

Annual Report 2017



AFRICAN FIELD EPIDEMIOLOGY NETWORK (AFENET)



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Acronyms

AFENET	African Field Epidemiology Network
ACoDD	AFENET Corps of Disease Detectives
AFRICA-CDC	Africa Centers for Disease Control and Prevention
U.S. CDC	U.S. Centers for Disease Control and Prevention
FELTP	Field Epidemiology and Laboratory Training Program
FETP	Field Epidemiology Training Program
GOARN	Global Outbreak Alert and Response Network
INS	Instituto Nacional de Saúde (National Institute of Health)
HHS	Department of Health and Human Services
MPH	Master of Public Health
NIH	National Institutes of Health
NSTOP	National Stop Transmission of Polio
PAMJ	Pan African Medical Journal
TEPHINET	Training Programs in Epidemiology and Public Health Interventions
USAID	United States Agency for International Development
WHO	World Health Organization

Vision

A Healthier Africa.

Mission

Committed to ensuring effective prevention and control of epidemics and other priority public health problems in Africa.

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Goal

To strengthen field epidemiology and public health laboratory capacity and effectively contribute to addressing epidemics and other major public health problems in Africa.

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Message from Executive Director

EXECUTIVE SUMMARY

This second year of the second decade of AFENET's existence was marked by growth and changes:

First, our Network grew from 28 members in 2016 to 31 member programs in 2017. We welcome our new members, as well as existing member programs found here: <http://www.afenet.net/index.php/about-us/who-we-are/who-we-are-2> who have continued to demonstrate impact in their countries and in the region by supporting and participating in routine and emergency public health interventions, and contributing to building human resource capacity for public health, at various levels of the health system.

Secondly, we launched a new Strategic Plan, to provide a roadmap for our operations for the period 2017 - 2021. The plan was developed through a consultative process that started with the review of the previous plan, followed by an information-gathering process to obtain inputs from across the Network. Among others, the plan has a strong focus on fostering the organization's development and sustainability of its members. We will look forward to engaging with all our partners to achieve this goal. Read more from our strategic plan here on the AFENET website.

In October 2017, we embarked on efforts to "decentralize" the AFENET Secretariat by creating 7 regional hubs: Anglophone West Africa with a hub in Ghana; Central Africa and Indian Ocean with a hub in DRC; East Africa with hub in Tanzania; Horn of Africa with hub in Ethiopia; Nigeria with



hub in Abuja; Southern and Lusophone Africa with hub in Zimbabwe and Francophone West Africa with hub in Burkina Faso. Each region will be supported by a Regional Technical Advisor (RTC), assisted by a Regional Administrator. The allocation of our operational regions and hubs is based on epidemiology, population, language, country-accessibility and magnitude of global public health resources. We hope that this model of operation will improve our efficiency, and catalyze our efforts to mobilize resources for the promotion and sustainability of FETPs as a model for workforce capacity development while strengthening Africa's public health systems.

For the first time, the AFENET Conference will be held in a non-English speaking country – Mozambique. Organized in collaboration with Mozambique's National Institute of Health and the Mozambique Field Epidemiology and Laboratory Training Program, the 7th AFENET Conference will be held from 12 -16 November 2018, at the Joaquim Chissano International Conference Center. Please join us as residents and graduates from the Network and public health specialists drawn from our partner base share knowledge, experiences and practices.

Lastly, 2017 marked the beginning of my tenure as AFENET's Executive Director. I am excited to be a part of this great organization, and look forward to working with you all – partners, staff and colleagues – as we strive to achieve a healthier Africa.

ABOUT AFENET

AFENET is a non-profit networking and service alliance of Field Epidemiology (and Laboratory) Training Programs (FELTPs), and other applied epidemiology training programs. AFENET has operations in over 31 countries in Sub-Saharan Africa or the World Health Organization Africa Region (WHO - AFRO). Established in 2005, AFENET is dedicated to helping Ministries of Health in Africa build strong, effective, sustainable programs and capacity to improve public health systems on the African continent.

Established in 2005, AFENET has its Headquarters in Kampala, Uganda with seven AFENET - Regional Hubs namely: Anglophone West Africa (Accra, Ghana), Nigeria (Abuja, Nigeria), Francophone West Africa (Ouagadougou, Burkina Faso), Central Africa & Indian Ocean (Kinshasa, D.R.C), East Africa (Dar es Salaam, Tanzania), Horn of Africa (Addis Ababa, Ethiopia) and Southern & Lusophone Africa (Harare, Zimbabwe).

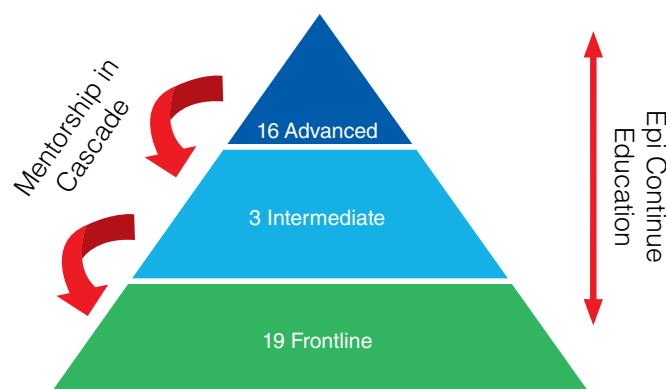
AFENET WORKS THROUGH SEVEN PRIORITY AREAS, THESE ARE:

Developing Field Epidemiology Capacity in Africa

This program fosters professional development of field epidemiologists, competent in the practical application of epidemiologic methods to a wide range of contemporary public health problems. The strategic objective addressed by this program is strengthening field epidemiology capacity in Africa. Emphasis is placed on the following strategic actions:

- Facilitating training of field epidemiologists.
- Mentoring trainees in outbreak investigation.
- Providing support to Ministries of Health in outbreak investigations.
- Providing support for operational research in epidemiology.

Field Epidemiology Workforce Development Pyramid



Developing Public Health Laboratory Capacity in Africa.

This area focuses on the strategic objective of enhancing public health laboratory capacity in Africa. Emphasis is on the following strategic actions:

- Establishing the current capacity of health laboratories in Africa
- Establishing and operationalizing a laboratory networking mechanisms
- Supporting laboratory capacity among member programs

Public Health Disease Surveillance and Effective Response Systems

Member programs contribute to strengthening surveillance and outbreak response systems. This includes formulation, strengthening, and periodical review of surveillance and emergency preparedness plans. The strategic objective advanced by this area is strengthening surveillance and outbreak response systems for communicable and Non-Communicable Diseases. Through this program area, the following strategic actions are emphasized:

- Training public health personnel in Integrated Disease Surveillance & Response (IDSR) and data management.
- Providing technical support to disease control programs.
- Establishing joint training of epidemiologists, veterinarians, and laboratory technicians, in line with the “One Health” initiative.
- Operationalizing surveillance systems.
- Strengthening early warning systems.

Networking and Collaboration

This area places emphasis on the strategic objective aimed at advancing the sharing of regional expertise in field epidemiology and laboratory practice. Emphasis is on the following strategic actions:

- Conducting experience-sharing conferences, workshops, and seminars in the region
- Facilitating faculty exchange programs in the region
- Strengthening inter-country collaboration
- Facilitating the sharing of training materials in the region
- Conducting joint outbreak investigations
- Promoting racial and ethnic diversity at all levels of public health practice

Publication and Documentation

The strategic objective for this program is to strengthen documentation and dissemination of field epidemiology experiences. The following strategic actions are considered:

- Supporting research performed by trainees
- Facilitating programs to document and disseminate their implementation experiences
- Supporting the Secretariat’s capacity to document and disseminate field experiences

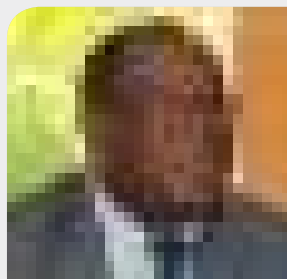
Public Health Program Management & Research Development

Public Health Program Management & Research Development aims to strengthen the capacity of disease prevention and control in the Ministries of Health in Africa. Through partnership, some of the projects that have been implemented include: enhancing research, epidemiology, and policy capacity in Sub Saharan Africa (Data to Action Award), Neglected Tropical Diseases Tobacco Control (NTD), Technical assistance to HIV response in Uganda, Malaria project, Nigeria, Tobacco Control, Data Improvement Teams – Uganda, Strengthening the Second Year of Life in Ghana, SMS reminder project in Uganda, Epidemiology of Burkitt’s lymphoma in East-African Children and Minors (EMBLEM) among others.

Promoting the “ONE HEALTH” Approach

- Establishing and strengthening of One Health platforms in Africa
- Preparedness and Response
- One health training programs (Burkina Faso and Senegal)

Board of Directors



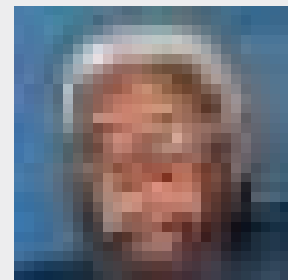
Prof Mufuta Tshimanga
Chair-person - Zimbabwe
Program Director, Zimbabwe FETP



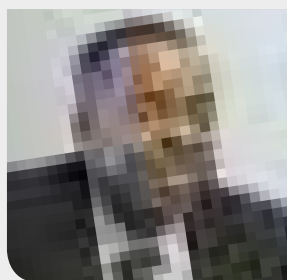
Dr. Chima Ohuabunwo
Executive Director



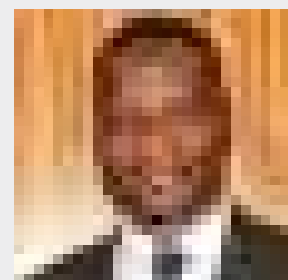
Dr. Zeinab Gura
Member - Kenya
Program Director, Kenya FELTP



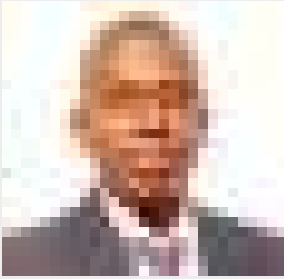
Dr. Kebela Ilunga
Member - DRC
Former Program Director,
DRC FELTP



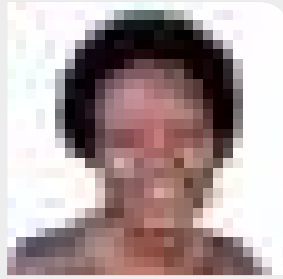
Dr. Peter Nsubuga
Eminent Member - USA



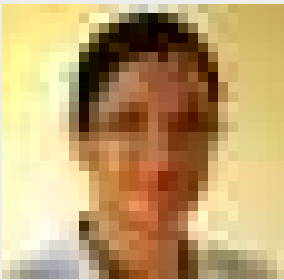
Dr. Ernest Kenu
Member - Ghana
Program Director, Ghana FELTP



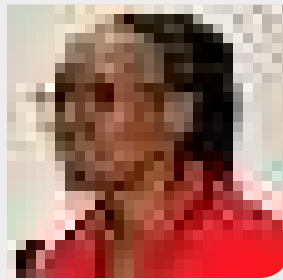
Mr. Moses Segawa
Secretary to the Board - Uganda



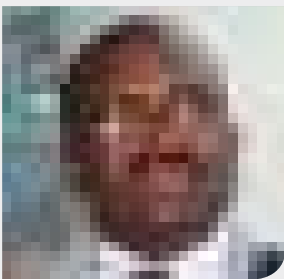
Dr. Elizabeth Ekirapa
Member - Uganda
Program Director, Uganda FELTP



Dr. Cynthia Sema
Member - Mozambique
Program Director, Mozambique FETP



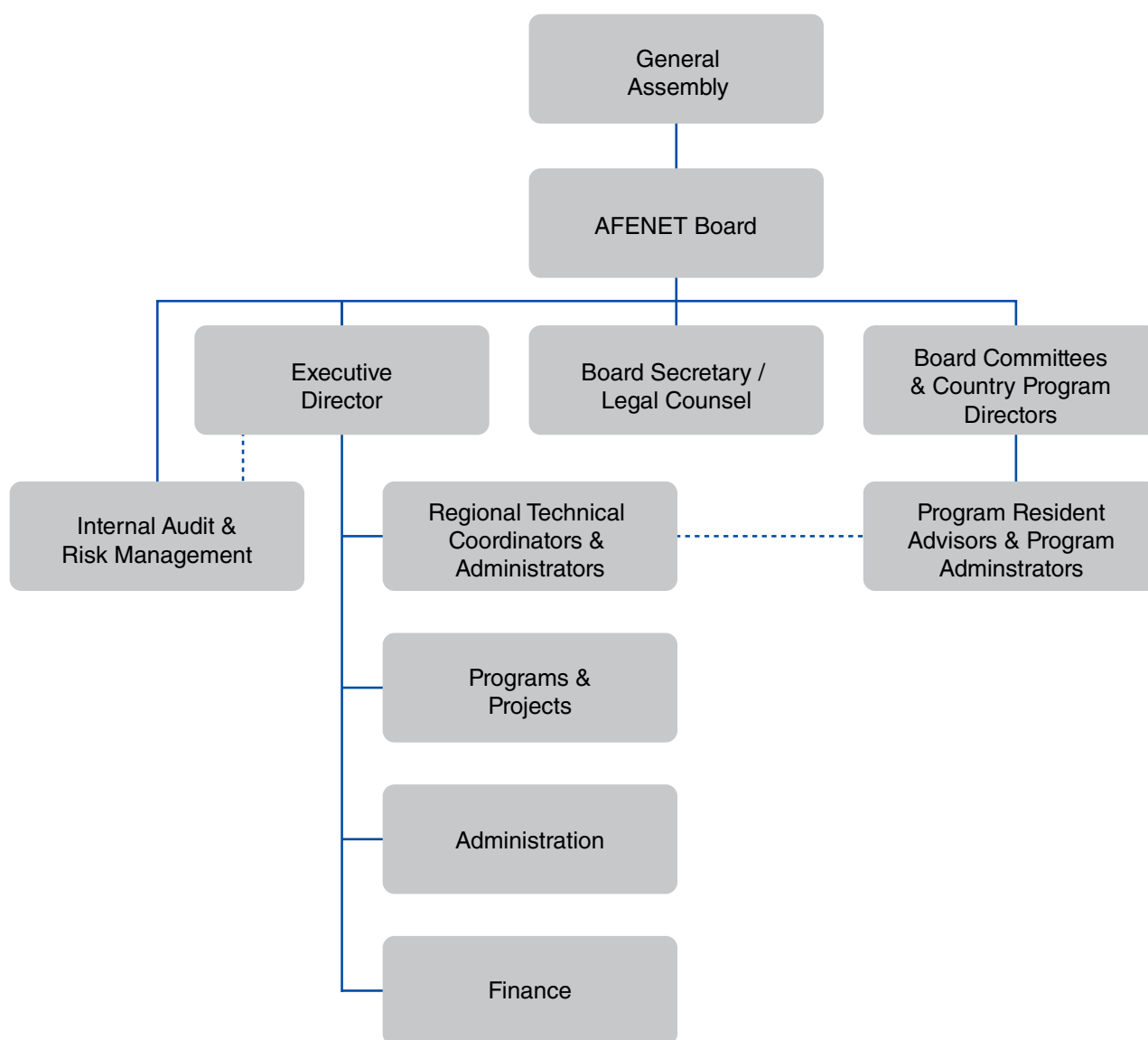
Dr. Janneth Mghamba
Member - Tanzania
Program Director, Tanzania FELTP



Dr. Ntadom Godwin
Member - Nigeria
Program Director, Nigeria FELTP

AFENET's highest body of governance is the Annual General Assembly (AGM) which oversees the Board of Directors (B.O.D), eight Individuals who are Program directors drawn from the membership, one Eminent person, one WHO - AFRO representative and the Executive Director. Two positions are non-voting and are held by the Executive Director and the representative for the World Health Organization (WHO) Regional Office for Africa.

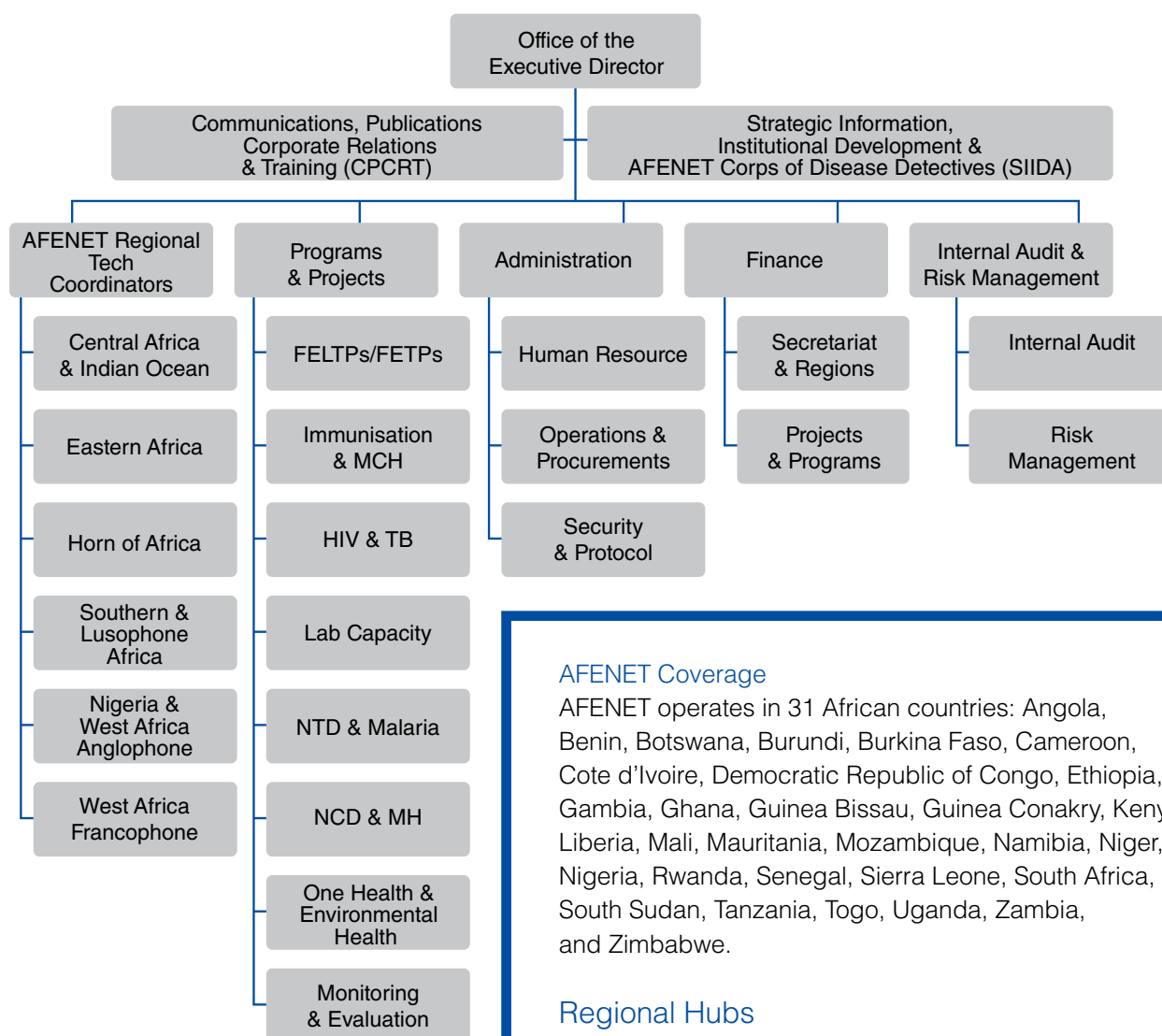
AFENET Organogram



*Board Committees

- Policy, Advocacy & Resource Mobilisation (PAR)
- Human Resources (HR)
- Finance, Audit & Risk Management (FAR)
- Quality Assurance and Monitoring & Evaluation (QA&ME)

AFENET Secretariat Organogram



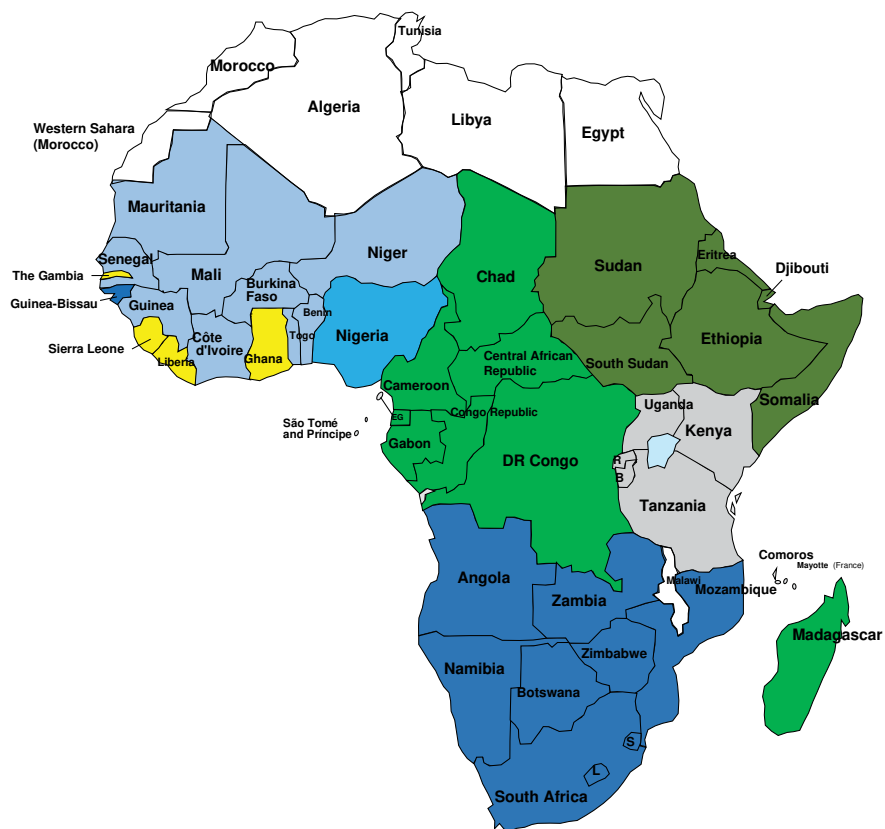
AFENET Coverage

AFENET operates in 31 African countries: Angola, Benin, Botswana, Burundi, Burkina Faso, Cameroon, Cote d'Ivoire, Democratic Republic of Congo, Ethiopia, Gambia, Ghana, Guinea Bissau, Guinea Conakry, Kenya, Liberia, Mali, Mauritania, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, South Sudan, Tanzania, Togo, Uganda, Zambia, and Zimbabwe.

Regional Hubs

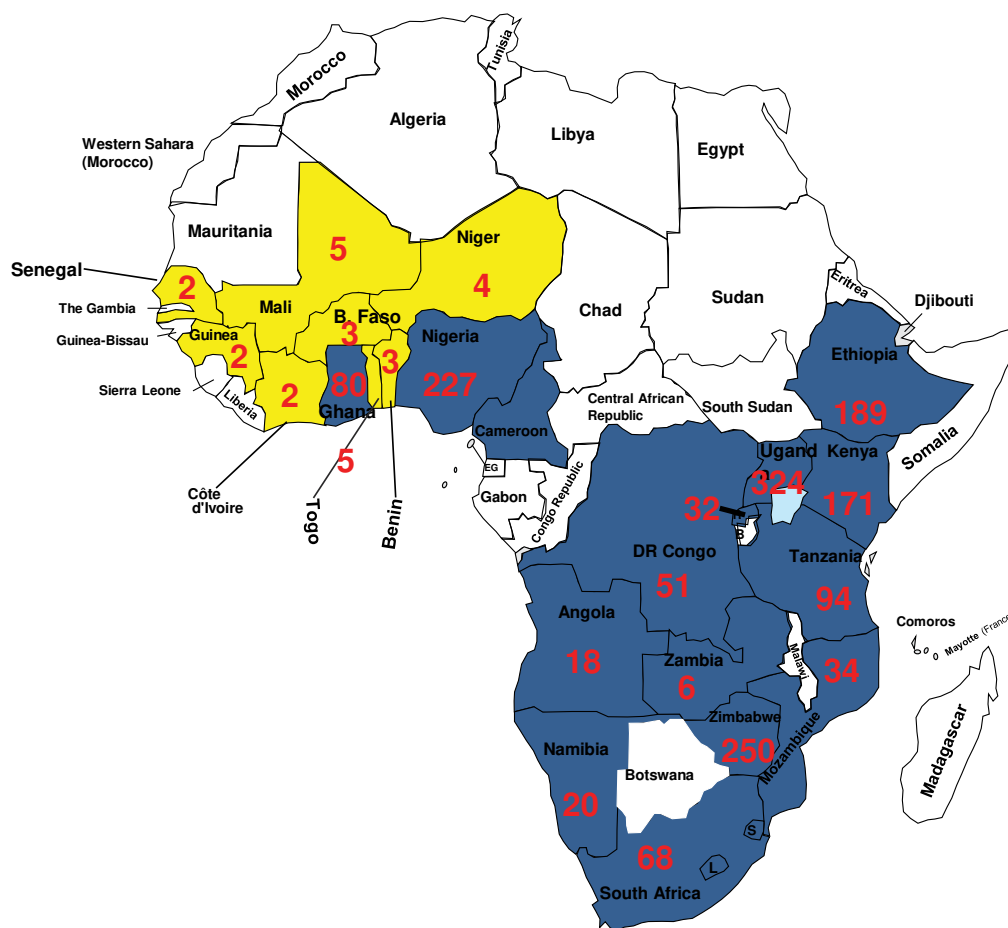
AFENET has its Headquarters in Kampala, Uganda with seven AFENET - Regional Hubs namely: Anglophone West Africa (Accra, Ghana), Nigeria (Abuja, Nigeria), Francophone West Africa (Ouagadougou, Burkina Faso), Central Africa & Indian Ocean (Kinshasa, D.R.C), East Africa (Dar es Salaam, Tanzania), Horn of Africa (Addis Ababa, Ethiopia) and Southern & Lusophone Africa (Harare, Zimbabwe)

AFENET Operations by Regions



- | | |
|--|------------------------|
| Anglo West Africa | B - Burundi |
| Central Africa & Indian | EG - Equatorial Guinea |
| East Africa | L - Lesotho |
| Francophone West Africa | R - Rwanda |
| Horn of Africa | S - Swaziland |
| Nigeria | |
| Southern & Lusophone Africa | |

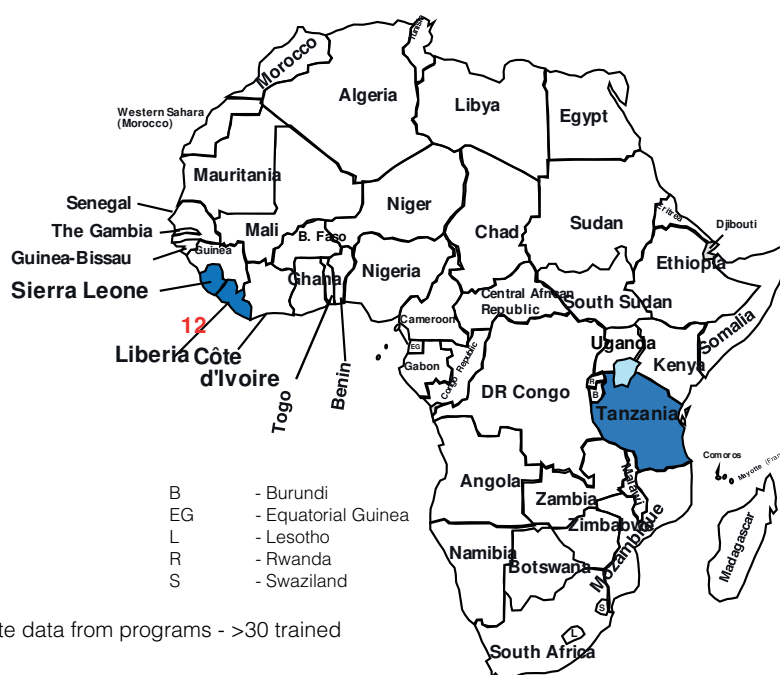
Distribution of FE(L)TP Residents and Graduates



- Advanced FE(L)TPs (16)
- WA Advanced - FETP (8)

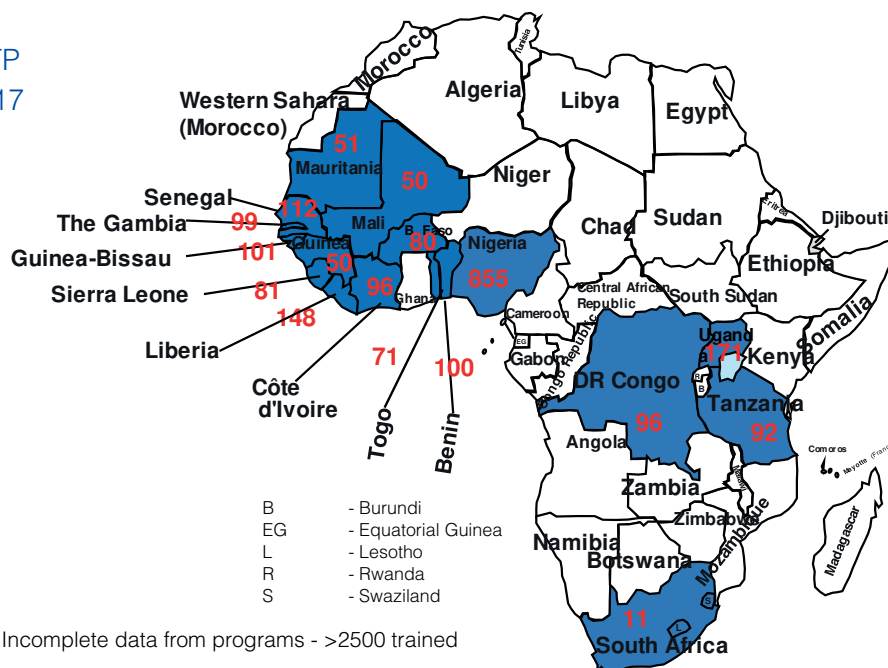
Distribution of Intermediate and Frontline FETP Residents

Distribution of Intermediate FETP Graduates, May, 2018



*EpiTrack database: Incomplete data from programs - >30 trained

Distribution of Frontline FETP Graduates - December, 2017



*EpiTrack database: Incomplete data from programs - >2500 trained

GHSA Workforce Development Action Package

(GHSA Action Package Detect-5)

Five Year Target:

A workforce including physicians, veterinarians, biostatisticians, laboratory scientists, farming/livestock professionals, and atleast 1 trained field epidemiologist per 200,000 population, who can systematically cooperate to meet relevant IHR and PVS core competencies.

