Ethiopia Field Epidemiology Training Program

Resident Manual

September 2012
Addis Ababa, Ethiopia

Ethiopia Field Epidemiology Training Program (EFETP)

Resident Manual

Addis Ababa, Ethiopia

2012

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Acronyms and Abbreviations

AAU-SPH	Addis Ababa University-School of Public Health
AC	Advisory Council
AFENET	African Field Epidemiology Network
CDC	Centers for Disease Control and Prevention
CDMA	Code Division Multiple Access
EFETP	Ethiopia Field Epidemiology Training Program
EHNRI	Ethiopian Health and Nutrition Research Institute
EIS	Epidemic Intelligence Service
EMA	Ethiopian Medical Association
EPHA	Ethiopian Public Health Association
FETP	Field Epidemiology Training Program
PHEM	Public Health Emergency Management
MOH	Ministry of Health
MOU	Memorandum of Understanding
SNNP	Southern Nations Nationalities and Peoples
SOP	Standard Operating Procedures
SPH	School of Public Health
TEPHINET	Training in Epidemiology and Public Health Interventions Network
WHO	World Health Organization

1. Background

1.1 Overview of the Ethiopia Field Epidemiology Training Program

The Field Epidemiology Training Program (FETP) is an in-service training program in field epidemiology adapted from the United States Centers for Disease Control and Prevention (CDC) Epidemic Intelligence Service (EIS) program. There are several such programs in Africa, and the programs are networked through AFENET (the African Field Epidemiology Network). The program is designed to assist the Ministry of Health in building or strengthening health systems by recruiting promising health workers and building their competencies through on-the-job mentorship and training. Because trainees work in active public health teams that are tackling the most serious and acute problems of the population, their work is exciting and leads to improvements in program implementation even as the trainees are learning.

Field epidemiology training resembles a traditional medical residency program, because trainees spend an extended period of time practicing and developing their skills in a "hands on" manner. For this reason program trainees are referred to as "residents".

Ethiopia adopted the Field Epidemiology Training Program to help improve leadership within Public Health Emergency Management. The EFETP provides residents a Master of Public Health degree in Field Epidemiology after they complete two years of supervised work in applied or field epidemiology.

The Ethiopia FETP is a member of AFENET and works closely also with the Training in Epidemiology and Public Health Interventions Network (TEPHINET).

1.2 Vision and Mission of the Program

Vision: To see healthy, productive, and prosperous Ethiopians.

Mission: To train a cadre of skilled public health professionals who provide in-service assistance to advance and protect public health and contribute to evidence-based decision-making.

1.3 Goal of the Program

The goal of the EFETP is to strengthen the Ethiopian Public Health Emergency Management system by:

1. Improving public health event detection and response;
2. Creating a robust disease surveillance system;
3. Building capacity in field epidemiology and public health laboratory systems;
4. Enhancing evidence-based decision making for public health practice; and
5. Reducing morbidity and mortality associated with priority diseases.

1.4 Objectives of the Program

1. Build public health capacity by developing a cadre of health professionals with advanced skills in applied epidemiology and laboratory management;
2. Increase national and regional capacity to respond to public health emergencies such as outbreaks, natural disasters, and other unusual public health events including those that could be a result of chemical or biological terrorism;
3. Strengthen national surveillance systems;
4. Prepare field epidemiology residents to take part in the leadership of Public Health Emergency Management units at national, regional, and sub-regional levels as well as other health related institutions;
5. Contribute to research activities on priority public health problems;
6. Strengthen laboratory participation in surveillance and field investigations;
7. Improve communications and networking of public health practitioners and researchers in the country and throughout the region;
8. Promote the sustainability of the EFETP; and
9. Assure active use and dissemination of public health data, which has been developed by the EFETP staff and residents.

1.5 Program Administration

The EFETP is owned by the MOH. The program Director is the Deputy Director General of Ethiopian Health and Nutrition Research Institute (EHNRI) and Head of PHEM Center. The program Co-Director is the Dean of Addis Ababa University School of Public Health (AAU-SPH). The Ethiopian Public Health Association (EPHA) Executive Director is the secretary of the Program. There is also a Memorandum of Understanding (MOU) between these partners to jointly administer the EFETP. The Program Coordinator is from EHNRI, and the academic coordinator is from AAU-SPH. The EPHA provides administrative support and manages financial resources. The U.S. Centers for Disease Control and Prevention (CDC) provides technical support through two Resident Advisors and financial support.

There is an Advisory Council (AC) composed of representatives from EHNRI (Co-chair) AAU-SPH (the chair of the Advisory council), the Federal Ministry of Health, the EPHA (Secretary), WHO country office, and CDC-Ethiopia. This council advises the decision making regarding the operation of the EFETP. The council also provides consultations and directions with regard to overall activities and communication with other authorities.

1.6 Field Bases

EFETP field bases have been established within the PHEM center at EHNRI and at four Regional Health Bureaus: Amhara, Oromia, SNNPR, and Tigray. These bases provide opportunities for field experience in epidemiology for the residents. Agreements have been made between the field bases and the EFETP to ensure that residents receive

adequate supervision and support during their two-year program. There is regular monitoring and appraisal of these sites to determine if they are meeting the needs of the individual residents and the broader objectives of the program. To accommodate the needs of the Regional Health Bureaus, residents may be asked to use their newly acquired skills and expertise to assist their sponsoring regions with investigations. Field bases were chosen based on population size, existence of required facilities, and field opportunities. Additional field bases may be added in the future depending on program needs.

2. Residents' Expected Competencies and Activities

This manual provides guidance for resident learning objectives and activities.

2.1 Program Structure

The EFETP program has two main components, each of which contributes to the award of the Master degree:

- A classroom-teaching component (25%)
- A practical attachment or field placement component (75%) consisting of disease investigations, surveillance evaluations, surveys, laboratory diagnoses, and applied research on national health problems. Residents have the opportunity for public health practice in the real world.

The Classroom Teaching Component

The purpose of this component is to prepare residents for field placement and reinforce lessons from their fieldwork. The in-class teaching component consists of an 8-week introductory course, additional intensive one to three-week courses, and several seminars over the two-year period (See Appendix 4).

Residents are instructed by experts in the field, including EFETP staff, AAU-SPH faculty, short-term consultants from CDC Atlanta, MOH, EHNRI, and invited guest lecturers from other institutions. Teaching methods used during the courses include lectures, group discussions, case studies, demonstrations and class projects.

The Field Assignment Component

The program is predominantly field-based with residents spending 75% of their time in the field. Residents build their competency in the field and frequently travel for supervised investigations and special epidemiologic projects. Each resident has a Field Supervisor, usually the head of the resident's field placement site and an academic supervisor based at AAU-SPH. The EFETP Resident Advisor(s) and Program Director also provide guidance and support. The field experience provides a balance between training and service. Each resident is expected have opportunities to participate in field investigations, program evaluations, analysis of data sets, surveillance and control activities, scientific report writing, oral presentations, and other public health activities at various levels of the health system.

2.2 Competencies

The EFETP is a competency-based program, and all residents build critical competencies in the following domains: epidemiologic methods, biostatistics, public health surveillance, laboratory and bio-safety, communications, research methodology, computer technology, management and leadership, teaching, and mentoring. Additional domains are prevention effectiveness and advanced epidemiology. Residents participate in core learning activities that are integrated into the field experience:

Competency	Activity
Epidemiologic Methods	1. Use epidemiologic practices to conduct studies that improve public health program delivery 2. Respond to outbreaks
Biostatistics	3. Analyze epidemiological data using appropriate statistical methods
Public Health Surveillance	4. Evaluate a public health surveillance system
Laboratory and Bio-safety	5. Use laboratory resources to support epidemiologic activities
Communications	6. Develop written public health communications 7. Develop and deliver oral public health communications
Computer Technology	8. Use computers for specific applications relevant to public health practices
Management and Leadership	9. Manage a field project 10. Manage staff and resources 11. Be an effective team leader and member 12. Manage personal responsibilities
Epidemiology of Priority Diseases and Injuries	13. Evaluate & prioritize the importance of diseases or conditions of national public health concern

Summary of Expected Activities

During the training and residencies at EFETP field bases, residents are expected to:

1. Conduct epidemiologic investigations independently;
2. Conduct descriptive and analytical analyses;
3. Respond to public health emergencies;
4. Analyze, improve, and develop public health surveillance systems;

5. Conduct a health profile of a Region, Zone or Woreda;
6. Evaluate and recommend disease control prevention measures;
7. Communicate public health information to colleagues, media and the public;
8. Apply training and acquired skills to improve public health programs;
9. Develop manuscripts for publication; and
10. Present work at national and international scientific conferences.

2.3 Core Activities for Learning

Competencies are obtained through the completion of core learning activities, which provide services to the public health units (see checklist Appendix 2). Residents should:

- Design, implement or evaluate a public health surveillance or information system;
- Conduct or participate substantively in a field investigation of a potentially serious public health problem that requires a rapid public health response;
- Use surveillance or other health information systems to identify public health problems requiring investigation;
- Develop, conduct and interpret an epidemiological analysis of a data set;
- Develop and carry out an epidemiological study or survey to assess a health problem of public health importance;
- Write an investigational or study protocol;
- Critically appraise the scientific literature to support the findings and recommendations of an epidemiological investigation;
- Respond to a disaster and report findings;
- Conduct a health profile description of an administrative locality;
- Visit and review the function of a public health laboratory and report findings;
- Write a report for publication in an approved public health bulletin;
- Write a scientific manuscript for a peer-reviewed journal;
- Give an oral presentation at a national or international scientific conference;
- Teach a public health course and /or serve as a Mentor for health trainees;
- Respond appropriately to written or oral public health inquiries from the public, the media, government officials, or other health professionals;
- Manage a public health project; and
- Use computers effectively.

2.4 Program Requirements and Outputs

Program Requirements

1. Complete coursework with acceptable grades;
2. Specify work products to be produced and evaluated;
3. Conduct meetings to review progress and activities;
4. Have the ability to travel as deemed necessary to investigate situations of public health concern on short notice and possibly for extended periods of time;
5. Have coursework evaluated by AAU-SPH and MOH coordinators and Resident Advisor(s);
6. Obtain Field Supervisor's evaluation and assessment of performance.

Outputs of Field Residency and Expectations

Residents are expected to deliver outputs as listed below, which demonstrate learned competencies and serve as academic requirements for their qualifications as field epidemiologists.

Outbreak and/or Epidemic Investigation Reports*:* All residents are expected to lead or independently perform at least two outbreak investigations during their residency. Whenever more than one resident is involved in an outbreak investigation, it should be decided beforehand which resident will lead the investigation, conduct the data analysis, perform the write-up, and present results. The person who is leading the investigation will be responsible for abstract and manuscript preparation and will be listed as first author. It is always possible for residents to collaborate on outbreak investigations and collaborators can be co-authors for abstracts and manuscripts, but note that only one resident can receive credit for a required output for a single investigation. The field base supervisor will assign residents to outbreak investigations, but residents should be vigilant for opportunities. Mentors will provide technical support required by the residents in the conduct of the outbreak investigation. To satisfy the output requirement, residents must prepare a written and oral report of the investigation.

Surveillance System Evaluation Report*:* Residents are expected to conduct an evaluation of a surveillance system at their field bases. Residents can choose to evaluate a specific disease or a group of diseases or can investigate the entire surveillance system of PHEM at the district, zone, or regional level, if there is a strong justification. Resident proposals must be approved by Field Supervisors and Mentors and endorsed by the Program Coordinators. The tools for surveillance evaluation can follow either WHO or CDC guidelines (See Appendix 5.2.3). Residents must prepare a written and oral report of results.

Surveillance Data Analysis Report*:* The scope of secondary surveillance data analyses will be determined by existing needs at the field base. Residents should submit proposals to Mentors, supervisors, and coordinators for approval before obtaining the data to be analyzed. All steps and procedures described above under Surveillance System Evaluation shall apply. In addition standard procedures of data handling should be well observed and respected.

Epidemiologic Project Proposal Template: The epidemiologic project is a research proposal or protocol related to a relevant public health problem that is linked to ongoing work. This project topic should be useful for improving Public Health Emergency Management. A well-written proposal can be considered adequate and can be incorporated in the 'Body of Works' as partial fulfillment for graduation. Residents are expected to plan to submit three topics with accompanying concept papers, which will be defended before one topic is approved. Once the topic is approved by the program Mentors, a proposal will be developed

and submitted following the proposal submission format of Addis Ababa University (See Appendix 5.2.2).

Health Profile Description Report Template: This output should be performed during the early stages of the residency. Residents should write a proposal for the health profile assessment, which is to be performed at the assigned field base or at the regional level if there is a strong justification. Residents' proposals must be approved by their field supervisors and Mentors and endorsed by Program Coordinators. The standard components of Health Profile Description Proposal and Report are presented in Appendix 5.2.1. A written report and an oral presentation of the results are required.

Finalized draft of a scientific manuscript for a peer review journal*:* Residents should develop at least one manuscript for submission to a scientific journal. Any of the residency outputs can be written up as manuscripts. The output is to be written in a manuscript form and the journal for submission selected by the resident in consultation with Mentors, Coordinators and Resident Advisor(s).

Abstract for scientific presentation*:* Residents are expected to submit at least one abstract for a relevant scientific conference, such as AFENET, TEPHINET, EIS, EPHA and EMA Conferences. For procedures please refer to appendix 1.

Narrative summary of disaster situation visited*:* Residents need to submit a narrative summary report of any disaster situations visited and managed.

Narrative summary of laboratory activities performed*:* Residents are expected to write a synthesis report of all laboratory related activities performed during field investigations or visits.

Record of teaching/mentoring in the EFETP*:* Residents are expected to be involved in teachings or trainings, which are organized by the field bases. In addition they are expected to serve as resource persons for various short courses in field epidemiology organized by the EFETP program. A narrative summary of all trainings and teachings the resident has conducted must be submitted.

Training and monitoring: Residents are expected to conduct trainings for health professionals at their respective regions. The goal is to create awareness on preparedness and response to specific diseases such as malaria, measles, and meningitis, and on the twenty notifiable diseases. Residents are advised to prepare a proposal for their Field Supervisors on how, when, and where to conduct the trainings. The training plan should include trainees who are regional health workers engaged in the PHEM structure. Once the Field Supervisor approves the proposal, the resident can request funding for implementation from the regional health bureau or from the EPHA.

Article appropriate for an epidemiology bulletin submitted to the EHNRI: Residents also are required to develop an epidemiologic bulletin to describe surveillance data and information. All bulletin contents and articles written by the resident must be compiled and submitted.

Submission of Monthly Reports: Monthly reports are to be sent by email to the Academic, EHNRI, and EPHA coordinators as well as the Resident Advisor(s) by the 7th day of the following month. Residents should use the template for monthly reporting (see Appendix 1 along with an example of how a monthly report is written). If a resident is unable to submit by the 7th due to fieldwork or investigation the report must be submitted as soon as possible thereafter. If a report is not submitted by the deadline for any other reason a formal explanation for the delay must be submitted to the coordinators, Resident Advisor(s) and Field Supervisor for consideration. Failure to submit the report due to reasons deemed unacceptable by EFETP will result in withholding of monthly transport and CDMA stipends. Grade evaluation will not be done until all reports are submitted.

Sequencing of the Residency Outputs

There are two residency periods (i.e. Residency I and Residency II) to accomplish the expected residency outcomes. During residency I, residents are expected to accomplish at least one outbreak investigation, a surveillance data analysis and a health profile description. However this does not mean they cannot do more and any unfinished outputs have to be conducted within the total period of residency.

Record Keeping (Resident Folder)

It is the primary responsibility of individual residents to keep a record of completed outputs. Residents are required to create a folder on their personal computer for all the outputs with all versions included. Residents make submissions of updated versions of the folders on a CD, to the Program Coordinators on a quarterly basis. The EFETP program will keep record of these outputs in its program database. However it should be noted that the residents should regularly back-up their documents to avoid losing data due to computer problems, as the program will not be responsible for any such losses.

Body of Works

At the end of the two residency periods, all the accomplished outputs are to be compiled by the resident in one volume as per the format provided by the program (see Appendix 5). This volume (EFETP Body of Works) is equivalent to a Master's Thesis, which the resident defends at the end of the program in order to fulfill the Addis Ababa University graduate program requirements.

2.5 Resident Evaluation and Assessment

Both the academic and fieldwork of each resident will be assessed for content and quality. Academic grades will be determined for class work per university guidelines.

For the field assignments, scheduled quarterly field supervision visits and accompanied assessments will occur with each resident. During this assessment the current work of the resident will be reviewed by the Coordinators, Field Supervisor and Resident Advisor(s). Progress toward attainment of competencies will be reviewed and a work plan developed for the next 3 months to help the resident best attain the needed activities and competencies. This assessment will be used to meet University requirements for regular assessment towards graduation (see Appendix 2: Checklist of Core Activities of Learning).

Additionally, there will be a comprehensive review of each resident annually using the Detailed Performance Evaluation Form by the Field Supervisor, resident, Program Coordinators, Resident Advisor(s) and Mentor. This will take place upon the completion of each residency, which will likely occur in or close to April of the Gregorian calendar each year (see Appendix 2: Detailed Performance Evaluation Form).

Routine Meetings and Seminars

During the field placement, regular EFETP meetings will be held at least monthly and residents will be expected to attend unless engaged in urgent program-related activities. Residents will present data and information on individual projects such as surveillance programs and/or outbreak activities, discuss journal articles, and review epidemiological concepts. Field Supervisors will coordinate these meetings.

Field Component

As stated in the Program Structure, the majority of the program is spent in the field at either the national or regional level. These organizations typically are responsible for communicable disease control, surveillance, epidemiology and other public health activities.

Residents may return to their region upon completion of the first course, or may reside in another region or institution depending upon availability of appropriate field sites as determined by the program. Prior to placement, these sites are evaluated to determine if there is support for residents including access to surveillance data, opportunities to assist with outbreaks, or the provision of technological and epidemiological assistance.

Field Placement

The final decision regarding field placement of residents is made by the EFETP. During the field assignment, residents will provide service to the EHNRI and RHBs by conducting outbreak investigations, surveillance activities, and other public health activities. During the field placements residents will also be involved in all the routine activities of the PHEM in the field bases as one of the staff of the PHEM.

Field Supervision

Supervision and mentoring in the field is provided in two different ways. Primary supervision is conducted by the onsite Field Supervisor, who is responsible for management and support, and some may serve in different capacities in regard to technical supervision. Other activities that the Field Supervisor might perform include:

- Sharing knowledge of the institutions in which the resident works
- Introducing the resident to other key professionals
- Supporting residents' access to surveillance data
- Identifying learning opportunities for residents
- Providing opportunities for the residents to conduct field investigations
- Facilitating conducive office environments at the residents' field bases
- Assisting the residents in establishing goals and effective timelines for completing field requirements and providing the necessary managerial support

In addition quarterly field supervision is conducted in all field bases by Program Coordinators and Resident Advisors.

Technical Mentoring

Mentoring of residents in field epidemiology will be provided by the staff of the EFETP. These persons will be responsible for providing consultation to residents during surveillance, outbreak investigations, and other public health activities. The primary difference between Field Supervisors and Technical Mentors is that Mentors are experienced field epidemiologists, who have a background in descriptive and analytic epidemiology, biostatistics, and surveillance techniques. At times, some Field Supervisors may also serve as Mentors due to their academic background, previous experience, and technical expertise. These persons will be assigned to each resident at the beginning of the program and will serve as a point of contact for the resident. First line technical communications regarding the field outputs are to be made with technical Mentors. Program Coordinators and the Resident Advisor(s) will be copied on relevant communications for the purpose of tracking the performance of residents.

