

DRAFT

**Kenya Field Epidemiology and Laboratory Training Program  
(FELTP)**

**Work plan**

*February 2004*

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# 1. Introduction

This work plan is a strategic document that presents the goals and objectives of the Field Epidemiology and Laboratory Training Program (FELTP) in Kenya and how they will be met. This is the first FELTP to be introduced in the world. While the FELTP is modeled after a fifty-year history of the US Centers for Disease Control and Prevention Epidemic Intelligence Service Program and over 30 years of Global Field/Applied Epidemiology Training Programs this program is unique in that it incorporates the Laboratory.

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# 2. Background

Kenya is located in East Africa and is bordered by Somalia to the east, Ethiopia and Sudan to the north, Uganda to the west, Tanzania to the south west and the Indian Ocean to the south. Kenya is a low income country with a total population of 31.6 million as of 2003.

Kenya was a British colony and protectorate from the late 1890s until independence in December 1963. Jomo Kenyatta, the country's first president, ruled the country until his death in 1978. He was succeeded by Daniel Arap Moi, who remained in office for twenty-four years. On December 27, 2002 Kenyan voters elected the country's third president, Mwai Kibaki, ending the political monopoly held by the Kenya African National Union (KANU) since independence.

Kenya has been and remains a relatively stable country. Kenya is multi-ethnic and administrative arrangements closely parallel ethnic boundaries. The largest ethnic groups are the Kikuyu, Luhya, Luo, Kamba, and Kalenjin.

Kenya's economy is reasonably diversified, though most employment depends on agriculture, which contributes 2 percent of GDP. Kenya is the world's third largest exporter of tea, which, together with coffee and horticultural products, contributed about 53 percent of total merchandise exports in 2002. This is followed by industrial goods and consumer goods, which accounted for 25 percent and 18 percent of total merchandise exports in 2002. The industrial sector currently contributes about 18 percent of GDP, and is a growing source of exports in the East African region.

According to population estimates, Kenya has a total population of 31.6 million as of 2003. Over 41% of the population is less than 15 years of age. Life expectancy at birth is 45 .0 years for males and 45.4 years for females.

According to KDHS of 2003, the under five mortality rate was estimated at 114 per 1000 live births. Infant mortality rate was estimated at 78 per 1000 live births by the KDHS of 2003.

The following table provides an overview of demographic, socioeconomic and epidemiological indicators for Kenya.

**Table 1: Overview of Basic Indicators for Kenya**

<b>Demographic Indicators</b>	
Total population (July 2003 est.)	31.6 million
Total Area (square kilometres)	582,646
Population per square kilometer	53
Natural rate of population increase	1.27%
Crude death rate (1999 Census)	11.7/1000
Crude birth rate (Census 1999)	41.3/1000
<b>Socioeconomic Indicators</b>	
Public health expenditures as % of GDP	2.3%
GNP per capita (provisional estimate)	US\$ 328
Adult Literacy rate (2002)	65%
% Urban population	39%
Population per doctor	
Population per hospital bed	
<b>Health Indicators (KDHS, 1998)</b>	
Infant Mortality Rate	78/1000
Under-5 Mortality Rate	114/1000
Maternal Mortality Rate	365-650/1000
Total Fertility Rate	5.0
Percentage of births attended by trained attendant	41%

Source: Economic Survey 1999; KDHS 2003; WPDS 1998; World Bank 1998; UNICEF 1998

Kenya's epidemiological profile is characterized by communicable diseases (malaria, upper respiratory infections and waterborne diseases), under-nutrition and poor reproductive health- typical for a developing country. However, the emergence of non-communicable diseases such as cancer, diabetes and cardiovascular diseases among the urban population indicates the onset of a health transition- acquiring diseases characteristic of affluent societies without having eliminated those characteristics of poor countries.

Description of Ministry of Health system and public health status (*Refer to documents from DOMU*)