As Measured By:

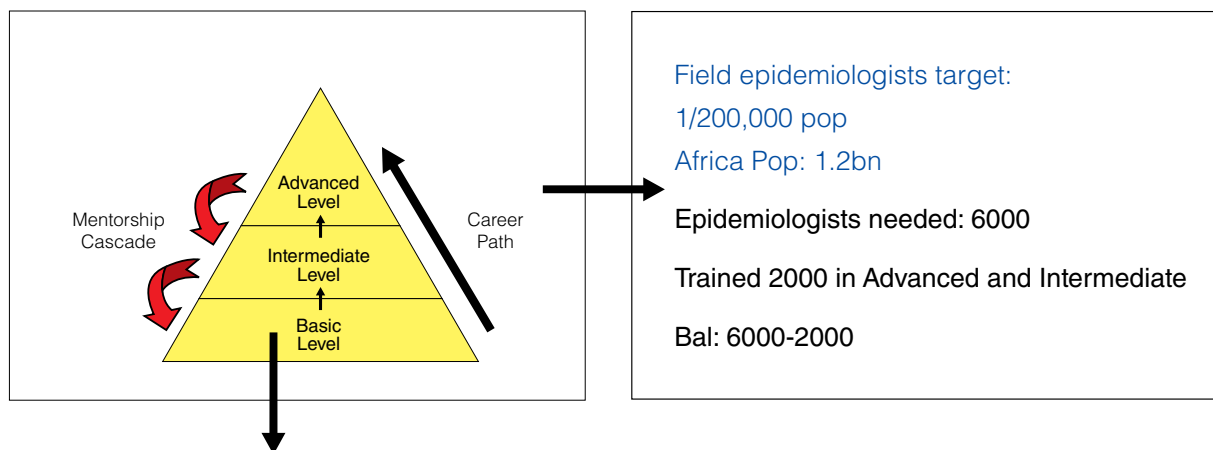
One trained field epidemiologist per 200,000 population, and one trained veterinarian per 400,000 animal units (or per 500,000 population), who can systematically cooperate to meet relevant IHR and PVS core competencies.

Desired Impact:

Prevention, detection, and response activities conducted effwectively and sustainably by a fully competent, coordinated, evaluated and occupationally diverse multi-sectoral workforce.

Workforce Development via FETPs:

Progress towards GHSA Workforce Target



FETP Core Competencies

- Public Health Surveillance
- Field Investigation
- Epidemiological Methods
- Scientific Communication

Program Reports

ANGOLA FIELD EPIDEMIOLOGY AND LABORATORY TRAINING PROGRAM

The Angola Program is a collaboration between the Angola Ministry of Health (MOH) in collaboration with Agostinho Neto University, the Army Health Services, WHO and AFENET. It was established in 2010 with funding from the U.S. Centers for Disease Control and Prevention (CDC).

Training and related activities

Angola FELTP supported Cohort 1, 2 and 3 with a Biostatistician.

The Resident Advisor engaged in discussions with the coordination of the FELTP program to discuss possibilities of changing the curriculum and/or teaching and evaluation system at Universidade Agostinho Neto. In addition, there were discussions with current Statistics teacher to seek ways of collaboration and cooperation to improve FELTP's students learning process.

2nd cohort FELTP resident training activities

- There were meetings to review the dissertation project entitled "Risk factors for malaria mortality among children under the age of 5 years old", namely: review methods; support data analysis and interpretation, as well as, revise multiple versions of the dissertation thesis;

3rd cohort FELTP (enrolment date 2015, 11 students) resident training activities

- The RA reviewed with each student the research projects they are current working on (mainly still doing the evaluation of the public health surveillance systems or analysis of database) and prepare with each one their presentations for the monthly FELTP work presentations meeting for the 3rd cohort that took place in April 2017.
- The RA continued revising the dissertation protocols of several students that have a preliminary version ready for review.

4th cohort FELTP students (enrollment date 2016, 7 students)

- Had weekly training sessions on key epidemiological and biostatistics concepts and tools for FELTP students to increase their knowledge and ensure that they acquire the basis for their

- graduation as FELTP students;
- Were supported in their FELTP obligatory research projects (evaluation of public health surveillance systems; outbreak investigation; evaluation/analysis of database; management project);
 - Students revised protocols and instruments of data collection concerning the public health surveillance systems each student was to evaluate;
 - Revised and supported elaboration of FELTP student's power point presentations concerning their protocols for the evaluation of public health surveillance system;

Outbreak Investigations

- Residents participated in field outbreak investigation for cholera suspected cases in the province of Luanda, together with partners (MoH, WHO).

Plans for the next reporting period

- AFENET to engage the CDC Country office to ensure we can have a workable solution for PMI funding - budgeting and implementation.
- Provide support to Malaria residents with their dissertations

3rd Cohort

- Further discuss and review the protocols for their dissertation projects;
- Support students in finalizing their obligatory field epidemiology projects and support the preparation of the power point presentations for the monthly meeting in April.
- Undertook didactics at Universidade Agostinho Neto.

4rd Cohort

- Maintain weekly training sessions to improve epidemiology and biostatistics related knowledge.
- Support the implementation of their protocols for the evaluation of the public health surveillance systems.
- Were involved in field epidemiology internship until end of May 2017.

BURKINA FASO RIPOSTE ET SURVEILLANCE PROMPTE DES INFECTIONS RESPIRATOIRES (RESPIRE)

Response to Acute Respiratory Infections in Burkina Faso.

Introduction

Acute respiratory infections pose a major public health burden around the world. The Global Health Security (GHS) Agenda aims to improve infrastructure for preventing, detecting, and responding to major infectious disease threats, including acute respiratory infections. Burkina Faso is one of the 17 GHS Phase 1 countries and one of nine such countries conducting “Flagship” projects designed to demonstrate early successes of the GHSA agenda.

Burkina Riposte Et Surveillance Prompte des Infections Respiratoires (RESPIRE) has three overarching objectives:

- Strengthen existing surveillance for Severe Acute Respiratory Illness (SARI) at the national level.
- Implement event-based surveillance for clusters of SARI in hospitals in nine districts.
- Implement event-based surveillance for clusters of acute respiratory infections at the community level in three districts (Boussé, Houndé, Kongoussi).

This Statement of Work outlines CDC needs related to strengthening surveillance and workforce development, two of CDC’s “Core 4” activities of the GHS Agenda, the others being improving laboratory capacity and developing emergency response capacity.

BURKINA FASO: STRENGTHENING MENINGITIS SURVEILLANCE

Introduction

The Meningitis Belt, an area that stretches from Senegal and Gambia in the West to Ethiopia in the East and has an at-risk population of about 430 million, is characterized by endemic meningococcal disease and annual outbreaks with large-scale epidemics every 5-12 years. In 2010, a novel serogroup A meningococcal conjugate vaccine developed specifically for Africa (MACV, MenAfriVac) was launched in and by 2015, more than 235 million in 16 countries had been immunized. Prior to widespread implementation of MACV, serogroup A was the cause of most major meningococcal epidemics in the countries of the Meningitis Belt. However, several epidemics of serogroup W have been reported (Burkina 2012, Togo 2016) and in 2015, the first largest epidemic of serogroup C was reported in Niger, with over 8,500 cases. This highlights the importance of high quality surveillance data to ensure early detection of epidemics and further understand the evolving epidemiology of epidemic meningitis in the region. The Meningitis and Vaccine Preventable Diseases Branch (MVPDB) committed to build and sustain capacities for

vaccine preventable disease surveillance and laboratory confirmation in support of the Global Health Security Agenda.

Objectives

To enhance rapid detection, diagnosis, and response for outbreaks of bacterial disease in meningitis belt countries such as Togo (primary) and Burkina Faso, Ghana, and Mali as needed.

Planned activities

- Support assessments of existing surveillance systems
- Support for hosting surveillance and laboratory workshops and training to enhance rapid detection, diagnosis, and response of epidemic-prone bacterial diseases
- FETP field support for meningitis epidemic response

THE CENTRAL AFRICAN FIELD EPIDEMIOLOGY AND LABORATORY TRAINING PROGRAM (CAFELTP)

The Central African Field Epidemiology and Laboratory Training Program (CAFELTP) was officially established in October 2010 at the University of Yaoundé I, Faculty of Medicine and Biomedical Sciences. The participating countries include Cameroun, Central African Republic (CAR) and Democratic Republic of Congo (DRC). The program emphasizes on applied field training more than theoretical classroom style teaching, with 25% of time designated for didactics, and 75% for field practice. CAFETP was designed in recognition of the need to strengthen the public health system of the Central African region, and to enhance the capacity of the region to carry out effective disease surveillance, outbreak investigations and response.

The Primary Objectives of CAFELTP Include:

- Developing leadership in public health;
- Providing epidemiological services;
- Educating and training public health professionals in epidemiology and laboratory sciences;
- Supporting public health laboratory services; and
- Providing technical support and advisory services to key stakeholders such as the Ministry of Health.

In 2013, DRC was replaced by Chad and a new CDC-implementing partner for CAFETP came onboard. CAFETP is a member of AFENET but there has been some gap in full participation in the network activities including sharing of program reports. The Program Director; Dr Etoundi Mballa currently serves on one of the AFENET Governing Board Committees.

DEMOCRATIC REPUBLIC OF CONGO FIELD EPIDEMIOLOGY AND LABORATORY TRAINING PROGRAM (DRC FELTP)

The Democratic Republic of Congo (DRC) is the second-largest country in Africa. It has an estimated population of 81,680,000 habitants. Bordered by nine (9) country, It ecosystem is favorable for disease outbreaks.

The DRC's Ministry of Health System has 3 levels : Central Level: MoH's office, DG, 13 Central Directory (including DLM), and Programs; Intermediate Level: 26 Provincial Health Divisions: DPS; Operationnal Level: 517 Health Zone (HZ) and the community.

Supported by the CDC Center for Global Health Protection (CGHP), Field Epidemiology and Training Program (FETP) Branch, the DRC program has greatly contributed to strengthening the capacity of the country in epidemiology, laboratory, management, outbreak response, disease monitoring, and communication.

Established in 2012, the DRC FELTP aims to strengthen national surveillance systems and enhance public health capacity by developing a critical mass of health professionals with advanced applied epidemiology skills. To date 3 cohorts have finished their training and 2 others are still in training. The 6th cohort will start in February 2018.

DRC implemented a Front line program to build epidemiologic capacity at the local surveillance level. The first session of the DRC front line started on June 6th, 2016 in Kinshasa. Three cohorts have completed the training and 4th cohort to be recruited in 2018.

Achievements

Participants: Advanced Program

Table I. Profile of Residents Enrolled for the Advanced Program DRC FETP since 2013 to date

Cohort N° : year of admission	Profile						Total	
	Medical		Veterinary		Laboratory		Enrolled	Graduate
	Enrolled	Graduate	Enrolled	Graduate	Enrolled	Graduate		
Cohort #1: 2013	7	7	2	2	3	3	12	12
Cohort #2: 2014	10	9	6	4	4	4	20	17
Cohort #3: 2015	12	11	3	3	3	3	18	17
Cohort #4: 2016	20	On going	2	On going	3	On going	25	On going
Cohort #5: 2017	19	On going	3	On going	3	On going	25	On going
Cohort #6: 2018*	21	N/A	2	N/A	2	N/A	25	N/A
Total (% among enrolled)	89(71.2)	27	18(14.4)	9	18(14.4)	10	125	46
% among graduates		58,7		19,6		21,7		100

*25 participants have just been enrolled for the 6th Cohort which will start on February 2018

Participants of Front Line FETP:

Table III. Number of Trainees Enrolled for the FETP Front Line since June 2016

Cohort #	Duration		Place	Profile										Total	
				MD		Veterinary		Laboratory		Bachelor in PH		Nurse		Enrolled (E)	Graduate (G)
	From	To		E	G	E	G	E	G	E	G	E	G		
Cohort 1	Jun 16	Sept 16	Kinshasa	15	14	1	1	1	1	1	1	12	12	30	29
Cohort 2	Oct 16	Jan 17	Lubumbashi	12	11	0	0	1	1	10	10	7	7	30	29
Cohort 3	April 16	Oct 17	Kisangani	9	8	2	2	2	2	5	5	12	11	30	28
Total				36	33	3	3	4	4	16	16	31	30	90	86 (96%)
% among graduates					38,4		3,5		4,7		19		35		

Comments: The proportion of Lab and Veterinarian is still low. There is a need to rise it up.

Graduation of Cohort III FELTP and Cohort III Frontline FETP

A total of 17 Residents of the 3rd Cohort graduated in March 2017. Cohort III Frontline trainees are scheduled to complete on 28th November 2018 in Kisangani.



Group photo after the graduation ceremony of the 3rd Cohort, Kisangani, DRC

Field Activities and Achievements

Table VIII. Summary of Field Investigation for FETP (Advance program), 2017

Period	Topics	DPS	Health Zone	# of FETP
July 2017	Polio*	Maniema, Haut Lomami, Lualaba, Haut Katanga	20 Health zone*	20
August, 2017	Typhoid Fever	Kinshasa	Kintambo	5
August, 2017	Malaria	Kinshasa, Kongo Central	Lemba, Matadi	7
August, 2017	measles	Maniema, Haut Katanga	Kunda , Kenya	1
August, 2017	Yellow Fever	Kinshasa, Kasai	Kingasani, Kansele	5
August, 2017	Cholera	Kinshasa, Nord Kivu	Limete, Kokolo, Goma	16
August, 2017	MonkeyPox	Tshuapa	Boende	1
November 2017	Polio*	Maniema, Haut Lomami, Lualaba, Haut Katanga, Tanganyika	20 Health zone*	20
December, 2017	Cholera	Lomami	Nganda jika	4
December, 2017	Cholera	Kinshasa	Binza Meteo, Limeté	18
December, 2017	Cholera	Nord Kivu	Karisimbi, Goma. Kiroshe	3
Total				100

*Health zone concerned by Polio investigation are detailed below

Table IX. Summary of Field Investigation for FETP - Front line, June 2016 to 2017

Period	Topics	DPS	Health Zone	# of Frontline
August 2016	Cholera	Equateur, Kinshasa		7
July 2016	Yellow Fever	Kongo Central		7
August 2016	Typhoid Fever	Kwilu	Mukedi	4
June 2017	MonkeyPox	Tshopo	Basoko	1
June 2017	Ebola	Bas Uélé	Likati	1
May 2017	Avian Flu	Ituri	Tchomia	1
Oct - Nov 2017	MDR Tuberculosis	Kinshasa	Binza Ozone	4
Oct - Nov 2017	Meningitidis	Tshopo	Isangi	1
Total				26

EBOLA Outbreak in Likati, Democratic Republic of Congo

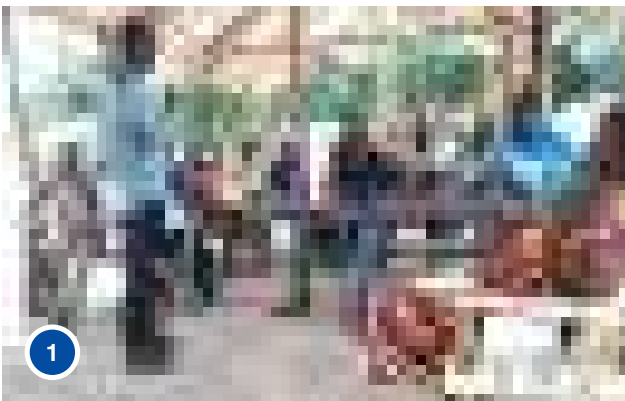
During the last Ebola Outbreak in Likati, DR Congo 4 graduates FETP and 1 Frontline resident were involved in the response as Field Coordinator, Field Surveillance team lead and member of the response team.

In total:

- 8 cases were notified including 5 confirmed (3 by PCR and 2 by Serology) and 3 probable (death).
- 83 contacts followed for the contact tracing.



Frontline RA, during Ebola investigation in Likati



1



3

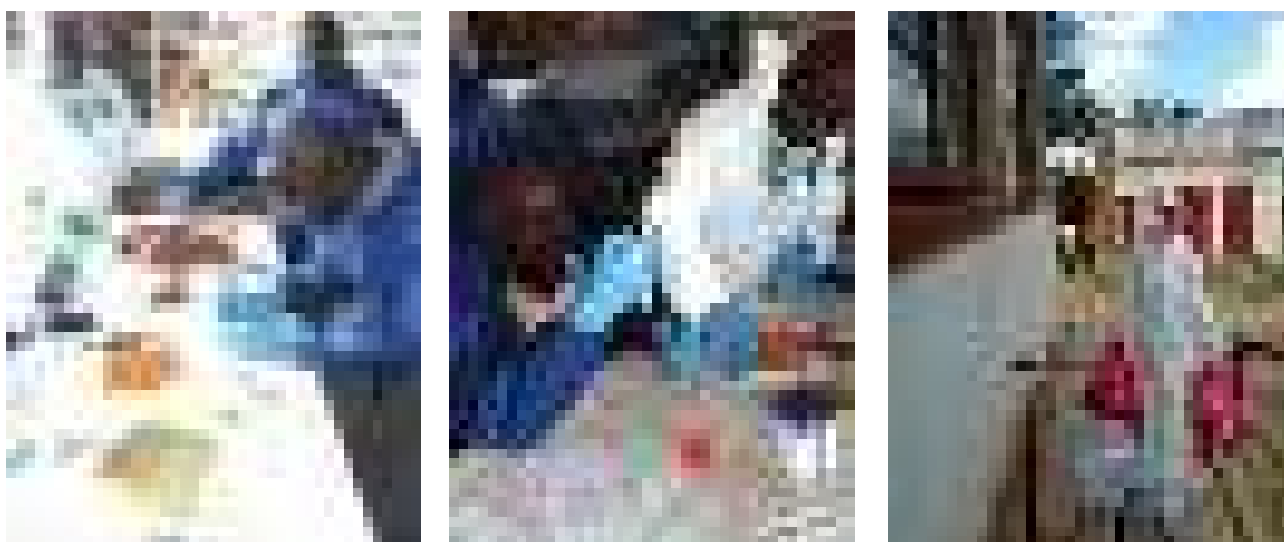


2

1. Frontline RA briefing of community surveillants (RECO)
2. Environment investigation in Likati, DR Congo
3. Frontline Resident (C3), during Ebola Outbreak in Likati with MSF team

Outbreak of Avian Flu in the DRC

This was the first biological confirmation of an Avian Flu in DR Congo. Seven (7) samples were confirmed in the field by PCR. The investigation and the response were initiated by (FAO) the Food and Agriculture Organisation.

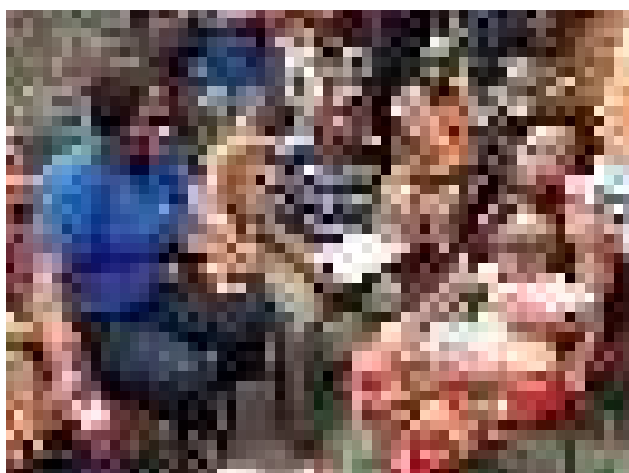


Frontline Resident (Cohort III): Bird dissection and Lab analysis during the Avian Flu's outbreak in Ituri, May 2017

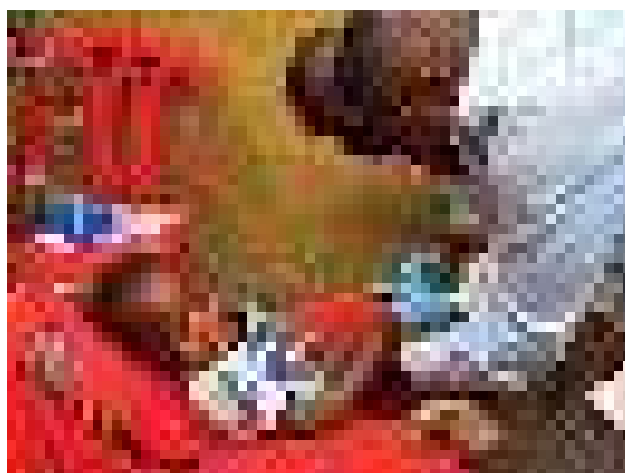
Micro Fluid Digital (MFD- Project): Lab Trial for Measles and Rubella

During one month, 8 FETP involved in Field Activities, (with 2 CDC staff and Toronto University's team)

- Surveillance activities
- 21 Health zone were visited
- 156 Suspects Cases found (85 F and 71 M)
- Sero surveillance in Biyela Health Zone:
- 145 house visited
- More than 150 Blood's sample collected



FETP graduate investigating a suspect case of measles



Sample prelevements of a suspect in the community

Poliomyelitis

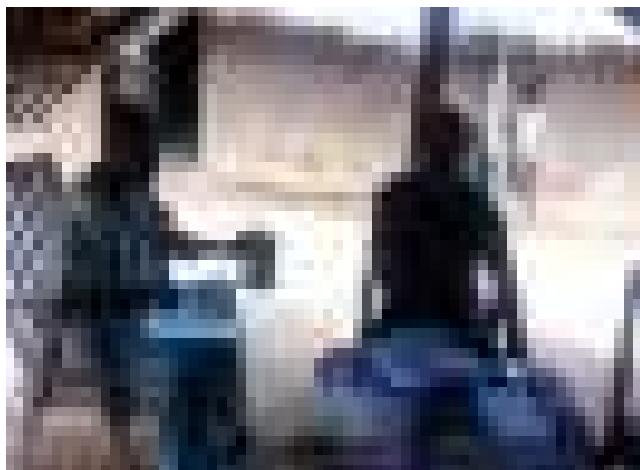
- From June to July 2017, 20 FETPs were actively involved in vaccination campaign and investigation of Acute Flaccid Paralysis (AFP) cases.
- A training session on Polio surveillance was held in Lubumbashi :
- From 28th October to 4th November, 2017 a training session
 - 29 participants from 7 provinces (Maniema, Kasai Oriental, Kasai Central, Lualaba, Haut Katanga, Kinshasa, Tanganyika) attended the training, including 5 FrontLine (Cohorte 2).
 - Six (6) Facilitators coming from MoH (DLM, EPI program) and Partners (CDC atlanta and DRC, WHO) attended the workshop training.

Participants were deployed on the field for 2 days for active surveillance of AFP.

- 11 Health Zone were targeted for the active surveillance
 - 242 sites were visited (High Priority : 42, Middle Priority : 94 and Low Priority : 102)
 - 6 Traditional Healer were visited,
 - 526 Health Workers (81 MD, 305 nurses, 18 Midwife, 24 administrative and 98 from the community) received a short briefing about AFP surveillance
- AFP cases:
In total 20 cases of AFP were detected during active surveillance
 - 2 less than (\leq 14 days),
 - 11 between 14-90 days ,
 - 7 more than 90 days.

3 FETP Frontline residents conducted Field Work on Monkey Pox

- Cohort I: Data Quality analysis in DPS EQUATEUR
- Cohort III: Data Quality Analysis in AKETI Health Zone/ DPS Bas Uele.
- Cohort III: Investigation of Monkey Pox in Basoko Health Zone/ DPS Bas Uele



Support to the MonkeyPox Response in Aketi Health Zone, (Frontline Cohort III)



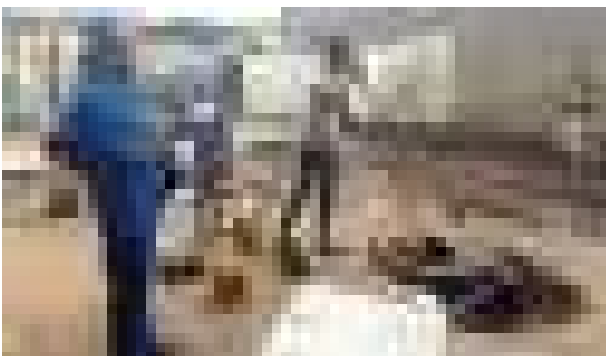
Response to MonkeyPox Outbreak in Ifondo, CONGO (Graduate Adv Cohort II)

Response to Cholera Outbreak

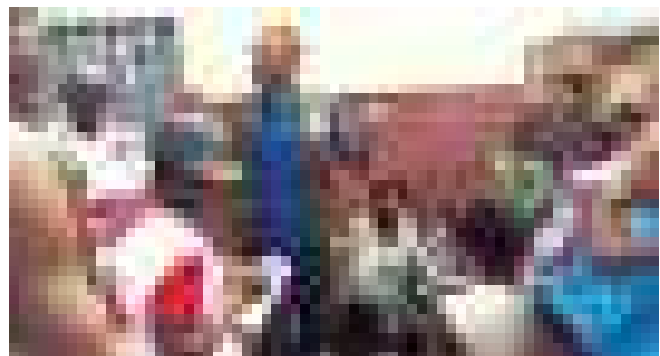
Table XIII. Outbreak Investigation of Cholera

Health Zone	Duration/Period	DPS/ Provinces	# of FETP
Limete, Kokolo,	August, 2017	Kinshasa,	13
Goma, Karisimbi	August, 2017	Nord Kivu	3
Nganda jika	December, 2017	Lomami	4
Binza Meteo, Limeté	December, 2017	Kinshasa	18
Karisimbi, Goma, Kiroshé	December, 2017	Nord Kivu	3
Total			41

In total, 41 FETP participated in Cholera response activities.



Sensitization and active surveillance in the community



Sensitization and investigation in the community

Congolese Association of Field Epidemiologist / Association Congolese des Epidémiologistes de Terrain (ACET)

All FETP graduates from the CAFELTP and DRC FETP are organised in an Alumni association called ACET. It comprises 70 Graduates FETP from the advanced program (46 in DRC and 24 in Cameroun).

Field Supervision for Advanced FETP

FETP Alumni (ACET) and the DRC FETP team are in charge of the supervision of all field activities. Those activities are planned in January 2018. Field placement run for 5 months, from September 2017 to February 2018 for residents of the 4th cohort and 4 months from October 2017 to February 2018 for those in the 5th cohort.

Field supervision is currently done weekly by the local supervisors and in January 2018, central supervisors from the National level (Kinshasa) and FETP Alumni (ACET) from Intermediate level will go to the field for a face to face supervision as showed below.

Success of the DRC Frontline FETP in 2017

- Investigation of Ebola Outbreak : One Frontline resident and Four(4) graduates of the Advanced program was actively involved in the Ebola response.
- Investigation of Avian Flu : One Frontline resident participated the detection of the 1st confirmed Avian's Outbreak in Ituri.
- FETP Graduates support the surveillance and active surveillance of Measles in Kinshasa, with the CDC team during the DMF activities.
- 30 FETP was trained in Lubumbashi for the Polio surveillance and 20 among them are actually in the Field. At date, they have reported 46 new AFP cases.
- Dr. Nicole ANSHAMBI, one of the graduates of the 2nd Cohort has been promoted as the Provincial Coordinator of TB in Kinshasa.
- Dr. Bona Ngoyi, graduate of the 1st Cohort is actually in Charge of Surveillance in RTI in DR Congo.
- 6 FETP Graduates (4 from DRC FETP and 2 CAFELTP) are actually working in an international carrier out of the country.
- 3 FETPs (1 Graduate and 2 Frontline) has been selected for international conferences.
- Good representation of women for Cohorts 5 & 6 (30% for each cohort).

Publications

- Jacques Lokofata, DRC FETP Cohort I:
Operational evaluation of rapid diagnostic testing for Ebola Virus Disease in Guinean laboratories
PLoS One. 2017; 12(11): e0188047.
Link : <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5708756/>
- Jacques Katomba, DRC FETP Cohort I:
Extended Human-to-Human Transmission during a Monkeypox Outbreak in the Democratic Republic of the Congo. *Emerg Infect Dis.* 2016 Jun; 22(6): 1014-1021.
- Jacques Katomba ; DRC FETP Cohort I:
Lessons learned by surveillance during the tail-end of the Ebola outbreak in Guinea, June-October 2015: A case series
Keïta et al. *BMC Infectious Diseases* (2017) 17:304 DOI 10.1186/s12879-017-2405-x
- Jacques Katomba : DRC FETP Cohort I:
Resurgence of Ebola Virus Disease in Guinea Linked to a Survivor With Virus Persistence in Seminal Fluid for More Than 500 Days. DOI: 10.17863/CAM.24185
- Nicole Anshambi: DRC FETP Cohort II:
Clinical profile and factors associated with treatment outcome in tuberculosis in children in Kinshasa, Democratic Republic of Congo
- Aketi Loukia, Shiku Diayisu Joseph, Bakoko Bryan, Anshambi Nicole, Kashongwe Zacharie and Kayembe Kalambay Patrick . *Merit Res. J. Med. Med. Sci.* 2017 5(7): 331-336013
<https://meritresearchjournals.org/mms/content/2017/July/Loukia%20et%20al.htm>

ETHIOPIA FIELD EPIDEMIOLOGY TRAINING PROGRAM

The Ethiopian Field Epidemiology and Laboratory Training Programme (EFELTP) is a two-year in-service training programme in applied epidemiology and public health laboratory practice. This was created to be a long-term program and is coordinated by the EFELTP Steering Committee of the Federal Ministry of Health (FMOH). It trains residents in Field Epidemiology, and Public Health Laboratory, for leadership positions in various levels of the Ministry of Health (MOH) and the Ministry of Agriculture, Ministry of Defence etc. The residents will provide service to the FMOH, Regional Health Bureaus, during their training through long-term field placements.

Taking into consideration the importance of the training program in improving the Ethiopian public health system, the Federal Ministry of Health, Addis Ababa University, Saint Paulos Millennium Medical College, Gondar University, Bahir Dar University, Mekele University, Hawassa University, Haramaya University, Jimma University and the Regional Health Bureaus all agreed to launch the training program. The field epidemiology component is similar to Programs that have been established in more than 49 other countries and modelled after CDC's two-year Epidemic Intelligence Service (EIS) training program. Achievements during this period are detailed below.

Training and Related Activities

- The program enrolled 148 residents in 8 universities in 2016-2017. The training took place in the 8 universities and 71 field bases
- We expect 203 graduates as of end of 2017

Outbreak Investigation

There a total of over 200 outbreak investigations that were investigated by cohort 2 and 3 residents from all 8 universities.

Meetings and Conference Attended and or Convened

The 1st EFELTP Annual Scientific Conference took place in Addis Ababa, Ethiopia from June 27-30/2017. The conference was organized by the Ethiopian Field Epidemiology and Laboratory Training Program, Federal Ministry of Health in collaboration with AFENET. The conference was organized under the theme: “Addressing the elimination of malaria in Ethiopia through field epidemiology training program”. Several subthemes in line with this theme were identified such as health security and emergency response, public health surveillance, outbreak investigation and response, vaccine preventable disease ,HIV/AIDS, Tuberculosis and other opportunistic infections, malaria and other vector-borne Diseases, on-communicable diseases(NCDs), Strengthening Public health laboratories, and One Health.

On 27th June, 2017 preconference workshops were held on these thematic areas: Malaria, Scientific writing, Disaster management and ARC GIS. There were over 550 participants from all 8 universities, participants were instructors and mentors.