2.6 Public Health Assistance

Residents are expected to be involved in the investigation and response activities in the event of an outbreak, acute health event, international crisis, or other epidemiological activity that is requested by the MOH and/or its structures. This situation may require mobilizing technical assistance from residents from any of the field bases other than the area requesting assistance.

Procedures for Field Activities

During field base placements (residencies), the resident will spend time in the field doing investigations, performing data collection, and providing technical assistance. Residents must submit a written proposal of every output to their Field Supervisor prior to conducting each field activity. The decision regarding which field opportunities are

relevant for EFETP residents is made by the Field Supervisor in consultation with the Program Coordinators and Resident Advisor(s).

Whether the field opportunity is deemed appropriate for EFETP is based on: public health importance and scientific interest, learning opportunities for residents, requests or permission from the FMOH/RHB to participate in the activity, financial support and the availability of support from the requesting department.

If the activity is deemed appropriate by the EFETP, the program will determine which residents to deploy, based upon factors such as availability, requirements met, previous experience, and special skills.

These assignments typically last at least two weeks, but can be longer depending upon the complexity of the activity. During deployment to the field for investigational activities per diem will be paid to cover resident expenses.

Upon completion of the activity, each resident should prepare a detailed first draft report and submit to the EFETP coordinators following the standard scientific format complete with introduction, methods, results, discussion/conclusion and recommendation sections. A section on response activities can also be included if necessary. The document name should include the resident's name, title of activity, and date. Program staff will provide feedback, comments, and suggestions and make some changes that the resident should use to revise the report. Once this report has been approved, a copy must be provided to the EFETP program office at the Zewditu site and placed in a folder labeled with the residents' name.

NB: Residents are responsible for maintaining final versions of all documents in electronic soft copy format (including reports, abstracts, presentations, manuscripts, summary documents, etc.). These should be submitted to the program regularly. Residents must also provide FINAL (not draft versions) soft copies of all these documents for program staff to place in their personal computer folders maintained at the Zewditu campus.

3. Responsibilities and Rights of the Residents at the Field bases

3.1 Field Base Rules and Regulations

Residents are placed in field bases to develop their knowledge and skills to address and strengthen the Public Health Emergency Management at national and sub national levels.

During the field assignments, residents are expected to abide by the field base rules and regulations. Commitment must be shown by all residents in performing the daily routine and field base activities. Residents are expected to keep the Program Coordinators informed as to their whereabouts at all times. Whether traveling to investigate public health problems or for personal business, communication is critical. Telephone or email communication should be regularly maintained. Unexplained or unexcused absences or failing to inform program staff of travel plans is not acceptable and will adversely impact resident evaluation.

3.2 Salaries and Expenses

During the course of the 2-year program, residents may continue to receive a salary paid through the sponsoring institution, Region or woreda that nominated the resident. Obligatory service after completion of the program is determined and enforced by the sponsoring health authority. As mentioned above, expenses related to travel for outbreak investigations will be covered by the EFETP. Residents are not allowed to accept paid work outside of the program. Residents will receive a monthly transport stipend and CDMA card contingent from EFETP upon submitting required monthly reports.

3.3 Computers, Libraries and Internet Access

Each resident will be provided a laptop computer and CDMA at the beginning of the program to be used during the two-year period. Residents are responsible for the safe-keeping and appropriate use of the computer and the CDMA which must be returned upon completion or termination of the program. Lost computers or CDMA due to problems related to the resident's mishandling will be the responsibility of the resident. In addition to CDMA, internet access will be available at the Addis Ababa University classroom site and also at most of the field bases.

Residents will be provided with basic books and some manuals that are necessary for the training. More essential books will also be available at the libraries at the Addis Ababa University and library facilities at the field bases. Free websites for books and journals will also be provided to residents during the courses.

3.4 Other Rights

1. The right to learn, develop knowledge and skill through asking, reading and doing
2. Right to access data at the field base based on standard operating procedures.
3. Provision of per-diem when departing for field activities out of the field base
4. Access to communication resources such as telephones and CDMAs
5. Access to stationery and other office supplies
6. Access to program related information as deemed important
7. Making formal as well as informal communication with Field Supervisors and other program staff regarding their residency activities
8. Vacation during Easter and New Year as per the University calendar
9. Participating in meetings of PHEM activities at the field bases
10. Participating at international conferences if approved by the program
11. Obtaining technical support from Resident Advisor(s), academic coordinators and Mentors and Field Supervisors

3.5 Duties of the Residents

1. Punctuality both in office and in field activities
2. Respecting the norms, rules and regulation of offices at the field base
3. Submitting all plans required by the program as is demanded by the Field Supervisor
4. Working enthusiastically and with full energy to the achievement of the plans set by the program and field bases
5. Submitting oral and written reports to supervisor in written form or orally to program supervisors
6. Participating in meetings of PHEM at the field bases
7. As the training is entirely learning by doing, 100% attendance is required (as mentioned in Addis Ababa University Senate Legislation Section 74.2.1). Unexplained absences will result in a lowering of evaluation, performance and academic grades. Absence that exceeds 25% of the course time will result in a failing grade.
8. Unless a resident goes for the field activities, s/he is expected to spend the whole time in PHEM office at the field bases.
9. Working closely and in a friendly manner with the staff of PHEM and other health staff
10. Readiness to depart for field work for emergencies and disasters
11. Residents should carefully and responsibly handle field equipment, supplies, and books received. Residents are responsible for damage to these properties.
12. Undertaking all the residency outputs to develop knowledge and skills and fulfilling all the requirements for graduation

3.6 Consequences of Breaching the Aforementioned Duties

Breaching the aforementioned duties and responsibilities will expose residents to the university disciplinary and administrative measures listed below.

1. The program reserves the right to dismiss from the program those residents who fail to be punctual, are chronically absent, display a poor work ethic, are disrespectful of program staff and colleagues, dishonestly or fraudulently use program funds and equipment or in any manner violate professional ethical standards of public health.
2. Failure to abide by the program requirements and expectations will also result in deduction of monthly transportation and CDMA allowances, lowered grades, and/or oral/written warning, the need to repeat courses/residency depending on the seriousness of the violation as judged by the EFETP Advisory Council and AAU.
3. Failure to exhibit enthusiasm in achieving the plans set will end up in deduction of grades or other measures.
4. Failure or carelessness to keep the safety of the properties received for the residency from any of the above parties will end up in replacing the property.
5. Disciplinary matters will be treated according to the Addis Ababa University Senate Legislation Chapter Eight.

4. Appendices

Appendix1: Outline of the EFETP Resident Monthly Report

Appendix 2. Evaluation Forms

Appendix 3: Standard Operating Procedures for Wider Distribution of Residents' Works

Appendix 4: Course Modules and their Credits

Appendix 5: Residency Outputs and Body of Works Templates

Appendix 6. Resident Folder Structure and Document Labeling

Appendix 7: Scope of Work for Coordinators and Resident Advisors

Appendix 8: Reference Guidelines for FETP Resident Outputs

Appendix1: EFETP Resident Monthly Activity Report Form

From (Resident's Name):

Email to: Field Supervisor, Mentor, Coordinators and Resident Advisor

Month/Year:
(due 7th of the month on GC (e.g. March/Megabit report due April 7th /29 Megabit)

Cohort: Field Site:

1. **Administrative Matters**
   - Comment on administrative issues relevant to program (computer, supplies, logistics, equipment needs, etc.)

2. **Field investigations**
   - Summarize all field investigations and activities that were started this month in the table below. Also write a short paragraph stating methods, results, conclusions, action taken, and recommendations for each investigation (no more than 15 lines).

Start Date	Disease or Event	Location	Estimated # Cases/Deaths	Etiology Identified?	Impact/Outcome of Investigation

3. **Surveillance Activities**
   - Summarize activities related to epidemiological surveillance; surveillance data analysis or surveillance system evaluation that were started this month. Also write a short paragraph stating methods, results, conclusions, action taken, and recommendations for each (no more than 15 lines).

Title	Month/Year Final Report	Location	Brief Results : Key Outcome	Impact of Analysis/Report

4. **Briefings, Presentations or Communications**
    - Briefings given to supervisors or higher officials; include topics
    - Seminars or presentations given to Bureau colleagues or others
    - Presentations at Conferences
    - Communication with public, journalists, media or community and answering public inquiries (write a paragraph below with details)

Date	Name of Conference or Meeting	Location	Oral or Poster	Topic of Presentation

5. **Training or teaching activities undertaken**
    - Please attach content, if you developed teaching materials

Title or Type of Training	Audience and Location	# Trainees	Date(s):	Length of Training (Days)	Key Outcomes /Learning Objectives

6. **Trainings attended:**

7. **Development of Epi Project Proposals /Protocol-based studies**

Study Title	Month/Year Final Report	Impact/Outcome of Analysis/Report

8. **Publications/ Manuscripts or abstracts written**

Citation[i]	Dates Submitted/ Published (Month/Year)

9. Any other activities that you would like to report

NB: The document should be saved as a Word Document using this following naming format: Residentname.Fieldsite.MonthYear.doc
Example: Boulanger.EHNRI.Meskerem2003.doc

At the end of the report, provide the following summary information in a table.
Summary Report

New Activities Performed in the month	Quantity	Status of the output	Remark

Example of the EFETP Resident Monthly Activity Report

From (Resident's Name): Lucy Boulanger

Email to: Field Supervisor, Mentor, Coordinators and Resident Advisors

Month/Year: Megabit2004 (EC)

Date: April 7

Cohort: Cohort 3

Field Site: EHNRI

1. Administrative Matters

- Payment of per diem for field investigation delayed due to finance office miscommunication

2. Field investigations

- Megabit1-5, investigated acute watery diarrhea (AWD) outbreak in W. Arsi Zone, Oromia Region; identified 150 cases, no deaths; created a line-list; no laboratory confirmation performed; conducted case-control study with 75 cases and controls. Analytic results suggested contaminated water as source. Distributed WuAgar and soap; recommended latrine improvements. Report written and submitted to Region and EFETP
- Megabit14-18 investigated malaria outbreak in West Wollega Zone, Oromia Region, no cases occurred after team's arrival; obtained line-list of 35 cases from district officials; CoArtem distributed; descriptive epidemiology only. Epi-curve showed sharp peak on Meskerem 17 but declined to 0 by the 18th.

Start Date	Disease or Event	Location	Estimated # Cases/Deaths	Etiology Identified?	Impact/Outcome of Investigation
Megabit1-5	AWD Outbreak	W. Arsi Zone, Oromia Region	150 cases, no deaths	No	Distributed WuAgar and soap; recommended latrine improvements
Megabit14-18	Malaria Outbreak	West Wollega Zone, Oromia Region	35 cases, no deaths	malaria	CoArtem distributed

22/2/11 GC	Outbreak of Acute Watery Diarrhea in a Rural Area of Y Zone	Village X, Zone Y	234, no deaths	Yes-Cholera	Etiologic agent identified; control measures put in place (closed affected well, delivered health education messages to village residents, chlorinated other water sources); cases decreased within one week

3. Surveillance Activities

- Megabit19-20, assisted Metu Zone with analyzing malaria data for past 2 years. Had outbreak reported from last month that was detected late. They wanted help recognizing outbreaks earlier. Visited 5 health centers to evaluate reporting system and identify problems. Report submitted to Regional Health Bureau PHEM focal person and EFETP program

Title	Month/Year Final Report	Location	Brief Results : Key Outcome	Impact of Analysis/Report
Evaluation of Malaria Surveillance System	Megabit2004	Metu Zone	The timeliness and completeness of reporting and data quality were found to be the weak system attributes. An evaluation report with specific recommendations to improve these attributes was submitted to NHB.	Based on recommendations the RHB piloted a new SMS based reporting system in the Metu Zone and began reimbursements for personal mobile phones used by HEWs for reporting if reports sent in timely manner.
Evaluation of National Tuberculosis Program Surveillance System	June 2011	FMOH/EHNRI	Timeliness of reporting and data quality were found to be the weakest system attributes. An evaluation report with specific recommendations to improve these attributes was submitted to NTP.	Based on findings and recommendations, NTP will pilot a new electronic reporting system in one province in an effort to improve timeliness of reporting and data quality

4. Briefings, Presentations or Communications

- Briefed the Regional IDSR focal person on the AWD outbreak
- Made presentation to Regional PHEM staff about the epidemiology of the AWD outbreak
- Conducted awareness raising and sensitization of kebele officials during the AWD outbreak

Date	Name of Conference or Meeting	Location	Oral or Poster	Topic of Presentation
03/12/2012	EMPHNET Conference	Sharm el Shiekh, Egypt	Oral	Prevalence of HIV/AIDS among Prisoners in District B, Country Y, 2009-2010

5. Training or teaching activities undertaken

Title or Type of Training	Audience and Location	# Trainees	Date(s):	Length of Training (Days)	Key Outcomes /Learning Objectives
Use of WHO Malaria Surveillance Guidelines	Zonal and district health officials in Shewa Zone	28	Megabit21-24	2 days	Taught health officials how to use surveillance guidelines for improved reporting
Rapid Response Team Training	District and Provincial Rapid Response Teams in Shewa Zone	44	Mar 3-8, 2012	5 days	Participants learned the fundamental principles of conducting a coordinated response to a public health event. Each team developed a response plan for a health event of their choosing.

6. Trainings attended: Megabit29, attended 1 Day WHO sponsored H1N1 Training at Oromia Regional Health Bureau Meskerem 30, literature review for background about measles vaccination practices.

7. Development of Epi Project Proposals /Protocol-based studies

Study Title	Month/Year Final Report	Impact/Outcome of Analysis/Report
Epidemiological Study of Breast Cancer in Ethiopia, 2009-2011	March 2012	This national-level study showed breast cancer affects younger women than has been reported in other countries. This has important implications for re-targeting screening and health education efforts to a younger population of women.

8. Publications/ Manuscripts or abstracts written

Citation	Date Published (Month/Year)
Adamu A, Alemayehu A, Zegeye A. Cholera outbreak in a rural community. N Engl J Med. 2012 Mar 20; 354(16):1698-705	March 2012
Boulanger L. Increased Transmission and Outbreaks of Measles, Ethiopia, 2011. ET Epi Bull. 2012 Mar 25; 1(1): 3-4	March 2012

9. Any other activities that you would like to report

- Megabit25-28, worked with a team of 10 MOH/PHEM staff to establish and equip a quarantine facility at Bole Airport to screen for potential H1N1 infected incoming passengers; collected questionnaires from 5,000 passengers, 1 presented with clinical symptoms of infection, lab test negative, patient returned to Nigeria; worked as on-site physician for 10 nights

All the files within the folders should include key words of the title of the output, first name of resident and version date (Month (in letters) – date – year)

e.g. AWDZewayAdamuAFebruary-24-2012
AnthraxAdigratZegeyeHMJanuary-12-2012
MeaslesDillaAlemayehuBOctober-11-2011

At the end of the report, provide the following summary information in a table.
Summary Report

New Activities Performed in the month	Quantity	Status of the output	Remark
Field Activities	3	1 final, 2 in process	
Surveillance Activities	1	1 in process	
Presentations	2	2 final	

Appendix 2. Evaluation Forms

Checklist of Core Activities for Learning (CALS)

This checklist is to be completed by the Program Coordinators quarterly. The form must be completed electronically and forwarded to: the EFETP resident, the Field Supervisor, the Mentor and the Resident Advisors.

Field Base:

Coordinator Name: Resident Name:

Date of Report: Dates for field placement:

Weeks already spent in the field: Weeks remaining in the field:

Core Activities for Learning (CALS)	Activity/Product	Yes	No	Comment
1. SURVEILLANCE: Design, implement, or evaluate a public health/ laboratory surveillance system	Topic chosen			
	Draft approved by Field supervisor and send to Field Coordinator			
	Local presentation of findings			
	Oral presentation to EFETP			
	Manuscript report approved by Resident Advisors			
2. DATA ANALYSIS Conduct and interpret an epidemiologic analysis of an existing data set	Topic chosen			
	Plan/Protocol approved by Resident Advisors/Academic Coordinator			
	Data collected			
	Local presentation of findings			
	Manuscript/report approved by Advisor/Academic Coordinator			

Core Activities for Learning (CALS)	Activity/Product	Yes	No	Comment
3.OUTBREAK INVESTIGATION Conduct an investigation of a serious public health problem that requires a rapid response	Field Investigation			
	Local presentation of findings			
	Manuscript approved by Field supervisor and Field Coordinator			
4. RESEARCH Design and conduct a protocol based study to assess a health problem of public health importance	Topic chosen			
	Study Protocol approved by Advisor/Academic Coordinator			
	Data collected			
	Local presentation of findings			
	Manuscript/report approved by Advisor/Academic Coordinator			
	Finalize research report and submit to UP			
5. DISASTER SITUATIONS VISITED	What was the situation visited? Data collected? Was the report made?			
6. CONDUCT HEALTH PROFILE DESCRIPTION AND PLANNING OF AN ADMINISTRATIVE LOCALITY: REGION/ZONE/DISTRICT	Data collected			
	Report submitted/			
	Feedback given			

Core Activities for Learning (CALS)	Activity/Product	Yes	No	Comment
7. ORAL SCIENTIFIC PRESENTATION Give an oral presentation at a national or an international scientific conference	EFETP seminar - Prepare and write up presentation for review - Do supervised dry-run presentations - Deliver presentation			
	National/ International conferences - Prepare and write up presentation for review - Do supervised dry-run presentations - Deliver presentation			
8. SCIENTIFIC WRITING a. Write a scientific manuscript for a peer reviewed journal	Abstract			
	1st draft			
	Final version			
b. Write a report for publication in an epidemiology bulletin	Abstract			
	1st draft			
	Final version			
9. COMPUTER USE	Set up database			
	Use graphic software to prepare presentations			
	Use word processor to prepare scientific documents and reports			
	Attend health team meetings and take minutes of meeting			
10. PUBLIC HEALTH LABORATORY ATTACHMENT	Exposure to Public lab. Settings?			
	What lessons were learnt?			
	Was there any report?			
11. TEACHING/TRAINING	Mentor other public health personnel			
	Submit summary report on teaching activities			

Core Activities for Learning (CALS)	Activity/Product	Yes	No	Comment
12. LOG BOOK	Do log entries follow the guidelines?			
	Has the log book been reviewed by Field Supervisor?			
13. ADMINISTRATIVE FINANCIAL ISSUES	Laptop computers provided			
	CDMA apparatus given			
	SIM card provided			
	Transportation and CDMA allowances sent			
	Per diem sent on time as per the request made by the Field Supervisor			
	Fuel and related expenses sent			
	Stationery sent to the field base			
	Other field base materials fulfilled			

14. RESIDENT'S EVALUATION OF MENTOR	Mentor responds to email/phone communications in a timely manner (ie: 1-2 weeks)			
	Mentor provides time for face to face meetings to review work if requested?			
	Mentor provides constructive criticism of resident's work?			
	Mentor has visited resident at field base?			
	Mentor has provided professional advice about publication of resident's work?			

Comments of the Program Coordinator on the overall performance of the resident:

Recommendations/Corrective measures made by the Program Coordinator:

Detailed Performance Evaluation Forms: Parts 1-4

This form is to be completed annually by Field Supervisors (Part I); residents (Part 2); Program Coordinators and Resident Advisors (Part 3); and Mentors (Part 4).

