

# **NATIONAL OUTBREAK REPORTING SYSTEM (NORS) GUIDANCE**

**For reporting all foodborne and enteric person-to-person, environmental, animal contact, and unknown/indeterminate mode of transmission outbreaks and for reporting the general section of waterborne outbreaks**

Version 2.0, updated 2/15/2017

Guidance document for reporting all enteric foodborne, person-to-person, environmental, animal contact, and unknown/indeterminate mode of transmission outbreaks and for the general sections for reporting waterborne outbreaks

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This document was prepared by the NORS team.

For general questions on reporting or the guidance document, email [NORSAdmin@cdc.gov](mailto:NORSAdmin@cdc.gov).

For questions on foodborne or animal contact transmission outbreaks, email [NORS-Foodborne@cdc.gov](mailto:NORS-Foodborne@cdc.gov).

For questions on waterborne transmission outbreaks, email [NORSWater@cdc.gov](mailto:NORSWater@cdc.gov).

For questions on person-to-person, environmental, or unknown/indeterminate transmission outbreaks, email [NORSP2P@cdc.gov](mailto:NORSP2P@cdc.gov).

To access more information about NORS, visit the NORS public website at <http://www.cdc.gov/NORS>.

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## Commonly Used Guidance

Links to our most-used guidance sections.

1. [Definition of an Outbreak](#)
2. [Selecting a Primary Mode of Transmission](#)
3. [How to Report Outbreak Etiology \(excluding waterborne disease outbreaks\)](#)
4. [Confirmed Etiology Guidelines \(excluding waterborne disease outbreaks\)](#)
5. [General Definition of a Multistate Outbreak](#)

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## **Introduction**

This guidance document gives detailed descriptions about each field in NORS. It is not intended to be a training guide on how to enter reports through the NORS interface; for this, see the NORS training guides at <http://www.cdc.gov/NORS/training>.

This guidance document follows the flow of the reporting forms and the web-based user interface; therefore it is recommended to view the guidance document in conjunction with the reporting forms or the interface. The headers of each section have the name of the reporting form section and the interface tab.

## What is Reportable to NORS

### Definition of an Outbreak

For NORS reporting, the definition of an outbreak is two or more cases of similar illness associated with a common exposure.

NORS is designed to capture all foodborne and waterborne outbreaks and acute gastroenteritis (AGE) outbreaks spread by person-to-person contact, animal contact, environmental contamination, and indeterminate/unknown modes of transmission. Mode-specific definitions are provided beginning on page 7.

**Note:** Single cases do not meet the definition of an outbreak. This includes single cases of botulism or other toxin poisoning (e.g., ciguatera fish poisoning). Reports of single cases will not be cleaned or included in analyses or publications. To report foodborne or waterborne case reports involving algal blooms or toxins, please use the [One Health Harmful Algal Bloom System \(OHHABS\)](#).

If you are uncertain about how an outbreak should be reported, contact the NORS team at [NORSAdmin@cdc.gov](mailto:NORSAdmin@cdc.gov).

### Clusters

Clusters occur when  $\geq 2$  similar illnesses are suspected to be associated with a common exposure, but investigators are unable to identify a shared food, animal, venue, or experience among ill persons. Clusters **should not** be reported to NORS. For guidance on multistate clusters, see [Appendix B](#).

**Example:** Thirty infections of a pathogen with an indistinguishable PFGE pattern were reported. A common exposure was not identified among the case-patients. Without a common exposure, this would be considered a cluster and is not reportable to NORS.

### Household clusters

When investigating outbreaks where two or more ill persons are in the same household, the investigator should review the exposures and onset dates closely.

- If two or more ill persons in the same household had a common exposure and, if a particular pathogen is suspected, these persons had illness onset dates within the incubation period for the pathogen, this situation is probably an outbreak (i.e., these cases would be considered primary cases). If two or more ill persons from the same household have similar onset dates but do not have a recognized common exposure, this situation is possibly an outbreak.

An illness in a household may be considered a secondary case (i.e., infected via contact with a primary case) if the ill person did not have the same exposure as any primary case, or the original source was no longer present in the household during the incubation period, or there was reasonable opportunity for the person to acquire infection from a primary case. If secondary cases cannot be distinguished from primary cases, then all cases can be reported as primary cases. Note in the Remarks field in the Agency & Remarks tab that distinctions could not be made.

### International exposures

Outbreaks resulting from exposures outside the United States or its territories are not reportable through NORS. In general, this includes outbreaks originating from international exposure or in which

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the exposure occurred on a cruise ship with at least one international port of call. For more information on international cruises, see the Vessel Sanitation Program website at <http://www.cdc.gov/nceh/vsp/default.htm>. During an outbreak with exposures in the United States and internationally, only cases exposed in the United States should be included in the case count. The number of cases exposed outside of the United States can be included in the remarks section.

**Example:** A contaminated frozen juice product is distributed to stores in the United States and Canada. Twenty people become ill after drinking the juice, 12 in the United States and 8 in Canada. Only the 12 cases who drank the juice in the United States would be included in the NORS report case count.

## Create New Report

### State ID (REQUIRED FIELD)

Enter the state-assigned identification number or name for the outbreak report. The state decides how to number or name their reports. A state-assigned report ID cannot be used more than once within the state.

### Date first case became ill (REQUIRED FIELD)

Indicate the date the first primary case became ill. If the first ill date is unknown, enter an approximate first ill date.

### Estimated total primary cases (REQUIRED FIELD)

Enter the estimated total primary cases, including lab-confirmed and probable, using the outbreak-specific case definition.

### Primary mode of transmission (REQUIRED FIELD)

Select the box indicating the primary mode of transmission for the outbreak. The mode of transmission does not need to be conclusively proven before being selected. If more than one mode of transmission was implicated, select the mode that resulted in the first cluster of illnesses in the outbreak. Once a mode of transmission is chosen in the NORS interface and the information is saved, the relevant tabs for that mode of transmission will appear.

For outbreaks in which a source case-patient (e.g., food handler) contaminated the implicated food, the source case-patient is **not** considered part of the first cluster of illnesses, and the primary mode of transmission for the outbreak is considered foodborne. Similarly, if a person had a fecal or vomiting incident in recreational water and contaminated the water, which then resulted in an outbreak, this person is the source case-patient and is not considered part of the first cluster of illnesses. The primary mode of transmission for the outbreak is considered waterborne. However, if the primary mode of transmission of an outbreak was person-to-person, then the source case-patient (e.g., the case with the earliest illness onset data) **would** be considered part of the first cluster of illness.

Inclusion of Source Case-Patients by Mode				
	Foodborne	Waterborne	Person-to-person	Environmental
Source case-patient	Exclude	Exclude	Include	Exclude

- **Foodborne** — Select if transmission occurred through consuming contaminated food or non-water beverages, including raw milk. This mode includes dietary supplements, such as protein powders, but excludes over-the-counter and prescription medicines.
  - When produce is contaminated in the field by contact with contaminated irrigation water or during processing or preparation with contaminated wash water, the mode of transmission is *foodborne* transmission.
  - When food is contaminated by an animal (e.g., vermin or a pet) prior to consumption, the mode of transmission is *foodborne* transmission.
  - When food that is processed or prepared for others is contaminated by an infected person, and the illness is attributed to the food, the mode of transmission is *foodborne* transmission.

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- When the contaminated ingredient of a non-water beverage is water or ice made with contaminated water, the mode of transmission is *waterborne*. If no contaminated ingredient is found, or is not water or ice, the transmission is *foodborne*. See [Appendix A](#) for more details on how to choose a mode of transmission for certain foods and beverages containing ice.
- A food vehicle does not need to be identified to select foodborne transmission.
- **Example:** Ten people become ill following a church potluck. No one reported attending the event while ill. Potato salad is statistically associated with illness. This may be considered a *foodborne* outbreak.
- **Waterborne** — Select if the initial illnesses (enteric or other) were associated with exposure via ingestion, inhalation, contact, or another route to water (e.g., treated or untreated recreational water, drinking water [including bottled water], or an environmental or indeterminate water source).
  - This mode includes exposures to recreational water–associated chemicals, including naturally-occurring toxins, that become volatilized or aerosolized into the air surrounding the water body.
  - See [Appendix A](#) for examples on how to choose a mode of transmission for certain beverages and foods or drinks containing ice.
- **Animal contact** — Select if the enteric illnesses were linked to contact with an animal, its bodily fluids (excluding raw milk or other fluids consumed as food), fur, hair, feathers, scales, or skin, its food, or by contact with the environment where the animal resides (e.g., barns, petting zoos, and pet stores).
  - This mode includes contact with domestic animals, farm animals, wildlife, and pets.
  - When illness results from exposure to the environment in which an animal resides, including bedding, flooring, barriers, or other surfaces, even in the absence of direct contact with the animal, the mode of transmission is considered animal contact.
  - An animal vehicle does not need to be identified to select animal contact.
  - **Example:** Several people become infected with *Salmonella* Poona. When questioned, all of the case-patients had contact with small turtles in the week before they became ill. The investigation revealed that all of the turtles came from the same farm and environmental samples from the farm revealed the outbreak strain. This may be considered an *animal contact* outbreak.
- **Person-to-person** — Select if the initial enteric illnesses were associated with direct contact with an infected person, their bodily fluids, or by contact with the local environment where the exposed person was simultaneously present with the infected person and may have had the opportunity for direct contact.
  - The source case-patient **should** be considered part of the initial cluster of illness.
  - Although environmental contamination is often a factor in person-to-person outbreaks, if most of the patients had known direct contact or likely had the opportunity for direct contact with one another, consider the primary mode of transmission to be person-to-person. In those situations, environmental contamination may be selected in the Mode of Secondary Transmission field, if there is evidence suggesting it contributed.

- **Example:** An outbreak takes place among attendees at a class reunion in a restaurant. Food histories were collected, but no contaminated food was identified. No other illnesses were reported among other restaurant patrons. Upon further investigation, one of the cases attended the reunion while ill. Because there was direct contact among attendees, this was considered a person-to-person outbreak.
- **Example:** An outbreak occurs in a long-term care facility. Several staff and residents become ill within a few days, with several more illness occurring over the next two weeks. No ill food workers or visitors were reported. Since there were multiple opportunities for direct contact among ill persons and evidence of ongoing, propagated transmission (i.e., non-point source), the mode of transmission was considered to be person-to-person.
- **Environmental contamination** — Select if the initial enteric illnesses were associated with exposure to a contaminated environment (e.g., contaminated air, mud, soil, or other outdoor or indoor surfaces or objects) not attributable to foodborne, waterborne, person-to-person, or animal contact transmission, as defined above.
  - The source case-patient **should not** be considered part of the first cluster of illness.
  - Although environmental contamination is often a factor in person-to-person outbreaks, if most of the patients had known direct contact or likely had the opportunity for direct contact with one another, consider the primary mode of transmission to be *person-to-person*. In those situations, environmental contamination may be selected in the Mode of Secondary Transmission field, if there is evidence suggesting it contributed.
  - **Example:** Ten people become sick after using the same restroom. No other common exposures were identified. This would *not* be considered a person-to-person outbreak because those who became sick did not come into direct contact with the source case-patient or that person's bodily fluids. Instead, this would be an outbreak due to *environmental contamination*.
- **Indeterminate/unknown** — Select if an enteric illness cluster is clearly an outbreak, but the mode of transmission resulting in the initial illnesses was not identified or is unknown. An outbreak caused by an enteric pathogen but for which there is insufficient epidemiologic and environmental microbiology data (e.g., environmental sample test results) to link the outbreak to one specific mode of transmission would be reported as indeterminate/unknown.
  - For outbreaks in which the mode of transmission resulting in the earliest cluster of illnesses cannot be determined, select indeterminate/unknown as the mode of transmission, select all known and suspected modes of transmission in the Secondary Mode of Transmission field, and treat all outbreak-associated ill persons as primary cases. Report all information available and provide any additional information (e.g., foods involved, etc.) in the Remarks field under the Agency & Remarks tab.
  - **Example:** An outbreak occurs at a wedding. No food items or beverages were associated with illness, and no food workers or guests reported illness before the event. Because it could not be determined what the outbreak source was, select indeterminate/unknown as the primary mode of transmission. Select any of the other modes as the secondary mode of transmission if there is some evidence that transmission might have occurred through these modes over the course of the outbreak. Treat all patients as primary cases, with zero estimated total secondary ill cases.