Collaborations and Partnerships

The EFELTP strongly worked with AFENET, TEPHINET and also with CDC and Public universities in Ethiopia. The EFELTP hired about 12 program coordinators for 8 universities. Undertaking field supervision was also one of the major activity of the program. During this period about 10 field bases and 4 universities were supervised. The program allocated resource for all field bases and 8 universities.

President’s Malaria Initiative (PMI) Support to EFETP

The PMI EFETP partnership was created to support the FMOH’s and EFETP’s effort to train competent field epidemiologists and public health laboratory managers who will contribute to Ethiopia’s malaria control capacity. A key outcome of the PMI EFETP initiative is to increase malaria expert epidemiologists and laboratory managers working in public health, outbreak preparedness and malaria control programs in Ethiopia. This was the sixth year of PMI support to EFETP with \$257,180, representing funding levels initially available to EFETP after CDC overhead cost deductions through an interagency agreement with USAID, but prior to CDC implementing partner cooperative agreement overhead cost reductions.

In 2017 there were 314 EFETP residents in training, 99 in year one and 215 in year two of training in 8 universities, all of these received basic malaria, epidemiology and outbreak investigation training in January 2018 and related practical experience as are typical of all CDC-supported international FETP/FELTP programs. There were 11 EFETP residents with an enhanced malaria focus enrolled in EFETP: Fowzi Salih (Haramaya University), Mekonnen Gebremichael (Mekele University), Afewerki Tesfahunegn (Mekele University), Getahun Kebede Embaye (Mekele University), Kissanet Tesfay (Mekele University), Malede Andargie Metekia (Mekele University), Mesafint Fekadu (Gondar University), Tirunesh Mulugeta Kassa (Gondar University), Ebise Abose Djirata (AAU), Muluget Asefu (AAU), and Dechasa Nesga (AAU). Residents were chosen based on contributions they had already made to malaria control in their regions along with academic performance and stated intention to assume leadership roles in malaria in Ethiopia. 179 graduates are working for FMOH or regional health bureaus and all work for the Public Health Emergency Management (PHEM) system. 20 graduates are malaria focal persons at the regional level, and one is a malaria focal person at the zonal level. Nearly all EFETP graduates are destined to assume PHEM officer duties, charged with reporting priority health events on a weekly basis and investigating outbreaks including malaria. The PHEM system conducts national surveillance for malaria and provides the emergency management of all outbreaks and is now the FMOH's premiere training and education program for building public sector workforce capacity for malaria epidemiology and malaria program leadership in Ethiopia.

The project aims to strengthen the Ethiopian public health system by contributing to the development of a robust disease surveillance system, with effective and timely acute public health event detection and response (including outbreak detection and response), capacity in field epidemiology and public health laboratory, evidence-based decision making for public health practice and leading to reduction in morbidity and mortality due to malaria.

Project Achievements:

Workforce capacity building through provision of both didactic and experiential training in malaria and applied epidemiology:

- General malaria training was conducted for all EFETP residents during the 8-week introductory training in field epidemiology through the Epidemiology of Priority Diseases module.
- Many EFETP residents benefit from ongoing interactions with the PMI Resident Advisor, Mathy Murphy, MD including training in modules on epidemiology and malaria, and Mini Grant for 11 residents.
- Malaria related symposium opportunities were provided to several residents with malaria focus:

Mini-grants for operational research: During this period, 11 EFETP Residents worked on malaria mini-grants for operational research: EFETP, via AFENET with funding from USAID PMI/E, issued a competitive solicitation for proposals to support efforts towards developing novel and effective strategies and interventions that will help improve malaria control in Ethiopia. The eleven proposals were accepted by the Program.

- Fowzi Salih from Haramaya University worked as first author (Assessment of Malaria surveillance Detection and Response capacity of Haramaya district, East Hararghea zone, Oromiya Region, Ethiopia, 2017.
- Mekonnen Gebremichael worked on Adherence to Artemether-lumefantrine (Coartem) treatment among uncomplicated malaria patients in northwest zone of Tigray region, Ethiopia, 2017.
- Afewerki Tesfahunegn from Mekele University is working on Determinant Factors of Delay in Malaria Diagnosis and Treatment among Residents of Laelay Adyabo District, North Western Zone of the Tigray Region, Ethiopia, 2017.
- Getahun Kebede Embaye, A Resident from Mekele University worked on Factors influencing the ownership and utilization of long-lasting insecticidal treated nets for malaria prevention in Raya Azebo district, Southern Zone of Tigray region, Northern Ethiopia, 2017.
- Kissanet Tesfay a resident from Mekele University Determinants of insecticide treated bed net (ITN) ownership and utilization for malaria prevention and control in Abi Adi district, Tigray region, Ethiopia; a community based cross-sectional study.
- Malede Andargie Metekia from Mekele University is working on Assessment of utilization and factors associated with utilization of LLINs among household of Malarias area of Awash fen tale district Afar region, Ethiopia, 2017.
- Mesafint Fekadu resident form Gondar University is currently working on Prevalence of malaria and its associated factors in dembia district, north west Ethiopia, 2017.
- Tirunesh Mulugeta Kassa a Resident from Gondar University is working on LLINs utilization and associated factors among households having children under-five and pregnant women in Fogera district, Amhara region, 2017.
- Ebise Abose Djirata from Addis Ababa University is working on Evaluation of accuracy of malaria surveillance in selected malaria endemic regions of Ethiopia by comparing rapid test kits reports against Microscopic method.
- Muluget Asefu a Resident from Addis Ababa University is working on Assessment of challenges associated with Malaria parasitological confirmation (diagnosis), in Ethio Somali region, 2017.
- Dechasa Nesga from Addis Ababa University is currently working on Assessment of malaria surveillance system, incidence and control interventions in Adama Town Oromia Region, Ethiopia, 2017.

National Malaria Survey

18 Residents both medical and laboratory tracks were involved in national malaria survey investigations focusing on risk factor analysis and control as well as evaluation of malaria control programs.

Publications or Submissions

There were no publications this quarter. However, there were 98 presentations at the Ethiopia annual conference out of which 22 were oral-poster presentations.

KENYA FIELD EPIDEMIOLOGY AND LABORATORY TRAINING PROGRAM

The Kenya Field Epidemiology and Laboratory Training Program (FELTP) is a two-year postgraduate and competency based training program in applied epidemiology and public health laboratory management. The program was established in April 2004 and was designed in recognition of the need to strengthen the epidemiologic and laboratory management capacity of Kenya and East Africa region to meet the challenges of the emerging infectious diseases and other public health problems. During this period from 1 April 2017 to 30 September 2017, the residents and members of faculty of the KFELTP participated in various activities detailed below.

Training and Related Activities

Cohort XIV

The advert for recruitment of cohort XIV was closed on 14 July, 2017. Two hundred and five applications were received and 60 shortlisted for interviews. On 30 August, interviews were conducted and 20 interviewees were selected to join Cohort XIV. Their first semester began on 6 October, 2017.

Cohort XIII

Residents of Cohort XIII successfully defended their proposals before Moi University supervisors and FELTP faculty on 17 May, 2017. The residents attended elective infectious diseases workshop for two weeks from 22 May to 2 June, 2017. The workshop included conducting outbreak investigations for food borne, vector borne, water borne and respiratory infections. The facilitators were from CDC Atlanta. The residents sat for their end of second semester examination from June 6-8, 2017. Courses examined were Principles of Epidemiology II, Statistics and Research Methods. They returned to their field placement sites to continue developing their planned study protocols.

In addition, residents of Cohort XIII undertook a Leadership and Management course from August 23 to September 1 2017. The course included sessions on leadership, management and health policy. The residents continued to support their placement sites.

Table 7: Topics for KFELTP Cohort XIII Thesis Projects and their supervisors

No.	Name	Topic	Supervisors
1	Beatrice Kin'gori	Factors affecting Viral Suppression among adolescents and children in Siaya County-Kenya, 2017.	Tura Galgallo
2	Jack Omolo	Prevalence and factors associated with Middle East Respiratory Syndrome(MERS-CoV) in Turkana County in Camels and Humans, 2017	Peninah Munyua
3	Polly Kiende	Factors affecting utilization of gene expert for diagnosis of TB patients in Selected Health Facilities in Kenya, 2017	Samuel Amwayi
4	Domnic Wamamba	Factors associated with deferral of blood donors and safety of donated blood in Regional Blood Transfusion Kisumu County, 2017	Waqo Boru
5	Dahabo Adi	Prevalence and factors associated with TB among Contacts of smear positive TB patients in a County with Active Community Health Unit in Kenya, 2017	Sara Lowther

No.	Name	Topic	Supervisors
6	Alexis Niyomwungere	Factors associated with Multidrug resistance Tuberculosis among patients with Pulmonary TB in Burundi in a Case Control study	Waqo Boru
7	Jeremiah Ngugi	Sero-prevalence and factors associated with Leptospirosis infections in pigs and Humans in Western Kenya: Linked Human and Pigs Leptospirosis Study	Eric Ferve
8	Eric Orimbo	Sero-prevalence and factors associated with Q Fever in small ruminants and Humans in Bungoma County in Western Kenya	Eric Ferve
9	Josephat Mbai	Prevalence and Anti-microbial Resistance Patterns of Campylobacter strains isolated from Bungoma Poultry Slaughter House, 2017	Eric Ferve
10	Valerian Mwenda	Prevalence of underlying causes of chronic renal disease among patients attending the renal specialist clinic at the Kenyatta National Hospital and Assessment of Economic Burden related to Treatment	Gladwel Gathecia
11	Stephen Mwatha	Prevalence and Factors Associated with Active Trachoma (TT) among Children aged 5-14 in Kajiado County, 2017	Zeinab Gura
12	Peter Lomurukai	Prevalence and Factors associated with Visceral Leishmaniasis in Loima Sub-county, Turkana County, 2017	Zeinab Gura
13	Baraqo Katelo	Sero-prevalence of Rubella anti-bodies among pregnant women attending ANC clinic in Pumwani Hospital, 2017	Sara Lowther
14	Elizabeth Oele	Prevalence of causes of neonatal morbidity and mortality and factors associated with mortality in JOOTRH, 2017	Sara Lowther
15	Grace Kariuki	Factors associated with development of diabetic complications among DM patients attending Nyeri County Referral Hospital, 2017	Tura Galgallo
16	Scolastica Wabwire	Assessment of Quality of care offered at Pre and post Delivery to Mothers attending Post-natal clinic: Comparison between a Health Facility trained in Respectful Maternal Care and one that is not Trained.	Jane Githuku
17	Diba Dulacha	Comparison of Malaria Indicators in two counties in malaria endemic region in Kenya: Migori (Intervention(IRS) group) and Homa bay (Non Intervention(IRS)group)	Sara Lowther
18	Philip Ngere	Antibiotics Susceptibility profile of Staphalococcus aureus in Human and Animal in Kajiado County	Sam Thumbi
19	Abdalla Isaac	Factors associated with HIV infection among adolescent in Siaya County: Facility Based Case control study	Jane Githuku
20	Gibson Waweru	Prevalence and Factors associated with UTIs and Assessment of antibiotics susceptibility among Pregnant Women in Thika and Kitale	Tura Galgallo

Cohort XII

During the period, Cohort XII residents collected data for their thesis projects. Two residents completed data collection, two have not begun data collection and the other 15 are at various stages of data collection. In addition, Cohort XII residents did scientific writing workshop from July 3 - 14, 2017. The residents developed framing documents of their thesis work and other field investigations. At the end of the workshop, they had developed draft manuscripts and are currently working towards submitting them to journals for publication. Moi University organized mock thesis defense on 12 September, 2017. Twelve residents presented and are awaiting submission of thesis to the University for examination.

Cohort XI

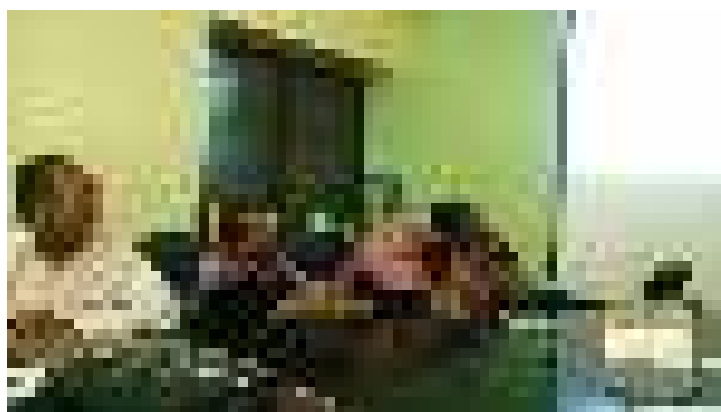
Eight Cohort XI residents are yet to graduate. Seven submitted their thesis for examination while one resident is at the final stages before submitting to the University for examination.

Outbreak Investigation and Response and Related Activities

Kenya FELTP residents/ graduates participated in several outbreak investigations. These are summarized in the table below.

Table 8: Kenya FELTP resident participation in outbreak investigations.

Outbreak investigated	Period of outbreak	Number of cases	Number of residents/ graduates who participated
Dengue Outbreak in Mombasa County	May 2017	437 suspected cases; one death	4
Food Borne Outbreak Following a Wedding in Karen-Nairobi County	May 2017.	3 deaths	4
Kala-azar Outbreak in Marsabit County, Kenya	2017	383 suspected cases; 13 deaths	4
Factors associated with cholera outbreak, Nairobi County	July 24 - 28, 2017		3
Assessment of Knowledge, Attitude and Practices towards cholera among community members of informal settlements in Nairobi County	July 28 - August 2, 2017	954 suspected cases; 115 confirmed cases.	8
Knowledge, attitude and practices towards cholera among health care workers in selected facilities in Nairobi	July 27 - August 5, 2017		3
Outbreak of cholera in Siaya County	August 2017	36 suspected cases; 5 deaths	
Cholera outbreak at a University Hotel in Nairobi County	September 4 - 11, 2017	139 suspected cases	4



(L) Records Review at Mvita Hospital during investigation of Dengue Outbreak in Mombasa County May 2017. (R) Disseminating findings to Mombasa CHMT

Workshops and Conferences

Epidemic Intelligence Service conference

Two residents of Cohort XI presented abstracts at the 66th EIS conference held in Atlanta, USA from April 23 - 27, 2017. Abdikadir Isaack made an oral presentation titled “Measles vaccination coverage and risk factors for the lack of vaccination among children aged 12 - 23 months in settled and nomadic population of Wajir county, Kenya, 2016” while Beatrice Ochieng made a poster

presentation titled “Assessing Consumption of Folic Acid Fortified Staples and Associated Factors for Consumption among Women of Reproductive Age in Kisumu East District, Kenya”

[Kenya Paediatric Association Conference, Kisumu, Kenya](#)

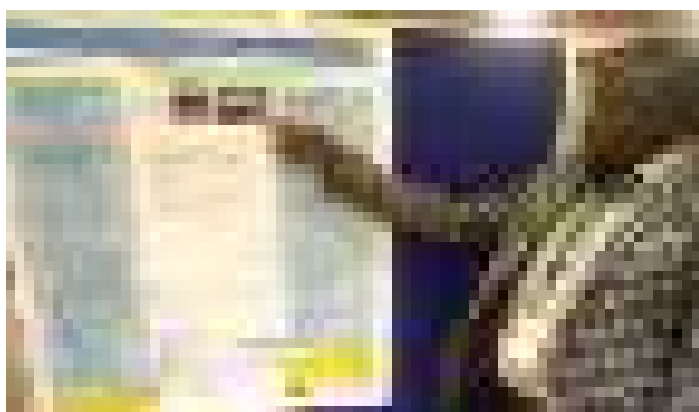
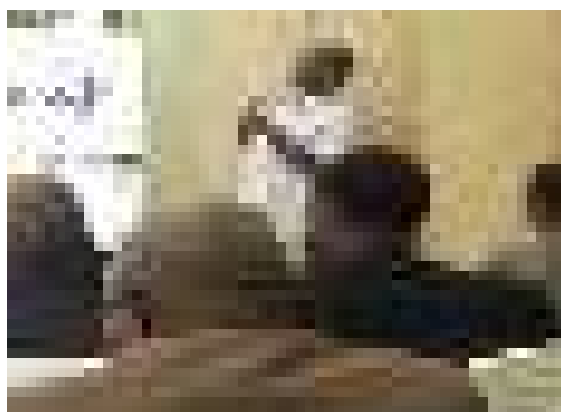
Dr. Jane Githuku, a Field Coordinator with KFELTP was a keynote speaker for Birth Defects Surveillance in Kenya at this year’s paediatric association conference held in Kisumu from April 25 - 28, 2017.

[Kenya Veterinary Association Conference, Nairobi, Kenya](#)

Three cohort XIII residents made oral and poster presentations at this year’s veterinary association conference which was held in Nairobi from April 26 - 29, 2017 as shown in the table below.

Table 9: KFELTP Cohort XIII resident presentations at the Veterinary Association Conference

Name	Presentation Title
Jack Omolo	Oral: Patterns of Antibiotic Resistance to Escherichia coli (E. coli) Isolated from Milk Samples Submitted at Kenya Central Veterinary Laboratory (CVL), 2011 - 2015
Jeremiah Ngugi	Oral: Epidemiology of Animal Bites and Rabies Post-Exposure Prophylaxis administration in Kilifi, Kisumu, Kitui, Machakos and Nandi Counties- Kenya, 2011 - 2016
Josephat Mbai	Poster: Coast to Hinterland: Sero-positivity and Epidemiology of Human Brucellosis in Tana River, Mandera and Makueni Counties-Kenya, 2012 - 2015



(L) Jack Omolo and (R) Josephat Mbai makes oral presentation and poster presentation respectively at the 2017 veterinary association conference

[Rabies Conference, August 25 - 28, Kisumu, Kenya](#)

Dr. Mark Obonyo, a field coordinator at Kenya FELTP attended and participated at the rabies conference as the One Health liaison officer. The rabies conference was held in Kisumu from August 25 - 28, 2017.

[9th Global TEPHINET Conference August 7 - 12, 2017](#)

Twenty abstracts from Kenya FELTP were presented at the TEPHINET conference: 11 oral and 9 poster presentations. During the conference, Kenya FELTP was applauded for the good quality work presented by the residents. The 9th Global TEPHINET conference was held in Chiang Mai, Thailand from August 7 - 12, 2017.

Table 10: Abstracts presented at the 9th TEPHINET Scientific Conference by KFELTP residents

Presenter	Title	Presentation
Albert Odhiambo	Adverse Pregnancy Outcomes among HIV Infected Pregnant Women in Selected Facilities in Kisumu County, Kenya, July 2015 - June 2016	Oral
Betty Chrichir	Effectiveness of eMTCT Programme in Two Hospitals - Uasin Gishu County 2014 - 2015	Oral
Dominic Ongaki	Factors affecting utilization of PMTCT services at Lodwar County Referral Hospital January 2015 to December 2016	Oral
Edwin Gudu	Factors associated with malnutrition in children <5 years attending Alupe Sub - County Hospital in Western Kenya, 2016/2017	Oral
Elizabeth Oele	Assessment of Leading Causes of Facility Based Maternal Deaths, Kisumu, Kenya, 2014 - 2016.	Oral
Erick Orimbo	Sero-Prevalence of Lymphatic Filariasis in Mombasa County, Coastal Region of Kenya, 2016	Oral
Grace Kariuki	Characterization of Cancer cases and surveillance system evaluation - Nyeri Cancer Registry, Central Kenya, 2005 - 2016	Oral
Hassan Abdala	Towards Elimination of Mother-to-Child Transmission of HIV in Kenya: An analysis of National Programme Data, 2013-2015.	Oral
Jack Omolo	Patterns of Antibiotic Resistance to Escherichia coli (E. coli) Isolated from Milk Samples Submitted to Kenya Central Veterinary Laboratory (CVL), 2011 - 2015.	Oral
Josephine Ihahi	Assessment of clinician adherence to diarrhoea case management guidelines for children <5 years at Wajir County Referral Hospital, North Eastern Kenya, January - December 2016	Oral
Valerian Mwenda	Prevalence and Factors Associated with Reported Excessive Salt Intake in Adults: Findings from STEPwise Survey, Kenya, 2015	Oral
Augusta Kivunzya	Dog Ecology, Dog Bite Incidence and Vaccination Coverage Survey Bondo, Siaya County, Kenya, December 2016	Poster
Caren Ndeta	Prevalence and Concentration of Specific Antibiotic Residues in Raw Milk from Dairy Farms in Peri - Urban Nairobi, Kenya - 2016	Poster
Gibson Waweru	Proportion of Latent Malaria Infections and Anemia in Pregnant Women, Kwale County, Kenya, 2015	Poster
Hudson Kigen	Predictors of Loss-to-Follow-Up among HIV-Exposed Children within HIV Prevention of Mother to Child Transmission Cascade, Kericho County, Kenya, 2016	Poster
Hussein Mohamed	Risk factors related to Visceral leishmaniasis, Wajir County, Kenya, 2016.	Poster
Josephat Mbai	Coast to Hinterland: Sero-positivity and Epidemiology of Human Brucellosis in Tana River, Mandera and Makeni Counties-Kenya, 2012 - 2015	Poster
Maurice Owiny	Investigation of Human and Animal Anthrax Outbreak in May-2016 and Mapping and Ecological Correlation of Historical Anthrax Sites in an Endemic Region in Central Kenya, 2011 - 2016.	Poster
Nancy Chongwony	Knowledge, Attitudes and Practices on vaccination among Healthcare Personnel in Kenyan - November, 2016	Poster
Ngina Kisangau	Hepatitis B virus infection in Makeni Prison, Kenya, 2016	Poster

Biennial Infectious Disease Conference, Nairobi, Kenya, July 2017

A cohort XIII resident, Dahabo Galgalo, made an oral presentation titled “Characterization of drug resistant tuberculosis cases - Kenya, 2012 to 2016“ at The biennial infectious disease conference which was held in Nairobi Hospital Conference hall from July 7 - 8, 2017.

Cholera National Task Force Meetings

Kenya FELTP residents presented findings of their work on cholera during cholera NTF meetings. The meetings were necessitated by the fact that Kenya experienced cholera outbreaks in various counties during the reporting period and a national task force was set up to meet every Thursday of the week. The presentations included survey on knowledge, attitude and practice on cholera among health care workers and community in the informal settlements of Nairobi, and Investigation of point source outbreak among security personnel and case control study to identify risk factors in Nairobi. The findings were important for decision making by the NTF.

Upcoming Conferences

American Society of Tropical Medicine and Hygiene

Two residents, Adano Godana (Cohort 12) and Angeline Aboto (Cohort XI) had their abstracts accepted for poster presentation at the upcoming 66th ASTMH conference to be held in Maryland, USA.

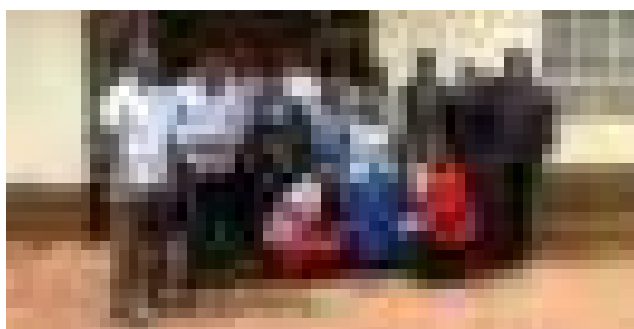
Other activities implemented by the Kenya Program:

Field Placement Site Supervisory Visits

The placement sites for residents in cohorts XII and XIII were visited beginning April 10, 2017. Residents placed in County Health Departments of Nyeri, Kwale and Kisumu as well as those placed in National Malaria Control Program and Neglected Tropical Disease Unit were also visited. The placement site supervisors commended the positive impact that residents had during their placement.

Birth Defects Surveillance Training in Nyamira and Mombasa, April and June 2017

KFELTP in collaboration with neonatal, child and adolescent health unit (NCAHU) conducted a series of two day trainings for health care workers in Nyamira and Kilifi counties. The facilitators included Dr Jane Githuku and Beatrice Ochieng, a recent graduate of FELTP who is now deployed at NCAHU. The overall objective of the trainings was to enable health care workers identify babies born with birth defects, collect clinical and social information on the cases and transmit the information to FELTP and NCAHU. In total, 100 health care workers were trained in four groups, with each training lasting two days. The topics covered included overview of birth defects surveillance, classification and coding, case ascertainment and case inclusion criteria and review of data collection materials.



Birth defects surveillance in Nyamira County, 24th - 27th April, 2017



Birth defects surveillance training in Mombasa, 27th - 30th June 2017

[Data Quality Audit of Birth Defects Surveillance Data and Dissemination Meeting, August 23rd - 24th, Kiambu](#)

A two day meeting was held in Kiambu County to conduct a data quality audit of the data collected through the birth defects surveillance system and also share the findings with key stakeholders. Participants of the dissemination meeting included health workers and administration from Pumwani Maternity Hospital, Kilifi County, Nyamira County, Nairobi County, FELTP (K) and Smile train Kenya. A total of 35 babies with birth defects were reported through the surveillance system. They included 33 babies born in Pumwani Maternity hospital and 2 born in Nyamira County referral hospital. Although the surveillance system was initially meant to capture three types of birth defects, namely neural tube defects, orofacial clefts and talipes equinovarus, the health care workers reported all the defects seen in the hospital, indicating eagerness to participate in the surveillance system.

[Records Review in Kilifi County Referral Hospital, 31st August - 4th September 2017](#)

Faculty from the Program; Dr. Jane Githuku and Mrs. Beatrice Ochieng assisted by two nurses and one records officer from Kilifi county referral hospital conducted a retrospective review of records to determine the prevalence of common birth defects in Kilifi county referral hospital. The aim was to establish the baseline prevalence of birth defects before starting surveillance activities.

A total of 5,998 records of births and newborn admissions in Kilifi CRH were reviewed, covering the period January 1st 2016 to April 30th 2017. Seventy four records of birth defects were retrieved of which 62 were major birth defects. Overall prevalence of birth defects was 123.4/10,000 births. The leading birth defect was congenital talipes equinovarus (16.7/10,000) followed by congenital hydrocephalus (11.7/10,000), neural tube defects (8.3/10,000) and omphalocele (6.7/ 10,000). Gaps in documentation of birth defects, such as incompleteness in records, data inconsistencies and lack of linkage between maternal and newborn records were also identified. The findings were shared with the county health management team.

[Field Supervisors Workshop, May 3, 2017](#)

KFELTP held a one-day workshop for the placement site supervisors of the residents. Topics discussed during the meeting included overview of the FELTP course, overview of field placement and EOC rotation, role of supervisor in outbreak investigations, field placement evaluation templates used for M&E and challenges with supervision of the residents.

[Birth Defect Evaluation Course, Arusha, Tanzania April 30 - May 6, 2017](#)

Seven participants attended birth defects evaluation training in Arusha, Tanzania. The objective of the training was to introduce techniques of data quality assessment and monitoring and evaluation in relation to data collected in birth defects surveillance systems. The team identified areas of improvement and developed a quality improvement plan for implementation in the next one year.

[Case Study Development Workshop, Atlanta, USA, May 15 - 26, 2017](#)

The workshop was conducted at Emory University School of Public Health, department of epidemiology in conjunction with AFENET from May 15 - 26, 2017. KFELTP was represented

by Dr. Mark Obonyo. The output of the workshop was a case study which was reviewed by co-authors before submission to PAMJ for publication as a special supplement. The case study is titled “Investigation of anthrax in an endemic region in Kenya: A mixed methods approach.”

[Meetings on Africa Centers for Disease Control and Prevention](#)

Kenya was chosen to host the Eastern Africa Regional Collaboration Center (RCC) of the Africa CDC. Three meetings were held to lay the framework for incorporation and institutionalization of Eastern Africa RCC. KFELTP continued to play a major role in these meetings, especially since the Program has a tiered database of field epidemiologists who will be used for surge capacity in case of disease outbreaks and other emergencies.

[Accreditation of Kenya FELTP by TEPHINET Accreditors \(July 10 - 13, 2017\)](#)

Two TEPHINET assessors, Maria Concepcion Roces and Katharina Alpers visited Kenya FELTP to assess requirements for TEPHINET accreditation. They held meetings and discussions with the Program staff, residents, field supervisors and alumni. Based on their findings, the Global Accrediting Body (GAB) accredited the Kenya Program on August 28th, 2017 (see certificate below).

[Kenya FELTP Annual Scientific Dissemination Workshop in July 2017](#)

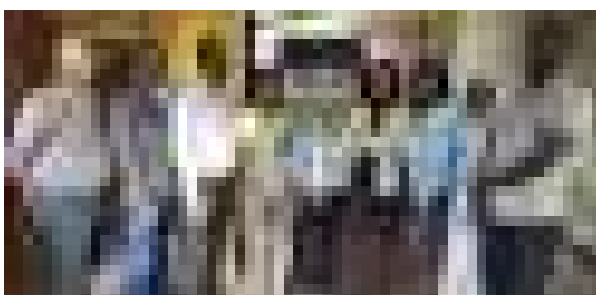
KFELTP held its annual scientific dissemination meeting at Silversprings Hotel in Nairobi July 25th, 2017. The meeting brought together various stakeholders in public health. Residents presented 38 projects to showcase the activities KFELTP had conducted that contributed to Kenya’s public health.



Kenya FELTP Accreditation Certificate

[MS-Access/Grant Writing Workshop in July 2017](#)

KFELTP conducted training on Microsoft access and grant writing from July 17 - 20, 2017. This workshop was facilitated by Dr. James Ransom. Topics covered included searching for grants and developing grants. Participants submitted grant applications at the end of the workshop.



(L) Dr. James Ransom with participants of the grant writing workshop

Kenya - Innovative Management of Public Health For Action (IMPACT) Activities

IMPACT Resident Advisor Field Supervision visits

IMPACT Resident Advisor (RA) visited Marsabit from April 25 - 27 to assess performance of Vincent Yator, the IMPACT Fellow assigned to Marsabit County, and to hold discussions with the assigned mentor, Obanya Adano. Primary topics for discussion included the fellow's work plan and strategy for conducting a community health needs assessment to inform the major project. The trip also served to gauge how the fellow was fitting-in at the new placement, the support being received, and the quality of supervision and mentoring.

The RA visited Kisumu county to assess the status of Lydia Kilowua, the IMPACT Fellow on 18 April. Lydia had been assigned office space at the Kisumu Community Hospital adjacent to her supervisor Dr. Kennedy Otieno. In a separate meeting with Dr. Otieno, he expressed a high level of satisfaction with the Lydia's early orientation and integration into the Kisumu office.

The RA visited Eldoret, Uasin Gishu county to meet with Evans Sumbeiywo, an IMPACT Fellow on 19 April, and later his supervisors Alex Korir and mentor Dr. Evans Kiprotich. The fellow had been actively involved in an immunization campaign for Uasin Gishu County. The experience with the immunization campaign led the Fellow to look at sub-standard immunization levels for the county and to potentially use this experience to inform the major project and the community health needs assessment.