Part 1: Evaluation of the Quality of Work by the Field Supervisor **To be completed by the Field Supervisor upon completion of each residency**	
Name of Resident:	Evaluation Period: From:_____To: _____
Field Site:	Name of Supervisor:
	Signature of Supervisor:
If others have provided supervision, list any who have contributed to this evaluation:	_____ _____

1. QUANTITY OF WORK
   A. Consistently produces less than is expected.
   B. Sometimes falls below productivity levels.
   C. Meets standards consistently.
   D. Usually exceeds standards of productivity.
   E. Exceptionally productive; accomplishes far more than is expected.

2. PUNCTUALITY OF WORK
   A. Regularly misses deadlines.
   B. Is sometimes behind schedule.
   C. Is almost always on time with assigned work.
   D. Can be relied upon to meet all deadlines and is sometimes ahead of schedule.
   E. Is exceptionally prompt and usually ahead of schedule.

3. INITIATIVE, CREATIVITY, AND JUDGMENT
   A. Often fails to take obviously necessary actions or takes wrong ones.
   B. Sometimes fails to take steps that would solve or head off usual problems.
   C. Deals effectively with usual problems and challenges.
   D. Moves creatively to meet program objectives and solve somewhat unusual problems.
   E. Routinely recognizes and solves unusual problems.

4. COMMITMENT TO PROGRAM GOALS
   A. Seems exclusively concerned with own convenience, welfare, and advancement to detriment of program.
   B. Too often puts personal concerns ahead of program.
   C. Is generally able to balance personal and program concerns.
   D. Has worked out a relationship between personal and work responsibilities, which allows a satisfactory resolution of almost all conflicts.
   E. Has achieved such an integration of personal and program interests that conflicts rarely arise.

5. ABILITY TO WORK WITH OTHERS
   A. Is not effective when work requires cooperative efforts.
   B. Performance is sometimes impaired if it requires working with others.
   C. Satisfactorily achieves objectives when working with others is required.
   D. Is able to cooperate with others in a manner that helps produce better work than any one member of the group could produce.
   E. Works with others in ways that maximize the contributions of each person and consistently produces excellent results.

6. ABILITY TO EXPRESS SELF VERBALLY AND IN WRITING
   A. Often does not get the desired response even to routine material because the message is not understood.
   B. Failure to communicate clearly sometimes causes problems.
   C. Communication failures rarely cause problems.
   D. Gets message across even when material is complex.
   E. Expresses complex and controversial material in such a lucid and persuasive way that achievement of objectives is materially aided.

7. PLANNING AND ORGANIZATION
   A. Needs continual supervision to determine priorities, resource needs, and time to be allotted for even routine tasks.
   B. Sometimes is lax in determining and adhering to priorities, available resources, and schedules.
   C. Sets and adheres to priorities, available resources, and schedules under most circumstances.
   D. Skilled planner and organizer. Grasps problems well and works out overall and detailed solutions.
   E. Exceptional skills in planning and organizing. Anticipates subtle and difficult issues and deploys resources imaginatively.

8. RESPONSE TO CRISIS
   A. During crises, performance is ineffective.
   B. During crises, performance is somewhat less effective than at other times.
   C. Performance during crises is as effective as at other times.
   D. Rises to the occasion during crises.
   E. Emerges as a superior performer and leader during crises.

9. ABILITY TO SOLVE PROBLEMS
   A. Often asks questions or presents solutions that evidence a lack of understanding of routine matters.
   B. Sometimes asks questions or presents solutions which complicate the management of routine problems.
   C. Almost always evidences understanding of routine and many more complex matters.
   D. Usually understands and presents good solutions to new and particularly difficult problems.
   E. Is a person to whom others look to for creative and thorough analyses of the most difficult problems.

10. PROFESSIONAL SKILLS IN PRESENT ACTIVITY
   A. Cannot be trusted in situations when professional judgment is required.
   B. Sometimes makes professional judgments that are not supportable.
   C Consistently makes professional judgments that are supportable and appropriate.
   D. Is looked to by others for professional advice.
   E. Is recognized by people outside his/her program as an expert in the application of professional skills.

11. SUPERVISORY SKILLS
   A. Frequently causes problems which require intervention.
   B. Sometimes makes supervisory decisions which complicate management problems.
   C. Handles most supervisory problems without difficulty.
   D. Resolves problems and improves employee's performance.
   E. Solves even difficult problems and gets the most out of even deficient employees.
   F. Resident has no supervisory responsibility.

12. GROWTH IN SKILLS DURING RATING PERIOD
   A. Performance has deteriorated.
   B. Has shown little, if any, improvement.
   C. Showed steady growth.
   D. Progressed more rapidly than most of his/her peers.
   E. Showed much more growth than almost all his/her peers.

13. RESPONSIVENESS TO SUPERVISION
   A. Usually rejects supervisory guidance without considering its merits.
   B. Sometimes rejects supervisory guidance without considering its merits.
   C. Usually considers supervisory guidance carefully and is able to apply it.
   D. Works with supervisory guidance constructively.
   E. Knows when to seek supervisory guidance and is highly creative in implementing recommendations.

14. OVERALL JOB PERFORMANCE
    A. Inadequate. This resident is a hindrance rather than an asset.
    B. Marginal. This resident is sometimes less effective than can be expected.
    C. Competent. This resident is fully effective in performing his/her job.
    D. Well above average. This resident has made a significant contribution and has enhanced the position he/she holds.
    E. Exceptional. This resident's performance is far better than can be reasonably expected and has brought credit on the resident and the program.

Evaluation Summary	(to be completed by Supervisor)
Number of "A" responses	
Number of "B" responses	
Number of "C" responses	
Number of "D" responses	
Number of "E" responses	

16. Does this resident have any limitations not identified above which might hinder his/her effectiveness?

17. Does this resident have any strengths not identified above which might enhance his/her effectiveness?

18. Other comments:

Part 2: Resident Signature Page
19. I have read this evaluation, discussed it and retained a copy. A. I concur with this evaluation. B. I disagree with this evaluation in the following ways:
Signature of resident: Date:

Part 3: Coordinator/Resident Advisor Signature Page

20. I have read this evaluation and had an opportunity to discuss it.

A. I concur with this evaluation in all respects.

B. Although this evaluation is reasonable, this supervisor is a somewhat more demanding rater than most.

C. Although this evaluation is reasonable, this supervisor is a somewhat less demanding rater than most.

D. I disagree with this evaluation in the following ways:

21. PROGRAM COORDINATOR/RESIDENT ADVISOR'S ASSESSMENT OF OVERALL JOB PERFORMANCE

A. Inadequate. This resident is a hindrance rather than an asset.

B. Marginal. This resident is sometimes less effective than can be reasonably expected.

C. Competent. This resident is fully effective in performing his/her job.

D. Well above average. This resident has made a significant contribution and has enhanced the position he/she holds.

E. Exceptional. This resident's performance is far better than can be reasonably expected and has brought credit to the resident and the program.

Comments:

Signature of Program Coordinator/Resident Advisor:

Date:

Part 4: Detailed Performance Evaluation of Outputs for Mentors (to be Completed by the Mentor Upon Completion of Each Residency)	
Name of Resident:	Evaluation Period: From:_____To: _____
Field Site:	Name of Mentor:
	Signature of Mentor:
If others have provided supervision, list any who have contributed to this evaluation:	_____ _____

Review the required activities listed below, which the resident completed during the evaluation period and calculate a point value based on the criteria of each activity.

Scoring Guidelines

A. Regularly produces work that does not meet standards of quality.
B. Occasionally produces work, which does not meet standards.
C. Produces work that consistently meets standards.
D. Produces above average work.
E. Produces exceptional work. Resident is seen as a model for others.

Resident Activity	**Criteria**	**Score**
Investigations of epidemiologic emergencies	1. The activity fulfills the requirements of an epidemiologic emergency The resident: 2. Knew what was required of him/her during the investigation and who is responsible for various elements of the investigation 3. Completed his own preparations for the emergency investigation 4. Brought adequate supplies and equipment for the investigation 5. Had a plan for data collection 6. Planned for training of additional personnel 7. Was responsible for analyzing data? 8. Created table shells for use in analysis 9. Correctly prepared the surveys 10. Completed a univariate and bivariate analysis of all the variables and corrected the data appropriately 11. Made conclusions and interpretations of data that are consistent with the results 12. Made recommendations that are consistent with and generated by the findings of the investigation 13. Completed the reports appropriately	**Comments:**

Resident Activity	Criteria	Score
Surveillance data analysis	The resident: 1. Organized the data 2. Entered the data into a system for analysis 3. Identified and interpreted patterns of data 4. Compared the current report with expected level and projections **each week** 5. The analysis of time-place-person uses appropriate formats, case definitions, graphics for interpretation 6. Established an hypothesis based on the observed patterns that is logical and consistent with the patterns in the data	**Comments:**
Surveillance project	1. The project contains the potential for resulting in modifications or improvements in the surveillance system, or in important actions in public health The resident: 2. Took into consideration the resource requirements for completing the project 3. Cleaned the data before analysis 4. Used appropriate public health literature to support his 5. Made recommendations which were connected to the findings and addressed the objective of the project 6. Made recommendations that are consistent with and generated by the results of the project	**Comments:**
Epidemiologic project	The resident: 1. Selected an appropriate theme 2. Used appropriate public health literature to support his recommendations 3. Completed each phase of the project in a reasonable amount of time 4. Was the one responsible for analysis or participated in the analysis with others 5. Created dummy tables before data collection to ensure the collection of all required data 6. Developed an appropriate survey for the project's goal 7. Conducted a pilot of the survey 8. Correctly prepared data entry screens for entering data into Epi-Info (or other software) 9. Included checks for logic and range 10. Appropriately analyzed risk factors 11. Formed conclusions and interpretations that are consistent with the results 12. Made specific recommendations that are consistent with or generated by the results of the project	**Comments:**

Reports and protocols	The resident: 1. Completed all reporting requirements for the public health activities during the evaluation period 2. Used the required format of the organization requesting the investigation 3. Included the impact on the public (e.g. those who are reviewing the protocol) in the investigation protocol	**Comments:**
Seminars and conference presentations	The resident: 1. Selected an appropriate theme for the presentation 2. Provided an introduction which establishes what the audience will hear 3. Included an introduction which identifies the problem and its significance 4. Included all the elements for the selected type of presentation (informative, persuasive, etc.) 5. Included a result for each method presented 6. Made a discussion point for each result 7. Included in the discussion recommendations and conclusions which related to the problems and objectives 8. In the conclusion, described the importance of the results to public health	**Comments** **:**
Manuscripts	The resident: 1. Selected an appropriate theme for the development of a manuscript, after conducting a literature review 2. Spent enough time on a literature search of the theme 3. Included all the components of the IMMRD format 4. Covered the required organizational structure for the periodical of submission 5. Prepared an abstract which summarizes the key information of the article	**Comments** **:**
Report of activities in surveillance and response	The resident: 1. Provided a report at least monthly 2. Developed a complete and thorough document and accurately recorded his activities	**Comments** **:**

Six Technical Core Competencies Form

Resident Name: Mentor Name:

(1) Biostatistics and Epidemiology						
Resident is to master bio-statistics and epidemiology to be able to formulate recommendations on a protocol or study report. The resident should be competent with:	1.No skills	2.Theoretical exposure	3.Theoretical acquisition	4.Practical exposure	5.Competency acquired	Comments, including documentation available or documentation to be sought
Measures of central tendency and dispersion						
Sampling methodology, including sample size estimation						
Design of studies (surveys, case control, cohorts)						
Measures of disease frequency (incidence, prevalence) and association (prevalence ratio, odds ratios and relative risks)						
Statistical testing and confidence intervals						
Standardization, stratification, bias, confounding, effect modification and matching						
Measures of impact						
Presentation of data in tables, graphs and maps						
Sensitivity, specificity and predictive values (positive and negative)						
Causality criteria						
Number of critical reviews of literature articles	*Number of reviews:*					

Resident Name: Mentor Name:

(2) Health information systems/surveillance						
Resident is to manage all aspects of health information systems including:	1.No Skills	2.Theoretical exposure	3.Theoretical acquisition	4. Practical exposure	5.Competency acquired	Comments, including documentation available or documentation to be sought
Routine management of a surveillance system						
Analysis of surveillance data						
Evaluation of a surveillance system						
Completion of surveillance project with delivery of satisfactory report	*Yes _____*			*No _____*		

(3) Outbreak investigation and response						
Resident is to lead effective responses to outbreaks, including:	1.No Skills	2.Theoretical exposure	3.Theoretical acquisition	4.Practical exposure	5.Competency acquired	Comments, including documentation available or documentation to be sought
Investigation of the source of infection						
Management sample collection, transport, biosafety; make test requests and interpret laboratory results						
Formulation of evidence-based recommendations for prevention and control						
Communication with stakeholders (e.g., decision-makers, political leaders, public and the media)						
Number of outbreaks investigated with final report produced and cleared by state and NIE supervisors	*Number of outbreaks:*					

Resident Name: Mentor Name:

(4) Epidemiologic Investigations						
Resident is to manage all aspects of an epidemiologic investigation or study including:	1.No Skills	2.Theoretical exposure	3.Theoretical acquisition	4.ractical exposure	5.Competency acquired	Comments, including documentation available or documentation to be sought
Framing research question(s) based upon public health needs and available evidence						
Writing a study protocol describing a design adapted to the research question(s)						
Designing and pilot testing data collection instruments, including questionnaires						
Collecting and analyzing data using computer tools and quality assurance measures						
Completion of special dissertation project and delivery of satisfactory report cleared by supervisors	*Yes* _____ *No* _____					

(5) Oral and poster scientific presentations						
Resident should be able to deliver a short oral scientific presentation and consider preparing a poster compatible with international scientific meetings, including:	1.No Skills	2.Theoretical exposure	3.Theoretical acquisition	4. practical exposure	5.Competency acquired	Comments, including documentation available or documentation to be sought
Writing an abstract						
Preparing an outline of talk						
Preparing a poster						
Giving a presentation						
Number of presentations given in international-level conferences	Number of presentations:					

Resident Name: Mentor Name:

(6) Scientific writing						
Resident should write a scientific manuscript of less than 3000 words using the IMRD structure with a maximum of five tables and or figures and of a quality allowing publication in an international peer-reviewed journal. Residents should:	1.No Skills	2.Theoretical exposure	3.Theoretical acquisition	4. practical exposure	5.Competency acquired	Comments, including documentation available or documentation to be sought
Write a high-level outline for the manuscript						
Produce a first draft of the manuscript						
Submit the manuscript to a peer-reviewed journal						
Obtain acceptance of the manuscript						
Number of manuscripts accepted for publication in a journal indexed in Medline or in the FETP bulletin	Number of papers:					

Guide to Assist in Scoring the Checklist Form for the Six Core Competencies

This guide provides detailed information to help in scoring the Six Core Competency Checklist.

1. Bio-statistics and epidemiology				
	Criteria to use			
1.Competencies	**2.Theoretical exposure: *Find out* if lecture was attended**	**3.Theoretical acquisition: *Test* knowledge**	**4.Some practical exposure: *Ask* for field experience**	**5.Competency acquired: *Look for* written evidence of the competency in reports**
Measures of central tendency and dispersion	▪ Lecture(s) attended	▪ Knowledge of the difference between a mean and a median ▪ Knowledge of the circumstances during which a mean or a median should be used	▪ Experience of calculation of measures of central tendency calculated in field assignments	▪ Evidence of appropriate measures of central tendency calculated correctly in field reports
Sampling methodology, including sample size estimation	▪ Lecture(s) attended	▪ Knowledge of the definitions of random, systematic and cluster samples ▪ Knowledge of the pros and cons of random, systematic and cluster samples ▪ Knowledge of the parameters that influence on the calculation of a sample size ▪ Knowledge of the methods available to calculate a sample size	▪ Experience with the design of at least one sample in field assignments ▪ Experience with the calculation of at least one sample size in field assignments	▪ Evidence of the use of a sample designed appropriately in one of the field reports. ▪ Evidence of a calculation of sample size done appropriately in one of the field reports.
Design of studies (surveys, case control, cohorts)	▪ Lecture(s) attended	▪ Knowledge of the definition of surveys, case control and cohort studies ▪ Knowledge of the circumstances that lead to choose between a case-control and a cohort study designs	▪ Experience with the design of a survey, a case control study or a cohort study during field assignments	▪ Evidence of a survey, a case control study or a cohort study chosen appropriately and designed correctly in one of the field reports

1. Bio-statistics and epidemiology				
1.Competencies	**Criteria to use**			
	2.Theoretical exposure: *Find out* if lecture was attended	**3.Theoretical acquisition: *Test* knowledge**	**4.Some practical exposure: *Ask* for field experience**	**5.Competency acquired: *Look for* written evidence of the competency in reports**
Measures of disease frequency (incidence, prevalence) and association (prevalence ratio, odds ratios and relative risks)	▪ Lecture(s) attended	▪ Knowledge of the definitions of incidence and prevalence ▪ Knowledge of the measures of association that are adapted to each study designs ▪ Knowledge of the formulas for odds ratio, risk ratio and prevalence ratio	▪ Experience with calculation of prevalence during field assignments ▪ Experience with calculation of incidence during field assignments ▪ Experience with the calculation of a measure of association during field assignments	▪ Incidence and prevalence calculated appropriately and correctly in field reports ▪ Evidence of at least one measure of association calculated appropriately and correctly in a field report
Statistical testing and confidence intervals	▪ Lecture(s) attended	▪ Knowledge of the definition of statistical testing and confidence intervals ▪ Knowledge of the methods to use to test statistical significance and to calculate confidence intervals	▪ Experience with statistical testing and / or confidence interval calculation during field assignments	▪ Evidence of statistical tests and / or confidence intervals conducted / calculated when needed and correctly in a field report

1. Bio-statistics and epidemiology				
	Criteria to use			
1.Competencies	**2.Theoretical exposure: *Find out* if lecture was attended**	**3.Theoretical acquisition: *Test* knowledge**	**4.Some practical exposure: *Ask* for field experience**	**5.Competency acquired: *Look for* written evidence of the competency in reports**
Standardization, stratification, bias, confounding, effect modification and matching	▪ Lecture(s) attended	▪ Knowledge of the definition of a confounding factor ▪ Knowledge of the definition of effect modification ▪ Knowledge of the practical ways to detect confounding and / or effect modification ▪ Knowledge of the way to handle and report effect modification ▪ Knowledge of the way to control a confounding factor	▪ Experience with a situation of effect modification and / confounding during field assignments [1]	▪ Evidence of appropriate handling of effect modification and / or confounding in a field report 1
Measures of impact	▪ Lecture(s) attended	▪ Knowledge of the definition of population attributable fraction among exposed and in the population ▪ Knowledge of the formula for population attributable fraction among exposed and in the population	▪ Experience with the calculation of a population attributable fraction during field assignments 1	▪ Evidence of appropriate and correct calculation a population attributable fraction in a field report 1
Presentation of data in tables, graphs and maps	▪ Lecture(s) attended	▪ Knowledge of the type of graph to use for each type of data (e.g., show data and ask for the appropriate graph to draw)	▪ Experience with drawing graphs and designing tables in field assignment reports	▪ Field assignment reports with less than five tables and or figures designed according to the rules.

