



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. 0000-0000

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		Sex (estimated percent of the primary cases)				
# Lab-confirmed cases	(A)	Male		%		
# Probable cases	(B)	Female		%		
# Estimated total primary ill (if greater than sum A+B)						
	# Cases	Total # of cases for whom info is available	Approximate percent of primary cases in each age group			
# Died			<1 year	%	20-49 years	%
# Hospitalized			1-4 years	%	50-74 years	%
# Visited Emergency Room			5-9 years	%	≥ 75 years	%
# Visited health care provider (excluding ER visits)			10-19 years	%	Unknown	%

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

Incubation Period <i>(circle appropriate units)</i>			Duration of Illness <i>(among recovered cases-circle appropriate units)</i>		
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		
<input type="checkbox"/> Unknown duration of illness			<input type="checkbox"/> Unknown duration of illness		

Signs or Symptoms *(*refer to terms from appendix, if appropriate, to describe other common characteristics of cases)*

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 <i>(check one)</i>	Number of Secondary Cases	
<input type="checkbox"/> Food <input type="checkbox"/> Water <input type="checkbox"/> Animal contact <input type="checkbox"/> Person-to-person <input type="checkbox"/> Environmental contamination other than food/water <input type="checkbox"/> Indeterminate/Other/Unknown	# Lab-confirmed secondary cases	(A)
	# Probable secondary cases	(B)
	Total # of secondary cases (if greater than sum A+B)	
	Total # of cases (Primary + Secondary)	

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 <i>(If publicly available)</i>	Source type <i>(e.g. poultry farm, tomato processing plant, bottled water factory)</i>	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)*

Waterborne Disease and Outbreaks - General

Type of Water Exposure (check ONE box)

<input type="checkbox"/> Water intended for recreational purposes – treated venue (e.g., pool, spa/whirlpool/hot tub, spray pad)	<input type="checkbox"/> Water intended for recreational purposes – untreated venue (e.g., freshwater lake, hot spring, marine beach)	<input type="checkbox"/> Water intended for drinking (includes water used for bathing/showering)	<input type="checkbox"/> Water not intended for drinking or water of unknown intent (e.g., cooling/industrial, occupational, decorative/display)
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Geographic Location	Symptoms	Route of Entry
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<p>Percent of primary cases living in reporting state : _____ %</p> <p>Associated Events</p> <p>Was exposure associated with a specific event or gathering? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown</p> <p>If Yes, what type of event or gathering was involved? _____ _____ _____</p> <p>If outbreak occurred during a defined event, dates of event: Start date: ____/____/____ End date: ____/____/____ (mm/dd/yyyy) (mm/dd/yyyy)</p>	<p>For each category, indicate # of persons with:</p> <p>Gastrointestinal symptoms/ conditions _____</p> <p>Respiratory symptoms/ conditions _____</p> <p>Skin symptoms/conditions _____</p> <p>Ear symptoms/conditions _____</p> <p>Eye symptoms/conditions _____</p> <p>Neurologic symptoms/ conditions _____</p> <p>Wound infections _____</p> <p>Other, specify (e.g., hepatitis A, leptospirosis): _____ _____</p>	<p><input type="checkbox"/> Ingestion</p> <p><input type="checkbox"/> Contact</p> <p><input type="checkbox"/> Inhalation</p> <p><input type="checkbox"/> Other, specify: _____</p> <p><input type="checkbox"/> Unknown</p>
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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) <i>(e.g., pool—waterpark; hot spring; well water)</i>	Total # Exposed (A)	# Ill Exposed (B)	Total # Not Exposed	# Ill Not Exposed	Attack Rate (%) (B/A)	Odds Ratio	Relative Risk	p-Value <i>(provide exact value, if known)</i>	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? _____

Water-General

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-Vomit, 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

Enter positive findings in the table below. If tests for a specific pathogen/agent were negative, please also list that pathogen/agent and fill in the Specimen Type, Specimen Subtype, Test Type, Total # of People Tested and Total # of People Positive.

