

National Outbreak Reporting System (NORS) User Training Document — Integrated Data Cleaning



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Introduction

Integrated data cleaning is a feature of the National Outbreak Reporting System (NORS) that was designed to reduce the burden of annual cleaning by allowing reporting sites more flexibility to review and respond to data cleaning tasks before annual cleaning begins. The feature incorporates data cleaning checks into the user interface for outbreaks of animal contact, environmental contamination, foodborne, person-to-person, waterborne, and indeterminate/unknown modes of transmission.

Data cleaning checks are accessible in three places:

1. Within each report — data cleaning tasks, called finalization issues, appear in a “Finalize” section within each report.
2. Data views — summaries for each reporting site, or agency based on account type, are available for users to identify reports and issues that need to be addressed.
3. Reports page — users may do a quick search for reports with finalization issues and download the issues as part of the NORS dataset.

This training guide provides instructions on how to find and address data cleaning tasks, as well as how to access and use the data cleaning views. This guide assumes familiarity with NORS. Additional training guides and resources for NORS can be found on the NORS website (<http://www.cdc.gov/nors/training/index.html>).

For questions, concerns, or more information about integrated data cleaning, please contact the CDC NORS team at NORSAdmin@cdc.gov.

Finalization Issues within a Report

Finalize Section

To view data cleaning tasks within each report, visit the Finalize Section. Data cleaning tasks, called finalization issues, are shown by report section and tab.

Most finalization issues need to be addressed by editing or completing fields in the form. For some issues, the user is asked to check a box to verify information or provide an explanation in a free text box within the Finalize section.

A full list of finalization issues and their descriptions is available in [Table 1](#) of this document.

1. Clicking on the hyperlink in a tab name under each section header (e.g., Primary Cases under General Section) will take you to that tab in the report and highlight all fields with issues that need to be addressed on that tab (see screenshot on page 4).
2. You can also click on the hyperlinks labeled “View” to address each finalization issue individually.

Home Reports NORSDirect Administration* Help CDC or State ID Account Log out

Report: Test_PS_19 Save Report Download

Status: Active State ID: Test_PS_19 Created: Tuesday, 03/19/2019
Primary Mode: Indeterminate / Unknown CDC ID: 91424 Author: PSundaraman_State

General Section Etiology Settings Attachments **Finalize**

Step 13 : Report Finalization Previous

Please review the items below and edit data or provide additional input as needed before finalizing outbreak report.

Finalize Report

General Section

Primary Cases — View issues by tab

- 1 The report indicates that there are 2 deaths for this outbreak. Please verify that this is accurate or change the entry. [View >](#)
 Yes, there were 2 deaths
- 1 Please enter the number of people who were hospitalized and the # cases with info available. If unknown, enter "0" under # cases with info available and leave # of cases blank. [View >](#)
- 1 Age information does not add up to estimated primary. Please update the age information. [View >](#) — View individual issue

Etiology

General Etiology

- 1 Please indicate whether any etiologies were confirmed or suspected. If yes, please enter an etiology. If no or unknown, no etiologies should be entered. [View >](#)
- 1 An etiology has >1 confirmed case but the etiology is not confirmed. Please update the etiology to "confirmed" or provide an explanation. [View >](#)

Addressing Issues on a Tab

When addressing issues on a tab, click on the exclamation point button next to each highlighted field to display a bubble with the issue description.

Click the button again to hide the description.

To see remaining finalization issues that need to be addressed, go back to the Finalize section.

General Section
Etiology
Settings
Attachments
Finalize

Investigation Methods & Dates
Geographic Location
Primary Cases
Incubation & Duration
Signs or Symptoms
Secondary Cases
Other CDC Systems, Traceback, & Recall

Agency & Remarks

Step 3 : Primary Cases
Previous
Next

Primary Case Counts
?

Lab-confirmed primary cases	<input type="text"/>	
Probable primary cases	<input type="text"/>	
Estimated total primary cases <i>(required field)</i>	<input type="text" value="52"/>	

Sex (number or percent of the primary cases)
?

	# of Cases	% of Cases
Male	<input type="text" value="22"/>	<input type="text" value="42.31"/>
Female	<input type="text" value="30"/>	<input type="text" value="57.69"/>
Unknown	<input type="text"/>	<input type="text" value="0.00"/>

[Calculate Percentage of cases](#)

Primary Case Outcomes
?

		# of Cases with Info Available
Died	<input type="text"/>	<input type="text" value="52"/>
Hospitalized	<input type="text"/>	<input type="text"/>
Visited Emergency Room	<input type="text"/>	<input type="text"/>
Visited health care provider (excluding ER visits)	<input type="text"/>	<input type="text"/>

Age (number or percent of the primary cases)
?

	# of Cases	% of Cases
< 1 year	<input type="text"/>	<input type="text" value="0.00"/>
1 to 4 years	<input type="text"/>	<input type="text" value="0.00"/>
5 to 9 years	<input type="text"/>	<input type="text" value="0.00"/>
10 to 19 years	<input type="text"/>	<input type="text" value="0.00"/>
20 to 49 years	<input type="text"/>	<input type="text" value="0.00"/>
50 to 74 years	<input type="text"/>	<input type="text" value="0.00"/>
>= 75 years	<input type="text"/>	<input type="text" value="0.00"/>
Unknown	<input type="text" value="30"/>	<input type="text" value="100.00"/>

[Calculate Percentage of cases](#)

Please enter the number of people who were hospitalized and the # cases with info available. If unknown, enter "0" under # cases with info available and leave # of cases blank.

