TEPHINET requests updates from its member programs for inclusion in each issue of TEPHINews, our quarterly newsletter.

This update has been compiled using text provided by the contributing field epidemiology training programs. Editing has been limited to minimal corrections where necessary. The information in each program's section is the responsibility of the program.
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AFGHANISTAN FIELD EPIDEMIOLOGY TRAINING PROGRAM

Group Project

A protocol for a group project on “childhood immunization coverage in urban settings in polio high-risk provinces” was finalized, and IRB approval was taken from the Ministry of Public Health. Residents were involved in data collection in the cities in which they are settled. The data were entered, managed, and cleaned in Epi Info. Now, they are busy with data analysis and report writing. The residents are learning by doing in this exercise and appreciated being busy in field projects. In addition, the result will help the immunization unit by providing urban coverage for children.

4th AFETP Workshop

The 4th Afghanistan FETP (AFETP) workshop was conducted in Kabul at the National Emergency Operations Center for polio (NEOC) from November 30 to December 5, 2019. The main agenda of this workshop was data management in Epi Info including data entry, merging, cleaning, management and analysis. In addition, a few sessions on plan for analysis, immunization surveys at national level and report writing were facilitated. All 30 residents from 13 provinces that are high risk for polio and have low immunization attended. The sessions were facilitated by national facilitators and technical advisor for AFETP.

Outbreak Investigation

On November 28, 2019, a suspected measles case came to Mirwais regional hospital in Kandahar city and was reported by the measles surveillance focal point. After investigation by a surveillance officer who is an AFETP resident, five suspected measles cases were detected when the team departed to the affected villages in the outskirts of the city. The cases were less than five years; of them, 2 were males and 3 were females. Four blood samples were taken and sent to lab that was confirmed. The cases were managed by local team through health center by provision of 2 doses of Vitamin A, antibiotics, analgesic and proper health education. In this small cluster of families 9 children aged less than 5 years were vaccinated for measles and vitamin A. The hypothesis is refusal of routine vaccination by this family and the index case is 05-year-old boy with no travel history. Reasons for refusal to immunization should be identified and tackled in the country.

Translation and Publication of Reference Book

In this quarter, the reference book of CDC on “Principles of epidemiology in public health practice” was translated, reviewed edited and published in local (Persian) language by AFETP in 1000 volumes. This book has six main lessons of: introduction to epidemiology, Introduction to Epidemiology, Summarizing public health data, Measures of risk, Public health surveillance, and Investigation of an outbreak. The book will be used as a reference for all epidemiologist and public health practitioners as well AFETP residents in the country. The translation and publication of this book have welcomed by all stakeholders.
Group project data collection in Kabul NEOC

4th AFETP workshop class in Kabul NEOC
Measles outbreak investigation in Kandahar city

Cover page of the book published on “Principles of epidemiology in public health practice”
BRAZIL FIELD EPIDEMIOLOGY TRAINING PROGRAM (EPISUS)

Between October and December 2019, the 16th EpiSUS class started at its advanced level (two years), with the participation of 12 health professionals (Figure 1). It was then held the 16th Introductory Course of EpiSUS-Advanced, lasting five weeks, which were held theoretical-practical classes and a field investigation.

EpiSUS-Advanced, during this period, participated in six field investigations, namely:

1. **Investigation of cases of acute poisoning in a population exposed to crude oil after chemical disaster in beaches of the Northeast Region, Pernambuco (PE):** in August 2019, the Brazilian coast was contaminated by a large spot of crude oil, whose population mobilized to clean the beaches and rescue the affected animals. It was observed, then, the increase of reports of chemical poisoning that triggered an investigation to elucidate its relation with crude oil in the exposed population.

2. **Investigation of varicella outbreaks among sheltered and non-sheltered migrants in Boa Vista (RR):** Although varicella vaccine is distributed free of charge to children in Brazil, several outbreaks have occurred among Venezuelan migrants, including deaths. Thus, an epidemiological investigation was conducted to guide the prevention and control measures that were triggered for this population;

3. **and 4. Monitoring of medical care related to two mass events, one in Belém (PA) and the other in Brasília (DF):** mass events have the ability to introduce or disperse etiological agents that can become public health emergencies. Thus, medical care was monitored, with support from EpiSUS-Frontline, during two mass events, one from the health area and the other religious, which brought together participants from all over Brazil;

4. **Investigation of a family group of exogenous intoxication to be clarified in Codajás (AM):** eight people from a family nucleus, mostly children and adolescents, manifested a poisoning condition and three deaths occurred. An investigation was conducted to identify possible causes of poisoning, the main hypothesis being the use of chemical agents such as pesticides;

5. **Knowledge, attitudes and practices on dengue in a high incidence region in Brasília (DF):** a survey was conducted through complex cluster sampling with the population and another with professionals of health in the region, about dengue, clinical management and surveillance actions.