Clinical Specimen Row Number	Genus/ Chemical/ Toxin	Species	Serotype/ Serogroup/ Serovar	Genotype/ Subtype
1				
2				
3				
4				
5				

Clinical Specimen Row Number	Confirmed as Etiology ?	Concentration (number)	Unit (e.g., oocysts, CFU)	Specimen Type *	Specimen Subtype **
1	<input type="checkbox"/> yes				
2	<input type="checkbox"/> yes				
3	<input type="checkbox"/> yes				
4	<input type="checkbox"/> yes				
5	<input type="checkbox"/> yes				

Clinical Specimen Row Number	Test Type §	Total # People Tested	Total # People Positive
1			
2			
3			
4			
5			

* 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-Vomit, 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., PFGE, MLVA, or genotype)	Specimen Profile 2 (e.g., PFGE, MLVA, or genotype)

Recreational Water – Treated Venue

Recreational Water Vehicle Description

Water Vehicle Number <i>(e.g., 1, 2, 3)</i>	Water Type <i>(e.g., spa/whirlpool/hot tub; pool- swimming pool; pool- waterpark)</i>	Water Subtype <i>(select indoor, outdoor, or unknown)</i>	Setting of Exposure <i>(e.g., club, requiring membership; hotel/motellodge/inn; waterpark)</i>
Water Vehicle Number <i>(e.g., 1, 2, 3)</i>	USUAL Water Treatment Provided at Venue <i>(e.g., no treatment; coagulation; disinfection; flocculation; filtration (pool); unknown)</i>	Venue Treatment Subtype <i>(disinfection or pool filtration: e.g., UV; chlorine dioxide; bag filter; cartridge filter; unknown)</i>	Chlorination Subtype <i>(chlorine disinfection only- e.g., gaseous; sodium hypochlorite; cyanurates /stabilized chlorine)</i>
Water Vehicle Number <i>(e.g., 1, 2, 3)</i>	Fill Water Type <i>(e.g., public water supply; sea water; untreated ground or surface water; unknown)</i>	IF PUBLIC WATER WAS USED TO FILL, USUAL Water Treatment Provided for Fill Water Before Coming to the Venue <i>(e.g., no treatment; disinfection; filtration (treatment plant); unknown)</i>	IF PUBLIC WATER WAS USED TO FILL, Fill Water Treatment Subtype <i>(disinfection or pool filtration: e.g., UV; chlorine dioxide; bag filter; cartridge filter; unknown)</i>

Recreational Water Quality

Did the venue meet state or local recreational water quality regulations? Yes No Unknown Not applicable

If **No**, explain: _____

Was there a pool operator on the payroll with state-approved training or certification? Yes No Unknown

Laboratory Section - Recreational Water Samples from Treated Venues

Was water from treated recreational water venues tested? Yes *(specify in table below)* No Unknown

Results Sample	1	2	3	4	5
Source of Sample <i>(e.g., swimming pool, hot tub)</i>					
Additional Description of Source of Sample <i>(e.g., specific location, time of day, backwash sample, etc.)</i>					
Date <i>(mm/dd/yyyy)</i>					
Volume Tested	Number				
	Unit				
Temperature	Number				
	Unit				
Residual/Free Disinfectant Level <i>(if total and combined disinfectant levels given, total - combined = free)</i>	Number				
	Unit				
Combined Disinfectant Level <i>(if total and free disinfectant levels given, total - free = combined)</i>	Number				
	Unit				
pH					

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 (number)	Unit (e.g., oocysts, CFU)	Test Type*	Test Method (reference: National Environmental Methods Index: http://www.nemi.gov)
	<input type="checkbox"/> yes				
	<input type="checkbox"/> yes				
	<input type="checkbox"/> 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 Recreational Water Contamination and/or Increased Exposure in Treated Venues

