FOODBORNE OUTBREAKS

The BC Centre for Disease Control is responsible for the surveillance, monitoring and response to foodborne outbreaks in British Columbia.

An outbreak occurs when multiple people get sick from the same source – this may be eating the same contaminated food item or doing the same activity such as visiting a petting zoo.

When an outbreak is detected, an investigation will take place in order to:

- Identify the source of the illness
- Control the source to prevent additional illnesses
- Make recommendations to prevent a similar outbreak from happening in the future

Investigations are often led by epidemiologists who study how and why diseases occur in certain groups of people, and who work to control the spread of disease.

Public health professionals monitor for a higher than expected number of cases in the same timeframe with the same genetic fingerprint. This indicates that all the cases got sick from the same source.

Interview cases to ask about the foods eaten during their exposure period

Collect purchase receipts or grocery store shopper card records to get as much detail as possible about the foods eaten

Review information to identify a common exposure that may have made the cases sick

Epidemiological data from cases showing the proportion of cases who reported eating the same food item

Food safety data to determine the origin, distribution, and affected lots of the contaminated food item

Laboratory data to confirm that the microbe in the food is the same as the microbe making the cases sick

If the food is confirmed to be the source of the outbreak, recall the food to ensure it can no longer make people sick

Inspect the facility where the food came from to determine how the food became contaminated and ensure the contamination does not occur again

Communicate the risk to the public and educate consumers on how to protect themselves

OUTBREAK INVESTIGATIONS REQUIRE THE EXPERTISE OF:

- **PUBLIC HEALTH**
  - Gather case information and identify a source

- **FOOD SAFETY**
  - Identify the origin of the source

- **LABORATORY**
  - Test human, food, and environmental samples

Outbreak detection can take about 4 weeks

- Ill people visit doctor and provide a sample .......................... 1 week
- Sample is tested to identify a microbe ........................................... 1 week
- Microbe is sent for further testing to identify the “fingerprint”, which is reported to epidemiologists .................... 2 weeks

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### Most Common Outbreak Microbes

#### Salmonella
- **Incubation Period:** 12 hours to 7 days after eating contaminated food
- **Symptoms:** stomach cramps, diarrhea, fever, nausea, vomiting
- **Duration of Illness:** 4 to 7 days
- **Recent Outbreaks Have Been Linked To:** chicken nuggets, eggs, reptiles, baby chicks, raw pet food

#### Norovirus
- **Incubation Period:** 12 hours to 2 days after eating contaminated food
- **Symptoms:** nausea, cramps, chills, fever, vomiting, diarrhea
- **Duration of Illness:** 1 to 2 days
- **Recent Outbreaks Have Been Linked To:** raw oysters, contact with a person with norovirus, eating foods prepared by a person with norovirus

#### E. coli
- **Incubation Period:** 2 to 10 days after eating contaminated food
- **Symptoms:** watery diarrhea, stomach cramps, bloody diarrhea. Can lead to hemolytic uremic syndrome, a condition that affects the blood and can lead to kidney failure
- **Duration of Illness:** 5 to 10 days
- **Recent Outbreaks Have Been Linked To:** flour, unpasteurized cheese, beef, leafy greens

### Food Safety Tips
- **Clean:** Wash your hands and surfaces often
- **Separate:** Separate dishes and utensils used for raw and cooked meats and poultry
- **Cook:** Cook all foods, particularly meats and poultry thoroughly
- **Chill:** Keep perishable foods cold

### Other Routes of Transmission
- **Waterborne:** Swallowing water contaminated with microbes
- **Zoonotic:** Contact with animals that carry the microbes, such as *Salmonella* in chicken or *E. coli* in cattle
- **Person-to-Person:** Close contact with an ill person via unclean hands or changing diapers, for example

### Foodborne Outbreaks Facts
- 550,000 cases of domestically-acquired foodborne illness occur in B.C. each year
- For every 347 people that get sick with diarrhea, only one gets reported to public health officials
- 5–10 outbreaks are investigated by BCCDC epidemiologists each year
- 60% of outbreaks are solved and the food source is identified

### Foodborne Outbreaks

<table>
<thead>
<tr>
<th>Outbreak</th>
<th>Incubation Period</th>
<th>Symptoms</th>
<th>Duration of Illness</th>
<th>Recent Outbreaks Have Been Linked To</th>
</tr>
</thead>
<tbody>
<tr>
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<td>stomach cramps, diarrhea, fever, nausea, vomiting</td>
<td>4 to 7 days</td>
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