



To: CAHAN San Diego Participants
Date: April 10, 2018
From: Public Health Services, Epidemiology and Immunizations Services Branch

Update: Wound Botulism Cases Associated with Black Tar Heroin

This health advisory updates providers about three recently reported wound botulism cases associated with black tar heroin use in San Diego County and provides recommendations on management. Three cases of wound botulism in local heroin users were reported in 2017, two of which were described in a [previous CAHAN](#).

Situation

In the past month, two confirmed cases and one highly suspect case of wound botulism associated with black tar heroin injection have been reported in San Diego County. The cases are all male, range in age from 28 to 67, and apparently are unknown to each other. They presented with wound infections or abscesses and a recent history of skin or muscle popping black tar heroin. Other symptoms included diplopia, ptosis, extraocular palsy, dysphagia, slurred speech, and generalized weakness. All required intensive care treatment, and two have had respiratory failure requiring intubation. All patients were treated with Botulism Antitoxin Heptavalent ([BAT[®]](#)) released by the California Department of Public Health (CDPH).

The sources of the black tar heroin remain unknown and additional cases may occur. Clusters of botulism cases associated with black tar heroin injection have occurred in Southern California in the past, including five cases in San Diego County in 2010.

Background

Botulism is a rare and potentially fatal illness caused by the neurotoxin produced by *Clostridium botulinum* and rarely by other *Clostridia* species. Routes of exposure vary: patients may present with wound botulism, commonly associated with injection drug use; with foodborne botulism from ingestion of contaminated food items; with infant botulism (the intestinal toxemia form of botulism in patients ≤ 15 months of age); and, rarely, with adult intestinal botulism, or with an iatrogenic exposure to therapeutic botulinum toxin. The figure on the following page presents information on the types of botulism cases reported in San Diego from 2000 to the present.

Prompt clinical diagnosis of botulism is imperative, as is timely administration of [BAT[®]](#) for adult botulism or Human Botulism Immune Globulin ([BabyBIG[®]](#)) for infant botulism. To reduce the incidence of respiratory failure, the botulism antitoxin should be administered as early as possible, prior to debridement in wound botulism, and ideally within 12 hours of presentation. Antibiotics are also recommended to treat wound botulism.

A useful checklist developed by CDPH is available to healthcare providers relating to the diagnosis and management of wound botulism. A modified version of the checklist is attached to this alert. Providers are strongly encouraged to use this checklist when managing patients suspected to have wound botulism.

More information about botulism and guidance for clinicians are available on the Centers for Disease Control and Prevention (CDC) [botulism website](#). Information on infant botulism may be found at www.infantbotulism.org.

Recommendations for Healthcare Providers

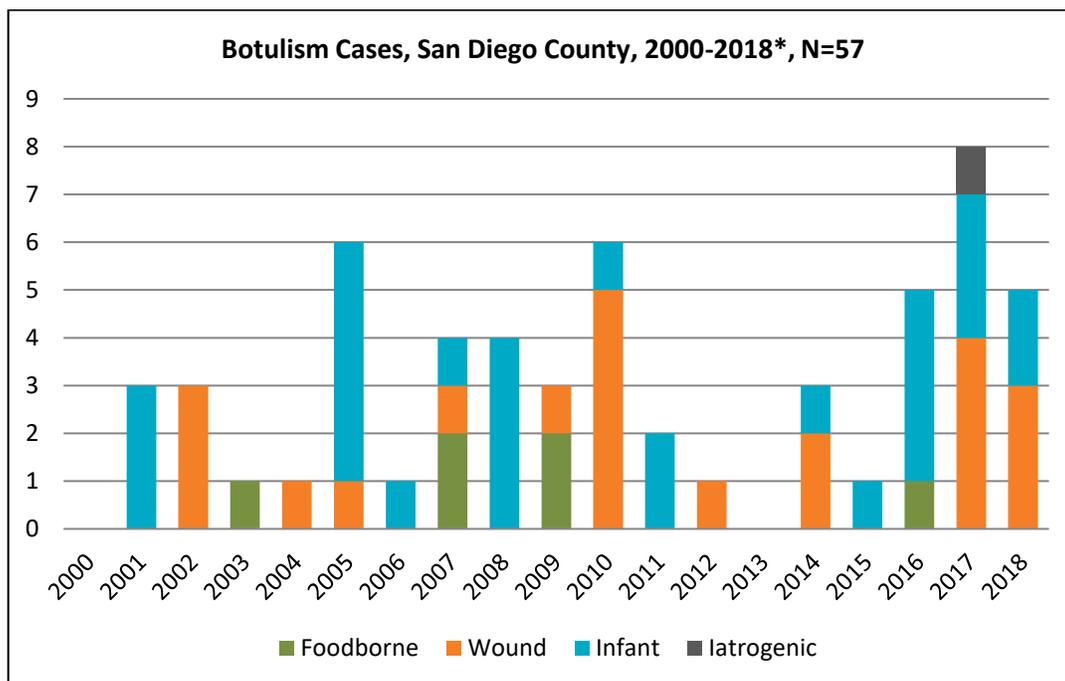
- Be alert for suspect cases of wound botulism, especially in injection drug users.
- Immediately report suspect cases to the Epidemiology Program at 619-692-8499 (Mon-Fri 8 AM to 5 PM) or after hours and County-observed holidays at 858-565-5255. Epidemiology Program staff can facilitate release of botulism antitoxin from CDPH.
- Conduct a thorough search for wounds when examining patients with a history of injection drug use.
- Consider prompt neurology, infectious disease, and surgical consultation as indicated.
- Obtain pre-antitoxin serum for toxin assays (in serum separator tubes). Instructions for specimen collection and submission are attached to this alert, and they may also be found [here](#). Note that Epidemiology Program approval for testing must be obtained prior to specimen submission.
- Warn patients who inject drugs, particularly black tar heroin, about the risk of wound botulism and other potentially life-threatening infections and conditions associated with drug use. Cooking or cleaning the drug will not prevent botulism infection. Risk reduction strategies for patients are available [here](#).
- Educate patients about the symptoms of wound botulism and instruct them to go to the nearest emergency department should symptoms develop.
- Ensure illicit drug users are immunized for hepatitis A and B, especially in light of the ongoing local hepatitis A outbreak. More information about the outbreak may be found at the [County hepatitis A website](#).
- Provide patients who inject drugs tetanus boosters every 5 years due to their higher risk for tetanus.
- Consider referring opioid-dependent patients to substance use disorder treatment programs and specialized opioid treatment programs. More information can be found [here](#).
- Consider prescribing naloxone to opioid-dependent patients and their families and friends to reduce the risk of overdose death. More information about naloxone may be found in this recent [U.S. Surgeon General advisory](#).

