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1. INTRODUCTION – ETIOLOGY & LAB SECTION

This is a National Outbreak Reporting System (NORS) training guide for waterborne disease outbreak reports. The document provides a brief overview of how to complete the Etiology & Lab Section in NORS. Training guides for the other types of water sections are available in separate training documents.

If you need additional guidance or have other report questions, click on the Quick Help icon, a blue button with the question mark near the top of each question window within the NORS interface, or see the NORS-Water Guidance Document at http://www.cdc.gov/nors/forms.html.

2. GENERAL ETIOLOGY TAB

Begin with the General Etiology tab. This tab collects information about the suspected or confirmed etiology of an outbreak (i.e., the pathogen, chemical, or toxin that caused the outbreak) and water testing related to the outbreak investigation.

2.1 ETIOLOGY SECTION

The Etiology Section summarizes the suspected or confirmed outbreak etiology, what type of specimen or sample was detected, what the specimen or sample was detected in, the total number of people (primary cases) who were tested, and the total number of those people who tested positive. To add an entry, click on the “Add Etiology” link, and a pop-up window will appear. The default value in the “Confirmed” field is “Suspected.” Change this value to “Confirmed” if the agent has been laboratory confirmed as a cause of the outbreak. Report the etiology by selecting from the “Genus/Chemical/Toxin”, “Species”, and if applicable the “Serotype/Serogroup/Serovar” or “Genotype/Subtype” drop down lists.

- If norovirus is selected for “Genus/Chemical/Toxin,” two additional fields, “Capsid” and “Polymerase,” will appear in place of the “Serotype/Serogroup/Serovar” field. Report these fields by selecting from the drop down lists available. If no information on either the polymerase
or capsid is available, please enter “unknown”. These fields will be concatenated and displayed in the “Serotype/Serogroup/Serovar” field once the data row is saved.

Report where the etiology was detected (e.g., clinical specimens, water samples) by selecting a value from the “Detected In” drop down list. If the total number of people who were tested and/or tested positive are known, enter the numbers in the appropriate entry areas for “Total # people tested” and the “Total # people positive” fields. Click on the “Save” button to complete the entry and close the pop-up window. Repeat the process if multiple etiologies were identified in an outbreak.

2.11 Etiology data from CaliciNet

CaliciNet is an outbreak surveillance program that collects information on outbreak-associated strains of norovirus. If data from CaliciNet have been matched to the NORS record, an additional Etiology table will appear below the NORS Etiology table. The data in the CaliciNet Etiology table cannot be edited or deleted. There are three options for including the CaliciNet Etiology information in the NORS record; these are 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 statement “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 [www.cdc.gov/nors/training/general.html](http://www.cdc.gov/nors/training/general.html). If there is an error in the CaliciNet Etiology data, please contact NORSAdmin@cdc.gov.

<table>
<thead>
<tr>
<th>Etiology (from CaliciNet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genus</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Norovirus</td>
</tr>
</tbody>
</table>
2.2 ISOLATES SECTION

Information entered in the Isolates Section can improve linkage of NORS data with laboratory data systems that contain molecular data obtained from tests such as Pulse Field Gel Electrophoresis (PFGE) or Multiple Locus Variable number tandem repeat Analysis (MLVA). To add an entry, click on the “Add Isolate” link, and a pop-up window will open. The “CDC System” is a required field in this table; it also contains options for “Other”, “Unknown”, or “None” if the drop list values do not apply. If available, report the “CDC Lab System Outbreak Number”, the “State Lab ID”, and up to two molecular designations in the “Molecular Designation 1” and “Molecular Designation 2” fields. Click on the “Save” button to save information and close the window.

2.22 Isolate data from CaliciNet

CaliciNet data can also be matched to isolate data in NORS. If data from CaliciNet have been matched to the NORS record, an additional Isolates table will appear below the NORS Isolates table. The table will contain CaliciNet data formatted to match the NORS Isolates table. The data in the CaliciNet Isolates table cannot be edited or deleted. If there is an error in the CaliciNet Isolates data, please contact NORSAdmin@cdc.gov.

There are three options for including the CaliciNet Isolate information in the NORS record; these are 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 statement “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 www.cdc.gov/nors/training/general.html.
3. **CLINICAL SPECIMENS TAB**

The Clinical Specimens Tab collects information about any clinical specimens collected, testing for clinical specimens, and the type of testing performed on clinical specimens in two sections: the Clinical Specimens – Laboratory Results Section and the Test Types Section.

### 3.1 CLINICAL SPECIMENS – LABORATORY RESULTS SECTION

The first question asks “Were clinical diagnostic specimens taken from persons?”. If no specimens were collected, click on the radio button next to “No”, and you will not be able to add specimen information to Clinical Specimens Section. If specimens were collected, click on the radio button next to “Yes” and answer the subsequent question by entering the number of people from whom specimens were collected. Click on the “Add Specimen” link to describe the specimens collected in the pop-up window. The type of specimen can be selected from the drop down list for the “Specimen Type” field. If the specimen type was “Autopsy” or “Biopsy”, the second question becomes available with a drop down list of organs and tissues from which the specimens were obtained. The third question in the pop-up window asks which types of pathogens (e.g., bacteria, viruses) were tested for. In order to make multiple selections, press “Ctrl” on the keyboard as you click on multiple pathogen types in the picklist. Click on the “Save” button complete the entry and close the pop-up window.

