

Salmonella Investigation Overview

The following guidelines provide a brief overview of the steps of a *Salmonella* investigation. *Salmonellosis* is one of the most common bacterial foodborne diseases of humans in North Carolina. There are 2000+ serotypes of *Salmonella*; the most common types in North Carolina are: Enteritidis, Javiana, Newport, and Typhimurium. *Salmonella* is spread by the fecal-oral route and can be transmitted by food and water, by direct animal contact, and rarely from person-to-person.

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

**** If determined to be part of a national outbreak, the event may require an additional CDC National Hypothesis Generating Questionnaire (NHGQ) to be completed and attached to event. The form will be sent to you by an enterics staff member.**

Basic Steps of a Salmonella Investigation

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| 1. Ensure case definition is met | <ul style="list-style-type: none"> Clinical criteria are not required for the Salmonellosis case definition Evaluate laboratory result to determine if requirements for case definition are met <ul style="list-style-type: none"> If laboratory evidence is missing, symptomatic epi-linked individuals are probable cases |
| 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 fever, diarrhea, abdominal pain, nausea and sometimes vomiting Use information collected from medical records or speak with the case Identify epidemiologic linkages to similarly ill individuals and other risk factors If 2 or more cases are identified report as an outbreak |
| 3. Incubation period | <ul style="list-style-type: none"> The incubation period is usually 6 hours – 6 days The duration is usually up to 4 - 7 days |
| 4. Manage the case | <ul style="list-style-type: none"> Ensure reporting laboratory has forwarded the specimen to the SLPH for serotyping and/or additional public health testing If the case is identified quickly and it has not been 3 days since resulting, please attempt to have specimen forwarded to SLPH for additional testing Interview the case and complete the Part 2 Form/risk history and clinical packages in NCEDSS <ul style="list-style-type: none"> If the case is later identified as being part of a multi-state outbreak/cluster investigation there may be additional interview surveys requested by CDC Most people with <i>Salmonella</i> infection recover without specific treatment |
| 5. Identify symptomatic contacts | <ul style="list-style-type: none"> Symptomatic contacts may be an indication of an outbreak <ul style="list-style-type: none"> Contacts have direct contact with a confirmed case (symptomatic person who is epidemiologically linked) Symptomatic contacts to a case with no laboratory confirmation of illness should be investigated as “probable” cases Symptomatic individuals in high-risk settings (food employees, healthcare workers, childcare workers/attendees) will need to be excluded. See “Symptomatic cases in high-risk settings” section below for specific control measures. |
| 6. Identify source of exposure | <ul style="list-style-type: none"> The large majority of <i>Salmonella</i> cases are sporadic and not related to an outbreak If source of exposure is suspected to be restaurant related, involve Environmental Health Specialist In addition to food exposures, ask about contact to pets, reptiles, rodents, and farm animal |
| 7. Manage high risk cases/contacts* | <ul style="list-style-type: none"> Course of action will depend on the presence of symptoms and any high-risk setting (e.g., healthcare worker, daycare worker, food handler) |

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| <ul style="list-style-type: none"> ➤ Implement Control Measures | <ul style="list-style-type: none"> ➤ Educate about proper food handling techniques (with an emphasis on avoidance of cross-contamination of food preparation surfaces), not eating undercooked meat (particularly poultry), proper hand washing after diapering, using the restroom, before and after handling food/animals, avoiding unchlorinated water, and a variety of techniques for reducing contamination during the slaughter and processing of food-animal carcasses. ➤ Except for the specific criteria listed below (i.e., symptomatic cases in high-risk settings), there are no exclusion and readmission requirements for other occupations ➤ Additional control measures may be implemented during an outbreak |
| <ul style="list-style-type: none"> ➤ Symptomatic cases in high-risk settings* | <ul style="list-style-type: none"> • Provide control measures <ul style="list-style-type: none"> Food Employees <ul style="list-style-type: none"> • Exclusion and readmission of symptomatic and asymptomatic lab positive food employees from work should be determined in consultation with your Environmental Health Specialist and at the discretion of the Local Health Director, based on criteria set in the North Carolina Food Code Manual and/or recommendations provided in the latest version of the Control of Communicable Diseases Manual (American Public Health Association). Healthcare workers <ul style="list-style-type: none"> • Healthcare workers should be excluded from direct patient care and can return to their usual duties once the diarrhea has resolved. If there is a concern regarding the hand hygiene of the individual, then return to work will require two negative stools. Childcare centers <ul style="list-style-type: none"> • Outbreaks of Salmonella illness in childcare centers are rare and there are specific strategies that are recommended to control infection in childcare centers which include strict adherence to hygiene practices, including meticulous hand hygiene and by limiting exposure to certain animals. Higher risk animals include reptiles, amphibians, and poultry. These animals are not recommended in schools, childcare centers, hospitals or long-term care facilities. • When non-typhoidal Salmonella serovars are identified in a symptomatic (i.e., enterocolitis) childcare attendee or staff member the following recommendations apply. <ul style="list-style-type: none"> ○ Children and staff members should be excluded and can return to childcare facilities once the diarrhea has resolved. ○ Children or staff members do not require negative culture results from stool samples to return. ○ If children or staff members are positive for non-typhoidal Salmonella and demonstrate poor hand hygiene, then return to any childcare facility will require two negative stools to return. ○ Stool cultures are not required for asymptomatic contacts. |

*High-risk contacts include individuals at high-risk for severe illness or complications, healthcare workers, childcare workers, and food handlers
➤ Resources – [Salmonella Homepage | 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.)