[1] May actually not happen during the course of the two years EFETP.

1. Bio-statistics and epidemiology				
1.Competencies	**Criteria to use**			
	2.Theoretical exposure: *Find out* if lecture was attended	**3.Theoretical acquisition: *Test* knowledge**	**4.Some practical exposure: *Ask* for field experience**	**5.Competency acquired: *Look for* written evidence of the competency in reports**
Sensitivity, specificity and predictive values (positive and negative)	▪ Lecture(s) attended	▪ Knowledge of the definition and formula for sensitivity, specificity, positive predictive value and negative predictive value	▪ Experience with sensitivity, specificity, positive predictive value or negative predictive value during field assignments1	▪ Evidence of the appropriate and correct use of sensitivity, specificity, positive predictive value or negative predictive value in field assignment reports 1
Causality criteria	▪ Lecture(s) attended	▪ Knowledge of Doll and Hill causality criteria	▪ Experience with Doll and Hill causality criteria during field assignments 1	▪ Evidence of the appropriate use of Doll and Hill causality criteria in field assignment reports 1
2. Surveillance				
Routine management of a surveillance system	▪ Lecture(s) attended	▪ Knowledge of the information pathway in a surveillance system	▪ Experience with surveillance data collection, transmission and entry during field assignments	▪ Evidence of expertise in management of surveillance data in the surveillance projects (secondary data analysis and surveillance system evaluation)
Analysis of surveillance data	▪ Lecture(s) attended	▪ Knowledge of the principles of the analysis of surveillance data by time, place and person	▪ Experience of surveillance data analysis during field assignments	▪ Satisfactory secondary data analysis report
Evaluation of a surveillance system	▪ Lecture(s) attended	▪ Knowledge of the evaluation criteria for surveillance systems	▪ Experience of surveillance system evaluation during field assignments	▪ Satisfactory report for surveillance system evaluation

3. Outbreak management				
	▪	▪	▪	▪
Investigation of the source of infection	▪ Lecture(s) attended	▪ Knowledge of the steps of the investigation of an outbreak	▪ Experience with an outbreak investigation during field assignments	▪ Satisfactory outbreak investigation report
Manage sample collection, transport, biosafety, test requests and interpretation of laboratory results	▪ Lecture(s) attended	▪ Knowledge of methods to use to collect, pack and ship blood and stool samples	▪ Experience with biological sample management during field assignments	▪ Evidence of appropriate biological sample management in outbreak investigation report
Formulation of evidence-based focused recommendations for prevention and control	▪ Lecture(s) attended	▪ Knowledge of the criteria to use to formulate recommendations for control during an outbreak	▪ Experience of formulation of recommendations during a an outbreak investigation	▪ Evidence of sound recommendation for control in outbreak investigation report
Communication with all stakeholders (e.g., decision-makers, politicians, public and the press)	▪ Lecture(s) attended	▪ Knowledge of the audiences to target, media to use and communication objectives to reach during an outbreak	▪ Experience with communication during an outbreak investigation	▪ Satisfactory implementation of a communication plan during an outbreak investigation

4. Epidemiological investigations				
Framing research question(s) based upon public health needs and available evidence	▪ Lecture(s) attended	▪ Knowledge of the life cycle of an epidemiological investigation ▪ Knowledge of the elements of a research question	▪ Experience with framing a research question during field assignments	▪ Evidence of an introduction paragraph that frames a research question well in field reports
Writing a study protocol describing a design adapted to the research question(s)	▪ Lecture(s) attended	▪ Knowledge of the methods to use to go from a research question to study objectives to study design	▪ Experience with designing a study according to a research question during field assignments	▪ Evidence of a study design that meets the objectives of study objectives in field reports
Designing and pilot testing data collection instruments, including questionnaire	▪ Lecture(s) attended	▪ Knowledge of the important attributes of a data collection instrument	▪ Experience with designing and pilot testing a data collection instrument during field assignments	▪ Evidence of an appropriate questionnaire in a field report
Collecting and analyzing data using adapted computer tools and quality assurance measures	▪ Lecture(s) attended	▪ Knowledge of the steps of an analysis plan	▪ Experience with data analysis during field assignments	▪ Evidence of satisfactory data analysis in field reports

5. Oral and poster communication				
Writing an abstract	▪ Lecture(s) attended	▪ Knowledge of the format to use to write an abstract for an international level scientific journal	▪ Experience with writing an abstract for an international level scientific journal or an international level scientific conference	▪ Evidence of abstract being accepted in international level scientific conference or in international level scientific journal
Preparing an outline of talk	▪ Lecture(s) attended	▪ Knowledge of the format and requirements for a 10 minutes oral scientific presentation	▪ Experience with the preparation of an outline for a 10 minutes oral scientific presentation	▪ Delivery of a satisfactory talk in less than 10 minutes
Preparing a poster	▪ Lecture(s) attended	▪ Knowledge of the rules to use to prepare a poster presentation for a scientific conference	▪ Experience with the preparation of a poster presentation	▪ Preparation of a poster presentation
Giving a presentation	▪ Lecture(s) attended	▪ Knowledge of the rules to follow to give an oral presentation at a scientific conference	▪ Experience with giving an oral presentation at a scientific conference	▪ Delivery of an oral presentation at an international level scientific conference

6. Written communication				
Write a high-level outline of manuscript	▪ Lecture(s) attended	▪ Knowledge of the elements going into a high level outline for a scientific manuscript	▪ Experience with writing a high level outline of a scientific manuscript	▪ Delivery of a satisfactory high level outline for a scientific manuscript
Produce first draft of the manuscript	▪ Lecture(s) attended	▪ Knowledge of the International Vancouver style for scientific manuscript	▪ Experience with drafting a scientific manuscript	▪ Delivery of a first draft of a scientific manuscript
Submit manuscript to peer-review journal	▪ Lecture(s) attended	▪ Knowledge of the procedures to follow to submit a manuscript to an international level scientific journal	▪ Submission of a manuscript to an international level scientific manuscript	▪ Acceptance of a manuscript for peer review in an international level scientific journal
Obtain acceptance of the manuscript	▪ Lecture(s) attended	▪ Knowledge of the procedures to follow to respond to reviewers	▪ Experience with handling reviewers comments	▪ Acceptance of a scientific manuscript in an international level peer review journal

Appendix 3: Standard Operating Procedures for Wider Distribution of Residents' Works

This SOP applies to all residents during the duration of their time in the program or after graduation if they will be presenting on work done while in the program. These procedures are designed to ensure that residents' work is of the highest possible quality which is ensured by an internal review by the EFETP prior to distribution to a wider public audience.

All oral presentations, posters, and written products including abstracts, manuscripts, field reports and other documents (from any program related activities including outbreak investigations, surveillance analysis or reports, and other epidemiological studies, including from secondary data) that will be distributed or disseminated outside of EFETP require review and approval by the EFETP Advisory Committee or its delegate. MOH/EHNRI and Regional Health Bureaus will determine nationally sensitive reports and can decide not to disseminate information. For residents placed in Regional Health Bureaus for their field assignments, approval by supervisors and Bureau health officials is also required documents be distributed outside of the programs. Failure to comply with these procedures will result in denial of travel funding and possible disciplinary action which may include dismissal from the program.

Objectives

1. To endure that resident's work is of the highest quality to improve success of acceptance by conferences and publications.
2. To match conference submissions to appropriate presentation forums
3. To ensure adequate funds are available to support resident travel.
4. To ensure all responsible authorities are aware of the submission
5. To safeguard sensitive epidemiological data.

All residents are encouraged to educate themselves about domestic and international conferences related to public health and epidemiology. Program Coordinators will also inform residents about upcoming conferences that they may consider for submission of abstracts. It is also the resident's responsibility to identify potential conferences where they would like to present. Only first authors are considered for travel support. It is the resident's responsibility to follow the steps listed below and to start the review process by submission deadline. If the call for abstracts is made public with less than 2 weeks before the submission deadline residents must begin the process within 2 days of the notice. Late submission into the EFETP review and approval process may not be considered. In the case of "late breakers" submission must start as soon as possible after conference organizers make their announcement calling for "late-breakers".

NB: If an abstract is approved for submission to one conference, approval is only for the conference specified. To submit to another or additional conference authorization must still be obtained by requesting permission from Program Coordinators a second time.

Approval for submission to one conference does not imply approval for submission to any other conference(s).

Step 1
Individual residents or groups of residents may prepare a draft abstract, manuscript or similar document based on their work. For example, outbreak investigations or surveillance analysis or evaluations are common topics. If more than one resident was involved in the activity the residents will determine first author among themselves based on recognized standards of authorship. It is the resident's responsibility to format the abstract according to the conference requirements and conform to word limits.

Step 2
The document should be submitted to the academic and Program Coordinators and the Resident Advisor(s) for initial review and comment. The document will be return to the resident to make revisions as suggested.

Step 3
After the initial review the resident will submit the revised document to EFETP advisory council members to include Academic and MOH country directors, the academic and Program Coordinators and the Resident Advisor(s) for a second round of review. E-mail approval or denial will be confirmed with the resident.

Step 4
If approval is obtained it is the resident's responsibility to submit the abstract to the conference or journal by the required mechanism (usually web-based submission) and copy other program staff to notify them of the submission. The resident will communicate to the program about acceptance as soon as they are notified of the result.

Step 5
Acceptance documents from conference organizers or journal editors are to be shared with the program staff in order to begin travel arrangements and/or document acceptance of the document for presentation or publication.

All above mentioned procedures and steps (1-5) are also implementable at regional field base level if requested by regional officials. Regional supervisors are to be consulted and informed throughout the review process and will need to grant approval for any submissions of abstracts or manuscripts or other information based on regional health related data.

Appendix 4: EFETP Course Modules

4.1. Type, Size and Number of Modules of the Training Program

	Type of module	Size	modules	ECTS	Hrs,1ECTS= 25 or 30*	Weeks
1	**Pedagogy (CTPD 601)**	**10 %**	**1.0**	**7**	**175**	**4**
2	**Research Methods (BMFC 700)**	**Nom credited**				**4**
3	**General Subject Area**	**25 %**	**2.5**	**17.5**	**437.5**	**14**
	Basic Epidemiology and Biostatistics (**PHEB 621)**	5%	0.5	3.5	87.5	2
	Field Epidemiology (**PHEB 631)**	2.5%	0.25	1.75	43.75	1
	Public Health Surveillance (**PHEB 641)**	2.5%	0.25	1.75	43.75	1
	Computer Applications in Public Health (**PHEB 651)**	2.5%	0.25	1.75	43.75	1
	Field Residency I (**PHEB 661)**	12.5%	1.25	8.75	262.5*	10
4	**Specialization Area**	**40 %**	**4.0**	**28**	**700**	**26**
	Advanced Epidemiology and Epidemiology of priority health problems (**PHEB 642)**	5%	0.5	3.5	87.5	2
	Health Services Management and Leadership (**PHHM632)**	2.5%	0.25	1.75	43.75	1
	Disaster management (**PHEB 662)**	2.5%	0.25	1.75	43.75	1
	Communication and scientific writing (**PHBH 622)**	2.5%	0.25	1.75	43.75	1
	Public Health Lab methods and bio-safety (**PHEB 682)**	2.5%	0.25	1.75	43.75	1
	Field Residency II **(PHEB 692)**	25%	2.5	17.5	525*	20
5	**Projects**	**25 %**	**2.5**	**30**	**1075**	**24**
	Project I **(PHEB 711)**	10%	1.0	7	175	4
	Project II **(PHEB 722)**	15%	1.5	30	900*	20
	Total	**100 %**	**10.0**	**89.5**	**2387.5**	**72**

NB: PHEB – Public Health Epidemiology and Biostatistics

4.2. Module Descriptions

Module Code	Module Title	Credit Value (ESTC)	Description of Module
(CTPD 601)	**Pedagogy**	**7**	To be provided by the respective school/college
(BMFC700)	**Research Methods**	**No**	To be provided by the respective school/college
(**PHEB 621)**	**Basic Epidemiology and Basic Biostatistics**	**3.5**	Unit 1: Introduction to epidemiology (definitions concepts); Measurement of disease occurrence and burden; Descriptive epidemiology-describe a health event in terms of person, place and time; Descriptive study designs (survey, cross sectional, ecological, qualitative methods); Analytical study designs (cohort, case-control, experimental); Sampling; Measurement of association and impact; Causation Unit 2: Introduction to biostatistics; Measures of frequency; Measures of central location and dispersion; Adjustment of rates; Probability; Probability distribution; Estimation and calculation of confidence interval; Statistical inference/hypothesis testing; Parametric tests; Non parametric tests; Introduction to correlation and regression analysis; Sample size determination
(**PHEB 631)**	**Field Epidemiology**	**1.75**	**I**ntroduction to Field epidemiology; Questionnaire design; Tables, graphs, charts and maps, Data entry and data management; Descriptive data analysis; Stratified analysis; Analyzing cross sectional studies; Outbreak investigation; Early warning system
(**PHEB 641)**	**Public Health Surveillance**	**1.75**	Introduction to surveillance and Existing surveillance system in Ethiopia; Surveillance system development; Surveillance data analysis and interpretation; Surveillance data collection; Public health response; Surveillance system evaluation
(**PHEB 651)**	**Computer Applications in Public Health**	**1.75**	GIS for health; Word processing; Spreadsheets; Graphics; E-mail and Internet; Online literature; Epi-info
(**PHEB 661)**	**Field-Residency I**	**8.75**	There three core activities for the residency program: Outbreak investigation; Health profile and prioritization of field residency area; Proposal development on a priority problem

Module Code	Module Title	Credit Value (ESTC)	Description of Module
(**PHEB 642)**	**Advanced Epidemiology and Epidemiology of Priority Health Problems**	**3.5**	Prioritization of diseases; Epidemiology and control of communicable diseases; Epidemiology and control of injury and non-communicable diseases; Epidemiology of public health disasters; Bioterrorism and emerging diseases
(**PHHM 632)**	**Health Service Management/ and Leadership**	**1.75**	Introduction to health service management; Project management; Monitoring and evaluation and economic analysis; financial management; Team building; Supervisory skills; Managerial skills/roles
(**PHEB 662)**	**Disaster Management**	**1.75**	Causes and consequences of natural and human-made disasters; Principles of management of natural and human-made disasters; Process of early warning disaster preparedness and response; National and international response to disasters
(**PHBH 622)**	**Communication and Scientific writing**	**1.75**	Field report: Internal written communication/ Proposal writing; External written; communication; Scientific writing (manuscripts and abstracts); Scientific presentation (oral, poster, briefing statement); Epidemiologic bulletins; Training development techniques; Training delivery techniques; Mentoring skills; Ethics
(**PHEB 682)**	**Public Health Laboratory and Bio-safety**	**1.75**	Introduction to role of laboratory in public health; the role of laboratory in the field; Reproducibility and validity; Specimen management in the field
(**PHEB 692)**	**Field-Residency II**	**17.5**	This residency program has five core activities in addition to some of the activities continuing from Field Residency I. Public health surveillance; Use of laboratory; Management of a public health project; Program evaluation; Research
(PHEB 711)	**Project I**	**7**	Formulation of research question, Organizational/administrative issues in conducting research, Ethical issues, Citation of references, Research project title selection , Proposal writing and development, Submission of research protocol
(PHEB 722)	**Project II**	**30**	Field work, development of data collection tools, data collection for research project, research activities, desk study for review research, data entry and write-up including defense. Continuation of field residency projects which were not finalized in the Residency II.

Appendix 5: Residency Outputs and Body of Work Templates

5.1. Body of Works Template

Addis Ababa University, College of Health Sciences,
School of Public Health

Ethiopia Field Epidemiology Training
Program (EFETP)

Compiled Body of Works in Field Epidemiology

By
[Name of the Student]

Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment for the degree of Master of Public Health in Field Epidemiology

Month, Year

Addis Ababa

Acknowledgements
Table of contents
List of tables
List of figures
List of Annexes
List of abbreviations
Summary Foreword

Chapter I – Outbreak/Epidemic Investigations
Chapter II – Surveillance Data Analyses Report
Chapter III – Evaluation of Surveillance System
Chapter IV – Health Profile Description Report
Chapter V – Scientific Manuscripts for Peer reviewed Journals
Chapter VI – Abstracts for Scientific Presentation
Chapter VII – Narrative Summary of Disaster Situation Visited
Chapter VIII – Protocol/Proposal for Epidemiologic Research Project
Chapter IX – Other Additional Output Reports (If any)

Annexes

5.2. Residency Output Templates

5.2.1. Health Profile Assessment Report Checklist

Definition: Presentation and discussion of health related data and important health related indicators to describe the **health** and related sociological factors in the geographic area under discussion.

Objective: To assess and describe health related issues about health status, health indicators and to identify problems for priority setting.

Methodology for obtaining data:

1. Review available data in health offices and health institutions
2. Review of publications and literature about the area
3. Interview and discussion with concerned health office heads, experts, professionals etc.
4. Personal observation (optional)

Checklist: The following are important components for any health profile (check list is exhaustive and you have to focus on parameters that are relevant for your area)

1. Historical Aspects of the area (only if relevant)
2. Geography and Climate (including map, altitudes, agro ecological zones etc…)
3. Political and Administrative Organization
4. Population and population structures (including sex ratios, urban/rural data, demographic characteristics, ethnic compositions, population pyramid etc.)
5. Economy (mainstay of the economy, average income levels etc.)
6. Education
7. Facilities (Transport, Telecommunication, Power supply, …)
8. Disaster Status in the area
9. Vital Statistics and Health Indicators (Infant Mortality Rate, Child Mortality Rate, Crude Birth Rate, Crude Death Rate, Maternal Mortality Rate, Contraceptive Prevalence rate, ANC rate, Immunization Coverage etc.)
10. Health Services (Types and numbers of health institutions, Types and numbers of health professionals, health institution to pop ratio, health professional to pop ratio, health service coverage, top and leading causes of OPD visit, admission and death, health budget allocation,)
11. Community Health Services (status of services provided by community health workers namely TBAs, CHWs and HEWs)
12. Status of Primary Health Care Components – with focus on the eight PHC elements (MCH/FP, EPI, Environmental Health, Health Education, Endemic diseases (Malaria/TB/Leprosy/etc.), Nutrition, Essential drugs etc.)
13. Discussion of the highlights and the main findings of the health profile assessment and description
14. Problem Identification and Priority Setting – set priority health problems based on the public health importance, magnitude, seriousness, community concern, feasibility etc.
15. Conclusions made about the health status of the area based on the findings
16. Action plan and recommendations – on how to address the problems identified clearly depicting responsibilities, required resources and timeline.

5.2.2. Project Proposal Submission Form

ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCES
SCHOOL OF PUBLIC HEALTH

RESEARCH PROJECT SUBMISSION FORM

Name of investigator	
Name of Advisor(s)	
Full title of the research project	
Duration of project	
Study Area	
Total Cost of the project	
Address of investigator	Tel: Mail:

INSTRUCTION

1. This form must be completed in three copies.
2. Page limits must be strictly observed.
3. Additional information can be provided in annexes as necessary.
4. Final submission must be approved by the primary advisor.
5. Use 1.5-2.0 spaced and 12 font Size;
6. Use new pages for each sub-title

SUMMARY (ONLY ONE PAGE, Do not exceed 350 words)

Background (problem statement), Objectives, Methods, Expected outcome, Work plan and budget.

BACKGROUND (introduction, problem statement, and expected outcome)

Give definitions and the scope of the problem. Provide the rationale for undertaking the research project in the Ethiopian or local context.

