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General

National Outbreak Reporting System

Waterborne Disease Transmission

This form is used to report waterborne disease outbreak investigations. This form has 6 parts, indicated by tabs at the top of each page. Part 1 asks for the minimum or basic information about the outbreak investigation. Part 2 asks for epidemiological data and clinical specimen test results. Parts 3, 4, 5 and 6 collect information about types of water exposure (treated recreational water, untreated recreational water, drinking water, and water not intended for drinking/unknown intent). Only 1 of these 4 water exposure parts should be completed for an outbreak investigation report.

CDC USE ONLY

CDC Report ID	State Report ID

Form Approved
OMB No. 0920-0004

General Section

Primary Mode of Transmission *(check one)*

- ☐ Food *(Complete CDC 52.13)*
- ☐ Water *(Complete tabs for General, Water-General and type of water exposure)*
- ☐ Animal contact *(Complete CDC 52.13)*
- ☐ Person-to-person *(Complete CDC 52.13)*
- ☐ Environmental contamination other than food/water *(Complete CDC 52.13)*
- ☐ Indeterminate/Other/Unknown *(Complete CDC 52.13)*

Investigation Methods *(check all that apply)*

- ☐ Interviews only of ill persons
- ☐ Case-control study
- ☐ Cohort study
- ☐ Food preparation review
- ☐ Water system assessment: Drinking water
- ☐ Water system assessment: Nonpotable water
- ☐ Treated or untreated recreational water venue assessment
- ☐ Investigation at factory/production/treatment plant
- ☐ Investigation at original source (e.g., farm, water source, etc.)
- ☐ Food product or bottled water traceback
- ☐ Environment/food/water sample testing
- ☐ Other

Comments

_____

Dates (mm/dd/yyyy)

Date first case became ill *(required)* _____ Date last case became ill _____

Date of initial exposure _____ Date of last exposure _____

Date of report to CDC (other than this form) _____

Date of notification to State/Territory or Local/Tribal Health Authorities _____

Geographic Location

Reporting state: _____

- ☐ Exposure occurred in multiple states
- ☐ Exposure occurred in a single state but cases resided in multiple states

Other states: _____

Reporting county: _____

- ☐ Exposure occurred in multiple counties in reporting state
- ☐ Exposure occurred in a single county but cases resided in multiple counties in reporting state

Other counties: _____

City/Town/Place of exposure: _____

Do not include proprietary or private facility names

Primary Cases

Number of Primary Cases	
# Lab-confirmed cases	
# Probable cases	
# Estimated total primary cases	

Sex *(estimated percent of the primary cases)*

Click "Calculate Sex Percentages" if you enter count data.

Calculate Sex Percentages

Male	%
Female	%

	# Cases	Total # of cases for whom info is available
# Died		
# Hospitalized		
# Visited Emergency Room		
# Visited health care provider (excluding ER visits)		

Approximate percent of primary cases in each age group

Calculate Age Percentages

<1 year	%	20–49 years	%
1–4 years	%	50–74 years	%
5–9 years	%	≥ 75 years	%
10–19 years	%	Unknown	%

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General

Incubation Period, Duration of Illness, Signs or Symptoms for Primary Cases only

Incubation Period *(select appropriate units)*			Duration of Illness *(among recovered cases-select appropriate units)*		
Shortest		Min Hours Days	Shortest		Min Hours Days
Median		Min Hours Days	Median		Min Hours Days
Longest		Min Hours Days	Longest		Min Hours Days
Total # of cases for whom info is available			Total # of cases for whom info is available		
☐ Unknown incubation period			☐ Unknown duration of illness		

Signs or Symptoms

Feature	# Cases with signs or symptoms	Total # cases for whom info available
Vomiting		
Diarrhea		
Bloody stools		
Fever		
Abdominal cramps		
HUS		
Asymptomatic		
*		
*		
*		

Secondary Cases

Mode of Secondary Transmission *(check one)*	Number of Secondary Cases	
☐ Food	# Lab-confirmed secondary cases	
☐ Water	# Probable secondary cases	
☐ Animal contact	Estimated total secondary ill	
☐ Person-to-person	Total # of cases (Primary + Secondary)	
☐ Environmental contamination other than food/water		
☐ Indeterminate/Other/Unknown		

Environmental Health Specialists Network *(if applicable)*

EHS-Net Evaluation ID: 1.) _____ 2.) _____ 3.) _____

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

☐ Please check if traceback conducted

Source name *(If publicly available)*	Source type *(e.g. poultry farm, tomato processing plant, bottled water factory)*	Location of source		Comments
		State	Country	