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### **Multimode outbreaks**

If multiple modes of transmission are involved, select the primary mode that resulted in the earliest cluster of cases. For example, if an outbreak in a nursing home began with consumption of contaminated food in the dining hall and then spread through person-to-person contact among residents and staff, select foodborne as the primary mode of transmission and person-to-person as the secondary mode.

## Interface Variables

These are the fields that remain at the top of each NORS report in the interface:

### **CDC ID**

This is the unique CDC-assigned report identification number; the field is automatically populated by the system.

### **State ID**

This is the state-assigned report identification number or name. States determine how to number or name their reports. **A state-assigned number or name cannot be used more than once within a state.**

### **Status**

The status of the report may be active, finalized, or deleted. This is managed in the Report Admin section under the “Administrative Tasks” header. An administrative user can also finalize an active report from within the report.

### **Author**

This is the username of the author of the NORS outbreak report and is automatically populated when the report is created. The author is typically the report creator unless the report has been reassigned (e.g., if the original author is no longer working at the agency).

### **Date Created**

This is the date that the NORS outbreak report was created. This variable is automatically populated when the report is created.

### **Primary Mode of Transmission**

This is the primary mode of transmission that was chosen for this outbreak report.

## General Section

### Investigation Methods & Dates Tab

#### Investigation Methods (select all that apply)

- **Interviews only of ill persons** — Select if only ill persons were interviewed.
- **Case-control study** — This is an observational study to evaluate the relationship between an exposure (e.g., eating contaminated food; swimming in contaminated water; having direct contact with a sick person) and an outcome (e.g., illness). There are two categories of study participants, people who have the outcome of interest (cases) and people who do not have the outcome of interest (controls). Select this picklist value if this investigation method was used.
- **Cohort study** — This is an epidemiological study used to assess outcomes (e.g., the development of gastrointestinal illness) in a group or cohort of people. Study participants are observed over time or counted to determine how many people experience the outcome of interest, and when the outcome occurred. Members in a cohort are defined according to their exposure profile (e.g., an exposed group and an unexposed group). In outbreak investigations, a cohort is frequently defined by membership in an organization (e.g., a Boy Scout troop attending a weeklong camp). Select this picklist value if this investigation method was completed.
- **Food preparation review** — Select this picklist value if a review of the preparation practices associated with the implicated food was conducted.
- **Water system assessment: Drinking water** — Select this picklist value if the environmental health investigation included an assessment of a drinking water system.
- **Water system assessment: Non-potable water** — Select this picklist value if the environmental health investigation included an assessment of a non-potable water system (e.g., cooling tower, irrigation system).
- **Treated or untreated recreational water venue assessment** — Select this picklist value if the environmental health investigation included an assessment of one or more treated or untreated recreational water source (e.g., swimming pool, lake).
- **Investigation at factory/production/treatment plant** — Select this picklist value if a factory, production, or treatment plant was investigated (e.g., poultry processing plant, water treatment facility, etc.).
- **Investigation at original source (e.g., farm, water source, etc.)** — Select this picklist value if the original source of an implicated food or water vehicle was investigated (e.g., the poultry farm, lake, well, etc.).
- **Food product or bottled water traceback** — Select this picklist value if a traceback of the implicated food, beverage, or bottled water was conducted.
- **Environment/food/water sample testing** — Select this picklist value if samples were taken from the environment, food, or water for testing.
- **Other** — Select this picklist value if the investigation method is not listed above, and provide additional information about the investigation methods (e.g., third party data collection) in the Investigation Method Comments section.

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**Investigation Method Comments** — Enter any additional information relevant to the investigation methods for the outbreak.

#### **Dates (MM/DD/YYYY)**

The following dates refer to **primary cases** that resulted from the mode of transmission selected above.

- **Date first case became ill** — This field is automatically populated based on the first ill date entered while creating the outbreak report, but may be updated if more information becomes available. If the date is unknown, enter an approximate first ill date.
- **Date last case became ill** — Indicate the date the last case became ill. If the date is unknown, leave this field blank or enter an approximate last ill date.
- **Date of initial exposure** — Indicate the date when the initial known exposure took place among primary cases. If the initial exposure date is unknown, leave this date field blank or enter an approximate initial exposure date.
- **Date of last exposure** — Indicate the date when the last known exposure took place among primary cases. If the last exposure date is unknown, leave this date field blank or enter an approximate date of last exposure.
- **Date of report to CDC (other than this form)** — If CDC was contacted before completing the outbreak report (via telephone, e-mail, fax, etc.), enter the date of initial contact with CDC about this outbreak or enter an approximate date of contact.
- **Date of notification to State/Territory or Local/Tribal Health Authorities** — Enter the date that state/territory or local/tribal health authorities were first notified or first learned about the outbreak or enter an approximate date of notification.

#### **Geographic Location Tab**

The following section refers only to **primary cases** that resulted from the mode of transmission selected above.

- **Exposure state (REQUIRED FIELD)** — Select the name of the state where the exposure occurred. This field will auto-populate based on the state affiliation of the report author but can be changed.
- **Exposure occurred in multiple states** — Indicate if the outbreak resulted from a common exposure that occurred in multiple states.
  - **Definition of a multistate exposure outbreak** — A multistate exposure outbreak is one that meets the definition of an outbreak that is reportable to NORS, in which the exposure occurred in more than one state. For guidance on defining and reporting these outbreaks, see [Appendix B](#).
  - The Exposure State will read “Multistate Outbreak (Choose states in Other States list)” when this field is selected to NORS.
- **Exposure occurred in a single state, but cases resided in another state or multiple states** — Indicate if the outbreak resulted from an exposure that occurred in one state, but cases resided in another state or multiple states.

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- **Definition of a multistate residency outbreak** — A multistate residency outbreak is one that meets the definition of an outbreak that is reportable in NORS and exposure occurred in a single state, but cases resided in multiple states. For additional guidance, see [Appendix B](#).
- **Other states** — Select the other states involved in the outbreak. For a multistate exposure outbreak where the “Exposure occurred in multiple states” box is checked, select all states in which exposure occurred, including your own state. For a multistate residency outbreak where the “Exposure occurred in a single state...” box is checked, select other states where cases resided, not including the exposure state.
- **Add/Edit case counts** — click to open the table to add individual state-by-state case counts; the table is pre-populated with states selected in the “Exposure State” and “Other States” fields.
- **Temporary access** — Users may grant read-only access to all states selected in the “Exposure State” and “Other States” fields.
  - Alternatively, sites may navigate to the “Temporary Read/Write Access” feature from the NORS Home page.
- **Exposure county** — Indicate the name of the county where the outbreak occurred. For multistate exposure outbreaks, the Exposure County field is not available.
- **Exposure occurred in multiple counties in exposure state** — Indicate if the outbreak resulted from an exposure that occurred in multiple counties.
- **Exposure occurred in a single county, but cases resided in another county or multiple counties** — Indicate if the exposure occurred in a single county but ill persons were residents of another county or multiple counties.
- **Other counties** — Select the other counties involved in the outbreak. For a multicounty exposure outbreak where the “Exposure occurred in multiple counties...” box is checked, select all counties in which exposure occurred, including your own county. For a multicounty residency outbreak where the “Exposure occurred in a single county...” box is checked, select other counties where cases resided, not including the exposure county.
- **City/Town/Place of exposure** — Enter city, town, or place of exposure. For example, if the reporting state was Georgia and the reporting county was Fulton, City/Town/Place of exposure might be one or more cities/towns incorporated into Fulton County, such as Alpharetta or Johns Creek. **DO NOT** include proprietary information, private facility names, or physical addresses in this field. If desired, proprietary information can be provided in the Remarks field under the Agency & Remarks tab.

## Primary Cases Tab

### Primary Case Counts

Only include data for primary cases in this section. Usually, primary cases and secondary cases differ by mode of transmission (e.g., in a foodborne outbreak that is followed by person-to-person transmission to household contacts, the household contacts are secondary cases). However, person-to-person outbreaks may also occur where primary and secondary cases share the same mode of transmission (e.g., both result from person-to-person transmission), but have different exposure contexts. For

example, a person-to-person outbreak in a nursing home may result in primary cases among residents and staff and secondary cases in household contacts. Any household contacts who became ill from person-to-person transmission would be considered secondary cases, even though the primary and secondary modes of transmission were the same.

Secondary cases should be recorded in the Secondary Cases tab. For outbreaks where multiple modes of transmission or exposures are suspected but cannot be separated from one another, classify all cases as primary cases. In such instances, report suspected transmission modes and other details in the Secondary Cases tab even if the number of secondary cases is reported as zero, and report additional information in the Remarks field.

- **Lab-confirmed primary cases** — Primary cases in which a specimen was collected and a laboratory was able to confirm the pathogen(s) or agent(s) causing illness. For a foodborne outbreak, marine toxin cases that meet exposure and symptom confirmation guidelines should be included in this count. **See page 7 for guidelines on inclusion of source case-patients.**
- **Probable primary cases** — Primary cases that are epidemiologically linked to a confirmed case or exposure (e.g., setting) but do not have laboratory confirmation (e.g., a specimen was not collected or submitted to a laboratory). **See page 7 for guidelines on inclusion of source case-patients.**
- **Estimated total primary cases (REQUIRED FIELD)** — This field automatically populates based on the estimated total primary cases entered while creating the outbreak report. This field can be modified. Enter the estimated total primary cases, including lab-confirmed and probable, using the outbreak-specific definition. The estimated total primary cases should be **greater than or equal to** the sum of the lab-confirmed and probable primary cases.

**Note:** The lab-confirmed primary cases, probable primary cases, and estimated total primary cases fields are not intended to conflict with a state’s outbreak-specific case definition, but rather are intended to determine which outbreaks have included laboratory confirmation and which have not. The remainder of the Primary Cases tab is based on the number of estimated total primary cases. Additionally, for domestic outbreaks, all case-patients should be included in the case count, both US residents and non-residents.

**Example 1:** In an outbreak of *Cryptosporidium*, the state’s case definition for this outbreak is as follows: A confirmed case was defined as a person who swam in the community pool with an illness onset date on or after September 1, 2008. The state reported 10 cases that met this case definition. Of these 10 cases, 2 cases were lab-confirmed cryptosporidiosis.

Therefore, for NORS reporting purposes:

Type of Primary Case	Count
Lab-confirmed primary cases	2
Probable primary cases	8
Estimated total primary cases	10

**Example 2:** In an outbreak of scombroid toxin poisoning, 5 restaurant patrons reported a tingling and burning sensation on their tongues and throats after eating tuna. Laboratory testing was not done.

Therefore, for NORS reporting purposes:

Type of Primary Case	Count
Lab-confirmed primary cases	0
Probable primary cases	5
Estimated total primary cases	5

### Primary Case Outcomes

**Number of Cases** (these categories are not mutually exclusive)

- **Died** — Indicate the number of patients who died as a result of becoming ill during the outbreak. If there were no deaths, enter “0” and indicate the total number of cases for whom information is available in the appropriate box. If a patient was hospitalized with an unrelated illness, became ill with the outbreak-related pathogen, and then died due to the outbreak pathogen, he or she should be included in this count. Neonatal deaths should be included in this count. Fetal losses should not be included in this count, but they should be noted in the Remarks field in the Agency & Remarks tab.
- **Hospitalized** — Indicate the number of patients that were hospitalized as a result of becoming ill during the outbreak.
- **Visited ER** — Indicate the number of patients who visited the emergency room or department as a result of becoming ill during the outbreak.
- **Visited health care provider (excluding ER visits)** — Indicate the number of patients who visited any kind of **outpatient** health care provider, including primary care physicians, physician’s assistants, nurses, or other medical professionals, or urgent care facilities, as a result of becoming ill during the outbreak. Do not include ER visits or hospitalizations in this field.

