National Outbreak Reporting System (NORS) User Training Document – Etiology & Lab Section

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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, research 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.

	General Se	ction		Water		Etiology & Lab		Drinking	Attachments		
G	eneral Etiology	Clinical Sp	pecimens	Water Samples							
S	tep 13 : Gener	al Etiolog	gy							<u>Previous</u>	Next
											_
	Etiology										•
	Add Etiology	¥									
	Isolates (links	data abo	ut molec	ular characteriza	ition ac	ross multiple system	s)				•
	Add Isolate										

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 display 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 popup window. Repeat the process if multiple etiologies were identified in an outbreak.

General Section Wa	Add Water Etiology		
General Etiology Clinical Specimens Wate	Confirmed	Confirmed	
Step 13 : General Etiology	Genus/Chemical/ Toxin	Cryptosporidium	Previous Next
Etiology	Species	hominis 🔽	0
Add Etiology	Serotype/Serogroup/ Serovar		
Isolates (links data about molecular ch	Genotype/Subtype	laA13R2	Θ
<u>Add Isolate</u>	Detected In	Clinical Specimens	
	Total # people tested	3	
Page last reviewed: January 14, 2016	Total # people positive	2	
Page last updated: January 14, 2016 Content source: Centers for Disease Control		Cancel Save	

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. If there is an error in the CaliciNet Etiology data, please contact NORSAdmin@cdc.gov.

Etiology (fr	Etiology (from CaliciNet)											
C Replace with CaliciNet Etiologies C Append CaliciNet Etiologies C Ignore CaliciNet Etiologies												
Genus	Species	Serotype	Confirmed or Suspected	Other Characteristics	Detected In*	# Lab Confirmed Cases						
Norovirus	Genogroup II	GII_4 Den Haag (2006)	Suspected	Imported from CaliciNet		1						

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.

General Section Wate	r Samples	à Lab Attachments			
Step 13 : General Etiology				<u>Previous</u>	Next
Etiology	Add Isolate				
O Add Etiology	CDC System	CryptoNet			
Confirmed or Genus/ Chemical/ Suspected Toxin	CDC Lab System Outbreak Number	456	People	Total # People Positive	
Confirmed Cryptosporidium	State Lab ID	StateA		2	×
Isolates (links data about molecular ch	Molecular Designation 1	123			•
Add Isolate	Molecular Designation 2				
		Cancel Save			

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.

Isolates (from CaliciNet)								
C Replace with CaliciNet Isolates C Append CaliciNet Isolates								
State Lab ID/CaliciNet Key	PulseNet Outbreak Code or CaliciNet Outbreak Number	CDC PulseNet Pattern Designation for Enzyme 1	CDC PulseNet Pattern Designation for Enzyme 2	CaliciNet Sequenced Region/Other Molecular Designation 1	CaliciNet Genotype/Other Molecular Designation 2			
OH2009- SP-0015	2009-OB-011				GII_4 Den Haag (2006)			

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.

General Section Water	Etiology & I	Lab Attachments					
General Etiology Clinical Specimens Water Sampl	es						
Step 14 : Clinical Specimens					Previous Next		
Clinical Specimens - Laboratory Results	Add Clinical Speci	imen			0		
Were clinical diagnostic specimens taken from If yes, how many persons were specimens ta 3 Add Specimen Testing Information 1. Test types (select all test types used for clinical Add Specimen	Specimen Type If Autopsy or Biopsy, Specimen SubType Tested For (select all that apply)	Stool					
Chemical Testing Culture DNA or RNA Amplication/Detection (e.g., PCR, R Microscopy (e.g., fluorescent, EM)	I-PCR) 🗌 Other (describ	Cancel Save					
2. Was Antimicrobial Susceptibility Testing (AST) performed?							

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".

