

February, 2008 Supplement to 'A Drop of News...' – The Waterborne Disease and Outbreak Surveillance System (WBD OSS) and the National Outbreak Surveillance System (NORS): A Comparison of Data Fields Using CDC Form 52.12



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Overview of Changes to Data Fields from WBD OSS to NORS using CDC Form 52.12

The National Outbreak Reporting System (NORS) will replace both the Waterborne Disease & Outbreak Surveillance System (WBD OSS) and the Electronic Foodborne Outbreak Reporting System (eFORS). This document will go through the sections of the current waterborne outbreak reporting form (CDC 52.12) to demonstrate some of the changes that you will see with the new reporting form and electronic system. Please note that this is just a brief overview. There will be more resources available for training and support in the coming months.

The new reporting system will be set up differently than the current CDC 52.12 form. It will have more fields than the CDC 52.12 and the corresponding paper form will have more pages. *Entering information in NORS will be voluntary for almost all of the variables on the form.* The main reason for the added length is that there will be separate sections for the four main water venues (recreational- treated water, recreational- untreated water, water intended for drinking, and water not intended for drinking/water of unknown intent), created in response to the fact that covering all of these possibilities using combined sections within one form was the single greatest area of confusion for users of the form. We have also added some new variables to NORS in response to multiple written comments on the existing form which demonstrated that our variables were not inclusive enough to fully characterize waterborne outbreaks. For example, the water sample data tables have been expanded (e.g. there are defined fields for sample volume and temperature) and tailored for the four water venues (e.g. the recreational– treated water section contains fields for recording disinfectant levels whereas the recreational—untreated water section does not).

When you enter information into the electronic NORS program, you will be able to skip fields or start a report and add more information later. A brief General section will be followed by a Water-General section. Once you select the water venue in the Water- General section, you will only be asked to fill out the pages for the water venue you have selected. To make the process more flexible, there are only two required fields in the electronic General section and no required variables in the sections that are specific to waterborne disease outbreaks. The required fields in the General section are 'Date first case became ill' and 'Reporting state.'

How CDC Form 52.12 Sections Will Differ in NORS

1. **Type of Exposure.** You will now be asked to select water intended for drinking, treated recreational water, untreated recreational water or water not intended for drinking/water of unknown intent.
2. **Location of Outbreak.** You will now be able to specify if an outbreak was caused by an exposure that occurred in multiple states or multiple counties within the reporting state, as well as indicate that outbreak-associated illnesses occurred in residents of other states.
3. **Date of Outbreak.** You will now be able specify both the date that the first case became ill and the date that last case became ill.
4. **Number of Cases.** This field will include a row for emergency room visits and healthcare provider visits. Age and sex variables will also be available.

Figure 1 Sections 1 through 4 of the CDC 52.12 form

SUBMITTED COPIES OF THIS FORM SHOULD INCLUDE AS MUCH INFORMATION AS POSSIBLE, BUT THE COMPLETION OF EVERY ITEM IS NOT REQUIRED.							
1. TYPE of EXPOSURE: <input type="checkbox"/> Drinking water <input type="checkbox"/> Recreational water <input type="checkbox"/> Other: _____	2. LOCATION of OUTBREAK: State: _____ City or Town: _____ County: _____		3. DATE of OUTBREAK: (Date first case became ill): Mo. Day Yr. [][] [][] [][]		4. NUMBERS OF:		
				Persons exposed:	Actual	Estimated	
				Persons ill:			
				Hospitalized:			
					Fatalities:		

5. **Symptoms.** There will be a drop-down list in the electronic system and a similar list to pick from for the paper form. If a symptom is not listed, you will be able to add it. There will be another section for syndromes, which are broader categories of symptoms (i.e. gastrointestinal symptoms/conditions).
6. **Incubation period.** 'Mean' incubation period will be removed. 'Minutes' will be included as an additional time unit.
7. **Duration of illness.** 'Mean' duration of illness will be removed. 'Minutes' will be included as an additional time unit.

