



Overview of Activities

1. Introduction
2. Reporting Discussion
3. Reporting Presentation
4. Review

Learning Outcomes

At the end of this session participants will be able to:

1. Explain the purpose of a DWQT report
2. Present a summary DWQT report

Materials & Preparation

- Activity: Introduction
- Activity: Report Presentation
- Handout: Case Studies for Reporting Exercise. See end of lesson (three pages, one case study per group)
- Trainer's Guides. See end of lesson (three pages, for trainer's use only)
- Review trainer's guides for each case study to help with interpretations
- Handout: Key Presentation Points template. See end of lesson (one page per participant)
- Activity: Review

Recommended Reading

- Technical Brief: Interpreting and Reporting Drinking Water Quality Test Results

5 minutes



Introduction

1. Stand in a line or in a circle with all the participants.
2. Whisper in the ear of one participant and have them pass on the information to the next person by whispering to them (once only). Each participant repeats the phrase to the next person until everyone has heard the phrase once.
Suggested phrases:
 - The water is contaminated in the shallow well
 - The arsenic in our water is within the guidelines
 - The water is not dangerous for drinking
3. Ask participants in the middle and at the end of the line what they heard.
4. Tell the participants what you actually said at the beginning of the activity.
5. Debrief the activity. Ask:
 - “What did you hear that was different from what I said?”
 - “What difficulties did you experience?”
 - “How could we overcome those difficulties?”
 - “What are the parallels in understanding DWQT results when using language or concepts that are not familiar?”
6. Present the learning outcomes or an overview of the lesson.

20 minutes



Reporting Discussion

1. Present a sample scenario: “You conducted drinking water quality testing in a rural community as part of a project evaluation. You discovered that the source water has extremely high levels of E. coli bacteria, indicating fecal contamination.”
2. Ask: “Why is reporting the results of the water quality tests important?”
 - Raises awareness of drinking water quality for users and communities
 - Advises corrective actions to ensure safe drinking water
 - Gives feedback to improve project implementation and to inform programs
 - Used as an awareness and mobilization tool
 - Presents test results in an understandable, organized way (e.g., tables, graphs)
 - Provides interpretation of the findings
 - Provides conclusions and recommendations

3. Explain that, working in groups, they will have five minutes to decide how they are going to present results to different audiences.
4. Divide the participants into three groups. Ask them to find some space, allow them five minutes to discuss in their groups.
 - Group 1 audience: Community members
 - Group 2 audience: Supervisors back at the office
 - Group 3 audience: Local government
5. Ask groups to explain how they would present the results to their assigned audience.
6. Ask: “Why is it important to present results appropriate to the audience?”
 - Using overly technical language can cause confusion and misunderstanding.
 - Plain language is preferable when communicating on a community level.
 - Providing test results without appropriate guidance and interpretation could lead to misinterpretation and inappropriate action or inaction.
 - Drinking water quality testing can be a great tool to raise awareness and help mobilize people to take action, as long as the results are interpreted properly and presented clearly.
 - Determining the objectives of the audience will guide how to present test results. (e.g., informing a program, community awareness, funder requirements)
 - Influencing governments on local water quality concerns.

Trainer tip

Make sure each group has a mix of abilities and understanding of the material.

Key Points

- The purpose of a report is to share results, conclusions, and recommendations to an audience.
- Test results and data are of no value without interpretation and reporting of findings.

90 minutes

Report Presentation

1. Explain that, working in the same small groups, participants are going to report and present the results of a case study to the large group. The report should be structured in a way that meets the needs of the audience of the report. Only use the data relevant to the audience.
2. Hand out flip chart paper, markers and a different case study to each group.
3. Post the key points for the report presentation in front of the room:
 1. Identify the audience for the report
 2. Present data in an organized and easy to read format (e.g., graphs or tables compared to WHO guidelines or other options appropriate to the audience)
 3. Make interpretations and conclusions
 4. Provide recommendations

4. Allow 45 minutes for groups to create a report and prepare a presentation.
5. Give a 15-minute warning.
6. Invite participants to return to the large group.
7. Hand out the Key Presentation Points template.
8. Instruct the participants to use the Key Presentation Points template to record their feedback when other groups give their presentations. There will be a discussion after the presentations are finished.
9. Ask groups to briefly describe their case study then present their reports as though speaking to the audience stated in the case study.
10. Allow 10-15 minutes for each group to present their reports including time for questions.
11. Encourage participants to respond and ask questions as though they are the intended audience for the reports.
12. Use the trainer's guides to help lead the discussions. *Trainer tip: be prepared with questions to stimulate the discussion.*
13. Remind participants to record their impressions for later feedback to the presenters.

Trainer Tips

Circulate among the groups and provide clarification and assistance if required.

Allow small groups to convene wherever they are most comfortable. Encourage them to spread out.

