World Health Organization

REGIONAL OFFICE FOR Africa

Integrated Disease Surveillance and Response

District Level Training Course

Facilitator Guide

July 2011

World Health Organization

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District Level Training Course | Course Facilitator's Instructions

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Introduction

The Facilitator's Guide provides instruction and suggestions for teaching the training modules for the *Technical Guidelines for Integrated Disease Surveillance and Response in the Africa Region,* 2nd edition. This training is intended for district level health officers who conduct IDSR activities. The course is laid out in 7 modules that walk participants through the Technical Guidelines (TGs) chapter by chapter. By the end of the course, participants will be familiar with the TGs and capable of utilizing them appropriately in their position.

For each exercise, the Facilitator's Guide includes **Notes to Facilitator**:

- Suggested teaching methods
- An explanation and purpose
- Proposed answers

1.0 Teaching Methods

This course is designed to first provide participants with information then provide examples of how to apply the information and conclude with an opportunity to practice applying the information or skill. In order to facilitate this process you can use several different teaching methods.

Readings- Participants will be asked to read short sections from the TGs for content. This helps them learn the content and shows them where they can find information within the TGs in the future.

Lectures- As the facilitator, you will conduct several lectures on content from the TGs. These lectures will be brief and are intended to provide information to the participants in a method that can be more engaging than reading because it is an interactive method of teaching. Content drawn from the Technical Guidelines is bulleted and set in a smaller font than the instructions for the facilitator so that you can see the difference between instructions to you and lecture material.

Some points to remember when preparing and giving a lecture are:

- Read through the relevant material so that you are familiar with the content and how to apply it.
- Limit the number of slides you use to about one for every three minutes of presentation.
- Keep your slides simple with only two or three points.
- When you show a slide, explain all of the content on that slide.
- Review your slide show to ensure that it can be read from the back of the room.
- Think of two or three discussion questions that you can ask during the presentation. This will keep the audience engaged and highlight the main points of the presentation.
- Summarize your main points at the end and ask for questions.
- Speak slowly and clearly. Use simple language. Make eye contact with the participants.

Individual Work- Participants will be asked to complete several exercises on their own. Practicing skills will help them understand the material and demonstrate that they have learned it completely. After participants complete their worksheets, review the correct answers so that they can identify any mistakes. Encourage participants to ask questions if they do not understand an answer.

Small Group Discussion- Participants will be asked to do several exercises in pairs or small groups. This will provide them with opportunities to practice using the information they have learned. Small group work is particularly helpful for people who are intimidated by larger groups.

Large Group Discussion- You will facilitate several discussions with the entire group. Your role as the facilitator is to provide the discussion topics and follow-up questions and to moderate the discussion. Some participants may be very vocal or aggressive. You can set time limits on responses and encourage the quieter participants to engage in these discussions.

2.0 Key Concepts of Adult Learning

Your target audience is District level health officers so it may be useful for you to review some key concepts of adult learning. Teaching adults requires a different skill set than teaching children. The following concepts may help you understand some of the elements that distinguish the adult learner from the child learner.

- **Self-concept:** Adults see themselves as autonomous and want to preserve or enhance their self-esteem.

- **Experience:** Adults bring their entire span of life experiences with them into any situation. Adults have trouble with information that conflicts with things they have learned previously.

- **Readiness to learn:** Adult learners are more likely to be motivated to learn something new if it is immediately relevant to their daily work.

- **Time perspective:** Adults have a problem-centered time perspective and a desire to become better problem-solvers right away.

3.0 Developing a Teaching Plan

To prepare a teaching plan for each module, first review the activities and exercises that are suggested. When you are choosing optional activities consider:

- What the participants have already learned
- The amount of time available for the module
- What aspects of the module should be emphasized

After you develop teaching plans for the modules you can make a schedule or outline of the modules so that you have an estimation of the time you will need for each module.

A sample teaching plan is provided below with estimated times for each exercise and breaks. The first three modules may take more time than is allotted here. Please make notes of any divergence from this schedule for future facilitators. Times are provided as estimations.

Time	Activity	Facilitators
Monday (Day 1)		
8:00-8:30	Registration of Participants	All
8:30-8:45	Opening Remarks	All
8:45-9:30	**Introduction Module** 1.0 Introduce yourself and the participants 2.0 Explain your role as the facilitator 3.0 Explain IDSR 4.0 Define the International Health Regulations 5.0 Explain the 2010 Revision of IDSR Technical Guidelines 6.0 Define disease surveillance 7.0 Describe how surveillance functions are presented in this course 8.0 Describe the purpose of the course 9.0 Describe the target audience 10.0 Explain the learning objectives 11.0 Explain the layout of the course 12.0 Summary of introduction	

9:30-10:00	**Module 1: Identify cases of priority diseases, conditions and events** 1.0 Introduction (10 minutes) 1.1 Exercise 1 (10 minutes) Presentations (10 minutes)	
10:00-10:30	***TEA BREAK***	
10:30-12:30	Module 1: Identify cases of priority diseases, conditions and events 1.2 Exercise 2 (20 minutes) 1.3 Exercise 3 (20 minutes) 1.4Exercise 4 (30 minutes) 1.5 Exercise 5 (30minutes) Presentations (20 minutes)	
12:30-13:30	***LUNCH BREAK***	
13:30-14:35	Module 1: Identify cases of priority diseases, conditions and events 1.6 Exercise 6 (45 minutes) Presentations (20 minutes)	
14:35-15:10	Module 1: feedback and discussion	
15:10-16:00	**Module 2: Report priority diseases, conditions and events** 2.0 Introduction (20 minutes)	

	Presentations (20 minutes) Begin Exercise 1	
16:00-16:30	***TEA BREAK***	
16:30-17:00	Module 2: Report priority diseases, conditions and events 2.1 Exercise 1 (30 minutes) Wrap up day	
Tuesday (Day 2)		
8:30-8:40	Questions from previous day	
8:40-10:00	Module 2: Report priority diseases, conditions and events 2.2Exercise 2 (60 minutes) Presentations (20 minutes)	
10:00-10:30	***TEA BREAK***	
10:30-11:00	Module 2: Report priority diseases, conditions and events 2.3 Exercise 3 (30 minutes) Wrap up Module 2	
11:00-11:30	Module 2: feedback and discussion	
11:30-13:00	**Module 3: Analyze and interpret data** 3.0 Introduction (20 minutes)	

	3.01 Introductory exercise (20 minutes) 3.1 Exercise 1 (40 minutes) Presentations (10 minutes)	
13:00-14:00	***LUNCH BREAK***	
14:00-16:00	Module 3: Analyze and interpret data 3.2 Exercise 2 (60 minutes) 3.3 Exercise 3 (30 minutes) 3.4 Exercise 4 (30 minutes) Presentations (20 minutes)	
16:00-16:30	***TEA BREAK***	
16:30-17:00	Finish exercises and presentations from above Wrap up the day	
Wednesday (Day 3)		
8:30-8:40	Questions from previous day	
8:40-10:00	Module 3: Analyze and interpret data 3.5 Exercise 5 (80 minutes)	
10:00-10:30	***TEA BREAK***	
10:30-12:00	Module 3: Analyze and interpret data 3.6 Exercise 6 (90 minutes)	
12:00-12:30	Module 3: feedback and discussion	

12:30-13:00	**Module 4: Investigate and confirm suspected cases, outbreaks and other events of public health importance** 4.0 Introduction (20 minutes)	
13:00-14:00	***LUNCH BREAK***	
14:00-16:00	Module 4: Investigate and confirm suspected cases, outbreaks and other events of public health importance 4.1 Exercise 1 (30 minutes) 4.2 Exercise 2 (20 minutes) 4.3 Exercise 3 (60 minutes) Presentations (10 minutes)	
16:00-16:30	***TEA BREAK***	
16:30-17:00	Module 4: Investigate and confirm suspected cases, outbreaks and other events of public health importance 4.4 Exercise 4 (20 minutes)	
Thursday (Day 4)		
8:30-8:40	Questions from previous day	
8:40-10:00	Module 4: Investigate and confirm suspected cases, outbreaks and other events of public health importance 4.5 Exercise 5 (80 minutes)	

10:00-10:30	***TEA BREAK***	
10:30-12:00	Module 4: Investigate and confirm suspected cases, outbreaks and other events of public health importance 4.6 Exercise 6 (90 minutes)	
12:00-12:30	Module 4: feedback and discussion	
12:30-13:10	**Module 5: Prepare to respond to outbreaks and other public health events** 5.0 Introduction (20 minutes) 5.01 Introductory exercise (20 minutes)	
13:10-14:00	***LUNCH BREAK***	
14:00-16:00	Module 5: Prepare to respond to outbreaks and other public health events 5.1 Exercise 1 (30 minutes) 5.2 Exercise 2 (30 minutes) 5.3 Exercise 3 (30 minutes) Presentation and short exercise (20 minutes)	
16:00-16:30	***TEA BREAK***	
16:30-17:00	Module 5: Prepare to respond to outbreaks and other public health events 5.4 Exercise 4 (30 minutes)	

Friday (Day 5)		
8:30-8:40	Questions from previous day	
8:40-9:30	Module 5: Prepare to respond to outbreaks and other public health events 5.5 Exercise 5 (20 minutes) Presentations (30 minutes)	
9:30-10:00	Module 5: feedback and discussion	
10:00-10:30	***TEA BREAK***	
10:30-11:50	**Module 6: Monitor, Evaluate and Improve Surveillance and Response** 6.0 Introduction (20 minutes) 6.1 Exercise 1 (30 minutes) 6.2 Exercise 2 (30 minutes)	
11:50-12:20	Module 6: feedback and discussion	
12:20-13:10	**Module 7: Supervise and Provide Feedback** 7.0 Introduction (10 minutes) 7.1 Exercise 1(30 minutes) Presentations (10 minutes)	
13:10-14:00	***LUNCH BREAK***	
14:00-15:00	Module 7: Supervise and Provide Feedback 7.2 Exercise 2 (30 minutes)	

	7.3 Exercise 3 (15 minutes) Presentations (15 minutes)	
15:00-15:30	Module 7: feedback and discussion	
15:30-16:00	**Course evaluation, feedback and closure**	

4.0 Logistics

a. Checklist of supplies needed for participants:

* Name tag and holder
* Pencil and sharpener
* Paper
* Eraser
*Ruler
* Calculator (if available)

b. Checklist of supplies needed for facilitators

*Flipcharts, paper and markers

*Laptop computer and LCD projector

Other supplies needed:

Module	Exercise	Materials/Supplies	Instructions to Facilitator
All Modules	All Exercises	Flipchart	
1	1	IDSR Matrix	Distribute copies of the Matrix to participants Tack an IDSR Matrix on the wall
3	1	Prepare a diagram to illustrate the flow of information in the national system	A printed copy of the diagram (generic or site-specific) can be included as a handout or projected on a screen. Ask participants to consider the national system diagram and find their location on the diagram. Individually or in pairs (if participants come from the same facility), participants can answer a series of questions
3	2.3	Graph paper if available, otherwise	Participants are asked to draw a bar chart

		use the space provided in the modules	
3	5.2	(optional) Prepare slide for projecting answer	Prepare a PowerPoint slide of the proposed answers for this table. Explain the attack rates for each week. Alternatively, explain each answer without projecting it.
3	5.4	Graph paper if available, otherwise use the space provided in the modules	Participants are asked to draw a line graph
3	6.1	(optional) Example of a spot map. Optional because of the spot map exercise.	Use an example of a spot map to demonstrate one method of analyzing data by place
4	4	Graph paper if available, otherwise use the space provided in the modules	Draw a graph to show the epidemic of plague

Instructions for setting up the room:

Set up the flipchart so that the entire room can view it easily.

You will need access to a computer and projector. Be sure that you know how to set up the projector and connect the computer before the training begins.

Be sure that the room is set up so that all of the participants can see the board where you will be projecting the slide sets

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Introduction Module

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By the end of this module, the participant will be able to:

1. Describe the objectives of Integrated Disease Surveillance and Response
2. Describe the objectives for this training course and how to participate in the course
3. Recognize how to apply the skills learned in the course

Introductory Presentation

A PowerPoint presentation has been provided for you as a standard template at the end of this module in Annex 1. You may use it exactly as it appears or alter it as you see necessary.

1.0 Introduce yourself and the participants

This training provides an opportunity for networking among district level health officers working with IDSR. It is important for them to know one another so that they can become an active support system when they return to their individual districts.

Introductions will help participants learn each other's names and the districts that they represent. **Ask participants to say their name and title, where they come from and their experience with IDSR**. This exercise will give you an indication of the levels of experience with IDSR among participants.

2.0 Explain your role as the facilitator

Explain to the participants that you are the facilitator of this course and that your role includes:

- Guiding the group through the modules by providing lectures, assigning readings and reviewing exercises
- Answering questions when they arise or finding the answers if you don't know them
- Clarifying information that is confusing
- Providing individual feedback on exercises
- Leading group discussions
- Encouraging participants to consider ways that this knowledge can be applied to their daily work

3.0 Explain IDSR

As you learned in the introductions, many of the participants have already heard of or worked with IDSR in some capacity.

Explain the main points of IDSR:

- Integrated Disease Surveillance and Response (IDSR) is a strategy of the World Health Organization Regional Office for Africa for improving epidemiologic surveillance and response in the African region. Surveillance is the ongoing systematic collection, analysis, and interpretation of health data.
- It includes the timely dissemination and use of information for public health action.
- Integrated Disease Surveillance and Response (IDSR) is a strategy for coordinating and integrating surveillance activities by focusing on the surveillance, laboratory and response functions of the national disease surveillance system.
- Scarce resources are combined to collect information from a single focal point at each level.

The objectives of the IDSR are to:

- Conduct effective surveillance activities
- Integrate multiple surveillance systems to use resources more efficiently
- Improve the use of information for detecting, investigating and responding to public health threats
- Improve the flow of surveillance information throughout the health system

Explain:

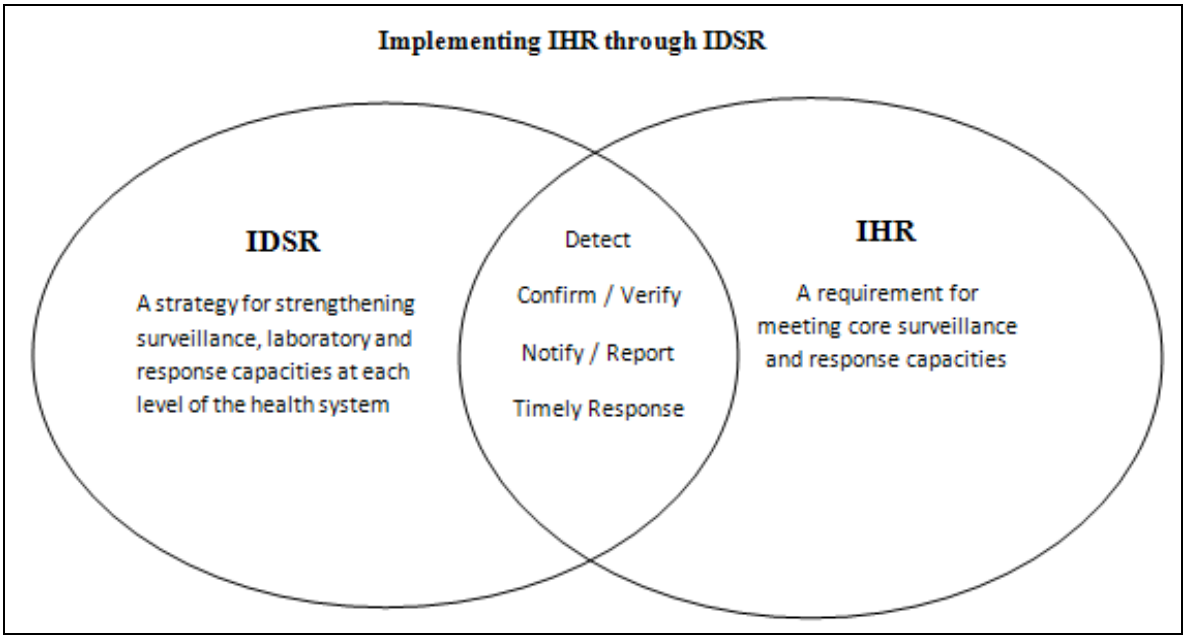
- In this course, you will have an opportunity to know and use skills that are relevant to carrying out surveillance and response activities with a focus on the district level.

4.0 Define the International Health Regulations

Be sure that participants understand the purpose of IHR and how it is being implemented in Africa. Explain the main points of IHR:

- The purpose of the International Health Regulations (IHR) is to prevent, protect against, control and provide public health response to the international spread of disease in ways that are relevant and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade. IHR (2005) is a binding and legal instrument.
- Among the several requirements in the IHR (2005) is a call for strengthening of national capacity for surveillance and control of public health events of national and international concern.
- The IHR (2005) is not a separate surveillance system. Instead, it requires strengthening the existing surveillance capacities in countries so that they meet international standards.
- Member States in the African Region recommended that IHR (2005) be implemented within the IDSR framework. This means that IDSR and IHR share common functions such as detection, reporting, confirmation, verification, notification, reporting and timely response.

Describe the following graphic and how it demonstrates the overlap of IDSR and IHR(2005)



5.0 Explain the 2010 Revision of IDSR Technical Guidelines

Describe the reasons that IDSR updated the TGs:

- During the last 10 years, new diseases, conditions and events resulted in revision of public health priorities for countries in the region.
- Although communicable diseases have long been the leading cause of illness, death and disability in African countries, non-communicable diseases such as hypertension and diabetes are emerging as threats to the well-being of African communities. Conditions and events such as malnutrition and maternal deaths are important targets for national health programs.
- The emergence of pandemic influenza highlighted the importance of having stronger surveillance links between community surveillance sources and the national surveillance and response system.
- Additionally, the integration of human and animal health surveillance has become a high priority in many countries.
- Finally, adoption of the International Health Regulations (2005) by countries in the African region includes the need to strengthen national core capacities for surveillance and response across all health systems.
- Because of these and other factors, guidelines for surveillance and response have been revised to incorporate new priorities while focusing on the ability of surveillance systems to identify health problems, report information in a timely manner, analyze data to provide information for action, confirm with laboratory testing, respond to outbreaks and other public health threats, monitor and evaluate performance of the health system, provide feedback and communicate with the community and with other levels and partners in the health system.

6.0 Define disease surveillance

Review the definition of disease surveillance for different health levels:

- Surveillance is the ongoing, systematic collection, analysis, and interpretation of health data. It includes the timely dissemination of the resulting information to those who need it for action. Surveillance is also used for planning, implementation, and evaluation of public health practices at any level of the health system. There are several types of surveillance used in disease programs:

- Health facility- or community-based surveillance: a term to describe when a particular location is the focus of surveillance activities

- Sentinel surveillance: a health facility or reporting sit designated for early warning of pandemic or epidemic events. The site is usually designated because it is representative of an area or is in an area of likely risk for a disease or condition of concern.
- Laboratory-based surveillance: surveillance conducted at laboratories for detecting events or trends that may not be seen as a problem at other locations
- Disease-specific surveillance: This is surveillance that involves activities aimed at targeted health data for a specific disease.

Regardless of the type of surveillance, remember that surveillance is data that is used for action!

7.0 Describe how surveillance functions are presented in this course

Present the core functions of surveillance that are addressed in this course:

- The *Technical Guidelines for Integrated Disease Surveillance and Response* (2010) presents a comprehensive vision of a disease surveillance and response system. In IDSR, all levels of the health system are involved in surveillance activities for responding to priority diseases and conditions. These activities include the following core functions:
    - Identify cases and events
    - Report suspected cases, conditions or events to the next level
    - Analyze and interpret findings
    - Investigate and confirm suspected cases, outbreaks or events
    - Prepare to respond to public health events
    - Respond to public health events
    - Communicate with and provide feedback to health workers and the community
    - Evaluate and improve the system.

- The matrix on pages 14 and 15 of the Technical Guidelines for Integrated Disease Surveillance and Response (2010) illustrates the skills and activities for carrying out these functions at each level of the health system. While the modules in this course are relevant for any level of the health system, each module in this course is from the perspective of how the district can carry out each function.

8.0 Describe the purpose of the course

Explain the purpose of this course:

The purpose of this training course is to improve the skills and knowledge of health staff to carry out activities that contribute to the national disease surveillance, laboratory and response system. These are skills which should result in more timely detection and response to the leading causes of illness, death and disability in African communities and improve their well-being.

Previous IDSR and IHR (2005) assessments of national surveillance and response systems have shown that:

1. Written standard case definitions for national priority diseases are not always readily available especially at the health facility or at district level.
2. Health workers were expected to complete multiple reporting forms from different health programmes and then forward them to the central level. There was little or no analysis at the lower level.
3. No standard disease outbreak investigation forms were used.
4. In many cases, the local public health laboratories were not used effectively during the investigations.
5. The District epidemic management committees or intersectoral emergency committees did not exist in many countries.
6. Supervisory visits were not always carried out regularly nor consistently. Feedback to the lower levels was scarce, and, where feedback occurred, it was mainly verbal.

Disease surveillance and response systems in many countries face serious challenges in achieving reliable surveillance and response outcomes. Most countries do not have the minimum IHR core capacities requirements for surveillance, reporting, notification, verification, and response in place including appropriate activities at the ports of entry. In order to address these shortcomings, the *Technical Guidelines for Integrated Disease Surveillance and Response* (IDSR) and this set of training modules on IDSR have been developed for use by health workers to enhance the implementation of IDSR skills and activities.

Ask the participants to share their experiences with surveillance systems:

- What surveillance activities have they participated in at the District level?
- What made those surveillance activities successful?
- What challenges have they encountered with surveillance?

9.0 Describe the target audience

Describe the target audience for this training:

- Clinical practitioners (doctors, nurses, clinical officers, and medical assistants)
- Public health officers.
- Environmental health workers.
- Laboratory workers.
- Data/record managers.
- Students (clinical, public health, environmental health and laboratory)
- IHR focal points , WHO contact point, competent authority at Point of Entry (PoE)
- Other Relevant personnel: IHR Food, chemical, radio nuclear, legal/lawyer and communication officers

10.0 Explain the learning objectives

Ask for a participant to read the general objective for the course:

The general objective:

The general objective of this training is for health workers to have the opportunity to practice skills and activities involved in surveillance and disease control. They will gain appropriate knowledge and skills for using data to detect and respond to priority diseases, conditions and events and thereby reduce the burden of illness, death and disability in African communities.

Ask participants to read the specific objectives out loud. One person will start by reading the first objective and then the person to his/her left will read the next one.

The specific objectives:

The specific objectives of this training are to enable participants to:

1. Identify cases and events of public Health importance
2. Report suspected cases or conditions or events of public Health importance
3. Analyze and interpret data on priority diseases and events
4. Investigate and confirm suspected cases, outbreaks or events
5. Be prepared for outbreaks or events of public health concern.
6. Respond to outbreaks or events of public health concern
7. Supervise and provide feedback.
8. Monitor and evaluate IDSR/IHR Implementation.

11.0 Explain the layout of the course

This course is designed to walk participants through the TGs chapter by chapter to ensure that they have a concrete understanding of the content and the application of the material.

Explain to the participants that:

- Each module corresponds to a chapter in the TGs and you will be guiding them through each module in numerical order
- The modules contain all of the information that participants will need to complete the exercises
- They will keep these modules and completed exercises as future reference guides
- Each module begins with information that can be read or given as a presentation
- Examples of completed forms and appropriate responses to situations will be provided
- The modules conclude with blank or partially completed forms providing practice for the participants
- You will review all of the answers after they complete a module to be sure that everyone has the correct answers and to encourage questions for clarification.

Present the course materials:

- *WHO-AFRO Technical Guidelines for Integrated Disease Surveillance and Response in the African Region*
- Training modules for integrated disease surveillance and response.
- International Health Regulations (2005), second edition

12.0 Summary of introduction

Review the following points:

- Reportable disease and PHEICs are a global problem with enormous personal, social and economic costs. IDSR provides TGs for performing systematic surveillance, reporting and disease response.
- Describe the time frame for the training
- Briefly describe each module including the topic and purpose
- Explain to the participants the following ways to learn the most from this course:
    - Work the exercises by themselves or in small groups. They will be given enough time to complete the exercises carefully with the understanding that people work at varying speeds as a result of their knowledge, experience and familiarity with the subject.
    - Ask questions.
    - Participate in group discussions and listen carefully to others.
    - Think about how the skills being taught apply to your own position. Discuss with the group and the facilitator ways that you will be able to incorporate these skills and knowledge into your current duties

Ask for questions and comments

ANNEX 1: Introductory Presentation

Slide 1

Introduction to Modules

Integrated Disease Surveillance and Response
District Level Training

Slide 2

Group Introductions

Your Name

Your Title

Your District

How have you used IDSR?

Slide 3

Learning Objectives for this Training

Participants will gain:

1. Knowledge of the IDSR Guidelines
2. Skills for applying the information in the IDSR Guidelines and using data for action
3. Skills for using the IHR (2005) decision instrument

Slide 4

Background of IDSR

- Integrated Disease Surveillance strategy adopted by Member states in 1998
- IDSR Technical Guidelines developed in 2001 with emphasis on:
  - Epidemic prone diseases
  - Diseases targeted for elimination and eradication
  - Diseases of public heath importance
- Revised IDSR Technical Guidelines (2010) include :
  - Non communicable diseases
  - Public Health Emergencies of International Concern (IHR 2005)

Slide 5

Objectives of IDSR

- Conduct effective surveillance activities
- Integrate multiple surveillance systems to use resources more efficiently
- Improve the use of information for detecting, investigating and responding to public health threats
- Improve the flow of surveillance information throughout the health system

Slide 6

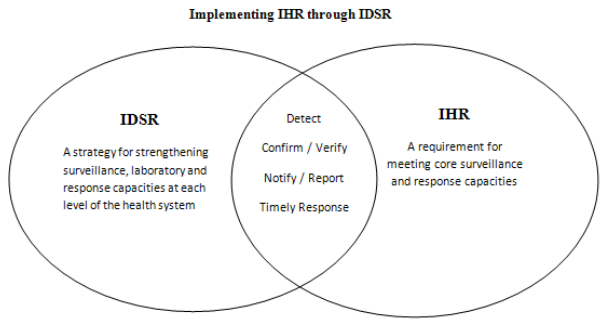
International Health Regulations (2005)

- The IHR (2005) is not a separate surveillance system. Instead, it requires strengthening the existing surveillance capacities in countries so that they meet international standards.

- Member States in the African Region recommended that IHR (2005) be implemented within the IDSR framework.

Among the several requirements in the IHR (2005) is a call for strengthening of national capacity for surveillance and control of public health events of national and international concern.
The purpose of the International Health Regulations (IHR) is to prevent, protect against, control and provide public health response to the international spread of disease in ways that are relevant and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade.

Slide 7



Slide 8

Disease Surveillance

- Surveillance is the ongoing, systematic collection, analysis, and interpretation of health data.
- Timely dissemination of the resulting information to those who need it for action.
- Used for planning, implementation, and evaluation of public health practices at any level of the health system.

Regardless of the type of surveillance, remember that surveillance is data that is used for action!

Slide 9

Course Layout

- This is a 5 day course
- We will cover 7 modules that address different aspects of the IDSR strategy
- You will be asked to think of examples and practices from your own district
- All content information you will need is in your module and the IDSR Technical Guidelines. You will take both home with you for reference

Slide 10

Module Structure

Each module:

- Corresponds to a chapter in the TGs
- Begins with information that can be read or given as a presentation
- Uses exercises and case studies
  - Most derived from real reported events
- Concludes with a summary of points to remember

Slide 11

Points to Remember

1. This course was developed for health workers to enhance the implementation of the IDSR strategy
2. Data used for action saves lives

Slide 12

Thank you!

Let's Get Started

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Integrated Disease Surveillance and Response

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Identify cases of priority diseases, conditions and events

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Module 1

Identify cases of priority diseases, conditions and events

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Introduction

Ask the participants to open their copy of the IDSR Matrix. You should have one posted on the wall as a presentation aid. Point to the first column. Show participants the column called "Identify". Remind them that each level of the health system has a role in detecting and indentifying priority diseases. In this module, as with the entire course, they will focus on the district level. Ask a participant to read the section "Identify" on the "District" row to the entire group.

A PowerPoint presentation has been provided for you as a standard template at the end of this module in Annex 1. You may use it exactly as it appears or alter it as you see necessary.

Emphasize these points in your presentation:

- Surveillance is a process for collecting, analyzing and interpreting health data.
- The results that are obtained from surveillance are used to detect public health events and take action to respond to them.
- Every level has a role to play in carrying out all functions of surveillance to keep communities healthy.
- Health staff at all levels of the health system carry out surveillance activities so that they can detect and respond quickly to health events that are of concern to their communities, districts, provinces and country.
- These priority events include communicable or non-communicable diseases, and other events involving water, food, or other environmental contamination due to chemical, radiological or other risk factors.

This course presents the main functions of surveillance which are to:

- Identify priority diseases, conditions, and events
- Report priority diseases, conditions, and events
- Analyze and interpret data
- Investigate and confirm outbreaks
- Respond to outbreaks and other public health events
- Provide supervision and feedback
- Monitor and evaluate the surveillance system

This course includes several modules that will provide you with an opportunity to practice using the skills that are included in your country's Technical Guidelines for Integrated Disease Surveillance and Response.

* * * *

Ask a participant to read the learning objectives to the group.

This module will describe and allow you to practice the following skills:

1. Use standard case definitions to identify diseases for reporting to the health system.
2. Involve the community in disease surveillance
3. Improve local laboratory capacity to detect priority diseases, events, and conditions.

1.0 Use standard case definitions to identify diseases for reporting to the next level

Emphasize these points in your presentation. Explain that this information can be found in the Technical Guidelines on pages 33 to 35.

- Using case definitions makes sure that every case is diagnosed in the same way. Standard case definitions let health staff compare the numbers of cases of the disease or condition that occurred in one time or place with the number occurring in another time or place.
- Using the same case definition throughout a national system allows the public health staff to monitor accurately priority diseases or conditions and identify thresholds for public health action.
- When health facilities and districts use different case definitions, monitoring the trend of a disease or event is difficult. Without using the same definitions, urgent action such as investigating the cause of the change in the trend will not be possible.
- Using standard case definitions is also important for carrying out the International Health Regulations (2005). Even at the district level, health staff should know and use the case definitions for reporting diseases that are a concern for local communities and also for those that could spread to neighbouring districts, provinces or countries.

