

# Causes of food-borne illness in Canada

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Food-borne bacteria, viruses and parasites cause illnesses in Canada. Learn about these causes of food-borne illness.

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## Food-borne illness in Canada

Canada has a very safe food supply. However, food-borne bacteria, parasites and viruses still cause illnesses in Canada.

Every year, about 4 million (1 in 8) Canadians are affected by a food-borne illness. Of these, there are about:

- 11,600 hospitalizations
- 238 deaths

Our estimates on just how much food-borne illnesses affect Canadians show there is still work to be done to:

- prevent and control food-borne illness in Canada
- focus efforts on the bacteria, parasites and viruses that cause the biggest problems
- better understand food-borne illness when there is no known cause

## Known and unknown causes of food-borne illness

Food-borne illness (or [food poisoning](#)) can be caused by:

- known food-borne bacteria, parasites and viruses (such as [Salmonella](#), [Cyclospora](#) or [norovirus](#))
- unknown agents

## Known causes of food-borne illness

There are at least 30 bacteria, parasites and viruses known to cause food-borne illness. These are called pathogens. Many of these pathogens are tracked by public health surveillance systems that monitor cases of illness.

### **Unknown causes of food-borne illness**

Agents that have not yet been identified can also cause vomiting and diarrhea (acute gastrointestinal illness).

These agents are grouped into the following 4 categories.

1. There is not enough information to develop an estimate of food-borne illness.
2. The agents are known but are not recognized as causing food-borne illness.
3. There is some uncertainty about the ability of some bacteria, chemicals or other substances found in food to cause illness.
4. The agents have not yet been identified.

## **Yearly food-borne illness estimates for Canada**

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Find information on the number of Canadians affected by food-borne illness every year.

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### **Overall estimates of Canadians affected by food-borne illness**

The most recent average yearly estimates for food-borne illness due to known and unknown causes are:

- 30 food-borne bacteria, parasites and viruses:
  - 1.6 million illnesses (40% of food-borne illnesses)

- 4,000 hospitalizations (34% of food-borne hospitalizations)
- 105 deaths (44% of food-borne deaths)
- unknown causes:
  - 2.4 million illnesses (60%)
  - 7,600 hospitalizations (66%)
  - 133 deaths (56%)

This means that every year, a total of about 4 million (1 in 8) Canadians are affected by a food-borne illness. Of these, there are about:

- 11,600 hospitalizations
- 238 deaths

## **Estimates of illness caused by food-borne bacteria, parasites and viruses**

Some bacteria, parasites and viruses are responsible for the most illnesses, hospitalizations and deaths in Canada. Yearly estimates for the most common causes are broken down below.

### **Number of illnesses**

- [norovirus](#) (1,048,000 or 65% of known causes of food-borne illnesses)
- [\*Clostridium perfringens\*](#) (177,000 or 11%)
- [\*Campylobacter\* spp.](#) (145,000 or 8%)
- [\*Salmonella\* spp., non-typhoidal](#) (87,500 or 5%)

### **Number of hospitalizations**

- norovirus (1,180 or 30% of known causes of food-borne hospitalizations)
- *Salmonella* spp., non-typhoidal (925 or 24%)
- *Campylobacter* spp. (565 or 14%)
- [\*Escherichia coli\* 0157](#) (245 or 6%)

### **Number of deaths**

- [\*Listeria monocytogenes\*](#) (35 or 33% of known causes of food-borne deaths)
- norovirus (21 or 20%)
- *Salmonella* spp., non-typhoidal (17 or 16%)
- *Escherichia coli* 0157 (8 or 8%)

## Surveillance of food-borne illness in Canada

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Canada uses different surveillance systems to monitor cases of food-borne illness. Learn about these systems.

### How does Canada monitor food-borne illness?

Surveillance systems across Canada:

- detect outbreaks
- monitor trends
- identify risk factors

These systems rely on information provided by:

- local public health authorities and laboratories
- provincial and territorial public health ministries and authorities

Canada uses data from different surveillance systems to estimate food-borne illness. These include the:

- [Canadian Notifiable Disease Surveillance System](#) (CNDSS)
  - collects annual numbers of laboratory-confirmed illnesses reported to provincial and territorial public health authorities for a set of diseases
- [National Enteric Surveillance Program](#) (NESP)
  - collects weekly numbers on select bacteria, parasites and viruses from provincial laboratories at the subtype and species level
- Enhanced National Listeriosis Surveillance
  - collects detailed information on invasive listeriosis cases in participating provinces and territories
- [FoodNet Canada](#)

- collects information on cases of infectious gastrointestinal illness and sources of exposure in specific communities across the country
- Provincial and Territorial Reportable Disease Surveillance System
  - collects the number of laboratory-confirmed illnesses reported by local public health units and authorities for a set of diseases
- National Studies on Acute Gastrointestinal Illness (NSAGI)
  - collects information from population surveys on vomiting and diarrhea

Other important surveillance systems for food-borne illness in Canada include:

- PulseNet Canada
- Canadian Integrated Program for Antimicrobial Resistance Surveillance (CIPARS)