Data Cleaning Views

To assist with data cleaning, summary views are available for NORS users to identify reports and finalization issues for each reporting site or agency. You can access these views from the homepage by clicking on “Data Views” from the top menu.

1. Finalization Issues Report — accessible to all NORS users, summaries of outbreak reports entered by your agency or reporting site and finalization issues that remain to be addressed.
2. Multistate Outbreak Report — accessible to all NORS users, a summary of all multistate exposure and multistate residency outbreak reports involving your state or reporting site.
3. Data Cleaning Admin — accessible to administrative users only (e.g., Reporting Site Administrators and Agency Administrators), a grid view of finalization issues for reports entered by your agency.

The screenshot shows the NORS Home dashboard. The top navigation bar includes 'Home', 'Reports', 'NORSDirect', 'Data Views' (highlighted with a red box), 'Administration', and 'Help'. A search bar for 'CDC or State ID' and a 'Log out' button are also present. The main content area is divided into several sections:

- Quick Start:** Includes a section for 'Open an existing report' with a search input field and a link to 'Advanced search >'. Below this is a 'Recently Opened' list with items like 'mvtest_idc_1', 'TEST_CaliciNet_Isolates', 'Test_PS3', 'MMPOFTEST_20180518', 'fsdbif', and 'envidtest1'. There are also links for 'Create a new report' and 'Manage users'.
- Message Board:** Displays a message from 'Last updated over a month ago' with the subject '*****TEST 10/17/2017*****'. The message content includes '-Test updates', '-More test updates', and 'Hello this is a test!...' with a 'View full message' link.
- Notifications:** Shows three notification items: 'No reports were imported with NORSDirect today.', 'There are 78 Pending NORSDirect reports. Resolve', and 'There are 2 reports with new CaliciNet records available for your review. View'.
- Active and Finalized Outbreak Reports:** A bar chart showing the number of 'Finalized' (blue) and 'Active' (orange) reports from 2012 to 2019. The y-axis ranges from 0 to 250. The chart shows a significant number of finalized reports in 2012, followed by a smaller number in 2013, and very few in subsequent years.

At the bottom left of the dashboard, there is a logo for 'OH HABS' with the tagline 'Report your harmful algal blooms and illnesses here'.

Finalization Issues Report

This report, accessible to all NORS users, provides summaries of outbreak reports entered by your agency or reporting site and the finalization issues that remain to be addressed. The view defaults to show outbreaks of all modes where the first illness occurred in the previous calendar year. If you have access to NORS reports entered by multiple agencies, you can filter by agency. All users can filter by primary mode of transmission or year of first illness.

Clicking on the hyperlink in a State ID opens the NORS report in a new tab. Clicking on the icon next to Finalization Issues opens the Finalize Section of the outbreak report in a new tab. Users can export the Finalization Issues Report to file formats such as PDF, XLS, and DOCX, for sharing with local or regional epidemiologists who may not have access to NORS. A “Refresh” button allows you to check for remaining finalization issues without having to reapply any filters.

Finalization Issues Report ▾

Filter by:

Agency: (All Agencies) ▾ Primary Mode: (All Modes) ▾ First Ill Date: 2018 [X] ▾ **Apply Filter**

Report:

1 of 1 [Navigation icons]

Finalization Issues — State Name
All modes, 2018

Test_PS_19 (Active) CDC Status:

CDC ID: 91424	Est. Primary Ill: 52	Agency: Department of Health
First Ill Date: March 19, 2018	Multistate Exposure: No	Created: March 19, 2019
Primary Mode: Unknown	Multistate Residency: No	Author: PSundaraman_State (Reporting Site Administrator)

Etiology: Campylobacter
Settings:

Finalization Issues: [Icon] **Open Finalize Section in new tab**

Issue Name	Issue Description
DeathsVerify	The report indicates that there are 2 deaths for this outbreak. Please verify that this is accurate or change the entry.
Hospitalized	Please enter the number of people who were hospitalized and the # cases with info available. If unknown, enter "0" under # cases with info available and leave # of cases blank.
ConfirmedFalse	An etiology has >1 confirmed case but the etiology is not confirmed. Please update the etiology to "confirmed" or provide an explanation.
AgeNum	Age information does not add up to estimated primary. Please update the age information.
EtiologyKnown	Please indicate whether any etiologies were confirmed or suspected. If yes, please enter an etiology. If no or unknown, no etiologies should be entered.
Setting	Please select a major setting or select "Unknown." If "Other, specify" is selected, please explain in the "Specify Setting" field.

Multistate Outbreak Report

This report, accessible to all NORS users, provides a summary of multistate outbreak reports that involved your reporting site, including those entered by your reporting site, another reporting site, and CDC. Multistate reports are presented in two groups — multistate exposure outbreaks and multistate residency outbreaks.

The view defaults to show outbreaks where the first illness occurred in the previous calendar year. Users can export the Multistate Outbreak Report to file formats such as PDF, XLS, and DOCX. If you have permission to view an outbreak report, clicking on the hyperlink in a State ID opens the NORS report in a new tab. If the report has not been shared with you, an error message will appear in a red banner at the top of the home page. Please contact NORSAdmin@cdc.gov with any questions or concerns about report sharing.