Figure 2 Sections 5 through 7 of the CDC 52.12 form

5. HISTORY of EXPOSED PERSONS: Enter the no. of persons with the following symptoms:		NO. OF PERSONS INTERVIEWED: []	NO. OF INTERVIEWED PERSONS WHO WERE ILL: []	6. INCUBATION PERIOD:	7. DURATION of ILLNESS:
Diarrhea (≥3 stools/day): _____	Diarrhea (other): _____ / (Specify definition): _____			Shortest: _____ Hrs. Days	Shortest: _____ Hrs. Days
Visible blood in stools: _____	Nausea: _____	Fever: _____	Vomiting: _____	Cramps: _____	Longest: _____ Hrs. Days
Eye infections: _____	Ear infections: _____	Skin infections: _____	Rash: _____	Dermatitis: _____	Median: _____ Hrs. Days
Respiratory symptoms: _____	Other, specify: _____			Mean: _____ Hrs. Days	Mean: _____ Hrs. Days

8. **Specimens examined.** This section will have fields for details on the type of specimen and type of testing. Standardized responses will be present in a drop-down list. There will be a section for state lab isolate numbers.
9. **Etiology of outbreak.** This field has been updated to more accurately reflect the changes in clinical laboratory testing (e.g., genotyping, PFGE). This will allow the comparison of testing results between outbreaks to help determine if the outbreaks are linked.

Figure 3 Sections 8 and 9 of the CDC 52.12 form

8. SPECIMENS EXAMINED from PATIENTS: (stool, vomitus, serum, etc.)				9. ETIOLOGY of OUTBREAK:		
SPECIMEN	No. PERSONS	FINDINGS	Agent (if not known enter "Unk.")	Diagnostic Certainty		
				Confirmed	Suspected	
EXAMPLE Stool	11	8 <i>Giardia intestinalis</i> 3 negative	Pathogen:	<input type="checkbox"/>	<input type="checkbox"/>	
			Chemical:	<input type="checkbox"/>	<input type="checkbox"/>	
			Other:	<input type="checkbox"/>	<input type="checkbox"/>	
Comments:						

10. **Epidemiological data.** There will be an added variable to auto-calculate the attack rate. There will be variables in other sections for the type of investigation (e.g. case-control, cohort) and event-associated outbreaks.

Figure 4 Sections 10 of the CDC 52.12 form

10a. EPIDEMIOLOGIC DATA: (e.g., vehicle/source - specific attack rates; dose-response curve, attach local and/or state report if available)										
EXPOSURE (vehicle/source)	Number of Persons EXPOSED				Number of Persons NOT EXPOSED				ODDS/RISK RATIO (if available)	p VALUE or CONFIDENCE INTERVAL (if available)
	ILL	NOT ILL	TOTAL	% ILL	ILL	NOT ILL	TOTAL	% ILL		

No data were collected from comparison groups to estimate risk but water was the only common source shared by persons who were ill.

10b. Comments:

11. **Water supply characteristics.** This section will be changed to reduce confusion about what needs to be completed for different types of outbreaks. In the new forms, the water supply section will be tailored to each of the four water venues and each section will more accurately reflect the characteristics of those venues. You will only see questions pertaining to the chosen water type.

