

FIELD GUIDELINES



Overview of Evaluating Surveillance Systems

Created: 2013



Overview of Evaluating Surveillance Systems. Atlanta, GA: Centers for Disease Control and Prevention (CDC), 2013.

Field Guidelines for the Evaluation of a Surveillance System

The evaluation of a surveillance system promotes the best use of data collection resources and assures that systems operate effectively. Surveillance system evaluation allows us to define whether a specific system is useful for a particular public health initiative and is achieving the overarching goals of the public health program and the data collection objectives. Any evaluation should include recommendations for improving the quality and efficiency of the system and a timeline for implementing changes based on available resources.

You will conduct a **surveillance system evaluation** to evaluate the attributes of a surveillance system. Your mentor will help you select the surveillance system to evaluate.

After completing the surveillance system evaluation, you will prepare a **report** as well as a **presentation** that emphasizes the most important aspects of the selected surveillance system.

You will use these field guidelines when conducting a surveillance system evaluation on the job (i.e., in the field). The guidelines are based on the *Evaluating a Noncommunicable Disease (NCD) – Related Surveillance System* training module and the *CDC Updated Guidelines for Evaluating Public Health Surveillance Systems: Recommendations from the Guidelines Working Group*.¹ This document reviews the tasks for evaluating a surveillance system (which you should have learned while participating in the training module) and describes how to prepare a report and presentation on findings and recommendations.

This **Field Guidelines** document includes the following sections:

TASKS FOR EVALUATING A PUBLIC HEALTH SURVEILLANCE SYSTEM

This section reviews the main tasks you will complete to evaluate a public health surveillance system.

SURVEILLANCE SYSTEM EVALUATION REPORT

This section helps you prepare an evaluation report based on your surveillance system evaluation. Reporting your findings clearly and concisely is important to ensure proper communication of your findings. This section also includes a report template and a sample report.

HOW YOUR MENTOR WILL ASSESS THE REPORT

This section provides you with the criteria your mentor will use to assess your surveillance system evaluation report.

¹ Centers for Disease Control and Prevention. Updated guidelines for evaluating public health surveillance systems: recommendations from the guidelines working group. *MMWR* 2001;50(No. RR-13)

COMMON ERRORS FOUND IN A SURVEILLANCE SYSTEM EVALUATION

This is a list of 8 common errors which you should avoid when writing your evaluation report.

SURVEILLANCE SYSTEM EVALUATION POWERPOINT™ PRESENTATION

This section contains guidelines for presenting your evaluation report. It also includes a sample PowerPoint template and presentation.

Tasks for Evaluating a Public Health Surveillance System²

- A. Engage the stakeholders in the evaluation
- B. Describe the surveillance system to be evaluated
 - B1. Describe the public health importance of the health-related event under surveillance
 - B2. Describe the purpose and operation of the surveillance system
 - B3. Describe the resources used to operate the system
- C. Focus the evaluation design
- D. Gather credible evidence regarding the performance of the surveillance system
 - D1. Indicate level of usefulness
 - D2. Describe each system attribute
- E. Justify and state conclusions, and make recommendations
- F. Ensure use and share lessons learned

² For details on how to complete each task, refer to the *Evaluating an NCD-Related Surveillance System* module.

Surveillance System Evaluation Report

Keep the following tips in mind when writing your Surveillance System Evaluation report:

- Use appropriate punctuation and grammar.
- Use proper spelling.
- Do not plagiarize.
- Provide a description of acronyms in parentheses the first time they are used, e.g., noncommunicable disease (NCD).

The following includes (in bold) the sections of the report that you will need to complete:

Title of Report, Name, Affiliation and Date

Include the title of the report, your name, the organization with which you are affiliated, and the date you are submitting the report.

Stakeholders

Describe persons or organizations that will utilize and/or contribute to the data collected via the surveillance system under evaluation.

System Description

- **Public Health Importance:** Describe the importance of the public health problem under surveillance in terms of frequency (incidence, prevalence, mortality rates), severity (disability, case fatality, hospitalizations), inequities associated with the health event, cost, preventability, and public interest.
- **Purpose and Operation:** Describe the purpose and objectives of the surveillance system, planned uses for the data collected, and the health events/ illness case definitions used to identify cases. In addition, you may want to include a brief description of the system's components (for example, the population under surveillance, how data are collected, etc.).
- **Resources:** Describe the monetary, personnel and other resources needed to operate the surveillance system of interest.