If a multistate report has been determined to be a duplicate of a report entered by the lead investigating agency, the CDC Status variable will be listed as “Excluded” and the report will not be included in analyses or NORS Dashboard. Additional information on multistate outbreak reporting is available in Appendix B of the NORS guidance document at <https://www.cdc.gov/nors/downloads/appendix-b.pdf>.

The screenshot displays the 'Multistate Outbreak Report' interface. At the top, there is a 'Filter by:' section with 'Primary Mode' set to '(All Modes)' and 'First Ill Date' set to '2018'. An 'Apply Filter' button is visible. Below this is a 'Report:' section with navigation and control icons. A red arrow points to the 'Export' icon, and another red arrow points to the 'Refresh' icon. The main report area shows a table of 'Multistate Outbreaks' for 'State Name: All modes, 2018'. The table has a blue header 'Multistate Exposure' and a row for 'Test_PS3 (Active)'. A red box highlights the 'Test_PS3 (Active)' link, with a red arrow pointing to it and the text 'Open report in new tab'. Another red box highlights the 'CDC Status: Excluded' text. Below the table, there is a detailed report for 'Test_PS3 (Active)' with the following information:

CDC ID:	91256	Est. Primary Ill:	32	Agency:	CDC
First Ill Date:	January 11, 2018	Outbreak Code:		Created:	January 11, 2019
Primary Mode:	Food	Author:	PSundaraman (CDC System Administrator)		

Etiology: Amnesic shellfish poison, Salmonella unknown, Salmonella enterica unknown, Escherichia coli, Shiga toxin-producing unknown

Food Vehicle:
Contaminated Ingredients:

Exposure States and Case Counts
Alaska, Michigan, Minnesota

Data Cleaning Admin View

This view is currently available to users with administrative permissions only (i.e., Reporting Site Administrators and Agency Administrators). A grid tool allows users to examine finalization issues for their reporting site by filtering or grouping by additional fields. Please note that unlike the previous two data views, each row represents a finalization issue and not an outbreak report.

The view defaults to show CDC ID fixed to the left. To freeze additional columns, right-click on the column name, select “Fix” and “To the left” or “To the right”. Drag columns horizontally to rearrange their order or above the table to group issues by the field. Filter by choosing field values or typing in the search box for a column. A “Refresh” button allows you to check for remaining finalization issues without having to reapply any filters. Users can export the Data Cleaning Admin View to file formats such as PDF, XLS, and DOCX.

The screenshot shows the 'Data Cleaning Admin' interface. At the top, there is a 'Filter by:' section with a search box for 'First Ill Date' containing '2018' and an 'Apply Filter' button. Below this is the 'Data View:' section, which includes a dropdown menu for 'State Id' currently set to 'Test_PS_19'. The main area is a table with columns: CDC Id, Issue Sta..., Issue Name, Issue Description, Agency Name, First Ill Date, Mode of..., Repo..., and CDC Stat... The table is filtered to show 'Open' issues. A context menu is open over the 'Issue Name' column, showing options: Sort Ascending, Sort Descending, Clear Sorting, Fix (with a sub-menu for 'To the left' and 'To the right'), and Unfix. Annotations with red arrows point to various features: 'State Id' dropdown, 'Apply Filter' button, 'Fix' and 'To the left' options in the context menu, 'Refresh', 'Export', and 'Clear' buttons, and the filter status bar at the bottom showing '[Issue Status] Equals 'Open''. A 'Clear' button is also visible at the bottom right of the table area.

	CDC Id	Issue Sta...	Issue Name	Issue Description	Agency Name	First Ill Date	Mode of...	Repo...	CDC Stat...
State Id: Test_PS_19									
<input type="checkbox"/>	91424	Open	Hospitalized	Please enter the number of people who were hospitalized and the # cases wi...	De...	3/19/2018	Unknown	Active	
<input type="checkbox"/>	91424	Open	ConfirmedFalse	An etiology has >1 confirmed case but the etiology is not confirmed. Please...	De...		Unknown	Active	
<input type="checkbox"/>	91424	Open	HUS1	The report indicates that there are 2 HUS cases for this outbreak. Please verif...	De...		Unknown	Active	
<input type="checkbox"/>	91424	Open	AgeNum	Age information does not add up to estimated primary. Please update the a...	Departm...	3/19/2018	Unknown	Active	
<input type="checkbox"/>	91424	Open	EtiologyKnown	Please indicate whether any etiologies were confirmed or suspected. If yes, p...	Departm...	3/19/2018	Unknown	Active	
<input type="checkbox"/>	91424	Open	Setting	Please select a major setting or select "Unknown." If "Other, specify" is select...	Departm...	3/19/2018	Unknown	Active	
State Id: Test_PS_18									
<input type="checkbox"/>	91440	Open	Died	Please enter the number of people who died and the # cases with info availa...	Departm...	1/27/2018	Food	Active	
<input type="checkbox"/>	91440	Open	Hospitalized	Please enter the number of people who were hospitalized and the # cases wi...	Departm...	1/27/2018	Food	Active	
<input type="checkbox"/>	91440	Open	MultiState	Please verify that this was a multistate exposure outbreak and not a multistat...	Departm...	1/27/2018	Food	Active	
<input type="checkbox"/>	91440	Open	HUS2	Please enter the number of cases with HUS and the # cases with info availab...	Departm...	1/27/2018	Food	Active	
<input type="checkbox"/>	91440	Open	Age	Please enter age information.	Departm...	1/27/2018	Food	Active	

Reports Page

Users may also quickly identify reports with finalization issues from the Reports page.