LITERATURE REVIEW

Discuss the theoretical and methodological concepts.

Discuss what is known and what is not known in the area of the research.

What are the methodological challenges in the area of the research?

Are there ethical or feasibility problems in conducting the research? (Discuss only when appropriate)

Discuss the focus of the study based on the above points of discussion.

Develop conceptual framework of factors

OBJECTIVES

General and Specific objectives: (maximum of three-four specific objectives)

METHODS

Study area, Study design, Study population, Sample size, Sampling procedures, Data collection procedures (Instrument, personnel, data quality control), Operational definitions (if any), Data Analysis procedures (Be specific to the study objective), Data quality management, Ethical consideration, Dissemination of results

WORK PLAN

Describe briefly the expected accomplishments of the project by phase, and the estimated time for each- use Gant chart

COST OF THE PROJECT

REFERENCE/BIBLIOGRAPHY

ASSURANCE OF PRINCIPAL INVESTIGATOR

The undersigned agrees to accept responsibility for the scientific ethical and technical

Conduct of the research project and for provision of required progress reports as Per terms and conditions of the Research Publications Office in effect at the time of Grant is forwarded as the result of this application.

Name of the student: _____

Date._____ Signature _____

Approval of the primary Advisor

Name of the primary advisor:_____

Date._____ Signature _____

ANNEXES

1. Conceptual framework (if any)
2. Dummy Tables
3. Questionnaire

(Others as necessary)

5.2.3. Surveillance System Evaluation Proposal and Report Framework

- All the following attributes have to be addressed by proposal and reports and they need to be adequately addressed by any surveillance system evaluation project. Please refer to the CDC's MMWR Updated Guidelines for Evaluating Public Health Surveillance Systems.
- Describe each of the following system attributes:
  --- Simplicity
  --- Flexibility
  --- Data quality
  --- Acceptability
  --- Sensitivity
  --- Predictive value positive
  --- Representativeness
  --- Timeliness
  --- Stability
- Indicate the level of usefulness by describing the actions taken as a result of analysis and interpretation of the data from the public health surveillance system. Characterize the entities that have used the data to make decisions and take actions.
- List other anticipated uses of the data.

Appendix 6. Resident Folder Structure and Document Labeling

Residents are required to create resident folders for their outputs which are organized in alphabetic orders: Abstract, Bulletin, Disaster, Epidemiologic Project, Health Profile, Laboratory, Manuscript, Monthly Report, Outbreak Investigation, Surveillance Data Analysis, Surveillance System Evaluation, and Teaching.

To maintain uniformity, all the output folders need to be labeled with the type of output, first name and father name initials.

E.g. Outbreak Investigations AdamuA
Surveillance Data Analysis ZegeyeHM
Health Profile AlemayehuB

All the files with in the folders should include key words of the title of the output, first name of resident and version date (Month (in letters) – date – year)

E.g. AWDZewayAdamuAFebruary-24-2012
AnthraxAdigratZegeyeHMJanuary-12-2012
MeaslesDillaAlemayehuBOctober-11-2011

Does not change file names when the versions are updated except the month-date-year. The suffix FINAL can be added to the file name on all final versions.

E.g. First version
AnthraxAdigratZegeyeHMJanuary-12-2012

Second Version
AnthraxAdigratZegeyeHMJanuary-24-2012

Third Version
AnthraxAdigratZegeyeHMMarch-20-2012

Final Version
AnthraxAdigratZegeyeHMMay-12-2012FINAL

Appendix 7: Scope of Work for Coordinators and Resident Advisors

Program Coordinator (EHNRI):

- Ensure that the public health concerns addressed by the resident's activities are consistent with the needs of the PHEM;
- Help develop the resident's project ideas, troubleshoot barriers to completion of projects, and facilitate the implementation of recommendations;
- Attend and comment on the presentations made, reports submitted, and papers written by the residents;
- Plan, implement, monitor, and evaluate the activities of the residents;
- Organize, in consultation with Program Director and Resident Advisor, field visits for the residents;
- Assist in the identification of operational research agendas;
- Report to the Program Director and to the resident advisor on the progress of activities by the residents on a regular basis;
- Complete an EFETP evaluation form at a regular interval and discuss with the residents before submitting to the resident advoisor and / or program director;
- Provide technical assistance and support through the development of grant proposals to mobilize resources for PHEM;
- Provide technical input in the effort to strengthen the capacity of the health sector in terms of early warning, preparedness, prevention, detection, response, and rehabilitation of major health and nutrition emergencies through trainings and seminars;
- Assist in preparation of public health emergency guidelines manuals, standard operating procedures and formats;
- Provide technical input for the vulnerability and risk mapping and identification of reliable early warning indicators of major public health emergencies;
- Assist in developing early warning systems, perparedness, and response plans to major public health emergencies and threats;
- Perform additional activities given by the Deputy Director General.

Project Coordinator (EPHA):

- Collect, compile, analyze and disseminate information and data to support project planning, implementation, appraisal, monitoring and evaluation, and decision-making;
- Analyze approved plans, adjust activity plans and provide adaptive management for full implementation;
- Participate in negotiations regarding all grant agreements and budgets from new grant proposals;

- Produce quarterly, bi-annual and annual performance reports to the MOH and counterparts;
- Identify research agendas, and plan and undertake research works in collaboration with the research coordinator of EPHA;
- Work with all EPHA staff to assess and identify technical assistance needs with regard to technical skills, partnership and networking;
- Ensure that project activities are implemented in collaboration with Woreda, Zonal and Regional health offices and other stakeholders;
- Establish and maintain formal and informal communication mechanisms with governmental and health institutions, donors and other stakeholders;
- Participate in the documentation and dissemination of lessons learned
- Mobilize resources for the Field Epidemiology Training Program and other programs at EPHA;
- Prepare annual plans for the EFETP and other programs and produce Quarterly; Semi-annual and annual reports on EFETP and other projects.
- Participate in trainings, mentorship and quarterly supervision of EFETP residents;
- Support the field bases both technically and administratively.

Academic Coordinator (AAU):

- Develop with counterparts guidelines for and implementation of resident selection including recruitment of candidates
- Registration of the students in the university
- Provide academic advise and counseling to residents
- Plan the academic calendar and follow its implementation
- Develop curriculum for program including MPH degree
- Organize all courses – contact course instructors, follow the course implantation and feedback
- Serve as a teacher /instructor for relevant courses and lectures
- Provide supervision, mentoring, and support to residents as they complete field investigations and other FETP related projects and coursework
- Recruit, orient and monitor mentors
- Facilitate interactions between residents and mentors
- Assist in development of supervisory skills of the on-site field supervisors
- Communicate with EPHA and MOH
- Collect all grades from instructors and mentors and compile grades and get them approved by the university to be submitted to the registrar
- Recruit external examiners
- Organize external examination

Resident Advisors (CDC):

- Develop and implement, along with Ethiopia MOH and other partners, an integrated and sustainable training plan to build evidence-based public health capacity
- Develop curriculum and facilitate courses in epidemiology along with AAU faculty, MOH staff, and other guest lecturers
- Work with MOH and counterparts to develop field site guidelines and guidelines for and implementation of resident selection
- Participate in the development of supervisory skills of the on-site field supervisors and facilitate interactions between residents and field supervisors
- Participate in the monitoring of mentorship and facilitate interactions between residents and mentors
- Provide supervision, mentoring, and support to residents as they complete field investigations and other FETP related projects and coursework
- Work with residents, field supervisors, MOH and local health staff to strengthen disease surveillance, response and control programs at all levels
- Establish/ develop networks at the national (e.g., alumni, academic) and international (e.g., WHO, donors, partners) levels
- Establish information outlet for public health actions (e.g., bulletin, annual conference, Internet).
- Develop/ maintain collaboration plans (e.g., polio eradication, HIV, malaria)
- Prepare proposal for resource mobilization (technical components)
- Manage funds allocated to facilitate technical assistance, including transfer of funds to adequate cooperative agreements
- Review finances, including budget, income and expenditure reporting
- Facilitate oversight and guidance for the program (e.g., monitoring and evaluation, feedback to partners, steering committee, national partners)
- Act as a liaison to CDC Atlanta, CDC Ethiopia support staff, and other FETPs
- Introduce, develop and maintain a strategic plan with milestones and indicators
- Work with MOH and other partners to ensure sustainability of the program

Appendix 8: Reference Guidelines for FETP Resident Outputs

Includes: Outbreak Investigation Report, Evaluation of a Surveillance System, Surveillance Analysis Report, Protocol Study, Scientific Abstract, Oral Presentation, Manuscript, Bulletin

Instructions and Guidelines for an Outbreak Investigation Report

Description

FETP students should participate in outbreak investigations or other health emergencies during the two years of their training, giving them the opportunity to apply knowledge gained during the first module in Epidemiologic Methods and the second module in Public Health Surveillance. These investigations should be monitored by the officer's mentor either in person or from a distance during all stages of the investigation.

The outbreak should be a problem requiring an immediate response as a local or national threat. The outbreak investigation should focus on identifying the etiologic agent, the source of the outbreak, the mode of transmission, and the risk factors for disease. The report should provide specific recommendations, based on the analysis of data from the investigation, which have an impact on the public health of the community.

Whenever possible, the supervisor should accompany the student on at least one outbreak investigation until the descriptive and analytic phases of the investigation are complete. Throughout FETP, the officer should participate in as many outbreak investigations as possible, whether as principal investigator or part of the investigation team. The officers should consult with supervisors regularly during the program to select outbreak investigations that could have a major impact on public health and where all phases of the investigation have been completed. These should then be the investigations that are written up as a report and submitted to program staff for a final grade.

To conduct the outbreak investigation well, the officer should:

- Know how to organize and lead a multidisciplinary investigation team
- Know all the steps of an outbreak investigation
- Master descriptive statistical methods
- Develop a good case definition
- Be familiar with the epidemiologic triangle
- Know how to generate a hypothesis
- Know how to use analytic statistical methods appropriately
- Be familiar with the design of analytic studies: retrospective cohort, case-control
- Know how to appropriately organize data in tables and graphs
- Know how to use laboratory support
- Know how to give recommendations based on the findings of the investigation

Structure and Content
The officer should conduct the outbreak investigation and provide a technical report, an abstract, and an oral presentation consistent with the following features when submitting to a scientific conference:

1. **Outbreak Report**
   - **Introduction**
     - Clearly explain when the outbreak notification was sent, and from where and whom; explain who received it and what actions were taken to prepare for the investigation
     - Describe the background of the outbreak
   - **Objectives**
     - Describe the investigation objectives concerning the agent, source of infection, mode of transmission, and risk factors
   - **Material and Methods**
     - Describe where the event occurred, the population, and the process for data collection
     - Clearly describe the case definition
     - Describe the questionnaire, variables used, and laboratory methods (sample type and test type)
     - Explain the study design and statistical analysis performed
   - **Results**
     - Describe person, place and time clearly and completely
     - Include maps and graphs where necessary
     - Include number of cases and attack rates
     - In the analytic phase, describe 2 x2 tables and their results with confidence intervals, Chi-square and the *p*-value
     - Present laboratory results
   - **Discussion**
     - In the order given in the results section, discuss the reason for the results and the similarities and differences to similar outbreak research
     - Support the discussion with references
     - Do not include results
   - **Study Limitations**
     - Indicate problems encountered during the outbreak investigation
   - **Conclusions**
     - Base on the findings
     - Do not repeat the results
   - **Recommendations**
     - Base on the findings and conclusions

2. **Slide Presentation**
   See “Instructions and Guidelines for Oral Presentations”

3. **Abstract**

   See “Instructions and Guidelines for Abstracts”

12 Common Errors Found in an FETP Outbreak Investigation Report

1. It lacks order or structure of IMRD.
2. The title does not reflect the investigation; it does not describe the what, when and where; it is not engaging.
3. The introduction is disorganized, without a chronology of events; and lacks background of the outbreak, where it occurred or who received notification.
4. There are no objectives of the outbreak investigation or hypotheses.
5. The methods are incomplete or poorly described. There is no case definition or it is poorly written.
6. The controls were not described.
7. The results do not reflect the methods. Methods or discussion are included in the results section.
8. The discussion includes new results. There are no references. It does not cover the main results.
9. There are no study limitations.
10. Conclusions are very general. They have nothing to do with the investigation. The results are repeated.
11. Recommendations do not reflect the study findings, are very general, and include conclusions and results.
12. There is no bibliography.

Evaluation of an Outbreak Investigation Report: Checklist

Score	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.
N/A = Not Applicable	The element is not relevant to this study.

Category	Criteria	1	2	3	4	5	N/A
Introduction	Describes the events that led to the outbreak/how was the outbreak initially reported/how the team was put together /when the investigation began						
	Describes the situation (person, place, time)						
	Describes the organism or illness (agent, clinical characteristics, endemicity or seasonality)						
	Explains the reasons for investigating the outbreak or specifies the investigation hypothesis						
	Clearly describes the objectives of the outbreak investigation						
Methods	States study design and temporality (retrospective, prospective, bidirectional)						
	Includes a case definition and eligibility criteria						
	Describes the methods of case finding /subject recruitment						
	Describes the method of collecting data from participants						
	Methods avoid biases						
	Explains the type of sampling and calculates the simple size						
	Explains data analysis procedure, including statistical methods and software used						

Category	Criteria	1	2	3	4	5	N/A
	Describes the clinical and environmental sampling and laboratory test methods						
	Includes the process used to protect human subjects (confidentiality, risks, informed consent)						
Results	Provides the number of participants with the response rate, if appropriate						
	The information is descriptive and clinical, including place/geographic distribution						
	Provides the epidemiologic curve or a description by time						
	Provides the attack rates by age, sex and other relevant variables						
	Demonstrates the effect size with measures of precision (confidence intervals) and adjusted for confounding (where appropriate)						
Discussion	Key findings are based on results						
	Conclusion is supported by the literature: explains data that do not support the conclusion						
	Describes the limitations of the data, the study design, the location of the investigation, noting possible biases						
	Reports immediate control measures used to prevent additional cases						
	Discusses the external validity of intervention study findings (Ex. To what degree can the results be generalized to other populations or places)						
	Discusses the feasibility and sustainability of a long term intervention						
	Makes suggestions on how to prevent similar outbreaks in the future, or on additional studies to needed to resolve the current outbreak						
Structure	Title (Brief and accurately reflects the outbreak)						
	Authors and contributors (including institutions)						
	Uses IMRD format						
	Results are reflected in the methods						
	Methods are not included in the results						

Category	Criteria	1	2	3	4	5	N/A
	The results are not repeated in the discussion or conclusion						
	Recommendations are based in the findings						
References	References are numbered and in the order they appear in the text						
	The number of references is appropriate for the content of the report						
	The references are up-to-date and related to the content						
	The references are formatted using Vancouver Style						
General form and clarity	Uses adequate punctuation and grammar						
	Uses proper spelling						
	Work is original and there's no evidence for plagiarism						
	The writing is in paragraph form and does not use bullets as in a presentation						
	Provides a description of acronyms before they are used						

Instructions and Guidelines for the Evaluation of a Surveillance System

Description

The evaluation of a surveillance system promotes the best use of health resources and assures that systems operate effectively. Surveillance system evaluation allows us to define whether a specific system is useful for public health and is achieving that system's objectives. Any evaluation should include recommendations for improving the quality and efficiency of the system.

The FETP officer should conduct a **surveillance system evaluation** that can evaluate one or several attributes of a surveillance system. The format for this evaluation should be similar to that of the surveillance analysis. Alternatively, he/she can **design and implement a new surveillance system.**

The officer should be supported by his/her mentor and the FETP coordinator in selecting the surveillance system to be evaluated. It can be prepared for submission for **publication** in an epidemiologic bulletin or a peer-reviewed journal. After completing the surveillance system evaluation report, he or she must prepare an **abstract** to submit to a national and international conference, as well as a **presentation** that emphasizes the most important aspects of the selected surveillance system.

Structure and Content

1. **Introduction**
    - Should give a brief description of the health problem to be evaluated (illness or event). Indicate why it is a health problem and the surveillance objectives of the selected system. Record the most salient results or the limitations found in previous evaluations of the system. Indicate the area of study (country, district, health area, municipality, etc.) and the justification for the evaluation (i.e. It has never been evaluated, specific attributes were not evaluated, or the system was not evaluated after the introduction of important changes, etc.). Conclude with the objectives of the evaluation (aspects of the surveillance system that will be evaluated—i.e. timeliness). Describe the overall approach.

2. **Methods**
    - Use the U.S. Centers for Disease Control and Prevention (CDC) Guidelines for Evaluating Public Health Surveillance. Keep in mind the suggested methods for the attribute(s) to be evaluated. The officer may choose to conduct a more in depth evaluation of a smaller number of attributes. Subtitles can be used to refer to each attribute. Indicate the design used, the population studied; the particular definitions used; the sources used or consulted, if required, to evaluate some attribute; the population or the sample (what parameters were used for its calculation); if it was a sample, the type of sampling;

the type of methodology used in the evaluation of different attributes. For interviews with health workers, creating surveys may be appropriate.

- For the evaluation of usefulness indicate hot he data or information was acquired to measure this.
- Explain the indicators used to evaluate each one of the qualitative and/or quantitative attributes considered: simplicity, flexibility, acceptability, sensitivity, predictive value positive, representativeness, timeliness, and cost.
- The methods should be appropriate and realistic in order to meet the goals outlined in the introduction.
- If the objective was to describe or quantify the system's operating cost, describe the cost of different areas of the system's operation.

3. Results

- Describe in detail the system's principal components, the population under surveillance, the case definition, the type of system, the structure of the data, the indicators used, the feedback provided and the actions taken.
- Show the results of the analysis in a logical manner.
- For each of the evaluated components or attributes, support the results obtained from the evaluation with evidence; the results should address the objectives outlined in the introduction.
- The data must be presented in simple tables, summary tables or appropriate figures; they must be numbered and placed in the text after its reference or at the end of the document.

4. Discussion

Summarize the main findings based on the objectives outlined in the study and the answers given to the research questions. If the evaluation is unable to meet the evaluation objectives, the reason they were not met must be explained. Indicate whether the objectives of the surveillance system are being met and if it is necessary to modify or continue with the system in place. Describe the most important limitations of the surveillance system evaluation (not the surveillance system itself). For each limitation, indicate the reason, the consequence of the limitation, how the limitation was addressed and how the evaluation was performed in light of the limitation. End with recommendations based on evidence, these recommendations should be realistic, specific and have a logical flow.

5. References

- The evaluation should have an appropriate amount of bibliographic references that are relevant and related to the evaluation.

6. Tables and Figures

- Include a maximum of 5 tables/figures, which should have a specific title that includes time, place and person. Each table or figure should be numbered in the order it appears and should be referred to in the text previous to the figure.

8 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

Evaluation of a Surveillance System Evaluation: Checklist

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 study.

