

Clostridium perfringens Investigation Overview

The following guidelines provide a brief overview of the steps of a *C. perfringens* investigation. Infection with the bacterium *C. perfringens* causes gastrointestinal illness. *C. perfringens* is spread by the fecal-oral route and can be transmitted by contaminated food and water. Common sources of *C. perfringens* infection include meat, poultry, gravies, and other foods cooked in large batches and held at an unsafe temperature. These bacteria make spores, which act like protective coatings that help the bacteria survive.

C. perfringens can grow and multiply when food is kept at an unsafe temperature (between 40°F–140°F). After the bacteria is swallowed, it can produce a toxin (poison) that causes diarrhea.

For additional support, consult the NC Communicable Disease Branch at (919) 733-3419.

Basic Steps of a *C. perfringens* Investigation

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| 1. Ensure case definition is met | <ul style="list-style-type: none"> Both clinical criteria and laboratory evidence are required to meet case definition. |
| 2. Collect clinical information | <ul style="list-style-type: none"> Use information collected from medical records and/or speak with the case Onset commonly manifested by watery diarrhea, abdominal pain, nausea; vomiting and fever are absent Use information collected from medical records or speak with the case Epidemiologic linkages to similarly ill Individuals and other risk factors If 2 or more cases are identified report as an outbreak |
| 3. Determine the incubation period | <ul style="list-style-type: none"> The incubation period is usually 6 -24 hours The duration is usually less than 24 hours |
| 4. Manage the case | <ul style="list-style-type: none"> Interview the case and complete the Part 2 Form/risk history and clinical packages in NCDSS Evaluate laboratory result to determine if requirements for case definition are met Most people with <i>C. perfringens</i> infection recover without specific treatment |
| 5. Identify all contacts of case during infectious period. | <ul style="list-style-type: none"> This illness cannot be passed from one person to another If the case is aware of others with similar symptoms this may indicate a possible outbreak |
| 6. Identify source of exposure | <ul style="list-style-type: none"> If source of exposure is suspected to be restaurant related, involve Environmental Health Specialist Is this part of an outbreak? If yes, notify CD Branch Immediately In recognized cluster of illnesses, consider conducting a cohort study to identify food vehicle Obtain leftover food specimens from identified event if possible |
| 7. Manage high risk cases/contacts* | <ul style="list-style-type: none"> Those in high-risk settings (e.g., healthcare worker, childcare attendee/worker, food handler) should not return until diarrhea has resolved. Environmental Health Specialist (EHS) should be consulted regarding return criteria for food employees |
| ➤ Symptomatic Contacts | <ul style="list-style-type: none"> Provide control measures |

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| <ul style="list-style-type: none"> ➤ Implement Control Measures | <ul style="list-style-type: none"> ➤ Exclude symptomatic individuals until symptoms have resolved and ability to perform appropriate hand hygiene is assessed ➤ Exclude infected children from daycare facilities until diarrhea resolves. ➤ Educate about proper food handling techniques (with an emphasis on avoidance of cross-contamination of food preparation surfaces), not eating undercooked meat and proper hand washing. |
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*High-risk contacts include people at high-risk for severe illness or complications, healthcare workers, childcare workers and food handlers

- Resources – [C. perfringens | CDC](#)

Critical Elements for NCEDSS

- Document if high risk (food worker, childcare attendee worker, or healthcare worker)
- Document if patient resides or has been in a congregate living situation (LTCF, Assisted Living, Camp, etc.)