Testing Information							
1. Test types (select all test types used for clinical specimens)							
Chemical Testing	Serological/Immunological Test (e.g., EIA, ELISA)						
☑ Culture	Tissue Culture Infectivity Assay						
☑ DNA or RNA Amplication/Detection (e.g., PCR, RT-PCR)	□ Other (describe in the general remarks)						
□ Microscopy (e.g., fluorescent, EM)							
2. Was Antimicrobial Susceptibility Testing (AST) per	ormed?						
● Yes ○ No ○ Unknown							
If yes, where was AST performed?							
Clinical lab Other							
Public health lab Unknown							
CDC-NARMS							
If yes, were any antimicrobial resistant strains asso	If yes, were any antimicrobial resistant strains associated with the outbreak?						
🔾 Yes 💽 No 🔷 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".

General Section	Water	Etiology & Lab	Drinking	Attachments	
General Etiology Clinical Spe	ecimens Water Samples				
Step 15 : Water Samples					Previous Next
Water Samples					θ
Was water tested? OYes (<u>Add Sample</u>	specify in table below) ONo O	Unknown			
Quality Indicator					0
Microbiology or Chemical	l/Toxin Analysis				0

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.

Home Reports NORSDirect A	Add Water Sample	2		Account 👻 🛛 Log out
Report:			Save Report	🔒 Finalize Report 🕹 Download
Status: Active S Primary Mode: Water 2 C	Sample Source	Fountain - Ornamental Fountain - Unknown Intent Hot Spring Lake/Reservoir/Impoundment Manicure Bath Mist/Steam - Device (e.g. steam cleaner)		
General Etiology Clinical Specimens Water Sample	Description	Outdoor natural hot spring		
Step 15 : Water Samples	Date	09/27/2017		Previous Next
	Volume Tested	50		
Water Samples	Volume Unit	mL 💟		U
Add Sample	Temperature	90		
Quality Indicator	Temperature Unit	°F 🔽		0
	Residual			
Microbiology or Chemical/Toxin Analysis	Disinfectant Level			0
	Residual			
	Disinfectant Level Unit			
Page last reviewed: January 14, 2016	Combined			
Page last updated: January 14, 2016	Disinfectant Level			
content source. Centers for Disease control and the	Combined			
	Disinfectant Level			
	Unit			
About CDC Jobs Funding Policies	рН			
1600 Clifton Road Atlanta, GA 30329-4027 USA 800-CDC-INFO (800-232-4636), TTY: 888-232-6348	Turbidity		U.S	. Department of Health & Human Services HHS/Open
Email CDC-INFO		Cancel Save		USA.gov

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.

General Section Water	Etiology & Lab Attachments	
General Etiology Clinical Specimens Water Sample	5	
Step 15 : Water Samples		Previous Next
Water Samples	Add Quality Indicator	θ
Was water tested? O Yes (specify in table below) C Add Sample	Sample Number 1 🔽 Water Quality Type Fecal Coliforms	
Sample Number Source of Sample Additional Descripti	Concentration .5	l Combined Disinfectant Level pH Turbidity
1 Hot Spring Outdoor natural h	Concentration Unit CFU/100 mL	*
Quality Indicator	Cancel Save	Θ
Add Quality Indicator		
Microbiology or Chemical/Toxin Analysis		0
Add Analysis		

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.

O Add Sample	ē		Add Sample Analys	is			
Sample Number	Source of Sample	Additional Descripti	Sample Number	1	: 	Combined Disinfectant Level pH	Turbidity
1	Hot Spring		Genus/Chemical/Toxin	Cryptosporidium			~
Quality Indicat	tor		Species	hominis			Ø
Add Quality	/ Indicator		Serotype/Serogroup/ Serovar				
Sample Numbe	r Water Quality	Type Concentrat	Genotype/Subtype	laA13R2			
1	Fecal Coliform	s 0.5	PFGE Pattern	123			
Microbiology o	r Chemical/Tox	in Analysis	Test results positive?	● Yes 🔾 No			e
Add Analys	is		Concentration	0.23			
			Concentration Unit	CFU/100 mL			
Page last reviewe	d: January 14, 20	16	Test Type	DNA or RNA Test			
Page last updated	l: January 14, 201 Centers for Disea	6 se Control and Prev	Test Method				
× []	V	0	<	Cancel Save	>		
hout CDC I	obs Eundin	r Policios		ouro-			

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.