Category	Criteria	1	2	3	4	5	NA
Summary	Provides a brief description of the surveillance system						
	States the objectives of the evaluation						
	Summarizes the methods used in a few sentences						
	Presents the evaluation results						
	Provides conclusions, including recommendations for improving the surveillance system						
Introduction	Describes the surveillance system, including illness/condition under surveillance and the reason for carrying out surveillance						
	Provides sources of the surveillance data and describes how the data is used						
	Presents the results from previous evaluations of this surveillance system or the potential limitations of the surveillance system						
	Indicates the intended objectives (2-5 objectives suggested) of the current evaluation (aspects of the surveillance system to be evaluated, i.e. timeliness)						

Category	Criteria	1	2	3	4	5	NA
Methods	Describes methods for the system evaluation by addressing several of the following attributes: data quality, stability, simplicity, acceptability, flexibility, sensitivity, predictive value positive, representativeness, timeliness						
	Was there a systematic way of acquiring information (i.e. using a survey instrument)?						
	Presents the measures used to answer the evaluation questions						
	Clearly specifies the sources that supplied data used to respond to the evaluation questions						
	Clearly defines the methods used to analyze the evaluation data						
	Are appropriate and realistic for completing stated objectives of the evaluation						
Results	Describes the system's principle components, population under surveillance, the case definition, the system type, the data structure, the indicators used, the feedback given and the actions taken						
	Presents analytic results in a logical manner						
	Calculations are free of errors						
	All of the stated findings are supported by the evidence for the attributes evaluated: simplicity, acceptability, flexibility, sensitivity, predictive value positive, representativeness, timeliness, cost, usefulness						
	The data are presented appropriately and are summarized in tables or figures						
Discussion	Provides conclusions that focus on the evaluation questions and are supported by the findings						
	Formulates recommendations that flow logically from the evaluation findings						
	The recommendations are realistic and achievable						

Category	Criteria	1	2	3	4	5	NA
	The recommendations are specific, including the time period proposed and other points of reference						
	Addresses the limitations in the evaluation design and implementation						
Bibliographic References	The references are numbered and in the order of how they appear in the text and in the bibliography						
	The number of references is adequate for the content of the report						
	The references are relevant to the topic						
	The references conform to Vancouver Style						
General Form and Clarity	Uses adequate punctuation and grammar						
	Uses proper spelling						
	Work is original and there is no evidence for plagiarism						
	The writing is in paragraph form and does not use bullets as in a presentation						
	Provides a description of acronyms before they are used						

Instructions and Guidelines for a Surveillance System Analysis Report

Description

Early in the FETP, officers should practice skills learned by carrying out at least one **surveillance system data analysis** on an illness or event under either individual or consolidated disease surveillance in the country. The selected illness/event should be a priority for the Ministry of Health or other health institution for which the officer works, and there should be an expectation for the Ministry of Health to take action based on the results of the project. Depending on the sponsoring program or project (for example, influenza, tuberculosis, foodborne disease, injury, chronic disease, etc.), the officer should carry out the surveillance analysis focusing on the relevant health problem. If the sponsoring program conducts surveillance for all diseases in the municipality, district, or health region, the event used for the analysis should be prioritized with the officer's mentor and/or the FETP country coordinator.

Structure and content

The officer should design, conduct, and interpret an epidemiologic analysis based on existing surveillance data, using descriptive epidemiology (time, place, and person). The structure of the surveillance analysis for the selected disease or condition is the following:

1. **Executive summary**
   - Use between 400 and 500 words and write after completing the report**.**
   - The structure of the summary for the report is different the structure of the abstract that is submitted to a scientific conference (which has IMRD format). The summary of a surveillance analysis report should have the following structure: Problem or condition; time period the report covers; description of the system; results; interpretation; and public health actions.

2. **Introduction**
   - Give rationale for surveillance of the disease or condition.
   - Describe the area or district/department where the surveillance analysis was carried out: the population under surveillance and the key data about the area / region and the environment (depending on the disease under surveillance).
   - Give a brief description of the surveillance system analyzed (including a flow chart and relevant aspects of the system) and of the chosen disease or condition.
   - Explain the background surveillance data over the previous years, in the context of the objectives of the surveillance analysis.

3. **Methods**
   - Identify the sources of data: include the distribution of the population by age, sex, and department, for subsequent calculation of rates.
   - State the definition of health events.
   - Describe database cleaning and the process to confirm that the variables are appropriately coded and categorized.
   - Describe the statistical methods used (descriptive and analytic).

- Describe the surveillance data collection instruments as well as the variables used.

4. **Results**
   - Identify the patterns in time, place, and person of the available data.
   - Indicate changes observed over the time period (rates in affected age groups, increase or decrease in the magnitude of the event, including changes in rates by department, behavior of the annual rates).
   - Indicate if there is seasonality or cyclical quality in the occurrence of the disease or event.
   - Record the number of outbreaks that were identified, and how many of those were investigated.
   - Create an epidemic curve and/or a map of the geographic area with rates by region, department, or municipality.
   - Create a summary table of the most salient results that were not presented in other tables or graphs.

5. **Discussion**
   - Interpret the observed patterns with respect to short and long term trends, including by place and person characteristics, to identify problems or areas that require epidemiologic investigation or public health action.
   - Identify or calculate the expected or projected level of reported disease.
   - Compare the current report with the expected or projected levels of disease.
   - State hypotheses and possible analytic studies to address them.
   - Based on the analysis, consider important public health actions.
   - Suggest specific recommendations, based on the results.
   - Include the limitations of the surveillance analysis, highlight key conclusions, and state the most important recommendations based on the data.

6. **References**
   - The references should be relevant to the surveillance analysis. The references should be referred to in the text of the report. Typically, references are cited in the introduction and discussion sections.

7. **Appendices**
   - **Glossary**. Include all definitions used.
   - **Summary of each of the outbreaks reported.** Indicate the date of the outbreak, department where it occurred, the number of cases, the number of deaths, and a brief description of the event.

12 Common Errors found in Surveillance Analysis Reports

1. Failed to state the objectives of the surveillance analysis.
2. Insufficient description of the methods used.
3. Did not describe the system.
4. Failed to identify patterns by time, place, and person, or didn't use rates.
5. Did not carry out statistical calculations (measures of central tendency and dispersion), and comparison of proportions and rates.
6. Did not indicate if there were changes in the distribution (increase or decrease) of the event by age groups, sex, department, or municipality, over the course of time.
7. There is no epidemic curve (histogram) or graph(s) are not created appropriately (such as making them three-dimensional or having errors in the titles).
8. Did not use summary tables (which, as well as showing frequencies, show rates by age group and sex).
9. Insufficient documentation or review of the literature in the discussion (did not compare the findings with those of other publications).
10. Confusion between analysis and evaluation of a surveillance system.
11. Confusion between limitations of the surveillance system and limitations of the analysis; or the failure to identify the limitations of the analysis.
12. Poor recommendations (too general, or not related to the findings)

Evaluation for a Surveillance Analysis Report: Checklist

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 study.

Category	Criterion	1	2	3	4	5	NA
Executive summary	Gives a brief summary of the problem / conditions under surveillance						
	Includes the time period covered by the report						
	Gives a brief description of the surveillance system and the objectives of surveillance						
	Mentions the principal findings						
	Interprets and discusses the results obtained in the evaluation based on the data from the surveillance system						
	Recommends actions based on the results obtained in the analysis						
Introduction	Gives the clinical and biological background of the condition / organism						
	State the public health importance of the disease or condition (burden of disease, mortality, morbidity, outbreak/epidemic potential, burden to the medical system, whether the problem is increasing or decreasing)						
	Describes the system analyzed (flow chart and relevant aspects of the surveillance system) and the objectives of the system						

Category	Criterion	1	2	3	4	5	NA
	States the importance of the disease or condition (cost, social burden, political importance, international importance, actual expenditures for prevention)						
	Gives the objectives of the current analysis						
Methods	Gives procedures for reporting the disease, population under surveillance, databases used, clinical and laboratory sources of information						
	Gives the case definition, defines important terminology about the disease/condition with the purpose of informing the reader about the situation						
	Gives a brief description of any laboratory procedures used for the disease or condition (if appropriate)						
Results	Statistical calculations are adequate and important calculations are not missing						
	Are given in terms of person, place, and time						
	The main results are clearly and succinctly presented						
	Are provided in the relevant categories and subcategories (demographics, level of illness, species of agent, etc)						
	Addresses the objectives described in the introduction						
	The graphs and tables summarize and illustrate the results						
Discussion	Summarizes the key results						
	Gives the public health implications of the results						
	Compares the results with previous years and/or with the literature						
	Discusses the limitations of the analysis and the data						
	Gives recommendations about the						

Category	Criterion	1	2	3	4	5	NA
	disease/condition and its control						
	Gives recommendations about surveillance for the disease/condition						
References	The references are numbered and in the order of how they appear in the text and in the bibliography						
	The number of references is adequate for the content of the report						
	The references are current and relevant to the topic						
	The references conform to Vancouver Style						
General form and clarity	Uses adequate punctuation and grammar						
	Uses proper spelling						
	Work is original and there's no evidence for plagiarism						
	The writing is in paragraph form and does not use bullets as in a presentation						
	Ideas are presented with a logical flow						
	Provides a description of acronyms before they are used						

Instructions and Guidelines for a Protocol

Description

During the first year of enrollment in the FETP, officers should create a written protocol designed to carry out a planned study. The protocol is a tool for investigators that develop and carry out research. Even among different scientific disciplines, a written protocol uses the same scientific method to carry out studies. No matter what the exact area of research, the general elements of a scientific protocol are the same. The Excellence in Science Committee (EISC) has developed a checklist to be used as a guide to help scientists in the development of protocols. The list was designed to be useful for a variety of studies, whether laboratory, epidemiologic, or behavioral studies of the social sciences that use a number of study designs. In using the checklist, investigators should choose the elements that apply to the appropriate type of study. It is unlikely that one study would include all of the elements from the checklist.

Keep in mind the following steps in writing a protocol:

1. Identify the topic, research question, and objectives of the study
    - Identify the research question in the context of the public health need
2. Write a one-page outline (concept paper)
    - Denote the basic elements of the study using a predefined template and seek out comments and suggestions from colleagues as well as subject-matter experts
3. Create tables for results
    - Create empty tables before developing the data collection instrument to help anticipate the data that will be collected and how it will be used
4. Write a draft of the protocol
    - Write a complete draft of the protocol incorporating suggestions and revisions received on the concept paper (Appendix 1)
5. Prepare the data collection instruments and appendices
    - Create data collection instruments based on data needs identified in the results tables
6. Prepare informed consent forms to present to the relevant ethics committee using predefined templates (if necessary)
7. Send the protocol to partners for their review
    - Solicit comments and suggestions from colleagues, mentors/professors, as well as subject-matter experts
8. Present the protocol to the ethics committee
    - Incorporate suggestions from partners to create the final version of the protocol

Keep the protocol as a guide that can be used in the field and as a basis to write the final report (the manuscript).

Structure and Content

The recommended written **style** is the following:

- Serif font: Times New Roman
- Font size: 12 point
- Spacing: 1.5 lines
- Justification: left

The following **structure** is recommended:

1. **Overview of the study**
    - ***Title*:** Summarize the main idea of the research. Should be able to "stand alone" in explaining the study. Should be brief, specific, and consistent with the topic of the research, and should contain the least number of words possible (preferably no more than 15 words).
    - ***Protocol abstract:*** Give a summary description of the study. Describe the study objectives, including the research question or hypothesis to be tested, the population, and the methods that will be used. Avoid the use of abbreviations. Include the expected benefit of the study. Should permit members of the committee to quickly and accurately identify the content of the project, as well as to select appropriate reviewers within the Committee.
    - ***Investigators/collaborators/sources of funding:*** Include the names and degrees of all investigators and their roles in the project, and the participating institution(s). Keep in mind any possible conflict of interest for each investigator, and acknowledge the sources of funding.

2. **Introduction**
    - ***Literature review/ current state of the knowledge of the research topic:*** The background of the health problem should synthesize the current research or studies on the subject, with the goal of giving the reader a sense of what has been done previously. Clearly state the problem, and clarify, judge, and interpret the health problem presented. In the reference section, include the bibliography of the sources of information used.
    - ***Justification for the study:*** Explain the scientific and public health importance of the study and the problem being addressed (magnitude, over-arching importance, feasibility, and amenability to intervention). In the context of previous research, describe the contribution of the present study.
    - ***Anticipated use of the results of the study:*** Define the principal audience(s) for the information coming from the study, and discuss the expected uses of the study results.

- ***Study design and location(s):*** Describe the study design and give the location where the study will be carried out.
- ***Objectives***: List clear and concise objectives that the project will undertake.
- ***Hypothesis or research questions:*** List clear, focused questions that the study will address. Present any hypotheses that will be tested.
- ***General focus***: Describe the focus of the study, whether it will be a descriptive / exploratory study (hypothesis-generating), analytic (hypothesis-testing), or whether it will focus on testing the implementation of interventions.
- ***Practicality y feasibility of the research:*** Before beginning the investigation, consider the availability of financial resources, materials, human resources (and time available), which may ultimately determine the reach that research may have.

3. **Procedures and methods**

- **Study design**
    - ***How does the study address the research questions and objectives previously indicated?*** Justify using the proposed study design for addressing the research questions and objectives indicated previously. Distinguish between procedures that are experimental and those that have been done previously. Identify the specific elements that characterize the study design (for example, a cross-sectional survey, case-control, cohort, focus groups, clinical record review, etc).
    - ***The public and stakeholders:*** Define the audience for the research. Assess who the stakeholders are and describe the ways in which they can (or cannot) participate in the study. Explain the process by which they can express their opinions, state their needs, and contribute to the project.
    - ***Timeline of the study:*** if possible, provide a calendar with the estimated dates for beginning and completing the major activities of the study.
    - ***Expedited review protocol:*** If appropriate, describe the need for a rapid review of the protocol (for example, if there is an outbreak in progress or there is a disaster or other emergency).

- **Population studied**
    - ***Description and source of the study population and the target study area:*** Define the population from which the participants, the sample, or the subjects under surveillance were drawn and to which inferences will be made. Include demographics and details relevant to the public health condition / disease of interest.
    - ***Case definition:*** Provide criteria for the disease, condition, or health event that define whether a participant will be judged to have the condition of interest.

- ***Inclusion criteria:*** Describe the characteristics or conditions used to identify and select participants for the study, and the necessary conditions for potential subjects to be eligible for inclusion in the study.
- ***Exclusion criteria:*** Describe the characteristics that disqualify potential study subjects from participating, or other ways that they could be ineligible for inclusion in the study.
- ***Justification for excluding a population group:*** Give the reasons that any subgroup of the population (for example, defined by race/ethnicity, gender, or age) is excluded from the study. Comply with CDC policy on the inclusion of women and minorities in research, and if necessary state why these populations are excluded from the research in this study.
- ***Estimated number of participants:*** Estimate the number of participants in the study. If the study is establishing or using data from a surveillance system, this section can include the anticipated number of reported cases for epidemic and non-epidemic periods.
- ***Sampling, including sample size and statistical power:*** Describe the sampling method (e.g. convenience, population based, or other specified method). Specify the sampling units (individuals, cluster, neighborhood, etc.) and the units of analysis. Estimate the size necessary to answer the research questions and to test the hypothesis based on available information from pilot studies or previous reports. Estimate the statistical power. Explain conditions in which the sampling estimates would have to be revised. If group or aggregated data will be collected (for example, from focus groups), explain how the groups will be assembled, or the procedures that will be followed to form appropriate groups.
- ***Enrollment:*** Describe how potential participants will be contacted, checked for compliance with inclusion criteria, and enrolled in the study. Describe the procedures for tracking the number of people who drop out of the study. Explain the procedures for assigning participants to different groups. Include a discussion of how any deviation from enrollment procedures will be handled and documented.
- ***Consent Process:*** Describe the procedures used to inform the participants about the study and to obtain consent.

- **Variables/interventions**
  - ***Variables:*** Briefly list and describe the categories, topics, or fields of information to be explored and the variables that should be collected. Clarify the consistency of the defined variables among data obtained from multiple sources. Traditionally, during an outbreak investigation, information on time, place and person is collected in order to develop

an epidemic curve. Explain how the variables will be used and the process in which will be used to define the variables.

- ***Study instruments, including questionnaires, laboratory instruments and analytic tests:*** Describe the strategies that will be used to obtain information, including laboratory techniques and instruments, and an explanation of how this information will be used. Describe the attributes of these strategies/instruments as demonstrated in other studies; including the suitability, validity and reliability among the study population and sensitivity and specificity of the instruments among studies that have obtained results that can be replicated; and whether there is any controversy about the methods being used. Include a description of how changes in study instruments will be handled and documented.
- ***FDA Investigational new drug/device (IND) or investigational device exemption (IDE):*** If the study involved the use of a new investigational treatment or a new investigational device, an IND or IDE, provide the number and relevant information.
- ***Intervention or treatment:*** Describe in detail the types of intervention or treatment to be tested, including dose, administration schedule, etc.
- ***Results and minimum significant differences:*** List the anticipated results from the exposure or intervention of interest to the study (i.e. results) and the clinical or epidemiologic differences in the result measurements that are important to detect.
- ***Training of all study personnel:*** Describe the type of training that will be provided to study personnel such as: interviewing techniques, data collection and processing methods, or informed consent.

- **Analysis and data management**
  - ***Data analysis plan, including statistical methodology:*** Describe sampling methods; procedures for the collection of information, methods used to maximize response rate, test procedures and relevant statistics (i.e. variance, confidence intervals, and power based in the study data); the methods should include sufficient detail in order to be reproducible. This includes the calculation of relevant quantitative measures of tests and instruments, such as sensitivity and specificity. In outbreak investigations, it is common to use an iterative process in the analysis (which consists of hypothesis development and testing and the planning and evaluation of the intervention) to identify the source of the outbreak and its control. For projects that establish or use data from a surveillance system, this can include how and how often the surveillance system will be evaluated.

- ***Data collection:*** Describe the data collection procedures, process and documentation. For data coming from a surveillance system, this can include the frequency in which reports are done.
- ***Information management and analysis software:*** Provide the names of the software packages and programming languages for the input, management, and analysis of the data used for the Project.
- ***Data entry, editing and management, including the handling of data collection forms, different versions of data, and the storage and disposal of data:*** Describe the general procedures for handling collected data. In the description, include the process for entry and editing of the data. Describe how the study materials, including the questionnaires, statistical analysis, notebook entries, computer programs and other electronic information systems, whether used to publish or not, will be kept available to allow future access for analysis and revision. Document the operating procedures for management and access of different versions of the data sets. Specify to whom the data belongs and the access rights and restrictions of all primary and secondary data analysis and publications. Document the related procedures regarding confidentiality of the data, including how confidentiality will be maintained during transfer, use and storage of data and the names or positions of those responsible for the technical and administrative management. Document the final disposal of the records, data, computer archives and samples, including the location of any relevant information to be stored. Records should be stored in compliance with agency directives.
- ***Quality assurance and control:*** Describe the steps taken to ensure there are no unforeseen consequences that can affect the quality of the data. Such measures may include methods for entering all data exactly as it is received; ensuring logical consistency among all parts of a record, as well as ensuring that the handling or transformation of the data (i.e. an audio tape transcribed into text) does not produce undesired changes; and the statistical verification of calculations are performed as proposed in the analysis plan. During an outbreak investigation, include verification of the diagnosis and confirmation of the outbreak. Describe the current quality control procedures for the data to ensure that the information is appropriate; is collected with the same depth, breadth and specificity; continues to be consistent within and among personnel over time; and achieves acceptable attribute levels such as validity, reliability, repeatability, sensitivity and specificity.
- ***Bias in the collection, measurement and analysis of data:*** Describe the types of bias that may occur during the collection, measurement, or

analysis phases of the data; and the steps, which should be taken to avoid, minimize or account for the presence of these biases. Include factors in the study population or study personnel that could bias the results, as well as the steps taken to ensure that self-reported or observed data are valid. Include any randomization or blinding procedures used to eliminate or minimize bias by the investigator, other study personnel or study participants (e.g. participant selection, treatment group assignment, treatment provided or received).