There was also the participation of EpiSUS-Advanced in three technical-scientific events, with presentations of seven works (five oral and two posters), namely:

- 10th TEPHINET Global Scientific Conference – October 28-November 1, 2019, Atlanta (GA/USA)
- National Exhibition of Successful Experiences in Epidemiology, Prevention and Control of Diseases (16th Expoepi) – December 4-6, 2019, Brasília (DF/BR)
- V District Forum on Immunization and II on Immunopreventable Diseases of the Federal District December 9-10, 2019, Brasília (DF/BR)

In addition, was performed the module “Spatial analysis techniques applied to outbreak investigations”, lasting 40 hours; and the “Teaching and Mentoring” course for Program supervisors, totaling 16 hours.
During this period, EpiSUS-Frontline concluded, with the support of the State and Municipal Health Secretariats, four groups, totaling 82 graduates, two from Argentina and two from Bolivia that counties bordering Brazil.

There was also the participation of EpiSUS-Frontline in two technical-scientific events, with presentations of two works, in poster mode, namely:

- 10th TEPHINET Global Scientific Conference – October 28-November 1, 2019, Atlanta (GA/USA)
- National Exhibition of Successful Experiences in Epidemiology, Disease Prevention and Control (16th Expoepi) – December 4-6, 2019, Brasilia, Federal District, Brazil

In addition, on November 17 and 18, 2019, the EpiSUS-Frontline Classes Content Review Workshop was held, with the participation of four Federated Units already conducting training for state initiatives (Amazonas, Ceará, Goiás and Minas Gerais) with a workload of 16 hours (Figure 2).
Figure 2 - Participants of the EpiSUS-Frontline Content Review Workshop held in November 2019, Brasilia/DF, Brazil.

Source: EpiSUS-Frontline Collection
CAMEROON FIELD EPIDEMIOLOGY TRAINING PROGRAM

The Cameroon Field Epidemiology Training Program (CAFETP)/Ministry of Health (MOH) received the visit of Dr Seymour Williams, FETP Team Leader, CDC Atlanta from October 14 to 18, 2019. As part of the CAFETP sustainability process, he had meetings with the DLMEP, the Director of Human Resources of the MOH, and the point of contact of CAFETP at the Ministry of Defense (MINDEF). He also met with the Organization of Coordination for the Fight against Endemic Diseases in Central Africa (OCEAC) as a potential support for CAFETP (see picture 1).

CAFETP/MOH participated in the 10th TEPHINET Global Scientific Conference held from October 28 to November 1, 2019 in Atlanta. CAFETP performed 3 oral presentations and 3 poster presentations under the supervision of Dr Serge Billong, MOH staff and Dr Seymour Williams, CDC FETP Team Leader (see picture 2).
CAFETP/MOH participated in the 3rd National Forum on Public Health Emergency Management held from October 28 to November 1, 2019 in Yaoundé. Abstracts of FETP Frontline were selected. They performed 8 oral presentations and 4 posters presentations (see picture 3).

As a side event of this forum, CAFETP received the visit of Dr. Nkengasong John, the CDC Africa Director. He congratulated the achievements of the CAFETP and encouraged the CAFETP residents in their training (see picture 4).
A total of 665 key disease surveillance staff from the MOH and Ministries of Livestock (MINEPIA), Defense (MINDEF), Prison Department (MINJUSTICE) and Police (DGSN) from the Central, Regional and District levels have been certified in Frontline Field Epidemiology in nine out of ten regions (see below).

Workshop 3 of cohort 4 held in the Far North region from December 10 to 14, 2019. A total of 22 trainees received the end of training certificate in the presence of the Director CAFETP, WHO Country Representative in Cameroon, and the Regional Delegate for MINEPIA Far North.
Picture 5: Handing over of end-of-course certificate to Frontline FETP Trainee cohort 4, Far North Region by the WHO Country Representative in Cameroon, Maroua, 9-13 December, 2019
It has been a busy few months for the Canadian Field Epidemiology Program (CFEP)! In September, CFEP welcomed five new field epidemiologists (cohort 45). Following a week of orientation, the new field epidemiologists attended two weeks of Epidemiology in Action in Ottawa, Ontario – an interactive course applying epidemiologic principles and technical tools to public health investigations, with a focus on foodborne and person-to-person transmission events.