Give examples of case definitions for priority diseases in the country's national surveillance program. For example, ask participants to turn to page 43 where the case definitions begin. Ask them to find the definition for **cholera**. Ask a volunteer to read the definition for a **suspected case** to the group. Now ask for a volunteer to read the definition for a **confirmed case**. Ask the group why there are two different definitions. Now read the definition for *diarrhoea with blood* (dysentery):

- **Suspected case:** A person with diarrhoea with visible blood in stool
- **Confirmed case:** Suspected case with stool culture positive for *Shigella dysenteriae* type 1.

Ask the group to consider non-communicable diseases. Do they need to use standard case definitions for NCDs? Ask a participant to read the case definition for **diabetes.** Ask them to discuss the differences between the suspected and confirmed case definitions.

Ex: "Why is lab confirmation important with this disease?"

Possible answer:

The suspected case definition is very broad and may include cases that are not actually diabetes, but will probably not miss any cases.

Exercise 1

Notes to Facilitator: Ask participants to break into groups of 2 or 3 to complete Exercise 1. Explain that suggestions for this exercise can be found on page 33 of the Technical Guidelines. Ask them to think about their experiences and knowledge from working in their districts. How do they become aware of important health events? Explain that "sources of information" means all of the sites or people that can provide them with information that is relevant for the investigation. When you are investigation an outbreak, your sources of information should include several health levels, such as the community level and health facility. Ask participants to consider the types of information that can be found at these sources. For example, where would you go if you wanted to look at patient records? (*Health facility*)

Ask a representative from each group to give an answer for the following questions. Record the answers on the flipchart as lists. Sample answers are included below. If any correct answers are missing, add them to the list and discuss why they might be helpful. Question 3 will be unique for every participant. Encourage two or three groups to share their answers.

Case study:

A local radio station announced that a cluster of deaths from a mysterious disease occurred in Salgaa village. The patients are presenting with fever, headache, muscle pains and backache. According to the radio report, four adults and two children have died within the last four days. The district health authorities are now investigating the outbreak.

1. The district team has been gathering information to verify the report on the radio. What are possible sources of information about health events in this district?

   Sample answers can include:

   Health Facility Level:

   - *Health or patient records*

- *Medical officers*

Community-level informants:

- *wildlife officer*
- *pharmacists*
- *traditional healer or birth attendants*

2. What type of information would you gather from each of the sources you have listed?
    - *Any information from health records if they presented at a health facility*
    - *Signs or symptoms*
    - *Date when signs or symptoms appeared*
    - *Age and gender of patient (demographics)*

3. Think about the most recent outbreak or unusual health event that happened in your district. Describe the event and list the sources of information.

    Answers will vary depending on the participant's experience

2.0 Update district procedures for surveillance and response

Provide a short presentation about improving procedures for surveillance in the district and involving the community. Explain that this information can be found in the Technical Guidelines on pages 35 to 37.

- At least once a year, the district should update the information it has about its catchment area. This is so you will have up-to-date information about the target populations and public health activities in the district.

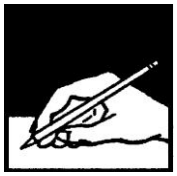
For example, target populations could include:

1. Children less than 5 years of age
2. School-aged children
3. Women of childbearing age
4. All adults and children of different age groups
5. People living in refugee settlements in your area

- Also include the location of major public health programs in your area such as public, private, and non-governmental organizations that provide clinical services or public health activities like clean water projects, immunization services, maternal and newborn care, or feeding malnourished children.

- Include in the update a list of the health facilities, Points of Entry and other locations that can report health information to the district. Make sure that they know the priority diseases, conditions and events that are of concern and provide them with information about the case definitions and when to report.

When you have finished, ask participants to begin Exercises 2 and 3. After about 15 minutes you can ask participants to stop and review Exercise 2 as a group.



Exercise 2

Notes to Facilitator: In Exercise 2, participants will answer questions about standard case definitions being used in their district. Each participant will have a different answer. For questions 1 and 2 participants will be circling answers depending on their experiences in their districts. Sample answers for questions 3and 4 are provided.

Ask participants to share their answers question 1. Make a list of the priority diseases that are chosen. You could put a tally next to each disease that is chosen to demonstrate the number of districts that have chosen each disease. Discuss the diseases that have the most checks and the least number of checks. For example, if everyone chose malaria but only one district chose rabies, ask why there is a difference for that disease. Are the vectors different? Do they require different habitats?

For question 2, ask the group to look at their lists and tell you which diseases they use standard case definitions for. Circle those diseases on the board. Discuss the diseases that were not circled. Ask why it is important for every district to use the same case definition for each disease.

For question 3, develop a range of times that people offer for updating their target population and list of reporting sites. The sample time frame is at least annually.

Ask participants to discuss why it is important to update their information about their catchment areas. For instance, why would it be important to update their lists if a natural disaster occurred? Also, what if the neighboring country or district had a conflict and there was a surge of refugees or IDPs into your district? What would you need to know about those populations? Where could you get that information?

1. On the next page, look at the chart that lists priority diseases, conditions and events. Circle those that are included in the list of priority diseases, conditions and events in your district.
   Answers will be on their checklists

2. Next to each disease that you circled in question 1, place a tick mark (√) to show whether the reporting sites use a standard case definition for reporting that disease to the district.
   Answers will be on their checklists

3. How often do you update the description of key target populations in your catchment area?
   At least annually. More frequently if a change occurred such as a disaster, or an influx of refugees/IDPs.

4. How often do you update the list of reporting sites in the district?
   At least annually. More frequently if a change occurred such as a disaster, or an influx of refugees/IDPs.

5. Do all sites know what diseases to report and the case definitions for reporting them?
   Answers depend on participant experience

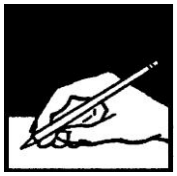
6. Do you include district laboratory sites in your list?
   Answers depend on participant experience

Table 1.1: IDSR Priority Diseases, Conditions and Events

<table>
<tr><th>Epidemic prone diseases</th><th>Diseases targeted for eradication or elimination</th><th>Other major diseases, events or conditions of public health importance</th></tr>
<tr><td rowspan="3">• Acute haemorrhagic fever syndrome*
• Anthrax
• Chikungunya
• Cholera
• Dengue
• Diarrhoea with blood (Shigella)
• Measles
• Meningococcal meningitis
• Plague
• SARI**
• Typhoid fever
• Yellow fever

*Ebola, Marburg, Rift Valley, Lassa, Crimean Congo, or West Nile Fever

**National programmes may wish to add Influenza-like illnesses to their priority disease list</td><td>• Buruli ulcer
• Dracunculiasis
• Leprosy
• Lymphatic filariasis
• Neonatal tetanus
• Noma
• Onchocerciasis
• Poliomyelitis</td><td>• Acute viral hepatitis
• Adverse events following immunization (AEFI)
• Diabetes mellitus
• Diarrhoea with dehydration in children less than 5 years of age
• HIV/AIDS (new cases)
• Hypertension
• Injuries (consider road traffic accidents)
• Malaria
• Malnutrition in children under 5 years of age
• Maternal deaths
• Mental health (consider epilepsy)
• Rabies
• Severe pneumonia less than 5 years of age
• Sexually transmitted infections
• Trachoma
• Trypanosomiasis
• Tuberculosis</td></tr>
<tr><td colspan="2">Diseases or events of international concern</td></tr>
<tr><td colspan="2">• Human influenza due to a new subtype
• SARS
• Smallpox
• Any public health event of international or national concern (infectious, zoonotic, food borne, chemical, radio nuclear, or due to unknown condition.</td></tr>
</table>



Exercise 3

Notes to Facilitator: In this exercise, participants will practice finding case definitions in the Technical Guidelines.

The information for completing this exercise can be found in Section 9 starting on page 229 of the IDSR Technical Guidelines or to Annexes 1A and 1B (pages 43 through 56). Assist participants in finding the missing information if they are struggling.

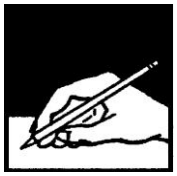
The purpose of this exercise is to show participants where to find information about case definitions for confirmed and suspected cases at the Health Facility and Community levels. Reiterate to the class the importance of using a consistent case definition every time so that cases can be compared across sites.

The first example for cholera has been done for you. Please note that the definition for cholera begins with "any person aged 5 years of more". This is intentional. As explained in the technical Guidelines on page 251, other enteric diseases may cause watery diarrhea, especially in children less than 5 years of age. By excluding children younger than 5 we increase the chance of diagnosing an actual case of cholera and not a different enteric disease.

Table 1.2: ANSWER. Using Standard Case Definitions

DISEASE	**DEFINING A CONFIRMED CASE**	**DEFINING A SUSPECTED CASE**	
		HEALTH FACILITY	**COMMUNITY**
Cholera	A suspected case in which *Vibrio cholerae* has been isolated in the stool.	Any person aged 5 years or more with severe dehydration or dies from acute watery diarrhea.	Any person 5 years of age or more with lots of watery diarrhoea

DISEASE	DEFINING A CONFIRMED CASE	DEFINING A SUSPECTED CASE	
		HEALTH FACILITY	**COMMUNITY**
Meningococcal meningitis	*A suspected case confirmed by isolation of N. meningitides from CSF or blood*	*Any person with sudden onset of fever (>38.5^{0}C rectal or 38.0^{0}C axillary) and one of the following signs: neck stiffness, altered consciousness or other meningeal signs*	Any person with fever and neck stiffness
Acute hemorrhagic fever syndrome	*A suspected case with laboratory confirmation (positive IgM antibody, positive PCR or viral isolation), or epidemiologic link to confirmed cases or outbreak*	*Illness with onset of fever and no response to usual causes of fever in the area, and at least one of the following signs: bloody diarrhea, bleeding from gums, bleeding into skin (purpura) bleeding into eyes and urine*	Any person who has an unexplained illness with fever and bleeding or who died after an unexplained severe illness with fever and bleeding
Poliomyelitis	*A suspected case with virus isolated in stool*	Any child less than 15 years of age with sudden onset of paralysis (AFP) or person of any age in whom the clinician suspects polio	*Any child with a sudden onset of acute paralytic disease*
Dracunculiasis	A person presenting with a skin lesion with itching and a blister living in endemic area	*Any person exhibiting or having a history of a skin lesion with the emergence of a worm*	*A person presenting with a skin lesion with itching and a blister living in an endemic area*
Neonatal tetanus	Any newborn with a normal ability to suck and cry during the first two days of life, and who, between the 3rd and 28th day of age, cannot suck normally, and becomes stiff or has convulsions or both.	*Any newborn normal in the 1st 2 days and unable to suck or feed thereafter from 3 to 28 days after birth*	*Any newborn who is normal at birth and then after 2 days, becomes stiff and unable to suck or feed or has convulsions*
Tuberculosis	*Refer to page 364 for complete reference*	Any person with a cough 3 weeks or more	*Any person with couch for 3 weeks or more*



Exercise 4

Notes to Facilitator: When participants have finished Exercise 3, explain that the group will now practice using case definitions to identify priority diseases for surveillance. In Exercise 4 they will need to use the list of case definitions in Annexes 1A or 1B between pages 43 and 56 in the Technical Guidelines to answer each question. You can also look for the information in Section 9 starting on page 252 of the Technical Guidelines. Ask the participants to read each question carefully and answer it using the information from the Technical Guidelines.

Answers are included below. When participants have finished, ask one person to share their answer for each question. Ask for alternate answers. Discuss the correct answer answers.

1. A health center in your district has reported a suspected case of cholera to the district. What case definition should the health center use to report the suspected case?
   (Please see pages 44 or 251 of the Technical Guidelines for more information)
   Cholera. Suspected case*:* *In a patient age 5 years or more, severe dehydration or death from acute watery diarrhea.*
   - *If there is a cholera epidemic, a suspected case is any person age 5 years or more with acute watery diarrhea, with or without vomiting.*

2. You would like to ask the community to help identify possible cholera cases within the community. According to Annex 1B, what signs and symptoms should communities use when they report information to the health facility?

   - *Report case-based information immediately.*
   - *Manage and treat the case according to national guidelines.*
   - *Enhance strict hand-washing and isolation procedures.*

- *Conduct case-based investigation to identify similar cases not previously reported*
- *Obtain stool specimen from 5 patients within 5 days of onset of acute watery diarrhea, and before antibiotic treatment is started. See laboratory guidelines for information on how to prepare, store and transport the specimens.*

3. Is this a definition that would be useful in communities in your district? What are local terms for reporting these signs or symptoms?
   Each participant will have a different answer. Encourage people to share their individual responses

3.0 Describe the role of the laboratory in detecting priority diseases, events and conditions

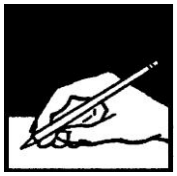
Give a presentation on improving local laboratory capacity for surveillance and response and about the role of laboratories at each level of the health system. Explain the importance of laboratory networks at the district level. Explain that participants can find this information on pages 37 to 39 of the Technical Guidelines. Annexes 1D and 1E provide information on lab function for different health levels and a format for creating a list of national reference laboratories.

Emphasize these points in your presentation:

- There are several diseases or conditions with signs and symptoms that are the same or similar to other diseases or conditions. For example, a child with fever and rash over the entire body might be diagnosed with measles, even though there could be several causes for the child's clinical presentation.

- Laboratory confirmation of diagnoses of diseases, conditions and events under surveillance is essential for disease surveillance because laboratory results help to:
    - Accurately diagnose illness in an individual patient, and
    - Verify the cause (or aetiology) of a suspected outbreak.

When you have finished the presentation, ask participants to continue on with exercises 5 and 6.



Exercise 5

Notes to Facilitator: In this exercise, participants will work with a group of 3 to 4 people and practice finding information from the Technical Guidelines about what is needed for laboratory confirmation of priority diseases. Explain that they will practice this skill by choosing 4 priority diseases from their district and completing the table below using information from the Technical Guidelines. Many people will use the same diseases. The groups will choose the diseases and then each member will fill out the table for 1 of the diseases.

Explain that Poliomyelitis has been completed for them. Introduce the Poliomyelitis example and present each column for the group. Explain that some columns have several important steps. For example, "when to collect" has two elements. The first is who should have a specimen collected and the second is the steps for collecting the specimens.

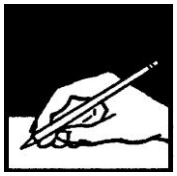
References for this exercise include Annexes 1A or 1B between pages 43 and 56 and the information in Section 9 starting on page 252 of the Technical Guidelines.

To conclude the exercise, ask participants to share one disease they chose until you have listed all of the diseases chosen by the group. Ask for a volunteer to tell the group the different specimens that are required to confirm the diseases that you have listed. Ask why it is important to know what specimens are required to perform a lab test. Ex: Physicians or lab techs will have to know what specimen is required and how to collect it in order to submit an accurate specimen for testing.

Table 1.3: Laboratory Confirmation for Priority Diseases

SUSPECTED DISEASE OR CONDITION	DIAGNOSTIC TEST	SPECIMEN TO COLLECT	WHEN TO COLLECT	HOW TO PREPARE, STORE AND TRANSPORT SPECIMEN	RESULTS
Poliomyelitis	Isolation of polio virus from stool	Stool	Collect a sample from every suspected AFP case. Collect 2 specimens 24 to 48 hours apart within the first 14 days of onset of paralysis	• Place stool in clean, leak-proof container and label clearly. • Immediately place in refrigerator or cold box not used for storing vaccines or other medicines • Transport specimens so they will arrive at designated polio laboratory within 72 hours of collection • When there is a delay, and specimen will not be transported within 72 hours, freeze specimen at -20°C or colder. Then transport frozen specimen with dry ice or cold packs also frozen at -20°C or colder.	Preliminary test results are usually available 14-28 days after receipt of specimen by the laboratory. If wild polio virus is detected, the national program will plan appropriate actions.

SUSPECTED DISEASE OR CONDITION	DIAGNOSTIC TEST	SPECIMEN TO COLLECT	WHEN TO COLLECT	HOW TO PREPARE, STORE AND TRANSPORT SPECIMEN	RESULTS
(1)	*Refer to Section 9 in the TG for answers to the diseases or conditions chosen by the participants*				
(2)					
(3)					
(4)					



Exercise 6

Notes to Facilitator: This exercise asks participants to utilize all of the skills they have learned in Module 1. Ask participants to read the case study and then discuss the questions with a small group of 2 or 3 people. When participants have finished the exercise, ask for a group representative to present his or her answer for each question. Allow different groups to respond for each question.

Answers have been provided below. After groups give their answers, ask if there is anything to add. If the sample answer is different, discuss why it is the correct answer.

Case Study:

Human Influenza caused by a new sub type

On the 17th of January 2010 (3.00 am), a 23 year-old woman named Lambda died from severe acute respiratory illness. Her death occurred within 48 hours of admission to a private hospital. The country, Ringah, had been experiencing an avian influenza outbreak among poultry. So the district team was asked to investigate Lambda's death.

The team learned that Lambda was first admitted for her illness to a private medical centre in Sondu city on 11 January 2010. She said her symptoms began on 8 January 2010. Her chief complaints were severe abdominal pain, high fever and vomiting. She developed cough and shortness of breath and was referred to a private hospital on 15 January 2010.

At the private hospital, the attending physician suspected infection with avian influenza because the patient reported exposure history to poultry before her onset of illness. She had bought a chicken in the market on 21 December 2009, and during the return to Lambda's home, the chicken died. Lambda was involved in de-feathering and preparing the chicken when she got home. Lambda was again involved in de-feathering and preparing poultry on 24 December 2009. Lambda did not report any other exposure to poultry after those two events.

The team also learned that the patient had been in close contact with her mother who died of acute viral pneumonia on 06 January 2010 (2.00 am).

Due to the circumstances of her death and exposure, the private hospital immediately alerted the district health authorities after Lambda's death.

* * *

You are a member of the investigating team in the district. Based on the information in the case report, please answer the following questions:

1. What would be your suspected case definition?

   (Please see page 278 in the Technical guidelines for more information)

   Human influenza caused by a new subtype. Suspected H5N1 case: *Any person presenting with unexplained acute lower respiratory illness with fever (>38^{0}C) and cough, shortness of breath or difficulty breathing*

   AND

   One or more of the following:

   - *Close contact (within 1 meter) with a person (e.g. caring for, speaking with, or touching) who is a suspected, probable, or confirmed H5N1 case;*
   - *Exposure (e.g. handling, slaughtering, de-feathering, butchering, preparation for consumption) to poultry or wild birds or their remains or to environments contaminated by their faeces in an area where H5N1 infections in animals or humans have been suspected or confirmed in the last month;*
   - *Consumption of raw or undercooked poultry products in an area where H5N1 infections in animals or humans have been suspected or confirmed in the last month;*
   - *Close contact with a confirmed H5N1 infected animal other than poultry or wild birds;*
   - *Handling samples (animal or human) suspected of containing H5N1 virus in a laboratory or other setting.*

2. What sources of information would you consult during the investigation?

   Sample answers could include:

- *Hospital records*
- *Medical officers and nurses at the private hospital*
- *Family members*
- *Contact tracing- who else had been exposed to the infected chicken*
- *Wildlife officers in the market town*

3. What specimen(s) should have been collected to confirm the diagnosis?

   (Please see page 279 of the Technical Guidelines for more information)

   A variety of specimens are suitable for diagnosis:

   - *Throat swab*
   - *Nasopharyngeal swab or aspirate*
   - *Nasal swab*
   - *Intubated patients: tracheal swab or broncholavage fluid*
   - *Blood*

4. How should the specimen have been prepared, stored and transported?

   (Please see page 280 of the Technical Guidelines for more information)
   Respiratory specimens should be transported in virus transport media. Media that could be used for a variety of viruses are commercially available.
   Specimens in viral transport medium for viral isolation should be kept at 4°C and transported to the laboratory promptly. If specimen is transported within 2 days, it may be kept at 4°C; otherwise should be frozen at or below -70 °C until transported to the laboratory. Repeated freezing and thawing must be avoided to prevent loss of infectivity. Sera may be stored at 4°C for approximately one week, but thereafter should be frozen at -20°C.

Transport of specimens should comply with the WHO guidelines for the safe transport of infectious substances and diagnostic specimens

5. What steps could be done to improve reporting from the private health facilities where she sought care?

   This answer will vary by participant. Ask for several responses and allow the group to discuss them.

   Possible answers include:

   - *Ensure that the private hospital has the correct contact information for the district surveillance officer*
   - *The private hospital could be given training in IDSR to ensure that they have the standard case definitions and alert thresholds for priority diseases.*
   - *Ensure that the private hospital is given feedback after they have reported a disease so that they know their information was utilized. They will be more likely to report again in the future if they know that their efforts are contributing to improved health outcomes.*

6. What steps would you take to improve community surveillance for suspected cases or deaths due to priority diseases, conditions, or events?

Points to remember:

1. Use standard case definitions to ensure that cases and suspected cases are recorded accurately across your district.
2. Update the information about your catchment area at least once a year so that you know who your target population is and the ongoing public health activities.
3. Make sure local laboratories are included in the surveillance and laboratory networks.

ANNEX 1: Introductory Presentation for Module 1

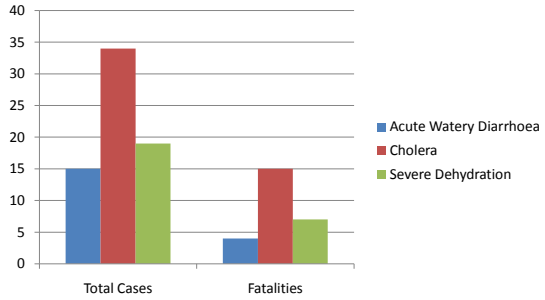
Slide 1

Module 1: Identify cases of priority diseases, conditions and events

Integrated Disease Surveillance and Response
District Level Training

Slide 2

Yearly report from a district



Notice the categories. They are being reported as different diseases/ causes of mortality. What problems does this labeling cause for analyzing this data? Using standard case definitions can reduce the amount of redundancy and miss-reporting from each site.

Slide 3

Learning Objectives

1. Use standard case definitions to identify diseases for reporting to the health system
2. Involve the community in disease surveillance
3. Improve local laboratories capacity to detect priority diseases, conditions and events.

Slide 4

Standard Case Definitions

- Agreed upon set of criteria
- Using case definitions makes sure that every case is diagnosed and reported in the same way.
- This allows us to:
  - Compare data across sites
  - Monitor priority diseases, conditions and events
  - Identify alert or epidemic thresholds

Slide 5

Exercises

Exercise 1: Case study on sources of information

- Information available at different health levels

Exercise 2: Checklist of priority diseases

- Identify priority diseases in your district

Slide 6

Update District Procedures for Surveillance and Response

- Description of the catchment area
- List of the reporting sites and focal persons
- Distribution of updated data collection forms, reporting tools and technical guidelines

Slide 7

Exercises

Exercise 3: Finding Standard Case Definitions

- Use Section 9 and Annexes 1A and 1B of the IDSR Technical Guidelines

Exercise 4: Using Standard Case Definitions

- **Suspected case:** Syndromic approach to diagnosis
- **Confirmed case:** Lab confirmation

Slide 8

Involve and Improve Local Laboratory Capacity for Surveillance and Response

- Do you know to which laboratories you send various pathological specimens?

  E.g., Ebola, Cholera, Influenza….
- Do the health facilities know where to send the various specimens?
- Is there an updated list of laboratories that can process various specimens?

Slide 9

Exercises

- **Exercise 5:** Use the Technical Guidelines to inform laboratories
- Choose 4 priority diseases from your district
- Locate information in TGs on the lab process for each disease

- **Exercise 6:** Case study using all of the skills from Module 1
- Suspected Case Definition
- Sources of Information
- Specimen Collection
- Lab Confirmation
- Improve Reporting

Slide 10

Points to Remember

1. Use standard case definitions to ensure that cases and suspected cases are recorded accurately across your district
2. Update the information about your catchment area at least once a year so that you know your target populations are and the ongoing public health activities
3. Make sure local laboratories are included in the surveillance and laboratory networks

World Health Organization

REGIONAL OFFICE FOR Africa

Integrated Disease Surveillance and Response

District Level Training Course | Facilitator's Guide Module 2

Report priority diseases, conditions and events

July 2011

World Health Organization

Regional Office for Africa (AFRO)

Integrated Disease Surveillance and Response

District Level Training Course

Facilitator Guide

Module 2

Report priority diseases, conditions and events

July 2011

Introduction

A PowerPoint presentation has been provided for you as a standard template at the end of this module in Annex 1. You may use it exactly as it appears or alter it as you see necessary.

Explain the importance of reporting a priority disease to the next health level.

Emphasize these points in your presentation:

- Every level of the health system has a role in carrying out ongoing surveillance for priority diseases, conditions and events.
- If a disease is identified at a local level, for example, but the information is not reported to the next level, an opportunity for timely response is lost.
- Gathering data about diseases, conditions and events in a health facility, district or other administrative area helps the health management teams to use the data for action and to:
    - Identify emerging problems and plan appropriate responses
    - Take action in a timely way
    - Monitor disease trends in the area
    - Evaluate the effectiveness of the response
- What is reported to each level and how often is usually guided by national policy. The policy will specify whether the data are reported immediately, weekly, monthly, or quarterly.
- How the information is reported depends on the capacity in your area. For example, reporting may be done by electronic methods such as email or other electronic transmission, by facsimile, by regular mail, or by radiophone or cell phone SMS text reporting.
- The decision about what, when and where to report disease information will depend on specific disease control priorities and activities in your country or district.
- This module focuses on requirements for immediate reporting with case-based data and regular (weekly, monthly or quarterly) reporting of summary data.
- In addition to priority diseases that are targets of national policy, districts should also report any unusual event that has the potential to affect human health.

* * * *

Ask a participant to read the learning objectives from Module 2 for the group.

This module will describe and allow you to practice the following skills:

1. Immediately report information about acute epidemic-prone diseases or events.
2. Immediately report information about diseases with potential to be public health events of national or international concern.
3. Regularly report summary disease information to the next level.
4. Improve the flow of data to improve timely reporting in your area.

1.0 Immediately report information about acute epidemic-prone diseases or events

Define immediate reporting and explain how it is often called case-based reporting.

Emphasize these points in your presentation:

- **Immediate reporting** means that information about a disease, condition, or event is reported to the next level as soon as an epidemic-prone disease is suspected or is otherwise required to be reported immediately because it is a potential public health event of national concern, or required by the International Health Regulations (2005).

- The information that is reported immediately is often referred to as **case-based reporting**. This means that specific information about each case is included in the report. The information is obtained through a preliminary investigation of the suspected case and includes:

    - Geographic and patient location
    - Patient identification and demographic information
    - Information about onset of symptoms, vaccine history and information about any relevant risk factors
    - Laboratory results

Ask participants to review the list of immediately reportable diseases and events on the next page. Ask participants to count the number of immediately reportable diseases that are present in their district. Ask for answers and discuss why it is important to report these diseases immediately.

Ask participants to review an immediate case-based reporting form which can be found in Annex 2A on page 73 of the Technical Guidelines.

Table 2.1: Diseases Requiring Immediate Reporting

Acute Flaccid Paralysis (AFP)	Maternal death
Acute hemorrhagic fever syndrome (Ebola, Marburg, Lassa Fever, RVF, Crimean-Congo)	Measles
Adverse effects following immunization (AEFI)	Meningococcal meningitis
Anthrax	Neonatal tetanus
Chikungunya	Plague
Cholera	Rabies (confirmed cases)
Cluster of SARI	SARS
Dengue fever	Smallpox
Diarrhoea with blood (*Shigella*)	Typhoid fever
Dracunculiasis	Yellow fever
Influenza due to new subtype	Any public health event of international concern (infectious, zoonotic, food borne, chemical, radio nuclear or due to an unknown condition)

2.0 Report summary information for priority diseases, conditions and events

Present information about reporting case-based information to the next level. Explain the purpose and procedures for reporting summary information to the next level. Explain the importance of reporting zeros on the forms to demonstrate that data is not missing and the form is complete. Explain that participants can find this information in the Technical Guidelines on pages 63 to 67.

Emphasize these points in your presentation:

- **Summary information** is the total number of cases and deaths seen in a particular time period (for example, weekly, monthly, or quarterly). This is information that is important for detecting emerging diseases or other health events and should be analyzed and used for action. For example, weekly reporting provides data for monitoring trends of diseases or conditions in order to detect epidemics. Monthly reporting about other endemic diseases is used for monitoring progress with or impact of prevention and control activities. It can also assist the other levels in detecting emergent or unusual events.

- During weekly reporting, use "zero reporting." **Zero reporting** means that you should record a 0 (zero) on the reporting form when no cases of an immediately reportable disease have been diagnosed during the week. Submitting a zero for each immediately reportable disease when no cases were detected during the week tells the staff at the next level that a complete report has been filed.

Table 2.2: Diseases Requiring Monthly or Quarterly Reporting

Acute viral hepatitis	Malaria
AIDS (New Cases)	Malnutrition in children under 5 years
Buruli ulcer	Mental health (Epilepsy)
Diabetes mellitus	Noma
Diarrhoea with severe dehydration in children under 5 years of age	Onchocerciasis
HIV (new detections)	Severe pneumonia in children under 5 years of age
Hypertension	Sexually transmitted diseases (STIs)
Influenza-like illness	Trachoma
Injuries (Road Traffic Accidents)	Trypanosomiasis
Leprosy (quarterly)	Tuberculosis (quarterly)
Lymphatic Filariasis	Underweight Newborns (less than 2500 g)

Exercise 1

Notes to Facilitator: Exercise 1 has two parts.

For Part A, ask participants to get into groups of three or four people to fill out the table. Explain that participants will complete a list of priority diseases by answering these questions: do they appear in their district? How often are they reported to the next level? What is the IDSR recommendation for reporting?

Each participant will have a different answer for the first two columns. The third column should be the same, as drawn from the Technical Guidelines. The groups can work together to complete column three. Ask the groups to compare their answers in the first two columns to the recommended frequency of reporting.

When the groups have completed the exercise, conduct a short feedback exercise. Ask for a show of hands:

1. How many of you said cholera was a priority disease in your district? (How many said Meningococcal meningitis...etc)
2. Ask for volunteers to answer questions about how often you report to the next level? Does this match the frequency in the Guidelines?