1. Icons next to the “Report Status” column indicate the number of finalization issues, or serve as a reminder to finalize an active report without any issues. Clicking on the icon next to a report leads you to the Finalize tab for that outbreak report.
2. Additionally, you can filter for reports where finalization issues exist by checking the box “Issues Exist” in the “Filter By” search menu on the left of the page.

The screenshot displays the 'Reports' page interface. At the top is a navigation bar with links for Home, Reports (highlighted with a red box), NORSDirect, Data Views, Administration, and Help. A search bar for 'CDC or State ID' and a 'Log out' link are also present.

The main content area is titled 'Reports' and includes a 'New Report' button. On the left is a 'Filter By' sidebar with the following sections:

- CDC or State ID:** Search input field.
- First Ill Date:** Date range selector (From: 1/1/2018, To: 4/5/2019).
- Primary Mode Of Transmission:** Radio buttons for Food, Water, Animal Contact, Person-to-person, Environmental, and Indeterminate/Unknown.
- Author Site/Agency:** Filter section.
- CaliciNet Records:** Filter section.
- Report Status:** Checkboxes for Active, Deleted, and Finalized.
- CDC Status:** Checkboxes for Excluded, Closeout, and Cleaned.
- Finalization Issues:** Checkboxes for Issues Exist (highlighted with a red box) and No Issues.

At the bottom of the sidebar are 'Reset' and 'Search' buttons.

The main table, titled 'View and Select Reports', shows 152 reports. The table columns are: CDC ID, State ID, Primary Mode of Transmission, First Ill, Report Status, CDC Status, Agency, Site, Report Author, and PDF. The table contains 19 rows of data. Two rows are annotated with red callouts:

- Row 3: Report ID 91432, Status 'Active' with a '13' icon. A red arrow points to the icon with the text 'Number of finalization issues'.
- Row 5: Report ID 91358, Status 'Active' with a '1' icon. A red arrow points to the icon with the text 'Reminder to finalize report'.

Data Download

Lastly, finalization issues, responses, and corresponding descriptions are downloadable as part of the NORS dataset from the Reports page.

These appear in a “Finalization_Issues” tab in Excel formats and in a “Finalization_Issues” table in the Access download. Additional information on variables can be found in the NORS flat and relational data dictionaries from the download menu.

The screenshot shows the NORS Reports interface. The top navigation bar includes Home, Reports, NORSDirect, Data Views, Administration, and Help. A search bar for 'CDC or State ID' is present. The main content area is titled 'View and Select Reports' and contains a table of 111 reports. A 'Download' button is highlighted in the top right corner. A 'Download Reports' dialog box is open, showing options for 'File Format' (Excel Flat, Excel Relational, XML Flat, XML Relational) and 'Primary Modes' (All modes in one file, Separate file for each mode). A 'Download' button is highlighted in the dialog. At the bottom of the dialog, 'Data Dictionary: Relational | Flat' is highlighted.

If assistance is needed with other functions of NORS, please refer to the online training guides and guidance documents located on the NORS website (<http://www.cdc.gov/NORS>). For further assistance, questions, or comments, please email the NORS team (NORSAdmin@cdc.gov).

Table 1. Finalization Issues and Descriptions

Issue Name	Applicable Mode(s)	Issue Query	Interface Section	Interface Tab	Issue Description
LastIllDate	Animal Contact, Food	DateLastIll = null	General Section	Investigation Methods & Dates	Please enter a date last case became ill or verify unknown.
Multistate	Animal Contact, Environmental, Food, Person-to-person, Unknown, Water	MultiStateExposure = 1	General Section	Geographic Location	Please verify that this was a multistate exposure outbreak and not a multistate residency outbreak. If your agency did not lead the investigation, please provide additional details (e.g., PulseNet outbreak code) to help us identify related reports.
Age	Animal Contact, Environmental, Food, Person-to-person, Unknown, Water	(NumberAgeUnder1 = null and PercentAgeUnder1 = null and NumberAge1to4 = null and PercentAge1to4 = null and NumberAge5to9 = null and PercentAge5to9 = null and NumberAge10to19 = null and PercentAge10to19 = null and NumberAge20to49 = null and PercentAge20to49 = null and NumberAge50to74 = null and PercentAge50to74 = null and NumberAge75plus = null and PercentAge75plus = null and NumberAgeUnknown = null and PercentAgeUnknown = null)	General Section	Primary Cases	Please enter age information.
Sex	Animal Contact, Environmental, Food, Person-to-person, Unknown, Water	(NumberMale = null and NumberFemale = null and NumberSexUnknown = null and PercentMale = null and PercentFemale = null and PercentSexUnknown = null)	General Section	Primary Cases	Please enter sex information.