In November, CFEP held its annual fall training on the east coast of Canada in Halifax, Nova Scotia. Over one week, field epidemiologists from cohort 44 and 45 engaged in Indigenous cultural competency training, explored qualitative methods for field investigations, composed scientific stories for non-scientific audiences, and examined international outbreak response with the Global Outbreak Alert & Response Network (GOARN) Tier 1.5 training. Cohort 45 field epidemiologists spent an additional week studying surveillance system foundations and evaluation, and surveillance for mass gatherings. The group applied their new skills by creating their own surveillance systems to address a simulated novel health event!

CFEP field epidemiologists and program directors (François-William Tremblay and Kathleen Laberge) had an opportunity to attend two international conferences in the fall. At the TEPHINET Global Scientific Conference in Atlanta, Georgia, Jessica Prairie and Andrea Schertzer presented their surveillance system evaluations, and networked with field epidemiology colleagues from across the globe. At the European Scientific Conference on Applied Infectious Disease Epidemiology (ESCAIDE) in Stockholm, Sweden, attendees learned about new outbreak investigation tools, and connected with EPIET fellows to exchange experiences and learn about program strengths.
CHINA FIELD EPIDEMIOLOGY TRAINING PROGRAM

In November 2019, 39 out of 40 fellows in China’s Western-region Field Epidemiology Training Program (WFETP), our intermediate FETP, graduated from 9 months of training. They are the fourth cohort of this intermediate FETP. During the course, each graduate completed at least one data analysis of public health surveillance system and one planned study and one outbreak investigation as required by graduation criteria.

In December 2019, all 25 residents from the 17th cohort of Chinese Field Epidemiology Training Program (CFETP, the advanced FETP of China) and one resident from the 16th cohort passed the final evaluation including presentation of one planned study or outbreak investigation and earned their graduation certification. During the 2-year “learning by doing” training, they totally completed 175 outcomes, including 66 surveillance data analysis, 71 outbreak investigations, and 38 planned studies. Up to now, China FETP has recruited 376 fellows into the advanced FETP; 339 of them have graduated and are taking vital roles at the national or regional CDC as qualified field epidemiologists.

While celebrating for the graduated fellows, the training for current-enrolled fellows continued.

In the last three months, from October to December of 2019, fellows of 18th cohort of CFETP participated in 13 outbreak investigations, including two national-level major Public Health emergency response such as dozens of brucellosis cases being identified at a veterinary research institute in the city of Lanzhou in Gansu Province in Northwest China, and the occurrence of pneumonic plague at the Sunitezuo Qi (County) of the Xilinguole League (Prefecture) in Inner Mongolia Autonomous Region.

Aside from the field practice, with the help from the Division of Global Health Security, Center of Global Health, US CDC, we organized the third NCD workshop for CFETP’s first cohort of NCD-track fellows in December; with our NCD department of China CDC, we co-hosted the Strategic Partner Meeting for the Promotion of “Health for All” Lifestyle and Sodium Reduction Program for Hypertension Control, and promoted the 2020 CFETP NCD Fellow Recruitment during this Partner Meeting in the same week.

Since China FETP launched in 2001, we had many firsts. In 2019, we continued that exploration spirit, and established the first TB-specialized and the first NCD-specialized training tracks in the advanced FETP, and achieved TEPHINET accreditation for the advanced FETP. All these efforts and exploration will definitely improve the training quality through integrating with more and more global expertise and experience.
GHANA FIELD EPIDEMIOLOGY AND LABORATORY TRAINING PROGRAM

Ghana FELTP 2nd Scientific Conference and Competency Graduation Ceremony

The Ghana FELTP held its 2nd Scientific Conference and Competency Graduation Ceremony from December 11 – 12, 2019 at the Noguchi Memorial Institute for Medical Research, University of Ghana, Accra – Ghana.

The theme for the conference was “Building and Sustaining Field Epidemiology Workforce through Ghana FELTP: The Role of Government, Private Sector and Institutional Partners”. The conference was attended by key partners such as the Ghana Health Services (GHS), World Health Organization (WHO), Korea International Cooperation Agency (KOICA), Centers for Disease Control and Prevention (CDC), African Field Epidemiology Network (AFENET), Veterinary Services Department (VSD), Food and Drugs Authority (FDA) and Environmental Health and Sanitation.