Part A:

Table 2.3: Reporting Priority Disease Information to the Next Level in Your District

Disease	Is this a priority disease or condition in your district?	How often do you report information to the next level?	What is the recommendation for frequency of reporting from your national IDSR guidelines?
Cholera	*Answers will depend on the participant's district*	*Answers will depend on the participant's district*	*Immediate*
Meningococcal meningitis	*See above*	*See above*	*Immediate*
Viral Hemorrhagic Fevers (Ebola, Marburg, Rift Valley Fever)	*See above*	*See above*	*Immediate*
Poliomyelitis	*See above*	*See above*	*Immediate*
Dracunculiasis	*See above*	*See above*	*Immediate*
Neonatal tetanus	*See above*	*See above*	*Immediate*
Tuberculosis	*See above*	*See above*	*Quarterly*

Part B:

Notes to Facilitator: For Part B, participants will work alone. Ask them to answer the following questions using information from their own districts. When they have completed the exercise, ask people to share their answers. When a participant offers his/her answer, acknowledge them and then ask the group to discuss alternative methods or answers.

1. What diseases or conditions do you report to the next level at least weekly? How do you report weekly data to the next level? Is there a standard form that you use? What methods of communication do you normally use for weekly reporting?
   Answers will vary

2. What diseases or conditions do you report to the next level at least monthly? How do you report monthly data to the next level? Is there a standard form that you use? What methods of communication do you normally use for monthly reporting?
   Answers will vary

3. What diseases do you report immediately in your district? Do you report case-based data?
   Answers will vary

4. Have you ever needed to report an unusual event or cluster due to an unknown cause? What were the signs and symptoms that you reported?
   Answers will vary

Exercise 2

Notes to Facilitator: For this exercise, ask participants to break into small groups of about four people. This exercise has three case stories. Each person will read the case studies to themselves and then the group will answer the questions together. Explain that they can find more information about this on pages 64 and 67.

Also look at Annexes:

- 2A: IDSR immediate case-based reporting form
- 2B: IDSR case-based laboratory reporting form
- 2C: IHR (2005) decision instrument

Exercise 2: Case 1

On 1 April 2010, Amina, a 25 year old fish monger from Bibi neighborhood in Kati town, (Njali District) reported to Kati Health centre complaining that she has had watery diarrhea for the last day. She also vomited twice this morning. She lives in the same household with her three children, husband and her step-mother. There have been episodes of cholera in a neighboring Bahati district in the last 3 months. Amina travelled there three days ago to go to her auntie's funeral.

1. When should the health staff report this case to the next level?
   Immediately
2. What information should be collected and reported about this case?
   Look in Section 9
3. Use information from Amina's case to record information on the form that is on the next page. You may need to leave some rows blank because you may not have all of the information you need.

*Shaded boxes indicate unknown information

IDSR Case Report Form		
Variables / Questions		**Answers**
1	Country	
2	Reporting Site (Health Facility, Camp, …)	*Kati Health Center*
3	Reporting District	*Njali*
4	Disease/Event (diagnosis): *	*Cholera*
5	In-patient or Out-patient?	*Outpatient*
6	Date seen at health facility (day/month/year)	*April 1*
7	Patient Name(s)	*Amina*
8	Date of Birth (day/month/year)	*About 1985*
9	Age (in years). You may use decimal numbers	*25 years*
10	Sex: M=Male F=Female	*F*
11	Patient's residence: Village/Neighbourhood	*Bibi*
12	Town/City	*Kati*
13	District of residence	
14	Urban/Rural? (U=Urban R=Rural)	*Rural*
15	Address, (cell)phone number … If applicable, name of mother and father if neonate or child	
16	Date of onset (day/month/year) of first symptoms	*31 March*
17	Number of vaccine doses received in the past **	
18	Date of last vaccination	
19	Laboratory results	
20	Outcome: (Alive, Dead, Transferred out, Lost to follow-up or unknown)	*Living*
21	Final Classification: Confirmed, Probable, Compatible, Discarded, Suspected or Pending	
22	Date health facility notified District (day/month/year)	
23	Date form sent to district (day/month/year)	
24	Record's unique identifier (YYYY-WEEK-CCC-PPP-DDD-Case nnn)	
25	Person completing form: name, function, signature	

***** Disease/Event (Diagnosis)**:**
AFP, Anthrax, Cholera, Bloody Diarrhoea, Dracunculiasis, Neonatal Tetanus, Measles, Meningitis, Yellow fever, Dengue, Chikungunya, Viral Hemorragic Fever, Plague, Any other event or disease of public health importance (Specify)

****** Measles, Neonatal Tetanus (TT in mother), Yellow Fever, and Meningitis only.
For cases of Measles, NT (TT in mother), Yellow Fever, and Meningitis; 9=unknown.
For Measles, TT, YF- documented by card. For Meningitis, by history.)

Exercise 2: Case 2

In August 2008, a ship offloaded more than 500 tons of toxic waste in a country named Majani. The waste was transferred into tankers owned by a local firm. The agreement was that the waste would be treated and disposed of safely. Over a period of one week following the offloading, approximately 600 to 1000 people presented at the local teaching hospital for assessment and treatment. The patients included adults, many children and young infants. There were three deaths reported, and these were patients who had died one day after presenting with acute symptoms of nosebleed, nausea and vomiting, headache, skin lesions, eye irritation and respiratory distress. Initial laboratory analyses indicated that the substances had a strong smell and consisted of many toxic chemicals including organochlorines and hydrogen sulphide. There were reports that public authorities may have authorized local dumping of the substances because they were told it was sewage.

1. When should the health staff have reported this case to the next level?

   Immediately

2. What information should be collected and reported about this event?

   Use the IDSR case based report form:

   - *Epidemiological, (who. where, when, etc…)*
   - *Clinical presentation*
   - *Risk mapping*

3. What questions do you think the national IHR Focal Point should ask about this case? Refer to the IHR decision instrument at the end of this module on page 2:22 or on page 75 of the Technical Guidelines.

Exercise 2: Case 3

On the 17th of January 2010 (3.00 am), a 23 year-old woman named Lambda died from severe acute respiratory illness. Her death occurred within 48 hours of admission to a private hospital. The country, Ringah, had been experiencing widespread infection of avian influenza outbreak among poultry. So the district team was asked to investigate the case.

The team learned that Lambda was first admitted to a private medical centre in the city Sondu for her illness on 11 January 2010. She said her symptoms began on 8 January 2010. She developed a high fever (above 38^0C), cough and shortness of breath and was referred to a private hospital on 15 January 2010.

At the private hospital, the attending physician suspected infection with avian influenza because the patient reported exposure history to poultry before her onset of illness. She had bought a chicken in the market on 21 December 2009, and the chicken had died during the trip back to her home. She was involved in de-feathering and preparing the chicken when she got home. She was again involved in de-feathering and preparation of poultry on the 24 December 2009. Lambda did not report any other exposure to poultry after that (e.g., in the week before onset of her illness).

The team also learned that the patient had been exposed to her mother who died of acute viral pneumonia on 06 Jan 2010 (2.00 am).

Due to the circumstances of her death and exposure, the private Hospital immediately alerted the district health authorities after Lambda's death.

1. Use the information above to fill in the form on the next page.

2. What additional information is needed to complete the form?

IDSR Case Report Form		
Variables / Questions		**Answers**
1	Country	*Ringah*
2	Reporting Site (Health Facility, Camp, …)	*Sondu*
3	Reporting District	
4	Disease/Event (diagnosis): *	*Avian influenza*
5	In-patient or Out-patient?	*Inpatient*
6	Date seen at health facility (day/month/year)	*11 Jan 2010*
7	Patient Name(s)	*Lamda*
8	Date of Birth (day/month/year)	*About 1987*
9	Age (in years). You may use decimal numbers	*23 years*
10	Sex: M=Male F=Female	*F*
11	Patient's residence: Village/Neighbourhood	
12	Town/City	*Sondu*
13	District of residence	
14	Urban/Rural? (U=Urban R=Rural)	*Rural*
15	Address, (cell)phone number … If applicable, name of mother and father if neonate or child	
16	Date of onset (day/month/year) of first symptoms	*8 January 2010*
17	Number of vaccine doses received in the past **	
18	Date of last vaccination	
19	Laboratory results	
20	Outcome: (Alive, Dead, Transferred out, Lost to follow-up or unknown)	*Dead*
21	Final Classification: Confirmed, Probable, Compatible, Discarded, Suspected or Pending	
22	Date health facility notified District (day/month/year)	*17 January 2010*
23	Date form sent to district (day/month/year)	
24	Record's unique identifier	
25	Person completing form: name, function, signature	

***** Disease/Event (Diagnosis)**:**
AFP, Anthrax, Cholera, Bloody Diarrhoea, Dracunculiasis, Neonatal Tetanus, Measles, Meningitis, Yellow fever, Dengue, Chikungunya, Viral Hemorragic Fever, Plague, Any other event or disease of public health importance (Specify)

****** Measles, Neonatal Tetanus (TT in mother), Yellow Fever, and Meningitis only.
For cases of Measles, NT (TT in mother), Yellow Fever, and Meningitis; 9=unknown.
For Measles, TT, YF- documented by card. For Meningitis, by history.)

3.0 Improve routine reporting practices

Present the following information about improving reporting practices in your area and making strong links to improve community-based surveillance. Explain that this information can be found in the Technical Guidelines on pages 68 and 69.

Emphasize these points in your presentation:

- In many health facilities, more than one person is responsible for recording information about patients seen in the facility. For example, the clinician records the patient's name and diagnosis in a clinic register. Later in the day, a nurse tallies the number of cases and deaths seen in an outpatient service. A ward nurse tallies the number of hospitalized cases. Then, each week, month and quarter, a statistician or data clear will calculate summaries for all the diseases and records the totals in a standard form. If the health facility has a computer for keeping individual patient records, surveillance data is extracted from the records as necessary for weekly, monthly and quarterly reporting.

- Make sure that the flow of information is reliable whether it is within a facility, between reporting sites in a district, between the community and the district, and from district to the national level. If facilities or districts do not have the necessary forms or procedures for reporting, they may not report on time, and an opportunity is missed for taking action.

- In many cases, health events will already be known in a community before cases reach a health facility. Building good working relationships with community informants is a way to make sure that information about health events, especially unusual or unexplained events, reaches health authorities in time to take action to prevent unnecessary death and illness.

Exercise 3

Notes to Facilitator: Explain that Exercise 3 is a checklist that participants will fill out using information from their own districts or facilities. They will determine if the following forms are available to them, what format they are in and what they do to problem solve if these forms are not available. Ask participants to volunteer some of their answers to generate a discussion to identify forms that are usually available, those that are not usually available and some of the problem solving actions that participants have done. Explain to participants that they should ask you for a definition if they don't recognize the name of a form. Show them how to look for the form in the Technical Guidelines.

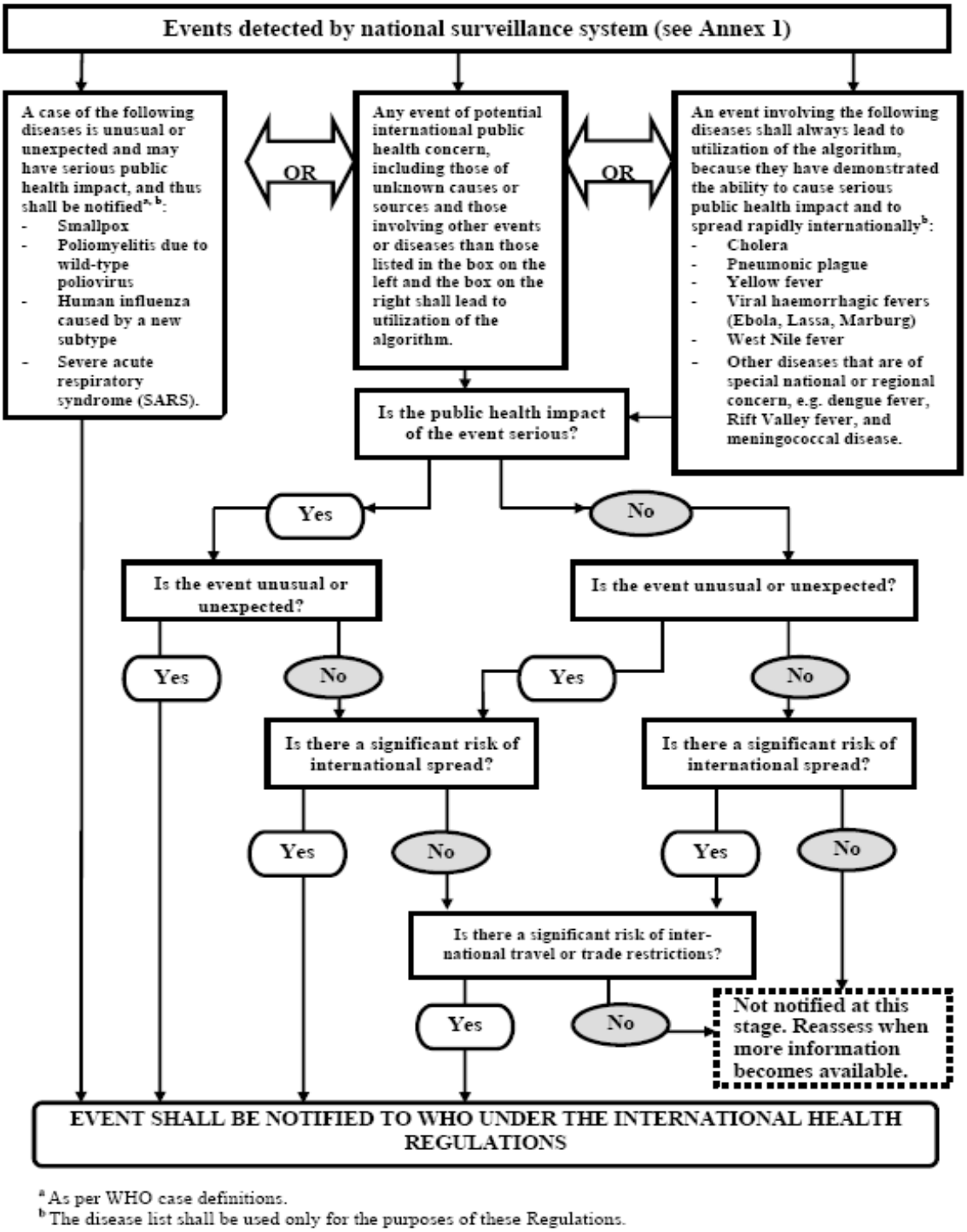
Table 2.4: Checklist for Reporting Forms in Your District

Reporting form	**Are these forms available in your work site?**		**How do you report data if paper or electronic means are not available?**
	Paper form	Electronic	
Case-based reporting form	*Answer will depend*	*Answer will depend*	*Answer will depend*
Lab-specimen-based reporting form			
Line list			
Routine weekly form			
Routine monthly form			

Points to remember:

1. Report priority diseases to the next health level at appropriate time intervals
2. Know which diseases and events require immediate reporting and which ones can be reported monthly
3. Be sure that you know who to send your reports to at the next health level and what format you should send them in.
4. Do your best to involve laboratories and community stakeholders in the reporting process to foster communication and develop a clear profile for the disease and target populations.

Figure 1: IHR Decision Instrument



[a] As per WHO case definitions.
[b] The disease list shall be used only for the purposes of these Regulations.

EXAMPLES FOR THE APPLICATION OF THE DECISION INSTRUMENT FOR THE ASSESSMENT AND NOTIFICATION OF EVENTS THAT MAY CONSTITUTE A PUBLIC HEALTH EMERGENCY OF INTERNATIONAL CONCERN

The examples appearing in this Annex are not binding and are for indicative guidance purposes to assist in the interpretation of the decision instrument criteria.

DOES THE EVENT MEET AT LEAST TWO OF THE FOLLOWING CRITERIA?

<table>
<tr><td rowspan="5">Is the public health impact of the event serious?</td><td></td></tr>
<tr><td>I. Is the public health impact of the event serious?</td></tr>
<tr><td>1. Is the number of cases and/or number of deaths for this type of event large for the given place, time or population?</td></tr>
<tr><td>2. Has the event the potential to have a high public health impact?

THE FOLLOWING ARE EXAMPLES OF CIRCUMSTANCES THAT CONTRIBUTE TO HIGH PUBLIC HEALTH IMPACT:

✓ Event caused by a pathogen with high potential to cause epidemic (infectiousness of the agent, high case fatality, multiple transmission routes or healthy carrier).
✓ Indication of treatment failure (new or emerging antibiotic resistance, vaccine failure, antidote resistance or failure).
✓ Event represents a significant public health risk even if no or very few human cases have yet been identified.
✓ Cases reported among health staff.
✓ The population at risk is especially vulnerable (refugees, low level of immunization, children, elderly, low immunity, undernourished, etc.).
✓ Concomitant factors that may hinder or delay the public health response (natural catastrophes, armed conflicts, unfavourable weather conditions, multiple foci in the State Party).
✓ Event in an area with high population density.
✓ Spread of toxic, infectious or otherwise hazardous materials that may be occurring naturally or otherwise that has contaminated or has the potential to contaminate a population and/or a large geographical area.</td></tr>
<tr><td>3. Is external assistance needed to detect, investigate, respond and control the current event, or prevent new cases?</td></tr>
</table>

	THE FOLLOWING ARE EXAMPLES OF WHEN ASSISTANCE MAY BE REQUIRED: ✓ Inadequate human, financial, material or technical resources – in particular: – Insufficient laboratory or epidemiological capacity to investigate the event (equipment, personnel, financial resources) – Insufficient antidotes, drugs and/or vaccine and/or protective equipment, decontamination equipment, or supportive equipment to cover estimated needs – Existing surveillance system is inadequate to detect new cases in a timely manner.
	IS THE PUBLIC HEALTH IMPACT OF THE EVENT SERIOUS? **Answer "yes" if you have answered "yes" to questions 1, 2 or 3 above.**

Is the event unusual or unexpected?	**II. Is the event unusual or unexpected?**
	4. *Is the event unusual?* THE FOLLOWING ARE EXAMPLES OF UNUSUAL EVENTS: ✓ The event is caused by an unknown agent or the source, vehicle, route of transmission is unusual or unknown. ✓ Evolution of cases more severe than expected (including morbidity or case-fatality) or with unusual symptoms. ✓ Occurrence of the event itself unusual for the area, season or population.
	5. *Is the event unexpected from a public health perspective?* THE FOLLOWING ARE EXAMPLES OF UNEXPECTED EVENTS: ✓ Event caused by a disease/agent that had already been eliminated or eradicated from the State Party or not previously reported.
	IS THE EVENT UNUSUAL OR UNEXPECTED? **Answer "yes" if you have answered "yes" to questions 4 or 5 above.**

Is there a significant risk of international spread?	**III. Is there a significant risk of international spread?**
	6. *Is there evidence of an epidemiological link to similar events in other States?*
	7. *Is there any factor that should alert us to the potential for cross border movement of the agent, vehicle or host?* THE FOLLOWING ARE EXAMPLES OF CIRCUMSTANCES THAT MAY PREDISPOSE TO INTERNATIONAL SPREAD: ✓ Where there is evidence of local spread, an index case (or other linked cases) with a history within the previous month of: – international travel (or time equivalent to the incubation period if the pathogen is known) – participation in an international gathering (pilgrimage, sports event, conference, etc.) – close contact with an international traveller or a highly mobile population. ✓ Event caused by an environmental contamination that has the potential to spread across international borders. ✓ Event in an area of intense international traffic with limited capacity for sanitary control or environmental detection or decontamination.
	IS THERE A SIGNIFICANT RISK OF INTERNATIONAL SPREAD? **Answer "yes" if you have answered "yes" to questions 6 or 7 above.**

international restrictions?	**IV. Is there a significant risk of international travel or trade restrictions?**
	8. *Have similar events in the past resulted in international restriction on trade and/ travel?*
	9. *Is the source suspected or known to be a food product, water or any other goods might be contaminated that has been exported/imported to/from other States*?

ANNEX 1: Introductory Presentation for Module 2

Slide 1

Module 2: Report priority diseases, conditions and events

Integrated Disease Surveillance and Response
District Level Training

Slide 2

Rank these by importance

1. Upcoming presidential elections
2. A woman in labor
3. Global warming
4. A child with helminth infection

Participants can do this exercise on their own. Ask: how did you know what was most important?
Knowing what to report (and when) can be subjective. That's why IDSR created a standard list for when and how to report specific diseases. Not everything has to be a mystery!

Slide 3

Learning Objectives

1. Immediately report information about acute epidemic-prone diseases or events or with potential to be public health events of national or international concern.
2. Regularly report summary disease information to the next level
3. Improve the flow of data to improve timely reporting in your area

Slide 4

Immediately Report Information About Acute Epidemic-Prone Diseases or Events

- **Immediate reporting** means that information about a disease, condition, or event is reported to the next level as soon as an epidemic-prone disease is suspected.
- The information that is reported immediately is often referred to as **case-based reporting**. This means that specific information about each case is included in the report.

Slide 5

Report Summary Information for Priority Diseases, Conditions and Events

- **Summary information** is the total number of cases and deaths seen in a particular time period (for example, weekly, monthly, or quarterly).
- During weekly reporting, use "zero reporting." **Zero reporting** means that you should record a 0 (zero) on the reporting form when no cases of an immediately reportable disease have been diagnosed during the week.

This information is important for detecting emerging diseases or other health events and should be analyzed and used for action. For example, weekly reporting provides data for monitoring trends of diseases or conditions in order to detect epidemics. Monthly reporting about other endemic diseases is used for monitoring progress with or impact of prevention and control activities. It can also assist the other levels in detecting emergent or unusual events.

Submitting a zero for each immediately reportable disease when no cases were detected during the week tells the staff at the next level that a complete report has been filed.

Slide 6

Exercises

Exercise 1:

Part A: Complete a table on reporting schedules for priority diseases

Part B: Answer questions about disease reporting in your district

Exercise 2: Practice filling out or using the following forms:

- IDSR immediate case-based reporting form
- IDSR case-based laboratory reporting form
- IHR (2005) decision instrument

Slide 7

Improve Routine Reporting Practices

- In many health facilities, more than one person is responsible for recording information about patients seen in the facility.
- Make sure that the flow of information is reliable whether it is within a facility, between reporting sites in a district, between the community and the district, and from district to the national level.
- In many cases, health events will already be known in a community before cases reach a health facility.

Slide 8

Exercises

Exercise 3: Complete a checklist for reporting forms

- Use information from your own district
- Check the forms that are available in your district
- How are they submitted to the next health level?

Slide 9

Points to Remember

1. Report priority diseases to the next level
2. Know which diseases and events require immediate reporting and monthly reporting
3. Be sure to know who to send the report to and the reporting format
4. Involve the labs and community to foster communication and develop a clear profile for the disease and target populations

World Health Organization

REGIONAL OFFICE FOR Africa

Integrated Disease Surveillance and Response

District Level Training Course | Facilitator's Guide Module 3

Analyze and interpret data

July 2011

World Health Organization

Regional Office for Africa (AFRO)

Integrated Disease Surveillance and Response

District Level Training Course

Facilitator Guide

Module 3

Analyze and interpret data

July 2011

The modules comprising the Integrated Disease Surveillance and Response District Level Training Course were prepared by the World Health Organization Regional Office for Africa (AFRO) and the Centers for Disease Control and Prevention (CDC) with support from the United States Agency for International Development (USAID) Africa Bureau. While the contents of this course are in the public domain and may be used and reproduced without permission, please refer to the suggested citation: WHO-AFRO & CDC (2010). *Integrated Disease Surveillance and District Level Training Course, Facilitator Guide. Module 3: Analyze and Interpret Data*. Brazzaville, Republic of Congo and Atlanta, USA.

Introduction

Begin this module by distributing graph paper to the participants if it is available. Otherwise, the participants will use the spaces provided to them in their modules. Please note that this module may require more time to complete than the other modules. During the following exercises, you could ask participants how they interpret the results the data that they are analyzing and possible actions that they could take resulting from the analysis.

A PowerPoint presentation has been provided for you as a standard template at the end of this module in Annex 1. You may use it exactly as it appears or alter it as you see necessary.

Emphasize the following points in your presentation:

- Organizing and analyzing data is an important function of surveillance. Data analysis provides information for taking relevant, timely and appropriate public health action. For example, analysis of surveillance data allows for:
    - Observing trends over time and alerting health staff about emergent events or unusual patterns.
    - Identifying geographic areas of higher risk.
    - Characterizing personal variables such as age, gender or occupation that place a person at higher risk for the disease or event.

Present a short lecture to orient participant to Table 4 on page 87 of the Technical Guidelines. Explain the three types of analysis (Time, Place and Person) the objectives for each type of analysis and tools and methods that can be used for each of the three types.

Time

- **Objective:** Detect abrupt or long-term changes in disease or unusual event occurrence, how many occurred, and the period of time from exposure to onset of symptoms.
- **Tools:** Record summary totals in a **table** or on a **line graph** or **histogram.**

- **Method:** Compare the number of case reports received for the current period with the number received in a previous period (weeks, months, seasons or years)

Place

- **Objective:** Determine where cases are occurring (for example, to identify high risk area or locations of populations at risk for the disease)
- **Tools:** Plot cases on a **spot map** of the district or area affected during an outbreak.
- **Method:** Plot cases on a map and look for clusters or relationships between the location of the cases and the health event being investigated.

Person

- **Objective:** Describe reasons for changes in disease occurrence, how it occurred, who is at greatest risk for the disease, and potential risk factors
- **Tools:** Extract specific data about the population affected and summarize in a **table.**
- **Method:** Depending on the disease, characterize cases according to the data reported for case-based surveillance such as age, sex, place of work, immunization status, school attendance, and other known risk factors for the diseases.

In general, analyzing routine surveillance data should include the following questions:

- Have any priority diseases or other public health events of concern been detected during the reporting period (this week, for example)? Is an epidemic or unusual public health event suspected?
- Of the cases, deaths or events detected, how many were confirmed?
- Where did they occur?
- How does the observed situation compare to previous observation periods of time this year? For example, when compared to the start of the reporting period, is the problem increasing?
- Are the trends stable, improving or worsening?
- Is the reported surveillance information representative enough of the reporting site's catchment area? Out of all the sites that should report, what proportion has actually been reported?
- How timely were the data received from the reporting sites?

Each site that collects or receives data should prepare and follow an analysis plan for analyzing routine surveillance information (refer to Annex 3A on page 103 of the Technical Guidelines).

* * * *

Ask a participant to read the learning objectives for the module.

This module will describe and allow you to practice the following skills:

1. Collect and organize data for analysis
2. Use tables, graphs and histograms to analyze trends
3. Use maps to analyze location of populations at risk
4. Use tables to describe characteristics of the affected population.
5. Draw conclusions about analysis results
6. Make recommendations based on the conclusions

Introductory Exercise

Notes to Facilitator: Facilitate an introductory exercise. Read aloud – one at a time – each of the questions below. Ask participants to listen to the following questions and write down their answers. They will discuss their answers with a neighbor. Allow about 10 minutes for this small group discussion. When they are finished, ask for a show of hands as a response to each of the questions above. ("How many of you analyze data weekly? Monthly? Annually?" "How many are regularly calculating trend analysis?" and so on). Record those totals on a flip chart or other writing board.

5. How often do you analyze surveillance data?
6. Do you analyze trends with the surveillance data? If so, for which diseases or conditions?
7. Do you analyze surveillance data by place? If so, for which diseases or conditions?
8. Did you locate geographic areas of higher risk for the particular disease?
9. Do you regularly analyze descriptive data about the characteristics of the population?

To conclude this exercise, reemphasize the main points from the introduction. Explain that surveillance data is data for action. Review the answers to the proceeding questions with the participants to point out the several kinds of questions that surveillance data can help us answer.

1.0 Collect and organize data

Present a short lecture based on the information in section 3.1. This brief but important lecture helps participants understand the flow of information in their own national system. Describe the generic flow of information from the diagram on page 84. Emphasize both the reporting and feedback loops.

- The routine flow of surveillance data is usually from each reporting site to its immediate supervisor (usually the next higher level within the health system).
- At the health facility level, both in-patient wards and out-patient areas are surveillance sites, and they will send their data to the facility's statistics section.
- Next, health facilities send their surveillance data to the district health management team. In some settings, a sub-district team collects the data from the health facilities in its catchment area and forwards it to the district team.
- Districts aggregate and send their data to provinces, regions or states with a copy to the Ministry of Health.
- After aggregating the district totals, provinces send their data to the Ministry of Health.

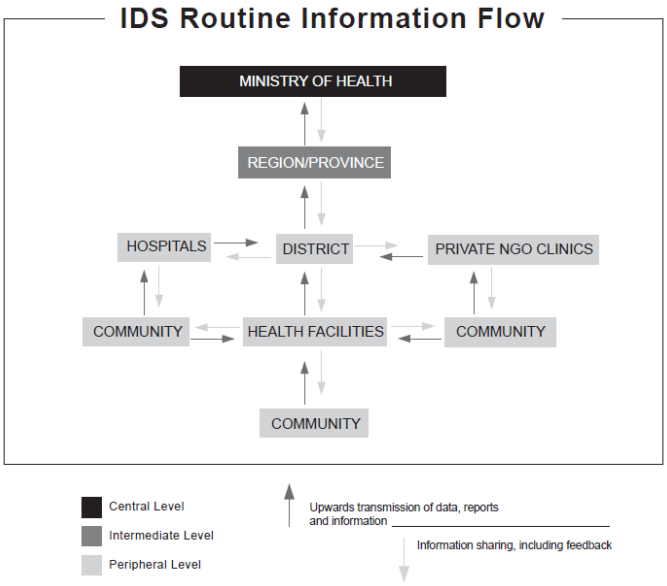
Exercise 1

Notes to Facilitator: For Exercise 1, you have the option of gathering information ahead of the course about the national system where the course is being given and prepare a diagram to illustrate the links between the levels (based on the diagram on page 84).Present the diagram of the country's system to the participants.

If you do not have the time or information to prepare a site-specific diagram, you can still perform the following steps to prepare participants for Exercise 1.

A printed copy of the diagram (generic or site-specific) can be included as a handout or projected on a screen. Ask participants to consider the national system diagram and find their location on the diagram. Individually or in pairs (if participants come from the same facility), participants can answer the following questions:

This diagram illustrates a usual flow of surveillance data throughout a health system.