### Number of Cases with Information Available

- **Died** — Indicate the total number of cases for whom information on outcome is available. **Do not leave this field blank** — if no information on deaths is available, enter “0” for the number of cases with information available.
- **Hospitalized** — Indicate the total number of cases for whom information on hospitalization status is available. **Do not leave this field blank** — if no information on hospitalizations is available, enter “0” for the number of cases with information available.
- **Visited ER** — Indicate the total number of cases for whom information on emergency room or department visits is available.
- **Visited health care provider (excluding ER visits)** — Indicate the total number of cases for whom information on outpatient health care provider visits is available, excluding ER visits.

The Primary Case Outcomes categories are not mutually exclusive. For example, if a case visited a health care provider as a result of becoming ill during the outbreak and on a different occasion, the person visited the ER as a result of the illness, and then was hospitalized as a result of the illness, this person would be counted in the # cases and # cases with info **for all three fields** (Visited health care provider, Visited ER, and Hospitalized).

### **Sex (number or percent of primary cases)**

Enter the number or percent of males and females among the total number of primary cases for whom information is available. The numbers should add up to the number of estimated primary cases, and percentages should add up to 100. If you have case counts only, percentages can be auto-calculated by clicking on “Calculate Percentage of cases.” If you have percentages that add up to a number other than 100 (e.g., 99), then case counts should be entered instead. Put the number or percent of cases where sex information is unknown in the Unknown field.

### **Age (number or percent of the primary cases)**

Enter the number or percent that falls into each age group among the total number of primary cases for whom information is available. The numbers should add up to the number of estimated primary cases and percentages should add up to 100. If you have case counts only, percentages can be auto-calculated by clicking on “Calculate Percentage of cases.” If you have percentages that add up to a number other than 100 (e.g., 99), then case counts should be entered instead. Put the number or percent of cases where age information is unknown in the Unknown field.

## **Incubation & Duration Tab**

### **Incubation Period**

The incubation period is the time between the implicated exposure and the clinical onset of illness for **primary cases**, and includes the date or time of exposure through the date or time that the symptoms began. For example, if patients ingested contaminated beef on Monday, May 1, and diarrhea started Friday, May 5, the incubation period would be 4 days (May 1–4).

Indicate the shortest, median, and longest incubation periods, and the total number of primary cases for whom information is available. Select the appropriate units (minutes, hours, or days). If sufficient data is not available to calculate a particular range, leave that range blank.

If information is only available for one case, then enter the same information for the shortest, median, and longest incubation periods.

If the incubation period is unknown, check the box labeled “Unknown Incubation Period.”

### **Duration of Illness (among recovered cases)**

The duration of illness is the time between the onset of the earliest symptom and the time the last symptom ended for **primary cases**, and includes the date or time that symptoms began through the date or time that the symptoms ended. For example, a patient had episodes of diarrhea that started on Monday, March 4, and vomiting that started on Tuesday, March 5. The diarrhea ended on Wednesday, March 6, but vomiting continued until Thursday, March 7, so the duration of illness would be 4 days (March 4–7).

Indicate the shortest, longest, and median duration of illness, and the total number of primary cases for whom information is available among those who have recovered. Select the appropriate units (minutes, hours, or days). If sufficient data is not available to calculate a particular range, leave that range blank.

If information is only available for one case, then enter the same information for the shortest, median, and longest durations of illness.

If duration of illness is unknown, check the box labeled “Unknown Duration Period.”

## Signs or Symptoms Tab

Enter the number of **primary cases** for whom information regarding specific symptoms or signs is known. Exclude the symptoms and signs of the source case-patient in foodborne, waterborne, and environmental outbreaks (e.g., an ill food handler) from this count. Several commonly-investigated signs and symptoms are displayed on this tab. If the value is not displayed, click “Add Other Sign/Symptom” to view the list of additional signs and symptoms. The available sign and symptom options are also listed in [Appendix E](#).

- **Sign or symptom** — This is the name of the sign/symptom that is being reported.
- **# of cases with signs or symptoms** — For each sign/symptom reported, enter the number of primary cases with that symptom during the outbreak. If the number of cases is entered for a symptom, the number of cases with information available must also be entered.
- **# of cases with info available** — For each symptom reported, enter the number of primary cases for whom information is available on whether they experienced that particular symptom during the outbreak. This number may be as few as the number of primary cases with that symptom or as great as the estimated total number of primary cases.

**Note: If Shiga toxin-producing *Escherichia coli* (STEC) is the outbreak etiology, do not leave the “hemolytic uremic syndrome (HUS)” fields blank.** If no information is available, enter “0” for the number of cases with information available.

- If no STEC cases were known to have developed HUS, enter zero for “# Cases with signs or symptoms” and enter the number of cases for whom you have information about HUS in “Total number of cases for whom information was available.”
- If there is only information for some of the STEC cases regarding HUS, enter the number of cases who developed HUS in “# Cases with signs or symptoms” and enter the number of cases for whom you have information about HUS in “Total number of cases for whom information was available.”
  - For example, of six cases of STEC, there is only information about HUS on four patients. Of these four patients, two patients developed HUS.
    - “# Cases with signs or symptoms” = 2 and “Total number of cases for whom information was available” = 4.

## Secondary Cases Tab

A secondary case is one in which the person was not directly exposed to the food, water, animal(s), person(s), or environment that was implicated in the initial outbreak but had another exposure that led to illness (most commonly, person-to-person contact with a primary case). Usually, primary cases and secondary cases differ by mode of transmission (e.g., in a foodborne outbreak that is followed by person-to-person transmission to household contacts, the household contacts are secondary cases). However, person-to-person outbreaks may also occur in which primary and secondary cases share the same mode of transmission (e.g., both result from person-to-person transmission), but have different exposure contexts. For example, a person-to-person outbreak in a nursing home may result in primary cases among residents and staff and additional cases in household contacts. Any household contacts that became ill from person-to-person transmission would be secondary cases, even though the primary and secondary modes of transmission were the same.

Any cases that can be clearly defined as secondary cases using the definitions described above should be detailed in the Secondary Cases tab. For outbreaks where multiple modes of transmission or exposures are suspected but cannot be separated from one another, classify all cases as primary cases. In such instances, report suspected transmission modes and other details in the Secondary Cases tab even if no numbers for secondary cases are being reported, and report additional information under the Agency & Remarks tab.

### **Secondary Mode of Transmission** (Select all that apply)

This field refers only to secondary mode of transmission. If more than one mode of transmission was involved during the outbreak, the secondary mode of transmission would yield the second cluster of illness in the outbreak. Select all that apply.

- **Foodborne** — Select if secondary transmission of illness occurred through consuming contaminated food or non-water beverages, including raw milk. This includes dietary supplements, such as protein powders, but excludes over-the-counter and prescription medicines.
  - See [Appendix A](#) for examples on how to choose a mode of transmission for certain beverages and foods or drinks containing ice.
- **Waterborne** — Select if secondary transmission of illness was associated with exposure via ingestion, inhalation, contact, or another route to treated or untreated recreational water, drinking water (including bottled water), or an unknown or other water source.
  - See [Appendix A](#) for examples on how to choose a mode of transmission for certain beverages and foods or drinks containing ice.
- **Animal contact** — Select if secondary transmission of illness was associated with contact with an animal, its bodily fluids (excluding raw milk or other fluids consumed as food), fur, hair, feathers, scales, or skin, its food, or by contact with the environment where the animal resides (e.g., barns, petting zoos, and pet stores).
- **Person-to-person** — Select if secondary transmission of illness was associated with direct contact with a primary case that became infected through the primary mode of transmission, their bodily fluids, or by contact with the local environment where the secondary case was simultaneously present with a primary case.
  - Note that a primary person-to-person outbreak consists of multiple generations of exposures and cases, all of which may be involved in the same exposure context (e.g., illness spread among residents and staff of a nursing home). In this case all of the residents and staff that became ill would be considered primary cases and only those who became ill through a different exposure context (e.g., household contacts of ill staff members) would be considered secondary cases.
  - **Example:** An outbreak of norovirus occurred after a catered meal with subsequent transmission occurring in family members of attendees. This may be considered a *foodborne* outbreak with secondary *person-to-person* transmission.
  - **Example:** An outbreak occurs in a long-term care facility. Several staff and residents become ill within a few days, with several more illness occurring over the next two weeks. No ill food workers or visitors were reported. Family members of ill staff, who did not visit the long-term care facility, also report illness. This may be considered a *person-to-person* outbreak with secondary *person-to-person* transmission.

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- **Environmental contamination** — Select if secondary transmission of illness was associated with exposure to a contaminated environment (e.g., contaminated air, mud, soil, or other outdoor or indoor surfaces or objects) not attributable to foodborne, waterborne, person-to-person, or animal contact transmission, as defined above.
  - **Example:** An outbreak of norovirus infection occurred after consumption of a contaminated catered meal at a conference center. A primary case, who had consumed the contaminated food the day prior, vomited in a public restroom in the conference center. The restroom was cleaned by the conference center staff, but other users of that restroom who did not have direct contact with the primary case and did not attend the catered meal subsequently became ill. This may be considered a *foodborne* outbreak with secondary *environmental contamination* transmission.
- **Indeterminate/Unknown** — Select if the mode of secondary transmission of illness was not identified or is unknown.

### Secondary Case Counts

Only include information on secondary cases; information on the primary cases should be completed in the Primary Cases tab.

- **Lab-confirmed secondary cases** — Enter the number of secondary cases associated with the outbreak in which a specimen was collected and a laboratory was able to confirm the pathogen(s) or agent(s) responsible for the illness.
- **Probable secondary cases** — Enter the number of secondary cases epidemiologically linked to the outbreak but do not have laboratory confirmation (e.g., a specimen was not collected or submitted to a laboratory).
- **Estimated total secondary cases** — Enter the estimated total secondary cases, including lab-confirmed and probable, using the outbreak-specific definition.
- **Estimated total cases (Primary + Secondary)** — This field will auto-populate to include all primary and secondary cases.

### Other CDC Systems, Traceback, and Recall Tab

#### Other CDC System IDs

- **National Environmental Assessment Reporting System (NEARS)** — This field is used to link NORS reports to environmental health investigation reports. If one or more NEARS reports contain outbreak-specific information, enter the evaluation ID(s) into the NEARS fields provided.
- **One Health Harmful Algae Bloom System (OHHABS)** — This field is used to link NORS reports to OHHABS reports. If one or more OHHABS reports contain outbreak-specific information, enter the OHHABS ID(s) into the fields provided.

#### Traceback (for food and bottled water only, not public water)

A traceback is conducted by local, state, and/or federal authorities to determine where contaminated food or bottled water came from, as far back to its origin or source as possible. Indicate if a traceback was attempted, regardless of its success. To add traceback information, click “Add Traceback.”

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- **Source Name (if made publicly available by regulatory agency and/or the company)** — Enter where the contaminated food or bottled water came from. Examples would be the name of a grocery store, a specific farm or ranch, etc.
- **Source Type** — Enter facility where food or bottled water came from. For example, a poultry farm, tomato-processing plant, bottled water factory, etc.
- **State and Country** — Enter state and country from which the contaminated food or bottled water came. If not in the United States, leave the state field blank and enter the area, province, or region in the comments box.
- **Comments** — Enter the agency that conducted the traceback and any additional comment(s) pertaining to the information found in the traceback, including the area, province, or region of non-US locations.