The conference was attended by about 150 participants made up of frontline, intermediate and advanced level graduates and alumni of the GFELTP and representatives from the GHS, WHO, KOICA, CDC, AFENET, VSD, FDA and Environmental Health. Oral and poster presentations were made by participants at the conference.

The conference held plenary sessions on the topics below;

- **Role of government, private, partners and institutions in building a sustainable workforce in Ghana.** This was facilitated by representatives from “KOICA, CDC, WHO and GHS.

- **Planning for Retirement: Investment, Good Health and Will.** This was facilitated by seasoned resource persons from law firms and reputable banks in the country.

- **The Role of FELP in the Global Initiative of Eradicating Polio.** This was facilitated by representatives from the CDC, WHO and Sierra Leone FELTP.

All participants were awarded certificates of participation whereas special awards were presented to those who performed extremely well.

Citations were also presented to the various stakeholders (Ten Regional Health Directorates of the GHS, FDA and VSD) for their outstanding support in the implementation of the frontline, intermediate and advanced trainings in the country.
(L-R): Dr. Joyceline Dontwi – Director, VSD, Dr. Sally-Ann Ohene – WHO, Dr. Simon Antara – Executive Director, AFENET, Dr. Kofi Issah – Brong Ahafo Regional Director of Health Services, GHS, who represented the Director General, GHS, Prof. Julius Fobil – Dean, University of Ghana School of Public Health, Mr. Yukyum Kim – KOICA Director, Ghana, Dr. Chastity Walker - Global Health Security Program Director, CDC Ghana and Mr. Benjamin Osei Tutu, who represented the Director for FDA at the GFELTP 2nd Scientific Conference and Competency Graduation

Participants at the GFELTP 2nd Scientific Conference and Competency Graduation
(L-R): Dr. Franklin Asiedu Bekoe, Head – Disease Surveillance Department, GHS, presenting a citation to a participant on behalf of the Volta Regional Health Directorate at the GFELTP 2nd Scientific Conference and Competency Graduation
The Field Epidemiology Training Program (FETP) of Honduras, with the technical and financial support of the Executive Secretariat of the Council of Ministers of Central America and the Dominican Republic (SE-COMISCA) through the CDC-CAR cooperative agreement, are prepared to implement in the country the new basic level curriculum called Frontline, or first line training; to be developed in the last week of January 2020 the first cohort with 20 participants from the central level of the Ministry of Health.

This process began with the expression of interest of the country to integrate the new training curriculum, with the issuance of letters of invitation to the different instances of the central level of the Ministry of Health, to recruit applicants; receiving 35 requests for participation, of which 20 were selected that met the profile established by this curriculum.

With this course, the technical capabilities of the human resource that works in epidemiological surveillance and data analysis activities at the central level would be strengthened, developing basic knowledge of epidemiological surveillance, promoting the investigation of cases and outbreaks in their areas of influence and elaboration of reports for different audiences that help decision making.

The training workshop for tutors was held from November 13 to 15, 2019, given by Dr. David Rodriguez, FETP coordinator at SE-COMISCA, aimed at 10 graduates of the advanced and intermediate level, who will provide support to the participants to achieve the optimal development of the competences defined for this level of training.

Image 1. Group of Frontline Honduras tutors

Image 2. Meeting with applicants to Frontline Honduras.
INDONESIA FIELD EPIDEMIOLOGY TRAINING PROGRAM

The Pilot project of FETP-Intermediate was conducted from April 29-December 20, 2019 in Murnajati Public Health Training Centre Unit, East Java Province. This 7-month training addresses the skill needed by health official at the District Health Office (DHO) to improve epidemiologic capacity to evaluate and strengthen public health surveillance systems, investigate and control outbreaks, and conduct field studies to address public health priority issues. The training was followed by 15 surveillance officers/public health officers from 15 DHO in East Java Province. The training adopted US-CDC curriculum and modules as well as curriculum and modules developed by MoH Indonesia and East Java Provincial Health Office (PHO) Team. Together with Directorate of Surveillance and Health Quarantine MoH, FETP Indonesia Secretariat, East Java PHO, UPT Latkesmas Murnajati organized this training.