Evaluation Design

Describe the specific purpose of the evaluation. Also include the specific questions that the evaluation will answer and the proposed uses of the information generated.

Credible evidence

- **Usefulness:** Describe the usefulness (e.g. value, practicality) of information generated by the surveillance system. Outline how the data can be used to improve public health in relation to the specific health event/illness. This section answers the questions of whether the data are helping users to detect changes in trends, magnitude of illness, and permit assessment of implemented control programs.
- **Attributes:** Describe the surveillance system attributes in terms of simplicity, flexibility, data quality, acceptability, sensitivity, predictive value positive, representativeness, timeliness, and stability of the system. All **attributes** have to be examined, because all of the attributes are relevant to surveillance systems. If there is no available data on a specific attribute please note this limitation in your report.

Conclusions and Recommendations

Summarize your findings based on the evaluation result and the credible evidence you collected. Propose applicable recommendations to strengthen system attributes, continue operating the system as it is, or discontinue the surveillance system.

Lessons Learned

Include how lessons learned will be communicated to stakeholders. Recommendations based on the evaluation can be communicated to different types of audiences via different channels of communications. Regardless of the communication method used, it is important to convey lessons learned to those who need to know.

References

The evaluation should have an appropriate amount of bibliographic references that are relevant and related to the evaluation. Place the references at the end of your report.

Surveillance System Evaluation Report Template

Title of Report, Name of Author and affiliation:

--

Stakeholders:

--

System Description:

Public health importance of the illness or health event under surveillance

Purpose and operation of the surveillance system

Resources needed to operate the system

Evaluation Design:

--

Credible evidence:

Usefulness:

System attributes:

Simplicity:

Flexibility:

Data Quality:

Acceptability:

Sensitivity:

Predictive Value Positive:

Representativeness:

Timeliness:

Credible evidence:

Stability:

Conclusions and Recommendations:

--

Lessons Learned:

--

References:

--

See the following page for an example of an evaluation report.

Sample Evaluation Report

An Evaluation of Surveillance for Tobacco Use among Youth Worldwide:

The Global Youth Tobacco Survey (GYTS)

Eugene K.K. Lam, MD, MSPH

Stakeholders:

The stakeholders of the Global Youth Tobacco Survey (GYTS) include the World Health Organization (WHO) headquarters, its Tobacco Free Initiative (TFI) and all 6 WHO regional offices (AFRO, AMRO, EMRO, EURO, SEARO, WPRO), the U.S. Centers for Disease Control and Prevention (CDC), national entities such as local governments (Ministries of Health and Education), local schools and educators, academia and researchers, and the general public.

System Description:

Public Health Importance

Tobacco use continues to be the leading global cause of preventable death. If current trends continue, by 2030 tobacco will kill more than 8 million people worldwide each year, with 80% of these premature deaths among people living in low- and middle-income countries. Prevalence of tobacco use among youth worldwide varies across WHO regions. Overall, 12 percent of boys and 7 percent of girls aged 13-15 years currently smoke cigarettes.

Purpose & Operation

In 1998, WHO and CDC initiated the GYTS to enhance the capacity of countries to monitor tobacco use among youth; guide national tobacco prevention and control programs; and facilitate comparison of tobacco-related data at the national, regional and global levels.

The GYTS targets non-institutionalized students in grades associated with ages 13-15 years. Participants are selected through a 2-stage cluster sample design. Schools are selected proportional to enrollment size and classrooms were chosen randomly within selected schools. All students in selected classes are eligible for participation. In small countries, a census may be conducted for the target grades. Since 1999, the GYTS has been conducted in 167 countries across all 6 WHO Regions. Over 2 million students and 11,000 schools have participated in GYTS.

Resources

GYTS is funded primarily by the U.S. government with secondary funding by some countries. This survey is managed through the CDC/Office on Smoking and Health, in collaboration with WHO Headquarters in Geneva, and its 6 regional offices. In-kind support is also provided by WHO, CDC, and the implementing countries.

Evaluation Design:

The purpose of this evaluation is to assess the performance of GYTS as a surveillance system for tobacco use.