Issue Name	Applicable Mode(s)	Issue Query	Interface Section	Interface Tab	Issue Description
AgeNum	Animal Contact, Environmental, Food, Person-to-person, Unknown, Water	[Sum(NumberAgeUnder1, NumberAge1to4, NumberAge5to9, NumberAge10to19, NumberAge20to49, NumberAge50to74, NumberAge75plus, NumberAgeUnknown) not equal EstimatedPrimary]	General Section	Primary Cases	Age information does not add up to estimated primary. Please update the age information.
SexNum	Animal Contact, Environmental, Food, Person-to-person, Unknown, Water	[Sum(NumberMale, NumberFemale, NumberSexUnknown) not equal EstimatedPrimary]	General Section	Primary Cases	Sex information does not add up to estimated primary. Please update the sex information.
ConPrimary	Animal Contact, Food	ConfirmedPrimary = null	General Section	Primary Cases	Please enter the number of lab confirmed primary cases.
DeathsVerify	Animal Contact, Environmental, Food, Person-to-person, Unknown, Water	Where DeathsNum >0	General Section	Primary Cases	The report indicates that there are ## deaths for this outbreak. Please verify that this is accurate or change the entry.
Died	Animal Contact, Environmental, Food, Person-to-person, Unknown, Water	(DeathsInfo >0 and DeathsNum = null) OR DeathsInfo = null	General Section	Primary Cases	Please enter the number of people who died and the # cases with info available. If unknown, enter "0" under # cases with info available and leave # of cases blank.
Hospitalized	Animal Contact, Environmental, Food, Person-to-person,	(HospitalInfo >0 and HospitalNum = null) OR (HospitalInfo = null)	General Section	Primary Cases	Please enter the number of people who were hospitalized and the # cases with info available. If unknown, enter "0" under # cases

Issue Name	Applicable Mode(s)	Issue Query	Interface Section	Interface Tab	Issue Description
	Unknown, Water				with info available and leave # of cases blank.
EstPrimary	Animal Contact, Environmental, Food, Person-to-person, Unknown, Water	EstimatedPrimary < 2	General Section	Primary Cases	The "Estimated total primary ill" value is <2. This does not meet the definition of an outbreak used for NORS reporting purposes. Please update the field to >1 or provide an explanation.
HUS1	Animal Contact, Environmental, Food, Person-to-person, Unknown, Water	Symptom = HUS and SymptomCases >0	General Section	Signs or Symptoms	The report indicates that there are HUS cases for this outbreak. Please verify that this is accurate or change the entry.
HUS2	Animal Contact, Environmental, Food, Person-to-person, Unknown, Water	Symptom = HUS and GenusName = Escherichia and SpeciesName = coli, Shiga-toxin producing and [SymptomCases = null and (SymptomInfo = null or SymptomInfo > 0)]	General Section	Signs or Symptoms	Please enter the number of cases with HUS and the # cases with info available. If unknown, enter "0" under # cases with Info available.
RecallNoFood1	Food	FoodName = null and FoodVehicleUndetermined = false and Recall = true	General Section	Other CDC Systems Traceback & Recall	Please enter a food for outbreaks with a recall.
RecallNoFood2	Food	FoodName = null and FoodVehicleUndetermined= true and Recall = true	General Section	Other CDC Systems Traceback & Recall	Please enter a food for outbreaks with a recall.
ConfirmedFalse	Animal Contact, Environmental, Person-to-	Confirmed = Suspected and NumberLabConfirmed > 1	Etiology	General Etiology	An etiology has >1 confirmed case but the etiology is not confirmed. Please update the etiology to "confirmed" or provide an explanation.

Issue Name	Applicable Mode(s)	Issue Query	Interface Section	Interface Tab	Issue Description
	person, Unknown				
ConfirmedFalse_Food	Food	Confirmed = Suspected and NumberLabConfirmed > 1 OR Confirmed = Suspected and FoodSpecimen = 1	Etiology	General Etiology	An etiology has >1 confirmed case or isolated from food, but etiology is not confirmed. Please update the etiology to "confirmed" or provide an explanation.
Crypto	Animal Contact, Environmental, Food, Person-to-person, Unknown	[GenusName = Cryptosporidium and (SpeciesName is not null or SpeciesName is not = Unknown) and (SerotypeName = null or (SerotypeName = Other and OtherCharacteristics = null))]	Etiology	General Etiology	Please enter the Cryptosporidium subtype name or "Unknown" in the serotype field or explain. If the subtype is not available, please enter in Other Characteristics.
Ecoli	Animal Contact, Environmental, Food, Person-to-person, Unknown	GenusName = Escherichia and (SerotypeName = null or "other" or "unknown") and OtherCharacteristics = null	Etiology	General Etiology	Please enter the E. coli subtype name. If the subtype is unknown or not available, please select "Unknown" or "Other", respectively, and explain in Other Characteristics.
OtherEtiology	Animal Contact, Environmental, Food, Person-to-person, Unknown	GenusName contains "Other" and OtherCharacteristics = null	Etiology	General Etiology	Verify etiology is not already in picklist. If not in picklist, please enter etiology information in Other Characteristics.
Salmonella	Animal Contact, Environmental, Food, Person-to-person, Unknown	[GenusName = Salmonella and (SpeciesName = "enterica") and (SerotypeName = null or "other" or "unknown") and OtherCharacteristics = null] OR [GenusName = Salmonella and (SpeciesName NOT = "enterica") and OtherCharacteristics = null]	Etiology	General Etiology	Please enter the Salmonella species and serotype name. If the subtype is unknown or not available, please select "Unknown" or "Other", respectively, and explain in Other Characteristics.
EtiologyKnown	Animal Contact, Environmental, Food, Person-to-person, Unknown	(EtiologyKnown = null) or (EtiologyKnown = true and GenusName = null) or (EtiologyKnown = false or null and GenusName is not null)	Etiology	General Etiology	Please indicate whether any etiologies were confirmed or suspected. If yes, please enter an etiology. If no or unknown, no etiologies should be entered.