Figure 5 Section 11 of the CDC 52.12 form

11. WATER SUPPLY CHARACTERISTICS: (check all that apply for drinking water or recreational water)		*If recreational water outbreak, this refers to recreational water treatment
a) TYPE OF DRINKING WATER SUPPLY: <input type="checkbox"/> Community or Municipal <input type="checkbox"/> City or County (Name: _____) <input type="checkbox"/> Subdivision <input type="checkbox"/> Trailer Park <input type="checkbox"/> Noncommunity (does not obtain water from a community water system, but has developed/maintained its own water supply) <input type="checkbox"/> Camp, Cabin, Recreational area <input type="checkbox"/> School <input type="checkbox"/> Restaurant <input type="checkbox"/> Hotel, Motel <input type="checkbox"/> Church <input type="checkbox"/> Other: _____ <input type="checkbox"/> Individual household supply <input type="checkbox"/> Bottled water <input type="checkbox"/> Other: _____ <input type="checkbox"/> Unknown	b) WATER SOURCE OR SETTING: <input type="checkbox"/> Well <input type="checkbox"/> Spring/Hot spring <input type="checkbox"/> River, Stream <input type="checkbox"/> Lake, Pond, Reservoir <input type="checkbox"/> Ocean <input type="checkbox"/> Pool <input type="checkbox"/> Waterpark <input type="checkbox"/> Community/municipal <input type="checkbox"/> Subdivision/neighborhood apartment <input type="checkbox"/> Hotel/motel <input type="checkbox"/> Membership club <input type="checkbox"/> Private home <input type="checkbox"/> Kiddie/wading <input type="checkbox"/> Fountain <input type="checkbox"/> Interactive <input type="checkbox"/> Ornamental <input type="checkbox"/> Waterpark <input type="checkbox"/> Hot tub <input type="checkbox"/> Whirlpool/spa pool <input type="checkbox"/> Other: _____ <input type="checkbox"/> Unknown	c) WATER TREATMENT PROVIDED:* <input type="checkbox"/> No treatment <input type="checkbox"/> Disinfection <input type="checkbox"/> Chlorine <input type="checkbox"/> Chlorine and Ammonia (chloramine) <input type="checkbox"/> Bromine <input type="checkbox"/> Ozone <input type="checkbox"/> U.V. <input type="checkbox"/> Other: _____ <input type="checkbox"/> Unknown <input type="checkbox"/> Coagulation and/or Flocculation <input type="checkbox"/> Settling (sedimentation) <input type="checkbox"/> Filtration at purification plant (don't include home filters) or pool <input type="checkbox"/> Rapid sand <input type="checkbox"/> Slow sand <input type="checkbox"/> Diatomaceous earth <input type="checkbox"/> Other: _____ <input type="checkbox"/> Unknown <input type="checkbox"/> Other: _____ <input type="checkbox"/> Unknown



12. **Factors contributing to drinking water contamination.** This field will be expanded and only found within the section for drinking water. You will be able to indicate whether or not a factor was 'documented/observed' or 'suspected.'

Figure 6 Section 12 of the CDC 52.12 form

<i>IF RECREATIONAL EXPOSURE, PROCEED TO QUESTION (13), OTHERWISE PROCEED TO (12a).</i>		
12. FACTORS CONTRIBUTING TO DRINKING WATER CONTAMINATION: (check <u>all</u> that apply) *See 16		
a) Contamination at the water source: <input type="checkbox"/> Overflow of sewage <input type="checkbox"/> Underground seepage of sewage <input type="checkbox"/> Septic system drainage	<input type="checkbox"/> Flooding, heavy rains <input type="checkbox"/> Use of a back-up source of water by a water utility <input type="checkbox"/> Improper construction or location of well or spring <input type="checkbox"/> Contamination of wells through limestone or fissured rock	<input type="checkbox"/> Contamination from wild/domestic animals <input type="checkbox"/> Chemical pollution <input type="checkbox"/> Algal bloom <input type="checkbox"/> Other: _____ <input type="checkbox"/> Unknown
b) Water treatment deficiencies:		
<input type="checkbox"/> No disinfection <input type="checkbox"/> Temporary interruption of disinfection <input type="checkbox"/> Chronically inadequate disinfection	<input type="checkbox"/> No filtration <input type="checkbox"/> Inadequate filtration <input type="checkbox"/> Deficiencies in other treatment processes	<input type="checkbox"/> Other: _____ <input type="checkbox"/> Unknown
c) Contamination in the water distribution system or home plumbing:		
<input type="checkbox"/> Cross connection of potable and non-potable water pipes resulting in back siphonage (negative pressure or backflow)	<input type="checkbox"/> Contamination of mains during construction or repair <input type="checkbox"/> Contamination of storage facility <input type="checkbox"/> Contamination in building/home	<input type="checkbox"/> Other: _____ <input type="checkbox"/> Unknown
d) OTHER REASONS/CONTRIBUTING FACTORS FOR CONTAMINATION OF WATER (eg. corrosive water):		

13. **Route of entry for recreational exposure.** This field will now apply to all of the water venues. 'Accidental ingestion' and 'Intentional ingestion' will be combined as 'Ingestion' because it can be difficult to gauge an exposed person's intent.