### Recall

- **Check if any food or water product was recalled** — If any foods or bottled water involved in the outbreak were recalled, check the box provided.
- **Type of item recalled** — Enter in a general description of the type of item recalled (e.g., peanut butter).
- **Recall Comments** — Enter in any additional information about the recall in the text box provided (e.g., brand and lot numbers for the recalled item).

### Agency & Remarks Tab

#### Author Agency

This section auto-populates to show the reporting site, agency name, the agency contact's name, title, phone number, e-mail address, and fax number associated with that outbreak report. The contact name listed is not necessarily the same as the author of the report. The state reporting the outbreak, captured as Agency State, is auto-populated based on the state of the report author. However, if for some reason the Agency State needs to be changed, this can be done by a CDC Managing Administrator. Please email [NORSAdmin@cdc.gov](mailto:NORSAdmin@cdc.gov) if you need to change a report's Agency State or Agency details.

#### Remarks

Briefly describe important aspects of the outbreak, including dates, not covered elsewhere in the NORS report. Indicate if any adverse outcomes occurred in special populations (e.g., pregnant women, immunocompromised persons). Proprietary information can also be provided in this field.

**Note:** CDC encourages states to attach any documents that provide additional information to the outbreak report under the Attachments Section. See page 47 for details.

#### CDC Remarks

This is an administrative field completed by the CDC NORS Team to document additional details or changes to the outbreak report. State users cannot modify this field.

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## **References**

This is an administrative field available for editing by the CDC NORS Team to document publications or other formal references related to the outbreak report. State users cannot modify this field. Please email [NORSAdmin@cdc.gov](mailto:NORSAdmin@cdc.gov) any recommended updates to this field.

## Etiology Section

**Note:** This section pertains only to **primary** cases. Do not enter any information concerning specimen collection or laboratory testing of secondary case specimens. Both suspected and confirmed outbreak etiologies are accepted in this section.

Waterborne disease outbreak reports have a separate section for reporting etiology and clinical specimen data. Refer to the Etiology & Lab section in the corresponding guidance for waterborne disease outbreaks at [www.cdc.gov/nors/forms](http://www.cdc.gov/nors/forms).

For specific pathogen confirmation guidelines, visit the Outbreak Response guide located here: [http://www.cdc.gov/foodsafety/outbreaks/investigating-outbreaks/confirming\\_diagnosis.html](http://www.cdc.gov/foodsafety/outbreaks/investigating-outbreaks/confirming_diagnosis.html).

### Clinical and Environmental Testing

1. **Were any samples collected or tested?** — Indicate whether or not any samples were collected from primary cases, animals, or food or environmental sources. Omit food handler specimens if the outbreak is the result of foodborne transmission. If samples were collected or tested, answer questions 2 through 5 in the NORS interface. If no, skip to question 6.
2. **How many samples of each type were tested?** — Indicate the types and numbers of samples collected and tested. Please report the total number of samples regardless of the number of persons who provide specimens. For example, if one person submitted two stool samples, enter two specimens.
3. **What were they tested for?** — If samples were collected, indicate whether the samples were tested for bacteria, chemicals or toxins, viruses, and/or parasites. Select all that apply. If the tests run are not known, then select unknown.
4. **Test types** — Indicate the types of tests used for human clinical specimens.
5. **Was antimicrobial susceptibility testing (AST) performed?** — Indicate whether any samples were tested for antimicrobial resistance.
  - a. **If yes, where was AST performed?** — Indicate if the AST was done by a clinical lab (e.g., hospital), a public health lab, the National Antimicrobial Resistance Monitoring System (NARMS), another lab, or unknown. Select all that apply.
  - b. **If yes, were any antimicrobial resistant isolates associated with the outbreak?** — Indicate whether any resistant isolates were detected.
6. **Is there at least one confirmed or suspected outbreak etiology(s)?** — If there is at least one suspected (based on epidemiological, clinical, or other evidence) or laboratory confirmed outbreak etiology, select “Yes.” If there is no confirmed or suspected etiology, or it is unknown, select “No.”

### Etiology

Enter the name of the bacteria, virus(es), parasite(s), and/or chemical/toxin(s) known or suspected (based on epidemiological, laboratory, clinical, or other evidence) to be responsible for the outbreak. If available, include the serotype and other characteristics, such as virulence factors and metabolic profile.

- **Genus** — For each suspected and confirmed etiology, list the genus name; chemicals/toxins are listed in this category. If the correct genus is not listed in the drop-down, select “Other

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bacterial,” “Other viral,” “Other parasitic,” or “Other chemical” as appropriate and then specify the etiology in the “Other Characteristics” field.

- **Species** — For each suspected and confirmed etiology, select the appropriate species name. If more than one species of a single genus is involved in an outbreak (e.g., both *Shigella sonnei* and *Shigella flexneri*), enter each one as a separate etiology. If norovirus or sapovirus is selected as the outbreak etiology, enter the genogroup in this field. If the species or genogroup is unknown, select “Unknown” where available.
- **Serotype/Genotype** — For each suspected and confirmed etiology, select the serotype or genotype, if known. Make sure to provide serotype for all Shiga toxin-producing *Escherichia coli* (STEC) and *Salmonella enterica* outbreaks. If more than one serotype or genotype of a single species is involved in an outbreak, enter each one as a separate etiology. If the species or genogroup has been entered but the serotype or genotype is unknown, select “Unknown” where available.
- **Confirmed or Suspected** — For each etiology, select whether the outbreak is laboratory confirmed or is suspected. You may enter multiple confirmed and/or suspected etiologies.
- **Other characteristics** — List any other pertinent characteristics of the outbreak etiology. For example, additional serotype or genotype information which may not be captured elsewhere.
- **Detected In** — Indicate whether the etiology listed was detected in 1) patient specimen, 2) food specimen, 3) environmental specimen, 4) food worker specimen, 5) water sample, and/or 6) animal specimen. Multiple selections are permitted.
- **# of Lab-confirmed cases** — Indicate the number of laboratory-confirmed primary cases associated with each etiology reported. If two specimens were positive for norovirus, but they were from the same case, then the etiology would have only one lab-confirmed case.

**Note:** For most etiologic agents reported here, CDC considers an outbreak to have a confirmed etiology if there are two or more lab-confirmed cases. However, because outbreaks of botulism, marine toxins, and other chemical outbreaks have such distinct clinical symptoms, a physician's diagnosis is often sufficient and laboratory confirmation is not always necessary to classify an outbreak as having a confirmed etiology. Therefore, for such outbreaks, CDC would consider the etiology confirmed if there are at least two cases (lab-confirmed and/or probable cases) with signs and symptoms meeting the confirmation criteria. Food worker cases can be included in this count. For such outbreaks, check the “Confirmed” box in the Etiology tab even if the number of laboratory-confirmed cases is less than two. Confirmation criteria are available at [http://www.cdc.gov/foodsafety/outbreaks/investigating-outbreaks/confirming\\_diagnosis.html](http://www.cdc.gov/foodsafety/outbreaks/investigating-outbreaks/confirming_diagnosis.html).

**Example:** In a botulism outbreak, 1 case-patient tested positive for botulism infection, but 5 other cases were not tested. However, these 5 case-patients displayed symptoms consistent with botulism infection and were exposed to the outbreak source.

For NORS reporting, indicate in the Primary Cases tab:

Type of Primary Case	Count
Lab-confirmed primary cases	1
Probable primary cases	5
Estimated total primary cases	6

AND in the Etiology Section:

Genus	Species	Serotype/ Genotype	Confirmed or Suspected	Other Characteristics	Detected In*	# Lab-confirmed cases
<i>Clostridium</i>	<i>botulinum</i>		Confirmed		1 — patient specimen	1

### Etiology (from CaliciNet)

If the NORS record has been matched to data from CaliciNet, an Etiology (from CaliciNet) table will appear below the NORS Etiology table. The additional table will contain data from CaliciNet that has been formatted to match the NORS Etiology table. The data in the CaliciNet Etiology table cannot be edited or deleted before being added to the NORS record. If there is an error in the CaliciNet Etiology data, please contact NORSAdmin@cdc.gov.

There are three options listed on the top of the CaliciNet Etiology table:

- *Replace with CaliciNet Etiologies* — Clicking this option will replace the data in the NORS Etiology table with the data shown in the CaliciNet Etiology table.
- *Append CaliciNet Etiologies* — Clicking this option will add the CaliciNet Etiology data to the NORS Etiology table without affecting the data currently in the NORS Etiology table.
- *Ignore CaliciNet Etiologies* — Clicking this option will hide the CaliciNet Etiology table. No data will be added to or changed in the NORS Etiology table.

Once you have clicked one of the above options, the CaliciNet Etiology table will be hidden, and the sentences “Etiology data from CaliciNet has been added or ignored. Show CaliciNet Etiologies” will appear. Click the “Show CaliciNet Etiologies” link to view the CaliciNet Etiology table again.

For more information regarding the CaliciNet Integration, please refer to the CaliciNet Integration training document on the NORS website at <https://www.cdc.gov/nors/training/general.html>.

### Isolates

For norovirus, provide CaliciNet outbreak number, CaliciNet key, sequenced region, and genotype for each distinct genotype identified in the outbreak. For bacterial pathogens, provide representative PulseNet data for each distinct pattern. Enter at least three isolates for outbreaks with the information that is available. If you do not have three isolates, enter “N/A” or “Unavailable” under “State Lab ID” or “CDC PulseNet or CaliciNet Outbreak Code” for the missing isolates. Enter all isolates associated with the National Antimicrobial Resistance Monitoring System (NARMS).

For information related to PulseNet, visit the following webpage: <http://www.cdc.gov/pulsenet/>. For information related to NARMS, visit the following webpage: <http://www.cdc.gov/narms/>. For information related to CaliciNet, visit the following webpage: <http://www.cdc.gov/norovirus/reporting/calicinet/>.

- **CDC System** — Indicate which CDC laboratory surveillance system, CaliciNet, CryptoNet, NARMS, PulseNet, Other, Unknown, or None, contains additional laboratory information on the outbreak.
- **State lab ID/Accession ID/CaliciNet key/PulseNet key** — Provide the state-assigned laboratory isolate identification number. For norovirus strains uploaded to CaliciNet, provide the CaliciNet key in this field. The CaliciNet key is generated by the testing laboratory and consists of the four digit

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year, the letters “SP,” and a four digit sequential number (e.g., 2013-SP-0654). For PulseNet isolates, enter the PulseNet key.

- **PulseNet Outbreak Code or CaliciNet Outbreak Number** — Indicate the PulseNet outbreak cluster code or CaliciNet outbreak number for bacterial and viral pathogens, respectively. This field is very important for distinguishing outbreak-associated cases from other sporadic cases and for outbreaks involving more than one state.
  - A PulseNet outbreak cluster code will have four numbers that make up the year and month of the cluster, two characters that represent the lab ID, three letters that are the serotype code, a dash, and then a unique cluster number (e.g., 0902MLJPX-4). PulseNet cluster codes are the same thing as OutbreakNet cluster codes.
  - The CaliciNet outbreak number (CaliciOBNumber) is assigned by CDC when a submission is made through CaliciNet and consists of the four digit year, the letters “OB,” and a three digit sequential number (e.g., 2011-OB-458).
- **CDC PulseNet Pattern Designation for Enzyme 1** — Indicate the PulseNet pattern/PFGE pattern for the first enzyme.
- **CDC PulseNet Pattern Designation for Enzyme 2** — Indicate the PulseNet pattern/PFGE pattern for the second enzyme.
- **CaliciNet Sequenced Region/Whole Genome Sequencing ID** — Indicate the CaliciNet sequenced region (e.g., Region C) for outbreaks entered into CaliciNet or the whole genome sequencing ID.
- **CaliciNet Genotype/Other Molecular Designation** — Indicate the CaliciNet genotype for outbreaks entered into CaliciNet (e.g., GII\_3) or any other molecular information related to this outbreak (e.g., MLVA).