Behavioural Change and Health Communication Course, April 24 - 28, 2017

The IMPACT fellows attended a Behavioural Change and Health Communication course On April 24 - 28 as part of their KU academic requirement. The purpose of the course was for students to learn more about the art and importance of communicating health information to various audiences. The fellows created and presented written and oral health messages, success stories, health information, and materials for the public. The emphasis was on communicating in an organised, concise and effective manner. Strategies shared during this course will serve to prepare students for health communications for a variety of audiences, including supervisors, government officials, peers, and the general public. The course was taught by Eunice Muthamia, Deputy Director of the MoH Public Health Communication Unit where she is responsible for communication policy and strategy.

Kenyatta University Examinations

IMPACT Fellows sat Kenyatta University final exams May 8th - 19th. Examination papers included Applied Program Planning and Project Management, Public Health Sciences in Practice, and Strategic Communication for Health.

2017 Mandela Washington Fellowship for Young Africa Leaders

The Kenya U.S. Ambassador nominated Lydia Kilowua, an IMPACT Fellow assigned to Kisumu to participate in the 2017 Mandela Washington Fellowship for Young Africa Leaders - the flagship program of the Young African leader's initiative. Beginning June 16th, she took part in an Academic

Leadership Institute hosted by a U.S. institute of higher education. The fellowship was an opportunity for her to hone leadership skills and network with other young leaders from sub-Saharan Africa and the US. Upon completion of the course, she will continue the fellowship in Kenya with access to professional development and networking opportunities.

MOZAMBIQUE FIELD EPIDEMIOLOGY AND LABORATORY TRAINING PROGRAM

The Mozambique FELTP was established in 2009 by the National Institute of Mozambique in partnership with the National Public Health Directorate and Faculty of Medicine of the Eduardo Mondlane University, with technical and financial support from Center for Diseases Control and prevention (CDC). Since the program was introduced, there has been a total of four cohorts, with 42 residents enrolled. The fourth cohort which is currently running, has 11 residents (7 from the Epidemiology branch and 4 from the Laboratory branch). This cohort began in June 2016 and it ends in June 2018.

The objective of the FELTP in Mozambique is to build epidemiological capacity in public health surveillance, disease control and outbreak response, public health emergency through training in epidemiology and applied intervention and laboratory management.

Didactics and Trainings

From 31 July to August, a short course for malaria was carried out in partnership with the National Malaria Control Program, in which 22 technicians responsible for collection, interpretation and presentation of malaria data at the provincial level. This training aims at strengthening the capacity of provincial malaria program staff to interpret, present and analyse data in a standardised way.



Participants of the short-course malaria program. This was in partnership with the National Malaria Control Program

Conferences and Meetings

Post-Graduation Forum

All residents of the 4th Cohort participated in the Postgraduate Forum with oral presentations. This Forum was organised by the National Institute of Health, from March 28th to 30th and it took place at the Ministry of Health building in Maputo.

Steering Committee meeting

The MFELTP participated in the Steering Committee Meeting held on 18th May.

10th Technological and Scientific Conference of Mozambique.

From 07th - 08th June 2017, MFELTP participated in the 10th Mozambican Technological and Scientific Conference in Gaza Province with oral presentations.

Participants

Name	Theme	Cohort
NilsaNhantumbo	Determination of contamination rate in liquid and solid culture in Sputum samples received at the TB National Reference Laboratory, 2016.	Lab Track, 4 th Cohort
Judite Cardoso	Epidemiological Profile of Rabies and Animal Bite, from January to August 2016, Mozambique	Epi Track, 4 th Cohort
FaisaSalé	Evaluation the Acute Flaccid Paralysis (AFP) epidemiological profile in Mozambique	Lab Track, 4 th Cohort



Residents in 10th Mozambican Technological and Scientific Conference.

9th TEPHINET Scientific Conference

In August, from 7th -11th, three residents attended the 9th TEPHINET Scientific Conference held at Chiang Mai, Thailand with 1 oral presentation and 2 posters presentations.

Name	Theme	Cohort
Faisa Salé	Epidemiological profile of Acute Flaccid Paralysis (AFP) as clinical suspected of polio in Mozambique, 2011 - 2015	Lab Track, 4 th Cohort
Manuel Paulo	Screening for Tuberculosis and provision of Prophylactic Treatment with Isoniazid (TPI) in HIV + Patients in Mozambique, 2013 - 2015	Epi Track, 4 th Cohort
Auria Banze	Evolution of the Prevention of Mother to Child Transmission (PMTCT) in antenatal visits in Mozambique, 2012 - 2015.	Epi Track, 4 th Cohort

Mozambique Health Conference

In September, MFELTP participated in the Mozambique Health Conference in the Central Area, in Zambézia province with two oral presentations.

Name	Theme	Cohort
Kulssum Mussá	Outbreak investigation about the increase of malaria cases in the Provinces of Manica and Tete, during March and April, 2017	Epi Track, 4 th Cohort
Abacar Guelane	Data Analysis Report of the External Evaluation of Microscopy Quality and Rapid Malaria Diagnostic Test in Mozambique, 2011 - 2016	Lab Track, 4 th Cohort

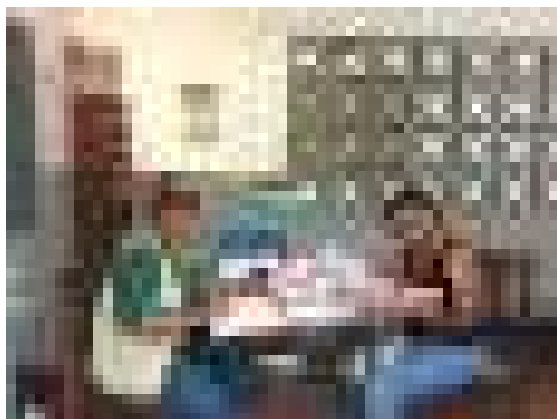
Responses to outbreaks and Field activities

Outbreak responses

In March and April in 2017, an outbreak investigation was carried out on the increase of malaria cases in Manica and Tete provinces.

Team Composition:

Name	FELTP/Cohort
CristoldeSalomão	Epi Track, 1 st Cohort
KulssumMussá	Epi Track, 4 th Cohort
Judite Monteiro	Epi Track, 4 th Cohort
Celeste Moreira	Epi Track, 2 nd Cohort



Mozambique residents participate in a malaria outbreak investigation in Manica and Tete provinces March - April 2017

Team Composition

Nome	Cohort
Cristolde Salomão	Epi Track, 1 st Cohort
Narciso Cardoso	Epi Track, 2 nd Cohort
Manuel Paulo	Epi Track, 4 th Cohort

An outbreak investigation of meningitis infection was carried out in Quelimane city, in Zambézia.

Team Composition

Name	Cohort
Sinézia José	Epi Track, 4 th Cohort
Auria Banze	Lab Track, 4 th Cohort
Nilsa Nhampula	Lab Track, 4 th Cohort

Another investigation of an outbreak of diarrhoea was carried out in a children's infant centre in Maputo city.

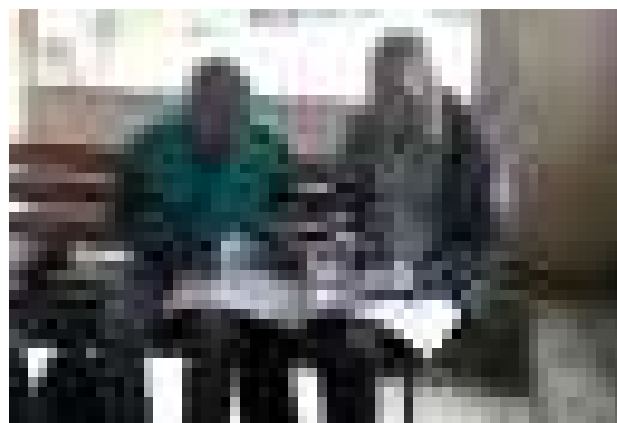
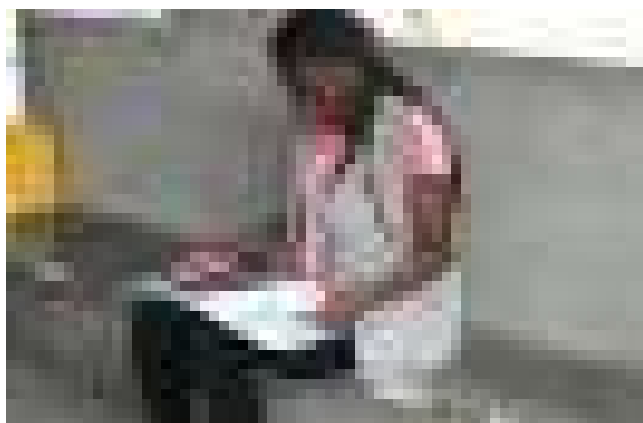
Team Composition

Name	Cohort
Cláudio Muianga	Epi Track, 2 nd Cohort
Lucas Nhantumbo	Epi Track, 4 th Cohort
Kulssum Mussá	Epi Track, 4 th Cohort

Field Activities

The MFELTP carried out fieldwork in Inhambane Province and Xai-Xai City which consisted of assessing gaps in data recording material for the Prevention of Mother to Child Transmission (PMTCT) program.

During the same year, a field work on evaluating the composition of APE malaria kits was carried out in Nampula, Inhambane and Maputo provinces.



FELTP team during the evaluation of the composition of malaria Kits activities

A qualitative evaluation of the PIDOM acceptability in Nampula and Zambézia provinces and evaluation of the acute fever surveillance system in Cabo Delgado, Nampula, Zambézia and Maputo City was carried out.

Submissions

MFELTP submitted 8 abstracts for the 9th TEPHINET global scientific conference held in Chiang Mai, Thailand, from 7th - 11th August 2017.

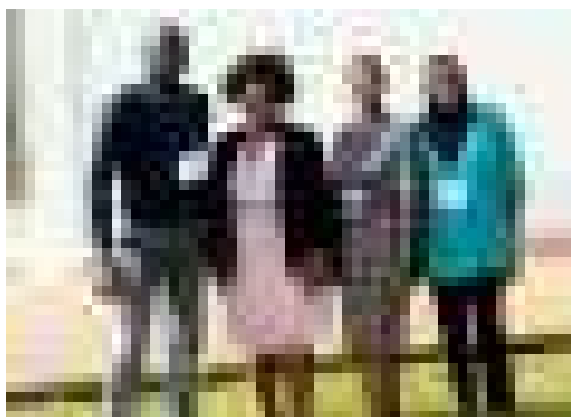
HIV/AIDS Surveillance and Response Workshop

The FELTP Mozambique organised a workshop on HIV/AIDS surveillance and response, from 20th - 24th March 2017.

A Team of MFELTP residents participated in the Monitoring, Evaluation and Surveillance Workshop for Malaria Programs, from May 29th to June 9th, 2017 at the University of Ghana, Public Health School, Legon, Ghana.

Team Composition:

Name	FELTP/Coort
Cristolde Salomão	EpiTrack, 1 st Cohort
Kulssum Mussá	Epi Track, 4 th Cohort
Abacar Gelane	LabTrack, 4 th Cohort
Mariana da Silva	EpiTrack, 2 nd Cohort



Mozambique FELTP residents at the Monitoring, evaluation and surveillance of malaria program workshop, 2017.

Manuscripts / Publications

- Salomão et al. Malar J (2017) 16:223 DOI 10.1186/s12936-017-1872-2. Assessment of coverage of preventive treatment and insecticide treated mosquito nets in pregnant women attending antenatal care services in 11 districts in Mozambique in 2011: the critical role of supply chain.
- Salomão, C., Nacima, A., Cuamba, L., Gujral, L., Amiel, O., Baltazar, C., ... Gudo, E. S. (2017). Epidemiology, clinical features and risk factors for human rabies and animal bites during an outbreak of rabies in Maputo and Matola cities, Mozambique, 2014: Implications for public health interventions for rabies control. PLoS Neglected Tropical Diseases, 11(7), e0005787. doi.org/10.1371/ journal.pntd.0005787
- Cynthia SemáBaltazar et al. (2017) Mozambique field epidemiology and laboratory training program: a pathway for strengthening human resources in applied epidemiology, The Pan African Medical Journal, 27:233. doi:10.11604/pamj.2017.27.233.13183.

NIGERIA FIELD EPIDEMIOLOGY AND LABORATORY TRAINING PROGRAM

Established in October 2008, the Nigeria Field Epidemiology and Laboratory Training Program (NFELTP) is a two year in-service training program in applied epidemiology, veterinary epidemiology and public health laboratory epidemiology and management. NFELTP was created to be a long-term ongoing program within the Federal Ministry of Health (FMOH) and Federal Ministry of Agriculture and Rural Development (FMARD). The program aims at training field epidemiology, veterinary epidemiology, and public health laboratory residents for leadership positions at various levels in both ministries mentioned above. During their training, residents provide epidemiological service as required to the FMOH, FMARD, and respective State Ministries of Health (SMOH) and State Ministries of Agriculture and Rural Development, through short and long-term field placements.

During this period the following achievements were realised:

Training and Related Activities

Cohort VII

Residents of Cohort VII had their pre-internal thesis defense in May 2017. This was in preparation for the University internal and external theses defense. They were mandated to submit the final version of their theses by the 23rd of June, 2017. Forty-seven (47) out of the 54 made presentations on their thesis. The residents had their internal thesis defense in August 2017. They corrected their theses based on the feedback from the internal defense and submitted to their respective universities. Tentative dates for the external theses defense is November, 2017. They will be joined by the residents of previous cohorts who are yet to graduate.

Cohort VIII

Cohort VIII residents were posted at various field sites so as to achieve the expected bound volume outputs. They revised their theses based on supervisors' comments given during the thesis proposal workshop. Some of the lectures undertaken by residents include: Teaching and Mentoring, Leadership and Management, Preventive Effectiveness. Special Topics in Public Health, Veterinary Epidemiology, Laboratory Systems, Management & Policies, Laboratory Methods, and Principles of Quality Assurance.

Cohort IX

From 2nd May - 17th June, Cohort IX, comprising 59 residents that included three participants from other African Countries (two from Burundi and one from the Gambia), had its first cluster of lectures in Abuja. Topics covered included basic epidemiology, public health surveillance, biostatistics, research methods, zoonosis, fundamental of laboratory methods, computer applications in public health and public health informatics. Lecturers and facilitators were drawn from Ahmadu Bello University, Zaria; University of Ibadan, Hanover Medical School (Germany), US Centers for Disease Control and Prevention and the African Field Epidemiology Network. Exams were conducted in July 2017 after which they were posted to their various field sites across the country.



Cohort IX Residents with the CEO of NCDC, Dr. Chikwe Ihekwezue, the Senior Resident Advisors and other Programme Staff at the NCDC Reference Lab, Gaduwa

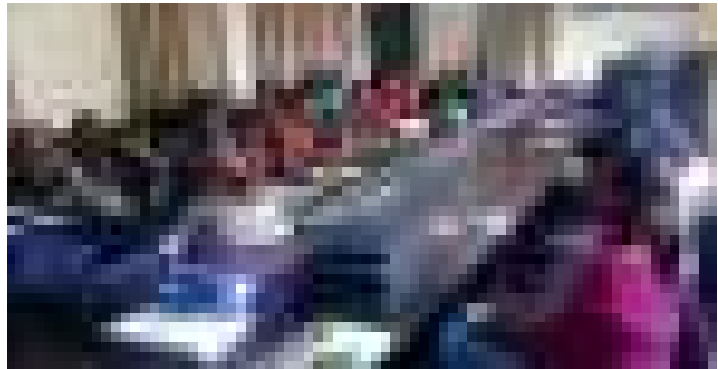
HIV/AIDS Activities

PMTCT Cascade Evaluation Project

The study aimed at evaluating the PMTCT cascade in selected PEPFAR supported sites across 12 states to identify gaps that exist in the management of HIV positive pregnant women to 18 month postpartum, best practices and proffering achievable and sustainable solutions for program improvement.

Training of Abstractors: With support from CDC Nigeria and Sherry Yin (CDC Atlanta), training materials and standard operating procedures were reviewed in line with field site feasibility study. A step-down training for 17 master trainers and members of the implementation team (IPs, USG and GoN) was conducted. The training aimed at familiarizing participants with PMTCT cascade evaluation process, informing participants on their roles and responsibilities as data abstractors, facility staff and supervisors, train participants on data abstraction process and practical data entry on smart phones using Enketo Smart Paper.

- 60 data abstractors and supervisors were trained (average knowledge gain = 21%).
- Participants comprised of experienced PMTCT/M&E focal persons, AFENET residents & graduates, staff of Federal Ministry of Health (FMOH) and National Agency for the Control of AIDS (NACA). This was done in 2 phases;
- Phase I: 2nd - 4th of May, 2017, Abuja (Bauchi, Kaduna, Katsina, Benue, Nassarawa and Taraba states)
- Phase II: 8th - 10th May, 2017 Enugu State (Rivers, Anambra, Abia, Akwa Ibom, Ogun and Lagos states).



(Above) Stepdown Training on PMTCT Cascade Evaluation, June, 2017. (Left) Data Abstraction at one of the Comprehensive Sites, May, 2017

Pilot study: A 2-day pilot was held in 8 non-evaluation facilities in 2 states (Kaduna and Enugu States) with the aim of stress testing the data collection tools and compatibility with the tablets, field hand-on session for trained data abstractors, test run abstraction procedures, identify constraint challenges and skip patterns. Lessons learnt and challenges found during the pilot were reviewed jointly with the implementing partners and the Government of Nigeria on the 26th of May, 2017. It was learnt that advocacy and sensitization of facility in-charges ahead played a key role in and returned the waiting time for abstractors.

Main field data collection: commenced in the week of 12th June with 5-day sensitization to state ministries and parastatals, implementing partners and 1-day step down training to 114 facility support staff residents in the evaluation sites. Actual data abstraction commenced in the week of 19th June and lasted 40 days. The 40-day activity experienced continuous joint supportive supervision and monitoring, daily dashboard eyeballing and tracking for consistency, trend and quality and prompt feedback mechanism.

USG Agencies (CDC & USAID) teams visited 3 states; Lagos, Ogun and Abia to assess the adherence to PMTCT Cascade Evaluation Standard Operating Procedures and field guide manual using a customized checklist. Other variables assessed by the USG include average abstraction time, percentage of missing records, understanding of PMTCT Cascade evaluation by Facility support staff, confidentiality of clients and facility willingness to participate (consent form). To assess the reliability of data submitted, abstractors were asked to conduct mock abstraction in sites where abstraction had been concluded.

Field data collection was concluded on the 11th of August 2017 across 9 states except for Benue, Anambra, Kaduna and Taraba which for security challenges were extended by a week and concluded with the support of mop-up teams. A total of 9,054 HIV positive pregnant women were recruited into the study with 3,753 mother child pair with 99% coverage except for Elema Sangama in Rivers State due to high rate of kidnapping and robbery by pirates.

Kaduna Aids Indicator Survey (KADAIS)

KADAIS is a population based study that is designed to fill gaps in data describing the HIV epidemic in Kaduna and to guide future HIV control activities. The overall aim of the KADAIS is to describe the HIV epidemic and assess the access to, utilization of, and unmet need of HIV intervention services among adults and children to provide useful, actionable data to guide HIV response in Kaduna State, Nigeria. After 3 months of over 250 field workers' visits to selected households in the 23 Local Government Areas of Kaduna State, data collection for the Kaduna AIDS Indicator Survey (KADAIS) came to an end on 22nd April 2017, with a study participant population of about 20,000.

Household Revisits: There were reasons for household revisits to re-collect blood samples for respondents aged 18 months and below whose blood samples were initially missing. 80 children under the category were re-bled and tested.

Data Cleaning SOP Development Meeting: AFENET, alongside CDC Nigeria team met in Kaduna during the week of May 8th to 13th to develop guidelines for the KADAIS data cleaning process. The CDC Nigeria and Atlanta teams supported the laboratory component of the survey; visited the Central Quality Control Laboratory in Saye, Zaria to harmonise the field, satellite and CQCL KADAIS result. A couple of samples were re-tested to validate the survey lab findings.

STC Meeting: On the 10th of May, 2017 the Survey Technical Committee (STC) met at the Kaduna State AIDS Control Agency (KADSACA) to receive feedback on the survey and deliberate on the next steps for the survey.

Meeting with the Honorable Commissioner of Health: AFENET KADAIS Team and key stakeholders of the state met with the Honorable Commissioner of Health on Thursday 11th May, 2017 to give feedback on the survey experience and next steps towards sharing of findings.

Data Cleaning Meeting and Exercise: The data cleaning process commenced in Abuja with relevant stakeholders and the Atlanta support team. This lasted for two weeks (May 15th - 25th May, 2017). Data managers were engaged to support the data cleaning exercise.

SMC Meeting: The Survey Management Committee (SMC) met in Abuja to receive updates on the data cleaning exercise and strategize on steps to conclude the survey.

Nasarawa AIDS Indicator Survey (NASAIS)

NAS AIS is a population based survey of households in Nasarawa State. The survey includes behavioural and biologic (laboratory) components and aims at recruiting approximately 9,000 individuals from selected enumeration areas in all the 13 local government areas (LGAs) of Nasarawa State.

[NASAIS update meeting with CDC - 4th April 2017](#): A meeting was held between AFENET and CDC to discuss pre-IRB activities and a way forward since NASAIS protocol had been submitted for IRB approval. After the meeting, the following were achieved by AFENET:

- Shared with CDC, Research Assistants (RAs) recruitment plan and selection criteria
- Terms of reference (TOR) for NASAIS external monitor to be engaged locally
- Laboratory assessment plan and selected laboratories shared with CDC

[Follow up NASAIS update meeting with CDC - 11th May 2017](#): A follow up update meeting was held on the sidelines of the KADAIS data cleaning preparatory meeting. Issues followed up in the meeting include, plans for activation of NASAIS secretariat at IHVN office, Lafia, SOPs and Training Manuals review, update on plans for Laboratory assessment, and update on plans for the appointment of NASAIS External monitor

[Laboratory Assessment 22nd - 26th May 2017](#): 9 laboratories were selected and assessed to support NASAIS considering the expected sample load.

[Laboratory Assessment Report sharing 31st May 2017](#): Comprehensive report of the laboratory assessment was written and shared with CDC, Nasarawa State Government and all other relevant stakeholders (IHVN, PHI).

[NASAIS Newsletter Development 5th June 2017](#): AFENET developed and shared with CDC a newsletter titled “NASAIS BULLETIN”, aimed at keeping all NASAIS team members and stakeholders abreast with updates and developments concerning NASAIS.

[NASAIS Protocol Review Meeting 15th - 16th June 2017](#): A 2 day review meeting was conducted at AFENET office by NASAIS Team. Questions, comments and suggestions were reviewed and feedback provided by AFENET. The reviewed documents were shared with CDC Nigeria office.

[Other activities were:](#)

- Redeployment of NASPHIA technical officers to AFENET Head office, Abuja.
- Contact and follow-up of key Nasarawa State Ministry of Health (MOH) officials - Director Planning, Research and Statistics (DPRS) and Director Public Health and Disease Control (DPH) for formal introductory letter to the State branch of National Population Commission (NPOPC) in relation to NASPHIA Enumeration and Household Listing.
- Development and sharing of NASAIS Laboratory Management and Implementation Plan with Institute of Human Virology Nigeria (IHVN) for their input before sharing with Centre for Disease Control (CDC) Nigeria.
- Reviewing responses on NASPHIA Protocol and Appendices for CDC and ADS Review.
- Development and sharing NASPHIA Data Management Request for proposal (RFP) for Inductive Health Informatics Atlanta, in consideration for engaging them to handle the Data Management component of NASPHIA.

- Completing the review process of NASPHIA Protocol and Appendices
- Reviewing and adopting responses provided by AFENET on the NASPHIA Protocol and Appendices.
- Completing formal introduction and linkage of AFENET by Nasarawa State Ministry of Health to the State National Population Commission (NPOPC) regarding NASPHIA Enumeration and Household Listing. Official letter written and forwarded to NPOPC.
- Meeting with IHVN on selection of NASPHIA Central Quality Control Laboratory (CQCL).
- Visits to Ministries, Agencies and Parastatals to obtain data relevant to a component of the NASPHIA survey, known as Network Scale-up Method (NSUM) Questionnaire.
- NASPHIA Implementation Plan reviewed, updated and sent to CDC.
- Completed NASPHIA Central Quality Control Laboratory (CQCL) Assessment exercise.
- Visit to the IHVN Bio-Repository Lab facility at Central Area, Abuja, known as I-HAB (IHVN Human Hereditary and Health, H3A in Africa Bio-repository) as part of a working knowledge and assessment of the lab for the future storage of NASPHIA specimens.
- Conference call between AFENET and Inductive Health Informatics, Atlanta Georgia, USA to discuss scope of work (SOW) OF “Data Management” component of NASPHIA.
- Complete renovation and furnishing of NASPHIA Secretariat at Lafia, Nasarawa State.
- Follow up with IHVN regarding NASPHIA Laboratory Management and Implementation Plan earlier shared for their input.
- NASPHIA team contributing extensively to NPHIA grant writing proposal.
- NASPHIA team in Lagos supported the training of recruited research assistants/field workers for the Lagos AIDS Indicator Survey (LAGAIS).

Lagos State AIDS Indicator Survey (LAGAIS):

The survey aimed to describe the HIV epidemic and assess the access to, utilization of, and unmet needs of HIV intervention services among adults and children to provide useful, actionable data to guide HIV response in Lagos State, Nigeria. The following activities were carried out between April and September 2017 as part of implementation of LAGAIS;

Survey Technical Committee Meeting: 4th April, 2017: The objectives of the meeting were to have an update on the Lagos State AIDS Indicator Survey, review the implementation plan, to discuss the laboratory assessment plans and identify next steps in the implementation of LAGAIS.

Protocol Finalization Meeting 5th and 6th April, 2017: A two-day protocol finalization meeting was held. In attendance were members of the Survey Technical Committee and the Survey Implementation Team (SIT). The objectives of the meeting were to review existing protocol for other surveys and develop a protocol for the Lagos State AIDS Indicator Survey. At the end of the meeting the SIT was implored to incorporate all comments in the protocol and submit it for ethical clearance.

Submission of Protocol for Ethical Clearance 19th - 24th, April, 2017: The SIT incorporated all comments made during the protocol development meeting into the protocol, it was prepared for submission of the protocol for ethical clearance at Lagos State University Teaching Hospital.

Seven copies of the protocol were produced. The protocol was submitted on 21st of April, 2017 and acknowledgement for submission of research proposal was received from LASUTH ethical office.

Laboratory Assessment 18th - 21st April: Twelve people drawn from Lagos State Ministry of Health (SMOH), AFENET, Family Health International (FHI) and APIN Public Health Initiatives (APIN) were involved in assessment of public Medical Facility Laboratories in Lagos between Tuesday 18th April to Friday 21st April. This team was divided into three groups of four people each. A total of 19 satellite laboratories and 1 central quality laboratory was assessed using a standard checklist. The objective of the assessment was to identify gaps in the laboratory before commencement of the survey.

Setting up of LAGAIS Secretariat 28th - 30th April, 2017: The LAGAIS secretariat was set up and fully equipped with support staff from Ministry of Health to work in the LAGAIS secretariat. The secretariat is now functional with all the SIT members available.

Visit of Grant Fiduciary Officer to LAGAIS Secretariat 2nd May, 2017: The Grant Fiduciary Officer (GFO) made an official visit to the LAGAIS secretariat. The fiduciary officer explained the TORS of payments. The AFENET Senior Administrator and Program Officer were present at the meeting and sought clarification on several pertinent financial issues to which the GFA responded that all processes should be in line with AFENET Financial manual.

2nd Training Manual Development meeting: The meeting for the development of training manuals for LAGAIS lasted four days. There were presentations on overview of LAGAIS, how to prepare a training manual, designing effective training manuals and group work guide. The participants were divided into 3 groups with 3 facilitators to guide each group on their work. Each group worked on Trainee manual, Trainers manual and operational manual. At the end of the meeting, the draft manuals, facilitator's manual, Trainees or participant manual, Operational manual and Instructional were collated.

LAGAIS Mobilization/advocacy Meetings and State LAGAIS Launch: The sub-committee on community and advocacy planned State launch of LAGAIS. The launch was held on 9th September 2017 at Adeyemi Bero hall, Alausa.

Meeting with LCDCA's: The survey implementation team led by the LAGAIS social mobilisers had series of meeting with association of community leaders on awareness and sensitization of community leaders on the objectives of Lagos State AIDS Indicator Survey and need for full participation of households mapped in their respective communities.

Motorized Rallies: Focused motorized rallies were carried out across the mapped enumeration areas in Lagos State to create more awareness on LAGAIS. This was done with the use of Disk Jockeys playing recorded messages on LAGAIS.

Advocacy visits to Community Gatekeepers: Advocacy visits were paid to traditional rulers and religious leaders and political leaders in Ikorodu, Mushin and Surulere Lagos States.

Ethical Approval: The Lagos State University Teaching Hospital (LASUTH) ethic and research committee gave final approval to LAGAIS protocol. Hence the survey implementation commenced fully.

Data management Plan for LAGAIS: The LAGAIS team and data management team worked together to produce the data management plan for the survey. The data management plan had different sections such as overview of the plan, equipment structure and survey management structure, data management team and data flow plan.

Update on Mapping and Enumeration of Households: The mappings of enumeration areas and households listing were completed. A total of 246 enumeration areas were mapped with 12 satellite laboratories.

Procurement of LAGAIS materials

- **Survey tablets and laptops:** procurement of 191 Samsung A6 tablets and 10 pieces of dell laptops.
- **Non-Lab Consumables:** Procured 7 freezers. Six 219 liters were distributed to 6 satellite laboratories (Badagry, Epe, Ibeju Lekki, Surulere, Lagos, Orile-Agege General Hospitals) and one 319 litres to the central quality laboratory (LASUTH); Milk: 32,000 pieces of tin milk has been procured, Customized T-shirts: 26,000 pieces of customized T-shirts have been procured in preparation for the field work.

Laboratory consumables/items: Laboratory items for the pilot are available. However, for the main survey advert for quotes from vendors has been done and these has been reviewed by AFENET procurement committee. Instruction came from GFA to hold on procurement processes.

Survey Technical Committee Meetings

Between July and September 2017, there were 3 STC meetings held as explained below.

- During the July survey technical committee meeting, update on the implementation of LAGAIS was presented, as well as the status of laboratories and storage of materials for the survey, and kits, update on community mobilization, and update on mapping. Current challenges on the implementation of the survey were identified and time lines for remedy put in place.
- During the August meeting, update on the implementation of LAGAIS included training of field workers, the status of the satellite laboratories and storage of materials for the survey, and kits, update on community mobilization, update on mapping.
- During the September meeting, updates on the implementation of LAGAIS included discussion on communication from the grant fiduciary agent to AFENET to start the procurement process on laboratory and logistician and the new timeline for delivery of goods as November 10th 2017. The issue of the extension plan and the implications on the survey was discussed.