Recall

☐ Please check if any food or bottled water product was recalled

Type of item recalled:

Comments:

Reporting Agency

Agency name: _____ E-mail: _____

Contact name: _____ Contact title: _____

Phone no.: _____ Fax no.: _____

Remarks

Briefly describe important aspects of the outbreak not covered above. Please indicate if any adverse outcomes occurred in special populations (e.g., pregnant women, immunocompromised persons)

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Waterborne Disease and Outbreaks - General

Type of Water Exposure *(check ONE box)*

- ☐ Water intended for recreational purposes – treated venue (e.g., pool, spa/whirlpool/hot tub, spray pad)
- ☐ Water intended for recreational purposes – untreated venue (e.g., freshwater lake, hot spring, marine beach)
- ☐ Water intended for drinking (includes water used for bathing/showering)
- ☐ Water not intended for drinking or water of unknown intent (e.g., cooling/industrial, occupational, decorative/display)

Geographic Location

Percent of primary cases living in reporting state : _____ %

Associated Events

Was exposure associated with a specific event or gathering?

☐ Yes ☐ No ☐ Unknown

If **Yes**, what type of event or gathering was involved?

_____

If outbreak occurred during a defined event, dates of event:

Start date: _____ (mm/dd/yyyy) End date: _____ (mm/dd/yyyy)

Symptoms

For each category, indicate # of persons with:

- Gastrointestinal symptoms/conditions _____
- Respiratory symptoms/conditions _____
- Skin symptoms/conditions _____
- Ear symptoms/conditions _____
- Eye symptoms/conditions _____
- Neurologic symptoms/conditions _____
- Wound infections _____
- Other, specify (e.g., hepatitis A, leptospirosis): _____

Route of Entry

- ☐ Ingestion
- ☐ Contact
- ☐ Inhalation
- ☐ Other, specify: _____
- ☐ Unknown

Epidemiologic Data

1. Estimated total number of persons with primary exposure: _____
2. Were data collected from comparison groups to estimate risk? ☐ Yes *(specify in table below)* ☐ No ☐ Unknown

   If ***No*** or ***Unknown***, was water the only common source shared by persons who were ill? ☐ Yes ☐ No ☐ Unknown

Exposure (Vehicle/Setting) *(e.g., pool—waterpark; hot spring; well water)*	Total # Exposed (A)	# Ill Exposed (B)	Total # Not Exposed	# Ill Not Exposed	Attack Rate (%) (B/A) Fill in (A) and (B).	Odds Ratio	Relative Risk	p-Value *(provide exact value)*	95% Confidence Interval
*									
*									
*									
*									
*									

Attack rate for residents of reporting state: _____ % **Attack rate for non-residents of reporting state:** _____ %

Clinical Specimens - Laboratory Results *(refer to the laboratory findings from the outbreak investigation)*

1. Were clinical diagnostic specimens taken from persons? ☐ Yes ☐ No *(go to next tab)* ☐ Unknown *(go to next tab)*

If ***Yes***, from how many persons were specimens taken? _____

Specimen Type*	Specimen Subtype**	Tested for § *(list all that apply)*
*		*
*		*
*		*
*		*

*** Specimen Type: 1- Autopsy Specimen (specify subtype), 2-Biopsy (specify), 3-Blood, 4-Bronchial Alveolar Lavage (BAL), 5-Cerebrospinal Fluid (CSF), 6-Conjunctiva/Eye Swab, 7-Ear Swab, 8-Endotracheal Aspirate, 9-Saliva, 10-Serum, 11-Skin Swab, 12-Sputum, 13-Stool, 14-Urine, 15-Vomitus, 16-Wound Swab, 17-Unknown**

**** Specimen Subtype: 1-Bladder, 2-Brain, 3-Dura, 4-Hair, 5-Intestine, 6-Kidney, 7-Liver, 8-Lung, 9-Nails, 10-Skin, 11-Stomach, 12-Wound, 13-Other, 14-Unknown**

§ Tested for: 1-Bacteria, 2-Chemicals/Toxins, 3-Fungi, 4-Parasites, 5-Viruses

Report the confirmed and/or suspected etiological agent(s) in the table below..