1. Locate your level on this diagram. Record the names of some of the sites that report surveillance data to you routinely. Also, record the number of sites that report to you.
2. Is there a designated focal person for surveillance and response at each of the sites?
3. How do you communicate with the sites?
4. How is data delivered to you from these sites? For example, do you receive data electronically, by telephone or by hand?
5. Do you provide feedback to those sites about the reporting?
6. Where do you send your aggregate reports?
7. How do you communicate with the level above you when you send your aggregate reports?
8. Do you routinely receive feedback about those reports?
9. Do you know where to report a public health event of national or international concern?

To conclude the exercise, the facilitator can ask participants to report their answers to the larger group. One question can be answered by each pair, for example, rather than having each group report back on each question. End the exercise by emphasizing that data moves through a system and each level has a role to analyze and report data for the level above them and provide feedback to sites below them.

Exercise 2

Notes to Facilitator: Participants will review a health center registry in order to prepare themselves for reviewing and analyzing routine data. They will find the relevant information from the registry and record it appropriately in the form. This skill is critical to providing accurate and consistent data analysis and reporting.

Conclude the exercise by discussing participants' answers. Review the correct answers with participants. End the exercise by emphasizing the information in the TG in sections 3.1.1 (Receive data) and 3.1.2 (Enter and clean data).

Review a Health Center Register

Zahanati Health Centre serves a population of about 10,000 people in its catchment area. The health facility provides both curative and maternal and child health care services. The basic information of those attending the outpatient department is summarized in the registers below:

Table 3.1: Extract from the register of Zahanati Health Centre, new cases received from 6 to 10 th May 2010.

ID No.	Date of attendance	Name	Village	Sex	Age	Suspected disease / syndrome
01	6/5/10	A.M.	C	M	6 mos	Pneumonia
02	6/5/10	T.F.	A	M	2 yrs	Measles
03	6/5/10	N.N.	C	M	22 yrs	Injury
04	6/5/10	Y.E.	C	F	28 yrs	Malaria
05	6/5/10	I.L.	B	F	7 mos	Meningitis
06	6/5/10	R.E.	B	F	8 mos	Pneumonia

ID No.	Date of attendance	Name	Village	Sex	Age	Suspected disease / syndrome
07	6/5/10	K.L.	D	F	4 yrs	Malaria
08	6/5/10	T.I.	A	M	13 yrs	Malaria
09	6/5/10	A.F.	D	F	15 yrs	Acute Flaccid Paralysis
10	6/5/10	D.O.	D	F	24 yrs	Meningitis
11	7/5/10	K.M.	A	M	22 yrs	Dysentery
12	7/5/10	U.G	A	F	9 mos	Fracture
13	7/5/10	P.F.	C	M	11 mos	Measles
14	7/5/10	H.I.	C	F	24 yrs	Abortion
15	7/5/10	G.T.	C	F	21 yrs	Malaria
16	7/5/10	W.T.	A	F	16 yrs	Tuberculosis
17	7/5/10	R.Y.	B	M	2yrs	Diarrhoea
18	8/5/10	A.C.	C	M	1 yr	Pneumonia
19	8/5/10	Z.U.	B	F	1 yr	Malaria
20	8/5/10	A.C.	C	M	11 mos	Scabies
21	8/5/10	J.F.	B	M	15 yrs	Malaria
22	8/5/10	M.M.	B	F	18 yrs	Dysentery
23	8/5/10	L.M.	B	M	5 yrs	Wound
24	8/5/10	P.L.	C	M	1 yr 10 mos	Diarrhoea[1]
25	8/5/10	Z.E.	A	M	16 yrs	Injury
26	8/5/10	A.B.	C	F	25 yrs	Haemorrhagic fever
27	8/5/10	S.R.	B	F	17 yrs	Malaria

[1] Count diarrhoea and severe diarrhoea as "diarrhoea".

ID No.	Date of attendance	Name	Village	Sex	Age	Suspected disease / syndrome
28	9/5/10	A.K.	C	F	4 mos	Meningitis
29	9/5/10	T.T.	B	M	3 yrs	Abscess
30	9/5/10	W.F	B	M	12 yrs	Meningitis
31	9/5/10	K.K.	B	F	2 yrs 10 mos	Malaria
32	9/5/10	L.D.	A	F	16 yrs	Cholera
33	9/5/10	D.B.	B	F	1 yr 8 mos	Pneumonia
34	9/5/10	A.N.	B	F	21 yrs	Tuberculosis
35	9/5/10	L.S.	A	M	1 yr 5 mos	Severe diarrhoea
36	9/5/10	B.D.	A	M	11 mos	Pneumonia
37	9/5/10	P.K.	B	F	1 yr	Malaria
38	9/5/10	K.R.	A	F	2 yrs 5 mos	Scabies
39	10/5/10	K.A.	D	M	26 yrs	Injury
40	10/5/10	P.N.	D	F	4 yrs	Pneumonia
41	10/5/10	S.A.	D	F	3 yrs	AIDS
42	10/5/10	M.A.	A	F	2 yrs	Diarrhoea
43	10/5/10	E.R.	C	F	16 yrs	Injury
44	10/5/10	U.H.	A	M	22 yrs	AIDS
45	10/5/10	Y.L.	C	M	18 yrs	Malaria
46	10/5/10	W.C.	A	F	4 mos	Malaria

1. Using data from the Zahanati H.C Register, show the distribution of patients by disease or syndrome by completing the following table. To record frequency, place a tick (√) or slash (/) in the column for each instance of a suspected case or syndrome.

Note: Count diarrhoea and severe diarrhoea as "diarrhoea".

Notes to Facilitator: *Explain each answer and allow participants to correct their own answers. If there are questions about any of the frequencies, take the time to go back and be sure everyone agrees on the correct answer.*

*The participants should be able to**:***

- *List the disease conditions from the register.*
- *Count the number of times they occur (tally them).*
- *Add up all cases of diseases or conditions.*
- *Divide the frequency of each disease by the total number of cases and multiply by 100.*
- *Complete the table 3.2 columns on disease / condition Frequency and Proportion*

Table 3.2: ANSWER. Distribution of patients by frequency and proportion of disease/syndrome in Zahanati HC, 6- 10 May 2010.

	Disease/syndrome	**Frequency**	**Percentage (%)**
1	*Pneumonia*	*///// / (6)*	*13.0*
2	*Measles*	*// (2)*	*4.3*
3	*Malaria*	*///// ///// / (11)*	*23.9*
4	*Meningitis*	*//// (4)*	*8.7*
5	*Acute Flaccid Paralysis*	*/ (1)*	*2.2*
6	*Dysentery*	*// (2)*	*4.3*
7	*Fracture*	*/ (1)*	*2.2*
8	*Abortion*	*/ (1)*	*2.2*
9	*Tuberculosis*	*// (2)*	*4.3*

10	*Diarrhoea*	*//// (4)*	*8.2*
11	*Scabies*	*// (2)*	*4.3*
12	*Injury*	*//// (4)*	*8.7*
13	*Hemorrhagic fever*	*/ (1)*	*2.2*
14	*AIDS*	*// (2)*	*4.3*
15	*Cholera*	*/ (1)*	*2.2*
16	*Wound*	*/ (1)*	*2.2*
17	*Abscess*	*/(1)*	*2.2*
	TOTAL	**46**	**100.0**

Notes to Facilitator: Distribute graph paper for participants or if they have computers, ask them to use a spreadsheet. Otherwise, participants can use the blank space provided to them in their module.

Examples of graphs can be found on the following pages of the Technical Guidelines:

Line graph: page 88

Bar graph: page 89

Histogram: page 90

Spot map: page 91

Tables for person analysis: pages 93-96

2. What are the top 5 disease conditions recorded in the Zahanati Health Centre?

Ask for a participant to share his/her answer to Question 2. Is this correct? Does anyone else have a different answer? Share the correct answers on the board. Ask if there are any questions on how those figures were created.

The top 5 diseases conditions are:

- *Malaria (23.9%)*
- *Pneumonia (13.0%)*
- *Meningitis (8.7%)*
- *Injury (8.7%)*
- *Diarrhoea (8.2%)*

3. Draw a bar graph to display the top 5 disease conditions by number of cases. Use the next page to create a grid and then draw the bar graph. If available, use graph paper or a computer. You may refer to the example on page 89 of the Technical Guidelines.

Notes to Facilitator: Participants will have enough space to hand draw a graph in their module, or you can provide graph paper. If computers are available, participants can use electronic spreadsheets.
The participants should be able to:

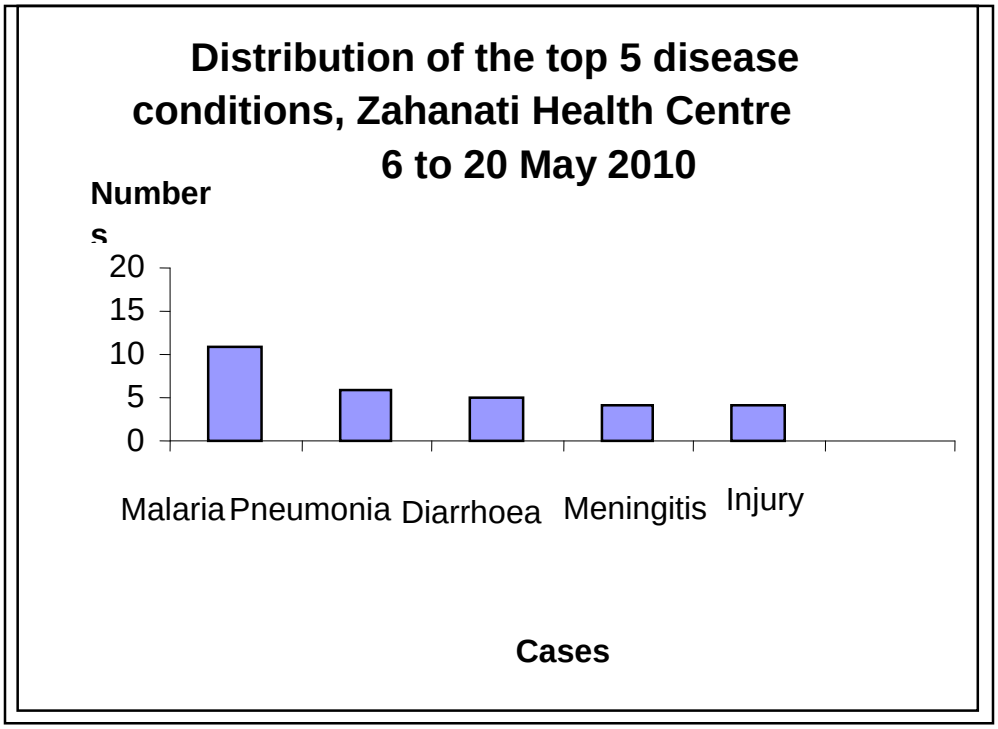
- Use the data from the frequency distribution column to draw the bar chart ;
- Label the Titles, X and Y axis appropriately
- Remind participants of the difference between a **bar graph** and a **histogram**.
    - A **bar graph** compares different variables at one point in time (for example, all reported diseases cases reported by weekly surveillance between January and August , 2010). When you have data that is discrete, use a bar graph.
    - **A histogram** compares the number of cases or a single variable over time (for example, detected cholera cases by epidemiologic week 1 to 31). If you have a continuous variable, use a histogram. You can draw a line with a histogram, you cannot draw a line (indicating time) with a bar graph.

Define **Attack Rate** for participants: the proportion of people exposed to the same risk who fell ill.

Formula for Attack Rate:

$$\frac{\text{Number of people at risk who develop a certain illness}}{\text{Total number of people at risk}} \text{ X } 100 = \quad \%$$

Question 2: ANSWER. Top five diseases recorded at Zahanati Health Center



Exercise 3

Analyze data by person

Notes to Facilitator: Assist the participants in completing the following form.

The participants should be able to:

- Refer to the Zahanati Register and tally the number of cases by age and sex categories.
- Enter the data in the appropriate column of table 3.3
- Complete the totals columns

Table 3.3: ANSWER. Distributions of Zahanati HC patients by age and sex, 2010

Age group	Sex		Total
	Male	Female	
0-4 years	*10*	*14*	*24*
5- 14 years	*3*	*0*	*3*
15 years and above	*7*	*12*	*19*
Total	*20*	*26*	*46*

2. Which groups of patients are seen most often?

In the period 6th May to 10th May 2010, most of the patients at Zahanti Health Center are below 5 years of age,

More females than males sought treatment in the facility.

3. In the table below, summarize the distribution of malaria patients by village from Zahanati Health Centre using the data in Table 3.1.

Table 3.4: ANSWER. Distribution of malaria patients recorded in Zahanati HC by Village, 1996

Village	Number of patients
A	*2*
B	*5*
C	*3*
D	*1*
Total	*11*

4. What conclusion can you make from this table about the patients and villages where they live?

Village B has the most number of patients.

Village D has the lowest number of patients.

You might want to gather more information on why Village B has more cases and why Village D has fewer cases. Inquire about bed net use in all four villages. You might also want to know if there are education campaigns in the different villages. You can also find out about geography, for example, is Village B close to a lake or have higher rainfall?

2.0 Use thresholds for public health action

Present information on using thresholds for public health action. Ask participants to define thresholds and ask where they can find the thresholds for priority diseases. Explain the difference between alert thresholds and epidemic thresholds.

- Thresholds are markers that indicate when something should happen or change. They help surveillance and program managers answer the question, "When should I take action, and what will that action be?"

- Thresholds are based on information from two different sources:

    - A situation analysis describing who is at risk for the disease, what are the risks, when is action needed to prevent a wider outbreak, and where do the diseases usually occur?
    - International recommendations from technical and disease control program experts.

- In this course, we will discuss two types of thresholds: an alert threshold and an epidemic threshold. Not every disease or condition uses both types of thresholds, although each disease or condition has a point where a problem must be reported and an action taken.

- An ***alert threshold*** tells health staff and the surveillance team that further investigation is needed. Depending on the disease or condition, an alert threshold is reached when there is one suspected case (as for an epidemic-prone disease or for a disease targeted for elimination or eradication) or when there is an unexplained increase in number of cases for any disease. An alert threshold is also reached when health staff review weekly or monthly summary reporting and they see an unusual pattern.

- An ***epidemic threshold*** triggers a definite response. It marks the specific data or finding from an investigation that signals an action beyond confirming or clarifying the problem. Possible actions include communicating laboratory confirmation to affected health centres, implementing an emergency response such as an immunization activity, conducting a community awareness campaign, or using improved infection control practices in the health care setting.

- Several thresholds have been proposed for action based on disease surveillance findings. For rare diseases or diseases targeted for eradication, detection of a single case suggests an epidemic. In such situations, one case is unusual and is a serious event. This is because these rare or targeted diseases have the potential for rapid transmission or high case fatality rates.

- In other situations, a number of cases will trigger a response. For example, the epidemic threshold for cerebrospinal meningitis in countries of the meningitis belt is 10 cases per 100,000 population, and the alert threshold is 5 cases per 100,000.

- In practice, the national level is responsible for communicating the thresholds for priority diseases to all reporting sites in the health system. This is so surveillance information can be used for action at the level where it is collected. Periodically, surveillance thresholds are assessed and reset at national or international levels according to the observed trends of the diseases, events or conditions under surveillance.

- Suggested thresholds for taking action in specific diseases or conditions are discussed in Section 9.0 of the Technical Guidelines.

Exercise 4:

Notes to Facilitator: Ask participants to read pages 97 to 99 about using data for action. When they have finished the reading, review with them the definitions of "alert threshold" and "epidemic threshold." Highlight that the use of thresholds is a core element of IDSR because this is a reminder to use data for action.

If you are getting short on time, you might do this exercise in a small group. Instruct participants to get into groups of 3 or 4 people. Ask the groups to assign 1 or 2 of the diseases to each participant in the group. After each participant has found and recorded the information, participants can present what they found to the others in the group.

Alert and Action Thresholds

Fill in the blank spaces in Table 3.5. Refer to the information provided in the TG guidelines starting on page 229. Also refer to, "Summary guidelines for priority diseases and conditions" in section 9. The row for cholera is completed for you as an example.

Table 3.5 ANSWER: Use thresholds for public health action

Disease	Alert threshold	Steps to take	Action/ Epidemic threshold	Steps to take
Cholera	A single suspected case	▪ Report case-based information immediately. ▪ Manage and treat the case ▪ Enhance strict hand-washing and isolation procedures. ▪ Conduct case-based investigation ▪ Obtain stool specimen for lab confirmation	If a suspected case is confirmed:	▪ Establish treatment centre ▪ Strengthen case management ▪ Mobilize community ent. Survey the availability of clean drinking water. ▪ Work with community leaders to limit the number of funerals or other large gatherings ▪ Access to safe water. ▪ Promote safe preparation of food ▪ Promote safe disposal of human waste.

Disease	Alert threshold	Steps to take	Action/ Epidemic threshold	Steps to take
Severe acute respiratory Illness (SARI)	A single suspected case Or unusual event of severe acute respiratory infection	▪ *Report case-based information immediately.* ▪ *Practice infection control and enhance Standard Precautions* ▪ *Treat and manage the patient according to national guidelines.* ▪ *Collect and transport laboratory specimens* ▪ *Review clinical history and exposure history during 7days before disease onset.* ▪ *Identify and follow-up close contacts of case-patient.* ▪ *Conduct active searches for additional cases.*	*If a suspected case is confirmed:*	▪ *Report case-based information or line list (if many cases)* ▪ *Practice infection control and enhance Standard Precautions* ▪ *Treat and manage the patient according to national guidelines.* ▪ *Identify and follow-up close contacts of the case.* ▪ *Conduct active case searches for additional cases.*
Onchocerciasis	A single suspected case	▪ *Report the case according to national guidelines* ▪ *Collect specimen for confirming the case* ▪ *Investigate the case to determine the cause* ▪ *Treat the case according to national guidelines*	*A suspected case that is laboratory confirmed by presence of one or more of the following: microfilaria in skin snips, adult worms in excised nodules, or typical ocular manifestations (us body)*	▪ *Conduct an investigation to identify the origins of infection* ▪ *Carry out vector control activities according to OCP guidelines.* ▪ *Conduct periodic mass treatment with Ivermectin in areas with endemic Onchocerciasis during the last 10 years.* ▪ *Conduct active case finding via population-based surveys and skin snips.*

Disease	Alert threshold	Steps to take	Action/ Epidemic threshold	Steps to take
Diabetes	To be determined nationally after analyzing trends and risk factors	▪ *Implement an integrated prevention and control programme for non-communicable diseases focusing on diabetes* ▪ *Implement plans of action on diet, weight-reduction, and physical activity.* ▪ *Implement clinical preventive measures and treatment interventions using evidence-based guidelines (screening high risk patients, for example)*	*To be determined by national authorities*	▪ *Implement an integrated prevention and control programme for non-communicable diseases focusing on diabetes.* ▪ *Implement plans of action on diet, weight-reduction, and physical activity.* ▪ *Implement clinical preventive measures and treatment interventions using evidence-based guidelines (screening high risk patients, for example).*
Food borne	If observed that ≥2 people are ill and have eaten food from a common source	▪ *Immediately report the illness to the next level of the heath system* ▪ *From patients and from the suspected food items and drinks, collect specimens for laboratory confirmation* ▪ *Treat suspected cases*	*If an outbreak of a food borne illness is confirmed*	▪ *Search for additional cases* ▪ *Strengthen case management and treatment* ▪ *Mobilise community for rapid case detection and treatment* ▪ *Identify high risk groups* ▪ *Remove from menu or market unsafe food* ▪ *Conduct in-depth investigation* ▪ *Promote hand washing and safe waste disposal* ▪ *Scale-up food safety health promotion activities* ▪ *Scale-up food inspection activities*

Exercise 5

Notes to Facilitator: The participants will read through the case study and use the summary table below to answer the following questions. Ask participants to complete the tables. Walk around while people draw their attack rate line graphs. Be sure that they are drawing a proper graph and not just a sketch. Distribute graph paper for this exercise.

Define an epidemic curve:
An **Epidemic curve** provides basic information such as incubation period, link to source, and progress of the outbreak. It can demonstrate the time and severity of the peak or peaks and can be useful for showing the effect over time after the introduction of an intervention.

To conclude the exercise, review each question and answer with the participants. For table on attack rates, prepare a slide or sheet to put onto a projector so that you can show the correct answers to the participants. If there are questions on calculating attack rates, review the steps with the entire group.

Side note: If a particular person is struggling with basic math concepts, provide individual help so that the participant is not embarrassed in front of colleagues.

Meningitis outbreak

Dr. Perfection, the former Ndousi District Medical Officer was the new Central Region Medical officer. He had replaced Dr. Everbusy who has been awarded a four-month scholarship to study Applied Epidemiology at the local university.

As he became familiar with his new office he found summary reports of meningococcal meningitis from five districts that had not been acted upon by Dr. Everbusy.

Table 3.6 is a summary table with the meningococcal meningitis reports from the 5 districts in Central Region.

Table 3.6: Meningitis cases by week Central Region, 2008

District	Population	wk 1	wk 2	wk 3	wk 4	wk 5	wk 6	wk 7	wk 8	wk 9	wk 10
Jamano	106550	2	3	2	1	0	2	2	0	2	3
Tarik	245907	1	2	11	9	16	16	20	42	42	57
Boula dougou	150279	15	16	16	8	14	8	9	9	12	11
Koilel	81032	1	0	2	1	1	1	4	3	3	3
Ankoubar	253181	4	3	5	4	3	4	8	6	8	5

1. Give Dr. Perfection some help by calculating the weekly attack rates for each District and complete the table provided.

(Weekly meningitis attack rate= weekly meningitis cases ÷ population at risk X 100,000)

Table 3.7: ANSWER. Attack rates of meningitis cases by week and District, central region, 2008

District	Pop	Wk 1	AR 1	WK 2	AR 2	WK 3	AR 3	WK 4	AR 4	WK 5	AR 5	WK 6	AR 6	WK 7	AR 7	WK 8	AR 8	WK 9	AR 9	WK 10	AR 10
Jamano	106550	2	*2*	3	*3*	2	*2*	1	*1*	0	*0*	2	*2*	2	*2*	0	*0*	2	*2*	3	*3*
Tarik	245907	1	*0*	2	*1*	11	*4*	9	*4*	16	*7*	16	*7*	20	*8*	42	*17*	42	*17*	57	*23*
Boula dougou	150279	15	*10*	16	*11*	16	*11*	8	*5*	14	*9*	8	*5*	9	*6*	9	*6*	12	*8*	11	*7*
Koilel	81032	1	*1*	0	*0*	2	*2*	1	*1*	1	*1*	1	*1*	4	*5*	3	*4*	3	*4*	3	*4*
Ankoubar	253181	4	*2*	3	*1*	5	*2*	4	*2*	3	*1*	4	*2*	8	*3*	6	*2*	8	*3*	5	*2*

3. Based on the calculated attack rates, name the districts that have been in the alert phase anytime after Week 1 and before Week 10. Also name those that have exceeded the epidemic threshold.

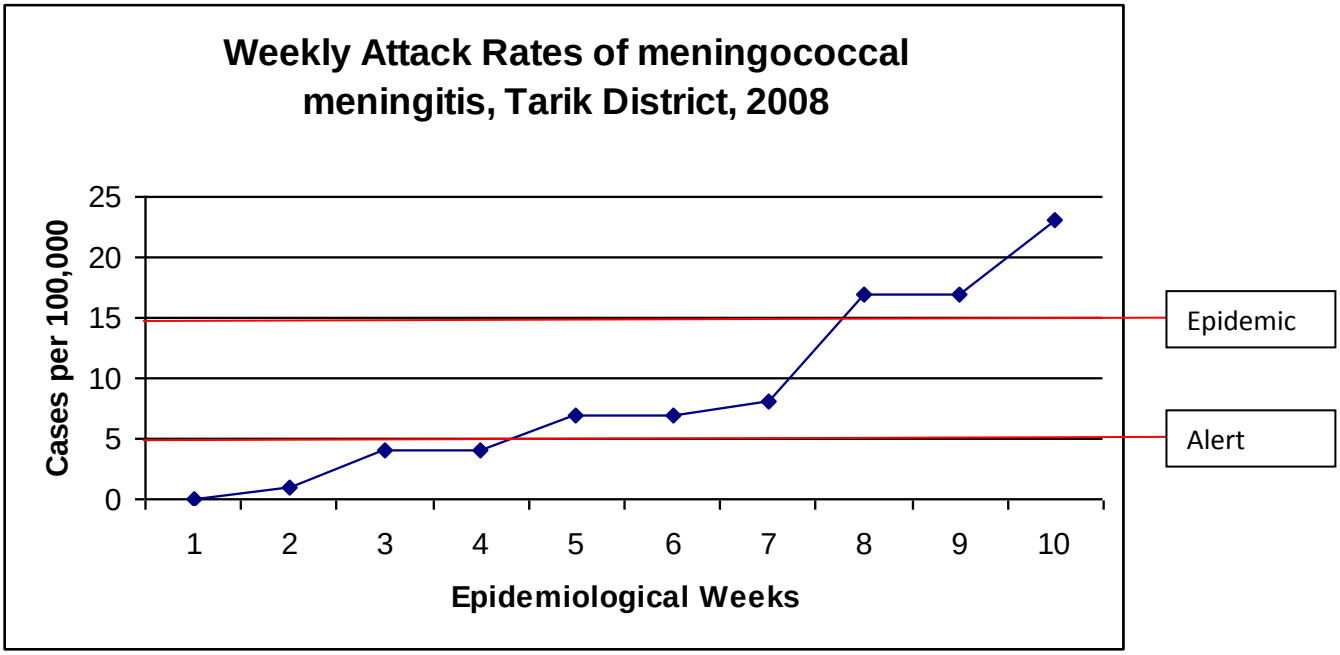
Hint: Alert Threshold= 5/100,000, Epidemic Threshold= 15/100,000

Alert: Tarik, Boula douga, Koilel

Epidemic: Tarik

4. In the space provided below, draw a line graph of attack rates of meningococcal meningitis by week for Tarik District. Label the horizontal axes that represent the alert and epidemic thresholds for Tarik district on the same graph. Hint: First draw a grid and label the axes and then draw the line graph.

Question 4: ANSWER. Attack rates of meningococcal meningitis by week for Tarik District with Epidemic and Alert Thresholds highlighted.



Refer to the graph you have just drawn:

6. When was the alert phase exceeded?

Between week 4 and 5

7. When was epidemic threshold exceeded?

After week 7 and before week 8

Exercise 6

Notes to Facilitator: Review with participants the purpose for analyzing data by person, time, and place. Base the short lecture on the information in section 3.2.2 of the TG. Emphasize with participants that with the adoption of the IHR (2005), identifying geographic clusters of public health events is a critical function of the surveillance system at each level. (Optional) Include examples of spot maps in the short lecture.

Participants will review the line-list[2] for Ebola below and use it to answer the following questions. Assist them in completing this exercise by demonstrating efficient and accurate methods for reviewing a complex line-list.

[2] A line list is a chart of cases that includes important demographic data, such as name or identification number of the patient and the age, sex, date of onset, date of death and case classification. Typically, new cases are added to a line list as they are identified.