Facilitators Training

Facilitators with huge wealth of experience in HIV programme and versed in knowledge were drawn from a wide range of background for the facilitators training. They were from the academia (ABU, UI, LASU), FMoH, Lagos SMoH, AFENET, NACA, NASCP, Missions 5000 plus, FHI 360, NEPWHAN, NPopC. The training lasted three days from 7th to 9th September at Dover Hotels. The objective of the training was to train the trainers who will train the field workers.

Training of LAGAIS Field Workers

LAGAIS field workers were trained from 11th - 23rd September at Lagos Digital village Alausa Ikeja. The field workers trained were in different cadres such as the team leads, interviewers, counselors, field laboratorians, satellite laboratorians and trackers. In all a total of 241 field workers were trained during the 10 to 12 days.

NIGERIA FELTP MALARIA PROGRAMME

The goal of the Nigeria FELTP Malaria Program is harnessing of malaria resources to build epidemiological capacity in malaria among field epidemiology and laboratory practice residents in Nigeria. Achievements during the six months period are presented below:

- NFELTP was represented at the PMI's Partners' meetings for FY2018 MOP on 12 April 2017 and 13/7/2017. The meetings were to deliberate on the preparation of each stakeholder for the forthcoming FY2018 MOP and to also plan for the 2018 World Malaria Day. The July meeting also deliberated on the PMI/CDC field visit towards the FY MOP 2018 with highlights of major findings, the research focus of PMI, participation in the forthcoming 2018 DHS especially making input to the questionnaire, need to provide success stories to PMI, progress report from implementing partners and follow up actions.
- The NMEP malaria stakeholders meeting with the CDC was held on 17th May 2017 at Nanet Suites, Abuja. NFELTP was represented and the objective of the meeting was to review the progress with malaria implementation in Nigeria including support from PMI and to identify priority areas for PMI FY2018 MOP.
- The PMI /CDC meeting with NFELTP Malaria was held on 19th May, 2017 as part of the PMI FY2018 MOP. One major discussion was the establishment of malaria short course. The proposal earlier submitted was reviewed and suggestions to address the queries on the proposed short course were provided. NFELTP sent the amended draft proposal and curriculum to PMI for approval. A proposal to hold a workshop to revise the draft curriculum and develop training modules was submitted.
- The NFELTP was represented on the 48th, 49th, 50th and 52nd M&E subcommittee meetings of the NMEP. The 50th M&E subcommittee meeting, was held on 30th May 2017 and 52nd M&E

subcommittee meeting was held on 31/8/2017. The meetings deliberated on update of activities of the NMEP partners, the development of malaria epidemiological profile for Nigeria by National Malaria Elimination Programme (NMEP), FMOH in collaboration with the DFID/WHO-AFRO LINK project, results of analysis of Q1 routine data, update on malaria operational research (OR) agenda, malaria surveillance activities, inclusion of IPT3 into the DHIS and addition of Biomaker to the 2018 NDHS.

- A meeting with M&E programme manager for Malaria OR agenda was held on 28/8/2017 to discuss the final draft of the Malaria OR agenda and support of NMEP towards printing and dissemination. It was suggested that the dissemination workshop should be merged with the NFELTP planned malaria research dissemination workshop to be held on October 17th-19th, 2017 at Barcelona Hotel, Abuja. A budget was prepared and submitted for approval. Letters of invitation were sent to stakeholders and resource persons. The call for submission of abstract was sent to NFELTP residents and graduates.
- Sensitization of cohort 9 residents on the need for malaria research was carried out. A lecture on malaria epidemiology, research and operational research needs was delivered by Dr Ajayi on June 2nd, 2017. The draft priority list of NMEP OR topic developed from the Malaria OR Agenda setting stakeholders workshop was shared with the residents.
- The 2nd NCDC/NFELTP Annual Scientific Conference was held at the Transcorp Hilton Hotel, Abuja, Nigeria between 5th and 7th July, 2017. The theme of the conference was “Strengthening One Health through Field Epidemiology Training.” The NFELTP/PMI malaria programme supported the malaria related activities at the conference.
- During the fourth quarter, residents’ projects in malaria research were reviewed. These were either dissertations, proposals or draft manuscripts.

Research and Publications

One manuscript was accepted for publication by Malaria World Journal. Asymptomatic Plasmodium falciparum parasitaemia among pregnant women: A health facility based survey in Nassarawa-Eggon, Nigeria by Samuel E. Emiasegen et al.

Manuscript writing workshop:

A combined AFENET NSTOP and NFELTP Malaria manuscript writing workshop was held between 15th-19th May 2017. This was facilitated by CDC resource persons, NFELTP Malaria Consultant, Dr Ike Oluwapo Ajayi and AFENET technical staff. There were 30 participants out of which 10 were from NFELTP malaria programme while others were to write manuscript on the Polio and Polio legacy interventions. At the end of the workshop, the participants had produced advanced draft manuscripts. These were to be further revised with local facilitators and submitted for possible publication in the supplementary edition of Pan African Medical Journal or any other appropriate journal.

Manuscripts submitted for publication:

Three manuscripts were submitted for publication in peer review journal in this quarter.

- A qualitative exploration of malaria operational research situation in Nigeria. Submitted to PLOS ONE journal.
- Setting a Nigeria National Malaria Operational Research Agenda: The process. Submitted to BMC Health Services Research.
- Bottlenecks, Concerns and Needs in Malaria Operations Research: The Perspectives of Key Stakeholders in Nigeria. Submitted to BMC Malaria.

Manuscript still under review:

- Caregivers' Knowledge and Utilization of Long Lasting Insecticidal Nets among Under-Five Children in Osun State, Southwest, Nigeria by Kolawole et al. is under review with BMC Malaria Journal.
- Determinants of Utilisation of Intermittent Preventive Treatment among Women Attending Antenatal Clinics in Primary Health Care Centers in Ogbomoso, Oyo State by Adewole et al is under review with BMC Pregnancy and Childbirth.
- Demand-related factors influencing caregivers' awareness of malaria tests and health workers' testing practices, in Makarfi, Nigeria by Ajumobi et al is under review with Malaria Journal.

Residents' proposals and dissertation

Draft dissertations of Cohort 7 residents who carried out research on malaria and malaria research proposals of Cohort 8 residents were revised by Dr. Ike Oluwapo Ajayi and Dr. Olufemi Ajumobi for university programme project.

AFENET Support to Nigeria Centre for Disease Control (NCDC)

During the period under review, AFENET supported the NCDC in the following activities:

Outbreak Investigations

NCDC/NFELTP deployed teams to conduct outbreak investigation and responses to outbreaks of epidemic prone diseases. NFELTP graduates were deployed as members of the outbreak investigation teams in the responses below:

Coordinated Response to the Epidemic of Meningococcal Meningitis: In April and May, staff, graduate and residents of the NFELTP participated in the NCDC - coordinated response to the epidemic of meningococcal meningitis that affected several states in northern Nigeria at the Emergency Operations Centre as well as in the field. The residents were in the field to support surveillance and reactive immunization, and conduct epidemiologic surveys and assessments in the districts.

Gastroenteritis in Queens' College Lagos: This was a retrospective review of processes that started with Dr Mahmood Dalhat accompanying the CEO to Lagos for evaluation of the situation on the request by the HMM. Follow-up activities included comprehensive epidemiological information to support the process of documentation and description of the outbreak.

Yellow fever Outbreak Investigation, Kwara state with activities like: establishment of cholera EOC, support State IM in the response coordination, verification of outbreak, risk analysis, and institution of control measures to contain the outbreak.

Cholera Outbreak Investigation, Kwara state. From 1st May, 2017 to 20th June, 2017, a total of 1429 suspected cases, 9 laboratory confirmed cases and 10 deaths were reported from four LGAs.

The activities of the NFELTP included:

- Establishment of cholera EOC, support State IM in the response coordination, verification of outbreak,
- Support State IM in response coordination, verification of outbreak, identification of risk factors and Institution of control measures to contain the outbreak.
- Finalization of the National Acute Watery Diarrhea Guidelines and Cholera emergency preparedness plan.
- Off-site monitoring support and follow up of the outbreak situation in the affected states and development of national Cholera situation report

Meningitis Outbreak: This outbreak response was further enhanced by activation of the emergency operation center (EOC) in the NCDC with an incident command system operated for managing the outbreaks. At least 30 residents, graduates and NCDC staff were supported across six states of Zamfara, Sokoto, Katsina, Kano, Kebbi and Niger states. There were post-outbreak activities to document the lessons learnt.

Hepatitis E Outbreak in Borno state: NFELTP worked with WHO for about 6 weeks to provide strong technical support to the State Ministry of Health's response to the outbreak through supportive coordination for the response, Inter-sectoral collaboration: joint planning and review of all activities including WaSH intervention activities, risk assessment, development and distribution of technical situation report, surveillance strengthening, LGA DSNO, and PHC coordinators sensitization, capacity building of the State and LGA rapid response team, Laboratory management of samples and result coordination.

Measles Surveillance Evaluation of Nigeria: Supported data collection and analysis, compiled and disseminated evaluation surveillance report, conducted national debriefing meeting on the measles surveillance evaluation meeting and developed work plan on the measles and congenital rubella syndrome (CRS).

Cholera Preparedness Workshop, NFELTP supported development of national acute watery diarrhea guidelines and cholera emergency preparedness plan, led by the Nigeria Centre for Disease Control (NCDC) and the World Health Organization in June.

[Lassa Fever Outbreak Response in Ondo state](#): At least 50 residents, graduates and NCDC staff were deployed with AFENET support to assess the IPC status in the institution and conduct IPC training to all healthcare workers. Specific objectives included to conduct a retrospective outbreak investigation of all cases admitted and treated for LF at FMC Owo from May to June, 2017, evaluate IPC status at FMC Owo viz, HCW knowledge of IPC, assess IPC standards in the facility and at the Isolation/treatment center, establish that there is nosocomial transmission of Lassa fever at FMC Owo and provide appropriate intervention, conduct IPC training and onsite mentorship for all facility staff, recommend sustainable measures for effective IPC standards in the facility and communities, reactivation of EPR team and establishment of EOC at Owo LGA to lead the outbreak response team, review and harmonization of national Lassa fever surveillance and outbreak data, writing Lassa fever weekly Sitrep, review of VHF case management SOP, guidelines, updating VHF database platform, 2016/2017 Lassa fever outbreak After Action Review and Preparedness meeting.

[Lassa Fever Outbreak Response Working Group \(VHFWG\)](#): Review and harmonization of national Lassa fever surveillance and outbreak data, writing Lassa fever weekly Sitrep, review of VHF case management SOP, guidelines and updating VHF database platform.

[Checklist for assessing preparedness for cerebrospinal meningitis CSM and Lassa fever response at state level](#): Residents collated all checklists from the State epidemiologists, analyzed and compiled report.

[Antimicrobial Resistance \(AMR\)](#): NCDC coordinated the secretariat on AMR related activities. Through this secretariat, NCDC developed and finalized AMR situation analysis (SITAN) for the country, developed National Action Plan (NAP) on Antimicrobial Resistance (AMR) surveillance program. These documents (National Action Plan and The AMR surveillance National Action Plan and SITAN) are now ready for printing and official launching by the HMM at the National level. Nigeria met the deadline for enrolment into Global Antimicrobial Surveillance System (GLASS). Also followed the AMR laboratory capacity assessment of the laboratories. In addition, AFENET supported the National Action Plan (NAP) on Antimicrobial Resistance (AMR) surveillance program; supported ongoing planning activities of the AMR awareness week, slated for November 2017, and planning activities for a workshop to engage the laboratories.

[Surveillance Team visit to Edo](#): A surveillance team that was deployed to Edo State carried out the following activities; assessed the involvement of Irrua Specialist Teaching Hospital and University of Benin Teaching Hospital in Lassa fever surveillance in the state, were able to facilitate effective coordination between the Irrua Specialist Hospital and the State Ministry of Health (Epidemiology Unit), reviewed case notes/records updated Viral haemorrhagic fever forms, reviewed the logistic utilization records including sources of logistic supply, assessed the cost of treating a Lassa fever patient in ISTH Irrua and recommended measures that will sustain effective surveillance activities between the state surveillance team and the tertiary healthcare institutions in the state.

CSM Outbreak Investigation and Response: NFELTP graduates deployed to NCDC participated in the areas of Epidemiology and Surveillance, risk assessment analysis, risk communication, supervision during the reactive vaccination campaigns.

Joint External Evaluation (JEE) of WHO IHR:

AFENET HIV program provided support to the JEE during the internal as well as external validation processes. The process started in February 2017 and ended successfully on 20th June 2017. NFELTP made presentations on workforce development during the JEE and participated in the discussions and other activities leading to the evaluation in May through June. Of the 19 areas evaluated, Nigeria scored the highest scores of four in two areas (Immunization and Workforce Development), areas where the NFELTP and NSTOP program gave significant contributions to (see report on the link: <https://www.dailytrust.com.ng/news/general/nigeria-has-low-disease-response-capacity-report/202566.html>)

EVD Preparedness Working Group (EPWG):

NFELTP graduates were involved in different thematic areas during EVD Preparedness Working Group following the EVD outbreak in the Democratic Republic of Congo. These areas included the surveillance, risk assessment analysis, investigation of rumour alert and training of Port Health Service (PHS) and Airport Officials on Infection Prevention and Control.

LGA basic minimum requirement: Development and review of LGA DSNO basic minimum requirement for surveillance, verification and response at LGA level in Nigeria. Finalized Protocol and data tools.

ESTHER Project:

NFELTP graduates were involved in the review of Infection Prevention and Control for infectious disease health emergencies protocol.

NCDC and Partners on Borno Mission:

There is currently a joint mission with NCDC and WHO in respect of the North East emergency response with focus on Borno State. Technical working group was set up to work on future sustainable plan using the following thematic areas; training of health facilities staff on Disease Surveillance and Outbreak Response, strengthening of public health laboratory in Borno, needs assessment of State Isolation Center for treatment of VHF patients, and Support to Rapid Response Team in the State and LGAs.

The Rapid Result Initiative (RRI):

This is a structure established by NCDC to oversee tenders received, contract biddings by NCDC and the laboratory implementation of the RRI.

NCDC National Reference Laboratory, Gaduwa:

The NCDC commenced operation of her national reference laboratory located in Gaduwa, Abuja. The operations and structures of the national influenza reference laboratory were relocated to the Gaduwa laboratory. This national reference laboratory is expected to focus on bacteriology diagnosis majorly in the interim while perfecting plans for other microbiological analysis at the center.

NFELTP residents on field posting at the NCDC:

AFENET continuous supervision and mentoring of NFELTP residents at NCDC is one of the core mandates. Residents were engaged more actively in NCDC field activities.

SORMAS, is electronic data capturing method from the field to the surveillance system.

Residents participated in the SORMAS introductory meeting, training of trainers' workshops which will be cascaded to the lower level.

MAURICE Project:

Residents participated in review of Infection Prevention and Control for infectious disease health emergencies protocol, core working group meeting, literature search and review of relevant documents, exchange visit to RKI and planning of TWG meeting.

NCDC/NFELTP 2nd annual scientific conference:

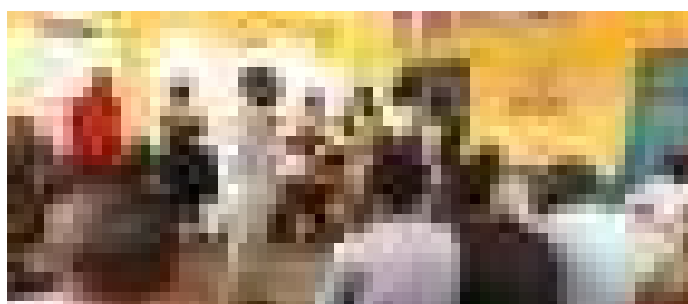
Residents participated in the local organizing committee planning meeting for the conference.

Outbreak Investigation and Response Activities

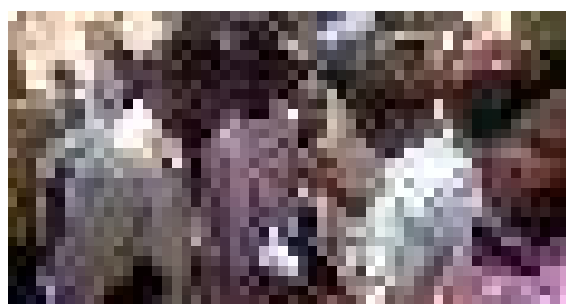
NFELTP residents/ graduates participated in several outbreak investigations. These are summarized in the table below. More than 60 residents and graduates played critical roles in the outbreak investigation and response efforts.

Table 11: NFELTP Residents/ Graduates Participation in Outbreak Investigations

Outbreak Investigated	Period of Outbreak	Number of Cases	No. of Residents/ Graduates who Participated
Cerebrospinal Meningitis (CSM) Outbreak, Katsina State	8 th - 27 th April 2017	653 suspected, 107 deaths	3
Cerebrospinal Meningitis Outbreak, Kano State	7 th - 20 th April 2017	8,546 suspected, 257 confirmed, 767 deaths	4
Cerebrospinal Meningitis outbreak in Kebbi State	8 th - 14 th April, 2017	84 suspected, 21 confirmed, 17.9% CFR.	3
Cerebrospinal Meningitis Outbreak, Niger State	6 th - 20 th April, 2017	123 suspected, 27.6% CFR	5
Cerebrospinal Meningitis outbreak in Yobe State	April 2017	10.5% CFR	4
Cerebrospinal Meningitis outbreak in Zamfara State	April 2017		4
Cerebrospinal Meningitis Outbreak in Sokoto state	3 rd April - 6 th May, 2017	4,509 suspected, 51 confirmed, cumulative case fatality rate 6%	4
Cholera Outbreak, Kwara State	9 th - 28 th June, 2017	19 suspected, 13 confirmed, 0 deaths	4
Lassa fever outbreak, Plateau State	July 2017	3 confirmed, 1 death	5
Cholera Outbreak, Zamfara State	26 th July - 4 th August, 2017	360 suspected, 12 deaths and 7 confirmed.	3
Cholera Outbreak, Kebbi State	August, 2017	1,196 cases; 31 deaths	1
Lassa Fever Outbreak, Lagos State	1 st - 8 th August, 2017	5 confirmed, 2 deaths	1
Cholera outbreak in Borno State	August - September, 2017	1,733 suspected, 44 deaths	4
Cholera outbreak in Bauchi State	September, 2017	19 suspected, 3 deaths	1
Yellow fever outbreak in Kogi State	September 2017		2
Yellow fever outbreak, Kwara State	September 2017	155 suspected, 2 confirmed, 26 probable deaths	8
Monkey pox outbreak, Bayelsa State	September 2017	15 suspected, 0 deaths	6



Community members listen attentively while a resident leads sensitization on meningitis



Outbreak investigation team members addressing some concerns of the community health workers

Publications

The table below shows the titles of the completed manuscripts from NFELTP and the draft manuscripts from the writing workshop being finalized for publication.

Table 12: Titles of Completed Manuscripts and Draft Manuscripts from NFELTP

	Title of Manuscript	Main Authors
	Completed Publications	
1	Predictors of depression among patients Open Access receiving treatment for snakebite in General Hospital, Kaltungo, Gombe State, Nigeria: August 2015. Int J Ment Health Syst (2017) 11:26 DOI 10.1186/s13033-017-0132-8	Abdulaziz Muhammed, Mahmood M. Dalhat, Babalola O. Joseph, Abubakar Ahmed, Patrick Nguku, Gabriele Poggensee, Mukthar Adeiza, Garba I. Yahya, Muhammad Hamza, Zaiyad G. Habib, Abisola M. Oladimeji, Abdulsalam Nasidi, Abubakar Balla, Ibrahim Nashabaru, Nasir Sani Gwarzo, Ahmad M. Yakasai, Joshua A. Difa, Taiwo Lateef Sheikh and Abdulrazaq G. Habib.
2	Detecting, Reporting, and Analysis of Priority Diseases for Routine Public Health Surveillance in Liberia. PAMJ	Joseph Asamoah Frimpong, Meeyoung Mattie Park, Maame Pokuah Amo-Addae, Peter Adebayo Adewuyi, and Thomas Knue Nagbe.
3	Conducting a Surveillance Problem Analysis on Poor Feedback from Reference Laboratory, Liberia, February 2016. PAMJ	Joseph Asamoah Frimpong, Maame Pokuah Amo-Addae, Peter Adebayo Adewuyi, Meeyoung Mattie Park, and Casey Daniel Hall.
4	Conducting a Surveillance Data Quality Audit in Grand Bassa County, Liberia, November 2015. PAMJ.	Joseph Asamoah Frimpong, Maame Pokuah Amo-Addae, Peter Adebayo Adewuyi, Casey Daniel Hall Meeyoung Mattie Park, and Thomas Knue Nagbe.
5	Contact Tracing Following Outbreak of Ebola Virus Disease in Urban Settings in Nigeria. PAMJ	Olufunmilayo Ibitola Fawole, Mahmood Muazu Dalhat, Meeyoung Mattie Park, Casey Daniel Hall, Patrick Mboye Nguku, and Peter Adebayo Adewuyi.
6	Response to an Unusual Outbreak in a High-risk Situation. PAMJ	Mahmood Muazu Dalhat Olufunmilayo, Ibitola Fawole, Patrick Mboye Nguku, Meeyoung Mattie Park, Casey Daniel Hall, and Nasir Sani-Gwarzo.
7	Outbreak of a Highly Virulent Lassa Fever Virus in Kano State, Nigeria: An Investigation Report 2015-2016. International Journal of Scientific & Engineering Research, Volume 8, Issue 1, January-2017 ISSN 2229-5518	Ibrahim Baffa Sule, I.B. Wada, A.A. Abubakar, A.H. Adamu, H.S. Fagge, Y. Mohammed, S.A Ibrahim, Z.D Ahmed, S.B Abba, M.S Balogun, P. Nguku, P. Nsubuga.
Draft manuscripts being finalised for publication		
1	Risk factors of Drugs Resistant Tuberculosis among Pulmonary Tuberculosis Patient in KanoState, Nigeria.	Chidinma Christiana Chimaka
2	Analysis of Wild Polio Viruses Cases among Endemic States in Nigeria, 2003-2012	Amina Zubair Kazaure
3	Sero-Prevalence of Dengue Virus and associated factors for risk among apparently Healthy Individuals In Karu Local Government, Nasarawa State, Nigeria.	Adama Abubakar Ahmad
4	Prevalence and Perception of partner disclosure among HIV positive clients in Public Health Facilities in Federal Capital Territory (FCT) Abuja, Nigeria - 2017	Fatima Saleh

5	Micro Nutrients levels in People living with HIV/ AIDS attending Antiretroviral Clinic in Oyo State, Nigeria	Olagunju Oluwasegun Timothy
6	Risk Factors Associated with HIV/TB Co-infection at a Tertiary Hospital in Edo State, Nigeria, 2016.	Bright E. Shadrack
7	Hematological Patterns associated with HIV/TB Co-infection Patients at a Tertiary Hospital in Benin City, Nigeria, 2016	Bright E. Shadrack
8	Knowledge, Attitude and Practices of Rabies among Residents of Abuja Municipal Area Council, Federal Capital Territory, Nigeria	Aboyowa Arayuwu Edukugho
9	Assessment of client's satisfaction with PEPFAR supported laboratory services at Infectious Disease Hospital, Kano, Northern Nigeria	Mikhail Abubakar
10	Fatal outbreak of gastro enteritis in suburban community, implication for surveillance and laboratory diagnosis, Saburi 1, Abuja, Nigeria, 2016	Saude Abdullahi Ibrahim
11	Determinants of pertussis infection in a rural community during an outbreak, Kano, Nigeria 2014	Saude Abdullahi Ibrahim
12	Nutritional status and CD4 cell counts in patients with HIV/AIDS receiving anti-retroviral therapy Oyo State Nigeria	Olagunju Oluwasegun Timothy
13	Comparison of patient's satisfaction with HIV care services received in public and private Hospitals in Anambra State Nigeria	Chukwuma David
14	Occupational Exposure to HIV among Healthcare Workers in PMTCT sites in Port Harcourt, Nigeria	Ndubuisi Akpuh
15	Knowledge, Attitude and Practice of Palliative Care for People Living with HIV/AIDS among Healthcare Workers in Public Health Facilities, Abuja, Nigeria	Ajisehiri Simeon

Meetings and Conferences

During this period, the NFELTP organized and also facilitated residents to participate in the following events primarily aimed at knowledge sharing and dissemination (workshop, meetings and conferences).

Table 13: NFELTP Residents' Participation in Knowledge Sharing and Dissemination Events

Event Title	Period	Aim of the Event	Main Outputs	No. of Participants
NFELTP workshop	30 th May, 2017	To finalize tools and protocols for National Surgical Site Infection Surveillance in Kaduna	Tools and protocols finalized	
NFELTP writing workshop	17 th - 23 rd July 2017	To impart knowledge and scientific writing skills to participants and ultimately ensure final publication of manuscripts in high impact peer reviewed journals.	27 manuscripts drafted; 15 manuscripts finalized for publication	27
1 st Annual Ghana Field Epidemiology & Laboratory Training Program Scientific Conference	18 th - 21 st Sept, 2017	Conference theme: A Decade of Field Epidemiology Training In Ghana - Scaling Up Workforce Development To Improve Public Health	1 oral presentation 5 oral - poster presentation	3 NFELTP residents
The 9 th TEPHINET Global Scientific Conference	7 th - 11 th , August 2017	Conference theme: Building on 20 Years of Applied Epidemiological Training to Advance Disease Surveillance, Response, and Sustainable Development	7 oral presentation 21 poster presentations	32 people from NFELTP: 25 trainees/ graduates and 7 faculty
2 nd Annual NCDC/ NFELTP Scientific Conference	5 th - 7 th July, 2017	Theme: Strengthening One Health through Field Epidemiology Training	A 2-day pre-conference One Health workshop; 36 oral presentations, 61 poster presentations	
Five-day training on BABIES Matrix/Story Board, Uganda	21 st - 25 th August 2017	Institutionalize the use of Maternal infant Matrix (BABIES and MOMs) in Uganda Write a Maternal Infant Matrix (MIM) story board for Uganda Understand and disseminate the power of this tool and approach to policy makers and healthcare providers.	Capacity of Uganda health providers built on the use of the BABIES matrix. Draft MOU for implementing BABIES in Nigeria developed. A Nigerian hospital identified to collect data to develop BABIES story board. Nigeria identified at least 2 participants to attend the BABIES workshop.	
NFELTP & NCDC One-Health Ant-Microbial Resistance (AMR) workshop for Cohort 8 residents	13 th - 15 th Sept, 2017	To foster a multi-coordinated and sustained ONE-Health approach against AMR and involve more stakeholders		

The main achievements of the Program are summarised below:

- At the 9th TEPHINET Global Scientific Conference; 7th - 11th, August 2017; The Nigerian delegation made a total of 28 presentations (7 oral and 21 posters). This was the highest number of presentations at the conference second only to China with 34 (21 poster and 13 oral) presentations.

The Nigeria contingent got 2 awards out of the total of 13 awards in the conference. This was the highest of any participating country in the conference.

The awards were:

- Photo Contest Winner 1st Place
- Best Poster Presentation by an FETP graduate

- At the five-day training on BABIES Matrix/Story Board, Uganda; The Nigerian team interacted with the team of master trainers from the US led by Dr Brian McCarthy to deliberate on the prospect of implementing BABIES in Nigeria. A draft MOU for implementing BABIES in Nigeria is currently being developed by the Notre Dame University on the directives of Dr Brian McCarthy

- Nigeria Centre for Disease Control/Nigeria Field Epidemiology and Laboratory Training Programme Scientific Conference held their 2nd annual conference from 5th to 7th July, 2017. The conference also featured a two-day pre-conference workshop on One Health where seasoned researchers on One Health made presentations and anchored sessions.

- At the end of the NFELTP and NCDC One-Health Ant-Microbial Resistance (AMR) workshop for Cohort 8 Residents, consensus was reached on the key role of the media in creating awareness on the global threat of AMR. It was also said that the while government and policy makers have a major role to play by providing the needed policy framework, political will and adequate health budgetary allocation are needed to ensure implementation of the 5 strategic framework pillars.

- At the Ghana conference 18th - 21st September, 2017, 1 oral and 5 oral-poster presentations were made by NFELTP residents and graduates. The table below shows the titles of the presentations.

Table 14: Titles of the Presentations by NFELTP Residents - Ghana Conference

Name of Resident	Oral	Oral Poster Presentation
Obagha. E .Chijioke	Health workers Knowledge, Attitude and Practice during Lassa Fever Outbreak, Anambra State	
Ibrahim. A .Seriki		Evaluation of Measles Case-Based Surveillance System in Edo State, Nigeria, January to December, 2016
Baffa Sule Ibrahim		Descriptive Characterization of Lassa fever Outbreak in Nigeria, 2016
Baffa Sule Ibrahim		Outbreak of Cholera at Dutsen-Abba Ward, Zaria Local Government Area, Kaduna state, Nigeria 2015: The Importance of Hygienic Practices
Ibrahim. A .Seriki		Descriptive Analysis of Lassa fever Outbreak data in Edo state, Nigeria 2016
Obagha. E .Chijioke		Surveillance Data Analysis on Measles, Anambra state, Nigeria, 2011 - 2016

Other Program Updates

Field Visit of University of Abuja Final Year Medical Students to AFENET Facility

The final year medical students of University of Abuja who were on senior Community Medicine posting visited AFENET offices in Nigeria on the 12th of July, 2017. They were given a presentation to orient them about AFENET - the various division, activities and impact made so far on strengthening the health system of Nigeria.

RWANDA FIELD EPIDEMIOLOGY AND LABORATORY TRAINING PROGRAM

Background

The Rwanda Field Epidemiology and Laboratory Training Program (RFELTP) was established in 2010 as a collaboration between the Rwanda Ministry of Health (MOH), Ministry of Agriculture and Animal Resources (MoAA), National University of Rwanda School of Public Health (NURSPH), Rwanda Biomedical Centre (RBC), the National Reference Laboratory (NRL), the Rwanda Animal Resources Development Authority (RARDA), AFENET and the United States (US) Centers for Disease Control and Prevention (CDC).

Cohort Enrolments

The program has so far enrolled four cohorts:

Country	Estab-lished	Cohorts	Residents enrolled	Year 1 residents	Year 2 residents	Tracks			Graduates
						Epi	Lab	Vet	
Rwanda	2010	4	60	17	0	45	15	0	28

Activities Undertaken by residents 2010 - 2017

Outbreak Investigations (Example of outbreaks undertaken)

- Cholera Outbreak Investigation at Rwanda/DRC border in April 2012. Nine cases were identified, and the causative pathogen confirmed as *Vibrio cholera*.
- Acute food borne illness at a church function, Nyamagabe District on 27 May 2012. A total of 129 cases recorded.
- Presidential Malaria Initiative (PMI) funding for FETP Rwanda supported three malaria upsurge investigations, an epidemic typhus investigation at a prison, and a surveillance evaluation of acute flaccid paralysis in 2014.