Clinical Specimen Row Number	Genus/ Chemical/ Toxin	Species	Serotype/ Serogroup/ Serovar	Genotype/ Subtype
1	*			
2	*			
3	*			
4	*			

Clinical Specimen Row Number	Confirmed as Etiology ?	Concentration *(numerical value)*	Unit	Specimen Type *	Specimen Subtype **
1	☐ Yes		*	*	
2	☐ Yes		*	*	
3	☐ Yes		*	*	
4	☐ Yes		*	*	

Clinical Specimen Row Number	Test Type §	Total # People Tested	Total # People Positive
1	*		
2	*		
3	*		
4	*		

*** Specimen Type: 1- Autopsy Specimen (specify subtype), 2-Biopsy (specify), 3-Blood, 4-Bronchial Alveolar Lavage (BAL), 5-Cerebrospinal Fluid (CSF), 6-Conjunctiva/Eye Swab, 7-Ear Swab, 8-Endotracheal Aspirate, 9-Saliva, 10-Serum, 11-Skin Swab, 12-Sputum, 13-Stool, 14-Urine, 15-Vomitus, 16-Wound Swab, 17-Unknown**

**** Specimen Subtype: 1-Bladder, 2-Brain, 3-Dura, 4-Hair, 5-Intestine, 6-Kidney, 7-Liver, 8-Lung, 9-Nails, 10-Skin, 11-Stomach, 12-Wound, 13-Other, 14-Unknown**

§ Test Type: 1-Culture, 2-DNA or RNA Amplification/Detection (e.g., PCR, RT-PCR), 3-Microscopy (e.g., fluorescent, EM), 4-Serological/Immunological Test (e.g., EIA, ELISA), 5-Phage Typing, 6-Chemical Testing, 7-Tissue Culture Infectivity Assay

Isolates

State Lab Isolate ID	Specimen Profile 1 *(e.g., the PFGE, MLVA, or genotype sequence)*	Specimen Profile 2 *(e.g., the PFGE, MLVA, or genotyping method used)*

Drinking Water Vehicle Description

Drinking Water Vehicle Description

Water Type* *(e.g., commercially-bottled water, community water system, individual water system)*	**Public Water System EPA ID Number****	**Water Source** *(select ground water, surface water or unknown)*	**Water Source Description** *(e.g., spring; well; lake)*	**Setting of Exposure** *(e.g., airport, mobile home park)*	**USUAL Water Treatment Provided** *(e.g., no treatment, disinfection, home filtration)*	**Water Treatment Subtype** *(disinfection or filtration: e.g., boiling; chlorine; rapid sand filter; reverse osmosis)*
*				*	*	
*				*	*	
*				*	*	
*				*	*	

***Water system definitions: Community and noncommunity water systems are public water systems that have ≥ 15 service connections or serve an average of ≥ 25 residents for ≥ 60 days/year. A community water system serves year-round residents of a community, subdivision, or mobile home park. A noncommunity water system serves an institution, industry, camp, park, hotel, or business and can be nontransient or transient. Nontransient systems serve ≥ 25 of the same persons for > 6 months of the year but not year-round (e.g., factories and schools), whereas transient systems provide water to places in which persons do not remain for long periods (e.g., restaurants, highway rest stations, and parks). Individual water systems are small systems not owned or operated by a water utility that have < 15 connections or serve < 25 persons.**

**** Number used for EPA reporting that uniquely identifies the water system within a specific state. The water system ID number can be found at http://www.epa.gov/safewater/dwinfo/index.html by first selecting a state and then selecting a county.**

Drinking Water Quality

Did the drinking water system have any monitoring violations in the 1 month prior to the outbreak?

☐ Yes ☐ No ☐ Unknown ☐ Not applicable

If **Yes**, explain: _____

Did the drinking water system have any maximum contaminant level (MCL) violations in the 1 month prior to the outbreak?

☐ Yes ☐ No ☐ Unknown ☐ Not applicable

If **Yes**, explain: _____

Did the drinking water system have any violations in the 12 months prior to the outbreak?***

☐ Yes ☐ No ☐ Unknown ☐ Not applicable

If **Yes**, explain: _____

*****Sources of information about past violations can be obtained from utility records, consumer confidence reports (water quality reports), or violation records from state or local health departments**

Laboratory Section - Drinking Water

Was drinking water tested? ☐ Yes *(specify in table below)* ☐ No ☐ Unknown

Results						
Sample		**1**	**2**	**3**	**4**	**5**
Source of Sample		*	*	*	*	*
Additional Description *(e.g., kitchen faucet, well, reservoir)*						
Date *(mm/dd/yyyy)*						
Volume Tested	**Number**					
	Unit	*	*	*	*	*
Temperature	**Number**					
	Unit	*	*	*	*	*
Residual/Free Disinfectant Level *(if total and combined disinfectant levels given, total - combined = free)*	**Number**					
	Unit	*	*	*	*	*
pH						
Turbidity (NTU)						