Table 3.8: Line List from Bandurana District for Ebola Outbreak—October to November, 2000

ID	Name	Age in years	Sex	Head of Household	Division	Village	Date of onset	Week of onset	Date Hospital-ised	Outcome (1=Dead, 0=Alive)	Date of Death	Case classifi-cation	Blood sample taken	Date blood sample taken	Result	Occupat-ion
3101	L.P.	20	M	Poun	Zanza	Zanza	12-Oct	40		1	16-Oct	Probable	N			Student
3102	A.I	44	F	Benga	Zanza	Zanza	30-Oct	43		1	4-Nov	Probable	N			Farmer
3103	E.N.	7	M	Ambe	Zanza	Zanza	12-Nov	45		1	18-Nov	Probable	N			None
3104	I.P.	47	F	Ambe	Zanza	Zanza	27-Nov	47		1	3-Nov	Probable	N			Farmer
3105	F.I.	2.5	M	Benga	Omo	Doum	11-Oct	40		1	17-Oct	Probable	N			None
3106	E.I.	13	F	Benga	Omo	Bea	11-Oct	40	18-Oct	1	22-Oct	Probable	N			Student
3107	K.L.	20	M	Lota	Omo	Bea	12-Oct	40		1	23-Oct	Probable	N			Hunter
3108	I.A.	39	F	Benga	Omo	Doum	24-Oct	42	24-Oct	1	29-Oct	Confirmed	Y	24-Oct	Positive	HCW
3109	L.S.	17	F	Lota	Omo	Andza	25-Oct	42		1	4-Nov	Probable	N			Farmer
3110	E.M.	44	F	Lota	Omo	Andza	25-Oct	42	26-Oct	1	4-Nov	Confirmed	Y	26-Oct	Positive	HCW
3111	I.J.	46	M	Benga	Omo	Bea	29-Oct	43		1	6-Nov	Probable	N			Hunter
3112	E.B.	38	F	Kabo	Omo	Doum	4-Nov	44		1	8-Nov	Probable	N			Farmer
3113	K.D.	40	M	Lakou	Omo	Bea	6-Nov	44		1	10-Nov	Confirmed	Y	11-Nov	Positive	Game Ranger
3114	A.Y.	60	F	Benga	Omo	Bea	16-Nov	45		1	19-Nov	Probable	N			Farmer
3115	N.R.	22	F	Kabo	Omo	Doum	16-Nov	45		0		Confirmed	Y	2-Dec	Positive	Farmer
3116	M.N.	28	F	Kabo	Omo	Doum	15-Nov	45		0		Probable	N			Farmer
3117	A.M.	40	M	Nossi	Omo	Bea	14-Nov	45		1	23-Nov	Confirmed	Y	24-Nov	Positive	Hunter
3118	A.J.	40	F	Benga	Omo	Bea	15-Nov	45		0		Probable	Y	3-Dec	Pending	Farmer
3119	N.A.	20	F	Benga	Omo	Bea	16-Nov	45	30-Nov	0		Probable	Y	2-Dec	Pending	Farmer
3120	N.O.	24	M	Lakou	Omo	Bea	15-Nov	45		1	23-Nov	Confirmed	Y	23-Nov	Positive	Hunter
3121	E.P.	22	F	Nossi	Omo	Bea	15-Nov	45	25-Nov	0		Confirmed	Y	24-Nov	Positive	Farmer
3122	E.B.	20	F	Nossi	Omo	Bea	18-Nov	46	24-Nov	1	26-Nov	Probable	N			Farmer
3123	I.O.	50	F	Nossi	Omo	Bea	18-Nov	46	24-Nov	1	24-Nov	Confirmed	Y	24-Nov	Positive	Farmer

ID	Name	Age in years	Sex	Head of Household	Division	Village	Date of onset	Week of onset	Date Hospital-ised	Outcome (1=Dead, 0=Alive)	Date of Death	Case classifi-cation	Blood sample taken	Date blood sample taken	Result	Occupat-ion
3124	N.M.	26	M	Ambe	Omo	Bea	13-Nov	45	13-Nov	1	24-Nov	Confirmed	Y	24-Nov	Positive	Hunter
3125	I.C.	16	F	Benga	Omo	Bea	15-Nov	45		1	21-Nov	Probable	N			Student
3126	K.N.	10	M	Lakou	Omo	Bea	17-Nov	46		1	21-Nov	Confirmed	Y	22-Nov	Positive	Student
3127	S.E.	25	M	Kabo	Omo	Doum	16-Nov	46		1	21-Nov	Confirmed	Y	22-Nov	Positive	Hunter
3128	M.S.	45	F	Lakou	Omo	Bea	17-Nov	46	24-Nov	1	24-Nov	Confirmed	Y	24-Nov	Positive	Farmer
3129	B.S.	8	F	Lakou	Omo	Bea	17-Nov	46		1	23-Nov	Confirmed	Y	24-Nov	Positive	None
3130	E.J.	43	M	Aucun	Omo	Centre	20-Nov	46		0		Confirmed	Y		Positive	None
3131	O.E.	16	M	Lakou	Omo	Bea	20-Nov	46	25-Nov	1	29-Nov	Confirmed	Y	24-Nov	Positive	Student
3132	M.R.	18	F	Odob	Omo	Andza	20-Nov	46		0		Probable	N			Farmer
3133	E.Y.	1.5	M	Rouja	Omo	Bea	16-Nov	45		1	23-Nov	Probable	N	24-Nov	Positive	None
3134	K.C.	14	M	Lakou	Omo	Bea	15-Nov	45	23-Nov	0		Confirmed	Y	3-Dec	Positive	Student
3135	K.R.	23	F	Nossi	Omo	Bea	23-Nov	46		0		Probable	N	8-Dec		Farmer
3136	K.E.	6	M	Lakou	Omo	Bea	23-Nov	46	23-Nov	0		Probable	N	3-Dec		None
3137	E.B.	38	F	Kabo	Omo	Bea	18-Nov	46	23-Nov	0		Probable	N	28-Nov		Farmer
3138	I.A.	26	M	Benga	Omo	Bea	20-Nov	46		0		Suspected	N			Hunter
3139	M.G.	19	M	Ambe	Omo	Bea	23-Nov	46		0		Suspected	N			Hunter
3140	N.N.	18	F	Ambe	Omo	Bea	22-Nov	46	24-Nov	0		Confirmed	Y	2-Dec	Positive	Farmer
3141	A.I.	28	M	Kabo	Omo	Bea	24-Nov	47		0		Confirmed	Y	24-Nov	Positive	Hunter
3142	D.D.	31	M	Ambe	Omo	Bea	24-Nov	47		0		Confirmed	Y	26-Nov	Positive	Farmer
3143	T.O.	22	M	Ambe	Omo	Bea	24-Nov	47	29-Nov	0		Confirmed	Y	2-Dec	Positive	Hunter
3144	Y.N.	25	F	Ambe	Omo	Bea	25-Nov	47		0		Suspected	N			Farmer
3145	O.A.	3	M	Nossi	Omo	Bea	26-Nov	47	26-Nov	1	28-Nov	Probable	N			None
3146	I.M.	5	F	Nossi	Omo	Bea	26-Nov	47	29-Nov	1	2-Dec	Confirmed	Y	2-Dec	Positive	None
3147	E.E.	1.5	M	Nossi	Omo	Bea	29-Nov	47	29-Nov	0		Confirmed	Y	5-Dec	Pending	None

Notes to facilitator: Participants to use the data from the line list and complete Table 3.9. The table has date of onset of symptoms filled, with the number of cases and deaths.

Table 3.9: ANSWER. Distribution of cases and deaths of Ebola by date of onset in Bandurana, 1st October – 30th November 2010

Date of onset of symptoms	Weeks	Cases	Deaths
01-Oct 2010	39	*0*	0
02-Oct 2010	40	*0*	0
03-Oct 2010	40	*0*	0
04-Oct 2010	40	*0*	0
05-Oct 2010	40	*0*	0
06-Oct 2010	40	*0*	0
07-Oct 2010	40	*0*	0
08-Oct 2010	40	*0*	0
09-Oct 2010	41	*0*	0
10-Oct 2010	41	*0*	0
11-Oct 2010	41	*2*	0
12-Oct 2010	41	*2*	0
13-Oct 2010	41	*0*	0
14-Oct 2010	41	*0*	0
15-Oct 2010	41	*0*	0
16-Oct 2010	42	*0*	1
17-Oct 2010	42	*0*	1
18-Oct 2010	42	*0*	0
19-Oct 2010	42	*0*	0
20-Oct 2010	42	*0*	0
21-Oct 2010	42	*0*	0

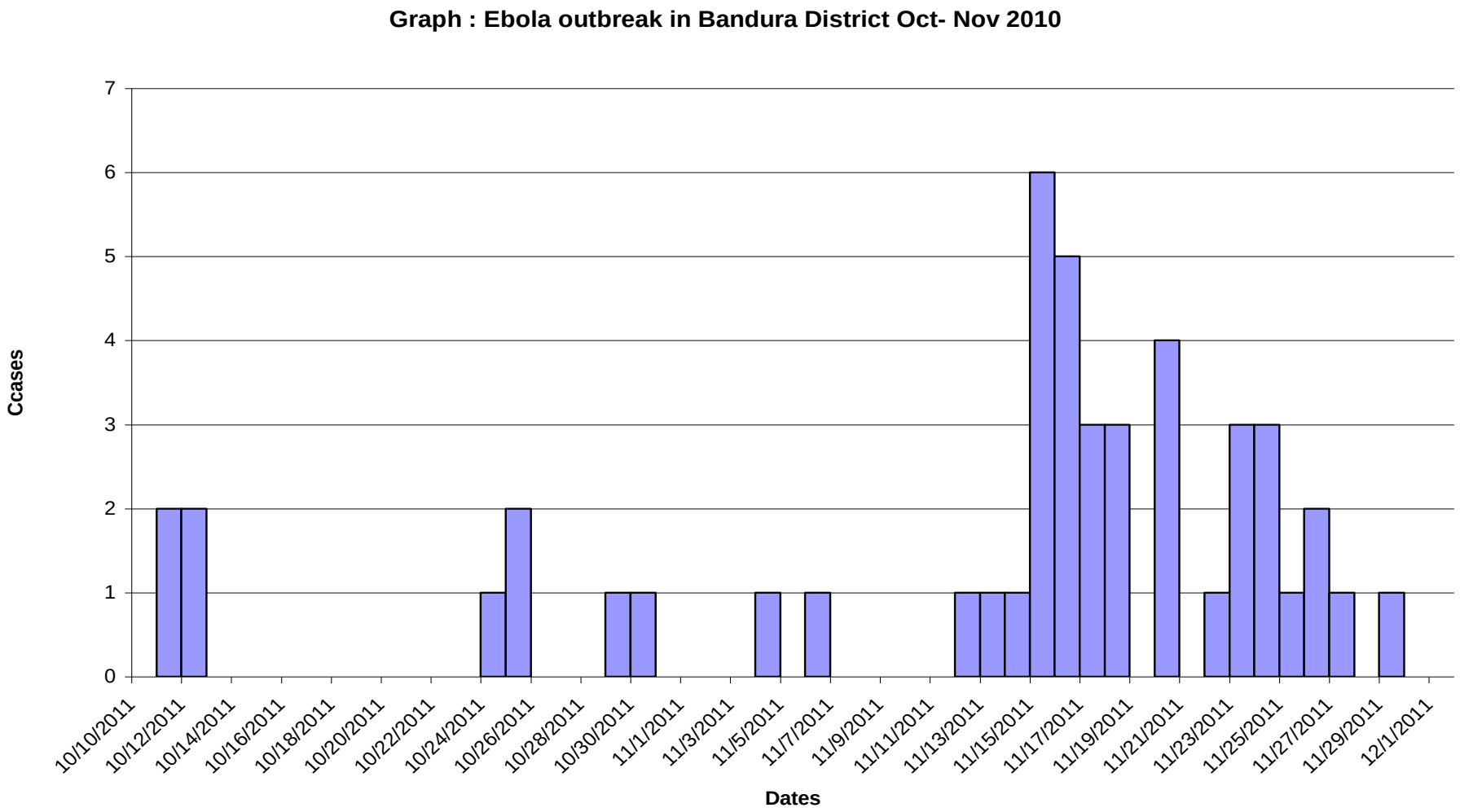
Date of onset of symptoms	Weeks	Cases	Deaths
22-Oct 2010	42	*0*	1
23-Oct 2010	43	*0*	1
24-Oct 2010	43	*1*	0
25-Oct 2010	43	*2*	0
26-Oct 2010	43	*0*	0
27-Oct 2010	43	*0*	0
28-Oct 2010	43	*0*	0
29-Oct 2010	43	*1*	1
30-Oct 2010	44	*1*	0
31-Oct 2010	44	*0*	0
01-Nov 2010	44	*0*	0
02-Nov 2010	44	*0*	0
03-Nov 2010	44	*0*	1
04-Nov 2010	44	*1*	3
05-Nov 2010	44	*0*	0
06- Nov 2010	45	*1*	1
07- Nov 2010	45	*0*	0
08- Nov 2010	45	*0*	1
09- Nov 2010	45	*0*	0
10- Nov 2010	45	*0*	1
11- Nov 2010	45	*0*	0
12- Nov 2010	45	*1*	0
13- Nov 2010	46	*1*	0
14- Nov 2010	46	*1*	0
15- Nov 2010	46	*6*	0

Date of onset of symptoms	Weeks	Cases	Deaths
16- Nov 2010	46	*5*	0
17- Nov 2010	46	*3*	1
18- Nov 2010	46	*3*	0
19- Nov 2010	46	*0*	1
20- Nov 2010	47	*4*	0
21- Nov 2010	47	*0*	1
22- Nov 2010	47	*1*	0
23- Nov 2010	47	*3*	4
24- Nov 2010	47	*3*	3
25- Nov 2010	47	*1*	0
26- Nov 2010	47	*2*	0
27- Nov 2010	48	*1*	0
28- Nov 2010	48	*0*	1
29- Nov 2010	48	*1*	1
30- Nov 2010	48	*0*	0
Total		47	24

2. In the space provided below (on the next page), use the date of onset to draw a histogram (or epi-curve) of cases due to Ebola. You may use graph paper if it is available or use a spreadsheet program if you are using a computer.

Notes to Facilitator: Ask a participant to draw his/her epi curve on the board and explain it to the class. Identify any discrepancies with the correct version below. Where can they find this information?

Question 2: ANSWER. Epidemic curve for Ebola outbreak in Bandura District- 2010



3. Describe the features of the graph you have drawn.

This is an epidemic curve with the index case in early October then more cases occurring in the last quarter of October but the mode and median is in last half of November.

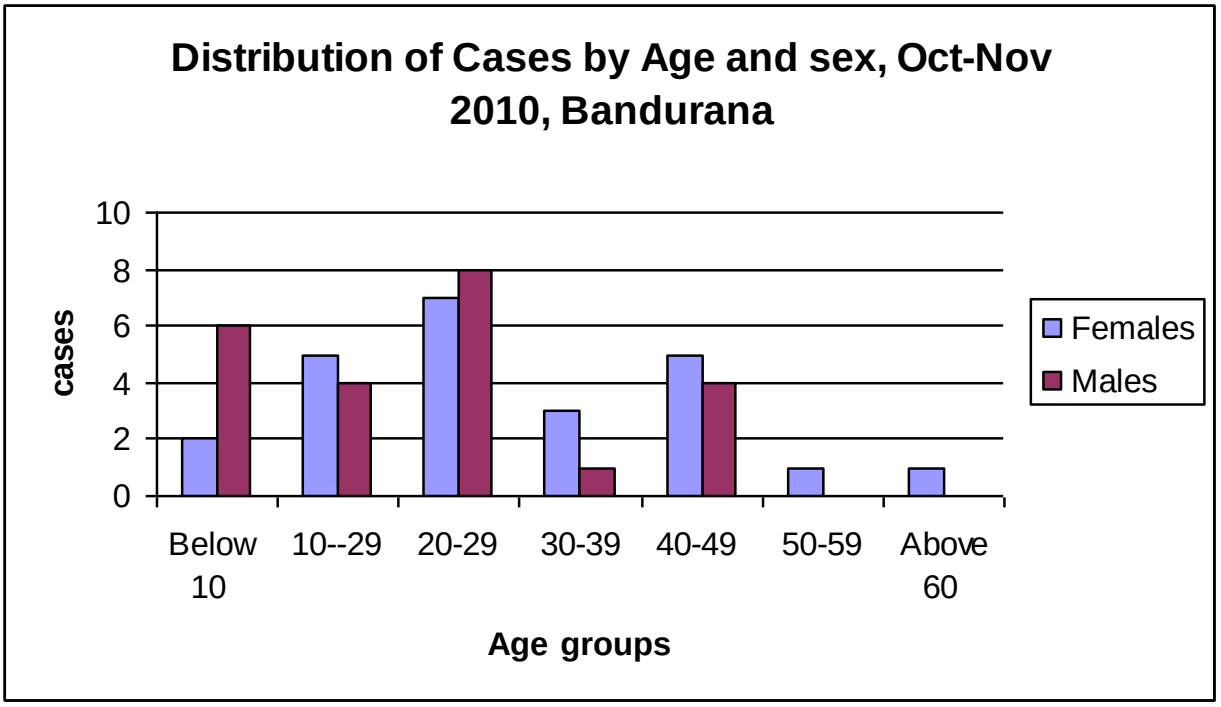
4. Using the data from the line list, do a person analysis and record the cases by age group and sex.

Table 3.10: ANSWER. Ebola cases by Age and Sex in Bandurana

Age group (in Years)	Females	Males	Total
Below 10	*2*	*6*	*7*
10-19	*5*	*4*	*9*
20-29	*7*	*8*	*15*
30-39	*3*	*1*	*4*
40-49	*5*	*4*	*9*
50-59	*1*	*0*	*1*
Above 60	*1*	*0*	*1*
Total	*24*	*23*	*47*

5. Draw a bar graph of the Ebola cases by age group and sex.

Question 5: ANSWER. Distribution of cases by age and sex



6. In the table below, analyze the distribution of cases by occupation. Be sure to calculate the case fatality ratio.

Table 3.11: ANSWER. Ebola cases by age and sex in Bandurana, October to November 2010

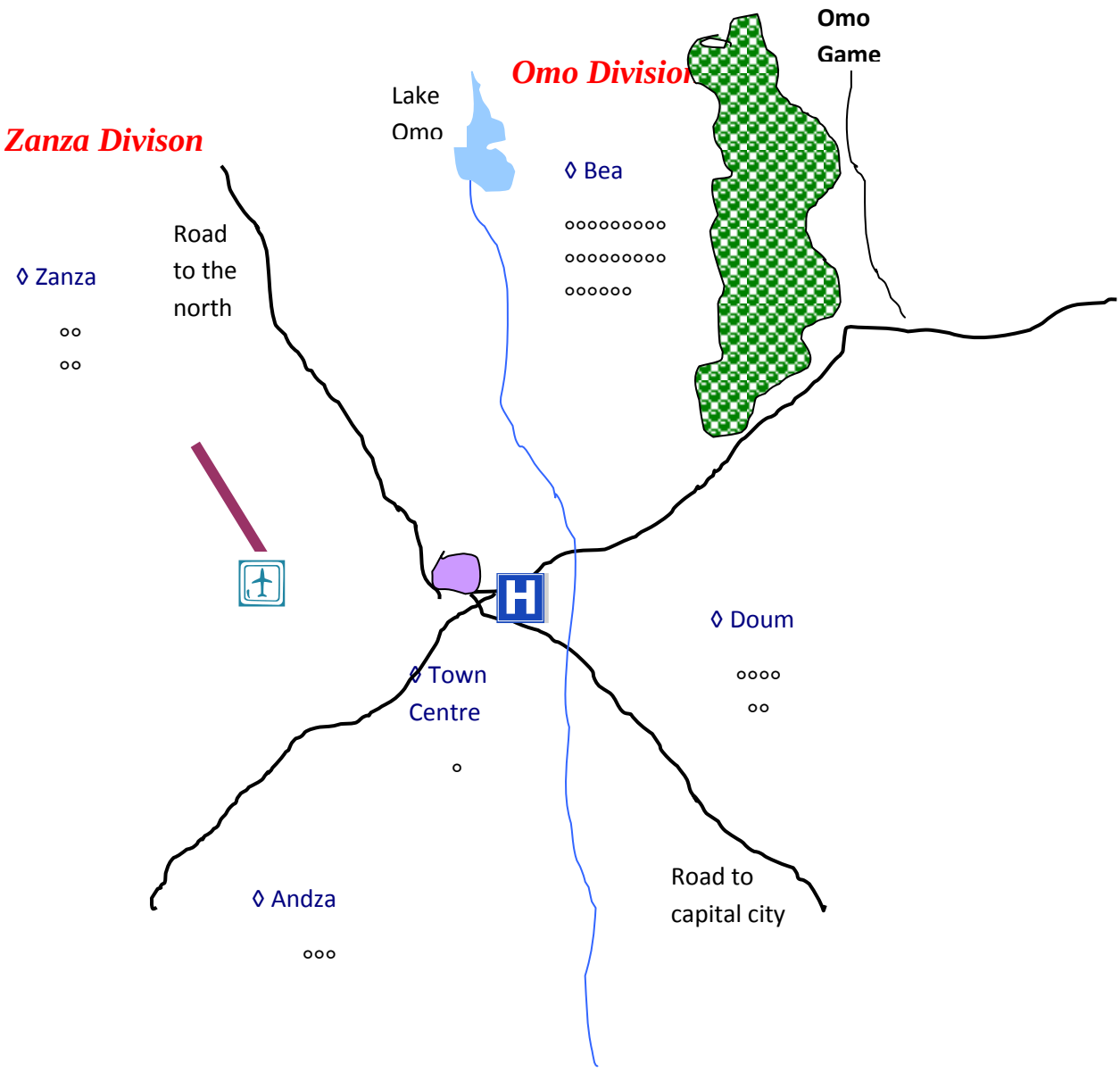
Occupation	Cases	Died	Survived	Case Fatality by Occupation
Student nurses	6	5	1	*83.3*
Farmer	19	8	11	*42.1*
None	9	6	3	*66.7*
Hunter	10	6	4	*60.0*
Game Ranger	1	1	0	*100.0*
Health Care Workers	2	2	0	*100.0*
Total	47	28	19	*59.6*

7. Which occupation is most affected?

8. Use the Village variable on the line list to plot the cases of Ebola on the map of the district below:

Facilitator's Guide: Participants should plot the cases by village. These can be clustered around the named villages. Note that there are many cases in Bea that is next to Omo Game Reserve.

Map: ANSWER. Cases of Ebola in Bandurana District, Nov – Dec 2010



9. Which areas are most at risk for transmission?

Bea (due to high number of cases – probability of community transmission and nosocomial infection)

Doum, and Zanza (due to closeness to the main road and to the capital city and the North)

Without analysis, we do not have data for action.

Points to remember:

1. Data analysis is a critical aspect of surveillance
2. There are several methods available to you for analyzing data depending on the information you are trying to present. For example, if you want to analyze a disease profile for a district, you can create a spot map for a visual representation of cases by location.
3. After you have compiled and analyzed data you can summarize your findings and use them for public health action.

Annex 1: Introductory Presentation for Module 3

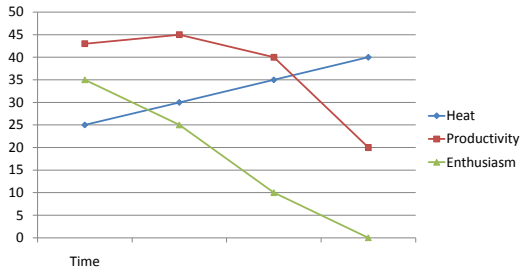
Slide 1

Module 3: Analyze and interpret data

Integrated Disease Surveillance and Response
District Level Training

Slide 2

What does this graph show you?



Does this graph make sense?
We can chart anything, but it should include actual data that is relevant and well labeled.
There's no title, no units for Time, no label for the Y-axis at all and no units for Productivity or Enthusiasm. Can those even be measured? Maybe, but there must be some indication of how they were measured and how they are being represented.

Slide 3

Learning Objectives

1. Collect and organize data for analysis
2. Use tables, graphs and histograms to analyze trends
3. Use maps to analyze location of populations at risk
4. Use tables to describe characteristics of the affected population.
5. Draw conclusions about analysis results
6. Make recommendations based on the conclusions

Slide 4

Collect and Organize Data

The routine flow of surveillance data is usually from each reporting site to its immediate supervisor

- At the health facility level, both in-patient wards and out-patient areas are surveillance sites
- Health facilities send their surveillance data to the district health management team.
- Districts aggregate and send their data to provinces, regions or states with a copy to the Ministry of Health.
- After aggregating the district totals, provinces send their data to the Ministry of Health.

Slide 5

Exercises

Exercise 1: IDSR Routine Information Flow

- Use your district to answer questions about the way that data moves through the health levels

Exercise 2: Review a health centre register

- Calculate distributions of diseases
- Draw a bar graph

Slide 6

Analyze Routine Data by Person, Place and Time

Person	Place	Time
Describe who is at greatest risk for the disease and potential risk factors	Determine where cases are occurring	Detect time-based changes in disease and the period of time from exposure to onset of symptoms.

Slide 7

Exercises

Exercise 3: Analyze a line list of routine data

- **Line list:** List of cases and demographic information

Slide 8

Use Thresholds for Public Health Action

- **Alert:** An ***alert threshold*** tells health staff and the surveillance team that further investigation is needed.
- **Epidemic:** An ***epidemic threshold*** triggers a definite response. It marks the specific data or investigation finding that signals an action beyond confirming or clarifying the problem

Slide 9

Exercises

Exercise 4: Alert and Action Thresholds

- Use Section 9 of TG to fill in table with alert and action thresholds for priority diseases

- **Exercise 5:** Calculating attack rates
- **Attack Rates:** The percentage of cases who died

  (Total number of deaths/ total number of cases) *100

Slide 10

Exercises

Exercise 6: Review line list of Ebola outbreak

- Analyze and record cases by date of onset, gender and occupation
- Draw bar graphs
- Fill in a spot map

Slide 11

Points to Remember

1. Data analysis is a critical aspect of surveillance
2. There are several methods available to you for analyzing data depending on the information you are trying to present
3. After you have compiled and analyzed data you can summarize your findings and use them for public health action

World Health Organization

REGIONAL OFFICE FOR Africa

Integrated Disease Surveillance and Response

District Level Training Course | Facilitator's Guide Module 4

Investigate and confirm suspected cases, outbreaks and other events of public health importance

July 2011

World Health Organization

Regional Office for Africa (AFRO)

Integrated Disease Surveillance and Response

District Level Training Course

Facilitator Guide

Module 4

Investigate and confirm suspected cases, outbreaks and other events of public health importance

July 2011

Introduction

Introduce Module 4 with a brief presentation based on the introduction to Section 4 of the IDSR Guidelines, page 107. A PowerPoint presentation has been provided for you as a standard template at the end of this module in Annex 1. You may use it exactly as it appears or alter it as you see necessary.

Emphasize these points in your presentation:

- The results of an investigation of the causes of an outbreak or other public health event lead to identification and assessment of people exposed to the disease or affected by the unusual health event.
- The investigation provides relevant information for taking immediate action and improving longer-term prevention activities.
- The steps for conducting an investigation of a suspected outbreak or other acute health event can also be used to investigate other public health problems in the district such as detection of an increase in a chronic or non-communicable disease.

The purpose of an investigation is to:

- Verify the outbreak or the public health event and risk.
- Identify and treat additional cases that have not been reported or recognized.
- Collect information and laboratory specimens for confirming the diagnosis.
- Identify the source of infection or cause of the outbreak.
- Describe how the disease is transmitted and the populations at risk.
- Select appropriate response activities to control the outbreak or the public health event

Ask for participants to volunteer answers to the following questions:

1. What is the purpose of investigating an outbreak? Why can't you take action on just a rumour or report only?
2. What do you think would be important steps to investigate a reported outbreak?

* * * *

Ask a participant to read the learning objectives to the group.

This module will describe and allow you to practice the following skills:

1. Know when to decide to investigate an outbreak
2. Verify and report an outbreak or public health event
3. Describe what might be happening
4. Plan to conduct a response
5. Analyze the investigation results to determine what caused the outbreak or event
6. Prepare an outbreak report

1.0 Decide to investigate a reported outbreak or public health event

Emphasize these points in your presentation:

- An investigation provides important and relevant information for deciding on how to respond to the suspected outbreak or public health event.
- The steps for investigating and confirming an outbreak include:
    1. Decide to investigate because an alert threshold has been reached or there is an unusual pattern or event. Be sure to use the IHR (2005) decision instrument when required.
    2. Record rumours
    3. Verify the information to ensure information is as accurate as possible.
    4. Prepare to conduct the investigation
    5. Confirm the outbreak with laboratory testing
    6. Carry out the recommended response
    7. Gather information about the cases and deaths on relevant forms
    8. Evaluate the response.

Explain to participants that in this module they will work on two or three case studies that illustrate the many steps involved in investigating an outbreak or public health event.

Exercise 1

Facilitator notes: For the following exercises, definitely do the Shotolu exercises on plague and then choose between the Bandura exercise on RVF or the Onori exercise on measles. Decide how much time you have and which exercise is the most relevant.

In this exercise, you will read about an outbreak and the steps that were taken to investigate it. You will read a section and then answer the questions that follow each section. Your facilitator may suggest that participants do this exercise in pairs or small groups of 3 to 4 people. At the end of the case study, there will be a group discussion

* * * *

An unknown disease outbreak in Shotolu District, Nizata.

On 4th September 2008, the District Medical Officer (DMO) of Shotolu District received a report of an outbreak of an unknown disease that had affected Gonu and Mizasha villages in the District. Patients were presenting with sudden onset of fever, headache, chills, weakness and swelling in the groin. Others were presenting with cough and blood-stained sputum. There were reports that two adults had already died from this cluster of symptoms.

1. The DMO suspected plague. What action should he now take?

   DMO should make immediate arrangements to verify the diagnosis and at the same time report the suspected event to the next level.

2. What is plague?

   Plague is a disease of rodents that is mainly transmitted to human beings through infected rodent fleas. It is called a zoonotic disease. The three main presentations of plague are pneumonic (affecting the lungs) and bubonic (swelling of the lymph nodes) and septicaemia (affecting the blood system). Patients usually present with fever, headache, chills, weakness and painful swellings (lymphadenopathy) in the groin, armpit or rarely in the neck.

Untreated bubonic plague has a case fatality rate of more than 50%.

3. Should this outbreak be reported to the MOH national level?

Yes, this could be reported to MOH when the report has been verified.

4. Should this outbreak be notified to the IHR focal point at the national level?

This could only be notified to the IHR focal point if it fulfills the 2 criteria proposed in Annex2 using the decision instrument. If the event caused by a pathogen with high potential to cause epidemic (infectiousness of the agent, high case fatality, multiple transmission routes or healthy carrier) or if the event represents a significant public health risk even if no or very few human cases have yet been identified.

5. The DMO compared the information he had with the IHR decision instrument (see Annex 2C on page 75 in the Technical Guidelines). How should he respond to the following questions:

5A: Is the public health impact of the event serious:

Yes.

5B: Is the event unusual or unexpected?

Yes

Occurrence of the event itself unusual for the area, season or population

5C: Is there a significant risk of international spread?

No

5D: Is there a significant risk of international travel or trade restrictions?

No

5E*:* Should the District Medical Officer notify the IHR focal point?

Yes, this outbreak should be notified to IHR focal point

Exercise 2

Notes to Facilitator: This exercise can be completed as an exercise with the entire group. Allow participants enough time to consider and write answers to the following questions. Then ask for participants to volunteer answers to the following questions.

* * * *

Continued Case Study from Shotolu District

1. How does DMO verify the existence of an outbreak of plague?
   He should immediately dispatch the District Rapid Response team (DRRT) to investigate the rumor. The team should look for cases, fill in the case-based surveillance reporting form and take the sputum and or lymph node aspirates specimen for laboratory confirmation.

2. What specimens should be collected for laboratory confirmation?
   Aspirate of buboes, blood, CSF, sputum, tracheal washes or autopsy materials for culture
   Blood for serological tests
   With buboes, a small amount of sterile saline (1-2 ml) may be injected into the bubo to obtain an adequate specimen

3. When should the specimen be collected?
   Collect specimen from the first suspected plague case before the administration of antibiotics.