Issue Name	Applicable Mode(s)	Issue Query	Interface Section	Interface Tab	Issue Description
ConfirmedTrue	Animal Contact, Environmental, Person-to-person, Unknown	Confirmed = Confirmed and NumberLabConfirmed <2 and (GenusName not in (Ciguatoxin, Mycotoxin, Plant/herbal toxin, Puffer fish tetrodotoxin, Scromboid toxin) or (Not GenusName = Clostridium and SpeciesName = botulinum))	Etiology	General Etiology	Please check the number of lab confirmed cases. If less than two, please change the etiology to "Suspected" or provide an explanation.
ConfirmedTrue_Food	Food	Confirmed = Confirmed and NumberLabConfirmed <2 and FoodSpecimen = null or 0 and (GenusName not in (Ciguatoxin, Mycotoxin, Plant/herbal toxin, Puffer fish tetrodotoxin, Scromboid toxin) or (Not GenusName = Clostridium and SpeciesName = botulinum))	Etiology	General Etiology	Please check the number of lab confirmed cases. If less than two, please change the etiology to "Suspected" or provide an explanation.
Isolates	Animal Contact, Environmental, Food, Person-to-person, Unknown, Water	Confirmed = Confirmed and GenusName in (Listeria, Escherichia, Salmonella, Shigella, Campylobacter, Vibrio) and StateLabID = null	Etiology	General Etiology	Please enter isolate information for outbreaks with confirmed Campylobacter, Escherichia, Listeria, Salmonella, Shigella, or Vibrio, or explain.
AST	Animal Contact, Environmental, Food, Person-to-person, Unknown, Water	Confirmed = Confirmed and GenusName in (Listeria, Escherichia, Salmonella, Shigella, Campylobacter, Vibrio) and (ASTPerformed = null or (ASTPerformed = Yes and ASTOutbreak = null))	Etiology	General Etiology	Please answer AST questions for outbreaks with confirmed Campylobacter, Escherichia, Listeria, Salmonella, Shigella, or Vibrio.
NoroGenotype	Animal Contact, Environmental, Food, Person-to-person, Unknown	GenusName = Norovirus and SpeciesName not = Unknown and Confirmed = Confirmed and Polymerase = null and Capsid = null	Etiology	General Etiology	Please enter genotype information for outbreaks with confirmed norovirus. If genogroup information is available but genotype is unknown, please enter the genogroup in the "Species" field and enter "unknown" in the "Capsid" field.

Issue Name	Applicable Mode(s)	Issue Query	Interface Section	Interface Tab	Issue Description
NotGastro	Environmental , Person-to-person, Unknown	GenusName in (Hepatitis, Listeria, Streptococcus())	Etiology	General Etiology	Hepatitis, Listeria, and Streptococcus are considered non-enteric etiologies. Please update the mode of transmission to foodborne or waterborne or else remove report from NORS.
Toxin	Food	GenusName in (Ciguatoxin, Mycotoxin, Plant/herbal toxin, Scromboid toxin) and FoodName is not null and (Confirmed = Suspected or Confirmed = null)	Etiology	General Etiology	Outbreaks of Ciguatoxin, Mycotoxin, Plant/herbal toxin, and Scromboid toxin can be confirmed by clinical syndrome or detection in the implicated food. Please update the status to "Confirmed."
Setting	Environmental , Person-to-person, Unknown	MajorSetting = null or (MajorSetting = Other, specify and MajorSettingSpecify = null)	Settings	General	Please select a major setting or select "Unknown". If "Other, specify" is selected, please explain in the "Specify Setting" field.
FoodConfirmed	Food	FoodName not = null and FoodConfirmed = null	Food	General	Please indicate whether each food vehicle was "Confirmed" or "Suspected."
FoodVehicleUnd	Food	FoodVehicleUndetermined = true and ReasonFoodEpi = false and ReasonFoodLab = false and ReasonFoodTrace = false and ReasonFoodOther = false	Food	General	Please select the reason(s) why the outbreak was foodborne with an unknown vehicle, or verify that the reasons are unknown.
LevelOfPrep	Food	FoodName not = null and LevelofPrep = null	Food	General	Please select a level of preparation for each food vehicle, or verify that the level of prep is unknown.
FoodReasonConfirmed	Food	FoodName not = null and ReasonSuspected = null	Food	General	Please select the reason(s) why a food vehicle was confirmed or suspected, or verify that the reasons are unknown.
FoodVehicle	Food	FoodVehicleUndetermined = false/null and FoodName = null	Food	General	Please enter the food vehicle(s) or select "Food Vehicle Undetermined."
Import	Food	FoodName not = null and imported = null	Food	General	Please indicate whether each food vehicle was imported.
MethodOfPrep	Food	FoodName not = null and MethodofPreparation = null	Food	General	Please select the method of preparation for each food vehicle.

