure to bat rabies:

- Do not disturb or touch any bat found outdoors.
- If a person or pet had possible contact with a bat, seek medical attention immediately and carefully capture the bat for testing (wear heavy leather gloves; after the bat lands, place a coffee can over it; slide a piece of cardboard underneath it; and close it securely).
- Call the BCPH Vector Control Program at 303.441.1564 and staff will arrange to test the bat for rabies.

Treatment for rabies exposure involves a series of 5 injections over a 28-day period.



Boulder County WNV Positive Traps Season-to-date 2007



West Nile Virus (WNV) 2007 Update

BCPH has received reports of 23 residents with WNV infection this season. Of those, 70% are from Longmont, 22% from Boulder, 4% from Niwot, and 4% from Superior. Of the patients, 52% are male and 100% are white and non-Hispanic; the median age is 43 years old (range is 16 to 89 years old). Clinically, 83% of the patients experienced uncomplicated fever, and 17% developed neuroinvasive disease, including 3 meningitis cases and 1 case of meningoencephalitis in an 89-year-old male resident of Longmont who subsequently died. The graphic displays the 2007 season-to-date WNV positive mosquito traps in Boulder County.