Factors (check all that apply)**		Documented/ Observed***	Suspected***
PEOPLE	Out of compliance with bather load/density requirements	<input type="checkbox"/>	<input type="checkbox"/>
	Primary intended use of water is by diaper/toddler-aged children (e.g., kiddie pool)	<input type="checkbox"/>	<input type="checkbox"/>
	Heavy use by child care center groups	<input type="checkbox"/>	<input type="checkbox"/>
	Fecal/vomitus accident	<input type="checkbox"/>	<input type="checkbox"/>
	Patrons continued to swim when ill or within 2 weeks of being ill	<input type="checkbox"/>	<input type="checkbox"/>
FACILITY DESIGN	Operator error	<input type="checkbox"/>	<input type="checkbox"/>
	Intentional contamination (explain in remarks)	<input type="checkbox"/>	<input type="checkbox"/>
	Combined pool filtration systems led to cross-contamination	<input type="checkbox"/>	<input type="checkbox"/>
	Hygiene facilities inadequate or distant (e.g., no toilets, no diaper changing facilities)	<input type="checkbox"/>	<input type="checkbox"/>
	Spray feature water demand higher than treatment system capacity so water returns to features and bypasses filtration/treatment system	<input type="checkbox"/>	<input type="checkbox"/>
	No supplemental disinfection installed that would have inactivated pathogen (e.g., <i>Cryptosporidium</i>)	<input type="checkbox"/>	<input type="checkbox"/>
	Water temperature $\geq 30^{\circ}\text{C}$ ($\geq 86^{\circ}\text{F}$)	<input type="checkbox"/>	<input type="checkbox"/>
	Cross-connection with wastewater or non-potable water	<input type="checkbox"/>	<input type="checkbox"/>
	Disinfectant control system malfunctioning, inadequate, or lacking (e.g., hand feed)	<input type="checkbox"/>	<input type="checkbox"/>
	Incorrect settings on disinfectant control system	<input type="checkbox"/>	<input type="checkbox"/>
MAINTENANCE	pH control system malfunctioning, inadequate, or lacking (e.g., hand feed)	<input type="checkbox"/>	<input type="checkbox"/>
	Incorrect settings on pH control system	<input type="checkbox"/>	<input type="checkbox"/>
	Filtration system malfunctioning or inadequate (e.g., low flow rate)	<input type="checkbox"/>	<input type="checkbox"/>
	Supplemental disinfection system malfunctioning (e.g., ultraviolet light, ozone)	<input type="checkbox"/>	<input type="checkbox"/>
	Insufficient system checks so breakdown detection delayed	<input type="checkbox"/>	<input type="checkbox"/>
	No preventive maintenance programs to reduce breakdowns	<input type="checkbox"/>	<input type="checkbox"/>
	Remote monitoring system in use	<input type="checkbox"/>	<input type="checkbox"/>
	Ventilation insufficient for indoor aquatic facilities	<input type="checkbox"/>	<input type="checkbox"/>
	Chemical handling error (e.g., chemical hookup, improper mixing or application)	<input type="checkbox"/>	<input type="checkbox"/>
	Maintenance chemicals not flushed from system before opening to swimmers	<input type="checkbox"/>	<input type="checkbox"/>
	Low or zero water flow combined with continuous feed of chemicals resulted in excess chemicals in water	<input type="checkbox"/>	<input type="checkbox"/>
	Extensive slime/biofilm formation	<input type="checkbox"/>	<input type="checkbox"/>
	Recent construction	<input type="checkbox"/>	<input type="checkbox"/>
	Cyanurate level excessive	<input type="checkbox"/>	<input type="checkbox"/>
	Lack of draining/cleaning	<input type="checkbox"/>	<input type="checkbox"/>
POLICY AND MANAGEMENT	Stagnant water in spa piping was aerosolized	<input type="checkbox"/>	<input type="checkbox"/>
	No aquatics operators on payroll who have received state/local certified training	<input type="checkbox"/>	<input type="checkbox"/>
	Untrained/inadequately trained staff on duty	<input type="checkbox"/>	<input type="checkbox"/>
	Unclear communication chain for reporting problems	<input type="checkbox"/>	<input type="checkbox"/>
	Inadequate water quality monitoring (e.g., inadequate test kit, inadequate testing frequency)	<input type="checkbox"/>	<input type="checkbox"/>
	Employee illness policies absent or not enforced	<input type="checkbox"/>	<input type="checkbox"/>
	Missing or poor chemical handling policies, practices, and training	<input type="checkbox"/>	<input type="checkbox"/>
	No operator on duty at the time of incident	<input type="checkbox"/>	<input type="checkbox"/>
	Facility falls outside aquatic health code	<input type="checkbox"/>	<input type="checkbox"/>
	No shock/hyperchlorination policy	<input type="checkbox"/>	<input type="checkbox"/>
Other, specify:	<input type="checkbox"/>	<input type="checkbox"/>	
Unknown	<input type="checkbox"/>	<input type="checkbox"/>	