15 minutes

Review



1. Working in the same groups, discuss how the other presentations met, or did not meet, the key points outlined in the handout.
2. Allow five minutes for groups to write on pieces of paper two things they liked about each presentation and one thing that could be improved about the presentations.
3. Collect the papers and pass them out to the appropriate groups.
4. Allow five minutes for groups to read the feedback on their presentations.
5. Explain that this will help to refine how they present results to different audiences.

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Case Study #1

Haiti

In January 2014, a field study of households was conducted to evaluate the performance of a biosand filter (BSF) project implementation in Haiti. Approximately 550 filters were installed in the area over a three-year period by the project implementer. The objective of the study was to inform the project implementer of the effectiveness of the project and to provide recommendations for future projects.

Interviews, observations and water sampling were carried out by three teams, each consisting of a trainer, BSF technician and water quality lab technician. Household surveys were conducted on 101 project households and water quality testing (WQT) was carried out on 49 households and 16 water sources (boreholes). The water samples were collected from source, transport, filtered and stored water. The tests were carried out for three indicators: turbidity, pH and E. coli (microbiological) with results compared to WHO guidelines.

Test results were collected and the average across all samples are listed below:

Table 1: Water quality test results

Sample Description	Number of Samples Tested	Average Turbidity Test Results	Average pH Test Results	Average E. Coli Test Results
Source Water	16	0.9	7.5	2
Transport Water	49	-	-	47
Filtered (treated) Water	49	0.4	7.8	4
Storage Water	49	-	-	50

Note: Actual test results from a project evaluation.

Observations recorded in the field include:

- Most households use open buckets for storing water
- 68% of storage containers were covered and clean
- Filters were located inside the households and were in good condition
- No residual chlorine was detected in any of the storage containers
- On average, more than 90% of users felt the water looked, smelled and tasted better after filtration
- 56% used the dip method to get water from the storage container; 41% used taps

Trainer's Guide: Case Study #1 – Haiti

Interpretations and Conclusions:

- Audience: Project Implementer
- Presentation should include a graph showing E. coli levels in source, transport, filtered and storage
- Filters are working well, % removal effectiveness of E. coli = 91% (when calculated from transport vs filtered)
- Transport buckets are dirty and are adding contamination to the source water
- E. coli levels exceed WHO guidelines of zero per 100 mL
- Contamination in storage is significant and reverses the benefits of filtration *Trainer tip: this is the most significant result of the evaluation*
- Possible that buckets used for transport are also used for storage
- Dipping could be introducing contamination to storage buckets
- Turbidity is reduced, % removal effectiveness of turbidity = 56%
- Turbidity (filtered) is within WHO guidelines for small community water systems (no more than 1 NTU)
- pH is within WHO range for most drinking water (6.5-8.5)
- The slight increase in pH may be due to the concrete in the filter, not significant

Recommendations:

- Clean transport and storage buckets with soap and clean water
- Post-filtration disinfection is needed (no residual chlorine found in the stored water)
- Recommend providing safe storage containers as part of the implementation plan
 - i. Tight-fitting lid (to keep water safe)
 - ii. Easy to clean
 - iii. Tap or narrow opening (so water can be poured out instead of users dipping hands or cups into it)
 - iv. Not transparent (to prevent algae growth)
 - v. Stable base (to prevent tipping)
- Reinforce community WASH training
- Add community WASH promoters to program implementation
- Routine monitoring and follow-up visits to reinforce correct use of the filters
- Hold community workshops/training on safe storage methods to maintain a safe drinking water supply. Use community WASH promoters to deliver this information.

Case Study #2

Nepal

A local organization implemented a household water treatment project in a rural community in Nepal. It installed ceramic candle filters in the village households. Community members collect water from three water sources and think the water is safe because it appears clean.

The implementer noticed that householders did not always use the filters and asked for water quality testing to show the villagers the importance of using the filters for safe water. The objective of the testing was to demonstrate how clear water may not be safe water to the rural community members.

You conducted microbiological testing on the three water sources and three filtered samples from households that used the ceramic candle filters. You used presence-absence tests and membrane filtration tests to detect microbiological contamination in the samples.

Table 1: Microbiological test results

Location	Sample Description	<i>E. coli</i> Test Results CFU/100 ml (Membrane Filtration)	Presence/Absence Results (H_2S)
Source #1	Baobab Spring with open pipe	301	Positive (very dark colour)
Source #2	Acacia Spring (protected)	73	Positive (dark colour)
Source #3	Jacaranda Reservoir	22	Positive (somewhat dark colour)
Household #1	Filtered water from ceramic candle filters	1	Negative (no colour change)
Household #2	Filtered water from ceramic candle filters	0	Negative (no colour change)
Household #3	Filtered water from ceramic candle filters	0	Negative (no colour change)

Test results for training purposes only.