The training approach consisting of classroom instruction (<25%) followed by field placement and assignment (>75%) to gain experience and competence in field epidemiology. Classroom instruction focuses on epidemiologic practices rather than theory and uses an interactive problem-solving approach, with frequent exercises and case studies to reinforce lecture material. Field placements focus on surveillance system evaluation, field investigations, and epidemiologic studies. The facilitators are FETP-Advanced alumni from East Java Provincial Health Office, Surabaya Environmental Health Laboratory, Surabaya Port Health Office, FETP University of Airlangga and the field supervisors are FETP-Advanced alumni from ten DHO in East Java Province.

All trainees have completed nine-stages of the training process (five classroom sessions and four on-the-job-projects sessions in their work areas). Classroom instruction (8 weeks total, in 5 classes) addresses basics of epidemiology, surveillance data analysis, surveillance system evaluation, public health communication, outbreak investigation, data management, and epidemiologic studies. During the off class when trainees are back to their jobs, each trainee conduct field projects that build on classroom instruction; analysing surveillance, evaluating a surveillance system, conducting an outbreak investigation, writing a brief report, and preparing and delivering oral and poster presentations. All trainees work together on the group project. The project is a cross-sectional survey about the Completeness of Antenatal Care Services. As a group, trainees work on the objectives, protocol, questionnaire, sampling strategy, and analysis plan. Each participant then collects, enters, and cleans his/her data. Data sets are merged, and participants work in groups to analyse and interpret the data and develop reports and presentations.

During the final workshop, each trainee delivers an oral presentation of one of field projects and the group project results to facilitators, field supervisors, East Java PHO, Mojokerto City Health Office, Surveillance Sub Directorate, MoH, CDC Indonesia. All trainees successfully completed training program, they received a certification and additional certificate awards. The certificate awards are the following: for the best trainee certificate was given to trainee from Banyuwangi DHO, for the best oral presentation given to Tuban DHO, and for the best poster presentation given to Mojokerto City Health Office.
JAPAN FIELD EPIDEMIOLOGY TRAINING PROGRAM

FETP-Japan (FETP-J) sent one FETP and two facilitators for 10th TEPHINET Global Scientific Conference in October 2019 at Atlanta, USA. Our participants kicked off the meeting with energetic air guitar performance at International Night and spent good time with FETP colleagues from other countries. The topic of the oral presentation of FETP was on measles outbreak at non-vaccinated group in one prefecture in Japan. Due to the emergence of the measles and vaccine hesitancy around the world, the session and discussion was very active and fruitful.

In December, for the first time in ten years, GOARN Tier 1.5 Workshop for rapid response to international public health emergencies was held in Tokyo. Four FETP trainees attended the training. With other trainings for rapid response to domestic and international public health emergencies, FETP-J has been continuously training personnel who can take a lead on preparedness and response for the global infectious disease emergencies and contribute to International outbreak response activities.

Deepened exchange with other FETP program at Halloween International Night

FETP trainees at TEPHINET
Participants of GOARN Tier 1.5 Workshop including FETP trainees
2019 was a very active year for AFENET Liberia. The team received new staff and started new projects, i.e. NAPHS, IPC/SSI, and FETP-V. The 2 existing projects, AFI and LFETP continued with gusto. A coordinator was engaged for the Liberia Scientific Writing Clubs, which is set to roll out in 2020.

Liberia Field Epidemiology Training Program (LFETP)

Admin
New staff
We received two new staff in 2019; Dr Obafemi J. Babalola, a Field Epidemiologist and Ms. Chantelle Asante, Administrative Assistant.

Appraisals
All staff were appraised at the end of the Coag year.

Frontline
Two cohorts were trained; Cohorts 9 and 10 numbering 17 and 19 respectively, bringing the total of LFETP Frontline graduates to 224.

Intermediate
Intermediate Cohort 3 began training on March 26, 2019 and graduated on September 27, 2019. The cohort of 17 brings the total trained at the intermediate level to 49. The cohort group study was on ‘IDSR in Monsterrado: an Evaluation and KAP study among clinicians’.

National Scientific Conference
The second Emmett Dennis NSC was held from August 27 to 29, 2019 at the Millennium Guest House and Suites. 121 abstracts were submitted and a total of sixty oral and poster presentations were made by LFETP graduates.