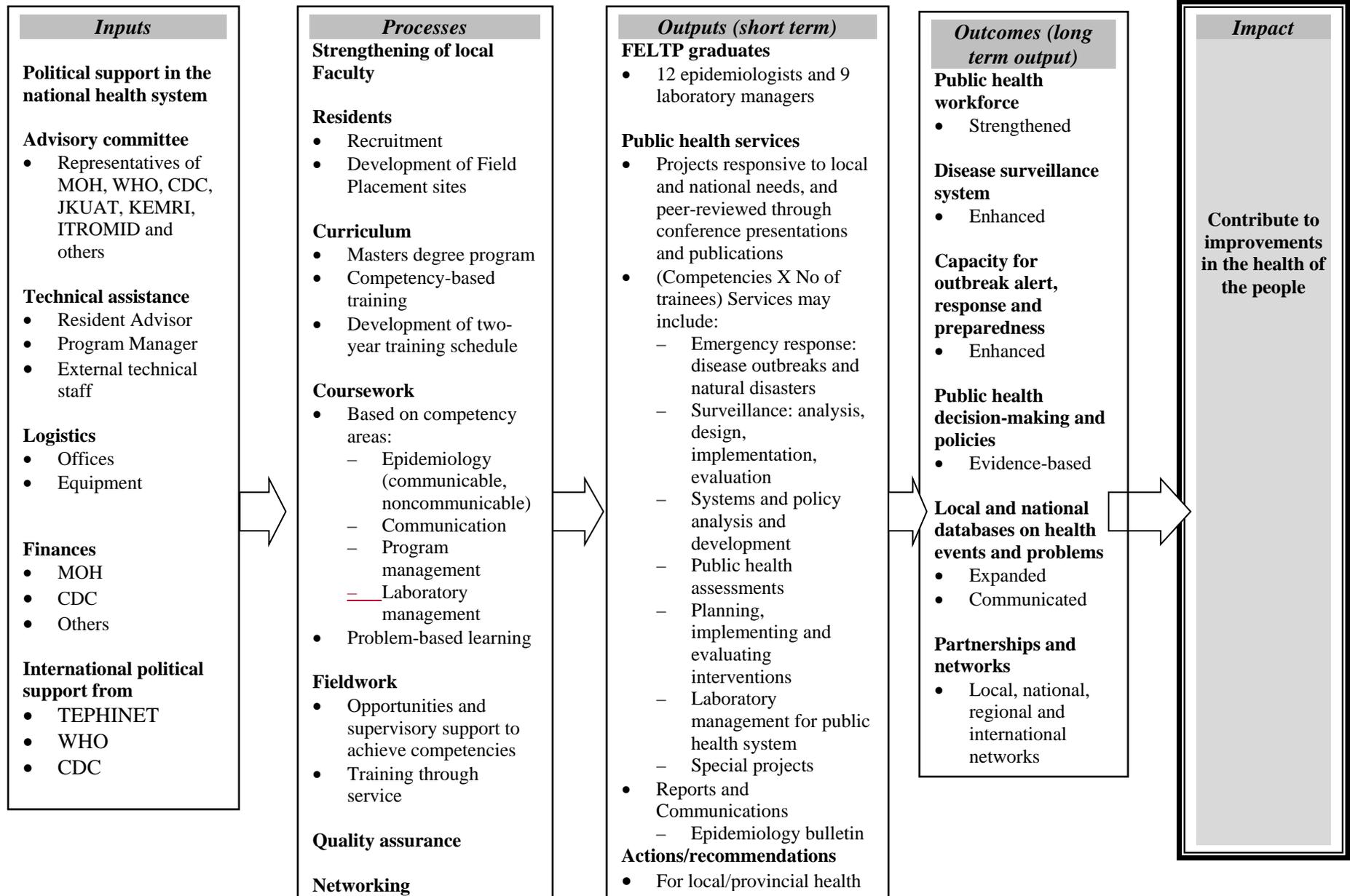
The Ministry of Health is organized around three distinct levels of administration, central, provincial and district. There are 8 administrative health provinces that are subdivided into 78 health districts. Provision of services is by provincial and district level hospitals, health centres and dispensaries.

Public Health status

To strengthen the national infectious disease surveillance system, the Ministry of Health (MOH) , with the World Health Organization (WHO/AFRO ) conducted a comprehensive review of the Kenyan infectious disease surveillance system. The assessment identified areas of weakness within the system and in response. The MOH developed a plan of action for it's strengthening in November 2002. The MOH will require substantial financial and technical support in order to implement this plan of action.

[Reasons for FELTP](#)  
[FELTP Organization](#)  
[Benefits to the country](#)

## FELTP Logic Model for 3 years



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### **3. Goals of FELTP related to the impact**

The overall goals of FELTP in Kenya are:

1. To develop a self-sustaining institutionalized capacity to train public health professionals in applied or field epidemiology and field-oriented public health laboratory practice
2. To provide epidemiological services to the public health system at national, provincial, district and local levels
3. To manage laboratory services for the public health system at national, provincial, district and local levels.