- ***Review and analysis during the process:*** Describe the ways in which the process will be monitored and how the study will be evaluated prior to the final evaluation of the results.
- ***Study limitations:*** Explain the factors, which may reduce the applicability of the study results. Discuss possible weaknesses or criticisms of the study, including alternative methods that could have been used.

- **Management of adverse or unexpected events**
  - ***Responding to new or unexpected findings and changes in the study environment:*** Describe the procedures for identifying and managing new or unexpected findings, and responding to changes in the study environment.
  - ***Identification, management, and reporting of adverse events:*** Describe the types of adverse events that may arise and how study personnel will be trained to react. Describe the methods used to track adverse reactions and their possible implications on the study.
  - ***Emergency care:*** Explain the steps to be taken in case an emergency develops during the study in any of the participants taking part in the investigation.

- **Dissemination, notification, and report of results**
  - ***Participant notification regarding individual results:*** Explain the process used to notify participants about their results. Include the circumstances that would drive the dissemination of urgent results and whether or not counselors will be used.
  - ***Participant notification regarding study conclusions:*** Explain if participants will be offered the option to receive general study findings and how this will be done.
  - ***Expected products or inventions resulting from the study and their use:*** List the products, including inventions, derived from the study and how they will be used.

- ***Dissemination of the results to the public:*** Define the channels of effective communication and the best ways to disseminate the project information and results to specific audiences.

4. **References**

- List the bibliographic references used to create and define all aspects of the study.

5. **Appendices**

- ***Data collection forms:*** Include all forms and documents used to collect data or extract the data. Examples of these are questionnaires, medical records and other collection forms.
- ***Suggested tables and figures:*** Provide health tables and examples of data presentation and study results.
- ***Other relevant documents:*** Include any other complementary documentation.

10 Common Errors Found in Protocols

1. Long and ineffective introduction
2. Poor study objectives
3. Poorly defined study population
4. Inappropriate study design
5. Operational definitions are unclear
6. Inadequate sampling strategy and/or poor calculation of the sample size
7. Insufficient documentation of data collection (i.e., what data should be collected and what methods should be used to collect the data)
8. The lack of a solid and previously defined analysis plan
9. The lack of quality assurance measures
10. Insufficient documentation of measures taken for the protection of human subjects

Evaluation of a Protocol: Checklist

Score	Description
5 = Excellent	The element is present and consistent with the standards described in the instructions and provided in the classroom, and is of outstanding quality.
4 = Good	The element is present and consistent with the standards 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 standards described in the instructions and provided in the classroom.
2 = Poor	The element is present but it has errors or is of poor quality.
1 = Absent	The element is absent.
N/A = Not Applicable	The element is not relevant.

Category	Criteria	1	2	3	4	5	NA
Overview of the study	The title is appropriate						
	The protocol abstract is acceptable						
	Includes a list of investigators, their collaborative roles and funding sources						
Introduction	Includes a literature review / current state of knowledge of the research topic						
	Presents the justification of the study						
	Gives the purpose or intended use of the findings						
	Includes the study design and location(s) of the study						
	Presents the objectives						
	Presents the research questions or hypothesis						
	Has a generally appropriate focus						
Procedures and methods: design	Includes how the study design addresses the hypothesis or fulfills the objectives						
Procedures: study	Includes a description and source of the						

Category	Criteria	1	2	3	4	5	NA
population	study population and the recruitment area						
	Shows the case definitions						
	Describes the exclusion criteria of participants						
	Describes the inclusion criteria of participants						
	Describes the estimated number of participants						
	Gives sampling methods, including sample size and statistical power						
	Outlines the appropriate recruitment procedures						
	Describes the consent process						
Procedures and methods: variables and interventions	Provides a description of the variables						
	Describes the study instruments, including questionnaires, laboratory instruments and analytic tests						
	Provides intervention procedures or appropriate treatment						
	Describes the anticipated results and minimum for significant differences						
	Describes the training of study personnel						
Procedures and methods: Analysis and data management	Provides an analysis plan, including statistical methodology						
	Clearly outlines data collection procedures						
	Shows the management and analysis procedures for data and the software to be used						
	Outlines the procedures used for data entry, editing and management, including the handling of data collection forms, different versions of data, and the storage and disposal of data						
	Describes quality assurance and control procedures						
	Notes potential biases in the collection, measurement and analysis of data						
	Describes study limitations						

Category	Criteria	1	2	3	4	5	NA
management of adverse events	Describes the management and reporting of potential adverse events, if applicable						
Procedures and methods: dissemination, notification, and report of results	Defines individual notification of participant results						
	Shows participant notification of study findings						
	Clearly outlines the expected products or inventions from the study and their use						
	Outlines the dissemination of the results to the public						
Appendices	Data collection forms are appropriate						
	Proposed tables and figures are appropriate						
	Includes relevant documents						
References	Numbers and lists bibliographic references in the order they appear in the text						
	The number of references is appropriate for the protocol content						
	Bibliographic references are current and related to the content referenced						
	Bibliographic references follow Vancouver format						
Structure and general clarity	Uses adequate punctuation and grammar						
	Uses proper spelling						
	Work is original and there is no evidence for plagiarism						
	The writing is in paragraph form and does not use bullets as in a presentation						
	Provides a description of acronyms before they are used						

Instructions and Guidelines for a Scientific Abstract

Description

During the first and second year of the FETP program, several Scientific Abstracts are required to be written for a variety of core activities. Typically, writing a scientific abstract is required for outbreak investigation reports, protocols, manuscripts for peer review, and surveillance reports. A scientific abstract serves as a general synopsis of an entire paper. Therefore, the scientific abstract must contain information from all four sections of a paper: introduction, methods, results, and conclusions. During the FETP program, Scientific Abstracts will be submitted to national and international conferences, such as EIS and TEPHINET, and if accepted, a poster or oral presentation will be developed based on the accepted abstract.

Structure and Content

The scientific abstract is usually between 250-275 words in length. The word count excludes the subheadings of the structured abstract (background, methods, results, conclusions), title, author list, address, or keywords. A word count is easily obtained by selecting the appropriate text of the abstract and then choosing the "Word Count" command in the "Tools" menu of Word. A Scientific Abstract should contain the following seven criteria: 1) background and rationale for study, 2) appropriateness of methods, 3) presentation of results, 4) conclusions and interpretation of results, 5) significance to public health, 6) recommended intervention and estimation of public health impact, and 7) overall clarity of abstract. The following abstract format is recommended:

1. **Authors**
   - First author (presenter). Type the full first name and middle initial, if any, before the last name (e.g., Jorge L. Lopez).
   - Co-authors. List each co-author in order of contribution by typing one initial followed by the last name (e.g., G. Diaz, S. Barajas).

2. **Title**
   - Be brief. Avoid subtitles if possible.
   - Capitalize major words only. Capitalize the second component of hyphenated terms.
   - Do NOT use abbreviations or acronyms in title.
   - Give geographic location (country, state or city) and dates of study or investigation. Do not abbreviate geographic locations; separate them from the rest of the title by a dash, e.g., "outbreak of Pneumonia – Texas, 1995."

3. **Abstract Text**
   - Structure the abstract, using the following subheadings to identify each section: **Background, Methods, Results, and Conclusions.**
   - Each subheading should be typed flush left, in bold font, and followed by a colon.

- The **Background** section should address both 1) the public health significance of the subject and 2) the scientific background and rationale for the study.
- The **Methods** section is a step-by-step description of the physical work that was done. This is written in paragraph style and does not include any results.
- The **Results** section should be a plain description of what your exact results were. Discussion as to what the results mean is NOT included here.
- The **Conclusions** section discusses the results as to how they address the hypothesis/questions.
- Since an abstract is a citable document, the **Results** section must contain data. It should not include such stated as "Data will be discussed."

4. **Key Words**
   - Please include 4-6 key words; use terms listed in the Medical Subject Headings (MeSH) from the Index Medicus (http://www.nlm.nih.gov/mesh/meshhome.html).

13 Common Errors Seen in Abstracts of Field Epidemiology Training Programs (FETPs)

1. The title is neutral and is only a summary of the methods.

2. The abstract exceeds the word limit.

3. The abstract does not follow the recommended structure or the recommended format.

4. The background section is too long.

5. The methods section labels what was done instead of describing it.

6. The methods used to analyze the data are not mentioned.

7. The results do not present enough data.

8. The abstract contains references.

9. Some results appear first in the conclusion section.

10. The conclusion repeats data already presented in the results.

11. The recommendations are not based on the data presented.

12. The abstract is not self-contained.

13. The abstract is not written using complete sentences.

SAMPLE ABSTRACT

Authors: Gulmira J. Sailybayeva, A. Kaspirova, A. Kuatbayeva, S. Ajeilat, A. Jumagulova, M. Favorov

Title: Human Immune Deficiency Virus (HIV) outbreak investigation among hospitalized children—Shymkent City, Southern Kazakhstan Region, June-November 2006

Background: Between January-June, 2006, 15 HIV infected children were identified in pediatric hospitals in Shymkent in Kazakhstan. To determine the magnitude of the outbreak, the Ministry of Health conducted an HIV sero-survey in Shymkent among children aged $\leq$ 2 years with history of hospitalization after Jan 1, 2006 (n=7954). We used the sero-survey as the source for a case-control study to identify factors associated with HIV infection.

Methods: HIV status was determined based on the 1999 CDC case definition for children. Twenty-eight HIV-positive children born to HIV-negative mothers and 195 randomly selected HIV-negative children were investigated. Information on factors that might have occurred in healthcare settings and at home was ascertained from children's polyclinic charts and hospital records. Medical care providers and blood donors for the 28 infected children were screened for HIV and medical practices were reviewed. Logistic regression was used to assess associations between risk factors and HIV infection.

Results: Of the 28 infected children, 27 (96%) had received intravenous (IV) fluids, 20 (71%) subclavian vein catheterization (SVC), and 16 (57%) blood products. Twenty (71%) were males, all uncircumcised. In multivariate analysis, factors associated with infection were: receiving IV fluids (OR=8.8, 95%CI=1.03-76.2), SVC (OR=3.7, 95%CI=1.2-11.5); other factors were not significant. Medical care providers and 81 available blood donors (total 89) were HIV-negative. In hospitals, unsafe techniques for administration of IV medications and the use of reusable equipment for catheterization were observed.

Conclusion: This study indicates that the administration of IV fluids and SVC were associated with infection among children, possibly because of unsafe practices. Measures were implemented to ensure safety of the administration of transfusion materials and sterilization of reusable medical equipment.

Key Words:

Word Count:

Evaluation for a Scientific Abstract: Checklist

Score	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 study.

Category	Criteria	1	2	3	4	5	N/A
Background and rationale for the study	Does the background clearly state the public health problem or question that the study will help to resolve?						
	Are key antecedent data or issues presented to set the stage for the study? (If necessary)						
	Does the background clearly state the objective(s) of the study?						
Appropriateness of Methods	Are epidemiologic comparisons clearly stated?						
	Are critical definitions clearly stated or obvious (for example, case definitions, main exposure)?						
	Do the selected methods correspond with the purpose of the study and the research questions?						
	Is the sequence of methods clear and easy to follow?						
	Are the essential methods described with precision and without undefined terms or jargon?						
Presentation of Results	Do the study results follow logically from the methods described?						
	Are the study results appropriately summarized in quantitative terms? (for example, number of individuals in study, major findings on time, place, and person)						
	Are appropriate epidemiologic measures used for all direct or implied comparisons?						
	Are comparisons epidemiologically correct and free from fallacious interpretation? (for example, rates						

Category	Criteria	1	2	3	4	5	N/A
	vs. proportionate frequencies, numerical estimates of risk and impact measures vs. “high” or “low”)						
	Are sufficient and adequate data presented to allow the reader to reach a conclusion?						
	Are the results organized in a way that assists the reader to reach a conclusion?						
Conclusions and Interpretations of Results	Does the conclusion have its principal basis in the data?						
	Does the conclusion integrate the key results?						
	Does the conclusion answer the problem and objectives stated in the background?						
	Are the findings and their interpretation consistent with existing scientific knowledge?						
Public Health Significance	Does this study, in both topic and results, have an obvious application to improving public health, and is this application obvious to the reader without the need for complex explanation or extrapolation?						
	Is the study sufficiently sound (including clarity and strength of results) to serve as a basis for taking public health action?						
	Do the data solves an immediate problem or build on existing knowledge (and not simply repeat what is already known)?						
	Are clear criteria used to stress the public health significance of the problem under study?						
Recommended Intervention and Estimation of Public Health Impact	Are actions/ recommendations/ control measures practical, and derived directly from study results?						
	Are public health actions recommended or reported as undertaken? (for example, initiating or enhancing prevention or other public health programs, developing procedures, policies or legislation, implementing and strengthening public health surveillance systems)						
	Does this study effectively						

Category	Criteria	1	2	3	4	5	N/A
	document the potential or actual public health impact? (for example, reporting on process or outcome indicators: number of persons treated, amount of increased resources devoted to a prevention activity, evidence of improvements in the operation of a surveillance system, estimation of morbidity or mortality prevented, or ways in which the public health actions were innovative)						
Overall Clarity of the Abstract	Is the writing clear and brief?						
	Is there a logical sequence and cohesiveness among all abstract sections?						
	Are complete sentences used?						
	Are proper and simple terms used to describe methods and discuss findings?						
	Is the abstract 275 words or less?						

Instructions and Guidelines for an Oral Presentation

Description

During the FETP program, several oral presentations will be given in class, for respective organizations, or for national and international conferences. An oral presentation is an exercise in effective communication. Often, communication of key study findings and the importance of studies, surveillance analyses, or surveillance evaluations to a diverse audience is required. Presentations that are given at national or international conferences are usually based on acceptance of submitted abstracts. Depending on the abstract, the presentation will be expected to be delivered on PowerPoint slides or on a poster.

Structure and content

Typically, oral presentations last 10-15 minutes and are organized like a scientific manuscript with title, introduction, methods, results, discussion, and acknowledgments. The presentation should only cover the most important findings of the study, the surveillance analysis, or the surveillance system evaluation. Depending on the time allotted for the presentation, each component should be adjusted to fit the overall length of the talk. An effective oral presentation should adhere to the following six categories: 1) background, 2) methods, 3) results, 4) discussion/conclusions, 5) question and answer session, and 6) overall style and delivery. The following structure of a 10-minute oral presentation is recommended:

1. **Title Slide (10-15 seconds)**
    - Provides a concise description of the topic, location, and dates of the study, surveillance analysis, or surveillance evaluation
    - Tells the audience who the speaker is and their affiliations
    - Includes coauthors (these should be listed in the printed abstract as well)
    - Should not be confused with an acknowledgments slide
    - May include agency or company logos

2. **Introductory Comments (1-2 minutes)**
    - Engage the audience
    - Provide the rationale
    - Establish relevance to public health
    - Give only essential information about pathogens, diseases, and other background information
    - Give the objectives of the study, surveillance analysis, or surveillance evaluation

3. **Methods Section (1-2 minutes)**
    - Describe the design study, surveillance analysis, or surveillance evaluation
    - Use appropriate statistical methods for the study, surveillance analysis, or surveillance evaluation design
    - Describe essential methods with precision and avoid vague language or jargon

- Sometimes use figures, such as flow diagrams and tables

4. **Results Section (3-4 minutes)**
   - Emphasize the most important findings of the study, surveillance analysis, or surveillance evaluation
   - Should have a combination of text, tables, figures, and occasionally photographs
   - Use text and bullets for qualitative results
   - Use tables and figures for quantitative data

5. **Discussion (2-3 minutes)**
   - Relate the findings to the objectives of the study, surveillance analysis, or surveillance evaluation
   - State and interpret main findings but do not simply restate results
   - Incorporate references from other studies, analyses, or evaluations
   - Mention only important limitations
   - Discuss public health importance of findings
   - Make specific recommendations for future work and public health response

6. **Acknowledgements Slide (10-15 seconds)**
   - Recognize coauthors and other contributors
   - Include same logos as on title slide
   - Thank the audience

Tips for Creating Slides

1. **Effective slides are:**
    - Simple
    - Clear
    - Visible
2. **Recommended typefaces and font sizes**
    - Sans serif font, like Arial and Tahoma
    - Make everything bold – all text, titles, graph labels, etc
    - Font size may vary according to typeface used
    - For Arial (bold)
        - Titles 36-40 pt
        - Main bullets 28-32 pt
        - Sub-bullets 24-28 pt
3. **Each slide should have a single focus or take-home message**
    - For multiple points, use multiple slides
    - Material divided into two slides takes no longer to present
4. **Avoid having too much**
    - Information
    - Color
    - Use of unnecessary symbols
    - Animation and clip art
5. **Avoid these elements**
    - Titles that aren't in the same location vertically on each slide
    - Too many bullets and sub-bullets – use no more than 8-10 lines of text per slide
    - Full sentences instead of key words or phrases
    - Serif Fonts (like Times New Roman)
    - Unnecessary boxes and grid lines in tables and charts
    - Different text styles from one slide to another
    - Decorative symbols, such as fancy bullets
    - Shadow text and decorative fonts
    - 3-D graphs used inappropriately
6. **Slides with bullets should**
    - Follow the order of script text
    - Keep the verb form consistent
    - Use a consistent style of bullet and spacing for each level
    - Capitalize the first word of each bullet and sub-bullet
    - Use special effects (italics, special colors) only once for emphasis
7. **Colored slides are the norm but keep the following in mind**
    - Contrast the font color with the background color; dark blue background with yellow titles and white text are safe choices
    - Keep the total number colors used to a minimum
    - Use color to enhance interpretation of the data and not for decoration
    - Avoid red and green backgrounds and text

Tips for Delivering Oral Presentations

1. **Humor**
    - A little humor is acceptable if you have a solid presentation. However, what's funny to you could be offensive to others

2. **Rehearse**
    - The best way to deliver a strong presentation is to rehearse it in front of critical reviewers
    - Practice, practice, practice!

3. **Speak slowly and project your voice**
    - Speak at a pace that is easy to understand
    - Breathd between sentences, phrases, or before advancing to the next slide to help you slow down
    - Articulate your speech, speak with energy, and make your voice reach your audience

4. **Look at your audience**
    - Maintain eye-contact
    - Speak as though you are speaking directly to a person

5. **Explain all figures to your audience**
    - Explain what the figures are showing and their significance

6. **Thank your audience when you are done**

7. **Answer questions briefly and directly**
    - Anticipate questions and rehearse ahead of time
    - Take time to make sure you understand the question
    - Avoid the urge to tell the audience everything you know
    - Do not provide unrelated information
    - Don't be afraid to say "I don't know"

Evaluation of an Oral Presentation: Checklist

Score	Description
5 = Excellent	The element is present and consistent with the standards described in the instructions and provided in the classroom, and is of outstanding quality.
4 = Good	The element is present and consistent with the standards 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 standards described in the instructions and provided in the classroom.
2 = Poor	The element is present but it has errors or is of poor quality.
1 = Absent	The element is absent.
N/A = Not Applicable	The element is not relevant.