Observations recorded in the field include:

- Some householders are not using the filters consistently; they believe that clear water is safe
- Safe storage practices are lacking
- Source protection is lacking

Trainer's Guide: Case Study #2 – Nepal

Interpretations and Conclusions:

- Audience: Community members
- Presentation of results could be showing the community members the P-A test vials and explaining what the results mean
- Presence-absence (P-A) tests show that fecal contamination is likely in all three source water samples
- P-A tests show that fecal contamination is not likely in the filtered water
- Membrane filtration (MF) tests confirm that fecal contamination is present in the source samples
- P-A tests qualitatively show the level of contamination by the darkness of the colour change in the samples
- The perception that clear water is safe water is disproved by the test results
- P-A testing can be used to demonstrate in a simple way that clear water is not necessarily safe water
- *Trainer tip: It isn't necessary to show the villagers the MF test results unless there is a high literacy level. The objective of the testing is to show that clear water is not necessarily safe water and that can be done using the P-A test results alone.*
- *Trainer tip: Remind participants that using P-A tests can yield uncertain results and should be used with caution.*

Recommendations to the community:

- Use the ceramic candle filters to ensure safe drinking water
- Use safe storage methods
- Use post filtration disinfection to keep stored water safe
- Protect the water sources to minimize contamination
- Ask the implementer for training on how to protect the water source
- Use safe water transport methods
- Clean transport and safe storage containers regularly
- Do not use the same containers for transport and storage
- Select a community WASH promoter for the village
- Get community WASH training from the implementer or other agency
- Ask for follow up visits to support the use and maintenance of the filters
- Create a community WASH group to discuss WASH issues

Case Study #3

Nepal

A local organization implemented a household water treatment project in a rural community in Nepal. It installed ceramic candle filters in the village households. Community members collect water from three water sources.

The project funder is considering funding another similar project in a nearby village. The funder has requested drinking water quality assessment of the filters installed in the implementation area and wants to know if the filters are providing safe water to the village before they support another project. The objective of the testing is to demonstrate to the funder that the filters provide safe water to the rural community members.

You conducted microbiological testing on the three water sources and three filtered samples from households that used the ceramic candle filters. You used presence-absence tests and membrane filtration tests to detect microbiological contamination in the samples.

Table 1: Microbiological test results

Location	Sample Description	<i>E. coli</i> Test Results CFU/100 ml (Membrane Filtration)	Presence/Absence Results (H_2S)
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Household #3	Filtered water from ceramic candle filters	0	Negative (no colour change)

Test results for training purposes only.

Observations recorded in the field include:

- Some householders are not using the filters consistently; believe that clear water is safe
- Safe storage practices are lacking
- Source protection lacking

Trainer's Guide: Case Study #3 – Nepal

Interpretations and Conclusions:

- Audience: Funder
- Presentation of results could be presented as a graph or a table with WHO guideline values
- Membrane filtration (MF) tests demonstrate that fecal contamination is present in the source samples
- % removal effectiveness of E. coli for the filtered samples ranges from 95% - 100%
- Untreated source water in the Acacia spring and Jacaranda reservoir are polluted and should be treated
- Untreated source water in the Baobab spring is dangerous and must be treated
- All source samples exceed WHO guidelines for fecal (E. coli) contamination (0 CFU / 100 mL)
- One filtered sample exceeds WHO guidelines but is of reasonable quality, according to the risk table, and may be consumed as is
- Observations and interviews with the community members showed that not all are using the filters because they believe that clear water is safe water
- *Trainer tips: it isn't necessary to show the funder the P-A test results because the MF results are more accurate. The objective of the testing is to demonstrate to the funder that the technology is providing safe water to the village.*

Recommendations to the funder:

- Source water should be treated before consumption by the community
- The ceramic candle filters are working well
- Ceramic candle filters are a good choice for water treatment in the community
- Demonstrate how clear water may not be safe water to the rural community members
- Community WASH training should be included in project implementation
- Conduct follow up monitoring to identify risks to the project
- Follow up visits to support the use and maintenance of the filters
- Encourage the use of community WASH promoters to interface with the project implementer and community members
- Encourage community WASH groups to address WASH issues
- Safe storage training for filter recipients
- Post filtration disinfection training for filter recipients
- Include source water protection in project plans to minimize contamination

Key Presentation Points Handout

Key Presentation Points Template

Use this template to record impressions and feedback for presentations.

Key Presentation Points Table

Case Study	Key Presentation Points	√	Comments/Feedback
#1 Haiti	Identify audience for the report		
	Data organized		
	Interpretations and conclusions		
	Recommendations		
#2 Nepal	Identify audience for the report		
	Data organized		
	Interpretations and conclusions		
	Recommendations		
#3 Nepal	Identify audience for the report		
	Data organized		
	Interpretations and conclusions		
	Recommendations		