** 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

Recreational Water – Untreated Venue

Recreational Water Vehicle Description

Water Type <i>(e.g., canal; lake; river/stream; ocean)</i>	IF SPRING OR HOT SPRING, Water Subtype <i>(select indoor, outdoor or unknown)</i>	Setting of Exposure <i>(e.g., beach- public; camp/cabin/recreational area)</i>

Recreational Water Quality

Did the venue meet state or local recreational water quality regulations? Yes No Unknown Not applicable

If No, explain: _____

Did the venue meet Environmental Protection Agency (EPA) recreational water quality standards?

Yes No Unknown Not applicable

If No, explain: _____

Laboratory Section - Recreational Water Samples from Untreated Venues

Was water from untreated recreational water venues tested? Yes *(specify in table below)* No Unknown

Results Sample	1	2	3	4	5
Source of Sample <i>(e.g., lake or stream)</i>					
Additional Description of Source of Sample <i>(e.g., specific location, time of day, etc)</i>					
Date <i>(mm/dd/yyyy)</i>					
Volume Tested	Number				
	Unit				
Temperature	Number				
	Unit				

Water Quality Indicator

Sample Number	Type <i>(e.g., fecal coliforms)</i>	Concentration <i>(number)</i>	Unit <i>(e.g., CFU)</i>

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 <i>(number)</i>	Unit <i>(e.g., oocysts, CFU)</i>	Test Type*	Test Method <i>(reference: National Environmental Methods Index: http://www.nemi.gov)</i>
	<input type="checkbox"/> yes				
	<input type="checkbox"/> yes				
	<input type="checkbox"/> yes				
	<input type="checkbox"/> 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 Recreational Water Contamination and/or Increased Exposure in Untreated Venues

Factors (check all that apply)*		Documented/ Observed**	Suspected**
PEOPLE	Out of compliance with bather load/density requirements	<input type="checkbox"/>	<input type="checkbox"/>
	Primary intended use of water is by diaper/toddler aged children (e.g., kiddie pool)	<input type="checkbox"/>	<input type="checkbox"/>
	Heavy use by child care center groups	<input type="checkbox"/>	<input type="checkbox"/>
	Fecal/vomitus accident	<input type="checkbox"/>	<input type="checkbox"/>
	Patrons continued to swim when ill or within 2 weeks of being ill	<input type="checkbox"/>	<input type="checkbox"/>
SWIM AREA DESIGN	Operator error	<input type="checkbox"/>	<input type="checkbox"/>
	Intentional contamination (explain in remarks)	<input type="checkbox"/>	<input type="checkbox"/>
	Hygiene facilities inadequate or distant (e.g., no toilets, no diaper changing facilities)	<input type="checkbox"/>	<input type="checkbox"/>
	Malfunctioning or inadequate onsite wastewater treatment system *** ≠	<input type="checkbox"/>	<input type="checkbox"/>
	Poor siting/design of onsite wastewater treatment system *** ≠	<input type="checkbox"/>	<input type="checkbox"/>
WATER QUALITY	Stagnant or poorly circulating water in swim area	<input type="checkbox"/>	<input type="checkbox"/>
	Heavy rainfall and runoff	<input type="checkbox"/>	<input type="checkbox"/>
	Sanitary sewer overflow (SSO) impact ***	<input type="checkbox"/>	<input type="checkbox"/>
	Combined sewer overflow (CSO) impact ***	<input type="checkbox"/>	<input type="checkbox"/>
	Domestic animal contamination (e.g., livestock, pets)	<input type="checkbox"/>	<input type="checkbox"/>
	Wildlife contamination - Birds	<input type="checkbox"/>	<input type="checkbox"/>
	Wildlife contamination - Mammals	<input type="checkbox"/>	<input type="checkbox"/>
	Wildlife contamination - Fish kill	<input type="checkbox"/>	<input type="checkbox"/>
	Wastewater treatment plant effluent flows past swim area	<input type="checkbox"/>	<input type="checkbox"/>
	Wastewater treatment plant malfunction ***	<input type="checkbox"/>	<input type="checkbox"/>
	Sewer line break ***	<input type="checkbox"/>	<input type="checkbox"/>
	Nearby biosolid/land application site (e.g., human or animal waste application)	<input type="checkbox"/>	<input type="checkbox"/>
	Contamination from agricultural chemical application (e.g., fertilizer, pesticides)	<input type="checkbox"/>	<input type="checkbox"/>
	Contamination from chemical pollution not related to agricultural application	<input type="checkbox"/>	<input type="checkbox"/>
	Water temperature ≥30°C (≥86°F)	<input type="checkbox"/>	<input type="checkbox"/>
POLICY AND MANAGEMENT	Seasonal variation in water quality (e.g., lake/reservoir turnover events)	<input type="checkbox"/>	<input type="checkbox"/>
	Inappropriate dumping of sewage into water body (e.g., boat, RV)	<input type="checkbox"/>	<input type="checkbox"/>
	Algal bloom	<input type="checkbox"/>	<input type="checkbox"/>
	Dumping of ballast water	<input type="checkbox"/>	<input type="checkbox"/>
	Tidal wash (i.e., tide exchange or influence by inland water)	<input type="checkbox"/>	<input type="checkbox"/>
	Aquatics operator has not received state/local certified training	<input type="checkbox"/>	<input type="checkbox"/>
	Untrained/inadequately trained staff on duty	<input type="checkbox"/>	<input type="checkbox"/>
	Unclear communication chain for reporting problems	<input type="checkbox"/>	<input type="checkbox"/>
	Employee illness policies absent	<input type="checkbox"/>	<input type="checkbox"/>
	No operator on duty at the time of incident	<input type="checkbox"/>	<input type="checkbox"/>
Other, specify:	<input type="checkbox"/>	<input type="checkbox"/>	
Unknown	<input type="checkbox"/>	<input type="checkbox"/>	