#### **FELTP Objectives (related to the outcome and outputs)**

1. Primary Objectives
  - a. Training: train leaders in applied epidemiology and public health laboratory practice; emphasis is on problem-solving
  - b. Service: provide epidemiologic services and laboratory management to national and sub-national health authorities throughout the countries of East Africa.
2. Secondary Objectives.
  - a. Strengthen 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.
  - b. Strengthen surveillance systems.
  - c. Strengthen laboratory participation in surveillance and field investigations.
  - d. Conduct research activities on priority public health problems.
  - e. Improve communications and networking within the country and throughout the region related to public health issues.
  - f. Strengthen affiliations with international organizations, such as TEPHINET, AETPs and laboratory training programs in other countries.

#### **Processes related to the activity matrix in the excel worksheet**

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## 4. Implementation Plan

### Program Staffing

#### 1. Local Program Staff

##### a. Ministry of Health Representative

The MOH should assign one health-professional staff person (preferably a physician) to work as a liaison between the FELTP and the MOH.

As the program develops it may be necessary to recruit one or more of the graduates as technical staff for the FELTP. This will depend somewhat on how the program is managed, and how involved the management staff is involved in directly supervising residents.

The final objective is to have a MOH person who will have both program management responsibilities, as well as help with technical supervision of residents. This person should be committed to the FELTP for at least 3 years, and should be replaced or supplemented, if necessary, with qualified graduate(s) of the FELTP.

##### b. Administrative Support

###### Program Manager

Initially, support for various administrative activities will be required on at least a part-time basis. Depending on the growth of the program, a full-time administrator may be required in order to allow the consultant epidemiologist and the country counterpart to focus completely on training and supervisory activities.

###### Secretarial Support

Full-time secretarial support will also be required.

Other staff to consider includes a driver, librarian, and a writer/editor.

#### 2. Field Supervisors

There may be epidemiologists in Kenya who have the time, interest, and qualifications to supervise one or more field epidemiology and laboratory residents. This would be a part-time responsibility - a resident could be assigned to work directly with the supervisor, or could be assigned to a public health program in the same city.

The Resident Advisor, working with the MOH representative and Program Manager, will identify these persons to participate in the FELTP as field supervisors. KEMRI, ITROMID, and CDC have experienced epidemiologists

and laboratory specialists working in various programs in Kenya and these individuals can be requested to assist in supervising the residents.

3. Epidemiology Resident Advisor

An experienced field epidemiologist has been recruited to support the development of the FELTP, to supervise residents and to provide general technical assistance in surveillance and epidemiology. He is a graduate of the Centers for Disease Control and Prevention EIS Program.

4. Laboratory Manager

An experienced laboratory manager is being recruited for the International Emerging Infections Program (IEIP). This individual will also support the laboratory component of the FELTP.

E. Residents

1. Size of FELTP Class

Initially the program will enroll seven trainees per year of which four will be applied epidemiology residents and the rest public health laboratory residents. This small size is to ensure that the residents get adequate technical supervision. As qualified field supervisors are identified or FELTP graduates become available to supervise residents, the size of the class may be increased to a maximum of ten.

2. Resident Positions and Support

Residents will be sponsored during the 2-year duration of the program with their own government position and salary. The salary will be augmented because of dislocation or maintenance of 2 households. In the future third-party scholarships for residents from non-governmental organizations such as WHO, UNICEF, USAID and semi-autonomous research institutes may be used.

3. Selection of Trainees

a. Qualifications:

Initially, we would recommend that the Program focus on training persons who are currently employed by their Ministry of Health. These are expected to become leaders in applied epidemiology and laboratory management at provincial and national levels.

The common regulations for all Masters degrees in JKUAT shall apply.

The general regulations for all Masters degrees in ITROMID shall apply.

The following shall be eligible for registration for the Master of Science in Applied Epidemiology:

- A holder of at least an Upper Second Class Honours degree in Biological Sciences or Health Sciences from any Institution recognized by JKUAT Senate.
- Under exceptional circumstances, a holder of a Lower Second Class Honours degree in health sciences provided that the candidate produces acceptable evidence of academic ability.