4. In your health system, where should you send plague specimens for confirmation?
   Answer may vary depending on the district

5. What information should accompany the specimens?
   Proper specimen identification and clinical information

6. Does your district keep supplies for collecting, packaging and shipping plague specimens? For example, does your team have a reliable supply of Cary Blair transport media?
   Answer may vary depending on the district

Exercise 3

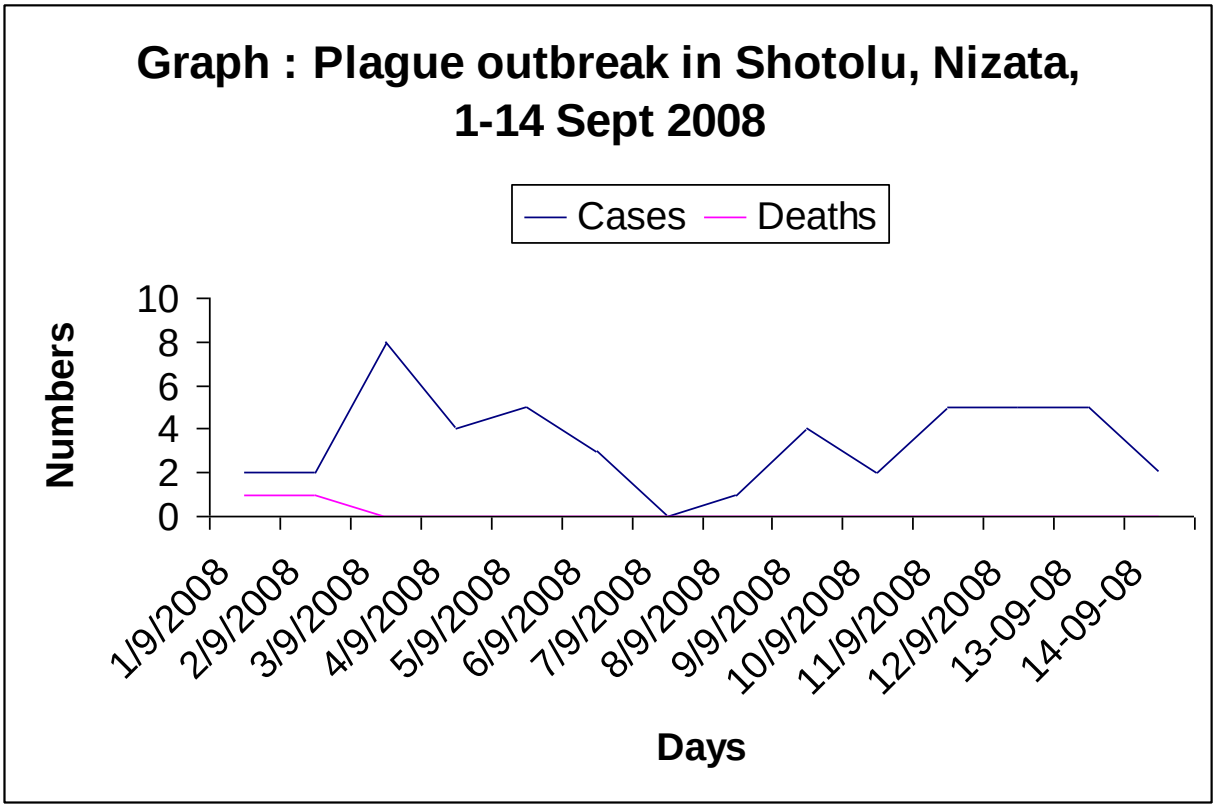
Continued Case Study from Shotolu District

Table 4.1: Plague outbreak in Shotolu Nizata, from 1 to 14 September, 2008

Date	Cases	Deaths
1-09-08	2	1
2-09-08	2	1
3-09-08	8	0
4-09-08	4	0
5-09-08	5	0
6-09-08	3	0
7-09-08	0	0
8-09-08	1	0
9-09-08	4	0
10-09-08	2	0
11-09-08	5	0
12-09-08	5	0
13-09-08	5	0
14-09-08	2	0
Total	**48**	**2**

1. Draw a line graph to show epidemic of plague in Shotolu using the data provided in Table 4.1

Question 1: ANSWER. Plague outbreak in Shotolu Province



2. Review the graph you created in Question 1. Describe what the graph shows, beginning with the onset of the first case.

- *This is a graph displaying cases and deaths from a plague outbreak that occurred in Shotolu, Nizata.*
- *In the initial two (2) days of the outbreak, the cases are few but the case fatality is high.*
- *On the third day the cases are at the peak (8), followed by a gradual decline to zero cases on the 7th day.*
- *There is again another increase of cases starting from the 8th day reaching a plateau of 5 cases daily from the 11th to the 13th day.*
- *There are no deaths recorded after the 2nd day of the outbreak.*

3. What was the **case fatality rate** in the first 2 days?

The Case fatality in the 1st two days is 50 per cent. That is 2 deaths divided by 4 cases multiplied by 100

4. What was the **overall case fatality rate** after the outbreak? Explain the apparent difference**.**

The overall case fatality is 4.1% (2 deaths divided by 48 cases multiplied by 100)
Deaths due to plague occurred only in the first 2 days, which explains the extremely high case fatality (50%) during that period. The overall case fatality rate includes all cases that occurred during the outbreak in the denominator, thereby giving a low case fatality of 4.2%.

5. Why do you think there is a difference between the two periods?

In most outbreaks the case fatality is initially high due to the delay in diagnosis and inadequate case management.

The District rapid response team also summarized the cases of plague by locality and sex as seen in Table 4.2

Table 4.2: ANSWER. Distribution of cases by village and sex in Shotolu District

Village	**Population at risk**	**Cases of plague**		**Total cases**	***Attack rate per 100000**
		Male	**Female**		
Gonu	30,000	12	7	**19**	*63.3*
Mizasha	20,000	12	3	**15**	*75.0*
Wandali	40,000	4	9	**13**	*32.5*
Makamekwe	10,000	0	1	**1**	*10.0*
Total	**100,000**	**28**	**20**	**48**	***48.0***

* Attack rates = total number of cases/ Total population at risk of the disease* 100,000.

6. Calculate the Attack Rate (incidence rate) for each village in Shotolu District. Record your answer in the blank column in Table 4.2.

* **Attack rates** = total number of cases ÷ Total population at risk of the disease X 100,000

7. Did the disease affect males and females equally? (Assume the male to female ratio in the general population is 1:1)

Males were proportionally more affected than females.

*Males: 28/48 *100= 58.3%*

*Females: 20/48*100= 41.7%*

8. Table 4.3 shows the distribution of cases by age group. It also gives the population at risk within those categories. The DMO was able to compare attack rates between the different age groups. Which age groups were **most** affected by Plague?

Table 4.3: ANSWER. Distribution of cases by age

Age group (yrs)	Population at risk	Number of cases	Attack rate per 100,000 population
0-4	20,000	14	*70*
5-9	15,000	13	*86.7*
10-14	15,000	11	*73.3*
15-19	10,000	6	*60*
20 and above	40,000	4	*10*

- *The youth below the age of **20 years** of age are the most affected especially the **5 to 9** years' age groups.*

Exercise 4

In this exercise, you will use the available information to characterize the outbreak and identify response actions. From the information that we have, the DMO can consider conducting an investigation to examine risk factors. For example, we know that most children sleep on the floor.

* * * *

1. Based on your answers to previous questions what do you think placed each of the particular groups at risk of getting disease in Shotolu?

   The report on the disease outbreak indicated that more males (58.3%) than females were affected. Most of the cases (91.6%) were below 20 years of age.
   The highest attack rate was in the villages of Gonu (63.3 per 100,000) and Mizashi (75.0 per 100,000).
   There is need for further study (preferably case control study) to find out why the disease was targeting young people in the community.
   Is it due to lack of acquired immunity towards plague in this group, (while their parents had previous non fatal experience with the disease) or was it due to their lifestyle which exposes them to wild infected rodents and their fleas?
   Samples of rodents from the affected villages should be collected for pathological analysis to detect whether they are carriers of the disease.

   1A: What do you think are the different risks for males versus females?

   Young males often hunt rodents in the village

   1B: What about the different age groups?

   Children often sleep on the floor

2. Refer to Section 9 of the Technical Guidelines and decide on recommendations for controlling this outbreak in each of the following areas:

2A: Case Management:

Admit the patient in an isolation unit

Treat the patient according to the disease specific treatment guidelines.

2B: Case Reporting:

Inform the District Medical officer (DMO) immediately by the fastest means possible.

The DMO should also report the outbreak to the next level including to the national disease control/ surveillance unit and inform the neighbouring District s to intensify surveillance on plague.

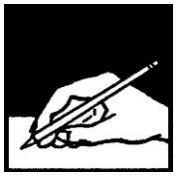
2C: Community Actions:

Inform the community (lay case-definition) to help you trace contacts and search for any other cases in the area.

Kill fleas by dusting rodent runways and burrows with insecticide and later kill rodents (using rodenticides).

Note to facilitator:

Conduct a group discussion about this multi-part case study. Highlight the steps of conducting an investigation and ask for examples from the participants as to how this DMO carried out the investigation according to the steps presented in Sectin 4.0 of the Technical Guidelines.



Exercise 5

In this exercise, you will have another opportunity to practice the steps for investigating an outbreak. Work with a partner or a small group of 3 to 4 participants to complete this second case study. When you have completed the exercise, your facilitator will provide feedback about your progress. As you do this exercise, refer to the disease specific guidelines for Rift Valley Fever on page 337 of the Technical Guidelines.

* * * *

Case Study: Hemorrhagic Fever Disease Outbreak in Buran District

In early December 2006, the District Medical officer of Health Buran District in Eastern Province reported several unexplained deaths associated with fever and generalized bleeding to the Ministry of Health. By 20 December, several cases were admitted to the hospital presenting with high fever headache, vomiting blood, abdominal pain, jaundice and sudden death. Those mostly affected were young herdsmen in contact with sick goats, sheep and cattle. The local veterinary health officials also reported high rates of spontaneous abortion and death among domestic livestock

The community lives in a dry area where herdsmen are gone from the village for long periods of time. When the area floods, the roads often become rivers or heavily rutted from rains and the village becomes difficult to reach. The DMO suspected an outbreak of Rift Valley Fever (RVF) based on the previous outbreak that occurred in December 1997 following the massive El Niño rains flooding. Presence of the *Aedes* mosquito has been documented in the village as well. He therefore sent case definitions to the district health facilities.

1. How is RVF transmitted?

   RVF is mainly transmitted from animals (sheep, cattle, goats, camels) to humans through close contact with infected animals (such as handling meat and body fluids and consumption of raw milk). During established RVF outbreaks in animals humans can also get infected through bites of infected mosquitoes and other biting insects.

2. What is a suspected case definition for RVF?

Any person who has been in contact with a confirmed case and presenting with fever (>37.5 ^{o}C) of acute onset with unexplained bleeding tendencies (passing bloody stools, vomiting blood, coughing blood, bleeding gums, nose vagina, skin or eyes) or deterioration of vision

3. What is a confirmed case definition for RVF?

A confirmed case is defined as a suspected or probable case with laboratory confirmation of the presence in serum of anti-RVF virus IgM by enzyme-linked immunosorbent assay (ELISA) or RVF virus RNA by reverse transcription--polymerase chain reaction (RT-PCR).

4. What action should the District Medical Officer take?

Depending on the country's health system: Inform the Provincial Medical Officer or the Director of Medical Services or IHR focal point

Send a Rapid Response Team to the field investigate

The Ministry of Health subsequently sent a Rapid Response Team to investigate the outbreak.

5. Which experts might be included on the initial investigation team?

- *Members of the Rapid Response Teams (clinicians, epidemiologists, public health nurse, environmental health, laboratory technicians)*
- *Could also include virologist, entomologist and social mobilization or communication officer*
- *Additionally a veterinarian from the ministry of agriculture and livestock etc*.

6. What should the Rapid Response Team do in the field?

- *Verify any rumours of the disease outbreak*
- *Conduct active case finding in the field and in the health facilities*
- *Sensitize health staff and the community on the RVF case definition*
- *Review medical records for suspected cases of RVF*

- *Conduct in depth investigations using the detailed case based reporting forms*
- *Follow up contacts*
- *Provide technical support to the health facilities on case management.*
- *Collect specimens for laboratory diagnosis of RVF*
- *Propose appropriate strategies and measures for the rapid containment of the RVF with the district epidemic management committee*
- *Participate actively in the implementation of RVF prevention and control strategies*

7. What tools should the team take with them to the field?

- *Treatment supplies including PPE*
- *Infection control information and tools*
- *Laboratory specimen collection equipment*
- *Recording forms and data collection tools*

8. The team collected samples for testing using Polymerase Chain Reaction (PCR). What type of laboratory samples should be collected to confirm the disease?

Diagnostic Test	**Sample required**	**Preparation and storage**	**Shipping**
PCR DNA, RNA (genetic materials) from virus	*Whole blood or clot* *Tissue (fresh frozen)* *Serum plasma*	*Freeze or refrigerate*	*Frozen in dry ice or ice packs or both*

9. What is the type of sample?

For ELISA: Whole blood, serum or plasma

For PCR: Whole blood or blood clot, serum/plasma or tissue

For Immunohistochemistry: Skin or tissue specimens from fatal cases

10. How will they be transported?

For ELISA or PCR: Refrigerate serum or clot …Freeze (-20C or colder) tissue specimens for virus isolation

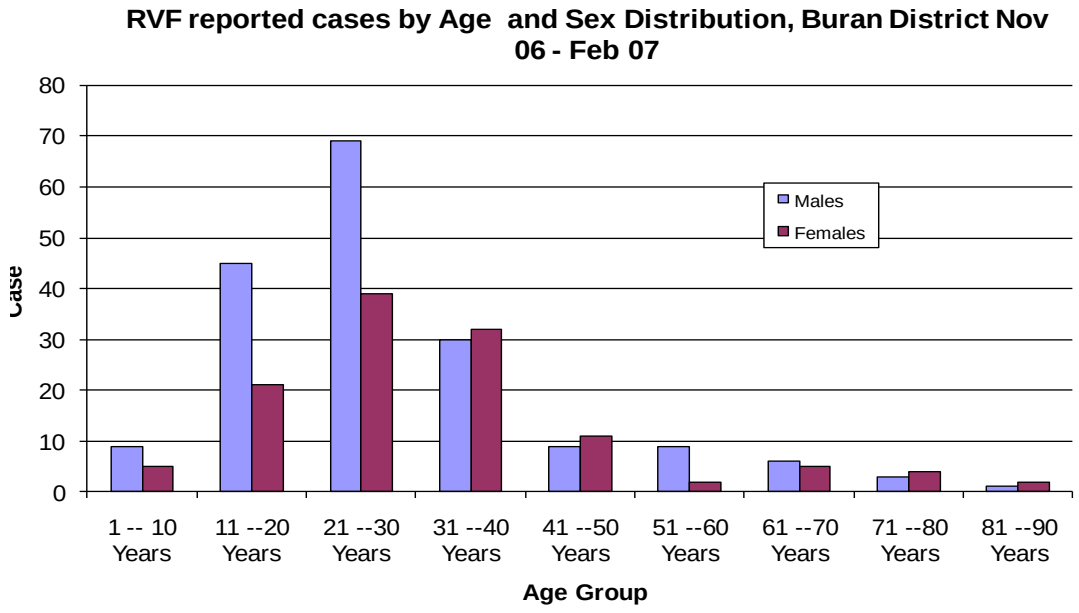
For Immunohistochemistry: Fix skin snip specimen in formalin. Store at room temperature.

Formalin-fixed specimens may be transported at room temperature.

11. Which laboratory in your health system will assist with safe handling, shipping, storing and processing of this specimen?

Answer will depend on participant's district

Figure 1: RVF reported cases by age and sex, Buran District



12. Based on your knowledge of RVF and information provided in figure 1, why do you think particular categories of people were most affected?

- *Young herdsmen (11- 30 yrs) in constant contact with animals while grazing and drinking raw milk*
- *Women (21-40 yrs) Prepare meat products and milking animals*

During the investigation, you received more information on the outbreak. Two thirds of the 66 patients who provided information on potential risk factors reported owning an animal that was recently ill. The most frequently reported RVF risk factors during the 2 weeks preceding illness onset were drinking unboiled (raw) milk (72%); living within 100 meters of a flooded area (70%); having an ill animal (67%); drinking milk from an ill animal (59%); working as a herdsman (50%); having a dead animal in a herd (50%); and slaughtering an animal (42%). Approximately 9% of patients reported close contact with another household member who was sick with RVF.

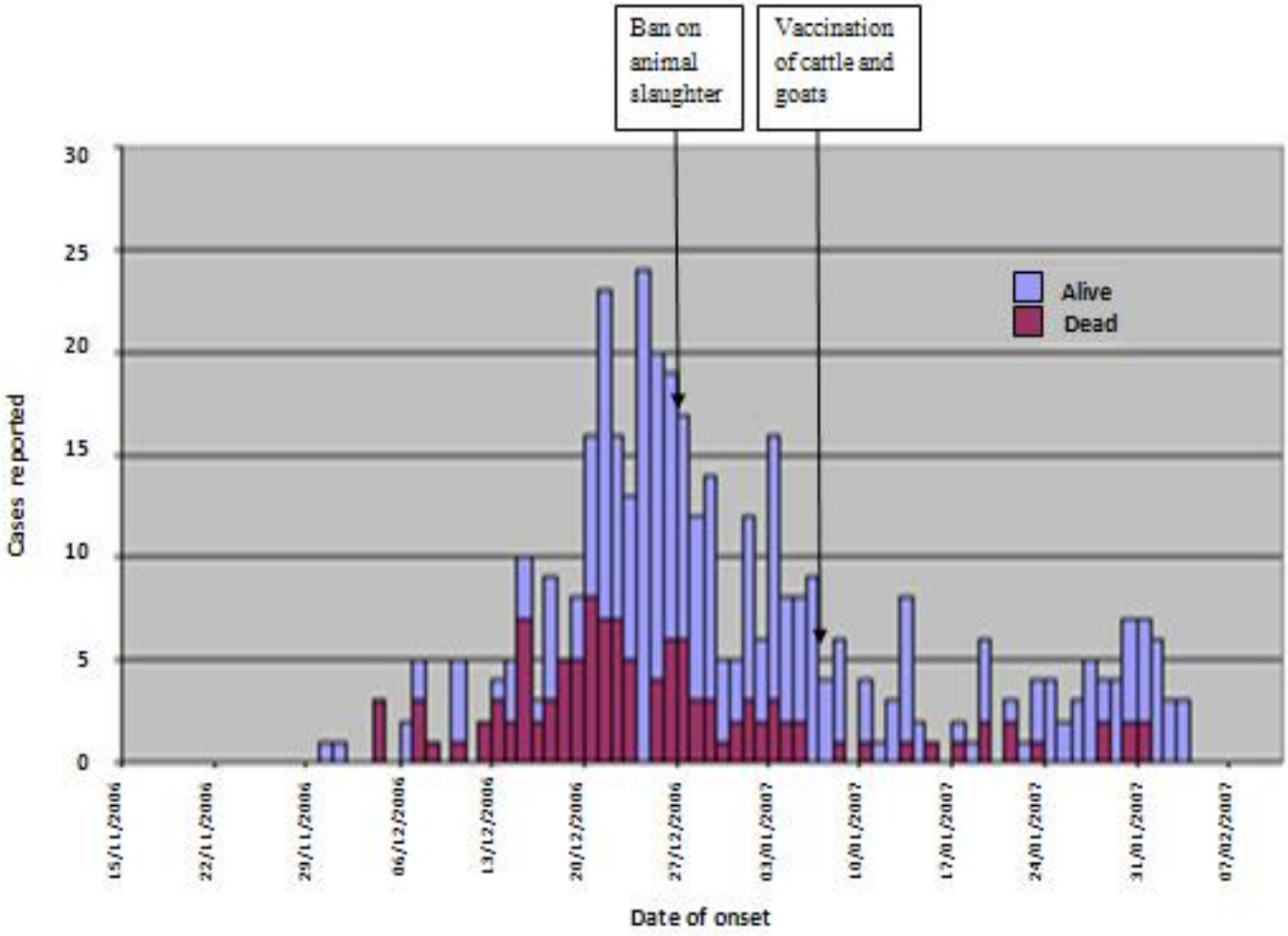
13. What are the key messages to reduce the transmission of the disease in the community?

- *Avoid direct contact with the blood and body fluids of sick or dead animals unless well protected*
- *Wash hands with disinfectant or soap after contact with blood or body fluids from infected animals*
- *Eat well cooked meat and avoid drinking raw milk or blood*
- *Seek medical advice if having un explained fever lasting more than 48 hours*
- *Use mosquito repellants and sleep under insecticide treated mosquito nets (ITNs) and wear long sleeved shirts and trousers*

14. What would be the most appropriate way to communicate health information to this nomadic community?

- *Prevention messages were developed in the local languages and public meetings were held to spread information rapidly to the community.*
- *Messages also were disseminated via radio, a widely used communication medium in NEP.*
- *Village elders, chiefs, and religious leaders were consulted throughout the District, leading to a district ban on the slaughter of livestock and closure of the livestock market.*

Figure 2: ANSWER. Distribution of cases by time Buran District, Nov 2006- January 2007.



15. The graph in figure 2 is an epidemic curve of this outbreak. An epidemic curve describes the distribution of cases over time. It can show the history of the first case. Describe what you see in this epidemic curve.

> *The figure shows the epidemic curve of the outbreak by date of symptom onset. The curve has biphasic distribution, with the first peak occurring mid December and the second in end January and early February*

The ban on animal slaughter was announced by the Ministry of Agriculture and Livestock on 27 December 2006. Vaccination of cattle and goats began on 7 January 2007. The Ministry also banned the movement of livestock from the infected areas.

16. Insert arrows on figure 2 indicating when the Ministry of Agriculture and Livestock was announced the ban on movement of livestock and when vaccination of the livestock started.

See arrows above

17. In your opinion, was the ban on slaughter of animals and starting vaccination of livestock effective in breaking the transmission of RVF? Explain your answer referring to figure 2.

The interventions by the livestock department came a bit late as the epidemic had already reached the peak

Exercise 6

In this case study, participants will practice evaluating an outbreak. Review this case study about an outbreak of measles and then answer the questions about the results of the outbreak response.

* * * *

An outbreak of measles in Onori

Demography:

Onori is an archipelago consisting of 10 islands. It is about 500 km off the coast of Galen, a country in Africa. It has a population of 430,000 people, 65% of which inhabit the two biggest islands of the archipelago.

The majority of people from Onori migrate out of the country for economic reasons. In fact, the major revenue of the country is obtained from money sent home from Onorians living and working abroad.

Only 10% of the country's food requirement is produced locally and the adult literacy rate is estimated at 80%.

Health Services

Health Services are delivered through both government and private providers. There are 2 central hospitals, 3 regional hospitals, 18 health centers, 20 dispensaries and 87 PHC centers. The doctor-patient ratio is 1:2500; while the nurse-patient ratio is 1: 1500. Onori has been measles free for several years. Measles elimination is the goal of Onori Health Services. The WHO target for measles elimination is 2020.

The Outbreak

Reporting

An outbreak of measles began on 16 August 2008 in Onori. A total of 44 cases were recorded over the outbreak period. The first cases were recorded in Victa, the capital of the biggest Island of the Onori archipelago. While doing an institutional outpatients and admissions register review at the Onori Central Hospital on 17 August 2008, a member of the polio STOP team was impressed about record keeping at the Hospital. He noticed in the admission register of the Paediatrics Isolation Unit that one case of "Suspected Measles" had been recorded, however, he did not find any records of acute flaccid paralysis cases. He faithfully submitted a zero case AFP surveillance report to the Epidemiologist of the Onori Health Services for the week ending 19 August 2008. He did not report the "Suspected Measles" because he was tasked with only STOP team activities.

Confirming Diagnosis

The suspected case was later confirmed to be due to measles in the laboratory by the detection of anti-measles IgM antibodies.

The EPI Program in Onori

Routine EPI coverage (<1Yr) in Onori declined from 79.4% in 2004 through 76.7% in 2005 to 69.6% in 2007. Factors responsible for this decline were not immediately known.

Disease Surveillance in Onori

Human resource capacity building for AFP Surveillance in Onori was carried out in 2004 and 2007 for national surveillance personnel. In August and September 2008 when the first cases of Measles outbreak were detected in the hospitals, the Onori Epidemiologist faxed a report to WHO indicating "No measles cases" and " No AFP cases" since did he not receive the measles case report from the STOP team member.

* * * *

Following a rumor of a suspected outbreak of measles, an epidemiologist was sent to investigate the outbreak and summarized the findings as shown in Table 4.4

Table 4.4: Line List—Measles outbreak in Onori Archipelago

Reg No.	Name	Community	Sex	Age	Wk of Adm	Vaccination Status	Lab Test IgM+	Outcome
1	GK	Osinya	F	11mnths	1	No	+Ve	Dead (D)
2	PG	Osinya	M	8yrs	1	No	+Ve	Alive (A)
3	JK	Osinya	M	3yrs	2	No	+Ve	A
4	WL	Osinya	F	38yrs	2	No	+Ve	A
5	WW	Osinya	F	4yrs	3	No	+Ve	A
6	OM	Osinya	M	2yrs	3	Yes	+Ve	D
7	SO	Osinya	F	2.5yrs	4	No	+Ve	A
8	OD	Osinya	F	6yrs	2	Yes	+Ve	A
9	ER	Osinya	F	4yrs	5	Yes	+Ve	A
10	DS	Osinya	M	1yr	6	No	+Ve	A
11	LK	Osinya	M	4yrs	6	Yes	+Ve	A
12	RE	Osinya	M	2yrs	6	No	+Ve	A
13	LO	Osinya	M	6yrs	7	No	+Ve	A
14	KO	Salama	F	15yrs	7	Yes	-	A
15	PO	Osinya	M	4yrs	7	Yes	+Ve	A
16	DE	Osinya	F	7yrs	7	No	+Ve	A
17	GS	Osinya	F	8yrs	7	Yes	+Ve	A
18	FK	Salama	F	2yrs	7	No	+Ve	D
19	NU	Salama	M	37yrs	8	No	+Ve	A
20	PQ	Osinya	F	3.5yrs	8	Yes	+Ve	D
21	KS	Salama	M	7yrs	8	No	+Ve	A
22	KA	Salama	F	5yrs	8	Yes	+Ve	D

Reg No.	Name	Community	Sex	Age	Wk of Adm	Vaccination Status	Lab Test IgM+	Outcome
23	NK	Salama	F	5yrs	8	No	+Ve	A
24	HD	Salama	M	6yrs	8	No	+Ve	A
25	XE	Vicente	M	1yr	8	No	+Ve	A
26	MA	Salama	M	7yrs	8	No	+Ve	D
27	ER	Vicente	F	5yrs	8	Yes	+Ve	D
28	BN	Vicente	M	9yrs	8	No	+Ve	A
29	MZ	Salama	F	8yrs	9	Yes	+Ve	A
30	MX	Vicente	M	12yrs	9	No	+Ve	A
31	BD	Vicente	F	11yrs	9	No	+Ve	A
32	AW	Cruz	F	9.5yrs	9	Yes	+Ve	D
33	QA	Tarime	M	12.5yrs	9	No	+Ve	A
34	WE	Cruz	M	10yrs	9	No	+Ve	A
35	DC	Tarime	F	14yrs	9	No	+Ve	A
36	BT	Cruz	M	3yrs	10	No	-	A
37	NX	Tarime	M	19yrs	10	No	+Ve	A
38	MZ	Cal	F	18yrs	10	Yes	+Ve	A
39	NX	Cal	F	30yrs	11	No	+Ve	A
40	POO	Cata	M	34yrs	11	No	+Ve	A
41	HDS	Cata	F	33yrs	11	No	-	A
42	SER	Domingo	M	5yrs	12	No	-	A
43	MJT	Kigumo	M	38yrs	12	Yes	+Ve	A
44	JSD	Mina	F	2yrs	13	No	-	D

1. Using the information provided in the line list of measles outbreak in Onori, complete the number of cases, cumulative cases and proportion of cumulative cases in this table.

Table 4.5: ANSWER. Number of measles cases reported in Onori by age, August 2008

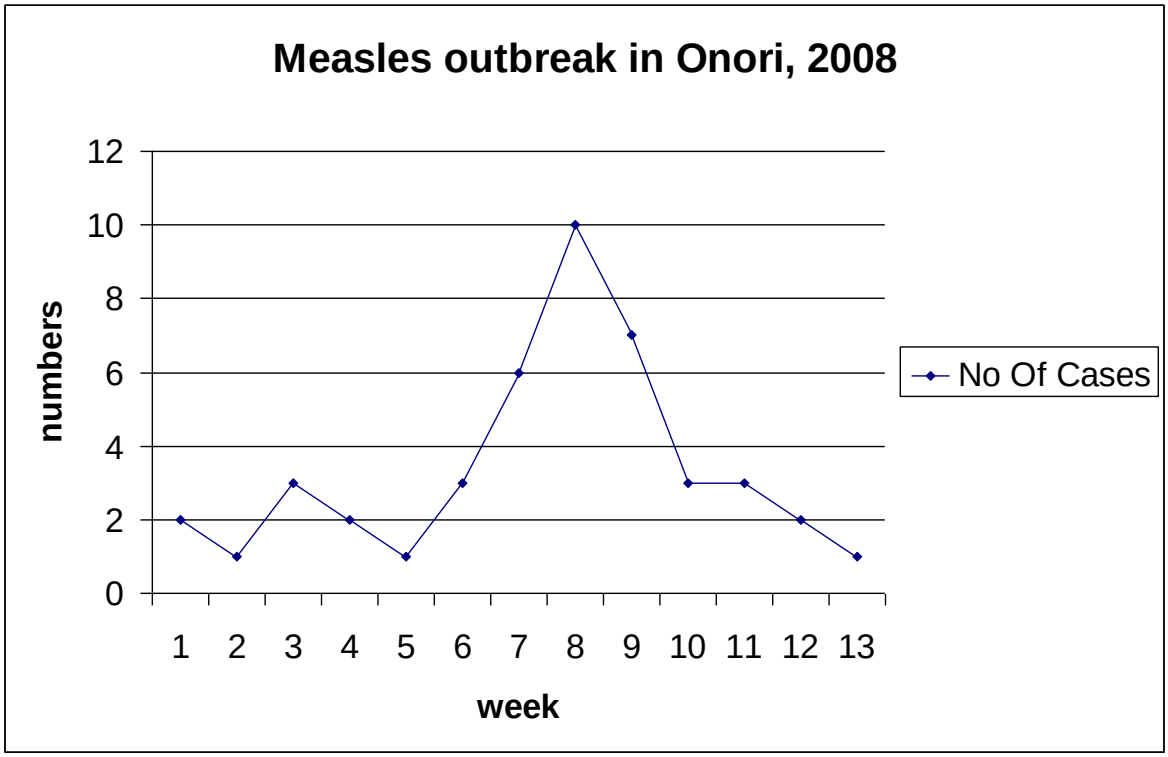
Age Group (yrs)	**<1**	**1 to 4**	**5 to 9**	**10 to 14**	**15 to 19**	**20 to 24**	**25 to 34**	**35 and over**
No. Of cases	1	14	15	5	*3*	*0*	*3*	*3*
Cumulative No. of cases	1	15	30	35	*38*	*38*	*41*	*44*
Proportional of cumulative cases (%)	*2.3*	*34.1*	*68.2*	*79.5*	*86.4*	*86.4*	*93.2*	*100*

2. Using the data in the table below, draw a graph showing the number of cases of measles reported per week since the beginning of the outbreak (start of epidemic is taken as week 1).