### Isolates (from CaliciNet)

If the NORS record has been matched to data from CaliciNet, an Isolates (from CaliciNet) table will appear below the NORS Isolates table. The additional table will contain data from CaliciNet that has been formatted to match the NORS Isolates table. The data in the CaliciNet Isolates table cannot be edited or deleted before being added to the NORS record. If there is an error in the CaliciNet Isolates data, please contact [NORSAdmin@cdc.gov](mailto:NORSAdmin@cdc.gov).

There are three options listed on the top of the CaliciNet Isolates table:

- *Replace with CaliciNet Isolates* — Clicking this option will replace the data in the NORS Isolates table with the data shown in the CaliciNet Isolates table.
- *Append CaliciNet Isolates* — Clicking this option will add the CaliciNet Isolates data to the NORS Isolates table without affecting the data currently in the NORS Isolates table.
- *Ignore CaliciNet Isolates* — Clicking this option will hide the CaliciNet Isolates table. No data will be added to or changed in the NORS Isolates table.

Once you have clicked one of the above options, the CaliciNet Isolates table will be hidden, and the sentences “Isolate data from CaliciNet has been added or ignored. Show CaliciNet Isolates” will appear. Click the “Show CaliciNet Isolates” link to view the CaliciNet Isolates table again.

For more information regarding the CaliciNet Integration, please refer to the CaliciNet Integration training document on the NORS website at <https://www.cdc.gov/nors/training/general.html>.

## Settings Section

Only complete this section if person-to-person, environmental contamination, or indeterminate/other/unknown was identified as the primary mode of transmission.

### Settings Tab

#### Major setting of exposure (choose one)

Select one of the pre-determined categories of major setting. If there was more than one setting of exposure, indicate the major setting of exposure that yielded the first cluster of illness in the outbreak.

As of September 2015, the Major setting of Exposure picklist no longer allows user-entered values. Additional setting details, such as the type of healthcare facility, can be entered in the Specify Setting textbox after the setting category has been selected.

- **Camp** — Indicate if exposure occurred in any designated place providing simple group accommodations or a gathering place outdoors, such as campgrounds, summer camps, or day camps.
- **Child daycare** — Indicate if exposure occurred in a facility designed to care for children during the day when not in school. This also includes preschool and daycare based in a residential home.
- **Event Space** — Indicate if exposure occurred in a setting designed to hold short-term events that do not offer overnight accommodations and do not fall into one of the other available setting categories. These may include convention centers, community centers, or reception venues other than hotels/motels, etc.
- **Festival/fair** — Indicate if exposure occurred at a fair or festival, such as a state fair.
- **Hospital** — Indicate if exposure occurred in a hospital, e.g., if illness was acquired through nosocomial infection. A hospital is any health care institution providing nursing care and medical or surgical treatment for sick or injured persons.
- **Hotel/motel** — Indicate if exposure occurred at an establishment that provides lodging and offers services such as meeting rooms for conferences/conventions or common areas for guests. Motels, lodges, inns, hostels, and similar settings should be considered a hotel/motel when indicating the setting of exposure.
- **Long-term care/nursing home/assisted-living facility** — Indicate if exposure occurred in a facility designed to provide long-term care, such as for the elderly or the disabled. Nursing homes, assisted living facilities, community-based residential facilities, and other long-term care facilities, which may not necessarily provide skilled nursing care, should be considered a long-term care facilities when indicating the setting of exposure.
- **Office/indoor workspace** — Indicate if exposure occurred in a workplace other than setting of exposures listed above, such as an office building.
- **Other healthcare facility** — Indicate if exposure occurred in other healthcare facilities, not including long-term care facilities or hospitals, as defined above.
- **Other (specify)** — Indicate if the type of setting cannot be found in the provided list, select “Other (specify)” and specify the type of setting in the space provided.

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- **Prison/jail** — Indicate if exposure occurred in a prison, jail, juvenile detention center, or similar detention facility.
- **Private home/residence** — Indicate if exposure occurred in a private home or residence.
- **Religious facility** — Indicate if exposure occurred in a religious facility, such as a church, temple, or other facility designed to house religious meetings.
- **Restaurant** — Indicate if exposure occurred in any establishment designed to provide meals for paying customers.
- **School/college/university** — Indicate if exposure occurred in a school setting, such as a university, college, kindergarten, grade school, or summer school. This includes residential facilities at schools (e.g., dormitories).
- **Shelter/group home/transitional housing** — Indicate if exposure occurred in a homeless shelter, group home, or other temporary, communal housing.
- **Ship/boat** — Indicate if exposure occurred on any commercial ship where passengers stay at least one night, such as a cruise ship. Some cruise ship outbreaks are not reportable to NORS and should be reported directly to the Vessel Sanitation Program (<http://www.cdc.gov/nceh/vsp/default.htm>).
- **Unknown** — Indicate if no setting of exposure could be identified.

**Specify setting** — Enter additional setting details, such as the type of healthcare facility or event space, in this box. Do not enter facility names or other proprietary information in this field.

#### **Attack rates for major settings of exposure**

For the major setting of exposure, estimate the total number of persons likely exposed in that setting and the total number of persons ill for each of the below groups. If the outbreak occurred in only a single or limited number of sections of the major setting of exposure (e.g., exposure did not occur throughout the entire setting of exposure), only include the total number of residents or staff in that section or sections. For example, an outbreak restricted to a single ward of a hospital should report as exposed only patients and staff assigned to that ward.

- **Residents, guests, passengers, patients, etc.** — Persons who do not work in the major setting, such as children attending daycare, residents of a nursing home, guests of a hotel, prison inmates, students at a school, etc. If exposure occurs in a work place, such as an office building, consider all persons exposed and/or ill as residents or guests. If residents and guests cannot be separated from staff and crew, consider all persons exposed or ill as residents or guests.
- **Staff, crew, etc.** — Persons who work in the major setting, such as healthcare providers, teachers, camp counselors, prison guards, daycare employees, hotel staff, waiters, etc.

#### **Other settings of exposure (choose all that apply)**

If the outbreak occurred in more than one setting of exposure, indicate all additional settings where exposure occurred. Similar to the Major Setting of Exposure, the Other Settings of Exposure picklist has been updated to include only pre-determined setting categories. Refer to “Major setting of exposure” for setting descriptions. Additional information can be entered in the text box “Other Setting Details.”

**Note:** As of September 2015, the Other Settings of Exposure picklist no longer allows user-entered values.

## ***Shigella* Tab**

This tab will only appear if *Shigella* is selected as a confirmed or suspected etiology for person-to-person and indeterminate/unknown outbreaks.

1. **Did any case-patients report travel prior to illness onset?** — Indicate whether any case-patients reported travel prior to illness onset.

- If yes, indicate whether travel was international, domestic, both, or unknown.

**Note:** Outbreaks with international exposures are not reportable to NORS. However, if the source case-patient had recent international travel and caused an outbreak with domestic exposures, the outbreak is reportable to NORS.

2. **Were any confirmed, suspected, or probable case-patients immunocompromised (e.g., HIV/AIDS)?** — Indicate whether any case-patients reported being immunocompromised, such as those with HIV/AIDS, cancer, etc.
3. **Were there any confirmed, suspected, or probable cases among men who have sex with men?** — Indicate whether any case-patients identified as men who have sex with men. This information is important for characterizing case-patients, identifying risk factors and modes of transmission, and addressing the increasing prevalence of antibiotic resistant shigellosis among MSM.

## Animal Section

Only complete this section if “Animal Contact” was identified as the primary mode of transmission.

### Animal vehicle undetermined

Indicate if an animal vehicle was *not* identified for the outbreak. If you check this box do not enter any animal-related information. An outbreak would be considered animal contact with undetermined vehicle when information gathered in the investigation strongly suggests a common source of infection, but a source is not identified.

**Note:** If multiple animal vehicles were suspected, but none confirmed, do not select “Animal vehicle undetermined.” Instead, enter information for each suspected animal.

### Reason(s) animal contact, but undetermined vehicle

If the animal vehicle is undetermined, enter the reason why the outbreak was considered animal contact, with an undetermined vehicle. The following types of evidence are regularly used to implicate vehicles in enteric disease outbreak investigations. All require judgment about the strength of evidence. Examples of these evidence types are provided here.

- **Epidemiologic** — An animal exposure occurs more often in case-patients than in controls, or more often in case-patients than expected in the general population. Multiple unrelated case-patients report a common exposure venue, such as attending the same event before becoming ill.
- **Laboratory** — The pathogen or pathogen subtype causing illness is found in a farm suspected to be the source of the outbreak. The pathogen, or pathogen subtype, causing human illness is isolated from an animal to which case-patients were exposed.
- **Traceback and environmental investigation** — A common point of contamination is identified through reviewing records collected from stores or other venues where sick people shopped or visited, or through an environmental investigation or assessment conducted at a farm.
- **Other data (*Specify in General Remarks*)** — Select other data if evidence not covered by the previous three options is available. Provide further details in the “General Remarks” section. Do not select this option if the vehicle is confirmed.

**Example:** Several people report vomiting and diarrhea after visiting a petting zoo. No other common venues, settings, or exposures were identified among the ill persons. No particular animal type was associated with illness and no animals tested positive for the outbreak pathogen. This would be an *animal contact* outbreak with an *undetermined* vehicle. “Epidemiologic” should be chosen for the reason why the outbreak was determined to be from animal contact, but has no specific vehicle.

### Type of animal

To add information on a new animal, click “Add Animal Vehicle.”

Indicate the type of animal exposure considered as the source of transmission in the outbreak. Choose from the list of animals provided, which includes both juvenile and adult animals, such as baby chick or duckling and other poultry.

- If another type of animal (not provided in the list) was implicated, please indicate “Other,” and specify the type (if known) in “Animal type (*specify*).”

### Animal type specify

Use this field to type any specific information on the type of animal involved. For example, if “Lizard” is chosen for type of animal, “Bearded dragon” may be specified here.

### Confirmed or suspected vehicle

Indicate whether the animal is confirmed or suspected. The types of evidence are listed under “Reason(s) animal contact, but undetermined vehicle.”

- **Confirmed vehicle** — Evidence implicates a source of infection. For point-source clusters linked to a meal or a single event, at least one type of evidence is needed. When exposures occur in multiple venues or across multiple counties or states, at least two types of evidence are needed to ensure that the case-patients were exposed to a common vehicle. For further guidance on multistate outbreaks, see [Appendix B](#).
- **Suspected vehicle** — At least one type of evidence provides considerable but not conclusive proof that an animal is the source of infection.

### Reason(s) confirmed or suspected

Enter the reason(s) the vehicle was confirmed or suspected. Use the options and definitions listed under “Reason(s) animal contact, but undetermined vehicle.”

**Example 1:** Seven unrelated children visited the same county fair event on the same day. Within a week, the children were hospitalized with *E. coli* O157 infection. Three of the seven reported visiting the calf petting zoo and no other common exposures were identified. Investigators from the state agriculture and health departments were sent to the fairgrounds, but the petting zoo area had been cleaned and calves were no longer present. This would be an *animal contact* outbreak with a *suspected* vehicle. “Epidemiologic” should be chosen for the “Reason(s) confirmed or suspected.”

**Example 2:** Three unrelated children visited the same county fair event on the same day. Within a week, the children were hospitalized with *E. coli* O157 infection. All three went to a calf petting zoo, but the parents of one child would not answer any additional interview questions, so other common exposures at the county fair could not be ruled out. Nevertheless, specimens from the calves tested positive for the outbreak strain. This would be an *animal contact* outbreak with a *confirmed* vehicle. “Epidemiologic” and “Laboratory” should be chosen for the “Reason(s) confirmed or suspected.”