* 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.

≠ "Onsite 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.

Remarks

Drinking Water Vehicle Description

Drinking Water Vehicle Description

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

*Water system definitions: Community and noncommunity water systems are public water systems that have 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 of Source of Sample <i>(e.g., kitchen faucet, well, reservoir)</i>					
Date <i>(mm/dd/yyyy)</i>					
Volume Tested	Number				
	Unit				
Temperature	Number				
	Unit				
Residual/Free Disinfectant Level <i>(if total and combined disinfectant levels given, total - combined = free)</i>	Number				
	Unit				
pH					
Turbidity (NTU)					

Water Quality Indicator

Sample Number	Type (e.g., fecal coliforms)	Concentration (number)	Unit (e.g., CFU)

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 (number)	Unit (e.g., oocysts, CFU)	Test Type*	Test Method (reference: National Environmental Methods Index: http://www.nemi.gov)
	<input type="checkbox"/> yes				
	<input type="checkbox"/> yes				
	<input type="checkbox"/> 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) ****	<input type="checkbox"/>	<input type="checkbox"/>
Combined sewer overflow (CSO) ****	<input type="checkbox"/>	<input type="checkbox"/>
Malfunctioning on-site wastewater treatment system **** ≠	<input type="checkbox"/>	<input type="checkbox"/>
Sewage treatment plant malfunction ***	<input type="checkbox"/>	<input type="checkbox"/>
Sewer line break ***	<input type="checkbox"/>	<input type="checkbox"/>
Poor siting/design of on site wastewater treatment system **** ≠	<input type="checkbox"/>	<input type="checkbox"/>
Nearby biosolid/land application site (e.g., human or animal waste application)	<input type="checkbox"/>	<input type="checkbox"/>
Contamination from agricultural chemical application (e.g., fertilizer, pesticides)	<input type="checkbox"/>	<input type="checkbox"/>
Contamination from chemical pollution not related to agricultural application	<input type="checkbox"/>	<input type="checkbox"/>
Contamination by a chemical that the current treatment methods were not designed to remove	<input type="checkbox"/>	<input type="checkbox"/>
Domestic animal contamination (e.g., livestock, concentrated feeding operations, pets)	<input type="checkbox"/>	<input type="checkbox"/>
Wildlife contamination - Birds	<input type="checkbox"/>	<input type="checkbox"/>
Wildlife contamination - Mammals	<input type="checkbox"/>	<input type="checkbox"/>
Wildlife contamination - Fish kill	<input type="checkbox"/>	<input type="checkbox"/>
Flooding/heavy rains	<input type="checkbox"/>	<input type="checkbox"/>
Algal bloom	<input type="checkbox"/>	<input type="checkbox"/>
Seasonal variation in water quality (e.g., lake/reservoir turnover events, resort community with seasonal loading)	<input type="checkbox"/>	<input type="checkbox"/>
Low water table (e.g., drought, over-pumping)	<input type="checkbox"/>	<input type="checkbox"/>
Ground water under direct influence of surface water (e.g., shallow well)≠ ≠	<input type="checkbox"/>	<input type="checkbox"/>
Contamination through limestone or fissured rock (e.g., karst)	<input type="checkbox"/>	<input type="checkbox"/>
Contaminated recharge water	<input type="checkbox"/>	<input type="checkbox"/>
Use of an alternate source of water by a water utility	<input type="checkbox"/>	<input type="checkbox"/>
Mixing of raw water from different sources	<input type="checkbox"/>	<input type="checkbox"/>
Improper construction or location of a well or spring	<input type="checkbox"/>	<input type="checkbox"/>
Water system intake failure (e.g., cracked well casing, cracked intake pipe)	<input type="checkbox"/>	<input type="checkbox"/>
Intentional contamination (explain in remarks)	<input type="checkbox"/>	<input type="checkbox"/>
Other, specify:	<input type="checkbox"/>	<input type="checkbox"/>
Unknown	<input type="checkbox"/>	<input type="checkbox"/>