Issue Name	Applicable Mode(s)	Issue Query	Interface Section	Interface Tab	Issue Description
MethodOfProc	Food	FoodName not = null and MethodofProcessing = null	Food	General	Please select the method(s) of processing for each food vehicle.
WhereEaten	Food	WhereEaten = null	Food	General	Please select the location(s) where food was prepared.
WherePrep	Food	WherePrep = null	Food	General	Please select the location(s) where food was eaten.
ContributingFactors	Food	ContributingFactorName = null and (ContributingFactorsUnknown = false OR ContributingFactorsUnknown = null)	Food	Contributing Factors	Please select the contributing factor(s) associated with the outbreak or select "Contributing Factors Unknown."
AnimalConfirmed	Animal Contact	AnimalTypeName not null and AnimalConfirmed = null	Animal	Animal Contact	Please indicate whether each animal vehicle was "Confirmed" or "Suspected."
AnimalReasonConfirmed	Animal Contact	AnimalTypeName not null and AnimalVehicleEpi = false and AnimalVehicleLab = false and AnimalVehicleTrace = null and AnimalVehicleOther = null	Animal	Animal Contact	Please select the reason(s) why an animal vehicle was confirmed or suspected, or verify that the reasons are unknown.
AnimalVehicleUnd	Animal Contact	AnimalUndetermined = true and AnimalReasonEpi = false and AnimalReasonLab = false and AnimalReasonTrace = false and AnimalReasonOther = false	Animal	Animal Contact	Please select the reason(s) why the outbreak was animal contact with an unknown vehicle, or verify that the reasons are unknown.
AnimalVehicle	Animal Contact	(AnimalUndetermined = null or AnimalUndetermined = false) and AnimalTypeName = null	Animal	Animal Contact	Please enter the animal vehicle(s) or select "Animal Vehicle Undetermined."
AnimalSetting	Animal Contact	AnimalSetting = null	Animal	Animal Details	Please select the setting(s) where cases were exposed to the animal vehicle.
ExposureCounty	Water	ExposureCounty = null and MultiStateExposure = 0	General	Geographic Location	Please enter the exposure county.
HealthcareED	Water	HealthcareNum = null and HealthcareInfo not = 0	General	Primary Cases	Please enter the number of people who visited an outpatient healthcare provider or enter "0" under # Cases and # Cases with Info Available to indicate unknown.
EmergencyCare	Water	EDNum = null and EDInfo not = 0	General	Primary Cases	Please enter the number of people who visited an emergency department or enter "0" under #

Issue Name	Applicable Mode(s)	Issue Query	Interface Section	Interface Tab	Issue Description
					Cases and # Cases with Info Available to indicate unknown.
SignSymptom	Water	(SymptomNum = null and SymptomInfo = null) or (SymptomNum = null and SymptomInfo not null or 0)	General	Signs or Symptoms	Please enter sign and symptom information. If unknown, enter "0" under # Cases with info available and leave # of cases blank.
Attachment	Water	Attachment = null	General	Attachments	Please attach documents to the report or verify that there are no attachments.
ProbablePrimary	Water	ProbablePrimary = null	General	Primary Cases	Please enter the number of probable primary cases or verify unknown.
WaterExposure	Water	WaterExposure in (null, Not entered)	Water	Type of Water Exposure	Please select a water exposure.
ComparisonGroups	Water	ComparisonGroup = null	Water	Epidemiologic data	Please indicate whether data were collected from comparison groups.
CommonSource	Water	(ComparisonGroup = 0 or ComparisonGroup = 9) and CommonSource = null	Water	Epidemiologic data	Please indicate whether a common source was shared among ill persons.
RouteofEntry	Water	RouteofEntry = null or other	Water	Epidemiologic data	Please indicate the routes of entry. If other, please provide the routes of entry.
EtiologyNull	Water	EtiologyGenus = null	Etiology & Lab	General Etiology	Please enter the suspected or confirmed etiology for this outbreak. If an etiology was not identified, please enter "Unknown" in the Genus field.
ConfirmedTrue_Water	Water	TestPositive = 0 and EtiologyConfirmed = Confirmed and (GenusName not in (Ciguatoxin, Mycotoxin, Plant/herbal toxin, Puffer fish tetrodotxin, Scombroid toxin) or (Not GenusName = Clostridium and SpeciesName = botulinum))	Etiology	General Etiology	Please check the number of lab confirmed cases. If less than one, please change the etiology to "Suspected" or provide an explanation.
Species	Water	EtiologySpecies = null and selected Genus has a species choice available	Etiology & Lab	General Etiology	Please enter the species name or "Unknown" in the species field.
SerotypeGenotype	Water	SerotypeGenotype = null and selected Genus has a serotype or genotype choice available	Etiology & Lab	General Etiology	Please enter the serotype or genotype for each microbial etiology or enter "Unknown."