1. **Settings of exposure** — Choose the places or settings where cases were exposed. Chose all that apply from the list provided. Definitions for each response option below:
  - **Agricultural feed store** — A retail store, such as Tractor Supply Company, which sells a number of products for agriculture, lawn and garden maintenance, livestock, equine, and pet care.
  - **Animal shelter or sanctuary** — A facility that houses homeless, lost, or abandoned animals.
  - **Camp** — Any designated place providing simple group accommodations or a gathering place outdoors, such as campgrounds, summer camps, or day camps.
  - **Child daycare** — A facility designed to care for children during the day when not in school. This also includes preschool and daycare based in a residential home.

- **Farm/dairy** — An area of land or water (for aquafarming) where crops or animals are raised. This includes educational farm tours, agro-tourism, private, public, and dairy farms.
  - **Festival or fair** — A fair or festival, such as state fairs, carnivals, circuses, and other mobile or temporary service.
  - **Hospital** — A health care institution providing medical or surgical treatment and nursing care for sick or injured persons.
  - **Laboratory** — A laboratory that uses animals for research, teaching, or testing purposes.
  - **Live animal market** — A place where customers can buy a live animal or live bird to be slaughtered for food.
  - **Long-term care/nursing home/assisted living facility** — A facility designed to provide long-term care, such as for the elderly or the disabled. Nursing homes, assisted living facilities, community-based residential facilities and other long-term care facilities, which may not necessarily provide skilled nursing care, should be considered long-term care facilities when indicating the setting of exposure.
  - **Pet store or other retail location** — A place of business or residence at which the seller, buyer, and the animal available for sale are physically present so that every buyer may personally observe the animal prior to purchasing and/or taking custody of that animal after purchase.
  - **Petting zoo** — The petting area of a zoo or park.
  - **Prison/jail** — A prison, jail, juvenile detention center, or similar detention facility.
  - **Private home/residence** — A private home or residence.
  - **School/college/university** — A school setting, such as a university, college, kindergarten, grade school, or summer school. This includes residential facilities at schools (e.g., dormitories).
  - **Veterinary clinic** — A hospital, doctor's office, or medical facility for medical care and treatment of animals.
  - **Zoo or animal exhibit** — A facility in which animals are confined within enclosures, displayed to the public, and in which they may also be bred. If exposure occurred at the petting area of the zoo, please select "Petting zoo" as the setting.
  - **Other (specify)** — If the type of setting cannot be found in the provided list, select "Other" and specify the type of setting in Animal contact remarks. This includes wildlife photo opportunities, museums, or settings where live birthing can be observed.
  - **Unknown** — Indicate if no setting of exposure could be identified.
2. **Was pet food or animal feed implicated as a potential source of the outbreak?** — Indicate whether pet food was a potential source of the outbreak.
- If "No" or "Unknown," continue to Question 4.
  - If "Yes," please specify — Indicate the types of pet food that were implicated. Select all that apply. Definitions for each response option below:

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- **Pre-packaged pet food** — Packaged at the processor level and received at the point of sale in a sealed bag or container.
  - **Pet treats or chews** — Edible product intended for consumption by pets that is not part of the staple diet of the animal (e.g., jerky treats, greenies, pig ears, bones).
  - **Homemade pet food** — Pet food prepared in a home or private setting; not by a commercially licensed entity.
  - **Commercially prepared “raw” pet food** — Un-cooked and un-processed food products intended for animal consumption, packaged by a commercial entity and sold at retail.
  - **Frozen or fresh feeder rodents** — Rodents purchased, raised, or obtained for use as animal feed (e.g. mice intended to be fed to snakes).
  - **Blended feed** — Feeds specifically formulated that can be full-fed, supplemented, or premixed with roughage sources and/or grain sources.
  - **Other (specify)** — If another type of pet food was implicated, please specify in Animal contact remarks.
  - **Unknown** — Indicate if the type of pet food is unknown.
3. **Did any cases have exposure to livestock or household pets that were experiencing diarrhea?** — Indicate whether any cases had exposure to an animal that had diarrhea.
- If this exposure is unknown, please indicate unknown.
4. **Was the “Compendium of Measures to Prevent Disease Associated with Animals in Public Settings” use in the investigation?** — Indicate whether the Compendium was used. The document can be found at <http://nasphv.org/Documents/AnimalContactCompendium2013.pdf>.
- If unknown, please indicate unknown.
5. **What prevention measure or recommendations were used to stop the outbreak and prevent additional infections?** — Indicate all measures that were used to prevent additional cases. Definitions of response options below:
- **Handwashing** — The action of rubbing hands vigorously under water, with soap for >20 seconds.
  - **Quarantine/stop movement** — To separate and restrict the movement of animals or people.
  - **Venue or event closure** — Stop public access to the venue and/or cease holding an event.
  - **Removal of animals from setting** — To take animals away from venue to areas not permitted for public access.
  - **None** — Indicate if no prevention measures were used.
  - **Other (specify)** — Specify other measures in Animal contact remarks.
  - **Unknown** — Indicate whether it is unknown if prevention measures were used.

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**Animal contact remarks**

Enter any additional information regarding the animal exposure. Use this space to further specify any “Other” options chosen from previous questions in the Animal Section. If different animals were associated with different settings, provide further details here.

## Food Section

Only complete this section if “Food” was identified as the primary mode of transmission.

### General Tab

#### Food vehicle undetermined

Indicate if a food vehicle was *not* identified for the outbreak. If you check this box do not enter any food-related information. An outbreak would be considered foodborne with undetermined vehicle when information gathered in the investigation strongly suggests a common food as the source of infection, but a source is not identified.

**Note:** If multiple food vehicles were suspected, but none confirmed, do not select “Food vehicle undetermined.” Instead, enter information for each suspected food item.

#### Reasons foodborne, but undetermined vehicle

If the food vehicle is undetermined, enter the reason why the outbreak was considered foodborne, with an undetermined vehicle. The following types of evidence are regularly used to implicate vehicles in enteric disease and foodborne toxin outbreak investigations. All require judgment about the strength of evidence. Examples of these evidence types are provided here.

- **Epidemiologic** — A food exposure occurs more often in case-patients than in controls, or more often in case-patients than expected in the general population. Multiple unrelated case-patients report a common exposure venue, such as eating at the same restaurant, shopping at the same grocery store, or attending the same event before becoming ill.
- **Laboratory** — The pathogen or pathogen subtype causing illness is found in a food item, restaurant, production facility, or farm suspected to be the source of the outbreak. The pathogen, or pathogen subtype, causing human illness is isolated from a food worker to which case-patients were exposed through prepared food.
- **Traceback and/or environmental investigation** — A common point of contamination is identified through reviewing records collected from restaurants, stores, or other venues where sick people ate, shopped, or visited, or through an environmental investigation or assessment conducted at a restaurant, production facility, or farm.
- **Other data (*specify in General Remarks*)** — Select other data if there is evidence not covered by the previous three options. Provide further details in the “General Remarks” section. Do not select this option if the vehicle is confirmed.

**Example:** During a one-week period, a party of four persons and then another party of seven persons reported that they all developed vomiting and diarrhea within a few hours after eating at a vegetarian restaurant. No other common venues were identified. Local environmental health investigators visited the restaurant and noted some health violations, including restaurant staff not wearing gloves while preparing food and pre-made food not being stored at a safe temperature. No food workers reported being ill during the week of or the week before the incidents. This would be considered a *foodborne* outbreak with an *undetermined* vehicle. “Epidemiologic” should be selected for “Reason(s) foodborne, but undetermined vehicle.”

## Name of food

To add food information, click “Add New Food Item.”

Excluding any method of preparation, indicate a single implicated food. If there was more than one implicated food, add additional food information by clicking “Add New Food Item.” Do not enter brand names in the food field. If you would like to report the brand of food, enter it into the Remarks field. For additional information on how to search for a food item or enter new foods, see the training guides for the Food tab.

## Confirmed or suspected vehicle

Indicate whether the vehicle was confirmed or suspected. The types of evidence are listed under “Reason(s) foodborne, but undetermined vehicle.”

- **Confirmed vehicle** — Evidence implicates a source of infection. For point-source clusters linked to a meal or a single event, at least one type of evidence is needed. When exposures occur in multiple venues or across multiple counties or states, at least two types of evidence are needed to ensure that the case-patients were exposed to a common vehicle. For further guidance on multistate outbreaks, see [Appendix B](#).
- **Suspected vehicle** — At least one type of evidence provides considerable but not conclusive proof that a food is the source of infection.

## Reason(s) confirmed or suspected (enter all that apply)

Enter the reason(s) the vehicle was confirmed or suspected. Use the options and definitions listed under “Reason(s) foodborne, but undetermined vehicle.” “Other data” should not be selected for confirmed vehicles.

**Example 1:** Five ill persons from different counties in a large state were infected with *Listeria monocytogenes* during a two month period. Isolates from these people were highly related to one another by whole genome sequencing and the ill persons were all of Russian descent. The clinical isolates were also highly related to *Listeria* isolated from herring fillets, but only two of the ill persons reported eating herring fillets in interviews. This is a *foodborne* outbreak with a suspected vehicle. Two types of evidence are needed to have a confirmed vehicle in this example because it is a multijurisdictional outbreak. “Laboratory” should be selected for “Reason(s) confirmed or suspected.”

**Example 2:** Twenty-one people became ill after attending a church potluck. The odds of eating a salad were significantly higher among ill than well persons; no other exposure was associated with illness. The salad preparer reported having a diarrheal illness two days before making the salad. This is a *foodborne* outbreak with a confirmed vehicle. “Epidemiologic” should be selected for “Reason(s) confirmed or suspected.”

## Ingredient(s)

For each implicated food, indicate all known ingredients.

- If contaminated ingredient(s) were identified, indicate in the “Contaminated ingredients” field.
- If single ingredient foods (e.g., milk, cantaloupe) were identified, please enter these in the ingredients section.

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- If the ingredients of the food vehicle are known, but a single ingredient cannot be determined as the sole source of contamination, list all known ingredients and leave the Contaminated Ingredient field blank.

### **Contaminated Ingredient(s)**

Among the ingredients previously listed in the “Selected Ingredients” field (as it corresponds to the “Name of Food”), indicate the contaminated ingredient(s) in the appropriate column. Multiple contaminated ingredients can be entered for the corresponding implicated food and ingredient fields. Epidemiologic information can be used to determine contaminated ingredients.

**Example 1:** The implicated food for an outbreak was coleslaw, and contaminated source ingredient was cabbage. Enter “coleslaw” as “Name of Food,” and “cabbage,” “mayonnaise,” “carrots,” and “raisins” as “Selected Ingredient(s)” and “cabbage” as “Contaminated Ingredient.”

**Example 2:** The implicated food for an outbreak was beef lasagna, and ground beef was identified as the contaminated source. Report “lasagna, beef” as “Name of Food,” and “ground beef,” “pasta,” “mozzarella cheese, pasteurized,” and “tomato sauce, unspecified” as “Selected Ingredient(s)” then list “ground beef” as the “Contaminated Ingredient.”

**Example 3:** Case-patients consumed vegetarian pizza and French fries, but the contaminated source ingredient was roma tomato (via pizza). Enter “pizza, vegetable” as “Name of Food” and “tomatoes, roma,” “zucchini,” “mozzarella cheese, pasteurized,” and “bread, unspecified” as the “Selected Ingredient(s)” and list “Contaminated Ingredient” as “tomatoes, roma.” Because French fries were not identified as the source of contamination, French fries can be omitted from the report.

**Example 4:** The implicated foods for an outbreak were potato salad and fruit salad, and the source of contamination was not identified. Report “potato salad” as “Name of Food” and if the ingredients are known, list them in the “Selected Ingredient(s)” field and the “Contaminated ingredient” field will be left blank. Also report “fruit salad” for “Name of Food,” list any known “Selected Ingredient(s),” and the “Contaminated Ingredients” field blank.

