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Participants' Guide

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Conducting a Surveillance Problem Analysis on Poor Feedback from Reference Laboratory, Liberia, February 2016

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Abstract

The laboratory plays a major role in surveillance, including confirming the start and end of an outbreak. Knowing the causative agent for an outbreak informs the development of response strategies and management plans for a public health event. However, issues and challenges may arise that limit the effectiveness or efficiency of laboratories in surveillance. This case study applies a systematic approach to analyse gaps in laboratory surveillance, thereby improving the ability to mitigate these gaps. Although this case study concentrates on factors resulting in poor feedback from the laboratory, practise of this general approach to problem analysis will confer skills required in analysing most public health issues. This case study was developed based on a report submitted by the district surveillance officer in Grand Bassa County, Liberia, as a resident of the Liberian Frontline Field Epidemiology Training Program in 2016. This case study will serve as a training tool to reinforce lectures on surveillance problem analysis using the fishbone approach. It is designed for public health training in a classroom setting and can be completed within 2 hours 30 minutes.

How to Use the Case Study

General instructions: Ideally, 1 to 2 instructors facilitate the case study for 8 to 20 students in a classroom or conference room. The instructor should direct participants to read a paragraph out loud, going around the room to give each participant a chance to read. When the participant reads a question, the instructor directs all participants to answer or engage in discussions. The instructor may split the class to play different roles or take different sides in answering a question. As a result, participants learn from each other, not just from the instructors. Specific instructor's notes are included with each question in the instructor's version of this case study.

Audience: Residents in Frontline Field Epidemiology Training Programs (FETP-Frontline), Field Epidemiology and Laboratory Training Programs (FELTPs), and others who are interested in this topic.

Prerequisites: Before using this case study, case study participants should have received lectures or other instruction in surveillance problem analysis using the fishbone approach.

Materials needed: Laptop with Microsoft Office applications, flipchart or white board with markers

Level of training and associated public health activity: Basic – public health surveillance

Time required: Approximately 2 hours 30 minutes

Language: English

Participant's Guide

Goal of Case Study – Simulate surveillance problem analysis of poor feedback from the laboratory on test results

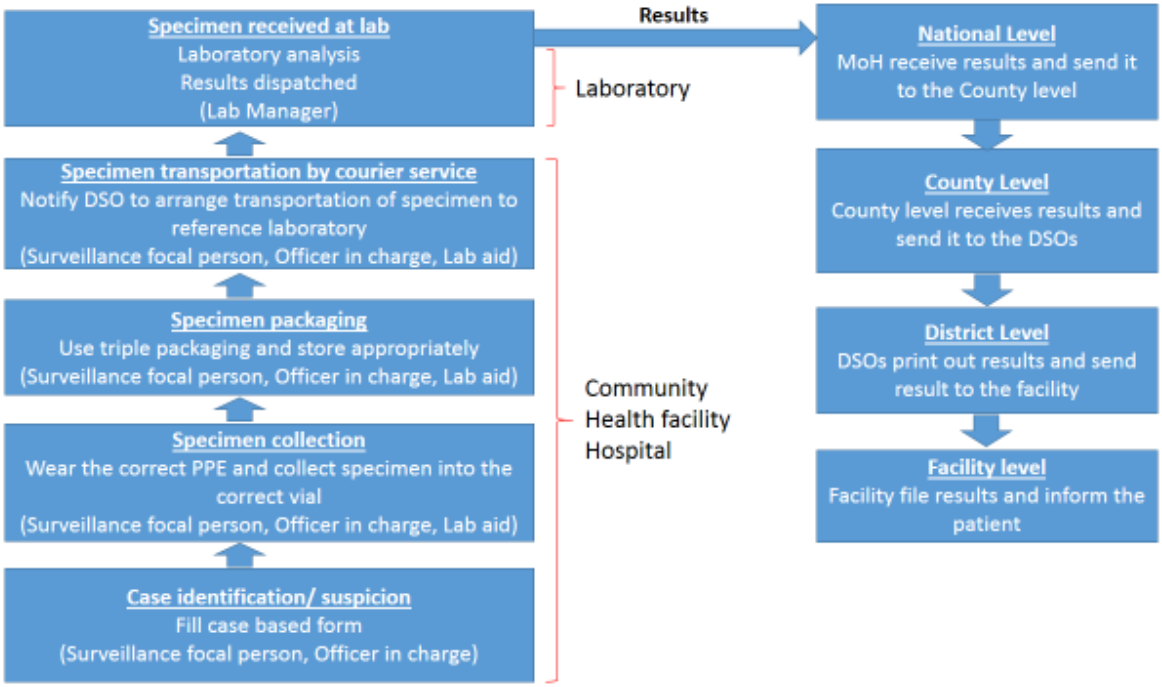
Learning Objectives – After completion of this case study, the participants should be able to:

1. Prioritize surveillance problems for analyses
2. Prepare and initiate a problem analysis
3. Identify broad categories of the contributing factors to a problem
4. Categorize factors into total, partial and not within their control
5. Identify the critical cause of a problem
6. Summarize findings into a fishbone
7. Make recommendations and develop a problem analysis report based on findings
8. Share findings and recommendations with relevant authorities

Introduction

The district surveillance officer (DSO) for District A conducted a data quality audit (DQA) in two health facilities located in her district. The DQA identified gaps and associated challenges impeding surveillance and response activities for health events. Among the challenges identified, she noticed that poor timeliness and frequency of feedback regarding test results from the central laboratory to health facilities and surveillance units was a major constraint to surveillance and outbreak investigation that needed to be addressed (Figure 1). To resolve this gap, she planned to conduct a problem analysis to examine factors contributing to poor feedback from the laboratory. She developed a problem statement and submitted it to the district health officer (DHO) to alert him to the magnitude of the problem [1].