** 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	<input type="checkbox"/>	<input type="checkbox"/>
No disinfection	<input type="checkbox"/>	<input type="checkbox"/>
Temporary interruption of disinfection	<input type="checkbox"/>	<input type="checkbox"/>
Chronically inadequate disinfection	<input type="checkbox"/>	<input type="checkbox"/>
No filtration	<input type="checkbox"/>	<input type="checkbox"/>
Inadequate filtration	<input type="checkbox"/>	<input type="checkbox"/>
Deficiencies in other treatment processes	<input type="checkbox"/>	<input type="checkbox"/>
Corrosion in or leaching from pipes or storage tanks	<input type="checkbox"/>	<input type="checkbox"/>
Pipe/component failure or break (e.g., pipes, tanks, valves)	<input type="checkbox"/>	<input type="checkbox"/>
Contamination during construction or repair of pipes/components	<input type="checkbox"/>	<input type="checkbox"/>
Construction or repair of pipes/components without evidence of contamination	<input type="checkbox"/>	<input type="checkbox"/>
Operator error	<input type="checkbox"/>	<input type="checkbox"/>
Other, specify:	<input type="checkbox"/>	<input type="checkbox"/>
Unknown	<input type="checkbox"/>	<input type="checkbox"/>

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	<input type="checkbox"/>	<input type="checkbox"/>
Low pressure or change in water pressure in the distribution system	<input type="checkbox"/>	<input type="checkbox"/>
Change in water flow direction in the distribution system	<input type="checkbox"/>	<input type="checkbox"/>
Mixing of treated water from different sources	<input type="checkbox"/>	<input type="checkbox"/>
Pipe/component failure or break (e.g., pipes, tanks, valves)	<input type="checkbox"/>	<input type="checkbox"/>
Corrosion in or leaching from pipes or storage tanks	<input type="checkbox"/>	<input type="checkbox"/>
Contamination of mains during construction or repair	<input type="checkbox"/>	<input type="checkbox"/>
Construction or repair of mains without evidence of contamination	<input type="checkbox"/>	<input type="checkbox"/>
Scheduled flushing of the distribution system	<input type="checkbox"/>	<input type="checkbox"/>
Contamination of storage facility	<input type="checkbox"/>	<input type="checkbox"/>
Aging water distribution components (e.g., pipes, tanks, valves)	<input type="checkbox"/>	<input type="checkbox"/>
Water temperature $\geq 30^{\circ}\text{C}$ ($\geq 86^{\circ}\text{F}$)	<input type="checkbox"/>	<input type="checkbox"/>
Intentional contamination (explain in remarks)	<input type="checkbox"/>	<input type="checkbox"/>
Other, specify:	<input type="checkbox"/>	<input type="checkbox"/>
Unknown	<input type="checkbox"/>	<input type="checkbox"/>

