



# Type E Botulism

A Manual for Outbreaks



## Highlights

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- Introduction
- Vulnerability
- Setting up a Working Group
- Meet with Leadership
- Involve Community and Others





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*Loons in McGregor Bay, northern Lake Huron. (A/OFRC)*



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## Introduction

### Botulism

Botulism is a neuromuscular disease caused by the bacterium *Clostridium botulinum*. There are several different types of botulism: Types A, B, C, and E. Type A and B cause botulism in humans, however, it results from eating improperly canned goods—not from eating fish.

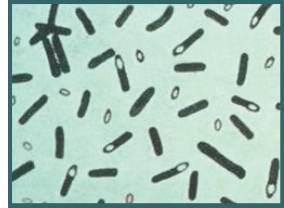


Photo: Google Images

Types C and E are responsible for fish and wildlife die-offs. Type E is the more prevalent one in the Great Lakes.

### Type E Botulism and the Great Lakes

Type E botulism (*Clostridium botulinum*) has been around for a long time, however, it hasn't been until recent years that it has seen a resurgence. It was first documented in Lake Michigan in 1964, regarding an outbreak in 1963. Since 1999, die-offs of birds and fish have been occurring regularly in Lake Ontario and Lake Erie; and occasionally since 1998 in the main basin of Lake Huron. An outbreak of type E botulism occurred in southern Georgian Bay (Lake Huron) in the fall of 2010. This was the first incidence of a botulism outbreak in Georgian Bay. Both fish and bird mortalities were observed.

The frequent fish and wildlife mortalities caused by botulism poisoning across an expanding geographic region are a continuing cause for



Photo: Google Earth Images

concern and emphasize the need for botulism management. The toxin is affecting native and sensitive wildlife populations and has consequences for the overall biological health of the Great Lakes. Taking action to prevent botulism outbreaks is important to reducing its impacts.



## Vulnerability

All communities have strengths and weaknesses. These strengths and weaknesses are different and could be related to water, the land, infrastructure, housing, governance, economic opportunities, culture, health, education, and family. The impacts of Type E botulism can create opportunities or cause threats in these areas and others. Threats like harm to loved pets, unsightly beaches, and the loss of birds and wildlife should be treated with caution but also with knowledge. Part and parcel to those, there are also opportunities to educate, understand and realize the importance of the land, water and living things in and around your community. This manual was developed to assist communities with Type E botulism outbreaks and how you can reduce its' impacts by informing, educating and working together.



Photo: Canadian Cooperative Wildlife Health Centre

### Type E Botulism and its' Effects

The most affected organisms tend to be birds and fish. However, some amphibians, like mudpuppies, and most mammals are susceptible to the Type E botulinum toxin as well.

Fish-eating birds that die of Type E botulism are poisoned by eating fish that contain the toxin. The ingestion of maggots from the carcass of an infected animal also continues the spread of botulism, which may be responsible for large kills of shorebirds and deaths of animals including pets.

Commonly affected fish species include freshwater drum (sheepshead), smallmouth bass, rock bass, round gobies, channel catfish, and sturgeon. Loons, mergansers, grebes, cormorants, and gulls are the bird species affected by Type E botulism.



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## Setting up a Working Group

To help you with a Type E botulism outbreak and community planning, a few guidelines have been set up to create a working group to spearhead any initiatives related to an outbreak. If your community has someone who works on community planning in the administration, then this person should be involved in the process as they would have a good understanding of the First Nation's plans and has already touched base with the community. If your community has people who are knowledgeable in and have dealt with Type E botulism before, then they should also be included.



Photo: A/OFRC

It is a good idea to have a Working Group who can meet on a regular basis and can work together to support the cause. The group should include people with different knowledge and experience so that you have a good cross-section of the community. For example, someone from fisheries, lands and resources department, education department, health centre, Elders and youth committees.

The Working Group will be in charge of getting information out to the community and dealing with outbreak concerns. Some of the steps to accomplish this may include:

- Make copies of (if needed) and distribute the Type E Botulism pamphlet and placemat/poster to each household.
- Post information posters at beach areas.
- Set-up and operate an information hotline to answer botulism related questions and to report dead or dying birds and fish.
- Designate a person(s) to dispose of carcasses (if needed).
- Organize a community meeting to inform members of Type E botulism characteristics, detection, removal and prevention.
- Keep Chief and Council informed of activities and progress.

## Meet with Leadership First

It is important to involve the leadership at this stage as much as possible. Their support will be required to move the goals forward. Finding the best way to meet with Chief and Council might mean: requesting a special council meeting and/or speaking with the Chief or one of the councilors who deals with environmental issues or is interested in them to initiate the process.

## Involve Community and Others

Speaking with your community members should be of the utmost importance as they will be the ones with the most questions regarding a Type E botulism outbreak. Setting up a community meeting would assist in making decisions, relieving any concerns, as well as getting the necessary information out.

Talking to the Elders in your community allows the Working Group to learn about their concerns, how outbreaks may have been dealt with in the past, successful solutions that have been implemented previously, as well as community initiatives that make them feel proud of their First Nation—ones which you can build upon or replicate to make the transition through a botulism outbreak successful.

In speaking with the community's youth, the Working Group can hear their concerns and get new ideas for dealing with the outbreak. Not to mention, they would also be a great source for volunteers and information sharing. In doing this, you facilitate a sense of belonging and let them know that they too can contribute to their community.

In addition to learning from your own First Nation, don't forget to look to other communities to help understand the issue and create partnerships. In doing this, you can learn about what they consider to be the key components to successfully dealing with an outbreak. You can then take what is relevant from the experience of others and adapt them to your local needs and realities.

Example of an Action Planning Chart.

<b>Actions</b>	<b>Roles and Responsibilities</b>	<b>Preliminary Budget</b>	<b>Detailed Timeline</b>	<b>Measure of Success</b>
Make copies of pamphlets and posters				
Distribute pamphlets and posters within community				
Post information at beach areas				
Set-up info hotline				
Operate info hotline				
Designate person for carcass disposal				
Organize community meeting				
Keep Chief and Council informed				



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