Category	Criteria	1	2	3	4	5	N/A
Background	The public health question (or problem) was clearly identified						
	The objectives were clear						
	The speaker captured the interest of the audience						
Methods	The study, surveillance analysis, or surveillance evaluation design was explained						
	Appropriate statistical methods for the study, surveillance analysis, or surveillance evaluation design were used						
	Essential methods were described accurately and avoided vague words or jargon						
Results	The findings were ordered logically, and clearly						
	No elements of the results section were found in the methods section						
Discussion/ Conclusion	The findings were discussed in the context of the objectives of the study, surveillance analysis, or surveillance evaluation						
	The discussion cited other studies, analysis or evaluations						

Category	Criteria	1	2	3	4	5	N/A
	The conclusions were stated clearly and ordered logically, e.g. most to least important						
	The conclusions were consistent with the data presented						
	The most important limitations were explained						
	No elements of the discussion section were found in the results section						
	The recommendations followed logically from the data presented						
	The recommendations were based on the interpretation of the data						
Question and Answer Session	The questions were answered fully and appropriately						
	The answers indicated knowledge of the subject						
Overall Style and Delivery	The speaker stayed within the allotted time						
	The presentation was well rehearsed so that the speaker did not appear to be reading						
	The presenter spoke clearly, at an adequate volume and appropriate pace						
	The speaker established and maintained good eye contact with the audience						
	The slides were nicely presented and easy to read and follow						
	Graphics and figures were relevant and appropriate						

Instructions and Guidelines for a Scientific Manuscript

Description

The publication of a manuscript is the culmination of scientific method. When written appropriately, it informs the scientific community about what happened in a scientific study, why was it done, how was it done, the result of what was done, and the meaning of what was done. During the Field Epidemiology Training Program (FETP), at least one manuscript should be written for submission to a peer-reviewed journal. In scientific methodology, the manuscript represents a high level of consensus; it is the most difficult product to develop, requires a lot of individual work, should be complete and well thought-out, and with persistence, can be published in a peer-reviewed journal. When developing of a manuscript, two things should be considered: the format and the style. In the FETP the formatting should be compatible with Vancouver Group, further elaborated by the International Committee of Medical Journal Editors (ICMJE).

The following are the recommendations for manuscript format and style:

1. **Format**
    - IMRD structure (introduction, methods, results and discussion)
    - Double-spaced, column in vertical design, 12-point font, letter-size white paper (21.59*27.94 cm)
    - No more than 3,000 words, from the introduction until the end of the discussion (this equals 8-10 pages of 300-400 words)
    - No more than five tables and/or figures
    - Should contain references
    - Numbered pages

2. **Style**
    - Use the past tense to describe what has been done
    - Use the present tense for established facts
    - Be brief, using sequential sentences
    - Choose one idea per sentence
    - Be specific
    - Do not use bold type or underline
    - Do not include footnotes that refer to the text in the pages (footnotes are only used for tables and figures)

The following is the structure for a manuscript that is recommended:

1. **Title**
    - In the age of information overload and with the ease in accessing data electronically, it is very important that the manuscript title reflects the study with precision. Many times, this is the only opportunity that the author has to try and entice readers to read the manuscript. The title helps the reader understand the nature of the study and decide if they want to read it. Always think about the "readability" of the title. The title can be in the form of a statement, a question or an answer. If the study was a randomized clinical trial, this should be included in the title. Many journals limit the number of characters permitted in a title; ensure that the title does not exceed this limit.

2. **Authorship**
    - An author is generally considered someone that has made a substantial intellectual contribution to the study that is going to be published. Some journals now require and publish information about the contribution of each person named as an author of the study submitted for publication, especially for original research. Editors are strongly motivated to develop and implement a policy for authorship contribution, such as identifying who is responsible for the integrity of the work. The ICMJE has recommended the following criteria for authorship:
        - The credit should be based on: 1) substantial contributions to the idea and design, acquisition of data, or analysis and interpretation of data, 2) the drafting of the article or critical revision of intellectually important content, 3) the final approval of the published version. The authors should meet conditions 1, 2 and 3.
        - When a large multi-center group has brought the study to completion, the group should identify the individuals that accept direct responsibility for the manuscript. These individuals should clearly satisfy the criteria for authorship that the editors have previously identified. These individuals are asked to complete the authorship forms specific to each journal, such as the conflict of interest form.
        - The acquisition of grants or funds, the collection of data, or general supervision of the research group by itself does not constitute a criterion for authorship.
        - All the individuals designated as authors should qualify for authorship, and all of those that qualify for authorship should be listed as authors.
        - Each author should have participated in the effort sufficiently to be able to take public responsibility for the parts of the content.

3. **Abstract**
    - The majority of journals require a structured abstract with a limited number of words; typically 150-250 are allowed. Since many readers will only read the abstract, ensure that it contains all the important information from the manuscript. A structured abstract should contain an introductory statement that ends with a specific objective or hypothesis, followed by methods, results, and conclusions. Always avoid speculation and detailed discussion (refer to the guidelines on how to write abstracts).

4. **Key words**
    - These are for Medline searches on words utilized in similar articles.

5. **Introduction**
    - The introduction should be brief, generally limited to three or four points. The introduction should describe the current situation, the problem being researched and the work already done in the same area. It is not necessary to mention all references. The introduction should identify the gaps in the current knowledge and show the necessity of the study. The end of this section lays out the goals or objectives of the study and the hypothesis that will be tested.

6. **Methods**
    - The methods section is one of the **most important** parts of the manuscript. The purpose of this section is to provide the reader sufficient detail so that they could replicate the study. Unfortunately, in reality this part is sometimes the weakest section of the manuscript, especially for new writers. Although many readers are ready to jump directly to the conclusions, the skilled reader will usually begin with methods. As a general rule, if the methods are flawed there is no reason to continue reading the manuscript.
    - **Study design**: Describe the design utilized in the study. This should include the sampling methods, such as convenience vs. randomized. This is very important in determining whether a selection bias exists.
    - **Ethical considerations:** The majority of the journals require an approval from the Ethics Committee of the Institutional Review Board (IRB) for protection of human and animal subjects; furthermore, information about whether and how the subjects of the study gave their consent is often required.
    - **Subjects:** This section allows the reader to judge the generalizability or external validity of the study. It should detail the inclusion and exclusion criteria. For studies that include human subjects, the basic demographic information, such as age, sex, race and health status should be explained. However, the exact number of the subjects recruited, such as the breakdown of their age, race and sex, belongs to the results section.
    - **Setting:** Describe the context (rural vs. urban; academic vs. community-based; level of care such as outpatient, hospital, or emergency department) in which the study is carried out. In studies carried out in the emergency department, indicate the number of patients seen annually. If new methods or models are used, much more detail will be required; in this case, consider establishing the validity of a new model in a separate article. Provide the generic names of medication utilized, the manufacturer, the dose and concentration. For studies involving animals, describe the sedation methods and anesthesia.
    - **Interventions:** In this section the experimental protocol should be described in sufficient detail to allow the replication of the study by another investigator. If the study has been described previously or the methods have already been validated, they should be referenced. Describe the baseline conditions and subsequent measures and manipulations of independent variables, followed by measures of the dependant variables (the factors of most interest). Describe any clinical procedures that are not controlled by the protocol. State any assumptions that experimental procedures are based on.

- **Calculations and Measurements:** Describe the variables that are measured and how the measurements are performed. When instruments are used, give the manufacturer, including city and state, and instrument and model. It also might be necessary to justify why and how the variables are measured.
- **Data analysis plan:** Describe how the data will be analyzed and presented (for example, the average as opposed to the median) and what statistical tests were used to create inferences from the data. Indicate the significance level (type I error) and describe how the sample size was calculated. Help from a professional statistician is recommended for this section. Of course, a statistician is also very important for at the (earlier) phase of study design.

7. Results

- This is probably the most important part of the manuscript. The results section includes only data, not background or methods. It should include all the main results obtained, including the negative results. In the first paragraph, begin by describing the population in general and then describe the sub-groups. Give data that are pertinent to the principal research question; further observations may be included if they strengthen the argument. In the second paragraph, the main results should be described first, followed by secondary results or analysis of subgroups. Begin with the description of the data, and then describe the effects of the independent variables on the dependent variables. Univariate comparisons should come first, followed by multivariate analysis or interaction effects. Unexpected results should be presented at the end of the section. Be clear and concise throughout and use tables and figures when appropriate. The data included in the tables or figures should not be repeated in detail in the body of the text. Do not interpret data or present results for which the methods were not given in the methods section.

8. Discussion

- The principal objective of the discussion section is to explain the significance of the results. The majority of the journals begin this section with a brief summary of the main findings. Do not introduce any new data that has not already been described in the results. Explain why the results are important and how they relate to similar studies. This is the section where the author should try to convince the reader on the merits of the study. Do the findings of other studies support this one? Likewise, indicate how your study differs from other similar studies. Carefully select the most pertinent references. Consider alternative explanations for your findings; carefully consider all the possibilities. Always state the clinical relevance or the implications of the findings. For which population do the findings of the study apply? A separate paragraph or section should acknowledge the limitations of the study. All studies have limitations, and it is best that the author identifies them before reviewers or readers do. Suggestions for future studies can also be made. What questions remain to be answered? What new questions have emerged? Finally, end the manuscript with a brief message that summarizes everything in a conclusion. What should the reader remember? Avoid speculation and excessive and unjustified interpretation of results. Avoid the temptation of exaggerating the importance of the results. Make certain that the conclusions are completely compatible with the data. In general,

you should make a direct connection between the study hypothesis, the results, and the conclusions.

9. Acknowledgements (list of contributors)

- All the contributors that do not meet authorship criteria should be listed in the acknowledgements section. For example, recognized a person that has provided technical assistance, assistance in drafting the manuscript, or a department chief that has provided only general support. The editors should ask the authors that declare if they have received assistance with the design of the study, the data collection, the data analysis, or the preparation of manuscripts. Anyone who has provided this assistance should be recognized by name supporting institution in the published article. Financial and material support should also be recognized.
- The groups of people that have contributed to the manuscript, but whose contributions do not justify the authorship that can be "clinical investigators" or "participating investigators," and their role or contribution should be described. For example, "employed as a scientific consultant", "critically examined study proposal", "obtained the data", or "cared for study patients". These people should give written permission in order to be recognized.

10. References

- The purpose of the references section is to have a list of the sources cited in the text. Before submitting the article, be sure to review instructions for the authors and verify that the references are appropriately formatted and cited. Many new writers use a large number of references, but this is not appropriate for the majority of original manuscripts. Limit the list of references to those most relevant for the study being presented. The most common method utilized for citing references in medical journals is the Vancouver system, where references are cited in the order in which they appear, using numbered superscript. Several types of software are available to help organize the references in a manuscript, for example EndNote® and Reference Manager ®.

11. Tables and Figures

- Use the tables and figures to present the most relevant data and relationships. For many authors it is useful to prepare the key tables and figures before writing the results section. The first table should describe the baseline characteristics of the study sample group and the comparison group. The second table and subsequent tables and figures should present the results of the study. Measures of association with 95% confidence intervals offer more information to the reader than the *p* values or significance levels. Tables and figures may not be required if the results are limited or can easily be presented in the text. Ensure that the numbers in tables and figures correspond to the numbers in the text.

11 common errors found in FETP manuscripts

1. The title is not appealing or does not reflect the study.
2. The connection between objective, methods, results, and conclusions is absent or inadequate.
3. There is an incomplete, sloppy, or outdated literature review. For example, start the introduction saying, “Disease X is an important health problem.” Instead, say “Disease X is the X cause of death at a global level” and proceed to focus on the area of study.
4. There is not enough information in the methods section.
5. Proportions (percentages) are presented, but not the relevant numbers.
6. Data is reported twice, in the tables/figures and in the text.
7. Opinions are given in the results section.
8. Information from the introduction is repeated in the discussion, or new data not included in the results is mentioned in the discussion.
9. The common phrase “Further study is needed” is used. Use this phrase only if necessary.
10. Using the passive voice denotes lack of ownership and is vague. Instead, use the active voice, which is precise and reflects responsibility for the actions taken.
11. There is speculation in the discussion without support.

Phrases to avoid in a manuscript

1. Qualifiers
   Example: “This was a huge outbreak.”
2. Exaggeration
   Example: “This is the biggest outbreak to date in which **thousands and thousands** of people have been affected.”
3. Accusations
   Example: “The irresponsible behavior of health workers drove the spread of this outbreak of yellow fever”.
4. Apologies
   Example: “Due to lack of resources I was not able to.”
5. “Clearly”
   If it is evident, it is not necessary to accentuate the phrase with this word.

Evaluation for a manuscript: Checklist

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 study.

Category	Criteria	1	2	3	4	5	NA
Beginning Pages	Title (brief and reflects the exact format of the study)						
	Authors and collaborators (including their roles)						
	Abstract (in IMRD format)						
Introduction	Brief (three or four paragraphs)						
	Describes the current state and gives a brief description of the problem						
	Includes the gaps in the current knowledge and justification of the study						
	Includes statements of the study objectives or the hypothesis that will be tested						
	Documents the facts with references						
Methods	Study design and temporality						
	Subjects: inclusion and exclusion criteria and basic demographic information						
	Location/ setting where the study was conducted						
	Description of what was done in sufficient detail						

Category	Criteria	1	2	3	4	5	NA
	to replicate study						
	Description of the variables measured and how the measurements were carried out						
	Definition of the dependant variable and the appropriateness to the study's objective(s)						
	Description of how the data were analyzed; if there were standardized procedures or tools, provide the reference						
Results	Explanation of the results of the study in simple terms						
	Provides the total numbers along with percentages						
	Statements of are supported with data ("Incidence is high" vs. "Incidence is high, at X%")						
	Information is not presented twice (results presented in tables and figures not duplicated in the text)						
	Does not repeat methods or include analysis						
	Describes the information from the tables as text subheadings - for example, "The cases and controls did not differ in respect to baseline characteristics (Table 1)"						
Discussion	Emphasizes the most important findings and explains them						
	Is focused (discusses three or four points)						
	Compares findings with those of other authors						
	Gives precise and specific conclusions						
	Mentions the limitations of the study						
	Discusses the importance of the study and suggests new ideas for research						
Bibliographical References	Lists the numbered bibliographical references in the order in which they appear on the text						

Category	Criteria	1	2	3	4	5	NA
	The number of references is adequate for the content of the report						
	The bibliographical references are current and are related to the information cited						
	The bibliographical references are registered following Vancouver style						
Tables & Figures	Gives the total numbers along with the percentages						
	Consolidated tables – for example, prevalence is shown by gender and age						
	The numbers coincide with those provided in the text, and the rows of tables are totaled						
	Footnotes are used in standard format (∗, †, ‡, §)						
	The charts and graphs are in black and white						
Format & General Clarity	Uses adequate punctuation and grammar						
	Uses proper spelling						
	Work is original and there's no evidence for plagiarism						
	The article is written in paragraph form, and does not use bullets as if it were a presentation						
	Provides a description of acronyms before they are used						

Instructions and Guidelines for Evaluating a Bulletin Article

Description

Writing a bulletin article is required as an initial activity of FETP and it is usually completed during the first year of the program. The bulletin article is generally about an epidemiologic investigation that is in process or completed. Frequently, the bulletin article serves the purpose of notifying health professionals and the public about outbreak investigations in process or that have recently occurred. A bulletin article also strives to inform the public and colleagues about outbreak prevention measures. While the sections are similar to a peer-reviewed manuscript, the requirements for a bulletin article are not as rigorous. The bulletin article should be written more quickly, during a period of days, instead of the months it takes to write a manuscript. National or regional epidemiologic bulletins are ideal for submitting this type of article, and there are other national and regional publications that could also be appropriate.

Structure and Content

The bulletin article should contain no more than 1,500 words, and should contain the following sections: 1) an opening paragraph, 2) introduction, 3) methods, 4) discussion and recommendations, and 5) acknowledgements, references and tables, if appropriate for the article. Note that there are differences between this type of article and those that appear in peer-reviewed journals. The emphasis of a bulletin article is to provide information about an event related to public health in a timely way so that action can be taken. The article should be concise and easy to read; should include the events that occurred- that led up to the outbreak; and should explain methods and immediate control measures that have been taken; and should provide a justification of the recommended control measures. The following structure is recommended:

1. **Opening paragraph**
    - The opening paragraph should summarize the main points of investigation. Similar to a newspaper article, the opening paragraph should respond to the questions who, what, where, when, and should describe any actions that have been taken. All of this should be covered in three to five sentences.
2. **Introduction**
    - The introduction provides more context about the event or disease, including the details of the events leading up to the outbreak in chronological order, recent trends of the disease, and pertinent clinical information.
3. **Methods**
    - The methods section should be concise and should not be as technical as you would expect in a scientific manuscript, but should contain the study design and the manner in which the data were obtained, including the collection of samples for analysis in the laboratory.
4. **Results**
    - Only the most relevant positive and negative results from descriptive and analytic data should be included in the results section. Specifically, the results that support the conclusions and recommendations in the discussion section should be included.
5. **Discussion and Recommendations**
    - The discussion section should interpret the data, identify the limitations and the lessons learned, and provide clear and concise recommendations. If the investigation is still not complete, the discussion should describe the remaining activities that are planned or under way.

10 Common Errors Found in Bulletin Articles

- The article is too long.
- The order of events is confusing.
- The link between the results and the recommendations is not clear.
- There is no opening paragraph.
- There are no acknowledgements.
- The methods are not concise.
- The activities remaining to be completed are not described.
- The recommendations are very general.
- The sections are mixed together (for example, the results are recorded in the discussion section).
- Too much time is taken before publishing the article, which results in information that is neither timely nor pertinent.

Evaluation for a Bulletin Article: Checklist

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.
N/A = Not applicable	The element is not relevant to this study.

Category	Criteria	1	2	3	4	5	N/A
General	Was the article submitted for publication in a timely manner? 5 = within a month, 4 = within 2 months, 3 = within 3 months, 2 = within 6-12 months, 1 = after a year						
	Does the article contain no more than 1,500 words?						
	Was the article published? 5 = yes, 1 = no						
	General clarity and organization of the article						
	Are the elements in each section correct (for example, the results are not mentioned in the discussion section for the first time)?						
Opening Paragraph	Are the questions who, what, where, and when answered in 4-5 sentences?						
	Are the public health actions that have already taken place described?						
	Is the reader's attention captured so that s/he is motivated to continue reading?						
Introduction	Is the order of events described in detail?						
	Is the event placed in the appropriate context (describing previously related events) or recent disease tendencies?						

Category	Criteria	1	2	3	4	5	N/A
Methods	Is the case-definition clear?						
	Is the study design clearly stated?						
	Are the methods utilized for collecting data described?						
	Is there a description of the laboratory participation in testing samples?						
	Are the methods concise and not too technical?						
Results	Are the results limited to the most pertinent positive or negative findings?						
	Do the results contain descriptive and analytical information?						
	Are the laboratory results well-described and do they identify what still needs to be done?						
Discussion	Is there discussion about how the results are related to the study hypothesis?						
	Are the limitations of the study described?						
	Are the recommendations clear and practical?						
	Are the recommendations clearly justified in regards to the interpretation of the results?						
	Are pending efforts regarding public health control and prevention discussed?						

	If the investigation study is in process, does it describe what will need to happen in order to complete the study?						
Acknowledgements, Figures, and References	Are tables, maps, or other graphs clear and precise?						
	Are the acknowledgements listed?						
	Are the references presented in a consistent format?						

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Federal Democratic Republic of Ethiopia
Ministry of Health