3.2 **TEST TYPES SECTION**

The Test Types Section collects information on the types of clinical tests conducted on the specimens. Select all “Test Types” that were conducted by clicking on the check window next to each of the “Test
Types” listed. The second question asks “Was Antimicrobial Susceptibility Testing (AST) performed? If no, click on the radio button next to “No”, and you will not be able to add additional information regarding AST testing. If specimens were tested, click on the radio button next to “Yes” and answer the subsequent question by indicating where AST was performed. The third question ask if any antimicrobial resistant strains were associated with the outbreak. Please indicate by selecting the radio button options of “Yes”, “No”, or “Unknown”.

### 4. WATER SAMPLES TAB

The Water Samples Tab asks questions about any water samples that may have been tested, results from general water quality tests conducted on the samples, and results from pathogen or chemical/toxin tests conducted on the samples. There are three sections in the Water Samples Tab: the Water Samples Section, the Quality Indicators Section, and the Microbiology or Chemical/Toxin Analysis Section. For all sections in the Water Sample Tab, the “Sample Number” field is used to link “Water Samples” to other sections in the Water Sample Tab. Identify the “Sample Number” in the other sections so that the information is linked with the correct “Water Sample”.

![Water Samples Tab](image)

**NORSWater@cdc.gov**
4.1 WATER SAMPLES SECTION

First, report whether the water was tested. Click on the appropriate radio button next to “Yes”, “No”, or “Unknown”. If the answer is “Yes”, then proceed to click on the “Add Sample” link to provide basic descriptive information about the water sample in the pop-up window. Describe source of the water sampled in the “Sample Source” field. More than one option can be selected in the “Sample Source” field by pressing “Ctrl” on the keyboard as you click multiple sample sources. Enter a brief description of the “Sample Source” in the “Description field and provide the date of when the water was sampled in the “Date” field. If known, report the volume of water tested and its unit, the temperature and its unit, any residual and combined disinfectant levels and their units, the turbidity of the water, and the pH of the sample tested. If more than one sample was collected, report each sample by clicking on the “Add Sample” link and filling in the appropriate fields. At least one sample needs to be added in order to fill the subsequent table(s) on this page.
4.2 QUALITY INDICATOR SECTION [not present in Recreational Treated (Rec. Treated) Water reports]

In the Quality Indicator Section report any water quality indicators (e.g., bacterial or viral quality indicators) identified in the water sample by clicking on the “Add Quality Indicator” link and entering information in the pop-up window. Indicate the appropriate “Sample Number” to describe any quality indicators identified in the “Water Sample” listed in the Water Samples Section. Select the “Water Quality Type”, “Concentration”, and “Concentration Unit” if applicable. Click the “Save” button to complete the entry and close the pop-up window. If multiple water samples have been tested or multiple water quality tests were performed, add this information by repeating the process outlined above. At least one “Water Sample” needs to be reported in the Water Samples Section in order to report quality indicator information.

4.3 MICROBIOLOGY OR CHEMICAL/TOXIN ANALYSIS SECTION

The last section on this page collects information for microbial or chemical/toxin analysis that was performed for individual samples. Add analysis results by clicking on the “Add Analysis” link and entering information in the pop-up window. First, identify the “Sample Number” and report the “Genus/Chemical/Toxin” identified. If the agent is microbial and if applicable, report the “Species”, “Serotype/Serogroup/Serovar”, “Genotype/Subtype”, and “PFGE Pattern”. Likewise, if the agent is a chemical or a toxin, select the chemical or toxin from the drop down menu in the “Genus/Chemical/Toxin” field.

- If norovirus is selected for “Genus/Chemical/Toxin,” two additional fields, “Capsid” and “Polymerase,” will appear in place of the “Serotype/Serogroup/Serovar” field. Report these fields by selecting from the drop down lists available. If no information on either the polymerase
or capsid is available, please enter “unknown”. These fields will be concatenated and display in the “Serotype/Serogroup/Serovar” field once the data row is saved.

Indicate whether or not the sample results were positive or negative for the pathogen or chemical/toxin in the “Test Results Positive” field. If available, report the concentration, the type of test used for analysis and the specific method of testing. Click the “Save” button to complete the entry and close the pop-up window. To enter analysis results for more than one sample, click on the “Add Analysis” link and repeat the process outlined above. At least one “Water Sample” needs to be reported in the Water Samples Section in order to report information for microbial or chemical/toxin analyses.

You have now finished reviewing the Etiology & Lab Section of a waterborne disease outbreak report. Make sure to click the “Save Report” button near the top of the screen before exiting the report.

If you need assistance in completing other sections of NORS, please refer to the online technical and guidance documents located at www.cdc.gov/nors/.

For further assistance or for questions or comments, please email NORSWater@cdc.gov.