### **Number of cases exposed to implicated food**

Enter the number of primary cases exposed to the implicated food.

### **Method of processing (Prior to point-of-service)**

For the **lowest level of food** responsible for the outbreak (either contaminated ingredient or single ingredient implicated food), indicate the method of processing. The method of processing intends to capture any modifications to the contaminated source food before it arrives at the final point of use location. Choose the method of processing from the list; multiple selections are permitted. However, if multiple selections must be entered, enter one per contaminated ingredient by listing additional method of processing and contaminated ingredients in separate columns. If the lowest level of contamination is unknown, report “unknown.” If the product was not processed, report “none.” Examples are below.

**1 — Pasteurized:** A food preservation process whereby fluid milk and others foods are heat-treated for a specified time and temperature to destroy all disease causing microorganisms and to reduce the total number of bacteria. These products should be labeled as having been pasteurized (e.g., fluid milk and milk products, juice, pasteurized egg-product, in-shell pasteurized eggs, etc.).

**2 — Unpasteurized:** Product that commonly is pasteurized for safety that has not gone through the pasteurization process. The product is not labeled as having been pasteurized (e.g., fluid milk, cheese, juice, etc.).

**3 — Shredded or diced:** Product that has been manually or mechanically shredded or diced at a processor and is received at the point of use without the need for further preparation except possible washing prior to service. This can also include shredded or diced cheese or meat that arrives at the point of service already shredded or diced.

**4 — Pre-packaged:** Packaged at the processor level and received at the point of use in a sealed bag or container (e.g., bagged lettuce or other produce).

**5 — Irradiation:** A controlled exposure of food to gamma rays from a radioactive source or to ionizing radiation to accomplish the equivalent of pasteurization. It may be labeled with a Radura symbol or otherwise labeled to indicate that it was irradiated.

**6 — Pre-washed:** The pre-washed food product when received at the point of use is considered a washed product (majority will be labeled as “pre-washed”) and may or may not specify on its label whether subsequent washing prior to use is necessary.

**7 — Frozen:** Process of freezing food to temperatures zero degrees Fahrenheit or below for the preservation of food and/or to provide protection against foodborne pathogens. The product arrives at the final point of use location already frozen. Thus, if the product arrived at the restaurant fresh then the restaurant later froze the product, the “method of processing” would not be “frozen.”

**8 — Canned:** The product arrived at the point of use in a can. Indicate “home-canned” or “commercially-canned” in the Remarks field under the Agency & Remarks tab.

**9 — Acid treatment:** The product arrived at the point of use having been made with an acid ingredient that would lower the pH for preservation and/or pathogen control (e.g., commercial potato salad with vinegar).

**10 — Pressure treated:** The product arrived at the point of use labeled it had been pressure treated. This process destroys bacterial pathogens of concern (e.g., oysters, juice, etc.).

**11 — Unknown:** Method of processing is unknown.

**12 — Other:** Method of processing was not identified above. Provide additional information in the Remarks field under the Agency & Remarks tab.

**13 — None:** The product was not processed.

**Example 1:** The implicated food for an outbreak was chef salad, and contaminated ingredient was Swiss cheese (pasteurized). Report “chef salad” as “Name of Food,” enter “Swiss cheese, pasteurized” in “Selected Ingredient(s)” and “Contaminated ingredient” fields, and enter “1 — pasteurized” as method of processing.

**Example 2:** The food suspected to be the source of an outbreak was potato salad, and the contaminated ingredient was unknown. Report “potato salad” as “Name of Food,” provide any known ingredients in “Selected Ingredient(s)” field, leave the “Contaminated ingredient” field blank, and select “unknown” as the method of processing for the suspected potato salad.

**Example 3:** Patients became ill after consuming chicken quesadilla in a fast food restaurant, and the contaminated ingredients were identified as both the pre-diced chicken and unpasteurized mozzarella

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cheese. Report “quesadilla, chicken” as “Name of Food,” enter “chicken” in “Selected Ingredient(s)” and “Contaminated ingredient” fields, and enter the appropriate method of processing for the chicken, in this case, “3 — Shredded or diced.” Then also report “quesadilla, chicken” as “Name of Food,” enter “mozzarella, unpasteurized” in “Selected Ingredient(s)” and “Contaminated Ingredients” fields, then enter appropriate method of processing for the cheese, in this case, “2 — Unpasteurized.”

### **Method of preparation (At point-of-service: Retail: restaurant, grocery store)<sup>1</sup>**

For the **implicated food**, indicate the method of preparation. The method of preparation intends to capture any modifications to the implicated food after it arrives at the final point of use location, which will often be a retail establishment such as a restaurant or grocery store. In other words, how was the implicated food handled before it was served? Choose only one method of preparation from the list below; multiple selections are NOT permitted. Note that the provided examples are to be used as guides; allow the possibility that different establishments may practice different methods of preparation for the same food.

**1 — Prepared in the home:** Food that is prepared in a private home and not in a regulated retail food establishment, such as a restaurant or grocery store that is regulated by a food regulatory authority. For example, game that was slaughtered, skinned, and/or butchered in a private home.

**2 — Ready to eat food: No manual preparation, no cook step:** Food preparation with no cook step wherein ready-to-eat food is received, stored, and served. For example, manufacturer pre-sliced cheese, pre-packaged deli meats, whole raw fruits, pre-shucked raw oysters.

**3 — Ready to eat food: Manual preparation, no cook step:** Food preparation with no cook step wherein ready-to-eat food is received, stored, prepared, and served. Cutting and chopping should be considered as manual preparation. For example, cut fresh fruits and vegetables, chicken salad made on-site from canned chicken.

**4 — Cook and Serve Foods: Immediate service:** Food preparation for same day service that involves a kill-step (cooking) wherein food is received, stored, prepared, cooked, and served. For example, food that is cooked to order and served immediately after preparation, such as hamburgers.

**5 — Cook and hot hold prior to service:** Food preparation for same day service wherein food is received, stored, prepared, cooked, held hot, and served. For example, hot dogs, fried chicken, soups, hot vegetables, and mashed potatoes.

**6 — Advance preparation: Cook, cool, serve:** Complex food preparation wherein food is received, stored, prepared, cooked, cooled during an extended period of time (several hours or a day or more), and then served. For example, sliced roast beef from a whole cooked roast.

**7 — Advance preparation: Cook, cool, reheat, serve:** Complex food preparation wherein food is received, stored, prepared, cooked, cooled over several hours or a day or more in advance of

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<sup>1</sup>Descriptions adapted from the FDA document entitled, *Managing Food Safety: A Manual for the Voluntary Use of HACCP Principles for Operators of Food Service and Retail Establishments*, April 2006.

service, then reheated immediately prior to service. For example: lasagna, casseroles, soups, gravies, sauces, and chili.

**8 — Advance preparation: Cook, cool, reheat, hot hold, serve:** Complex food preparation wherein food is received, stored, prepared, cooked, cooled over several hours or a day or more in advance of service, then reheated and held hot prior to service. For example: chili and refried beans.

**9 — Advance preparation: Cook-chill and Reduced Oxygen Packaging (ROP):** Complex food preparation wherein food is processed on-site in a retail food establishment so that it goes through a packaging procedure that results in a reduced level of oxygen in a sealed package. For example, sauces, gravies, or cheeses packaged under ROP. ROP is an inclusive term and can include other packaging processes, such as cook-chill and sous-vide. Cook-chill is a process that uses a plastic bag filled with hot cooked food from which air is expelled and which is closed with a plastic or metal crimp. Sous-vide is a specialized process of ROP for partially cooked ingredients alone or combined with raw foods that require refrigeration or frozen storage until the package is thoroughly heated immediately before service.

**10 — Unknown:** Method of preparation is unknown.

### Level of preparation

For the **implicated food**, indicate level of preparation. Select one level of preparation from the list in the appendix. If the implicated food had multiple levels of preparation, reenter the food name and select the other level of preparation.

- 1 — Foods eaten raw with minimal or no processing (e.g., washing, cooling).
- 2 — Foods eaten raw with some processing (e.g., no cooking, fresh cut and/or packaged raw).
- 3 — Foods eaten heat processed (e.g., cooked: a microbiological kill step was involved in processing).

### Contaminated food imported to US?

Indicate whether the contaminated food was imported into the US. If the contaminated food was imported, indicate the name of the country, if known. Select “No” if the contaminated food was not imported into the US. Select “Unknown” if import status is not known.

### Was product both produced under domestic regulatory oversight and sold?

Indicate whether the food product was produced *and* sold under domestic regulatory oversight. Domestic regulatory oversight includes commercial products that are regulated by the FDA or locally produced food products for distribution regulated by local and state health authorities. Select “Yes” if the food product was produced and sold under domestic regulatory oversight. For example, a loaf of bread produced and sold by a licensed local bakery, commercially canned foods, etc. Select “No” if the food product was not produced under domestic regulatory oversight and/or not sold under domestic regulatory oversight; for example, homemade cheese (produced in personal home — no local/state oversight) sold in grocery stores or food establishments (this practice is illegal). If it is unknown whether the food product was produced and/or sold under domestic regulatory oversight, then select “Unknown.”

### **Location where food was prepared *and* Location of exposure (where food was eaten)**

**Note:** As of September 2015, the settings available for “Location where food was prepared” and “Location of exposure (where food was eaten)” have been alphabetized, and, where necessary, updated to better match the setting names available for person-to-person, environmental contamination, and unknown mode of transmission reports.

Indicate the location where the implicated food(s) was prepared and/or eaten. **Multiple selections are allowed.** Briefly describe important aspects of the location of exposure in the “Eaten Remarks” below. The same selections are available to indicate the location where the implicated food(s) was prepared. If there was a specific food item confirmed as the contaminated source, indicate only the location where that food item was prepared. Briefly describe important aspects of the location where the food was prepared in the “Prepared Remarks” below. The examples provided should be used as guides; it is not possible to provide examples that would be applicable for every outbreak scenario. With that in mind, please use your best judgment when indicating the location where food was eaten and the location where food was prepared. Please contact [NORS-Foodborne@cdc.gov](mailto:NORS-Foodborne@cdc.gov) if additional guidance is needed.

- **Banquet Facility (food prepared and served on-site)** — Indicate if food was prepared and served on site. A banquet facility is typically a building/section of a building, equipped with an on-site kitchen/cooking facility, capable of serving individuals at an on-site dining area. For example, if a group of patrons dine in a sit-down restaurant’s banquet room, indicate “location where food was prepared” as “restaurant: sit-down dining” and “location where food was eaten” as “banquet facility.”
- **Camp** — Indicate if food was prepared/eaten at a camp. A camp may include any designated place used for overnight stay outdoors, including but not limited to summer camps for youth with formal kitchen, a day camp that serves food, a commercial firm that hosts trips such as rafting or horseback riding, family vacations where a fire pit or small burners are used to prepare food, etc.
- **Caterer (food prepared off-site from where served)** — Indicate if food was prepared off-site at a different location from where it was eaten. Event caterers typically prepare food off-site and deliver/set-up prepared food at another location.
- **Child day care center** — Indicate if food was prepared/eaten at a facility designed to care for children during the day when not in school. This also includes preschool and daycare based in a residential home.
- **Fair, festival, other temp or mobile services** — Indicate if food was prepared/eaten at a fair, festival, or other temporary or mobile food service.
- **Farm/dairy** — Indicate if food was prepared/eaten at an area of land or water (for aquafarming) where crops or animals are raised. Dairies are included in this category.
- **Grocery store** — Indicate if food was prepared/eaten at grocery store, for example, the deli department or seafood department of a grocery store.
- **Hospital** — Indicate if food was prepared/eaten at a health care institution providing medical or surgical treatment and nursing care for sick or injured persons.
- **Hotel/motel** — Indicate if food was prepared/eaten at an establishment that provides lodging and offers services such as meeting rooms for conferences/conventions or common areas for

guests. Motels, lodges, inns, hostels, and similar settings should be considered a hotel when indicating the setting of exposure.

