

The CDC 52.12 form for NORS, Module 5: Water Intended for Drinking (Drinking Water)

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1 INTRODUCTION

This module will show you how to complete the Drinking Water tabs. After you have selected Drinking Water as the type of water exposure in the Water-General section and entered data for this section, go to the Drinking Water tab to enter data about the water system, water quality and testing, as well as any contributing factors known or suspected to be associated with the outbreak.

Data entry for the Water-General tabs and the tabs for other types of water exposure are covered in separate training modules. Please review the trainings for each section before completing it for the first time. If you have additional questions about this form, a guidance document for the paper form is available online. This document also contains pick-lists to help you complete several of the fields. Please contact your agency or reporting site administrator if you have questions about the reporting process for your site.

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For the Drinking Water tab, we will review data from a practice report that describes an outbreak of non-O157 Shiga toxin-producing *Escherichia coli* at a restaurant. In this scenario, let's assume that only the people who drank ice water with their meals became ill. We will report information about the drinking water system used by the restaurant.

The Drinking Water Vehicle Description section describes the water that was the vehicle for disease transmission. Let's review the two rows of data already completed in this table. The data rows tell us that the outbreak involved a non-transient noncommunity water system that drew its water from a reservoir, and that the water was both filtered and disinfected.

The first field is 'Water Type'. This is where the type of water system, such as non-transient noncommunity, should be reported. Water system definitions have been included directly below the table to help you complete this field.

Next, enter the 'Public Water System EPA ID Number' if you are reporting a water type that is a public water system. The EPA ID number is used in EPA reporting to uniquely identify public water systems within each state. Since this example does not reflect a real system, the field has been left blank, however, if you need to find an EPA ID number, the website where you can look it up is listed below the table. The 'Water Source' for the drinking water system is 'surface water' and the entry in this field determines the options for 'Water Source Description'. Refer to the

CDC 52.12 guidance document for pick list options. Here, 'Lake/Reservoir/Impoundment' has been selected as a more detailed description of the water source.

The final three fields describe the setting of exposure, the usual water treatment and the water treatment subtype. 'Setting of Exposure' is 'Restaurant/Cafeteria' 'Usual Water Treatment Provided' is listed as 'filtration'. The 'Water Treatment Subtype' field is only used to describe disinfection or filtration treatments. In this example, the filtration subtype is 'rapid sand'.

We see that another row was completed to report a second treatment method. Everything in this second row is the same, except the 'Usual Water Treatment Provided' is 'disinfection' and the 'Water Treatment Subtype' is 'chlorine'.

The Drinking Water Quality section contains three questions about drinking water system violations that may have occurred prior to the outbreak. If you need to look for this information, it may be obtained from utility records, consumer confidence or water quality reports, as well as from violation records at state and local health departments. If the answer to a question is 'yes', a brief explanation should be provided in the space following the question.

The first question asks if there were there any monitoring violations in the month leading up to the outbreak. The answer in this report is 'Yes' and the explanation is "Failed to test according to required schedule".

The second question asks if there were any maximum contaminant level violations in the month prior to the outbreak. The answer in this report is 'unknown'.

The third question asks of there were any violations in the 12 months prior to the outbreak, and the answer is again 'unknown'.

Now we will go to the Laboratory Section to review how data from water sampling and testing are reported. The first question asks 'Was drinking water tested?'. For this example, 'yes' has been checked.

Since water was tested, let's next move to the Water Quality Results table. Data are entered here in columns instead of rows. We will look at the existing column about a restaurant kitchen sample. This column has a 'Sample Number' of '1'. We will refer to the sample number again in the next two tables.

'Source of Sample' has been reported as 'restaurant - kitchen'. 'Additional Description...' should be a brief description about where and how the sample was collected and any treatments applied to the sample before it went to the laboratory. The additional description in this table tells us that a sample was collected from the faucet and treated with sodium thiosulfate before being sent on ice to the laboratory. For 'Date', July 26, 2007, is the date that the sample was collected.