Water Quality Indicator

Sample Number	Type *(e.g., fecal coliforms)*	Concentration *(numerical value)*	Unit
	*		*
	*		*
	*		*
	*		*

Microbiology or Chemical/Toxin Analysis *(refer to the laboratory findings from the outbreak investigation)*

Sample Number	Genus/ Chemical/ Toxin	Species	Serotype/ Serogroup/ Serovar	Genotype/ Subtype	PFGE Pattern
	*				
	*				
	*				

Sample Number	Test Results Positive?	Concentration *(numerical value)*	Unit	Test Type*	Test Method *(reference: National Environmental Methods Index: http://www.nemi.gov)*
	☐ Yes		*	*	
	☐ Yes		*	*	
	☐ Yes		*	*	

*** Test Type: 1-Culture, 2-DNA or RNA Amplification/Detection (e.g., PCR, RT-PCR), 3-Microscopy (e.g., fluorescent, EM), 4-Serological/Immunological Test (e.g., EIA, ELISA), 5-Phage Typing, 6-Chemical Testing, 7-Tissue Culture Infectivity Assay**

Factors Contributing to Drinking Water Contamination and/or Increased Exposure to Contaminated Drinking Water

Did a problem with the source water (i.e., ground water or surface water) contribute to the disease or outbreak?

☐ Yes *(specify in table below)* ☐ No ☐ Unknown

Source Water Factors *(check all that apply)***	Documented/ Observed***	Suspected***
Sanitary sewer overflow (SSO) ****	☐	☐
Combined sewer overflow (CSO) ****	☐	☐
Malfunctioning on-site wastewater treatment system **** ≠	☐	☐
Sewage treatment plant malfunction ***	☐	☐
Sewer line break ***	☐	☐
Poor siting/design of on-site wastewater treatment system **** ≠	☐	☐
Nearby biosolid/land application site (e.g., human or animal waste application)	☐	☐
Contamination from agricultural chemical application (e.g., fertilizer, pesticides)	☐	☐
Contamination from chemical pollution not related to agricultural application	☐	☐
Contamination by a chemical that the current treatment methods were not designed to remove	☐	☐
Domestic animal contamination (e.g., livestock, concentrated feeding operations, pets)	☐	☐
Wildlife contamination - Birds	☐	☐
Wildlife contamination - Mammals	☐	☐
Wildlife contamination - Fish kill	☐	☐
Flooding/heavy rains	☐	☐
Algal bloom	☐	☐
Seasonal variation in water quality (e.g., lake/reservoir turnover events, resort community with seasonal loading)	☐	☐
Low water table (e.g., drought, over-pumping)	☐	☐
Ground water under direct influence of surface water (e.g., shallow well)≠ ≠	☐	☐
Contamination through limestone or fissured rock (e.g., karst)	☐	☐
Contaminated recharge water	☐	☐
Use of an alternate source of water by a water utility	☐	☐
Mixing of raw water from different sources	☐	☐
Improper construction or location of a well or spring	☐	☐
Water system intake failure (e.g., cracked well casing, cracked intake pipe)	☐	☐
Intentional contamination (explain in remarks)	☐	☐
Other, specify:	☐	☐
Unknown	☐	☐

**** Only check off what was found during investigation.**

***** "Documented/Observed" refers to information gathered through document reviews, direct observations, and/or interviews. "Suspected" refers to factors that probably occurred but for which no documentation (as defined previously) is available.**

****** The release of sewage does not have to occur on the property in which persons have become ill. The sewage release may have occurred at a distant site but still affected the property in question.**

≠ "On-site wastewater treatment system" refers to a system designed to treat and dispose of wastewater at the point of generation, generally on the property where the wastewater is generated (e.g., septic systems or other advanced on-site systems). However, contamination that originates from these systems can still occur off the property where treatment and disposal takes place due to migration of contaminants from malfunctioning systems or poor siting and design.

≠ ≠ Any water beneath the surface of the ground with substantial occurrence of insects or other macroorganisms, algae, or large-diameter pathogens (e.g., *Giardia intestinalis* or *Cryptosporidium*), or substantial and relatively rapid shifts in water characteristics (e.g., turbidity, temperature, conductivity, or pH) that closely correlate with climatologic or surface water conditions. Direct influence must be determined for individual sources in accordance with criteria established by the state.