- **Long-term care/nursing home/assisted living facility** — Indicate if food was prepared/eaten at a facility designed to provide long-term care, such as for the elderly or the disabled. Nursing homes, assisted living facilities, community-based residential facilities, and other long-term care facilities which may not necessarily provide skilled nursing care should be considered a long-term care facility when indicating the setting of exposure.
- **Office/indoor workplace** — Indicate if food was prepared/eaten at a workplace, but **not** at a work cafeteria. For example, a worker uses the workplace kitchenette (stove, toaster, etc.) to prepare lunch.
- **Other (describe in “Remarks”)** — If food was prepared/eaten at a location that cannot be described from the above choices, indicate “Other” and explain in the Remarks below.
- **Other healthcare facility** — Indicate if food was prepared/eaten at another healthcare facility, not including long-term care facilities or hospitals as defined above.
- **Prison/jail** — Indicate if food was prepared/eaten at a jail or prison.
- **Private home/residence** — Indicate if food was prepared/eaten at a private home or residence.
- **Religious facility** — Indicate if food was prepared/eaten at a religious facility such as a church, temple, or other facility designed to house religious meetings.
- **Restaurant: Buffet** — Indicate if food was prepared/eaten at a buffet-style restaurant. Consider if food is cooked and served from a buffet station. Some restaurants have both sit-down and buffet options; choose whichever best fits the meal leading to the outbreak.
- **Restaurant: “Fast-food” (drive up service or pay at counter)** — Indicate if food was prepared/eaten at a fast food restaurant. Consider fast-food restaurants to be any restaurant where patrons are not served by a server at a table and patrons are responsible for carrying their own food tray.
- **Restaurant: Other** — Indicate if food was prepared/eaten at a restaurant, but the type of restaurant was not a “buffet,” “fast-food,” or “sit-down dining” restaurant, such as a bakery or stand-alone deli. Provide additional details in the “Where Prepared Remarks” section below.
- **Restaurant: Sit-down dining** — Indicate if food was prepared/eaten at a restaurant where staff direct patrons to their seat and are responsible for clearing the tables. Many traditional sit-down restaurants now offer patrons an opportunity to have their food prepared for takeout; identify these restaurants in “location where food was prepared” as sit-down dining restaurants.
- **School/college/university** — Indicate if food was prepared/eaten at a school setting, such as a university, college, kindergarten, grade school, or summer school. This includes residential facilities at schools (e.g., dormitories).
- **Ship/boat** — Indicate if food was prepared on any ship or boat, such as a cruise ship. Some cruise ship outbreaks are not reportable to NORS and should be reported directly to the Vessel Sanitation Program (<http://www.cdc.gov/nceh/vsp/default.htm>).
- **Unknown** — If information on location where food was prepared is not known, indicate unknown.

### **Where Prepared/Where Eaten Remarks**

Indicate any other information related to the location where prepared or eaten, and if “Other” location where food prepared or eaten was indicated, describe here (e.g., such as restaurant names, etc.).

### **Was there a kitchen manager certified in food safety at the location of preparation?**

Indicate whether a kitchen manager at the location of preparation was certified in food safety (e.g., ServSafe).

### **Contributing Factors Tab**

For guidance on contamination, proliferation/amplification, and survival factors, see guidance diagram and text in [Appendix D](#).

### **The confirmed or suspected point of contamination (check only one)**

Indicate if the confirmed or suspected point of contamination occurred “Before preparation” or at “Preparation.” For example, if a multistate outbreak was linked by PFGE to samples obtained from a processing plant, one might conclude that the contamination occurred “before preparation.” Often, it will be difficult to make this delineation without a traceback investigation, but indicate based on your investigation whether you would conclude that contamination occurred before preparation or at preparation. If unknown, then select “Unknown.”

- If the confirmed or suspected point of contamination occurred “**before preparation**,” indicate if it occurred at “Pre-Harvest,” “Processing,” or “Unknown.” Further evidence might permit determining whether the point of contamination occurred at “pre-harvest” (FDA traceback to farm fields) or “processing” (FDA traceback to leaking roof at plant).

### **Reason suspected (check all that apply)**

Indicate the reason why the confirmed or suspected point of contamination was assumed. Such examples include environmental evidence, (e.g., soil sample collected contaminated lettuce field), epidemiologic evidence (e.g., implicated food identified through a case-control study), laboratory evidence (e.g., laboratory confirmation obtained from food specimen or patient specimen), or that prior experience makes this a likely source of contamination.

### **Was food worker implicated as the source of contamination?**

Indicate if a food worker was implicated as the initial source of contamination. A food worker only refers to someone close to the point of service for the contaminated food, such as a restaurant cook. Any information regarding food pickers working in fields or sorters working in packaging plants should be placed in the traceback comments field. Select “No” if the suspected point of contamination is “before preparation,” even if food workers helped propagate the outbreak. If unknown, select “Unknown.”

- If **Yes**, indicate the type of evidence that implicated the food worker, such as laboratory and/or epidemiologic evidence, or that prior experience makes this a likely source of contamination. Place any additional information in the Remarks field under the Agency & Remarks tab.

### **School Tab**

Complete this section only if school is checked in either sections “Location where food was prepared” or “Location of exposure (where food eaten).” Complete this section even if the outbreak did not involve students or the school lunch program.

**1. Did the outbreak involve a single or multiple schools?**

Indicate if a single or multiple schools were involved in the outbreak. If multiple schools were involved in the outbreak, enter the number of schools.

**2. School characteristics (for all involved students in all involved schools):**

**a. Total approximate enrollment**

Indicate the approximate number of students enrolled in the school. Indicate if the number of students is unknown.

**b. Grade level(s)**

Indicate the grade level of the students in the outbreak; if more than one grade level applies, indicate all grade levels that apply.

- **Grade school (grades K-12)** — Formal school for children from kindergarten to grade 12. Indicate all grades affected.
- **College/university/technical school** — Formal educational institution for students after high school.
- **Unknown or Undetermined** — Indicate if the grade level of the involved students could not be determined.

**c. Primary funding of involved schools**

- **Public** —Funded through the state or county.
- **Private** — Funded primarily through private funds (e.g., tuition paid by parents).
- **Unknown** — Funding for school is unknown.

**3. Describe the preparation of the implicated item: (check all that apply)**

Indicate how the implicated food item was prepared.

- **Heat and serve (item mostly prepared or cooked off-site, reheated on-site)** — Food prepared and cooked offsite but heated and served on site.
- **Served a-la-carte** — Food was not part of a USDA reimbursable meal.
- **Serve only (preheated or served cold)** — Food received hot at the school, held hot, and served hot or received cold, held cold, and served cold.
- **Cooked on site using primary ingredients** — Food cooked on site.
- **Provided by a food service management company** — Food provided by a food service company.
- **Provided by a fast-food vendor** — Food provided by a fast-food vendor.
- **Provided by a pre-plate company** — Food already prepared and plated but usually requires heating.
- **Part of a club or fundraising event** — Food served at a club or fundraiser event.
- **Made in the classroom** — Food prepared in a classroom.

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- **Brought by a student/teacher/parent** — Food brought into school by a student, teacher, or parent.
- **Other (*describe in General Remarks*)** — If implicated item was prepared by a method that cannot be described from the above choices, indicate “Other” and describe in General Section/Remarks.
- **Unknown or Undetermined** — Indicate if the preparation method could not be determined.

**4. How many times has the state, county, or local health department inspected this school cafeteria or kitchen in the 12 months before the outbreak?**

Indicate how many times the school cafeteria or kitchen was inspected in the preceding 12 months by state, county, or local health departments. If the school cafeteria or kitchen was not inspected, indicate “Not inspected.” If the inspection status was unknown or undetermined, indicate “unknown or undetermined.” If multiple schools were involved, answer according to the school with the most cases, and explain in the Remarks field in the General Section.

**5. Does the school have a HACCP (Hazard Analysis and Critical Control Point) plan in place for the school feeding program?**

Indicate whether the school involved in the outbreak has a HACCP plan in place for the school feeding program. If multiple schools are involved, answer according to the school with the most cases, and explain this in the Remarks field in the General Section.

**6. Was implicated food item provided to the school through the National School Lunch/Breakfast Program?**

Indicate whether the implicated item was served as part of the National School Lunch/Breakfast Program, and used commodities purchased and distributed by USDA for use in schools.

- **If Yes, was the implicated food item donated/purchased by:**

If the school participates in the National School Lunch/Breakfast Program, indicate the source of the implicated food items: “USDA through the Commodity Distribution Program,” “The state/school authority,” “Other (provide name in the Remarks field under the Agency & Remarks tab),” or “Unknown or Undetermined.” Multiple selections are not permitted.

## **Ground Beef Tab**

Complete this section only if “ground beef” was indicated as the food vehicle and/or contaminated ingredient.

**1. What percentage of ill persons, for whom information is available, ate ground beef raw or undercooked (any visible pink)?**

Enter the percentage of ill persons who ate raw or undercooked ground beef (any visible pink). Base the percentage reported on the number of case-patients with information available.

**2. Was ground beef case-ready?**

Indicate whether the ground beef was case ready. Case-ready ground beef is meat that comes from a manufacturer packaged for sale that is not altered or repackaged by the retailer.

**3. Was the beef ground or reground by the retailer?**

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Indicate if the beef was ground or reground by the retailer. That is, the retailer altered the beef from the manufacturer by grinding or regrinding.

**If Yes, was anything added to the beef during grinding?** Indicate if anything was added to the beef during grinding, such as shop trim or any product used to alter the fat content.

## Eggs Tab

Complete this section only if “egg” was indicated as the food vehicle and/or contaminated ingredient.

### 1. Were Eggs (Check all that apply):

Indicate if the eggs were “in shell, unpasteurized,” “in shell, pasteurized,” “packaged liquid or dry,” “stored with inadequate refrigeration during or after sale,” “consumed raw,” “consumed undercooked,” or “pooled.”

### 2. Was *Salmonella* Enteritidis found on the farm?

Indicate if *Salmonella* Enteritidis was identified at the farm where the eggs originated.

## Eggs Comments

Provide any additional information related to eggs and this outbreak, such as eggs and patients’ isolates matched by subtyping.

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## **Attachments Section**

CDC encourages states to attach any documents that provide additional information to the outbreak report for future reference. Examples of possible documents to attach are unpublished agency reports, Epi-Aid reports, publications, etc. Additional documents may be attached to a report when they become available.

The maximum allowable file size for a NORS outbreak report in the interface is 4 MB for each attachment. If you would like to decrease the file size of a particular document before uploading, there are a number of ways to do so. If the file is a PDF, you can go to the Document tab on the menu bar in Adobe Acrobat and select "Reduce File Size." For later versions, go to File — Save As Other — Reduced Size PDF. Another option is to send one or multiple files to a compressed (zipped) file by highlighting and right clicking on the file(s) in which you would like to reduce the size. If you continue to have issues with attaching a file, contact us at [NORSAdmin@cdc.gov](mailto:NORSAdmin@cdc.gov).

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## **Electronic Foodborne Outbreak Reporting System (eFORS) Section**

During 1998–2008, foodborne and some other enteric outbreak reports were housed in the electronic Foodborne Outbreak Reporting System (eFORS). In March 2015, all outbreak reports stored in eFORS were migrated to NORS. For a more efficient data collection and analysis system, users can now access outbreak data reported since 1998 from one system rather than two.

Original eFORS variables have been mapped to the current NORS format where possible for more streamlined analysis. Data that could not be mapped to NORS variables are displayed in the eFORS section. This will only appear on migrated reports; new reports will not have access to this section.