Meetings and Conferences

- East African Regional Bio-surveillance Workshop (RBSW) 11th -15th June 2012. RFELTP made a presentation on Role and scope of Rwanda FELTP in bio-surveillance.
- Rwanda FELTP will hold a FELTP Scientific Day on 26 March 2013 at Lemigo Hotel, Kigali. Twenty abstracts (10 orals and 10 posters) from Cohort I and Cohort II.
- Through PMI funding, residents were supported to travel to international conferences such as the 63rd Annual Meeting of the American Society for Tropical Medicine and Hygiene (ASTMH) in New Orleans, from 2nd - 6th November 2014

Didactics

- All residents enrolled are mandated to complete didactics at the National University of Rwanda, School of Public Health.

Scientific Publications:

Eight manuscripts published in 2014.

SOUTH AFRICA FIELD EPIDEMIOLOGY TRAINING PROGRAM 2017

The South Africa Field Epidemiology Training Programme (SAFETP) was created in 2006 after recognizing the need to build and sustain the country's human resource capacity in applied epidemiology and public health practice. It was formed as collaboration between the South Africa National Department of Health (NDoH), the National Institute for Communicable Diseases (NICD), the National Health Laboratory Services (NHLS), the Centers for Disease Control and Prevention (CDC) and the University of Pretoria (UP). Like most other FETPs globally, the SAFETP is a 2-year, competency-based, applied epidemiology training program, based on the 'learn by doing' model. SAFETP residents spend approximately 25% of the training in classroom-based didactic learning activities, and 75% in field activities. Residents gain core competencies in epidemiology, biostatistics, outbreak investigation, scientific communication, surveillance evaluation, teaching others, and public health leadership. Thus far, SAFETP has enrolled a total of 105 residents with its 11th cohort in 2017 and 87 graduates (excluding the seven that will complete end of this year) with a completion rate of 80%.

Program Enrolment and Graduation

The 11th cohort of seven new residents started SAFETP training in January 2017, and are due to complete in December 2018. Seven residents of the Cohort IX class (2015 intake) completed the 2 year FETP residency and were awarded MPH degrees at a graduation ceremony held in May 2017, see pictures below.



Cohort IX class (2015 intake) residents with Program staff during the university fall graduation ceremony, May 5th, 2017



*Vashnee Govender, a resident from Cohort IX class (2015 intake) graduated from the University of Pretoria during the university Spring graduation, September 2017. She was awarded her MPH cum laude.
Left to right: Vashnee Govender with parents. Vashnee with mini dissertation co-author Professor Geoff Fosgate, a Veterinary epidemiologist at UP Veterinary Faculty.*

Frontline/ Short Course Trainings

During the year, the SAFETP staff delivered training courses for a total of 93 health professionals as follows:

- Frontline course in East London;
- The Principles of Outbreak Investigations for the provincial DoH in Randfontein;
- Outbreak investigation training for Environmental Health Practitioners at the City of Johannesburg;
- A short course in basic epidemiology for the Group for Enteric, Respiratory and Meningeal disease Surveillance in South Africa (GERMS-SA) field project coordinators

The programme held a two-day training workshop for field supervisors, on 23rd - 24th August 2017 at the NICD. The goal of the workshop was to orient new field supervisors on the FETP curriculum, the tools and guidelines that are used to support residents during field placement and to the roles and responsibilities of supervisors/mentors during FETP residency. The workshop is held annually, before the residents are placed in the field.

Outbreak Investigations

In the year under review, residents participated in 26 outbreak investigations, conducted seven large data base analyses and produced the following dissertations as part of their core learning activities

- Investigation of a gastroenteritis outbreak among a preparatory school among learners and teachers, January 2017.
- An Investigation of a cluster of paediatric Hydrocephalus in Mohale's Hoek District of Lesotho, January 2017.
- Investigation of a cluster of haemolytic uremic syndrome cases among children in the Western Cape Province, February 2017.
- Foodborne illness outbreak at a boarding school, Limpopo province - February 2017.
- Investigation of a rash (associated with fever) outbreak in the northern suburbs of Johannesburg, March 2017.
- Investigation of a measles outbreak in Zinniaville, Rustenburg, March 2017.
- Foodborne Illness outbreak at a secondary school, Pretoria North, March 2017.
- Investigation of Typhoid fever at a district hospital, Mopani District - March 2017.
- An outbreak investigation of gastrointestinal illness at a frail-care facility in Nelson Mandela metropolitan health district, March 2017.
- Measles outbreak, KwaZulu-Natal Province, May 2017.
- Measles - Azaadville, West Rand, Investigation and vaccination campaign 20th - 21st June 2017.
- Gastrointestinal Illness Outbreak Investigation at a training facility in Johannesburg July, 2017.
- Investigation of a Diphtheria outbreak, Cape Town, August 2017.
- Atypical presentation of Herpes Simplex Virus type 1 in paediatric burns patients in a large tertiary hospital - Gauteng, South Africa, July 2017.
- Outbreak of culture-confirmed *Candida auris* bloodstream infection in the neonatal unit of a public-sector hospital, South Africa, July through September 2017.
- An outbreak of skin lesions among mine workers employed at a mine in Gauteng

- Gastrointestinal outbreak at a University in Johannesburg October - November 2017.
- H5N8 Avian Influenza investigation of in-contact poultry workers at affected farming operations during June - August 2017.
- An investigation of an outbreak of Listeriosis, Gauteng, 2017
- Investigation of Clusters of Malaria Cases in Gauteng Province-South Africa, September - October 2017.
- Food-borne illness outbreak in North West Province.
- Epidemiological investigation of two cases of odyssean malaria in, Gauteng, October, 2017.
- Report of Group A streptococcus outbreak in long term care facility, Gauteng , 24th September - 31st October, 2017.
- Mumps outbreak in a primary school in Berea, Lesotho, 2017.
- Diarrheal outbreak in a high school in Leribe, Lesotho, 2017.
- Typhoid fever outbreak investigation, Sekhukhune District, Limpopo Province, November 2017.

Meetings and Conferences

Program residents made several presentations at national and international conferences including the FETP International Night, The STI & HIV World Congress, 9th Global TEPHINET Scientific Conference and 12th Public Health Association of South Africa (PHASA). Selected presentations are in the table below.

Author	Presentation Title	Type
FETP International Night 25 th -26 th April 2017, Atlanta		
Liliwe Shuping	Investigation of a cluster of extended spectrum beta-lactamase-producing Klebsiella pneumoniae infections among infants admitted to a public-sector hospital, Mpumalanga, South Africa, 2016	Poster
PathRed Congress, 23 rd June 2017, Johannesburg, South Africa		
Phuti Sekwadi	Estimating vaccine coverage and timelines among children	Oral
The STI & HIV World Congress, 7 th -13 th July 2017, Rio, Brazil		
Rudzani Mathebula	Predictors of persistent and recurrent genital STI symptoms at sentinel surveillance sites in South Africa, January 2015 - June 2016	Oral
9th Global TEPHINET Scientific Conference, 7 th -11 th August 2015, Chiang Mai, Thailand		
Mabore Morifi	Imported Malaria in North West Province, South Africa - 2011 to 2015	Oral
Rudzani Mathebula	Estimating progress towards elimination of congenital syphilis in South Africa; incidence trends, 2010 - 2015	Poster
	An Investigation of a Cluster of Paediatric Hydrocephalus - Mohale's Hoek (MH) District, Lesotho, January 2017	Oral
Pinky Manana	Feasibility of determining tuberculosis prevalence among health care workers in South Africa using a postal and web-based survey'	Poster
Phuti Sekwadi	An outbreak of gastroenteritis on the KwaZulu-Natal South Coast, South Africa, Dec 2016 / Jan 2017	Poster
Jackie Kleynhans	An outbreak of influenza A(H3N2) among students at a boarding school in Eastern Cape Province, South Africa, July 2016	Poster
PHASA, 4 th - 7 th September 2017, Johannesburg, South Africa		
Mabore Morifi	Imported malaria in North West Province, South Africa, 2011 - 2015	oral
Khuliso Ravhuhali	Investigation of a typhoid fever case at a district hospital, Mopani district, Limpopo province, March 2017	Poster

Theesan Vedan	An outbreak investigation of gastrointestinal illness at a frail-care facility in the Eastern Cape, March 2017	Poster
Phuti Sekwadi	Outbreak of gastroenteritis on the KwaZulu - Natal South Coast, South Africa, 2016/2017	Poster
Rudzani Mathebula	Estimating progress towards elimination of congenital syphilis in South Africa; incidence trends, 2010 - 2015	Oral
Jackie Kleynhans	An outbreak of influenza A(H3N2) among students at a boarding school in Eastern Cape Province, South Africa, July 2016	Poster
Natasha Abraham	Leading cancers among men and women: South Africa, 2002 - 2012	oral

Conference Honours

Ms Jackie Kleynhans, a 2nd year resident, received an award in the category for “Best Poster Presentation” at the 9th Global TEPHINET Scientific Conference for her poster on the *Outbreak of influenza A(H3N2) among students at a boarding school in Eastern Cape Province, South Africa, July 2016*.

Ms Natasha Abraham, a 1st year resident, won the “Best Oral Presentation” Award at the PHASA conference for her poster on the *Leading cancers among men and women: South Africa, 2002-2012*.

Peer-reviewed Publications - 2017

- Shuping LL, Kuonza L, Musekiwa A, Iyaloo S, Perovic O. Hospital-associated methicillin-resistant *Staphylococcus aureus*: A cross-sectional analysis of risk factors in South African tertiary public hospitals. *Plos One* 12(11). 2017. doi: 10.1371/journal.pone.0188216
- Manana PM, Kuonza L, Musekiwa A, Mpangane HD, Koekemoer LL. Knowledge, attitudes, and practices on malaria transmission in Mamfene, KwaZulu-Natal Province, South Africa 2015. *BMC Public Health* 18(41). 2018 doi: 10.1186/s12889-017-4583-2
- Smith AM, Jacobs C, Ntshoe G, Page N, Manesen R, Iyaloo S, Motladiile T, Chetty V. “Laboratory-acquired infections of *Salmonella enterica* serotype Typhi in South Africa: Phenotypic and genotypic analysis of isolates.” *BMC Infectious Diseases* 17(1). 2017
- Mlotshwa M, Smit S, Williams S, Reddy C, Medina-Marino-A. Evaluating the electronic tuberculosis register surveillance system in Eden District, Western Cape, South Africa, 2015. *Global Health Action* 10(1). 2017. doi: 10.1080/16549716.2017.1360560.

Other Highlights

The team continues to work with the DoH in having epidemiology recognised as a professional discipline in the Human Resource for Health Strategy and are defining the epidemiology core competencies required for existing health staff in the health service. Pursuant to building epidemiology capacity at grass root level, we also developed an Applied Epidemiology e-learning course with I-Tech, which will be rolled out in 2018.

Dr Mayet (Co-Director, SA Regional Global Disease Detection Centre), facilitated a pre-conference workshop titled “Field Epidemiology Capacity Building for Strengthening Public Health Institutes” at the Training Program in Epidemiology and Public Health Intervention (TEPHINET) conference, in Thailand, which was attended by 23 participants from 15 countries. Outcomes from the workshop

were shared with TEPHINET and IANPHI and will inform workforce strategy development for public health institutes.

In September, the team facilitated and presented a preconference workshop at the Public Health Association of South Africa (PHASA), conference titled: “International Health Regulations and Requirements to Build Epidemiology Capacity in South Africa.” The outcomes of the workshop were shared with the NDoH, with the aim of helping to build the epidemiology requirements for the International Health Regulations.

Dr. Reddy (Programme Director), in his capacity as the Chair of the TEPHINET, played an active role in the development of the TEPHINET Strategic Plan for 2017-2020. As a member of the TEPHICConnect Steering Committee he also oversaw the establishment of TEPHICConnect - an online and mobile networking platform for FETP alumni worldwide, with more than 1000 registered users.

Dr Kuonza (Senior Medical Epidemiologist), in his role as an Advisory Board member at University of Johannesburg is working on the curriculum for trainee environmental health practitioners and is enrolled for his PhD.

Dr Mayet participated in the Africa CDC Expert Taskforce for Public Health Workforce Development Task.

South Africa hosted a Joint External Evaluation of International Health Regulations core capacities in December 2017. The SAFETP team participated in the workforce development action package.

Professional development

Hetani Ngobeni (Programme Field Epidemiologist) attended a non-communicable disease short course at the WITS School of Public Health and she and Ms Pinky Manana (Programme Field Epidemiologist) attended the “Introduction to R-management, exploration, and communication of data” course at Stellenbosch University.

TANZANIA FIELD EPIDEMIOLOGY AND LABORATORY TRAINING PROGRAM (TFELTP)

The Tanzania Field Epidemiology and Laboratory Training Program (TFELTP) was established in October 2008 with funding from the Global AIDS Program (GAP) of the United States Centers for Disease Control and Prevention (CDC) - Tanzania, and the Presidential Malaria Initiative (PMI) led by the United States Agency for International Development (USAID)'s Global Bureau in partnership with CDC.

The goal of the TFELTP is to strengthen the capacity of MOHCDGEC to collect and utilize surveillance data and manage national programs by expanding surveillance programs and strengthening laboratory support for surveillance, diagnosis, treatment and disease-monitoring.

MoHCDGEC is committed to strengthening its response to communicable and non-communicable disease epidemics through building the capacity of its health workers in areas of surveillance, epidemiology, and improving diagnosis through training in epidemiology and laboratory management.

Training and Related Activities

Table 1: FETP Resident Enrollment and Currently In-training by the Program

FETP Level	Cohort	Start Date dd/mm/yr	Expected Completion Date dd/mm/yr	Track	Number Enrolled	Number in Training this Quarter	Explain any Variation in Numbers
Advanced	Cohort 9	October 2016	December 2018	Epi	9	9	n/a
				Vet	0	0	n/a
				Lab	4	4	n/a
	Cohort 10	October 2017	December 2019	Epi	11	11	n/a
				Vet	1	1	n/a
				Lab	5	5	n/a
Intermediate	Cohort 3	13 th May 2018	13 th December 2018	No track	12	12	n/a
Frontline FETP	Cohort 6	25 th Feb, 2018	July, 2018	Human health	20	18	Social problem
				Vet	17	15	Social problem

The program which is competency based is designed in recognition of the need to strengthen the epidemiologic and laboratory management capacity to meet the challenges of the emerging infectious diseases and other public health problems. From July to September 2018, the program has successfully conducted training of the residents and trainees who were enrolled for the three training level i.e. 31, 14 and 37 for advance, intermediate and frontline respectively. Fourteen of the advanced program are in cohort 9 while 17 trainees are in cohort 10. Other than the advanced program, during this last quarter, the program successfully enrolled one cohort of frontline however 4 trainees didn't complete because of unavoidable social circumstances.

Table 2: Residents Graduated by the Program

FETP Level	Cohort	Start Date dd/mm/yr	Completion Date dd/mm/yr	Track	Numbers Enrolled	Numbers Graduated	Explain any Vvariation in Numbers
Advanced	9	October 2016	December 2018	Epi	8	nil	Awaiting to graduate in December 2018
				Vet			
				Lab	6	nil	Awaiting to graduate in December 2018
Intermediate	3	May 28, 2018	February 28, 2018	No track	12	Nil	Graduate in November 2018
Frontline FETP	6	March 11, 2018	August 30, 2018	Human	20	18	Two trainees couldn't finish because of social problem
				Vet	17	15	Two trainees couldn't finish because of social problem

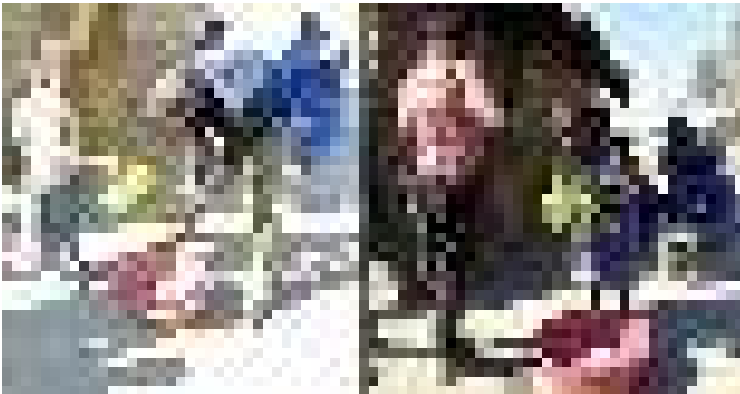
Outbreak Investigations

Summary of the Outbreaks in 2017

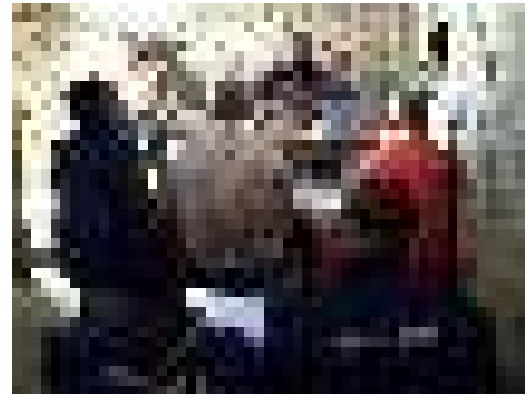
Table 4: Residents/Alumni Participation in Outbreaks & Public Health Emergency Investigations

Outbreak / public health emergency	Time period of investigation (from - to)	Suspected etiology	Duration between detection and reporting to national level	Lab capacity available for confirmation (Yes/No)	Number of cases			# residents/ alumni that participated	Real-time data analysis conducted? (Yes/No)
					Sus-pected	Con-firmed	Deaths		
1.Cholera outbreak Investigation, Sumbawanga, Rukwa region	July 4 th , 2018	V cholera	Within 7 days	Yes	1130	113	21	3	Yes
2.Cholera outbreak in Ngorongoro	July 25 th 2018	V cholera	Within 7 days	Yes	1007	57	11	3	Yes
3.Suspected viral hemorrhagic fever	July 6 th , 2018	Ebola, Yellow fever and Chikungunya	2 days	Yes	1	0	0	3	Yes

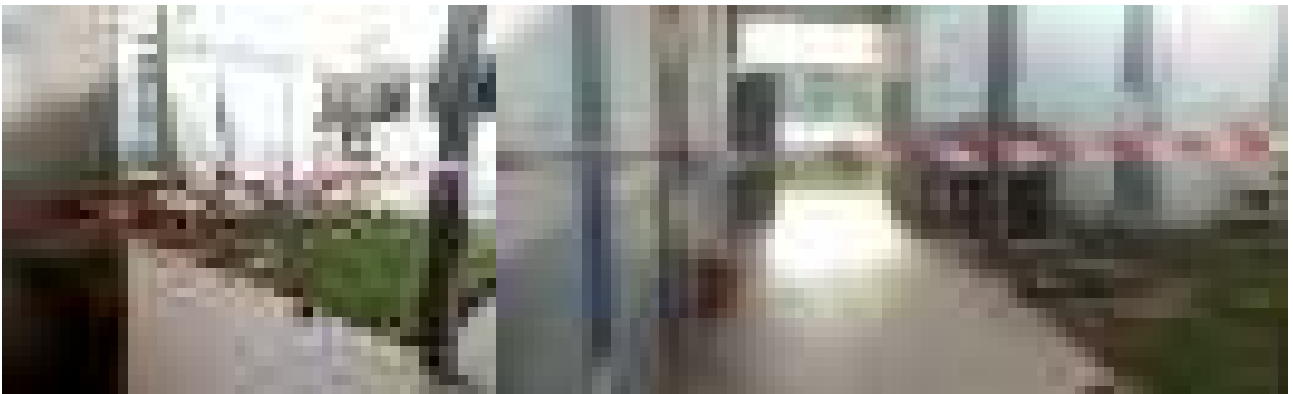
The program has from 2017 - 2018 investigated a number of outbreaks in different regions of the country. Since August 2015, Tanzania has experienced several wave of cholera outbreak with over 30,000 cases being reported from all the 26 regions of the country. The MoHCDGEC has appreciated the contribution of FELTP in responding to public health emergency and outbreak investigation. FELTP commonly referred to as disease detective responded to a number cholera outbreaks, and suspected viral hemorrhagic fever (VHF). Trainees and alumni responded to 3 different outbreaks in the fourth quarter of the FY2017 - 2018. Two of the outbreaks were cholera while one was suspected viral hemorrhagic fever.



Boniface Jacob demonstrating proper hand washing practice to members of one of the cholera affected household.



FELTP team in a meeting with District Health Office, Village Executive Officer, Regional laboratory technician during the field investigation



Isolation center set up by the FELTP team during suspected VHF outbreak in Tumbi Regional Referral Hospital, Coast region, Tanzania

Meetings and Conferences

Table 6: Conferences Attended by Residents/Alumni/Faculty/ Other Personnel

Name/Title and Venue of Conference	Conference Dates (from - to)	Type (National, Regional, International)	Total Numbers that Attended			Number of Presentations Made (provide details of presentations in the annex)	
			Residents/ Alumni	Faculty	Other (MoH) Personnel	Oral	Poster
MUHAS scientific conference	2-3 July 2018	National	3	4	N/A	3	0

Three FELTP residents attended Muhimbili University of Health and Allied Sciences scientific conference where they made oral presentations. The titles of the presentations and the names of the residents are indicated below;

- Viral load suppression among HIV-infected individuals using antiretroviral treatment, Dar es Salaam and Pwani 2016 by Felister Ngulubai
- Genetic relatedness and virulence factors of vibrio cholerae isolated from different regions in Tanzania, 2016 - 2017
- An outbreak of food poisoning in Chamwino Boarding Secondary School, Tanzania, November 2017

TOGO: STRENGTHENING APPLIED EPIDEMIOLOGY AND EMERGENCY RESPONSE FOR THE GLOBAL HEALTH SECURITY AGENDA

Establishing public health EOCs is a new concept to many West African countries, and the EOC Framework recently published by WHO and partners from countries committed to achieving compliance with International Health Regulations (2005) provides a structured approach for member states, such as Togo, to achieve the overarching targeted objectives of GHSA to prevent, detect, and respond. The Respond objective states “every country will have public health emergency operations center (EOC) functioning according to minimum common standards; maintaining trained, functioning, multi-sectoral rapid response teams and “real-time” biosurveillance laboratory networks and information systems; and trained EOC staff capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency.”

AFENET had the opportunity to support the Government and Ministry of Health in Togo to establish public health emergency management authority through the development of policies, protocols and guidelines.

Planned Activities

AFENET was required to provide logistical support to:

- Review the country’s public health laws and legal gaps related to GHSA targets – Public Health Emergency Management Law and Regulation Workshop – Phase 1.
- Conduct legal mapping consultation with MoH leadership.
- Convene a meeting to review the Public Health Emergency Operations Center Implementation Plan and national all-hazards planning discussion.
- Convene a multi-sectoral stakeholder meeting to bring global partners together to support development of Emergency Operations.
- Conduct threats and hazard risk assessment for the purpose of mapping risks and vulnerabilities of priority diseases and public health threats.
- Train staff to carry out general core staff responsibilities and function for emergency management.
- Conduct Standard Operating Procedures (SOP) development workshop and mission, roles, and responsibilities of the national PHEOC are developed.
- Support three Togo EOC core staff to attend a regional EOC workshop in West Africa.
- Conduct intermediate level IMS training for core EOC staff.
- Conduct two exercises, discussion-based and operations-based exercises and after action review meetings to test team cooperation and coordination, decision-making and capability performance, activity performance, or task performance of plans and procedures.
- Conduct two exercises, discussion-based and operations-based exercises and after action review meetings to test team cooperation and coordination, decision-making and capability performance, activity performance, or task performance of plans and procedures.

- Support one core EOC staff to attend the Public Health Emergency Management Fellowship.
- Conduct a risk communications assessment of community engagement capacities.
- Conduct Crisis Emergency and Risk Communication (CERC) training and support the Government of Togo in the development of strong risk communications tools to rapidly and effectively respond to public health threats.

Progress

During the quarter 4 of the financial year, AFENET will provide logistical support to undertake all the activities.

Healthcare Epidemiology Activities in West Africa (Hai West Africa)

Background

AFENET received funding from CDC to provide assistance to develop local capacity in healthcare epidemiology through MOH initiatives in various countries.

Planned Activities

- Fund project coordinator to provide assistance and leadership on healthcare epidemiology for Ministry of Health staff and participants in FETP courses.
- Collaborate with Ministry of Health infection prevention and control staff on development of Healthcare Associated Infection (HAI) surveillance.
- To Serve as project lead for FETP residents assisting with HAI surveillance in selected hospitals
- To Coordinate with FETP to arrange attendance at FETP Frontline for Ministry of Health staff and select members of Infection Control Committees where appropriate.
- To Capacitate Ministry of Health staff and Infection Control Committee members in hospitals via training and mentoring on hospital epidemiology.
- To Collaborate with CDC Country Offices and International Infection Control Program (IICP) on other healthcare epidemiology activities as requested.
- Assist with logistics of training activities related to healthcare epidemiology.

Deliverables

- Project-end summary/report of HAI surveillance activities, including input from FETP residents.
- Semi-annual progress report (to include status summary of project tasks, accomplishments, and plans for next reporting period).

Progress:

All activities will be done in the 4th quarter of this financial year.

WEST AFRICA FIELD EPIDEMIOLOGY AND LABORATORY TRAINING PROGRAM

Response and Surveillance to Respiratory Infections in Burkina Faso

Acute respiratory infections pose a major public health burden around the world. The Global Health Security Agenda (GHS) aims to improve infrastructure for preventing, detecting, and responding to major infectious disease threats, including acute respiratory infections. Burkina Faso is one of the 17 GHS Phase 1 countries and one of nine such countries conducting “Flagship” projects designed to demonstrate early successes of the GHS agenda. Objectives of the project:

- Strengthen existing surveillance for Severe Acute Respiratory Illness (SARI) at the national level.
- Implement event-based surveillance for clusters of SARI in hospitals in nine districts.
- Implement event-based surveillance for clusters of acute respiratory infections at the community level in three districts (Boussé, Houndé, Kongoussi).

The current Statement of Work outlines, CDC needs related to strengthening surveillance and workforce development, two of CDC’s “Core 4” activities of the GHS Agenda, the others being improving laboratory capacity and developing emergency response capacity. CDC was interested in two distinct activities:

- Development and Implementation of training at the community level
- Summarize previous assessments of SARI surveillance

Strengthening Meningitis Surveillance In Burkina Faso

The Meningitis Belt, an area that stretches from Senegal and Gambia in the West to Ethiopia in the East and has an at-risk population of about 430 million, is characterized by endemic meningococcal disease and annual outbreaks with large-scale epidemics every 5 - 12 years. In 2010, a novel serogroup a meningococcal conjugate vaccine developed specifically for Africa (MACV, MenAfriVac) was launched in and by 2015, more than 235 million in 16 countries had been immunized. Prior to widespread implementation of MACV, serogroup A was the cause of most major meningococcal epidemics in the countries of the Meningitis Belt. However, several epidemics of serogroup W have been reported (Burkina 2012, Togo 2016) and in 2015, the first largest epidemic of serogroup C was reported in Niger, with over 8,500 cases. This highlights the importance of high quality surveillance data to ensure early detection of epidemics and further understand the evolving epidemiology of epidemic meningitis in the region. The Meningitis and Vaccine Preventable Diseases Branch (MVPDB) committed to build and sustain capacities for vaccine preventable disease surveillance and laboratory confirmation in support of the Global Health Security Agenda.

The main objective of this project is to enhance rapid detection, diagnosis, and response for outbreaks of bacterial disease in meningitis belt countries such as Togo (primary) and Burkina Faso, Ghana, and Mali as needed.