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	<input type="checkbox"/>	<input type="checkbox"/>
Cross-connection of potable and nonpotable water pipes resulting in backflow	<input type="checkbox"/>	<input type="checkbox"/>
Lack of backflow prevention in plumbing	<input type="checkbox"/>	<input type="checkbox"/>
Low pressure or change in water pressure in the plumbing	<input type="checkbox"/>	<input type="checkbox"/>
Change in water flow direction in the plumbing	<input type="checkbox"/>	<input type="checkbox"/>
Corrosion in or leaching from pipes or storage tanks	<input type="checkbox"/>	<input type="checkbox"/>
Pipe/component failure or break (e.g., pipes, tanks, valves)	<input type="checkbox"/>	<input type="checkbox"/>
Aging plumbing components (e.g., pipes, tanks, valves)	<input type="checkbox"/>	<input type="checkbox"/>
Contamination of plumbing during construction or repair	<input type="checkbox"/>	<input type="checkbox"/>
Construction or repair of plumbing without evidence of contamination	<input type="checkbox"/>	<input type="checkbox"/>
Deficiency in building/home-specific water treatment after the water meter or property line	<input type="checkbox"/>	<input type="checkbox"/>
Deficiency or contamination of equipment/devices using or distributing water	<input type="checkbox"/>	<input type="checkbox"/>
Contamination during commercial bottling	<input type="checkbox"/>	<input type="checkbox"/>
Contamination during shipping, hauling, or storage	<input type="checkbox"/>	<input type="checkbox"/>
Contamination at point of use – Tap	<input type="checkbox"/>	<input type="checkbox"/>
Contamination at point of use – Hose	<input type="checkbox"/>	<input type="checkbox"/>
Contamination at point of use – Commercially-bottled water	<input type="checkbox"/>	<input type="checkbox"/>
Contamination at point of use – Container, bottle, or pitcher	<input type="checkbox"/>	<input type="checkbox"/>
Contamination at point of use – Unknown	<input type="checkbox"/>	<input type="checkbox"/>
Water temperature $\geq 30^{\circ}\text{C}$ ($\geq 86^{\circ}\text{F}$)	<input type="checkbox"/>	<input type="checkbox"/>
Intentional contamination (explain in remarks)	<input type="checkbox"/>	<input type="checkbox"/>
Other, specify:	<input type="checkbox"/>	<input type="checkbox"/>
Unknown	<input type="checkbox"/>	<input type="checkbox"/>

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Remarks

Water Not Intended for Drinking or Water of Unknown Intent (WNID/WUI)

Intent for Use

What was the intended use for the implicated water? (check all that apply)

- Cooling/Air Conditioning (e.g., cooling tower, swamp cooler)
- Mister (e.g., produce in grocery store, public cooling system)
- Ornamental (e.g., a decorative non-interactive fountain intended for public display and not designed for swimming or recreational use)
- Industrial/Occupational (e.g., steam cleaner)
- Agricultural Irrigation
- Waste water
- Other (specify): _____
- Unknown

Water Description

Water Type <i>(e.g., cooling tower; drainage ditch; fountain- ornamental)</i>	Setting of Exposure <i>(e.g., airport; hospital/health care facility, nursing home; park- state park)</i>	USUAL Water Treatment Provided <i>(e.g., no treatment; disinfection; settling/sedimentation)</i>	Water Treatment Subtype <i>(disinfection or filtration: e.g., boiling; chlorine; rapid sand filter; reverse osmosis)</i>

Laboratory Section

Was the implicated water tested? Yes (specify in table below) No Unknown

Results		1	2	3	4	5
Sample						
Source of Sample						
Additional Description of Source of Sample <i>(e.g., stream not intended for drinking, main A/C unit)</i>						
Date <i>(mm/dd/yyyy)</i>						
Volume Tested	Number					
	Unit					
Temperature	Number					
	Unit					
Residual/Free Disinfectant Level <i>(if total and combined disinfectant levels given, total - combined = free)</i>	Number					
	Unit					
Turbidity (NTU)						
pH						