Figure 7 Section 13 of the CDC 52.12 form

13. ROUTE OF ENTRY FOR RECREATIONAL EXPOSURE:	
<input type="checkbox"/> Accidental ingestion <input type="checkbox"/> Intentional ingestion <input type="checkbox"/> Contact <input type="checkbox"/> Inhalation	<input type="checkbox"/> Other: _____ <input type="checkbox"/> Unknown
14. FACTORS CONTRIBUTING TO RECREATIONAL WATER CONTAMINATION: (check <u>all</u> that apply) *See 16	

14. **Factors contributing to recreational water contamination.** As with #12, the factors for recreational water outbreaks will be expanded and included in the appropriate sections for treated and untreated venues.

Figure 8 Section 14 of the CDC 52.12 form

14. FACTORS CONTRIBUTING TO RECREATIONAL WATER CONTAMINATION: (check <u>all</u> that apply) *See 16	
a) FRESH OR MARINE WATER (e.g. lakes, rivers, oceans): <input type="checkbox"/> High bather density/load <input type="checkbox"/> Fecal accident by bather(s) <input type="checkbox"/> Use by diaper/toddler aged children <input type="checkbox"/> Overflow or release of sewage	<input type="checkbox"/> Flooding, heavy rains <input type="checkbox"/> Stagnant water <input type="checkbox"/> Water Temperature $\geq 30^{\circ}\text{C}$ <input type="checkbox"/> Chemical pollution
<input type="checkbox"/> Algal bloom <input type="checkbox"/> Animal feces observed near site <input type="checkbox"/> Agricultural/animal production in watershed <input type="checkbox"/> Unprotected watershed <input type="checkbox"/> Other: _____ <input type="checkbox"/> Unknown	
b) FILTERED AND/OR DISINFECTED SWIMMING VENUES (e.g. swimming pools, water parks, hot tubs, whirlpools/spa pools):	
<input type="checkbox"/> High bather density/load <input type="checkbox"/> Fecal accident by bather(s) <input type="checkbox"/> Use by diaper/toddler aged children <input type="checkbox"/> No disinfection	<input type="checkbox"/> Inadequate disinfection <input type="checkbox"/> Poor monitoring of disinfection levels <input type="checkbox"/> Cross contamination (specify _____) <input type="checkbox"/> Combined adult/child pool filtration systems
<input type="checkbox"/> No filtration <input type="checkbox"/> Inadequate filtration <input type="checkbox"/> Other: _____ <input type="checkbox"/> Unknown	
15. WATER SPECIMENS EXAMINED: (provide information for routine samples collected before and during the outbreak investigation as well as for any special lab studies)	

15. **Water specimens examined.** This field will be modified for each of the water venues to better capture the environmental testing that is being done in waterborne outbreak settings. There will also be fields for bottled water trace-back and recalls in the General section.

Figure 9 Section 15 of the CDC 52.12 form

15. WATER SPECIMENS EXAMINED: (provide information for routine samples collected before and during the outbreak investigation as well as for any special lab studies)				
<input type="checkbox"/> NONE TESTED		LABORATORY RESULTS		
ITEM	DATE	MICROBIOLOGY	DISINFECTANT RESIDUAL	TURBIDITY
EXAMPLES Tap Water	10/11/01	Total coliforms- none found in two 100ml samples; Giardia- 10 cysts/100L	0.5 mg/L	0.1 NTU
Untreated Raw Water	11/02/01	23 fecal coliforms per 100 ml	Not Done	10.0 NTU
System History	Prev. 3 mos	MCL for total coliforms exceeded month before outbreak	NA	>MCL
Source Water	Prev. 2 wks	Heavy runoff, high turbidity	NA	5.0 NTU

16. **Remarks.** Space will be available for both general and water venue-specific remarks. Reporting agency information will be captured in the General section of the electronic and paper form. Supplemental information (e.g. a final report) may be uploaded from your computer and attached to the electronic form or printed out and submitted to the CDC along with the paper form.

Figure 10 Section 16 and contact information section of the CDC 52.12 form

16. REMARKS: Clarify for sections 12 and 14 which checked items are confirmed or are suspected factors		Briefly describe the unusual aspects of the outbreak and/or the outbreak investigation not covered above. Attach epidemic curve and summary report, if available.	
Person to contact for information about water quality or water system:	Person completing form: (please print)	E-MAIL: _____	Date investigation initiated:
NAME: _____	NAME: _____	TEL NO: (____) _____	MO / DAY / YR
AGENCY: _____	AGENCY: _____	DATE OF REPORT: MO / DAY / YR	MO / DAY / YR