Planned Activities

- Support assessments of existing surveillance systems.
- Support for hosting surveillance and laboratory workshops and training to enhance rapid detection, diagnosis, and response of epidemic-prone bacterial diseases.
- FETP field support for meningitis epidemic response.
- Cohort Number: 29
- Cohort Start Date: March 2015
- Cohort End Date: June 2017
- Number Enrolled: 30
- Number Graduated (this indicates completion of FETP requirements - not university graduation)
- Cohort Demographics

Resident Country of Origin (Number of residents, country)

Country	Number	Number Completed an outbreak	Male	Female
Benin	3	3	1	2
Burkina Faso	3	3	3	0
Côte d'Ivoire	4	4	4	0
Guinea	4	4	4	0
Mali	4	4	4	0
Niger	3	3	2	1
Togo	4	4	3	1
Sénégal	4	2	2	0

NB: One resident from Niger died in 2015

Number of Male / Number of Female

Gender	Number
Male	25
Female	4

- Number of trainees and graduates from this cohort who have completed an outbreak investigation during training: 27

Activities

List all Outbreak Investigations Initiated in 2016. Include the Following Data Points:

Outbreak	Suspected Etiology	# of Trainees Engaged	Month/Year the Investigation Initiated
Investigation of an Outbreak of Hemorrhagic Fever in Tchaourou, Benin	Lassa virus	3	January 2016
Investigation of Foodborne Outbreak, Malika, Dakar, Senegal	Pesticide	1	January 2016
Investigation of Acute Flaccid Paralysis cases in Siguiri, Guinea	Poliovirus	1	January 2016
Investigation of Meningitis Outbreak in Kouibly District, Ivory Coast,	Neisseria meningitides	1	February 2016
Investigation of Measles Outbreak IN Labé, Guinea	Measles virus	1	February 2016
Investigation of Ebola fever outbreak, Nzérékoré, Guinea	Ebola virus	4	March 2016
Investigation of measles outbreak, Bogandé, Burkina Faso	Measles virus	1	March 2016
Investigation of Measles Outbreak in Keur Massar, Mbao and Dakar	Measles virus	4	March 2016
Investigation of Lassa Fever Outbreak in Oti District, Togo	Lassa virus	4	April 2016
Meningitis Outbreak Investigation in Batié, Burkina Faso	Neisseria meningitides	1	May 2016
Investigation of Dog bite Cases in Bamako, Mali	Rhabdovirus	1	June 2016
Investigation of Pertussis Cases in Dialakon, Mali	Bordetella pertussis	2	July 2016
Investigation of cluster of deaths, in Odjomboï district of Tchamba, Togo Juillet 2016	Suspected food poisoning	2	July 2016
Investigation of acute diarrhea in Laustre Municipality, Benin	Vibrio cholerae	3	August 2016
Investigation of Food poisoning outbreak in Prere, Benin		3	August 2016
Investigation of Rift Valley Fever outbreak in Tchintabaraden and Tassara, Districts in Niger	Rift Valley fever virus	7	September 2016
Investigation of Avian Influenza in the districts of Golfe and Zio, Togo	Influenza A (H5N1)	4	September 2016
Investigation of dengue fever outbreak, Ouagadougou, Burkina Faso	Flavivirus	2	October 2016
Investigation of Risk Factors for Rift Valley fever Outbreak in Tchintabaraden and Tassara Districts, Niger	Rift Valley fever virus	3	October 2016
Investigation of Gastro enteritis outbreak, in Diana, district of Dianké Makha, Sénégal		1	October 2016

Number of Abstracts Presented - Provide Details (Authors, Title, Conference)

Title	Authors	Conference
Epidemiological profile of bacterial meningitis in Benin, 2005 - 2014	Mathilde A. HOUSSOU; C.K.GLELE, B.Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Availability and Use of Rapid Diagnostic Tests for Malaria Diagnosis in the Central Health Region of Burkina Faso, 2015	Timotheé N. Bationo, Y. Sawadogo, S. Antara, B. Sawadogo, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Incidence of Rubella in Burkina Faso, 2005 - 2014	Pedwindé Hamadou Seogo, Y. Sawadogo, D. Yelbeogo, B. Ouedraogo, S. Zeba, I. Medah, B. Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference

Impact of Seasonal Malaria Chemoprophylaxis on Malaria Incidence in a Rural District in Burkina Faso, 2013 - 2015	Pedwindé Hamadou Seogo, Y. Savadogo, D. Yelbeogo, P. Yanogo, I. Zongo, R. Dao, B. Ouedraogo, A. Traore, B. Bicaba, I. Medah, B. Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Epidemiological Profile of Bacterial Meningitis Cases in Burkina Faso, 2005 - 2014	Hyacinthe E. Sow, I. Yameogo, B. Bicaba, I. Medah, B. Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Trend of the Incidence of Meningitis in Burkina Faso, 2005 - 2014	Hyacinthe E. Sow, I. Yameogo, B. Bicaba, I. Medah, B. Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Sensitivity and Specificity of Latex Rapid Diagnostic Test in the Diagnosis of Meningitis in Burkina Faso, 2005 - 2014	Hyacinthe E. Sow, I. Yameogo, B. Bicaba, I. Medah, B. Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Investigation of Influenza A (H1N1) 2009 Outbreak in a school in Grand Bassam in Ivory Coast, 2015	Felix Koffi Kouadio, P. Acray- Zengbe, Daouda COULIBALY, B. Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Investigation of Meningitis Outbreak in Kouibly District, Ivory Coast, February 2016	Felix Koffi Kouadio, P. Acray- Zengbe, Daouda COULIBALY, B. Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Epidemiological Profile of Ebola Virus Disease in Guinea 2014 - 2015	A. Camara, M. Hann, B. Sawadogo, S. Antara, A. McKenzie, B. Diallo, M. Sawadogo	5 th AFENET Scientific Conference
Trend in the Incidence of Malaria in Guinea, 2009 - 2014	N. Gomou, P. Bilivogui, T. Guilavogui, M. Keita, B. Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Trend of Measles Cases in Mali, 2005 - 2014	Hanine Keita, M. M. Farka B. Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Trend of Neisseria meningitides Serogroups in Niger, 2008-2015	Issifou Djibo, I. Alkassoum, B. Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Trend of Malaria Incidence in Sentinel Surveillance Sites Senegal, 2010 - 2014	Mamadou S. BA, Médoune Diop, Ibrahima Diallo, Bernard Sawadogo, Simon Antara, Moustapha Cisse, Mady BA, André McKenzie, Mamadou Sawadogo	5 th AFENET Scientific Conference
Investigation of Pesticide Food Poisoning in Dakar-Senegal, January 2016	MB. Ndiaye, M. Ndiaye, B. Ndoeye, B. Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Evaluation of Usefulness, Simplicity and Acceptability of Ebola Virus Disease Surveillance System - Senegal, February 2016	I. Sonko, A. Bousso, B. Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Trend in Incidence of Laboratory Confirmed Measles in Togo, 2005 - 2014	Hamadi Assane, K. Badziklou, B. Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Epidemiological Profile of Laboratory Confirmed Yellow Fever Cases tested in the National Reference Laboratory in Togo from 2004 - 2014	W. A. Halatoko, H. Assane, A. Naba Mouchadou, A. M. Tchalla, Y. Layibo, K. Akolly, B. Sawadogo, S. N. Antara, K. Badziklou, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Trend of Maternal Mortality in Togo, 2010 - 2014	A. Tchalla, H. Assane, A. Mouchadou, A. Halatoko, B. Sawadogo, N. Antara, I. Nassoury, K. N'tapi, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Epidemiological profile of Measles in Côte d'Ivoire, 2013 - 2014	K A N'Guettia, A N Brou, A M Kanga, S Antara, B Sawadogo, A McKenzie, M Sawadogo	5 th AFENET Scientific Conference

Trends in Incidence of Measles in Guinea, 2004 - 2015	N. Gbamou, Y. Koita, CT.Sidibé, S. Antara, B. Sawadogo, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Investigation of Suspected Cases of Measles in the Dambantchant District in Guinea, 2015	Nouonan Gbamou, Y. Koita, C. T. Sidibé, F. Guilavogui, K. Fangamou,, B. Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Data Analysis of maternal mortality in Bamako - 2010 to 2014, Mali.	Y. Koné, Y. Ballayira, H. Kéita, D. Barry, B. Sawadogo S. Antara, M. Diabaté, B. Diarra, M. Coumaré, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
HIV Prevalence, Knowledge, Attitudes and Practices among Men who have Sex with Men in Niger, 2015	Batouré Oumarou, M. Djibrilla, G. Savadogo, B. Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Descriptive Epidemiology of HIV/AIDS in Niger, 2005 - 2014	Laurent C. Mariame, Issa Kanta, B. Sawadogo, S. Antara, A. McKenzie, M. Sawadogo	5 th AFENET Scientific Conference
Investigation of a Lassa fever outbreak, Oti district, Togo, March - April 2016	Wemboo A. Halatoko, Simon-Pierre A. Assane, Bernard Sawadogo, Simon N. Antara, Kossi Badziklou	5 th AFENET Scientific Conference

Minigrants Won by Residents

No.	Resident	Country	Topic
1	Akoklanou Albert Houssou	Benin	Analysis of cardiovascular disease surveillance data in Benin, 2011 - 2015
2	Halatoko Wemboo Afiwa	Togo	Evaluation of diabetes and hypertension surveillance systems in Togo, 2016
3	Lazile Bougouyou Franck Olivier	Cote d'Ivoire	Trend of Road traffic injuries in Abidjan, Cote, 2011 - 2015
	Lazile Bougouyou Franck Olivier	Cote d'Ivoire	Development of road traffic injury surveillance system in Abidjan: A pilot study
4	Pedwinde Hamadou Seogo	Burkina Faso	Profile of Hypertension Cases seen in Ouahigouya district health facilities in Burkina Faso, 2007-2014
5	Laurent Comlan Marianne Bonkano	Niger	Factors influencing non-use of maternity services at Bossey Bongou health center in Niger 2016
6	Sonko Ibrahim	Senegal	Timeliness of detection of infectious disease outbreak in Senegal, 2003-2013
7	Djibril Barry	Mali	Determinants of perinatal mortality in Sikasso region in Mali, 2016
8	Batoure Oumarou	Niger	Prevalence of neural tube defects, knowledge attitudes and practice in Niger 2016

ZIMBABWE FIELD EPIDEMIOLOGY TRAINING PROGRAM

Zimbabwe FETP is a 2-year competency based training program that consists of classroom teaching (30%) and on the job field training (70%) The program was created in 1993 with the aim of assisting the Ministry of Health and Child Care create a permanent capacity to recruit, train and employ public health practitioners to sustain the public health infrastructure. To date it has enrolled 26 cohorts and 24 have completed translating to 262 residents. Of these 251 (96%) have graduated with an MPH degree. The majority of these graduates are currently employed in-country by the Ministry of Health and Child Care in Zimbabwe.

Major highlights of the period under review include the assessment of the program for accreditation by the accreditation review team (ART) from the 13th to the 17th November 2017. The program has since been accredited. In addition 15 of the 18 residents successfully completed training in November 2017.

Training and Didactics

Table 1: FETP resident enrollment and currently in-training by the Program

FETP Level	Cohort	Start Date dd/mm/yr	Expected Completion Date dd/mm/yr	Track	Number Enrolled	Number in Training
Advanced	25	January 2017	November 2018	Epi	15	15

Of the 15 in cohort 25, 11 residents are fulltime and four are part-time. These include nine medical officers, two laboratory scientists, one nurse, one veterinarian, one pharmacist, and one Health Promotion Officer.

They have since submitted their dissertations which were due on the 31st of August 2017. They are in the process of completing Core Activities for learning (CALs) and they will be required to submit a bound copy of the notebook of events to the FETP office also known as Health Studies Office (HSO).

Outbreak Investigations and Other Field Activities

Residents were involved in a number of outbreak investigations during the period under review. Evidence from these investigations proved vital in informing control activities. Residents together with health officials from the Ministry of Health and Child Care were involved in field investigations, risk factor analysis, and instituting control measures including community health education.

Listed below are the outbreaks investigated during the period under review;

- Typhoid fever Outbreak Investigation at Matapi Flats, Mbare 2017
- An acute Respiratory Infection outbreak Investigation in Bende, Nyanga District, 2017
- Risk Factors for contracting Gastroenteritis at a High School in Gweru District, Zimbabwe, 2017
- A Suspected Foodborne Illness at a Primary School at Kadoma City 2017
- Outbreak of Foodborne Illness at Morgester Teachers College, Masvingo, 2017

Conferences, Meetings and Workshops.

Five (5) residents presented at the Annual Medical Research day held at the Rainbow Hotel on the 21st October 2017. They presented a total of seven (7) papers as listed in table 1 below:

Zimbabwe FETP Annual Medical Research Day (AMRD) Presenters 2017.

Name of Resident	Title of Presentation	Presentation Type	Awards
Ms. Batsirai Mbodza	Trends of HPV - related cancers in Harare, Zimbabwe, 2005 -2014	Oral	Voted the overall best paper
	Determinants of late stage presentation for cervical cancer treatment among HIV - Positive women in Harare, Zimbabwe, 2017	Poster	Nil
Mr. Mpumelelo Maphosa	Evaluation of the Maternal Death Surveillance and Response System in Hwange district, Zimbabwe, 2016	Oral	Nil
Mr. Hamufare Mugauri	Antiretroviral Adverse Drug Reactions Pharmacovigilance in Harare City, Zimbabwe, 2017	Oral	Nil
	A Comparative Evaluation of the Voluntary Medical Male Circumcision Program for Seke and Goromonzi Districts, Mashonaland East Province, Zimbabwe, 2017	Oral	Nil
Ruth Machaka	Evaluation of the HIV Drug Resistance Early Warning Indicator Surveillance System, Zimbabwe, 2017	Oral	Nil
Zvanaka Sithole	Evaluation of the Adverse Events Following Immunizations Surveillance System in Harare, Zimbabwe, 2016	Poster	Voted the best poster

Zimbabwe FETP Presenters at the 9th TEPHINET.

Global Scientific Conference in Chiang Mai, Thailand.

Resident	Title of Presentation	Presentation Type
Dr. Sithabiso Dube	Trend Analysis of HIV Testing Services in Zimbabwe, 2007 - 2016: A Secondary Dataset Analysis	Oral
Ms. Zvanaka Sithole	Food Borne Illness amongst Health Care Workers, at a Central Hospital, Harare, Zimbabwe, 2016 - a Retrospective Cohort Study	Poster
Mr. Hamufare Mugauri	Early Infant Diagnosis Sample Management in Mashonaland West Province, Zimbabwe, 2017	Oral
Mr. Martin Dzimbanhete	Non Adherence and First Line Antiretroviral Therapy Failure among People Living with HIV in Bulawayo City, Zimbabwe, 2016	Oral

Four residents presented their papers at the 6th AFENET Scientific Conference in Abuja from the 8th - 12th August 2016. They made 4 oral presentations in total as listed above.

Excellence in Reporting Science Writing Workshop.

Zimbabwe Field Epidemiology Training Program: 26th-30th June 2017.

In June 2017, the Zimbabwe FETP hosted a five day Science Writing Workshop for residents of the Zimbabwe Field Epidemiology Training Program (FETP) and researchers at the Zimbabwe Community Health Intervention Research Program (ZiCHIRe). Funded by African Field Epidemiology Network (AFENET), the workshop was held in the Cresta Lodge Masasa in Harare, Zimbabwe. The objectives of the workshop were to strengthen the scientific writing skills of the

participants, aid them in preparing and refining manuscripts for submission and publication to epidemiology journal, and provide them a platform to practice their presentation skills. Dr. Peter Nsubuga was the main facilitator assisted by the program National Focal Point, Dr. Notion Gombe and the program scientific writer, Ms Tsitsi Juru.



L-R: Dr. Peter Nsubuga and Ms. Tsitsi Juru - Facilitators at the Zimbabwe FETP Scientific writing workshop held at Cresta Lodge in Harare Zimbabwe - 26th - 30th June 2017.



Participants at the Zimbabwe FETP Scientific writing workshop held at Cresta Lodge in Harare Zimbabwe - 26th to 30th June 2017

Publications

Title of Paper	Journal	Status	Date of Publication	URL
Evaluation of Perinatal Mortality Surveillance System in Hwange District, Matabeleland North Province, Zimbabwe, 2015	PAMJ	Accepted		
Factors Associated with Severe Malaria among Children below Ten Years in Mutasa and Nyanga Districts, Zimbabwe, 2014 - 2015	PAMJ	Accepted	2/5/2017	http://www.panafrican-med-journal.com/content/article/27/23/full
Evaluation of Severe Malaria Case Management in Mazowe District, Zimbabwe, 2014	PAMJ	Accepted	11/5/2017	http://www.panafrican-med-journal.com/content/article/27/23/full
Trends in Trends of Antenatal Care HIV testing rates at Bindura Provincial Hospital, Zimbabwe, 2010 - 2014	BMC research Notes	Under review		
An Evaluation of the Proposed Organization Restructuring at Kadoma City 2015	PAMJ	Accepted	8/5/2017	http://www.panafrican-med-journal.com/content/article/27/20/full
Evaluation of the Adverse Drug Reaction Surveillance System Kadoma City, Zimbabwe 2015	PAMJ	Accepted		
Determinants of multidrug resistance among tuberculosis patients in Zimbabwe	International Journal for tuberculosis and Lung Disease	Accepted		http://www.ingentaconnect.com/contentone/iatld/ijtld/2017/00000021/00000011/art0001311/1/2017
HIV Testing and Counseling Trends Analysis, Midlands Province, Zimbabwe: A secondary data analysis 2010 - 2014	International Journal of AIDS and Research	Accepted	12/4/2017	http://www.academicjournals.org/JAHR
Food Borne Illness amongst Health Care Workers, at a Central Hospital, Harare, Zimbabwe, 2016 - a Retrospective Cohort Study	BMC research Notes	Accepted	28/11/17	https://bmresnotes.biomedcentral.com/articles/10.1186/s13104-017-3030-x
Clinical Care Given to Victims of Sexual Abuse at Kadoma General Hospital, Zimbabwe: a Secondary Data Analysis, 2016	BMC Infectious	Accepted	22/08/17	https://doi.org/10.1186/s12879-017-2702-4

Hospital-Acquired Neonatal Sepsis in an Intensive Care Unit of a Central Hospital, Zimbabwe, 2016 - A Cohort Study	BMC Infectious	Under review		
Evaluation of Notifiable Disease Surveillance System in Centenary District, Zimbabwe, 2016	Open Journal of Epidemiology	Accepted	11/8/2017	http://file.scirp.org/Html/2-1890260_78355.htm
Evaluation of the At Risk Surveillance system, mash central Zimbabwe	Open Journal of Therapy and rehabilitation	Accepted		http://www.scirp.org/Journal/PaperInformation.aspx?PaperID=80623
A Comparative Evaluation of the Voluntary Medical Male Circumcision Program for Seke and Goromonzi Districts, Mashonaland East Province, Zimbabwe, 2017	Open journal of preventive medicine	Accepted	25/07/17	http://www.scirp.org/journal/OJPM/.S
Trend Analysis of HIV Testing Services in Zimbabwe, 2007 - 2016: A Secondary Dataset Analysis	Open journal of Epidemiology	Accepted 02/04/17	29/08/17	http://www.scirp.org/journal/OJEpi/.
Evaluation of the Maternal Mortality Surveillance System in Mutare District, Zimbabwe, 2014 - 2015: A Cross Sectional Study	PAMJ	Accepted	18/07/17	http://www.panafrican-med-journal.com/content/article/27/204/full
Evaluation of the Maternal Death Surveillance and Response System, Sanyati, Zimbabwe 2017	Texila Journal of Public health	Accepted		http://www.texilajournal.com/public-health/article/739-evaluation-of-the
Do short message reminders improve art adherence? Randomized control trial among HIV clients - Kadoma (Zimbabwe) - KAMP Study Protocol	Texila Journal of Public health	Accepted	Jun 17 th	http://www.texilajournal.com/clinical-research/article/731-do-short
Typhoid Fever Clusters in Kadoma City, Zimbabwe April 2014	Texila Journal of Public health	Accepted	Mar 17 th	https://www.academia.edu/32268664/Typhoid_Fever_Clusters_in_Kadoma_City_Zimbabwe_April_2014
Evaluation of the Adverse Events Following Immunizations Surveillance System in Harare City, Zimbabwe, 2016 - a Descriptive Cross Sectional Study	PAMJ	Accepted	24/09/17	

Project Reports

AFENET-MOH (UGANDA) CoAg PROGRAM

On 1 April 2016, AFENET was awarded a five year cooperative agreement (CoAg) with the US CDC to strengthen the Uganda Ministry of Health's capacity to execute its essential public health functions through provision of technical assistance, public health workforce development, and institutional capacity building in the Republic of Uganda under the President's Emergency Plan for AIDS Relief (PEPFAR).

The Objectives of the Project:

- Support the national health system to improve HIV programming and implementation of the National Strategic Plan and the National Prevention Strategy
- Support the Resource Centre to fulfill its mandate of managing all health related data and establishing national data standards.
- Support the development of systems for improving collection, availability and utilization of program data to improve quality of health services at the national and sub-national levels.
- Strengthen quality assurance functions of Ministry of Health, districts and health facilities.

FRONTLINE FIELD EPIDEMIOLOGY TRAINING PROGRAM (FETP-L)

The African Field Epidemiology Network was awarded a five year Cooperative Agreement in 2015 by the US CDC to strengthen Applied Epidemiology and Sustainable International Public Health Capacity through the Field Epidemiology Training Programs in Africa. Through this CoAg, the frontline field epidemiology training programs were initiated for several cadres of public health workers.

The main objectives of these three months in service training programs are: 1) to Increase the appreciation of the role of data among local public health workers for monitoring the health of the community and for providing information for decision-making, 2) Improve the skills of local public health workers in basic data collection & analysis, interpretation, and communication, 3)

The Program is implemented in 17 African Countries that include: Benin, Burkina Faso, Cameroon, Cote d'Ivoire, Democratic Republic of Congo, Gambia, Guinea, Guinea Bissau, Mali, Mauritania, Nigeria, Senegal, Sierra Leone, South Africa, Tanzania, Togo and Uganda.

ADVANCED FIELD EPIDEMIOLOGY AND LABORATORY TRAINING PROGRAMS (FELTP)

The Advanced Field Epidemiology and Laboratory Training Program is a two-year in-service training program that aims to enhance the epidemiologic capacity of the public health workforce. The training provides residents (trainees) with hands-on experience in responding to a wide range of disease outbreaks and other public health priorities including disease surveillance and natural disasters. Advanced FE(L)TPs across different countries are collaborations between ministries of health and the U.S. Centers for Disease Control and Prevention (CDC) and a few other partners.

The Main Objectives of the Training are:

- To develop a workforce competent in applied epidemiology and other cross-cutting aspects of public health practice
- To fill gaps and perform essential functions in public health practice within priority technical units and programs at national and sub-national levels
- Establish/reinforce substantive public health specialist cadres at national, regional/district levels and ensure dedicated funding to sustain the capacity building efforts
- To strengthen collaborations across various tiers of the health sector, other national and regional stakeholders
- To enhance scientific data driven public health decisions

POLIO COOPERATIVE AGREEMENT PROJECTS 2017

In 2015 AFENET received funding from CDC to implement a five year cooperative agreement called National Stop Transmission of Polio (NSTOP) initiative supporting polio eradication in Africa.

Currently in its third year of implementation, the Cooperative agreement has several projects based in different Sub Saharan African countries. The purpose of the project is to contribute to general immunization system strengthening and capacity building in the African region with a focus on polio eradication, routine immunization strengthening, new vaccine introduction, and strengthening of disease surveillance.

[NSTOP Nigeria](#)

NSTOP Nigeria was established to provide Nigeria with high quality and culturally competent technical field support staff in polio high-risk areas to implement the National Polio Eradication Emergency Plan (NPEEP), PEI accountability framework and strengthen routine immunization.

[Nigeria Malaria Frontline Project](#)

Designed and modelled after the lessons learned from NSTOP, this project is piloted in the two states of Kano and Zamfara states with the objective of strengthening malaria elimination initiatives.

[Nigeria DHIS-2 Project](#)

This project was piloted in Kano state in 2014 with eventual scale up to all the 36 states and the Federal Capital Territory by December, 2017. The DHIS 2 project aims to strengthen Routine Immunization data management through timely collection, collation and reporting, analysis and use for decision making.

[List of Polio Projects:](#)

- NSTOP Uganda
- GHSA Uganda
- Polio Outbreak response - Somalia and Madagascar
- NSTOP South Sudan
- Civil Registration and Vital Statistics (CRVS) - Kenya
- Civil Registration and Vital Statistics (CRVS) - Homabay Kenya
- Data Improvement Teams - Uganda
- The Zambia Civil Registry and Vital Statistics & Immunization Project
- Strengthening Technical Assistance for Routine Immunization Training (START) - Kenya
- DRC Pilot study on a rapid diagnostic test (RDT) detection of measles and rubella infection and immunity
- Data Quality project Kenya
- Data Systems Assessment in South Sudan

[Second Year of Life Project in Ghana](#)

[Protecting children from vaccine preventable diseases by Strengthening the second year of life.](#)

[Background](#)

The Second Year of life Project seeks to develop and assess the impact of a multi-faceted approach to strengthening the second year of life visit on immunization coverage and operational performance in Ghana.

Achievements

- A baseline survey in 3 regions of Northern, Volta, and Greater Accra Regions was done.
- Findings of the survey have been disseminated to 10 regional and district health teams.
- Supporting the printing of health educational materials including flip charts, flyers, posters.
- 347,000 Child health record booklets have been printed.
- TV spot messages have been developed and are running.
- Health promoters have been trained in communication skills and radio jingles on 2YL.
- 170 pieces of Digital Tablets and 130 Laptop computers & accessories for GHS have been provided.
- Red Cross was contracted to conduct house-to-house social mobilization activities to raise the awareness of the second dose of measles at 18 months, vitamin A supplementation, growth monitoring, and insecticide treated bed net distribution.
- 100 Community Health Workers have been trained on Immunization.
- Active involvement in the review of the EPI policy and guide documents.
- 30 community health workers have been trained on defaulter tracking
- Trained 50 biomedical scientists on laboratory surveillance for meningitis.
- Conducted regional & district level trainings on E-tracker for Volta region.

Challenges

Health workers are not yet adequately knowledgeable on the schedule of 2YL antigens and consequently presenting a communication gap among caretakers.

Outbreak Response in Somalia

Background

Since the beginning of the Polio outbreak in April 2013, Somalia has made tremendous gains in her efforts to eradicate polio. The last case of wild polio virus reported was from Mudug region in August 2014. However, due to the poor routine immunization coverage, insecurity, and the presence of pockets of inaccessible population groups, the country remains at risk of renewed transmission of WPV and potential outbreak of CVDPVs. It is therefore crucial that the number and quality of staff inside and outside Somalia provided by the GPEI partnership in support of the Country be sustained. CDC through AFENET engaged a consultant to support the response activities.

Objectives of the Consultancy

- Provide technical guidance and field support in the implementation of LQAS across Somalia.
- Provide technical guidance and field support in the implementation of 'zero'/unknown' – dose investigations across Somalia.
- Provide technical guidance and field support in the implementation of GIS mapping to support micro-planning and the improvement of routine immunization.
- Provide support to the AFP surveillance system through the implementation of AFP case validation across Somalia.

Achievements

- Reviewed the Somalia Polio Program Annual Work Plan and developed a framework for its monitoring.
- Conducted data analysis for all LQAS surveys conducted in Somalia and reports shared with WHO country office.
- Polio Situation Report is generated and shared to GPEI partners monthly.
- Conducted a comprehensive surveillance training in collaboration with Amref Health Africa for all (5) zonal, 24 regional Polio Officers, 48 district polio officers and 9 ministry officers.

Kenya: Strengthening Technical Assistant for Routine Immunization Training (START)

The Kenya START Project started in April 2016 in six counties of Nyandarua, Elgeyo Marakwet, Tharaka Nithi, Siaya, Kakamega and Kajiado. The project objective to improve EPI planning, monitoring, and service delivery through the approach of mentoring and on-the-job (OTJ) training in low performing health facilities. CDC and AFENET joint offer support visits to the project.

Kenya Civil Registry and Vital Statistics Project

The project supports the government of Kenya in the development of guidance and tools to promote the use of functional standards within immunization information systems (IIS).

The project also focuses on addressing the data quality issues to increase the timeliness and completeness of immunization data.

Uganda: Global Health Security Agenda Immunization Project

Global Health Security Agenda (GHSA) is a multi-partner and multi-country initiative that targets to reduce health threats from infectious diseases outbreaks through prevention, timely detection and response strategies. Uganda benefited from all 11 action packages of the GHSA including the immunizations action package. The main objective of the GHSA immunizations project is to prevent avoidable outbreaks of measles and other Vaccine Preventable Diseases (VPDs) through strengthening routine immunization systems and building capacity for timely investigations of and response to measles outbreaks including molecular surveillance. The project started in May 2016 and was to be implemented for one year.

Data Improvement Teams (DIT) - Uganda

The immunization data improvement team strategy is a collaborative initiative led by the Uganda Ministry of Health (Resource Centre and UNEPI), with support from WHO, CDC, GAVI, UNICEF and other partners that aims to build capacity of district DITs to strengthen the health system through improving the quality of immunization data in Uganda, and was designed following the recommendations of the 2013 Data Quality Self-Assessment (DQSA).

The project was rolled out in 2014.

Zambia Civil Registry Vital Statistics - Immunization Project

The goal of this project is to provide technical assistance to support the development of functional standards for immunization information systems or immunization registries globally and country specific in Zambia.

Developed and shared concept note with MoH for support and project implementation. Concept note revised based on feedback from the MoH Child Health & Nutrition Expanded Program for Immunization (EPI) team.

NSTOP South Sudan

This project is in its Year 3 implementation period. CDC Atlanta in partnership with the National Ministry of Health, UNICEF, WHO and Bill & Mellinda Gates Foundation is implementing a national capacity building model based on the iSTOP approach but targeting the creation of national core competencies for the national immunization program (also dubbed nSTOP). The nSTOP project will be the sustainable model for iSTOP, in line with the Polio legacy plan outlined in the End Game strategic plan.

In this model, nSTOP aims at recruiting 56 nationals (8 at national level and 48 at the state/administrative levels). nSTOP strives to build the national immunization in 7 core capacities namely: Routine EPI operations management, Supplemental Immunization Activities management, Vaccine Preventable diseases surveillance, EPI communications (using the C4D approach) and EPI data management, Immunization supply chain management (EPI logistics) and Cold Chain Management.

Achievements

- 34 mentees have been recruited to support SIAs, data management, VPDs surveillance and communications.
- 8 national level mentees have been recruited.
- A project review meeting was held in October 2016.

Challenges

- At the time of the project design, the nSTOP project would cover all states and administrative levels. However, recent changes in the administrative structure led to the creation of 18 new administrative states making it impossible for the nSTOP to cover all the states.
- Considering access limitations and the geo-political context nSTOP only covers 17 out of the new 28 administrative states.
- Insecurity makes implementation difficult.

DRC Measles and Rubella RDT Study

DRC Pilot study on a rapid diagnostic test (RDT) detection of measles and rubella infection and immunity.

Background

This purpose of this project is to pilot a rapid diagnostic test (RDT) detection of measles and rubella infection and immunity using a digital microfluidics (DMF)-powered immunoassay. Currently, there is no RDT available for measles and rubella (MR). Timely disease identification and response is crucial in controlling outbreaks of MR. Thus, if an outbreak occurs it is important to immediately identify the etiological agent through laboratory confirmation. However, establishing diagnostic

laboratory facilities is challenging in resource poor settings. Alternative diagnostic tools that can be deployed to clinical sites reducing the demand for intensive and centralized laboratory resources should be explored for low-resource settings. This project will pilot an innovative and low-cost technology able to confirm infection and immunity to measles and rubella in ~30 minutes from a finger-stick of blood.

The University of Toronto has expertise in conducting the DMF-immunoassay for measles and rubella and agreed to collaborate with AFENET to conduct the rapid tests for this evaluation. This project is a collaboration between DRC FETLP (the country is providing the study sites), the University of Toronto, the Kinshasa School of Public Health, DRC Ministry of Health, WHO, CDC DRC, and CDC Atlanta.

Project Objective:

The overall goal of this study is to evaluate the application of a novel and cost-effective digital microfluidics (DMF)-powered immunoassay for detection of measles and rubella infection and immunity among displaced populations. The objective is to examine the utility of using the DMF-ELISA instrument for detection of measles and rubella infection and immunity in a field setting.

Achievements/ Success Stories to date

- AFENET successfully contracted the University of Toronto to test the DMF ELISA kits in DRC.
- Funds have been transferred to both the University of Toronto and the DRC FELTP for field activities.
- One scientist from DRC was able to travel for preparatory meetings in Toronto to acquaint herself with the DMF technology.
- Subcontractors who will be travelling to the DRC have been trained in assay operation.
- New reagents have been acquired and institutional ethics approval has been granted to begin tests for the DMF kit.

Way forward

- Later this month a team of scientists will be travelling from Toronto to DRC for field trials to perform point-of-care testing with the DMF-ELISA instrument on-site.

SMS REMINDER PROJECT IN UGANDA

Evaluating a caregiver SMS reminder intervention to reduce immunization drop-out in Arua, Uganda a randomized controlled trial.

According to its 2011 Demographic and Health Survey, only 40% of 12-23 month olds in Uganda had received all recommended vaccinations by 12 months of age. In 2013, Uganda ranked twelfth in the world in total number of children having not received their first dose of measles vaccination, resulting in ongoing measles outbreaks. Immunization coverage has fallen in the face of a growing population and a stagnating national health spending. Faced with high rates of immunization drop-

out, this research proposes to build upon a growing mHealth system in Uganda to use SMS to remind mothers of upcoming vaccination visits.

In the first 3 months, the project developed an SMS reminder system that registers recruited caregivers, randomizes them into intervention and control arms and then sends out SMS reminders to children who are due for an immunization visit. These reminders are sent to the phones of the caregivers. Since January 2016 to-date, the project successfully recruited 1,955 participants and they're currently being followed up for the evaluation phase.

General Goal

To evaluate a routine immunization SMS caregiver reminder intervention to reduce immunization drop-out for children 12 months of age and younger in select health centers in Arua District.

The main objectives of these three months in service training programs are:

- To measure the impact of a routine immunization SMS caregiver reminder intervention to increase Penta3 and MCV coverage for children 12 months of age and younger in select health facilities in Arua District.
- To measure the impact of a routine immunization SMS caregiver reminder intervention to increase the probability that their children will receive Penta3 within 12 weeks of Penta1 receipt and MCV by 10 months of age.
- To assess caregiver acceptability of a routine immunization SMS caregiver reminder intervention.
- To determine the costs and cost-effectiveness of a caregiver SMS reminder intervention to improve vaccination coverage.