Table 4.6: Number of Cases by week of admission, August 2008

Week of epidemic	1	2	3	4	5	6	7	8	9	10	11	12	13
No Of Cases	2	1	3	2	1	3	6	10	7	3	3	2	1

Question 2: ANSWER. Measles outbreak in Onori, 2008



3. Describe what you see in the graph.

This is a graph of measles cases occurring against time.

It is referred to as an epidemic curve.

The pattern is in keeping with propagated source epidemic.

4. Calculate measles incidence rate (attack) rate by community, by completing Table 4.7.

Table 4.7: ANSWER. Distribution of measles cases by community in Onori

Community	Population	Number of cases	Incidence rate Per 100,000 population
Osinya	121212	17	*14.0*
Salama	12769	9	*70.5*
Vicente	81799	5	*6.1*
Cruz	26667	3	*11.2*
Tarime	12121	3	*24.8*
Cata	45866	2	*4.4*
Domingo	9696	1	*10.3*
Kigumo	3736	1	*26.8*
Mina	8767	1	*11.4*
Baraka	18181	2	*11.0*
Total	340814	44	*12.9*

*****Calculate the incidence rate (attack rate) by dividing the number of cases by the population at risk and multiplying by a factor such as 100,000; in this case we assume that the whole population is at risk of getting measles.

5. Complete Table 4.8 by calculating and recording the Case Fatality Rate (CFR) for the remaining communities. The CFR is the proportion of fatal cases (i.e., the percentage of cases who died)

Table 4.8: ANSWER. Case-Fatality Rate for Onori Measles Outbreak

Community	Island	Population	No Of Cases	Mortality	Case-Fatality Rate (%)
Osinya	A	121212	17	2	11.8
Domingo	A	9696	1	0	*0*
Cruz	A	26667	3	1	*33.3*
Tarime	A	12121	3	0	*0*
Baraka	A	18181	2	0	*0*
Cata	A	45866	2	0	*0*
Salama	B	12769	9	4	44.4
Kigumo	C	3736	1	0	*0*
Vicente	D	81799	5	1	*20*
Mina	E	8767	1	1	*100*
Total		340814	44	9	20.5

6. What is the surveillance case definition of Measles or a Measles death?

   The surveillance case definition of measles is any person with fever and maculo-Papular generalised rash and cough, coryza or conjunctivitis or any person who a clinician suspects measles.

   A measles death: death occurring within 30 days after onset of measles rash.

7. Which of the islands have the highest case fatality rate (CFR)?

   The islands with the highest case fatality rate are B and E, (please note that in island E there is only one case and one death, the number is too small for meaningful comparison!)

8. What could be the possible underlying factors responsible for a high CFR?

This could be due to delay in seeking treatment poor case management or poor access to health facilities.

9. The cases from the measles epidemic were summarized by age group and vaccination status in order to further characterize the epidemic. The details are provided in Table 4.9. Calculate the proportion of cases by age category and by vaccination status as provided in the table.

Table 4.9: ANSWER. Distribution of cases by age and vaccination status

Age category	**Vaccinated**		**Unvaccinated**		**Total**
	#	**%**	**#**	**%**	
< 5 yrs	5	(*33*)	10	*(67*)	15
5yrs and above	9	(*31*)	20	(*69*)	29
Total	**14**		**30**		**44**

10. What do you think are possible causes of this epidemic??

The possible cause of this outbreak is that there has been a building up of the number of unvaccinated children (susceptible) due to poor immunisation coverage leading to the outbreak.

11. Considering your responses to the questions so far on this epidemic, what are your informed views on the following?

11A: Time interval between onset of Outbreak and Campaign.

The response (immunization campaign) was too slow and coming late. This signifies lack of adequate epidemic preparedness.

11B: The selection of the islands targeted for the initial campaign.

The intervention should have started from the Islands that had not been affected. It is likely that all susceptible in the affected islands had already been infected with the Measles virus by the time the vaccination campaign started.

11C: The age group targeted for the mass immunization.

He should have targeted all the children less than 15 years of age as nearly 80% of cases occurred in this age group.

12. What are some of the challenges facing Disease Surveillance in Onori?

- *Non-integration has compromised case detection and reporting. There is therefore need to initiate IDS strategy in the country.*
- *There is an urgent need for epidemic preparedness and also initiation of a reliable method of forecasting measles epidemics.*

Exercise 7

Notes to Facilitator: Ask participants to read through the first four sections of Exercise 7. Tell them they will have about 10 minutes to read the case. They will then get into groups of three or four people and complete the calculations for the Outbreak Report in Section IV. Ask them to discuss the evaluation questions in parts V, VI and VII with their group members.

To conclude this exercise, ask the groups to share their answers aloud for the calculations and then for the evaluation sections. There may be several different suggestions for the last three sections. Allow each group to provide one of their suggestions. Sample answers are provided below. If these answers are not generated by the group, read them out loud so people can correct their answers or identify where they may have miscalculated or misread a question.

* * * *

The purpose of this exercise is for you to practice completing a district outbreak report by calculating indicators and drawing conclusions about the response. First, read the following District Outbreak Report that describes an outbreak of Chikungunya. Read through the first four parts: Executive Summary, Introduction, Methods and Results. For a real report, you would have written these sections yourself. Then in Part IV, use information from the report to calculate the indictors about the timeliness and quality of the outbreak detection, investigation and response. Discuss parts V, VI and VII (the evaluation and recommendation sections) with a small group.

A blank District Outbreak Report form can be found in section 7A on page 191 of the Technical Guidelines.

District Outbreak Report

Outbreak of Chikungunya

Title/Description (include disease/condition investigated)

12 August- 15 September 2007	Touli Village, Faroush District
Period	Place (Villages, Neighborhoods, District, Province)

Executive Summary:

On 12 August, 2007, a rumor of suspected Chikungunya reached the health facility near Touli village. On 13 August, 4 cases of suspected Chikungunya were admitted to the health facility. The disease was confirmed by laboratory on 16 August. Subsequently, the District Public Health Management Committee was alerted on 17 August and the Rapid Response Team dispatched to Touli on the 20 August. The team immediately started active case finding and case management. The vector control activities were initiated on 25 August and there were no new suspected cases of Chikungunya reported after 15 September.

I. Introduction:

On 12 August, 2007, a rumor of suspected Chikungunya reached the health facility near Touli village. On 13 August, 4 cases of suspected Chikungunya cases were admitted to the health facility near Touli. The health facility immediately reported the suspected cases to the DMO by phone. Blood samples were taken and sent to the district laboratory. Confirmation results were returned within 72 hours showing the specimens positive for Chikungunya. Health facility staff were trained on how to manage suspected cases of Chikungunya and protocols were made available in the outpatient and inpatient departments. As cases arrived at the health facility, health staff were able to treat patients by alleviating their pain with appropriate medications that were in adequate supply. Each case was recorded in a line list form. On 16 August, the health facility reported the confirmation to the DMO who immediately reported the confirmation to the national level. He also alerted other neighbouring health facilities to initiate active surveillance for Chikungunya cases. The District Public Health Management Committee was alerted about the suspected cases during their weekly meeting on 17 August. The investigation team arrived in

Touli on 20 August and started active case finding and case management. The team found that cases lived near an illegally constructed dam for irrigation water that was blocking the local river. The area had become a breeding ground for mosquitoes. The Rapid Response Team initiated vector control intervention on 25 August. On the same day, the community was informed on how Chikungunya was spread and how they could protect themselves from mosquitoes. Finally, the RRT contacted the health facility to update the staff on the current state of cases and risk factors in Touli.

Over the period of the outbreak (12 August-15 September) 45 cases were confirmed with no deaths. The final outbreak report was completed on 20 September and sent to the national level.

II. Methods:

The investigation occurred from 20 to 25 August in the village of Touli in Faroush District. The investigation team performed contact tracing and mapped the location of the cases. The team found that cases lived near an illegal dam that was causing the river to stop flowing. The area had become a breeding ground for mosquitoes. The investigation team treated cases immediately. Blood samples were taken from each case and sent to the district laboratory. They started a mosquito control intervention on 25 August.

III. Results:

The first suspected case was reported from Touli village on 12 August. The first case seen in a health facility arrived from Touli on 13 August. Case tracing in the village identified 14 additional cases of Chikungunya. Lab results confirmed that each case was Chikungunya. The cases were clustered around an illegal dam in the village of Touli and mostly affected children under 5. The mosquito control efforts initiated by the district epidemic management committee decreased the mosquito population and resulted in a decline in cases over a one week period.

IV. Self-evaluation of the timeliness and quality of preparedness, outbreak detection, investigation, and response

Epidemic Preparedness

Indicator	Yes	No
Were adequate drugs and medical supplies available at the onset of the outbreak	*X*	
Were treatment protocols available to health workers?	*X*	
Does the district epidemic management committee regularly meet as part of epidemic preparedness?	*X*	

Outbreak Detection

Indicator	Date 1	Date 2	Interval
Interval between onset of index case (or occurrence of an unusual cluster at the community level) [date 1] to arrival of first outbreak case at the health facility [date 2] (Target: <3 days)	*12 August*	*13 August*	*1day*
Interval between initial outbreak case seen at the health facility (or date of outbreak threshold crossing at the health facility) [date 1] and reporting to the district health team [date 2] (Target: within 24 hours)	*13 August*	*13 August*	*0 day*
Cumulative interval between onset of index case (or occurrence of an unusual cluster at the community or health facility) [date 1] to notification to the district [date 2] (Target: <7 days)	*12 August*	*13 August*	*1day*

Outbreak investigation

Indicator	Yes	No
Were case forms and line lists completed?	*X*	
Were laboratory specimens taken (if required)?	*X*	

Indicator	Date 1	Date 2	Interval
Interval between notification of district [date 1] and district field investigation conducted [date 2] (Target: within 48 hours)	*13 August*	*20 August*	*7 days*
Interval between sending specimens to the lab [date 1] and receipt of results by the district [date 2] (Target: 3-7 days, depending on type of test)	*13 August*	*16 August*	*3 days*

Outbreak response:

Indicator	Date 1	Date 2	Interval
Interval between notification of outbreak to district [date 1] and concrete response by the district [date 2] (Target: within 48 hours of notification)	*13 August*	*20 August*	*7*

Evaluation and Feedback:

Indicator	Date 1	Date 2	Interval
Interval between end of the outbreak [date 1] and finalization of outbreak report with case forms/line list sent to national level [date 2] (Target: 2 weeks)	*15 September*	*20 September*	*5*

Indicator	Yes	No
Did the outbreak management committee meet to review investigation results?		*Unknown*
Was feedback given to health facilities and community?	*X*	

V. Evaluation of other aspects of the response

Answers could include points such as:

- *The community was able to communicate suspected cases of Chikungunya to the health facility which was able to report them to the district.*
- *The health facility had treatment protocols posted in the inpatient and outpatient departments for easy access by the health care workers.*
- *The district did a good job communicating the outbreak to neighboring villages so that they could conduct active case findings.*
- *The RRT did a thorough investigation of the risk factors for Chikungunya in the village and took an appropriate response by initiating a mosquito control intervention.*

VI. Interpretations, discussion, and conclusions

Answers could include points such as:

- *The outbreak response in this health facility was very fast, and the facility had all of the resources and information that they needed to treat and record cases and collect and ship specimens.*
- *The lab responded quickly with confirmation, indicating that they have adequate supplies and skills to conduct specimen testing.*
- *The outbreak response by the district was surprisingly slow, considering the timeliness of the rest of the outbreak activities. The interval between the district being alerted to the suspected cases of Chikungunya and concrete action (investigation) by the district was 7 days instead of the target interval of 48 hours.*
- *This response covered the majority of the indicators from the IDSR guidelines and met many of the target intervals for timeliness. The health facility, lab and district demonstrated good communication for reporting suspected and confirmed cases. The district performed a thorough job investigating and responding to the outbreak at the community level. Feedback was given to the village and health facility following the investigation.*

What information is missing that could help you complete this form?

Answers could include points such as:

- *We do not know if the district management committee met to review the investigation results.*

VII. Recommended public health actions:

- **Community level:**
  - *The RRT initiated appropriate public health actions by performing immediate treatment of cases and initiating a mosquito control intervention, including information for villagers on the spread of Chikungunya.*
  - *The village chief could hold a meeting to stress the importance of reducing mosquito breeding grounds and ways that people can do that around their homes.*
  - *Community health workers can perform active case surveillance to ensure that cases aren't missed after the outbreak.*
  - *Additional public health action could include supplying bednets for additional mosquito protection.*
- **Health Facility:**
  - *The health facility could provide health talks in the outpatient department on risk factors for Chikungunya and other mosquito-borne diseases. They could provide information on how people can protect themselves from mosquito bites and supply free bednets.*
- **District:**
  - *The district can create a campaign to teach people about the risk factors for mosquito-borne diseases, such as building illegal dams. One major point is that mosquitoes can carry more than just malaria.*
- **Provincial:**
  - *The provincial level can assist the district in creating the campaign about mosquito-borne diseases and help disseminate the campaign materials around the province.*
  - *The province can review its policy around mosquito control and ensure that districts are supplied with adequate resources for carrying out appropriate mosquito control interventions.*

Points to remember:

1. Understanding alert thresholds will help you know when to investigate an outbreak
2. Document all of the rumors, reports and verified information about an outbreak
3. Assemble an outbreak investigation team and consider all of the logistics that will need to be taken care of so that they can do their jobs, i.e., which vehicles can they use, what resources are available to them for fuel, food, etc. Who will they contact at the outbreak site?
4. Analyze the investigation results to determine what caused the outbreak or event and decide if there is immediate action that can decrease the severity of the effect.
5. Prepare an outbreak report to submit to the National Level.

Annex 1: Introductory Presentation for Module 4

Slide 1

Module 4: Investigate and confirm suspected cases, outbreaks and other events of public health importance

Integrated Disease Surveillance and Response
District Level Training

Slide 2

Optional Activity For Focusing Group

Slide 3

Learning Objectives

1. Know when to decide to investigate an outbreak
2. Verify and report an outbreak or public health event
3. Formulate a hypothesis
4. Plan to conduct a response
5. Analyze the investigation results to determine what caused the outbreak or event
6. Prepare an outbreak report

Slide 4

Decide to Investigate a Reported Outbreak or Public Health Event

An investigation helps you decide how to respond to the suspected outbreak or public health event.

Slide 5

Exercises

Exercise 1: Unknown disease outbreak
- Steps for investigation
- Using the IHR (2005) Decision instrument

Exercise 2: Continued from Exercise 1
- Confirming outbreak
- Obtaining specimens for lab confirmation

Slide 6

Exercises

Exercise 3: Continued from 1 and 2
- Create a line graph from outbreak data
- **Case Fatality Rate:** (Total deaths/total cases) *100

Exercise 4: Characterize the outbreak and identify response activities
- **Hypothesis:** A suggested idea for the possible explanation of a situation. Investigations test your hypothesis.

Slide 7

Exercises

Exercise 5: Conduct an outbreak investigation
- Follow investigation procedures
- Build a response team
- Consider lab supplies
- Interpret data analysis

Exercise 6: Evaluate an outbreak response
- Complete data analysis and graphs from line list
- Calculate case fatality
- Evaluate the response

Slide 8

Points to Remember

1. Alert thresholds will help you know when to investigate an outbreak
2. Document all of the rumors, reports and verified information about an outbreak
3. Assemble an outbreak investigation team and consider all of the logistics that will need to be taken care of so that they can do their jobs
4. Analyze the investigation results and decide if there is immediate action needed
5. Prepare an outbreak report to submit to the National Level

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Integrated Disease Surveillance and Response

District Level Training Course | Facilitator's Guide Module 5

Prepare to respond to outbreaks and other public health events

July 2011

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Integrated Disease Surveillance and Response

District Level Training Course

Facilitator Guide

Module 5

Prepare to respond to outbreaks and other public health events

July 2011

Introduction

Introduce Module 5 with a brief presentation based on the introduction to Section 5 of the IDSR Guidelines, page 133. A PowerPoint presentation has been provided for you as a standard template at the end of this module in Annex 1. You may use it exactly as it appears or alter it as you see necessary.

Emphasize these points in your presentation:

- A public health emergency such as an acute outbreak or public health event calls for an immediate response.
- Being prepared to detect and respond to such an event is an essential role of the district.
- This module describes steps for organizing preparedness activities in the district.
- Preparedness activities should take place through the health system and may be guided by a national preparedness plan.
- The plan should address the roles and responsibilities for a national Public Health Emergency Management Committee and emergency Rapid Response Teams at the national, regional, and district, state or provincial levels.
- National preparedness guidelines are followed at the district level to develop contingency plans and other preparedness activities.

* * * *

Ask a participant to read the learning objectives to the group.

This module will describe and allow you to practice the following skills:

1. Identify functions of the emergency management committee
2. Define the roles and responsibilities of a district rapid response team
3. Describe the content of an epidemic preparedness and response plan
4. Identify the steps to setting up contingency stocks
5. Explain the importance of the steps involved in risk mapping for public health events

1.0 Organizing for a Public Health Response

Public Health Emergency Management Committee

- District-level public health emergency management committees (PHEMC) work closely with their counterparts at the regional and national levels to plan and monitor the implementation of public health emergency plans. PHEMCs are coordinating committees composed of technical and non-technical members from health and other sectors. The role of the PHEMC is to develop and oversee the implementation of emergency preparedness strategies, action plans, and procedures.

Review the main functions of the district public health emergency committee on page 134 of the Technical Guidelines:

- Develop a district emergency preparedness and response plan that accounts for all potential emergencies including disease outbreaks and detection of other emergent public health events or hazards.
- Establish a community communications plan for sharing information with communities before, during, and after any public health emergency.
- Mobilize resources for emergency prevention and control including procurement of response and communication supplies. Plan to monitor the use of the resources before, during and after the emergency event.
- Support the procurement of emergency material stockpiles within the district.
- Coordinate the post-emergency evaluation and plan to disseminate findings with the affected communities.

Rapid Response Team

- A Rapid Response Team is a technical, multi disciplinary team that is readily available for quick mobilization and deployment in case of emergencies.

The main functions are to:

- Investigate rumors, reported outbreaks, and other public health emergencies
- Propose appropriate strategies and control measures including risk communications activities.
- Coordinate rapid response actions with partners and other agencies.

- Initiate the implementation of the proposed control measures including capacity building
- Prepare detailed investigation reports
- Contribute to the final evaluation of the outbreak response.

Ask the participants to identify key differences between the PHEMC and the District RRT.

Be sure to emphasize that the PHEMC is a planning and review board that creates the emergency preparedness plan for the district. They should be involved in policy creation and high level logistical planning.

The district RRT goes to the field and investigates rumors and outbreaks and then prepares the final reports. Their role is to provide the planning committees with field-based statistics, lab results and other information that will directly inform public health action.

Notes to Facilitator: Point to IDSR Matrix on the wall or in the Technical Guidelines pages 14-15. The final column is PREPARE. Have a participant read the box for District level Preparedness.

Follow with short question and answer discussion exercise.

1. What kinds of preparedness activities have taken place in your district?
2. Is there an emergency preparedness committee or rapid response team? If so, who are the members?
3. Is there an emergency preparedness plan?
4. Are there contingency stocks?
5. What other preparedness activities have been undertaken in your district?

Exercise 1

Notes to Facilitator: Ask participants to read through the case study for Exercise 2. Tell them they will have about 10 minutes to read the case. They will then get into groups of three or four people and discuss the questions below. Ask them to prepare answers for the questions.

To conclude this exercise, ask the groups to read their answers aloud for each question. If there are disagreements, lead a group discussion. Sample answers are provided below. If these answers are not generated by the group, read them out loud so people can correct their answers.

Case study: An outbreak of a Viral Hemorrhagic Fever

Wilaya is a district in one of the countries in central Africa. It has a population of 469,700 persons (2007census). Because of insecurity in the area, 60% of the people in the district are internally displaced i.e. live in protected villages.

On the 8th of October 2010, an outbreak of an unusual illness in Wilaya District was reported to the Ministry of Health. This was by both the medical superintendent of Sarafu hospital and the acting district director of health services, Wilaya district. The focus of the outbreak was reported to be predominantly Kijiji, a remote village north of Wilaya municipality.

The illness was characterized by acute onset of fever, severe muscle pains, bleeding from multiple orifices (nose, mouth, anus and vagina) and death.

At the time of reporting, more than 10 people including 2 students had died from VHF related symptoms.

Due to the urgency, the Ministry of Health advised the DMOH to immediately send a team to the field to investigate the outbreak and to liaise with the local administration in setting up a local coordinating committee.

* * * *

1. Who should the DMOH send to the field to investigate?

- *An epidemiologist or public health officer*
- *Laboratory technologist or technician*
- *Clinician*
- *Environmental health officer*
- *Public health nurse*
- *Veterinary or wildlife management experts*

2. What will be their roles?

- *Investigate rumors, reported outbreaks, and other public health emergencies*
- *Propose appropriate strategies and control measures including risk communications activities.*
- *Coordinate rapid response actions with partners and other agencies.*
- *Initiate the implementation of the proposed control measures including capacity building*
- *Prepare detailed investigation reports*
- *Contribute to the final evaluation of the outbreak response*

3. Who should be included as members of the coordinating committee?

- *District administrator or equivalent*
- *District director of health services*
- *District public health nurse*
- *District disease control officer*
- *District environmental health officer*
- *Laboratory technician or laboratory technologist from the district laboratory*
- *Community health programs and mission hospitals.*
- *Red Cross, Red Crescent or similar agencies working in the area*

4. What will be their roles?

The main functions of the district public health emergency committee will be to:

- *Develop an emergency preparedness and response plan*
- *Establish a community communications plan for sharing information with communities*
- *Mobilize resources for emergency prevention and control including procurement of response and communication supplies*
- *Support the procurement of emergency materials and supplies*
- *Coordinate training of community, health facility, and district personnel on preparedness and response.*
- *Monitor and coordinate the response and disseminate findings to the relevant persons*

Exercise 2

Notes to Facilitator: Ask participants to read the following case study and then discuss the questions with two or three people. One member of each group will be asked to share an answer.

Case Study: Water Contamination

The recent floods made the Andu district impossible to reach. All road communication with the capital city had been cut. On Saturday, following a heavy rain, a fuel tanker slipped and rolled into the Ndoza river spilling 10 tonnes of benzene. Benzene is a chemical known to cause cancer and other health concerns. The river is the only main source of water and fish for three towns in the district of Andu. After hearing reports on the local radio, The Director of Medical services requested the local DMO to send a team to assess the situation and report back to her promptly.

* * * *

1. What should be the purpose of this investigation?

- *Determine who is at risk*
- *Determine risk factors*
- *Identify any health indicators that will measured over time*

2. In addition to the DMO, who else should be a part of this team?

Possible answers include:

- *Environmental officer*
- *Sanitarian*
- *Data Manager*
- *Laboratorian*
- *Fisheries and Wildlife Officer*

3. What are the main objectives of this team?

- *Investigate the extent of the water and fish pollution*
- *Propose appropriate strategies and control measures including risk communications activities.*
- *Initiate the implementation of the proposed control measures including capacity building with partners and other agencies.*
- *Prepare detailed investigation reports*

4. What are possible messages for the surrounding communities?

Avoid eating fish and drinking contaminated water from the river until further notice. Check TG for more details.

2.0 Preparing an epidemic preparedness and response plan

Present the following information on preparing an epidemic preparedness and response plan. Explain that this information can also be found on page 137 of the Technical Guidelines.

The purpose of the plan is to strengthen the ability of the district to respond promptly when an acute outbreak or other public health event is detected.

Emphasize these points in your presentation:

This plan should:

- Be based on district risk assessments, and should specify the resources available for epidemic preparedness and response.
- Take into account diseases with epidemic potential in the district and in neighboring districts.
- Provide estimates of the population at risk for epidemic-prone diseases and other public health emergencies.
- Clearly indicate for each suspected outbreak which reference laboratory will be used for confirmation.
- Provide estimates of quantities of drugs, vaccines and supplies for each epidemic-prone disease likely to occur in the district.
- Plan to be tested before implementation
- Include standard operating procedures (SOPS) in the training plan

Ask participants to refer to the list below, "Key Sections…" in their module. Ask the group if anyone has constructed or planned an epidemic preparedness plan for their district or health facility. What were some of the challenges? Is this list helpful?

Key sections of an epidemic preparedness and response plan:

1. Designated coordination committees
2. Elements of epidemiology of the event and surveillance including data management
3. Steps for carrying out a risk communication strategy including social mobilization
4. Operational actions according to expected phases of the epidemic
5. Laboratory: specimen collection, handling , transportation and processing
6. Case management , treatments (anti-viral, antimicrobial, decontamination, disinfection or others as indicated) & infection control
7. Pre- and post-exposure prophylaxis treatments
8. Immunization strategies
9. Rapid containment activities and additional methods if rapid containment fails
10. Capacity building including required training, sensitization meetings and simulation exercises
11. Logistics including supply lists for response activities
12. Environment, water and sanitation activities
13. Plans for monitoring the outbreak or event

Exercise 3

Preparing an epidemic preparedness plan

Over the last five years, your district experienced outbreaks of yellow fever, cholera, meningitis and measles. These diseases resulted in many deaths. Most of the health workers have been trained in integrated disease surveillance and response. They are currently using the revised data collection tools targeting priority diseases.

As the disease surveillance focal person and a member of the health management team, the District Medical Officer asked you to assist in the preparation of the District epidemic preparedness plans.

* * * *

1. What are major topics to include in an epidemic preparedness plan for this district?

The District epidemic preparedness plans must include the following areas:

1. *Background information,*
2. *Strategies for preparedness include:*
    - *Conducting surveillance.*
    - *Providing Laboratory support.*
    - *Conducting training of health workers.*
    - *Develop guidelines.*
    - *Coordinating with relevant stakeholders.*
    - *Preparing contingency stocks of drugs and supplies.*
    - *Preventing and controlling (Case management, immunization, vector control, Information, Education and communication (IEC), water and sanitation.*

- *Providing other supplies and logistics.*

3. *Procedures and responsibilities,*
4. *Cost estimates (Budget)*

2. Suggest an outline of information that should be included in the background to the plan.

The background information of epidemic preparedness plans should have:

- *Geographical data;*

  - Relevant environmental factors involved in diseases causation should be included.

- *Demographical data;*

  -Take into account the population distribution and structure.

  - Estimate the population at risk.

- *Social economic and cultural factors;*

  -Poverty and dependency ratios.

- *Epidemiological information;*

  -Especially on priority epidemic prone disease

3. Using knowledge about your own district, fill in summary Table 5.1 with possible health officers or health units that would be responsible for carrying out a meningococcal meningitis preparedness checklist for your District.

Table 5.1: ANSWER. Checklist for meningococcal meningitis epidemic preparedness

Preparedness Strategy & activities	**Responsible Officer /unit**
1. Epidemic management committee	*District administrator*
2. Epidemic preparedness plan	*Epidemic management committee*
3. Training of personnel on Integrated disease surveillance	*DHMT*
4. Guidelines on epidemic meningococcal disease	*DRRT/DHMT*
5. Contingency stocks of drugs and supplies	*DMO/ pharmacy and EPI*
6. Laboratory equipment and transport media	*Laboratory*
7. Budget line for epidemic control	*Administration/ DMO*

3.0 Setting up contingency stocks

Give a presentation on setting up contingency stocks of drugs, vaccines, reagents and supplies. Explain that this information can also be found in the Technical Guidelines on pages 138-139.

Emphasize these points in your presentation:

- Outbreaks and other public health emergencies require the rapid mobilization of resources such as vaccines, medicines and lab supplies.
- It is prudent to establish and preposition stockpiles of materials before an emergency occurs.
- Maintain a reliable supply of supplies and materials for responding to an outbreak or public health event.

Exercise 4

Notes to Facilitator: Ask questions about what level of the health system has the materials, and where the district gets them. Ex: Cholera, district will need to think about supplies, while with Yellow fever the national level.

* * * *

Setting up Contingency Stocks

Using the examples of cholera and poliomyelitis in Table 5.2, complete the columns with appropriate drugs and supplies for treatment of the diseases listed. Refer to Annex 6A on page 163 of the Technical Guidelines to complete each row.

Table 5.2: ANSWER. Essential drugs and supplies for treatment of epidemic-prone diseases

Disease	**Drugs**	**Supplies**
Cholera	ORS, IV fluids (Ringer's lactate)	Chloride of lime, giving sets, disinfectants, Cary Blair medium
Dysentery	*Nalidixic acid, Ciprofloxacine, ORS, Ringers lactate*	*Giving sets, disinfectants*
Measles	*Measles vaccine, Penicillin, gentian violet, Vitamin A, ORS, tetracycline eye ointment, Paracetamol*	*Auto destruct syringes and needles,*

Disease	**Drugs**	**Supplies**
Meningococcal meningitis	*Meningococcal vaccine* *Oily Chloromphenical*	*Lumber puncture equipment,* *Auto destruct syringes and needles*
Poliomyelitis	OPV oral vaccine, Anti spasmodic drugs	Stool collection containers
H5N1	*Oseltamivir*	*Nasopharyngeal swabs* *Nasopharyngeal aspirate* *Virus Transport Media (VTM)* *Cool boxes for transport of specimens*

Points to remember:

1. Being prepared will help you be a better leader when an emergency occurs.
2. Being prepared can reduce the number of excess deaths in your district when an outbreak happens.
3. Establish an emergency management committee to increase communication between stakeholders before and during an emergency.
4. Create an epidemic preparedness plan that will strengthen your ability to respond to an outbreak
5. Maintain proper stocks of drugs, vaccines, reagents and supplies. This will assist everyone else in your health system to do their jobs well.

Annex 1: Introductory Presentation for Module 5

Slide 1

Module 5: Prepare to respond to outbreaks and other public health events

Integrated Disease Surveillance and Response
District Level Training

Slide 2

Optional Activity For Focusing Group

Slide 3

Learning Objectives

1. Identify functions of the emergency management committee
2. Define the roles and responsibilities of a district rapid response team
3. Describe the content of an epidemic preparedness and response plan
4. Identify the steps to setting up contingency stocks
5. Explain the steps involved in risk mapping for public health events

Slide 4

Exercises

Exercise 1: Complete a flow diagram for an epidemic cycle

- **Detect**
- **Report**
- **Analyze and Interpret**
- **Investigate and Confirm**
- **Respond**
- **Communication (Feedback)**
- **Evaluate**
- **Prepare**

Exercise 2: Case Study on preparing to respond to an outbreak

- Investigation team
  - Duties
  - Roles

Slide 5

Establish an Emergency Management Committee

- **Public Health Emergency Management Committees (PHEMC) are coordinating committees**
- Membership are technical & non-technical from health and other sectors.
- Committee should meet regularly
- PHEMC support the procurement of emergency material stockpiles within the district
- Committee should meet regularly to develop the district emergency preparedness and response plan (EPR).