Water Quality Indicator

Sample Number	Type (e.g., fecal coliforms)	Concentration (number)	Unit (e.g., CFU)

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 (number)	Unit (e.g., oocysts, CFU)	Test Type*	Test Method (reference: National Environmental Methods Index: http://www.nemi.gov)
	<input type="checkbox"/> yes				
	<input type="checkbox"/> yes				
	<input type="checkbox"/> yes				
	<input type="checkbox"/> 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 Contamination and/or Increased Exposure to Contaminated Water

Factors (check all that apply)*	Documented/ Observed**	Suspected**
Cooling tower/evaporative condenser – shutdown for >3 days without draining to waste	<input type="checkbox"/>	<input type="checkbox"/>
Cooling tower/evaporative condenser – lack of a maintenance program	<input type="checkbox"/>	<input type="checkbox"/>
Cooling tower/evaporative condenser – lack of a qualified water quality specialist	<input type="checkbox"/>	<input type="checkbox"/>
Cooling tower/evaporative condenser – presence of scale or corrosion	<input type="checkbox"/>	<input type="checkbox"/>
Cooling tower/evaporative condenser – presence of dirt, organic matter, or other debris in the cold water basin	<input type="checkbox"/>	<input type="checkbox"/>
Cooling tower/evaporative condenser – absence of drift eliminators	<input type="checkbox"/>	<input type="checkbox"/>
Cooling tower/evaporative condenser – presence of damaged drift eliminators	<input type="checkbox"/>	<input type="checkbox"/>
Cooling tower/evaporative condenser – history of recent repairs to the device	<input type="checkbox"/>	<input type="checkbox"/>
Cooling tower/evaporative condenser – siting of device near building air intakes	<input type="checkbox"/>	<input type="checkbox"/>
Cooling tower/evaporative condenser – siting of device near windows that can be opened	<input type="checkbox"/>	<input type="checkbox"/>
Cooling tower/evaporative condenser – siting of device in immediate area of kitchen exhaust fans, live plants, truck bays, or other sources of organic matter	<input type="checkbox"/>	<input type="checkbox"/>
Cooling tower/evaporative condenser – construction on the premises of the device within 6 months before the index case	<input type="checkbox"/>	<input type="checkbox"/>
Cooling tower/evaporative condenser – construction within 100 meters of the premises of the device within 6 months before the index case	<input type="checkbox"/>	<input type="checkbox"/>
Ornamental fountain – presence of submerged lighting	<input type="checkbox"/>	<input type="checkbox"/>
Ornamental fountain – lack of a written cleaning and maintenance program	<input type="checkbox"/>	<input type="checkbox"/>
Ornamental fountain – presence of dirt, organic matter, or other debris in the water basin	<input type="checkbox"/>	<input type="checkbox"/>
Broken/damaged sewer pipe	<input type="checkbox"/>	<input type="checkbox"/>
Recycling of water	<input type="checkbox"/>	<input type="checkbox"/>
Water temperature $\geq 30^{\circ}\text{C}$ ($\geq 86^{\circ}\text{F}$)	<input type="checkbox"/>	<input type="checkbox"/>
Other, specify:	<input type="checkbox"/>	<input type="checkbox"/>
Unknown	<input type="checkbox"/>	<input type="checkbox"/>

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Remarks

Epidemic and laboratory assistance for the investigation of a waterborne disease outbreak is available upon request by the State Health Department to the Centers for Disease Control and Prevention. Please enter this report into the National Outbreak Reporting System (NORS). State/Local investigation reports and questionnaires can also be attached to the report in the electronic system. Communications and requests for epidemic and laboratory assistance may be directed to: Waterborne Disease and Surveillance Coordinator, Division of Parasitic Diseases, National Center for Zoonotic, Vector-Borne, and Enteric Diseases, Coordinating Center for Infectious Diseases, CDC 4770 Buford Highway, NE, MS F-22, Atlanta, GA, 30341-3724 or (770) 488-7775

Public reporting burden of this collection of information is estimated to average 20 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC, Project Clearance Officer, 1600 Clifton Road, MS D-24, Atlanta, GA, 30333, ATTN: PRA (xxxx-xxxx) --DO NOT MAIL CASE REPORTS TO THIS ADDRESS--