Issue Name	Applicable Mode(s)	Issue Query	Interface Section	Interface Tab	Issue Description
EtiologyTestedCounts	Water	TotalPositiveNum = null or TotalTestedNum = null	Etiology & Lab	General Etiology	Please indicate the total number of people who tested positive and the total number of people tested for each etiology.
EtiologyTestedCountCompare	Water	TotalPositiveNum > EstimatedPrimary	Etiology & Lab	General Etiology	Please update the total number of people who tested positive to be less than or equal to the total number of primary cases.
ClinicalSpecimens	Water	ClinicalSpecimens = null	Etiology & Lab	Clinical Specimens	Please indicate whether clinical diagnostic specimens were collected.
WaterSampling	Water	WaterTested = null	Etiology & Lab	Water Samples	Please indicate whether water was tested.
WaterData	Water	WaterTested in (null, 1) and SampleID = null	Etiology & Lab	Water Samples	Please enter data about water samples and test results. If unknown, please verify that no information is available.
WaterTypeRec	Water	WaterType in (null)	Rec Treated	Rec Treated	Please enter the water type or "Unknown" in the water venue, system, or type field.
SettingRec	Water	WaterSetting in (null)	Rec Treated	Rec Treated	Please enter the setting or "Unknown" in the setting of exposure field.
RecWaterTreatment	Water	WaterExposure in (Treated Rec) and RecTreatment in (null)	Rec Treated	Water Venue	Please enter the usual water treatment or "Unknown" in the usual water treatment field.
ContribFactorsRec	Water	WaterFactor in (null)	Rec Treated	Contributing Factors	Please mark contributing factors "Confirmed/Documented" or "Suspected".
TreatedVenueSubType	Water	WaterExposure in (Treated Rec) WaterSubtype in (null)	Rec Treated	Water Venue	Please enter the water venue subtype or "Unknown" for each water subtype.
RecSubtreatment	Water	WaterExposure in (Treated Rec) and RecTreatmentSub in (null, Other) and RecTreatment not like "Unknown" and RecTreatment not like "No Treatment" and (RecTreatment = null or RecTreatment like "disinfection" or RecTreatment like "filtration")	Rec Treated	Water Venue	Please enter the water treatment subtype or "Unknown" for each water venue.

Issue Name	Applicable Mode(s)	Issue Query	Interface Section	Interface Tab	Issue Description
RecWaterQuality	Water	WaterExposure in (null) or (WaterExposure = Treated Rec and TreatedQuality = null)	Rec Treated	Water Quality	Please indicate whether the venue met state/local recreational water quality guidelines. If no, please explain in the box below the question.
WaterTypeUntreatedRec	Water	WaterType in (null)	Rec Untreated	Rec Untreated	Please enter the water type or "Unknown" in the water venue, system, or type field.
SettingUntreatedRec	Water	WaterSetting in (null)	Rec Untreated	Rec Untreated	Please enter the setting or "Unknown" in the setting of exposure field.
ContribFactorsUntreatedRec	Water	WaterFactor in (null)	Rec Untreated	Contributing Factors	Please mark contributing factors "Confirmed/Documented" or "Suspected".
UntreatedVenueSubType	Water	WaterExposure in (Treated Rec) and WaterType in (null, Spring, Hot Spring))	Rec Untreated	Water Venue	Please enter the water venue subtype.
UntreatedRecWaterQuality	Water	WaterExposure in (null) or (WaterExposure = Untreated Rec and UntreatedQuality = null)	Rec Untreated	Water Quality	Please indicate whether the venue met state/local recreational water quality guidelines. If no, please explain in the box below the question.
DrinkingSource	Water	WaterExposure in (Drinking) and DWSource in (null)	Drinking	Water System	Please enter the water source or "Unknown" in the water source field.
DrinkingTreatment	Water	WaterExposure in (Drinking) and (TreatmentDWOther = null)	Drinking	Water System	Please enter the usual water treatment or "Unknown" in the usual water treatment field.
SettingDrinking	Water	WaterSetting in (null, other)	Drinking	Drinking	Please enter the setting or "Unknown" in the setting of exposure field. If "other" please provide the water source.
DWContribFactor1-4	Water	WaterExposure in (Drinking) and (SourceFactor = null or TreatmentFactor = null or DistributionFactor = null or NonUtilityFactor = null)	Drinking	Contributing Factors	Please answer questions 1–4.
ContribFactorsDrinking	Water	WaterFactor in (null)	Drinking	Contributing Factors	Please enter contributing factors. or "Unknown".
EPAID	Water	WaterExposure in (Drinking) and (WaterType in (community, nontransient	Drinking	Water System	Please enter the EPA ID Number for any public water systems.

Issue Name	Applicable Mode(s)	Issue Query	Interface Section	Interface Tab	Issue Description
		noncommunity, transient noncommunity)			
DrinkingSourceDescript	Water	WaterExposure in (Drinking) and DWSource not like "Unknown" and DWDescription in (null)	Drinking	Water System	Please enter the water source description or "Unknown" for each water source.
DrinkingSubtreatment	Water	WaterExposure in (Drinking) and (TreatmentDWOther like "Disinfection" or TreatmentDWOther like "Filtration" or TreatmentDWOther = null) and TreatmentSubDWOther in (null, other)	Drinking	Water System	Please enter the water treatment subtype or "Unknown" for each water system.
WaterTypeUnknown	Water	WaterType in (null)	Other/Unknown	Other/Unknown	Please enter the water type or "Unknown" in the water venue, system, or type field.
SettingOtherUnknown	Water	WaterSetting in (null)	Other/Unknown	Other/Unknown	Please enter the setting or "Unknown" in the setting of exposure field.
ContribFactorsUnknown	Water	WaterFactor in (null)	Other/Unknown	Contributing Factors	Please enter contributing factors or "Unknown".
IntendedUse	Water	WaterExposure in (Other, Unknown) AND IntendedUse in (Null)	Other/Unknown	Intent for Use	Please select the intended use(s) of the water or "Unknown".