Credible Evidence:

The GYTS is a simple survey as it only addresses tobacco indicators in select school-based students of ages 13-15 years. The system is flexible as countries are able to insert optional questions for country-specific adaptation with little additional resources. Data quality may be adversely affected by minimal data edits and lack of a biomarker, cotinine, for validation of smoking prevalence. Acceptability is high as GYTS data have the potential to be used by multiple stakeholders. Representativeness is limited to enrolled students in grades

associated with ages 13-15 years. Countries with sub-national data were unable to implement national sample design due to limited funding in the countries, time constraints, and political instability. Sensitivity and positive predictive value of smoking prevalence cannot be calculated due to lack of cotinine measurement (considered the “gold standard” in measurement of smoking). Stability is adequate as the system has been ongoing since 1999. The GYTS framework is generally completed within recommended 4-5 year cycle with the exception of countries that have difficulty obtaining school enrollment lists.

Recommendations:

Recommendations for the continuation and modification of GYTS are as follows:

1. Evaluate rates of smoking among youth not in school, data inconsistencies and revise to link WHO MPOWER interventions.
2. Promote a national sample design as a standard recommendation but allow sub-national data with justifications.

Lessons Learned:

1. Tobacco use is a leading cause of preventable disease and death among youth worldwide.
2. GYTS can provide valid and timely surveillance data on tobacco use indicators among adolescents outside the United States. Data representing all aspects of WHO MPOWER strategies are crucial for monitoring impact of policies and tobacco-related interventions.

How Your Mentor Will Assess the Report

You will write an evaluation report based on your findings and submit to your mentor for review. Your mentor will use the following points and criteria to evaluate your report. The points are assigned values from 5 (excellent) to 1 (absent).

Based on the feedback you receive from your mentor, you will revise the report and then develop a PowerPoint presentation that contains the same content as the report. You will conduct the presentation in front of your mentor and peers and hand in your revised report to your mentor at that time.

Points	Description
5 = excellent	The element is present, consistent with the standard described in the instructions and provided in the classroom, and is of a remarkable/outstanding quality.
4 = good	The element is present and consistent with the standard described in the instructions and provided in the classroom.
3 = satisfactory	The element is present and may be used even though it may not completely follow the standard described in the instructions and provided in the classroom.
2 = poor	The element is present but flawed or of poor quality.
1 = absent	The element is absent from the report.
NA = not applicable	The element is not relevant to this report.

(To be completed by a mentor.)

Assign a point (1-5) and check the appropriate column:

Category	Criteria	1	2	3	4	5	NA
Stakeholders	Describe persons or organizations who will utilize the data gathered by the surveillance system.						
Description of the system	Describe the importance of the public health problem under surveillance.						
	Explain the reason/purpose behind collecting data, and how the data is intended to be used.						
	Describe resources required to operate the system.						
Evaluation design	Describe the specific purpose of the evaluation .						
	Propose uses of the evaluation results.						
	Include the specific questions that the evaluation answered.						
Credible evidence	Describe usefulness of the information generated by analyzing data.						
	Assess surveillance system attributes in terms of:						
	Simplicity						
	Flexibility						
	Data quality						
	Acceptability						
	Sensitivity						
	Predictive value positive						
	Representativeness						
	Timeliness						
	Stability						
Conclusions and	Present conclusions based on						

Category	Criteria	1	2	3	4	5	NA
Recommendations	evaluation results.						
	Propose appropriate and applicable recommendations to improve the system or discontinue its operation.						
Lessons learned	Describe how lessons learned will be communicated to those who need to know.						
References	List references at the end of the report.						
General Form and Clarity	Use appropriate punctuation and grammar .						
	Use proper spelling .						
	Do not plagiarize .						
	Provide a description of acronyms in parentheses the first time they are used.						

Common Errors Found in a Surveillance System Evaluation

1. Surveillance system objectives are not clear or not included.
2. Scope of evaluation is too narrow.
3. Insufficient description of the methods used.
4. The system is not described.
5. Key attributes of the surveillance system to be evaluated are not identified.
6. Insufficient documentation of the attributes evaluated.
7. Confusion between the surveillance system's limitations and the limitations of its evaluation.
8. Poor or weak recommendations.