The following shall be eligible for registration for the Master of Science in Laboratory Management and Epidemiology:

- A holder of at least an Upper Second Class Honours degree in Biological Sciences or Health Sciences from any Institution recognized by JKUAT Senate.
- Under exceptional circumstances, a holder of a Lower Second Class Honours degree in health sciences provided that the candidate produces acceptable evidence of research ability.
- A holder of Higher National Diploma in Laboratory Sciences.

b. Groups to focus on for recruiting:

- (1) Regional and National public health program staff and laboratorians
- (2) Provincial, district and local health staff and laboratorians
- (3) Medical research organizations
- (4) Graduates of medical schools
- (5) Public Health School Graduates

c. Recruitment Procedures

Selection of suitable residents is critical for project success. Residents should be selected on the basis of objective and subjective assessments of their:

- (a) likelihood to make careers in regional or local health departments
- (b) motivation to work in epidemiology or laboratory management
- (c) interest in public health
- (d) location and relevance of their previous work experience
- (e) intelligence, character, and technical qualifications.

A formal selection committee should be formed to solicit applications and assure balance and equity in recruiting and selection procedures. This will be done through a formal letter of recruitment from MOH and advertisement of the program within the health sector and the public media.

A formal interview committee will be convened to interview potential residents. This interview committee will be comprised of epidemiology and laboratory representatives from the MOH, CDC, ITROMID, JKUAT, and KEMRI.

F. Certification and Evaluation of Trainees

1. Certification

Residents will receive Masters of Science degrees from JKUAT after completing the program satisfactorily. The applied epidemiology residents will receive Master of Science in Applied Epidemiology and the laboratory practice residents will receive Master of Science in Laboratory Management degrees.

## 2. Evaluation of trainees

Residents will be expected to participate fully in the programme. Attendance will be required at all formal instruction in Nairobi, monthly meetings and seminars and field assignments. Assignments will be expected to be completed in a timely manner.

Seven evaluation methods will be used throughout the programme. These methods can be characterized in three major categories:

### 1. Evaluation of learner satisfaction

- a. Satisfaction evaluations for each of the formal courses. Results will influence the content and delivery method of subsequent courses.
- b. Learner program evaluations to be completed quarterly or semi-annually to determine the residents' satisfaction with the program in general. Results will influence the individual's work plan and specific elements of the design of the program.

### 2. Evaluation of transfer of knowledge and skills

- a. Specific tests/assessments for specific learning assignments- this will include exams, assignments and formal evaluation of products the learner produces, such as field reports. Results will fulfill University requirements and determine if learner has absorbed key concepts and skills.
- b. Course exams to be administered upon completion of the equivalent of 16 semester hours, in compliance with University requirements.
- c. Learner self-assessment to identify gaps in knowledge and skills, and to prioritize development requirements. Results will affect the individual work plan.

### 3. Learner performance management

- a. A formal work plan for the FETP resident. This plan will include a list of the specific outputs expected from the resident, along with a space for target & completion dates. This plan will measure milestones toward specific competencies. (ex, writing field reports, giving seminars, attending required courses) Results will serve as a guideline for the learner and a benchmark by which to measure performance.
- b. A Supervisor evaluation- a performance evaluation- to be given quarterly during a private meeting with the FETP resident. This process will provide feedback to the learner on their attitude, teamwork, motivation and progress through the program.

### For awarding of a degree:

- A final exam will be administered upon completion the program
- Residents will prepare a bound volume containing a portfolio of work completed during the programme
- The portfolio will include:
  - a report of a field investigation of an outbreak or other acute health problem
  - a late draft of a scientific paper submitted for publication to a refereed journal
  - a report accepted for publication in the national epidemiology bulletin
  - a review of a communicable disease surveillance or laboratory system in which the candidate has been practically involved, during the periods of field assignment
  - a summary of practical epidemiologic experience gained during a field assignment

### Summary of University Requirements

#### For each Unit:

3-4 formal assessments + unit final exam	10 marks
Graded assignment	5 marks
Practical	<u>15 marks</u>

**Unit total:** 30 marks

#### Degree Requirement

Final Program Exam + Portfolio ('dissertation')	70 marks
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**Program Total** 100 marks

### G. Career Structure & Opportunities

This is one of the most critical issues for developing a long-term sustainable program. If graduates are not recognized for their increased abilities, and positions are not available for them to apply what they have learned then word will get back to recruits and few good candidates will apply. This issue is rarely resolved at the start of an FELTP, but everyone must be aware of its importance and a plan should be developed for dealing with it. This issue is closely tied in with the certification issue.

#### 1. Structure

The MoH or other governmental agencies responsible for personnel matters and health manpower planning should create a career ladder for epidemiologists and laboratorians. For example: junior epidemiologist/ junior public health laboratorian, epidemiologist/public health laboratorian, senior epidemiologist/senior public health

laboratorian, chief epidemiologist/chief public health laboratorian, etc. These categories should come with appropriate salaries and benefits to recruit qualified persons into them.