Achievements/ Success Stories

- AFENET successfully hired study coordinator and 3 research assistants.
- AFENET successfully led the protocol through IRB approvals.
- HISP successfully set up the SMS reminder system.
- The SMS messages were developed in English and translated into Lugbara, the common indigenous language in the study area.
- The SMS system was developed and tested and found to be able to register participants, randomize them, schedule the SMS reminders and send them out. This was successfully launched as of 1st February 2016.
- Database and data entry forms have been developed, tested and are currently being used for the recruitment form and pre-intervention questionnaire.
- Participants were enrolled at the study sites, achieving the sample size of 1,955.
- The pre-intervention survey was completed in August 2016.
- Data collection is ongoing, using the post-intervention survey to evaluate the intervention.
- Data is being entered by research assistants and reviewed by the study coordinator, using RedCap software.

Challenges

- In the pilot of the SMS reminder system, not all SMS messages reached the intended recipients. As such we've increased the number of reminders to be sent per scheduled visit from 3 to 6.
- AFENET approval for use of RedCap software for data entry and database management took longer than expected, so we were not able to finalize the data entry forms before study launch.
- AFENET procurement of tablets and cell phones and other items took longer than expected, so we first had to conduct paper-based interviews for the first few weeks of the study until we acquired the tablets and field tested the electronic questionnaires.
- In the current follow-up phase, it is difficult to trace study participants at home. An amendment has been submitted to the IRB, to alter the protocol and have the caregivers come to the health facilities for post-intervention interviews.

PAN AFRICAN MEDICAL JOURNAL (PAMJ)

The Pan African Medical Journal (PAMJ) has been published in partnership with AFENET since 2008. During the last nine years, PAMJ has helped AFENET achieve the network's sixth strategic objective: "documentation and publication" by providing a peer reviewed, electronic format only, open access and bi-lingual (English and French) publication platform for the network. Over the last nine years, PAMJ has published over 4000 articles in 27 categories encompassing clinical and public health medical disciplines. PAMJ has been indexed on PubMed since 2010 and is a member of the Open Access Scholarly Publishers Association (OASPA). In 2016, PAMJ became a member of the Committee on Publication Ethics (COPE).

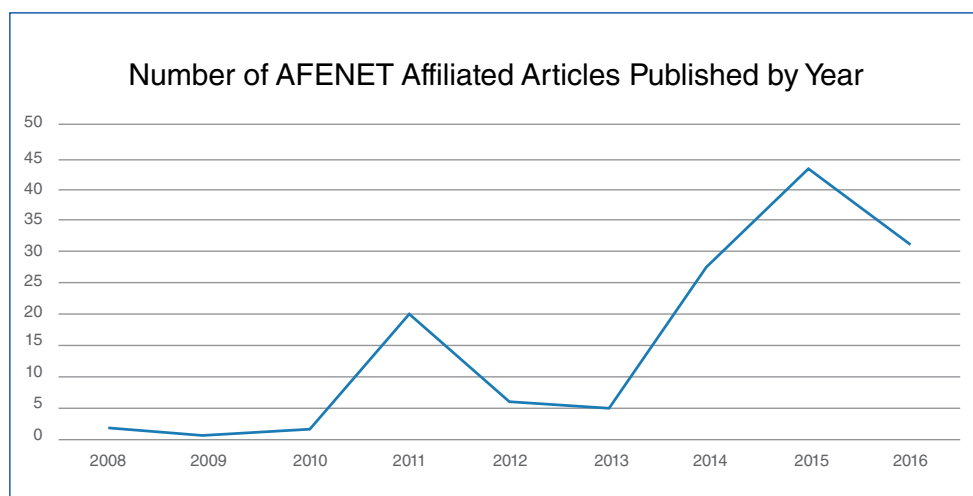
Achievements

Program Supplements

PAMJ has published seven program supplements

- Field Epidemiology in Africa-14 December 2011
- Building a public health workforce in Nigeria through experiential training-21 July 2014
- Ebola in West Africa. Before, now and then- 10 October 2015
- Strengthening Surveillance, Outbreak Investigation and Response: the Role of Ghana FELTP-01 October 2016
- African Case Studies in Public Health-28 May 2017
- The Expanded Program on Immunization in Ethiopia-09 June 2017
- The Future of Immunization in Africa

Articles from AFENET Member Programs



Participation in Scientific Writing Workshops at AFENET Scientific Conferences

PAMJ has conducted and co-facilitated scientific writing workshops at the fourth (Tanzania, 2011), fifth (Addis Ababa, 2013) and sixth (Abuja, 2016) AFENET scientific conferences. PAMJ's participation at these conferences has led to a marked increase in interest from the network as can be observed in the line graph above.

AFENET Conferences

AFENET has rooted several information dissemination mechanisms within the Secretariat as well as in Member Program.

Publication and Documentation is Promoted Through the Following:

International and Regional Scientific Conferences:

- Epidemic Intelligence Surveillance (EIS)
- Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET)
- Infectious Diseases Conference on Neglected Tropical Diseases
- European Scientific Conference on Applied Infectious Disease Epidemiology (ESCAIDE)

AFENET Scientific Conferences:

- 1st AFENET Regional Scientific Conference, Accra - Ghana December 2005
- Regional Scientific Conference, Kampala Uganda December 2007
- 5th TEPHINET African Regional/ 3rd AFENET Scientific Conference, Mombasa - Kenya August 2009
- 6th TEPHINET Global Scientific/ 4th AFENET Scientific Conference, Cape Town South Africa December 2010
- 5th AFENET Scientific Conference, Addis Ababa - Ethiopia November 2013
- 6th AFENET Scientific Conference, Abuja - Nigeria August 2016

Table 2: Abstracts Accepted for Presentation at the AFENET Scientific Conferences

Country	2013		2016		2013 Presentations	2016 presentations
	Poster	Oral	Poster	Oral		
Angola	2	3	2	1	5	3
Benin	0	0	1	0	0	1
Burkina Faso	1	1	1	6	2	7
CAR	1	0	1	1	1	2
Cameroon	0	0	1	0	0	1
DRC	0	1	5	4	1	9
Ethiopia	9	9	13	6	18	19
Guinea	0	0	2	3	0	5
Ivory Coast	0	0	2	1	0	3
Ghana	14	7	15	5	21	23
Kenya	9	10	15	39	19	39
Liberia	0	0	4	2	0	6
Mali	0	0	1	1	0	2
Morocco	0	0	1	0	0	1
Mozambique	4	2	9	2	6	11
Namibia	1	3	13	3	4	16
Niger	0	0	1	2	0	3
Nigeria	26	13	68	31	39	99
Rwanda	11	6	8	2	17	10
Senegal	0	0	3	1	0	4
South Africa	2	5	7	6	7	13
Tanzania	10	7	18	6	17	24
Togo	0	0	4	1	0	5
Uganda	17	7	32	10	24	42
USA	0	0	1	0	0	1
Zambia	0	0	6	2	0	8
Zimbabwe	6	3	6	5	9	11
Total					190	368

Table 3: AFENET Output Indicators and Performance on documentation and dissemination

Indicators	2012	2013	2014	2015	2016
Advancing the networking and collaboration					
Number of AFENET & TEPHINET conferences organized	1	1	0	1	1
Number of AFENET/ program websites developed	1	2	1	0	2
Number of monthly updates published	2	24	19	20	3
Visitors to the AFENET Website	5471	14009	13877	18639	21336
Number of writing workshops conducted	2	1	3	3	4
Staff trained in information dissemination and documentation	0	0	0	0	1
Number of scientific writing materials developed	68	178	38	122	0
Number of articles published by PAMJ	281	483	1078	1174	
Number of staff trained in scientific writing workshops	0	0	0	4	1
Number of annual reports disseminated	1500	1500	1000	1000	1000

Table 4: Articles published by Member Programs in the Pan African Medical Journal

Member Program	No of Articles
AFENET Secretariat	7
Zimbabwe	10
Kenya	17
Uganda	1
Nigeria	13
South Africa	2
Central Africa Republic	3
Tanzania	7
Ghana	2

UGANDA PUBLIC HEALTH FELLOWSHIP PROGRAM (PHFP)

Overview Of PHFP Activities

The Uganda Public Health Fellowship Program (PHFP) is a partnership between the Ministry of Health (MoH), Makerere University School of Public Health (MakSPH), and the US Centers for Disease Control and Prevention (CDC). The PHFP is a training-through-service capacity building program that aims to create a cadre of public health workers who can efficiently and effectively address public health challenges in Uganda. The program supports various health interventions including those that focus on surveillance and epidemic investigations/response as well as communicable and non-communicable diseases. The PHFP offers a two-year Field Epidemiology Training Program that is tenable at MakSPH and MoH. The Field Epidemiology Training Program is a training-through-service program in applied epidemiology and public health leadership. Enrolled Fellows develop competencies by providing valuable public health services to the Ministry of Health and District Health Teams. Overall, a total of 31 Fellows have been enrolled and supported since inception in 2015; 10 of whom graduated in February 2017. Currently, there are 21 Fellows enrolled on the program; 10 in their second year (Cohort 2016) and 11 in their first year (Cohort 2017).

Between April and June 2017, the 21 continuing Fellows received technical and financial support from the program as well as their hosting sites to implement a series of activities that are related to the program and host site expectations. Of these, two Fellows [Joselyn Annet Atuhariwe (cohort 2016) and Denis Okethwangu (cohort 2017)] were supported to implement malaria-related activities. The two Fellows received financial and technical support from the President's Malaria Initiative (PMI) during the reporting period. This report presents the progress made by these Fellows.

Planned Activities and Achievements

The following sub-sections provide details on what each Fellow planned to achieve and what they achieved during the reporting period.

Activities carried out by Joselyn Annet Atuhairwe

- Joselyn coordinated a multi-stakeholder meeting involving 11 epidemic districts (Kitgum, Gulu, Pader, Agago, Lamwo, Nwoya, Amuru, Oyam, Kole, Apac and Omoro), Ministry of Health, donors and implementing partners in the districts to conduct a bottleneck analysis and come up with feasible plans to implement IRS in the remaining districts. Also, she coordinated the reallocation of IRS supplies to the districts that had not yet implemented IRS; supervised implementation of IRS and followed up reports and accountabilities by the implementing districts.
- She worked with multiple stakeholders including WHO, other Ministry of Health departments, manufacturers and distributors of Long Lasting Insecticidal Nets (LLINS) and academic institutions to finalize the IRM plan which will guide implementation of malaria vector control interventions to prevent Insecticide resistance. A final version of the IRM plan will be presented at the next Integrated Vector Management Technical Working Group Meeting, and to Ministry of Health.
- She worked with Denis to coordinate and co-facilitate a workshop that brought together stakeholders implementing IRS in Uganda such as the US President's Malaria Initiative, Abt Associates, PATH and the National Malaria Control Program (NMCP). During this workshop, Uganda's IRS insecticide needs for 2018 were quantified and the finalized document will be used to mobilize resources for IRS for 2018.
- Both residents attended a meeting to review studies on insecticide resistance spanning a period of over 40 years since the 1980s to today. This review indicated that there are reports of insecticide resistance to pyrethroids and carbamates although the epidemiological impact of the resistance is yet to be evaluated. These findings were compiled into a review report that was submitted to the Integrated Vector Management (IVM) technical working Group. This report was useful in the development of the Insecticide Resistance Management (IRM) plan already referred to above.
- She provided cluster supervision of universal Long Lasting Insecticide mosquito Nets (LLIN) campaign in Kabale District where she ensured the adherence to protocols and procedures during the distribution.
- She participated in the development of the first national malaria entomological surveillance and information management system for Uganda.
- She participated in the eCMEWeb Conference Agenda in relation to Artemisinin Resistance and multiple First Line treatments. At the conference, the need for the development of policies and guidelines for management of Artemisinin resistance were highlighted.
- She analyzed malaria surveillance data to determine the changes in Malaria morbidity in seven districts in Northern and Eastern Uganda. The analysis showed that the districts that implemented IRS had reduced malaria incidence over the years compared to those that did not. Results from the analysis have been documented in a report to the Uganda public

Health Fellowship Program and will be disseminated at the next Monitoring and Evaluation Technical Working Group meeting for Malaria.

- She developed a protocol titled “Factors affecting consistent use of Long Lasting Insecticidal Nets following a Universal Mass Distribution Campaign” The purpose of the protocol is to investigate why the distribution of nets is not followed by consistent net usage and reduced malaria incidence. This protocol has been reviewed by the academic mentor and the CDC Malaria Advisor, Dr. Peter Thomas, and will be submitted to an ethics review committee for clearance.
- She carried out a retrospective comparative analysis of routine malaria morbidity surveillance data reported through the Uganda Health Management Information System. From the analysis, she discovered that over the four years, confirmed malaria cases reduced by 22% while modelling results showed that by the fourth year of IRS implementation, the IRS districts had 47% fewer malaria cases compared to non-IRS districts. This work was submitted in a report titled “Changes in malaria morbidity following Indoor Residual Spraying in Eastern and Northern Uganda: A comparative analysis of IRS and non-IRS districts 2013-2016” to the PHFP secretariat.
- At the National Malaria Control Program (NMCP), she took the lead in the development of the first national malaria Entomological Surveillance and Information Management System. She developed a concept note for capacity building of the District Vector Control Officers (DVCOs) in the field of entomological surveillance and use of entomological data for decision making.
- The fellow developed a policy brief titled: “Improve adherence to malaria test results to achieve the test and treat policy.” This followed analysis of malaria surveillance data from the Uganda Malaria Surveillance Project (UMSP) in four malaria reference centres in Northern Uganda to determine health worker prescription practices following negative test results for the period 2015 - 2016.
- She has continued to coordinate the Indoor Residual Spraying (IRS) activities in eleven Northern Uganda malaria epidemic. She has also coordinated efforts towards the development of district specific malaria operational plans as part of the strategy to sustain the gains in malaria morbidity reduction achieved by IRS in the region.
- On assignment by the program manager, she held networking meetings between PATH, NMCP and USAID’s Presidents Malaria Initiative (PMI). This collaboration was meant to generate evidence on the impact of Next generation IRS chemicals like Pirimiphos Methyl (PM) on malaria morbidity and mortality.
- She attended a scientific manuscript writing workshop organized by AFENET. Following this training she is drafting a manuscript from the findings of the cholera outbreak investigation conducted in March 2016 in Namayingo district, Uganda.
- She was a co-investigator in a measles outbreak in Lyantonde district. The team found that the outbreak was propagated at a public hospital and that people who visited the paediatric ward at Lyantonde hospital were 29 times more likely to develop measles.

- Joselyn was supported by the program to present at the 9th Global TEPHINET conference in Chiang Mai, Thailand. The title of her presentation was: “Spreading like a Wild Fire: A Tale of Three Cholera Outbreaks - Namayingo District, Uganda, March 2016.

Activities implemented by Denis Okethwangu

- Denis was involved in the training and supervision of indoor residual spraying in Lira District (July 7th to 19th). Specifically, the fellow trained spray teams to effectively implement IRS, with focus on data entry, spray technique and communication.
- Denis also participated in a National Malaria Control Program Monitoring and Evaluation training in Entebbe (28th July). In the training, job descriptions within the program were defined as well as individual targets and expected outputs.
- The fellow was involved in the production of the Malaria Quarterly bulletin (April - June, 2017) where he extracted and analyzed data from the surveillance system (DHIS2), drew heat maps and worked with the unit head to write the narrative that accompanies the data.
- The fellow participated in the midterm review of the National Malaria Control Program (4th September). Specifically, he worked with the Surveillance Monitoring and Evaluation and Operational Research (SMEOR) unit.
- Denis participated in the regional malaria indicator survey trends workshop (14th Sept) organized by the demographic and health survey program, and USAID. The workshop was attended by participants from Malawi, Sierra Leone, Nigeria, Liberia and Uganda. Participants learnt how to interpret data from population-based surveys, understand indicators used in the surveys, analyze the data and use the data for action.
- He participated in an engagement meeting in Gulu district to discuss sustainability of IRS gains in the districts as part of the malaria Epidemic Response Plan (ERP) and the Uganda National Malaria Reduction Strategic Plan (UNMRSP): This meeting brought district leadership together to discuss IRS experiences; draw plans on how to consolidate gains from IRS activities in the districts; review the malaria Epidemic Response Plan for Northern Uganda and update the districts on the UNMRSP.
- He participated in and was rapporteur at the World Malaria Day (WMD) Malaria Colloquium at Hotel Africana (21st April 2017): The WMD Colloquium is an annual scientific conference that brings together malaria actors from the academia, partners and interested parties.

- He supervised training of Insecticide Residual Spray (IRS) teams in Dokolo district, Northern Uganda. The training involved ensuring that the personnel and logistics are available. After the training, the fellow supervised the actual IRS in the District as a representative of the NMCP between 2nd-27th May 2017.
- He participated in the IVM Technical Working Group (TWG) meeting at Vector Control Division (VCD) Ministry of Health. This was part of the routine meetings of the VCD to get updates on vector control interventions and to also receive updates on the IRM draft from the task force.
- He participated in Data Quality Assessment (DQA) in Orum Health Center IV in Otuke district, Northern Uganda (15th-18th May): This activity was carried out to assess whether the accuracy and reliability of the data were the reasons why there was a persistently high smear positivity rate in the district.
- Participated in an investigation of an outbreak of cholera in Nebbi district. The primary finding was that the cholera outbreak was caused by drinking contaminated river water. This and other findings were shared with the District Health Team and appropriate action was initiated.

Other Achievements

Technical assistance received and visitors to the program during the reporting period

All the Fellows (including the two that were supported through PMI) received ongoing mentorship and support from the CDC Resident Advisor, Dr Bao-Ping Zhu and the CDC Senior Malaria Technical Advisor, Dr Peter Thomas. Over the same period, the Program received a visitor from CDC Atlanta; Dr Tippawan Nagachinta, who provided technical assistance to the fellows when Dr. Bao-Ping Zhu was on leave.

Lessons Learned

One of the Fellows who graduated in February 2017 (Allen E Okullo) continues to provide invaluable assistance to the National Malaria Control Program. This suggests that even after their graduation, Fellows can remain useful to their host institutions.

Major Challenges / Constraints

By reporting time, Joselyn Atuhairwe (cohort 2016) was still behind schedule on her program deliverables in spite of excelling at the NMCP. However, she was able to submit her descriptive analysis during the reporting period. The PHFP Secretariat instituted measures including periodic one-on-one meetings to assist Joselyn to complete her program deliverables ahead of program completion in the remaining 5 months.

MEMBER PROGRAM PUBLICATIONS IN PDF

Member Program Publications on PAMJ

No.	Type	Category	Program	Title	Citation
1	Regular article	Research	Nigeria	Knowledge and utilization of contraceptive devices among unmarried undergraduate students of a tertiary institution in Kano State, Nigeria 2016	The Pan African Medical Journal. 2017;26:103. doi:10.11604/pamj.2017.26.103.11436
2	Regular article	Research	Zimbabwe	An evaluation of the proposed organisation restructuring at Kadoma city 2015	The Pan African Medical Journal. 2017;27:20. doi:10.11604/pamj.2017.27.20.11085
3	Regular article	Research	Zimbabwe	Factors associated with severe malaria among children below ten years in Mutasa and Nyanga districts, Zimbabwe, 2014-2015	The Pan African Medical Journal. 2017;27:23. doi:10.11604/pamj.2017.27.23.10957
4	Regular article	Research	Zimbabwe	Malaria morbidity and mortality trends in Manicaland province, Zimbabwe, 2005-2014	The Pan African Medical Journal. 2017;27:30. doi:10.11604/pamj.2017.27.30.11130
5	Regular article	Research	Zimbabwe	Evaluation of severe malaria case management in Mazowe District, Zimbabwe, 2014	The Pan African Medical Journal. 2017;27:33. doi:10.11604/pamj.2017.27.33.11081
6	Regular article	Research	Tanzania	Male partner involvement in the prevention of mother to child transmission of HIV infection in Mwanza Region, Tanzania	The Pan African Medical Journal. 2017;27:90. doi:10.11604/pamj.2017.27.90.8901
7	Regular article	Research	Ghana	Evaluation of bacterial meningitis surveillance data of the northern region, Ghana, 2010-2015	The Pan African Medical Journal. 2017;27:164. doi:10.11604/pamj.2017.27.164.11036
8	Regular article	Research	Nigeria	Descriptive epidemiology of a cholera outbreak in Kaduna State, Northwest Nigeria, 2014	The Pan African Medical Journal. 2017;27:172. doi:10.11604/pamj.2017.27.172.11925
9	Regular article	Research	Nigeria	Factors affecting access to information on routine immunization among mothers of under 5 children in Kaduna State Nigeria, 2015	The Pan African Medical Journal. 2017;27:186. doi:10.11604/pamj.2017.27.186.11191
10	Regular article	Research	Zimbabwe	Evaluation of the acute flaccid paralysis (AFP) surveillance system, Gokwe North district, Zimbabwe, 2015: a descriptive cross sectional study	The Pan African Medical Journal. 2017;27:203. doi:10.11604/pamj.2017.27.203.10956
11	Regular article	Research	Zimbabwe	Evaluation of the maternal mortality surveillance system in Mutare district, Zimbabwe, 2014-2015: a cross sectional study	The Pan African Medical Journal. 2017;27:204. doi:10.11604/pamj.2017.27.204.7210
12	Regular article	Research	Mozambique	Mozambique field epidemiology and laboratory training program: a pathway for strengthening human resources in applied epidemiology	The Pan African Medical Journal. 2017;27:233. doi:10.11604/pamj.2017.27.233.13183

13	Regular article	Research	Nigeria	Prevalence and determinants of diarrhoea among infants in selected primary health centres in Kaduna north local government area, Nigeria	The Pan African Medical Journal. 2017;28:109. doi:10.11604/pamj.2017.28.109.8152
14	Regular article	Research	Namibia	Factors associated with Schistosomiasis outbreak at Omindamba primary school, Omusati region, Namibia: a case-control study, March 2016	The Pan African Medical Journal. 2017;28:212. doi:10.11604/pamj.2017.28.212.11458
15	Regular article	Research	Uganda	Risk factors for hematemesis in Hoima and Buliisa Districts, Western Uganda, September-October 2015	The Pan African Medical Journal. 2017;28:215. doi:10.11604/pamj.2017.28.215.12395
16	Regular article	Research	Ghana	Evaluation of cholera surveillance system in Osu Klotey District, Accra, Ghana (2011-2013)	The Pan African Medical Journal. 2017;28:224. doi:10.11604/pamj.2017.28.224.10737
17	Regular article	Research	Ghana	Evaluation of access and utilization of EPI services amongst children 12-23 months in Kwahu Afram Plains, Eastern region, Ghana	The Pan African Medical Journal. 2017;28:238. doi:10.11604/pamj.2017.28.238.11538
18	Regular article	Research	Zimbabwe	Evaluation of the adverse events following immunizations surveillance system in Harare City, Zimbabwe, 2016: a descriptive cross sectional study	The Pan African Medical Journal. 2017;28:308. doi:10.11604/pamj.2017.28.308.12730
African Case Studies in Public Health					
19	Supplement	Editorial		Case studies in applied epidemiology	The Pan African Medical Journal. 2017;27 (Supp 1):1. doi:10.11604/pamj.supp.2017.27.1.12172
20	Supplement	Editorial		Overview of the design and development of public health case studies	The Pan African Medical Journal. 2017;27 (Supp 1):2. doi:10.11604/pamj.supp.2017.27.1.12887
21	Supplement	Case study		Unexplained Haemorrhagic Fever in Rural Ethiopia	The Pan African Medical Journal. 2017;27 (Supp 1):3. doi:10.11604/pamj.supp.2017.27.1.12567
22	Supplement	Case study		Cholera Outbreak in Homa Bay County, Kenya, 2015	The Pan African Medical Journal. 2017;27 (Supp 1):4. doi:10.11604/pamj.supp.2017.27.1.12563
23	Supplement	Case study		Investigating an outbreak of measles in Margibi County, Liberia, October 2015	The Pan African Medical Journal. 2017;27 (Supp 1):5. doi:10.11604/pamj.supp.2017.27.1.12564
24	Supplement	Case study		An epidemic of spastic paraparesis of unknown aetiology in Northern Mozambique	The Pan African Medical Journal. 2017;27 (Supp 1):6. doi:10.11604/pamj.supp.2017.27.1.12623

25	Supplement	Case study		Response to an Unusual Outbreak in a High-risk Situation	The Pan African Medical Journal. 2017;27 (Supp 1):7. doi:10.11604/pamj.supp.2017.27.1.12566
26	Supplement	Case study		Contact Tracing Following Outbreak of Ebola Virus Disease in Urban Settings in Nigeria	The Pan African Medical Journal. 2017;27 (Supp 1):8. doi:10.11604/pamj.supp.2017.27.1.12565
27	Supplement	Case study		Detecting, reporting, and analysis of priority diseases for routine public health surveillance in Liberia	The Pan African Medical Journal. 2017;27 (Supp 1):9. doi:10.11604/pamj.supp.2017.27.1.12570
28	Supplement	Case study		Conducting a surveillance data quality audit in Grand Bassa County, Liberia, November 2015	The Pan African Medical Journal. 2017;27 (Supp 1):10. doi:10.11604/pamj.supp.2017.27.1.12561
29	Supplement	Case study		Conducting a surveillance problem analysis on poor feedback from Reference Laboratory, Liberia, February 2016	The Pan African Medical Journal. 2017;27 (Supp 1):11. doi:10.11604/pamj.supp.2017.27.1.12569
30	Supplement	Case study		From one to the other: responding to Ebola cases on either side of the line	The Pan African Medical Journal. 2017;27 (Supp 1):12. doi:10.11604/pamj.supp.2017.27.1.12568
31	Supplement	Case study		Antiretroviral therapy outcomes among HIV infected clients in Gweru City, Zimbabwe 2006-2011: a cohort analysis	The Pan African Medical Journal. 2017;27 (Supp 1):13. doi:10.11604/pamj.supp.2017.27.1.12562
Kenya Field Epidemiology and Laboratory Training Program; Strengthening Public Health Systems through Experiential Training and Operational Research					
32	Supplement	Commentary	Kenya	Catalysts for implementation of One Health in Kenya	The Pan African Medical Journal. 2017;28 (Supp 1):1. doi:10.11604/pamj.supp.2017.28.1.13275
33	Supplement	Research	Kenya	Factors associated with uptake of dual contraception among HIV-infected women in Bungoma County, Kenya: a cross-sectional study	The Pan African Medical Journal. 2017;28 (Supp 1):2. doi:10.11604/pamj.supp.2017.28.1.9289
34	Supplement	Research	Kenya	Molecular epidemiology and associated risk factors of rotavirus infection among children under 5 years hospitalized for acute gastroenteritis in North Eastern, Kenya, 2012	The Pan African Medical Journal. 2017;28 (Supp 1):3. doi:10.11604/pamj.supp.2017.28.1.2486

35	Supplement	Research	Kenya	Tuberculosis infection among health care workers: a case series in two district hospitals, Kenya, August 2013	The Pan African Medical Journal. 2017;28 (Supp 1):4. doi:10.11604/pamj.supp.2017.28.1.8222
36	Supplement	Research	Kenya	Antimicrobial residues and compositional quality of informally marketed raw cow milk, Lamu West Sub-County, Kenya, 2015	The Pan African Medical Journal. 2017;28 (Supp 1):5. doi:10.11604/pamj.supp.2017.28.1.9279
37	Supplement	Research	Kenya	Male partner involvement in efforts to eliminate mother-to-child transmission of HIV in Kisumu County, Western Kenya, 2015	The Pan African Medical Journal. 2017;28 (Supp 1):6. doi:10.11604/pamj.supp.2017.28.1.9283
38	Supplement	Research	Kenya	Factors associated with caesarean sections among mothers delivering at Mama Lucy Kibaki Hospital, Nairobi, Kenya between January and March, 2015: a case-control study	The Pan African Medical Journal. 2017;28 (Supp 1):7. doi:10.11604/pamj.supp.2017.28.1.9290
39	Supplement	Research	Kenya	Folate deficiency and utilization of folic acid among pregnant women attending antenatal clinic at Pumwani Maternity Hospital, Kenya, 2015	The Pan African Medical Journal. 2017;28 (Supp 1):8. doi:10.11604/pamj.supp.2017.28.1.9296
40	Supplement	Research	Kenya	Cryptosporidium infection in calves and the environment in Asembo, Western Kenya: 2015	The Pan African Medical Journal. 2017;28 (Supp 1):9. doi:10.11604/pamj.supp.2017.28.1.9313
41	Supplement	Research	Kenya	Etiology of bacterial meningitis: a cross-sectional study among patients admitted in a semi-urban hospital in Nairobi, Kenya	The Pan African Medical Journal. 2017;28 (Supp 1):10. doi:10.11604/pamj.supp.2017.28.1.9383
42	Supplement	Research	Kenya	Factors associated with interruption of tuberculosis treatment among patients in Nandi County, Kenya 2015	The Pan African Medical Journal. 2017;28 (Supp 1):11. doi:10.11604/pamj.supp.2017.28.1.9347
43	Supplement	Research	Kenya	An outbreak of cholera in western Kenya, 2015: a case control study	The Pan African Medical Journal. 2017;28 (Supp 1):12. doi:10.11604/pamj.supp.2017.28.1.9477

List of Partners

Academic Institutions

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Associations/Nonprofit Organizations

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Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET)
Task Force for Global Health
African Society for Laboratory Medicine (ASLM)

African Government Agencies

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Ghana Ministry of Health
Rwanda Ministry of Health
Kenya Medical Research Institute (KEMRI)
Kenya Ministry of Health
Mozambique Ministry of Public Health and Sanitation
National Institute for Communicable Diseases (NICD)
South Africa Ministry of Health
Southern Sudan Ministry of Health
National Health Laboratory Services, South Africa

National Institute for Communicable Diseases (NICD), South Africa
Nigeria Federal Ministry of Health
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Treatment and Research AIDS Center (TRAC) Plus, Rwanda
Uganda Ministry of Health
Uganda Virus Research Institute (UVRI)
Uganda National Expanded Program on Immunization (UNEPI)
National Institute for Medical Research (NIMR), Tanzania
Zimbabwe Ministry of Health and Social Welfare
National Center for Zoonotic, Vector-Borne, and Enteric Diseases, Nigeria

Foundations

CDC Foundation
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WHO/ Global Outbreak Alert and Response Network (GOARN)
World Health Organization Multi Disease Surveillance Center (MDSC)
World Health Organization (WHO)
World Health Organization Regional Office for Africa (WHO AFRO)

U.S. Government

U.S. Agency for International Development (USAID)
U.S. Centers for Disease Control and Prevention (CDC)
U.S. Department of Defence
U.S. Department of Health and Human Services (HHS)
U.S. Department of State
US Defense Threat Reduction Agency

Private Entities

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Public Health Practice (PHP)
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