Factors Contributing to Drinking Water Contamination and/or Increased Exposure to Contaminated Drinking Water

Did a problem with the water treatment prior to entry into a house or building contribute to the disease or outbreak?

☐ Yes *(specify in table below)* ☐ No ☐ Unknown

Treatment Factors (*check all that apply*)*	Documented/ Observed**	Suspected**
Change in treatment process (explain in remarks)	☐	☐
No disinfection	☐	☐
Temporary interruption of disinfection	☐	☐
Chronically inadequate disinfection	☐	☐
No filtration	☐	☐
Inadequate filtration	☐	☐
Deficiencies in other treatment processes	☐	☐
Corrosion in or leaching from pipes or storage tanks	☐	☐
Pipe/component failure or break (e.g., pipes, tanks, valves)	☐	☐
Contamination during construction or repair of pipes/components	☐	☐
Construction or repair of pipes/components without evidence of contamination	☐	☐
Operator error	☐	☐
Other, specify:	☐	☐
Unknown	☐	☐

Did a problem with the distribution system contribute to the disease or outbreak? ☐ Yes *(specify in table below)* ☐ No ☐ Unknown

(NOTE: For a community water system, the distribution system refers to the pipes and storage infrastructure under the jurisdiction of the water utility prior to the water meter (or property line if the system is not metered). For noncommunity and nonpublic water systems, the distribution system refers to the pipes and storage infrastructure prior to entry into a building or house)

Distribution and Storage Factors (*check all that apply*)*	Documented/ Observed**	Suspected**
Cross-connection of potable and nonpotable water pipes resulting in backflow	☐	☐
Low pressure or change in water pressure in the distribution system	☐	☐
Change in water flow direction in the distribution system	☐	☐
Mixing of treated water from different sources	☐	☐
Pipe/component failure or break (e.g., pipes, tanks, valves)	☐	☐
Corrosion in or leaching from pipes or storage tanks	☐	☐
Contamination of mains during construction or repair	☐	☐
Construction or repair of mains without evidence of contamination	☐	☐
Scheduled flushing of the distribution system	☐	☐
Contamination of storage facility	☐	☐
Aging water distribution components (e.g., pipes, tanks, valves)	☐	☐
Water temperature ≥30°C (≥86°F)	☐	☐
Intentional contamination (explain in remarks)	☐	☐
Other, specify:	☐	☐
Unknown	☐	☐

Did a problem occur after the water meter or outside the jurisdiction of a water utility that contributed to the disease or outbreak? (e.g., in a service line leading to a house/building, in the plumbing inside a house/building, during shipping/hauling, during storage other than in the distribution system, at the point of use, involving commercially-bottled water)

☐ Yes *(specify in table below)* ☐ No ☐ Unknown

Factors Not Under the Jurisdiction of a Water Utility or Factors at the Point of Use (*check all that apply*)*	Documented/ Observed**	Suspected**
Legionella species in water system	☐	☐
Cross-connection of potable and nonpotable water pipes resulting in backflow	☐	☐
Lack of backflow prevention in plumbing	☐	☐
Low pressure or change in water pressure in the plumbing	☐	☐
Change in water flow direction in the plumbing	☐	☐
Corrosion in or leaching from pipes or storage tanks	☐	☐
Pipe/component failure or break (e.g., pipes, tanks, valves)	☐	☐
Aging plumbing components (e.g., pipes, tanks, valves)	☐	☐
Contamination of plumbing during construction or repair	☐	☐
Construction or repair of plumbing without evidence of contamination	☐	☐
Deficiency in building/home-specific water treatment after the water meter or property line	☐	☐
Deficiency or contamination of equipment/devices using or distributing water	☐	☐
Contamination during commercial bottling	☐	☐
Contamination during shipping, hauling, or storage	☐	☐
Contamination at point of use – Tap	☐	☐
Contamination at point of use – Hose	☐	☐
Contamination at point of use – Commercially-bottled water	☐	☐
Contamination at point of use – Container, bottle, or pitcher	☐	☐
Contamination at point of use – Unknown	☐	☐
Water temperature ≥30°C (≥86°F)	☐	☐
Intentional contamination (explain in remarks)	☐	☐
Other, specify:	☐	☐
Unknown	☐	☐

*** Only check off what was found during investigation.**

**** "Documented/Observed" refers to information gathered through document reviews, direct observations, and/or interviews. "Suspected" refers to factors that probably occurred but for which no documentation (as defined previously) is available.**

Remarks