Regional, national, provincial, district, and local health authorities that have their own personnel systems should be encouraged to do the same.

## 2. Positions

To ensure that FELTP graduates will have appropriate epidemiologist positions to move into in the MOH, new technical positions for epidemiologists and laboratorians, at salary levels sufficiently high to attract program graduates, should be created. It might be necessary to restrict these positions to graduates of FELTP or similar programs.

Residents sponsored by their employing organization will be expected to appropriate positions in that sponsoring organization.

Examples of appropriate locations for FELTP graduates include the following

- a. Fulltime epidemiologists in national disease prevention and control programs. Fulltime public health laboratorians at the national level
- b. Managers of national disease control programs
- c. Fulltime epidemiologists in provincial or district health departments. Fulltime public health laboratorians in provincial or district laboratories
- d. State, and provincial health program managers.
- e. Large city health departments.
- f. District health officers.
- g. Researchers in format research institutions.
- h. Academic institutions such as Schools of Public Health and Departments of Community Health in Schools of Medicine.

## H. Advisory Committee

To utilize the broad expertise of the epidemiology community, to maintain broad-based support, assure that the program is meeting needs, and to help the program move toward institutionalization it may be important to have an advisory committee. This committee could be very important in helping the FELTP over the inevitable hurdles and to ensure broad-based support. Organizations represented could include the following: MoH, KEMRI, JKUAT, University of Nairobi, WHO-Kenya etc.

The Advisory Committee should meet no less often than semi-annually during the development of the project to discuss and recommend overall policy, and to serve as technical resource.

The following table summarizes the roles and responsibilities of the key personnel involved in the execution of the activities listed in this work plan

**Table: Summary of Key Personnel, Roles, and Responsibilities**

Name, Title, Location	Primary Role	Primary Responsibilities
RA		
FELTP manager		
National Counterpart		
Admin Asst.		
Lab advisor		

## 5. Funding

**The CDC Foundation’s total grant request for the Ellison Medical Foundation Joint Global Field Epidemiology and Laboratory Training Program in Kenya is \$2,817,182 over four years, including the CDC Foundation’s administrative fee.**

Total costs include support for a resident medical epidemiology advisor and a senior laboratory scientist, a Kenyan resident advisor, CDC support staff, housing, travel, operating expenses for training including stipends for the Ellison fellows, equipment, and supplies. Stipend costs are based on initiating a new class of 7 fellows in each of the first three years.

## Budget

	2003	2004	2005	2006	4-Year Total
<b>GFELTP - KENYA</b>					
Resident Epid. Advisor sal/ben/housing/security//ICASS	313,000	295,000	306,800	319,072	<b>1,233,872</b>
RA relocation (yrs 1,4) & home leave (yrs 2, 3)	40,000	15,000	16,000	45,000	<b>116,000</b>
Resident Lab Advisor sal/ben/housing/reloc/etc. NCID in-kind					
CDC-Atlanta technical support	80,000	83,200	86,528	89,989	<b>339,717</b>
Epi and Lab Fellow stipend each (incl 1,000 in- ctry travel)	91,000	189,280	196,854	102,361	<b>579,495</b>
Number of fellows supported (21 overall)	7	14	14	7	
Travel of Epi and Lab RA and consultants	14,500	50,500	52,520	18,000	<b>135,520</b>
Equip/supplies	7,000	10,000	10,400	3,000	<b>30,400</b>
CDC Foundation Program Officer	10,000	5,200	5,408	5,624	<b>26,232</b>
CDC Foundation Admin. Assist.	1,750	1,820	1,893	1,969	<b>7,431</b>
CDC Foundation - Direct Costs:					
Travel	-	3,500	-	-	<b>3,500</b>
Mailings, phone & supplies	1,500	1,560	1,622	1,687	<b>6,370</b>
Legal Fees	2,000	500	520	541	<b>3,561</b>
Subtotal	560,750	655,560	678,545	587,243	<b>2,482,098</b>
CDC Fdn Admin Fee (13.5%)	75,701	88,501	91,604	79,278	<b>335,084</b>
	636,451	744,061	770,149	666,521	<b>2,817,182</b>

Note: 4% inflation factor calculated for years 2-4

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## **6. Monitoring and Evaluation Plan**

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### **Annexes and examples**

#### **Annex 1: Competencies**

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## **Appendix 2: General curriculum layout**