The results for the remaining fields should be collected at the time of sampling, before any treatment has been applied to the sample. In this example, the volume was 50 liter, the temperature was 45 degrees Fahrenheit, the residual level was 0.05 parts per million, the pH was 7 and the turbidity—in NTUs—was 1.

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Going to the next page, the Water Quality Indicator section is used to report standard measures of water quality, such as coliform levels. The 'Sample Number', in this example is '1' to correspond to the water sample in the previous table. The 'Type' is 'fecal coliforms' and the 'Concentration' of fecal coliforms is '55'. The 'Unit' for the concentration is 'CFU/100 mL'.

Next, let's look at the Microbiology or Chemical/Toxin Analysis table. This table is similar to the Clinical Specimens table that was reviewed in the Water-General training module. The data should include both positive and negative findings, which means that if water was tested for a specific pathogen or chemical, the pathogen or chemical should have its own data row, along with whether or not the test results were positive. Secondly, there should be a row for each level of testing performed, as we will see below for *E. coli*.

In this example, the 'Sample Number' is '1', again referencing the water sample described in column one of the Water Quality Results table. The genus is '*Escherichia*' and the species is '*coli*, enterohemorrhagic'. 'Serotype..', 'Genotype/Subtype' and 'PFGE Pattern' have been left blank because the laboratory did not look for that information in the first round of testing. 'Test Results Positive?' is checked off to indicate that *E. coli* was found in the sample. This is different from the Clinical Specimens table, where the field for confirmed etiology is only checked off for the most detailed description of the etiologic agent. The 'Concentration' reported by the laboratory was '5' with a 'Unit' of 'CFU/100 mL'. The 'Test Type' used by the laboratory was 'Culture'. Refer to the list directly below the table for additional assistance with the 'Test Type' field. 'Test Method' is a field that refers to standard laboratory procedures used to isolate or detect a microbe or chemical. This is a field that laboratory staff should be able to assist with, and further information can also be found in the guidance document for the form.

The second row contains results for the testing that attempted to identify the serotype. Again, the 'Sample Number' is '1'. The genus and species are the same as above. In the 'Serotype...' field, we can see that testing was specific for 'O157:H7'. The box for 'Test Results Positive?' has not been checked off, telling us that the test results were negative. Unsurprisingly, the 'Concentration' is '0' for a 'Unit' of 'CFU/100 mL', The 'Test Type' listed here is again 'culture'. Note that the 'Test Method' used by the laboratory is specific to *E. coli* O157:H7.

The next section is used to report Contributing Factors for the outbreak. There are four questions about contributing factors and each question has its own set of factors. Factors can be labeled as confirmed or documented factors, or as suspected factors. Please do not report factors that were not documented, observed or suspected. The guidance document contains a more detailed explanation of key terms and concepts referenced in this section.

For this report, assume that local weather reports showed that there were heavy rains on several days prior to the outbreak. The investigators suspected that there was a temporary interruption of disinfection during the time period leading up to the outbreak and documented that there was inadequate filtration.

The first question asks if a problem with the source water contributed to the outbreak. The answer is 'yes' and the factor that was reported is 'Flooding/heavy rains'. The factor is a documented factor.

The next three questions are on the remaining pages.

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The second question asks if a problem with the water treatment prior to entry into a house or building contributed to the outbreak. The answer is 'yes' and two factors have been reported. 'Inadequate filtration' is a documented factor. 'Temporary interruption of disinfection' is a suspected factor.

The third question asks if a problem with the distribution system contributed to the outbreak. The answer to this question is dependent on the type of water system, so you may find it helpful to review the note directly below this question when you are completing a report. Here, the answer is 'unknown' and no contributing factors have been selected.

The fourth question asks if a problem after the water meter or outside the jurisdiction of a water utility contributed to the outbreak. The examples directly below the question may be helpful. Here, the answer is 'no' and again, no contributing factors have been selected.

Now let's go to the last page.

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Finish the report by entering up to 1500 characters of text in the Remarks field.

Thank you for reviewing the information contained in this module. This is the end of the training for the Drinking Water section of the CDC 52.12 waterborne disease outbreak reporting form. Please refer to the guidance document for the form or the other online training modules before completing additional sections of the form.