Thank you for your participation.

CAHAN San Diego

County of San Diego Health & Human Services Agency
Epidemiology and Immunization Services Branch
Phone: (619) 692-8499
Fax: (858) 715-6458

Secure Website: <http://cahan.ca.gov>
E-mail: cahan@sdcounty.ca.gov
Public-Access Website: <http://www.cahansandiego.com>
Urgent Phone for pm/weekends/holidays: (858) 565-5255



*2018 data are year-to-date and include the three cases mentioned in this advisory; current as of 4/10/18. Data include laboratory-confirmed and probable epidemiologically-linked cases. Data are provisional and subject to change as additional information becomes available. Grouped by CDC disease years.

CHECKLIST: DIAGNOSIS AND MANAGEMENT OF WOUND BOTULISM

Diagnosis

- Establish the presence of signs and symptoms consistent with the descending paralysis of botulism. *Did the symptoms begin with cranial nerve palsies (ptosis, diplopia, dysarthria) and progress distally?*
- If the diagnosis is in doubt, consider an infectious diseases consult, a neurology consult, and/or EMG testing which should show augmentation of muscle action potential at 20-50 Hz.
- Determine if the patient has risk factors for wound botulism. *Is the patient an injecting drug user, especially a person who skin-pops black tar heroin?*
- Look for infected wound(s). Some patients with wound botulism may not have an obvious site of infection.

Obtaining antitoxin

- Call the County of San Diego Epidemiology Program at 619-619-8499 (after hours 858-565-5255).
- Receive call from the California Department of Public Health (CDPH) Division of Communicable Disease Control Duty Officer (DCDC DOD) who will discuss the case and release of antitoxin. (Note: the state's DCDC DOD should not be contacted directly from the hospital initially.)
- Alert the hospital pharmacy that antitoxin is being released from the Los Angeles Quarantine Station.
- Arrange for the transport of antitoxin (the admitting hospital is responsible for transport).

Required pre-antitoxin administration laboratory testing

- Draw 30 cc's of whole blood into red top tubes (this will take more than one tube).
- Label each tube with the patient's name, "pre-antitoxin serum," and the date and time of collection.
- Bundle the tubes.
- Indicate if the patient is taking any of the following interfering medications: neostigmine bromide, neostigmine methyl sulfate, pyridostigmine bromide, edrophonium chloride, ambenonium chloride.
- Send the tubes to the hospital laboratory with instructions to refrigerate and ship to the San Diego County Public Health Laboratory.

Antitoxin administration

- The antitoxin currently available for wound botulism is BAT® [Botulism Antitoxin Heptavalent (A, B, C, D, E, F, G) – (Equine)]. It is a mixture of immune globulin fragments indicated for the treatment of symptomatic botulism following documented or suspected exposure to botulinum neurotoxin serotypes A, B, C, D, E, F, or G in adults and pediatric patients. The most current information on BAT® can be found [here](#). The [package insert](#) which includes information on dosage and administration, and how to report adverse events is also included on this site.

Wound debridement

- Debride the patient's wound(s) if any. (CDPH recommends hanging antitoxin prior to wound debridement.)

Other considerations

- Treat with high-dose antibiotics effective against anaerobes.
- Vaccinate against tetanus if not up to date (every 5 years) and hepatitis A and B.

Post antitoxin laboratory testing

This is no longer done routinely as the amount of antitoxin is generally much more than needed to neutralize the circulating toxin. If the patient does not respond to antitoxin or has an exacerbation of symptoms consider whether there may be an ongoing source of toxin such as an ongoing infection or abscess. Repeat toxin testing can be considered on a case by case basis.