Figure 1. Process of submitting laboratory specimens for testing and reporting results to health facilities and the Ministry of Health in Liberia



Question 1: What are key criteria to apply when selecting a problem to be analysed among gaps identified during a data quality audit?

Question 2: What is a problem statement?

In her statement, the DSO indicated that poor timeliness and frequency of feedback regarding test results from the central laboratory to health facilities and surveillance units affected response to interventions and quality of surveillance data. As a consequence, community members lost confidence in health officials to provide adequate care without lab results.

The DHO recognized the impact the findings will have on the surveillance system and was persuaded by the problem statement to offer logistical support to the DSO to facilitate problem analysis. On receiving the support and approval of the DHO, she initiated the planning process [1].

Question 3. At this stage, what preparations and arrangements should be made before conducting the problem analysis?

Question 4. Which key personnel should be asked to participate in problem analysis for laboratory reporting in this scenario? Justify your answer.

Part 1

The team convened at Clinic B on 4th February, 2016 to conduct the problem analysis exercise. The DSO described the extent of the problem and explained the systematic approach to problem analysis using the fishbone diagram.

The team intensively brainstormed possible contributing factors to poor feedback on laboratory results. Each team member provided their perspective and experience on issues contributing to the problem of poor laboratory feedback. The various points raised were recorded, discussed, and refined by the team [1].

The lab personnel raised concerns that most of the laboratory test request forms were not properly filled, making it difficult to trace the source of the sample and subsequently provide feedback. Some of the samples received were not well packaged and labelled, making it difficult for them to link the case-based forms to a sample. In some instances, samples were not well collected or stored, rendering the sample useless for testing; either the wrong tube was used to store the specimen or the specimen collected was inadequate. In most instances, the samples arrived warm when they were supposed to be transported at 4-8°C. The lab personnel lastly reported occasional logistical challenges, such as lack of laboratory reagents, which impeded their work [1].

In response, the officers in charge (OiCs) of the health facilities in the district brought up key issues that hindered their work and addressed some of the issues raised by the laboratory personnel. They indicated that the health facilities have had limited staff to do the work, thereby affecting their work output. There were only a few staff trained in sample collection, packaging, and transport; as a result, health facilities were unable to properly conduct those tasks when trained staff were absent. Furthermore, there was high employee attrition among trained staff. Another issue was that courier services were not accessible at times due to poor mobile network connections; however, even when they were able to be reached, services would be delayed [1].

The county representative of the courier service responded that the poor condition of roads, especially during the rainy season, delayed transportation of samples to the reference laboratory. He advised that packaging should be done well to avoid spills during transportation on bumpy roads [1].

The DHO was encouraged by the open nature of the discussions, but felt if all parties had communicated their issues when first identified, most of the issues would have been resolved by now. From these discussions, it was evident that OiC of health facilities were not well aware of the issues raised by the laboratory team. He advised that bi-directional communication should be the a core function of the collaborative work to support surveillance; stakeholders should immediately voice issues as they arise [1].

At this point, the DSO offered to lead the team in summarizing their findings using a fishbone diagram.

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Question 5. What steps should the DSO follow to summarize their findings into a fishbone diagram?

Question 6. From the narrative, list all possible factors contributing to the poor feedback on test results from the central laboratory.

Question 7. What four to six broad categories are you going to group the factors under? Classify the factors under these categories.

Question 8. Use a fishbone diagram to summarize the findings indicating the level of the control you have over each of the factors contributing to the problem.

Question 9. Give a justification for your critical cause(s).

Part 2

The team recognized that about 80% of the issues identified could be resolved by stakeholders at the district and county level, without need for an intervention by the national team. The DSO developed a table outlining the challenges, recommendations, roles, and responsibilities to address the problem of poor laboratory feedback. The DHO tasked the DSO to develop a work plan for implementing the recommendations within the capacity of the district with support from partners.

Question 10. Based on the issues identified, what recommendations will you give?

Question 11. As a surveillance officer, what actions will you take to ensure that challenges not within your control are resolved?

Question 12. Develop a report for the problem analysis on poor feedback on test results from the central laboratory and indicate how you will share your findings.

Hint: Your report should have the following sections with headings: Introduction, Methods, Results (i.e. fishbone diagram explaining the relationship between the contributing factors and the gap under analysis), Recommendation, and Conclusion

Conclusion

The DSO developed a comprehensive report of findings and recommendations to share with all key holders. Through the support of the county health team and health partners, she implemented the recommendations within the control of the district level, including a major improvement in the laboratory feedback system. The ministry agreed to support the district in analysing and resolving other issues that were identified from the data quality audit to help improve the standard of surveillance activities in the district.

As demonstrated in this case study, surveillance problem analysis using the fishbone diagram can help to identify the critical cause of issues that impede surveillance activities. Although many issues may be identified through a data quality audit, it is necessary to prioritize problems, first tackling those that you have some level of control over to implement effective interventions. It is also important to identify the key personnel who play a major role in the associated surveillance activity in question to comprehensively dissect and resolve problems.

Background Reading

Educational Business Articles. 7 Steps to a Fishbone Diagram and to Identify Those Causes. http://www.educational-business-articles.com/fishbone-diagram/. Accessed 26 July 2016

Mind Tools. Cause and Effect Analysis: Identify the Likely Causes of Problems. https://www.mindtools.com/pages/article/newTMC_03.htm. Accessed 26 July 2016

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