Slide 6

Main Functions of the PHEMC

- Develop & oversee the implementation of EPR strategies, plans & SOPs.
- Develop communication strategy for sharing information
- Mobilize resources for emergency prevention and control
- Monitor the use of the resources before, during and after the emergency event.
- Coordinate the post-emergency evaluation & dissemination of findings

Slide 7

Roles and Responsibilities of the District Rapid Response Team

- **District rapid response teams are field-based response teams**
- Investigate rumors, reported outbreaks, and other public health emergencies
- Propose appropriate strategies & control measures
- Initiate the implementation of control measures
- Prepare detailed investigation reports

Slide 8

Exercises

Exercise 3: Case study on responding to environmental contamination

- Determine the members of response team
- Identify goals of the investigation

Slide 9

Preparing an Epidemic Preparedness and Response Plan

- Based on risk assessments
- Provide estimates of the population at risk
- Identifies reference laboratory for confirmation of cases
- Provide estimates for supplies
- Specify the resources available and gaps
- Adapt/develop standard operating procedures (SOPS)

Slide 10

Exercises

Exercise 4: Draft an epidemic preparedness plan

- Compile background information
- Identify contributing teams and their lead officers

Slide 11

Setting up Contingency Stocks

- Outbreaks and other public health emergencies require rapid mobilization of resources
- Establish and preposition stockpiles of materials before an emergency occurs
- Identify sources of resources which can not be found locally
- Maintain a reliable stock of supplies & materials for responding to an outbreak or public health event.

Slide 12

Exercises

Exercise 5: Essential drug list

- Complete the list of essential drugs and supplies for each disease listed

Slide 13

Points to Remember

1. Preparing for an emergency can reduce the number of excess deaths in your district
2. Establishing an emergency management committee increases communication between stakeholders before and during an emergency.
3. Creating an epidemic preparedness plan will strengthen your ability to respond to an outbreak
4. Maintaining proper stocks of drugs, vaccines, reagents and supplies assists everyone else in your health system to do their jobs.

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Integrated Disease Surveillance and Response

District Level Training Course | Facilitator's Guide Module 6

Monitor, evaluate and improve surveillance and response

July 2011

World Health Organization

Regional Office for Africa (AFRO)

Integrated Disease Surveillance and Response

District Level Training Course

Facilitator Guide

Module 6

Monitor, evaluate and improve surveillance and response

July 2011

The modules comprising the Integrated Disease Surveillance and Response District Level Training Course were prepared by the World Health Organization Regional Office for Africa (AFRO) and the Centers for Disease Control and Prevention (CDC) with support from the United States Agency for International Development (USAID) Africa Bureau. WHO-AFRO & CDC (2010). *Integrated Disease Surveillance and District Level Training Course, Facilitator Guide. Module 6: Monitor, evaluate and improve surveillance and response.* Brazzaville, Republic of Congo and Atlanta, USA.

Introduction

Ask the participants to open their copy of the IDSR Matrix or turn to pages 14-15 of the Technical Guidelines. Point to the seventh column. Show participants the column called "Evaluate". In this module, as with the entire course, they will focus on the district level. Ask a participant to read the section "Evaluate" on the "District" row to the entire group.

A PowerPoint presentation has been provided for you as a standard template at the end of this module in Annex 1. You may use it exactly as it appears or alter it as you see necessary.

Emphasize these points in your presentation:

- Monitoring of surveillance and response systems refers to the routine and continuous tracking of the implementation of planned surveillance activities (for example, reports are received on time).
- Evaluation periodically (for example annually) assesses whether surveillance and response objectives have been achieved.
- Both monitoring and evaluation are used to improve surveillance and response.
- Use the monthly monitoring data to do an evaluation at the end of the year.

Questions to help evaluate include:

- Are surveillance objectives for existing activities being met?
- Was surveillance data used for taking public health action?
- Did surveillance, laboratory and response activities have an impact on the outcome of health events in the district?

* * * *

Ask a participant to read the learning objectives to the group.

This module will describe and allow you to practice the following skills:

1. Use the district level core indicators for integrated disease surveillance and response.
2. Plan the monitoring and evaluation of integrated disease surveillance and response training.

1.0 Identify targets and indicators

Present the participants with information on identifying targets and indicators for evaluating an IDSR training program. Explain that participants can read this information on pages 198 to 200 of the Technical Guidelines. The chart of core indicators for the district level can be found on page 215.

Emphasize these points in your presentation:

- Using indicators is a method for measuring the extent of achievement for a particular program or activity.
- An indicator can be developed to measure the proportion or percentage of facilities that are reporting. This proportion is then compared with the desired goal or target, and can be used to evaluate progress and, therefore, the quality of the service or activity.
- You will need to list possible indicators to measure in the district. These may be indicators that relate to national goals and indicators, or to specific plans for improving integrated surveillance and response activities in a district.
- Select the indicators that are most relevant to the district's plan for improving surveillance this year, and that will provide information that the district can use.

  Selected indicators are likely to be the following:

  - Indicators for measuring quality of surveillance in general.
    - For example, to evaluate timeliness and completeness of reporting, select as an indicator the percentage of health facilities that reported routine information on time.
  - Indicators for measuring quality of surveillance for specific diseases or public health events.
    - For example, to monitor response to surveillance data about meningitis, select as an indicator the percentage of health facilities where meningitis outbreaks were detected -- that is, the rate was more than 15 suspected cases per 100 000 population -- and which were laboratory confirmed.
  - All countries must also report on indicators for monitoring progress with the International Health Regulations.

Review the list on page 199 of the Technical Guidelines, "Indicators for monitoring performance of core functions of IDSR". As participants to go around the room and each read an indicator out loud. Do the same for the IHR indicators on page 200.

Exercise 1

Notes to Facilitator: The table below was extracted from Annex 8C on page 215. It is pre-filled with data on the indicator, its purpose, the numerator, denominator and source of information.

* * * *

In Part A, you will fill in missing information about sources of information for monitoring data and suggestions for how often to calculate and indicator.

In Part B, you will answer questions about your own district.

In the table below, the first four columns have been filled in. You will work in pairs or a small group of 3 to review the indicators and complete the last two columns.

Core indicators at the district level

Every group should review their assigned indicator carefully including information about the numerator and denominator. Then answer the following questions:

a) Describe how you will extract the data from the sources of information in order to calculate the indicator.

b) Suggest how often you think the data should be collected and analyzed.

c) Describe who should be responsible for collecting the data and calculating the indicator at district level.

d) In the table below, the first four columns have been filled in. You will work in pairs or a small group of 3 to review the indicators and complete the last two columns. Fill in the blank spaces for your assigned indicator in the table on the next 3 pages.

Table 6.1: ANSWER. Monitoring the IDSR core indicators at the district level

Indicator	Purpose	Numerator	Denominator	Source of information	How often do you calculate this indicator?
1. Proportion of health facilities submitting surveillance reports on time to the district	Measures the timeliness of submission of surveillance reports	Number of health facilities that submitted surveillance reports on time to the district	Number of health facilities in the district	*Monitoring chart for timely submission of report*[3]	*Monthly* *Annually*
2. Proportion of cases of diseases targeted for elimination, eradication and any diseases selected for case-based surveillance reported with case-based forms or line lists.	Measures reporting of surveillance data with detailed information to use for further analysis	Number of diseases targeted for elimination, eradication, and any diseases selected for case-based surveillance reported with case-based forms or line list	Total number of cases of diseases selected for case-based surveillance that occurred in the district	*Routine summary reports and case-based or line listing reports for diseases targeted for elimination and eradication and for any diseases selected for case-based surveillance*	*Quarterly* *Annually*

[3] A chart for monitoring district indicator performance is in Annex 5.

Indicator	Purpose	Numerator	Denominator	Source of information	How often do you calculate this indicator?
3. Proportion of suspected outbreaks of epidemic-prone diseases notified to the higher level within 2 days or surpassing the epidemic threshold	Measures use of data and thresholds for early detection of outbreaks and timely reporting at the local level	Number of suspected outbreaks of epidemic-prone diseases notified to the province within 2 days of surpassing the epidemic threshold	Number of suspected outbreaks of epidemic-prone diseases in the district	*Log of suspected outbreaks and rumors* *District analysis book or other routine analysis tool*	*Annually*
4. Proportion of priority diseases for which a current line graph[4] is available.[5]	Measures the practice and capacity of the district health management team to analyze surveillance data	Number of selected diseases (at least malaria and meningococcal meningitis in districts at high risk for meningitis) for which a line graph is available and current	Total number of selected diseases with a line graph (at least malaria and meningococcal meningitis if district is at high risk for meningitis)	*Indicator monitoring chart* *District analysis book*	*Quarterly* *Annually*

[4] The national IDSR team should define the list of diseases for which a line graph should be kept at the health facility level. AFRO recommends that at a minimum, health facilities maintain current line graphs for 1) weekly trend analysis of cerebrospinal meningitis, particularly in the meningitis belt countries, 2) monthly malaria inpatient cases and deaths in children under 5 years of age and 3) trends for malaria in children under 5 years of age.

[5] "Current" in this indicators means that the line graph display should reflect data within the past three months from the day of the assessment.

Indicator	Purpose	Numerator	Denominator	Source of information	How often do you calculate this indicator?
5. Proportion of health facilities that have current trend analysis (line graphs) for selected priority diseases	Measures the practice and capacity of the health facility team to analyze surveillance data	Number of health facilities that have current trend analyses for selected priority diseases	Total number of health facilities in the district	*Supervisory report* *Health facility data analysis tools*	*Quarterly* *Annually*
6. Proportion of reports of investigated outbreaks that include analyzed case-based data	Measures availability of additional variables for further analysis	Number of outbreak investigation reports that include case-based data	Total number of outbreak investigation reports conducted in the district	*Investigation report* *Epidemic curve* *Map* *Person analysis table* *Line lists or case-based reporting forms*	*Annually*
7. Proportion of investigated outbreaks with laboratory results	Measures capacity of laboratory to confirm diagnosis and involvement of laboratory in surveillance activities	Number of investigated outbreaks with laboratory results in a given time period	Total number of investigated outbreaks that occurred in a given time period	*Log of suspected outbreaks and rumors* *Laboratory reports* *Outbreak investigation reports*	*Annually*

Indicator	Purpose	Numerator	Denominator	Source of information	How often do you calculate this indicator?
8. Proportion of confirmed outbreaks with a nationally recommended public health response	Measures capacity of the district to respond to outbreaks	Number of confirmed outbreaks with a nationally recommended response	Number of confirmed outbreaks in the district	*Log of suspected outbreaks and rumors* *Outbreak investigation reports* *Supervisory reports*	*Annually*
9. Case fatality rates for outbreaks of priority diseases	Measures quality of case management	Number of deaths from each of the outbreak diseases	Number of cases from the same outbreak due to that disease	*Routine summary report* *Outbreak investigation report*	*Per outbreak*
10. Attack rate for each outbreak of a priority disease	Helps to identify the population at risk and efficacy of the intervention	Number of new cases of an epidemic-prone disease that occurred during an outbreak	Number of population at risk during the outbreak	*Demographic data about the district* *Outbreak investigation report with line lists or case-based forms*	*Per outbreak*

Part B:

1. Review the sources of data you recorded in the table. Do you have these sources available in your district?

2. If not, how do you collect information?

3. What are two specific actions you would need to do to improve the availability of sources?

Exercise 2

Notes to Facilitator: This exercise may be done individually and then checked in a small group. This will allow participants to share the work of calculating the timeliness and completeness proportions for each reporting site. Groups can also discuss the questions and respond as a group.

* * * *

Evaluate performance in the district

1. Use the information in the table on the next page to calculate the timeliness of reporting for each health facility in the district. Record your answer in the second to last column, labeled T/N (T means "on time" and N means "total number of reports").

To calculate a proportion, use the equation below:

$$\frac{\textbf{Numerator: (Ex: \# of timely reports)}}{\textbf{Denominator: (Ex: Total \# of reports)}} \textbf{ X 100 = } \_\_\_\_\_$$

Next, calculate the completeness of reporting for each health facility and record the answer in the last column, labeled (N-W)/N. (N means the total number of reports and W means the number of reports not received.

Legend

T = arrived on time; L = arrived late; W = report not received; N= total number of reports

Country: Pacem District: Zahanati Year: 2010

Table 6.2: Timeliness and completeness of reports from reporting sites

Name of health Facility	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	T/N	(N-W) /N
Kamakwa	L	T	T	L	L	T	T	L	L	L	L	W		
Iridi	T	T	T	L	T	T	T	L	T	T	T	L		
Dunyu	W	L	L	W	L	W	L	L	W	L	T	T		
Orogo	T	T	T	T	T	T	T	L	T	T	L	T		
Kinjo	L	L	L	W	T	L	W	W	L	T	L	W		
Naima	T	T	T	T	T	L	L	T	T	T	L	L		
Ngimwa	T	T	T	T	T	L	T	T	T	T	T	T		
Sinde	W	W	W	W	W	L	L	W	L	W	W	L		

2. The WHO Africa regional target for timeliness of reporting is 80%. Which of the health facilities in the Zahanati District have reached the target?

3. The target for completeness is also 80%. List the health facilities that have reached or passed the target.

4. Why do you think these facilities have reached the target?

Answers will vary and can include points such as:

Supervisors at higher level routinely request reports and provide timely feedback.

Health staff have relevant resources and training.

5. Which health facility had the best timely reporting?

Ngimwa had 92% on time reports. (11 out of 12 reports were on time.)

6. Calculate the completeness of reporting for each health facility in the district.

See answer sheet

7. Which health facility is doing poorly on reporting?

Sinde had 66% of reports not received with 16% of reports received late.

8. What could cause the poor reporting?

Answers will vary and can include points such as:

- *Lack of training*
- *Staff turnover*
- *Lack of supervisory feedback*

9. What action should be taken to rectify the situation?

Answers will vary and can include points such as:

- *Conduct a supervisory visit to work with staff on identifying the problem and finding solutions.*

Points to remember:

1. Decide how activities will be monitored and evaluated should be made during the development of the plans.
2. Monitor and revise plans.
3. Evaluate whether project objectives have been achieved.

Annex 1: Introductory Presentation for Module 6

Slide 1

Module 6: Monitor, evaluate and improve surveillance and response

Integrated Disease Surveillance and Response
District Level Training

Slide 2

- Where am I going?
- How far is it?
- Where am I now?
- Will I get there on time?
- Is there a better way to get there next time?

Exercise: you are on a journey. First you plan, then you check on your progress as you go then you evaluate the trip

Slide 3

Learning Objectives

1. Use IDSR indicators to monitor surveillance and response activities at the district level
2. Identify targets and indicators for your district
3. Monitor the quality of surveillance activities at the district level
4. Evaluate the system once a year
5. Use results to take action to improve surveillance and response

Slide 4

Identify Targets and Indicators

Indicator:

- A statement to measure achievement of an activity objective.
  - Example: Is reporting done on time?

Target:

- A desired level of achievement
  - Example: 80% of monthly reports have been sent on time to the national level

Slide 5

Exercises

Exercise 1: Use IDSR Core Indicators

- How do you (or can you) use indicators for surveillance and response at the district level
- Complete a table on calculating core indicators

Numerator:

- How many items or actions have met the objective
  - The number above the line in a fraction

Denominator:

- The total number of items or actions that should meet the objective
  - The number below the line in a fraction

Slide 6

Exercises

Exercise 2: Practice using monitoring data to evaluate performance of a surveillance system

- Calculate timeliness and completeness of reporting
- Identify success and challenge areas

Slide 7

Points to Remember

1. Monitoring makes it possible to effectively revise plans
2. Evaluation tells you whether project objectives have been achieved or not
3. Decisions on how activities will be monitored and evaluated should be made during the development of the activities

World Health Organization

REGIONAL OFFICE FOR Africa

Integrated Disease Surveillance and Response

District Level Training Course | Facilitator's Guide Module 7

Supervise and provide feedback

July 2011

World Health Organization

Regional Office for Africa (AFRO)

Integrated Disease Surveillance and Response

District Level Training Course

Facilitator Guide

Module 7

Supervise and Provide Feedback

July 2011

The modules comprising the Integrated Disease Surveillance and Response District Level Training Course were prepared by the World Health Organization Regional Office for Africa (AFRO) and the Centers for Disease Control and Prevention (CDC) with support from the United States Agency for International Development (USAID) Africa Bureau. WHO-AFRO & CDC (2010). *Integrated Disease Surveillance and District Level Training Course, Facilitator Guide. Module 7: Supervise and provide feedback.* Republic of Congo and Atlanta, USA.

Introduction

Give a brief presentation on the purpose and function of supervision and providing feedback. A PowerPoint presentation has been provided for you as a standard template at the end of this module in Annex 1. You may use it exactly as it appears or alter it as you see necessary.

Emphasize these points in your presentation:

- Supervision is a process of helping health staff improve their work performance.
- Supervision is not an inspection. Rather, good supervision aims to sustain good quality services rather than finding things that are wrong.
- In a good system, supervisors and health professional work together to review progress, identify problems, decide what has caused the problem and develop feasible solutions.

Use a supervisory checklist

- Each health facility has unique problems and priorities that require specific problem solving and corrections.
- Create a unique checklist for each health facility.
- Revise the supervisory checklist as health facilities change or improve. Use it during future visits to help health staff monitor their activities and progress towards an improved system.

Conduct supervisory visits

- Begin regularly scheduled supervision in the district
- Provide feedback to health staff during each visit.
- Let the health staff know what is working well and what is not working. Also give feedback on how the data reported previously was used to detect outbreaks and take action to reduce illness, mortality and disability in the district. If improvements are needed, discuss solutions with the staff.
- Provide on-the-job training as needed if a problem is identified.
- Follow up on any request for assistance such as for emergency response equipment or supplies.

- If a solution to a pre-existing problem was identified in a previous visit, check to see how well the solution has been implemented. Find out if problems are still occurring and modify the solution if necessary.
- Visits of surveillance supervisors and regional or provincial disease control programs are good opportunities to discuss and improve disease control in your district.

* * * *

Ask a participant to read the learning objectives to the group.

This module will describe and allow you to practice the following skills:

1. Supervise surveillance and response activities
2. Use the health facility surveillance checklist
3. Provide feedback to health personnel

1.0 Prepare a supervision plan

Present on the steps for performing supervisory visits and providing feedback to health facilities from those visits. Explain that participants can read this information in the Technical Guidelines on pages 203-210.

Emphasize these points in your presentation:

- Decide how often to monitor health staff performance.
    - For example, a district may decide to conduct a supervisory visit at least 2 times a year for each health facility. In some countries, depending on resources, supervisory visits take place more often (monthly, for example).
- Ask health facility supervisors to make a schedule of the supervision they will conduct over the next year in their own facilities and to any community sites that report to the facility.
- Make sure that transport is available for supervision and for surveillance activities that require transportation.
    - For example, coordinate travel or logistics for surveillance supervisory visits with visits made by other programs or activities.
- Include other reporting sites in supervision of district surveillance activities such as clinics, medical centres and community reporting sites in the overall plan. Include private health centres if feasible.
- Identify and obtain necessary resources for supervision.

Exercise 1

Notes to Facilitator: This exercise could be done conducted in the small group to allow adequate discussion and contribution by all participants. There are no definite right or wrong answers because the responses will depend on the country's policy, availability of resources, tools and manpower at the district and health facility levels.

* * * *

The purpose of this exercise is to practice finding and applying recommendations for supervision of surveillance activities in your district. Refer to pages 203 through 207 in the Technical Guidelines as you work in pairs of a small group to answer each of the following questions. Your facilitator will conduct a group discussion when everyone has completed the exercise.

1. How is supervision of disease surveillance conducted between the districts and health facility levels in your district?

   Answers will vary and can include points such as:

   - *Weekly radiophone calls*
   - *Periodic visits*
   - *Quality meetings*

2. Do you use tools or checklists for supervision at the district level?

   Answers will vary and can include points such as:

   - *Register reviews by the health facility director*
   - *Staff meetings*
   - *Checklists*

3. Do you have a supervision plan on disease surveillance in your area?

   Answers will vary

4. Where is it located?

   Answers will vary

5. How often is it used?

   Answers will vary

6. What should you consider when preparing a supervision plan on disease surveillance?

   - *Know that supervision is formative (supportive) not fault finding only.*
   - *Have a clear job description for health staff involved in surveillance tasks.*
   - *Have a comprehensive supervision schedule.*
   - *Prepare a checklist on what to do during the supervisory visits.*
   - *Request for adequate resources for supervisory activities.*

7. What should you do during disease surveillance and response supervisory visits?

   - *Use a checklist for supervising surveillance and response activities at the health facility (Annex 45 IDSR TG)*
   - *Observe and confirm that health workers are using the standard case definition when recording suspected case of priority diseases.*
   - *Ensure that priority diseases are recorded in the appropriate forms and registers.*
   - *Certify that reporting and investigation of epidemic prone diseases and diseases targeted for eradication or elimination is done promptly.*
   - *Confirm that the response to reported disease outbreaks is timely and adequate.*
   - *Check whether appropriate analysis on disease surveillance data has been conducted, including graphs drawn on reported priority diseases.*
   - *Ensure response actions are monitored and action taken by the health facility to improve surveillance action and readiness for outbreak response.*
   - *Confirm that appropriate emergency drugs, supplies and protective clothing are available for responding to disease emergencies.*

8. How do you motivate the staff during the supervisory visits?

The health facility staff could be motivated through:

- *Providing immediate feedback on how they are performing as relates to disease surveillance and response.*
- *Reviewing together information on priority diseases including the outbreak response report and providing appropriate comments.*
- *Giving the necessary assistance as may be requested.*
- *Assisting them to solve outstanding disease surveillance problems within the health facility.*
- *Follow up on implementation of previously identified solutions to problems.*
- *Commend the health workers for jobs well done.*

Exercise 2

Notes to Facilitator: Explain that the purpose of this exercise is to fill out a health surveillance checklist that has very negative responses in order to brainstorm the possible causes of the issues and potential solutions. The reasons that an issue has not been resolved may be very simple to resolve with the right tools. Encourage participants to think of themselves as problem-solvers who can be useful assets to the people they are supervising.

Break into groups of 2 or 3 people or divide the room into three sections. Each section will be responsible for three rows (i.e., the left side of the room will do questions 1-3, the middle 4-6 and the right side 7-9). Groups will work independently but can discuss the answers with others in their section. To conclude the exercise, ask for a participant from each section to give an answer for each row of the chart. Ask if anyone in the section had other thoughts.

* * * *

Use the health facility surveillance check list

Below is the surveillance checklist for the Zahanati Health Center. As you can see, the health center did not score well on their last supervisory visit. As you review the checklist, consider the possible reasons for the issues that they faced and then recommend some solutions. You may do this exercise in pairs or in a small group.

Table 7.1: Health facility surveillance checklist for Zahanati Health Center

ACTIVITY	SUPERVISORY QUESTION	ANSWER (Yes/No or Specified)	List possible causes of the omission or problem	List Possible Solutions
1. Data collection to identify Suspected Cases within health facilities	1. How often do you collect information from the community about reports of suspected cases or deaths due to a priority disease or condition?	**Rarely**	*Community doesn't know what to report*	*Distribute simplified case definitions. Include surveillance objectives in community health program activities*
2. Register cases	1. Are diagnoses of cases of priority diseases recorded in the clinic register according to the standard case definition?	**No**		
3. Report	1. Do health staff use a standard case definition to report the suspected cases and outbreaks?	**No**		
	2. Do you record information about immediately notifiable diseases on a case form or line list?	**No**		
4. Analyze and Interpret	1. Do you plot the numbers of cases and deaths for each priority disease on a graph? (Ask to see the health facility's analysis book. Look to see if the trend lines are up-to date.)	**No**		

ACTIVITY	SUPERVISORY QUESTION	ANSWER (Yes/No or Specified)	List possible causes of the omission or problem	List Possible Solutions
	2. Do you plot the distribution of cases on a map?	**No**		
5. Investigate and Confirm Reported Cases and Outbreaks	1. If an epidemic-prone disease was suspected, was it reported immediately to the district office?	**No**		
	2. For the cases of priority diseases needing laboratory tests seen since the last supervisory visit, how many had laboratory results?	**1 out of 25**		
	3. Are appropriate supplies available or set aside for collecting laboratory specimens during an urgent situation and show me the supply?	**No**		
6. Respond	1. Are appropriate supplies available for responding to a confirmed case or outbreak *(for example, immunization supplies and vaccine, ORS, antibiotics, and so on*)?	**No**		
	2. Please show me the supplies for carrying out a recommended response.	**I can't**		

ACTIVITY	SUPERVISORY QUESTION	ANSWER (Yes/No or Specified)	List possible causes of the omission or problem	List Possible Solutions
	3. Who is the outbreak coordinator for this facility?	**I don't know**		
	4. How often do you provide information and training in outbreak response to the staff of this facility?	**Rarely**		
7. Provide Feedback	1. How often do you report information to the community?	**Never**		
	2. Do you receive the latest bulletin from the *(central, sub national*) level?	**No**		
8. Evaluate and Improve the System	1. Were the last 3 routine monthly reports sent to the district office?	**No**		
	2. Were the last 3 routine monthly reports sent on time?	**No**		
9. Epidemic Preparedness	1. What precautions do health staff (including laboratory staff) take routinely with all patients regardless of the patients' infection status?	**Minimum level of standard precautions:** **Very Few**		
	2. How do you estimate the number of supplies to set aside for use during an emergency situation?	**How supplies are estimated:** **They aren't**		

2.0 Evaluate performance of surveillance and response system

- Use indicators for measuring the quality of the surveillance system
- Identify the weak places in a surveillance system and try to understand what is causing them.
- Provide feedback to health facilities about the evaluation

Exercise 3

Notes to Facilitator: The purpose of this exercise is to practice giving feedback during a supervisory visit to Afaya Health Center. Assign each participant a role for the role play. After the role play, facilitate a group discussion.

A supervisory visit to Afaya Health Facility

Dr Perfection, the district management officer, is meeting with the health facility team to give feedback about the results to the supervisory checklist. He thanks the team for their time during today's visit. Then he reports that in the visit today, he learned the following things:

- There is regular contact between the community health workers and the health facility so disease notification from the community is timely and being monitored.
- The clinic register is up-to-date, but it does not look like diagnoses are recorded according to the standard case definition.
- The line graphs for meningococcal meningitis and cholera are posted but they are not up-to-date. They are two months behind.
- A suspected case of human influenza H1N1 in the health facility catchment area was reported promptly to the district office during this quarter.
- Reporting of routine data to the district has been on time all year.
- The health facility said that they have not received a copy of the latest feedback newsletter from the district.
- A request by the health facility for specimen transport media has not yet been filled.

Dr Perfection wanted to know what two or three problems the health facility thought were the most important. Then they discussed possible causes for the problem and how improvements could be made.

Notes to Facilitator: When the role play has concluded, conduct a group discussion with participants. Responses may vary but guide them to include factors such as those included on page 210 of the Technical Guidelines:

- What the objectives were for the year.
- What was actually achieved?
- What were likely reasons for any differences between what was planned and what was achieved.
- Recommended solutions and prioritized activities for improving surveillance and response in the district.

1. How well did Dr Perfection communicate with the health facility team?

2. How did the health facility team decide on the most important problems? Do you agree with their conclusions?

3. Did they identify feasible solutions to the problems they discussed?

Points to remember:

1. Prepare supervision plans with health facility supervisors to ensure that supervisory visits will occur on a scheduled basis
2. Supervisory checklists make supervisory visits more objective and help you to be sure you haven't missed anything critical for evaluating the performance of the health facility
3. Supervisory visits are intended to help improve the functions of health facilities by providing constructive criticism and feedback.
4. Give feedback to the health facilities about their evaluation so that they know what needs to be improved in their facility. Feedback from you also shows them that you are paying attention to their work and that they are a valuable asset to the health care system of your district.

Annex 1: Introductory Presentation for Module 7

Slide 1

Module 7: Supervise and Provide Feedback

Integrated Disease Surveillance and Response
District Level Training

Slide 2

Optional Activity For Focusing Group

Slide 3

Learning Objectives

1. Supervise surveillance and response activities
2. Use the health facility surveillance checklist
3. Provide feedback to health personnel

Slide 4

Prepare a Supervision Plan

- Decide how often to monitor health staff performance
- Assist supervisors to make a schedule
- Consider transportation and logistics
- Include a variety of sites and health levels in your plan: public, private and community.
- Identify and obtain resources for supervision

Slide 5

Exercises

Exercise 1: Plan to conduct a disease surveillance supervision visit

- Considerations for a supervisory visit

Slide 6

Using a Supervisory Checklist

- Each health facility has unique problems and priorities that require specific problem-solving and corrections
- Create a unique checklist for each facility
- Revise the supervisory checklist as the health facilities change/improve
- Use during future visits to help staff monitor their activities and progress

Slide 7

Exercises

Exercise 2: Review a surveillance checklist from a health centre with serious surveillance problems

- Within the group, brainstorm the likely causes of the omissions or problem
- Think about possible solutions

Slide 8

Conduct Supervisory Visits

- Begin regularly scheduled supervision in the district
- Let the health staff know what is working well and what is not working.
- Give feedback on how the data they reported was used
- Follow up on any request for assistance
- Follow-up on previous visits—what has changed?

For example, during a review of the analysis workbook, the supervisor noted that case fatality rates were not calculated correctly. The supervisor met with the health staff who do the calculation and reviewed the steps for calculating the rate.

Slide 9

Evaluate Performance of Surveillance and Response System

- Use indicators for measuring the quality of the surveillance system
- Identify the weak places in a surveillance system and try to understand what is causing them.
- Provide feedback to health facilities about the evaluation

Slide 10

Exercises

Exercise 3: Provide feedback to the health facility staff

- Discuss problem-solving approaches
- Practice methods for providing feedback to the health personnel

Exercise 4: Role Play

Slide 11

Points to Remember

1. Prepare plans for supervisory visits
2. Supervisory checklists make supervisory visits more objective and help you to be sure you haven't missed anything critical
3. Supervisory visits are intended to help improve the functions of health facilities by providing constructive criticism and feedback.
4. Give feedback to the health facilities about their evaluation so that they know what is working well and what needs to be improved in their facility.