International Conference
There were 3 international conferences -
- Lassa fever Conference, Abuja
- EIS 2019 and FETP Round Table Conference, Atlanta, USA
- TEPHINET 2019, Atlanta, USA
A poster presentation by an LFETP frontline graduate at the 2nd annual Emmet Dennis National Scientific Conference

Graduation ceremony of Frontline Cohort 10 comprising 19 participants

Visit by Dr Herbert Kazoora Brian, Ag Program Director, AFENET

Dr Herbert Kazoora visited the team from August 26 to 30, 2019. During his visit, he attended the second Emmet Dennis National Scientific Conference, interacted with the AFENET Liberia staff, and paid courtesy calls on partners – CDC, NPHIL, World Bank in Liberia.

Dr Kazoora also interacted with Intermediate Cohort 3 who were in session for workshop 4 at the time of his visit.
A case of CVDPV1 (Circulating Vaccine Derived Polio Virus Type 1) was reported from a 3 month old child in Sabah District of Tuaran in December 2019. Testing showed a genetic link to the ongoing poliovirus circulation in the southern Philippines, which declared an outbreak of polio on 19 September 2019. An outbreak of CVDPV1 was thus declared in Sabah as there has not been a single case as such. The last case of wild polio virus was detected in Malaysia in 1992.

A team of 6 Epidemic Intelligence Program (EIP Malaysia) members were deployed for 5 days to assist in finding the source of transmission and reassess the Acute Flaccid Paralysis (AFP) Surveillance. Epidemiologic investigations were carried out at the case’s neighbourhood including active search of potentially missed cases from the nearby Health Clinic.

Medical case notes from the case locality (Tuaran Hospital, 2015 to 2019) and two tertiary referral centres (Likas and QE Hospitals, from 2018-2019) with neurological diagnoses were searched. The case notes were reviewed to identify cases with documented hypotonia and weakness as to whether preliminary diagnoses of AFP were made by the clinicians followed by notification of the AFP cases to the nearest health office.

Investigations revealed various strength and weaknesses in the current Polio Vaccination Program as well as in the Acute Flaccid Paralysis Surveillance. Main findings and recommendations were shared with the Sabah Health Department and the Malaysia Ministry of Health.
Giving instructions on the plan for Case Finding

Case note review for Acute Flaccid Paralysis cases
1. The introductory course for the 10th cohort of the Mongolian Field Epidemiology Training Programme has started in October 2019. Trainees of this cohort are recruited from the National Center for Mental Health, National Center for Zoonotic Disease, National Center for Communicable Disease (NCCD), and Health Centers of Chingeltei and Nalaikh districts. During the introductory course, MFETP coordinators and experts and professionals from various organizations, such as the National University of Medical Sciences, WHO and National Centers, give lectures and provide hands-on practice on statistical software and case studies to the trainees.

2. MFETP organized a scientific writing workshop with the support of “West Pacific Surveillance and Response Journal: WPSAR” team from September 23-27, 2019. The workshop participants were graduates of MFETP and staffs of Surveillance Department of NCCD. Dr. Anna Drexler, Chief editor of WPSAR and Dr. Dorothy Southern, A Consultant of WHO gave lectures on basic steps of how to write a scientific manuscript and the process of its submission to peer reviewed journals. During the workshop participants worked on their manuscripts step by step with help of Dr. Drexler and Dr. Southern.

3. Mentors’ training for Frontline FETP was held from December 2-6, 2019 in cooperation with U.S. Embassy in Mongolia. The participants of the training were graduates of MFETP who work at National Centers and province Health Departments. In 2020, MFETP plan to organize the Frontline FETP in 4 provinces of Mongolia with the support of U.S. Embassy. The mentors prepared in this training will give lessons and advises to the trainees of the upcoming 4 frontline FETP trainings.

4. MFETP participated in a Joint review of Lao FET. Lao FET was established in 2009 and produced competent workforce for surveillance of the nation. But additional government support required to ensure its sustainability. The international members of the joint review team were from WHO WPRO, US CDC, DTRA, FETPs of Japan, Malaysia and Mongolia. The review was held between October and December, 2019 and the results and recommendations of the review will be finalized in January 2020.
The FETP Moroccan model was thus applied to the training cycle in Health Administration called “Épidémiologie en Santé Publique” that has now become the FETP/ESP. The curriculum of the cycle has been gradually adapted to fulfil the FETP criteria by expanding the field component of the training hence reducing the time spent in class. The FETP/ESP aims at producing highly qualified field epidemiologists who during the two-year training acquire competences on epidemiological surveillance, analysis of surveillance data aimed at providing evidence for decision-making, as well as at strengthening the outbreak investigation capacity of the country and the use of applied research in public health. Key partners in developing and sustaining the FETP/ESP are the Ministry of Health (e.g. ENSP, DELM and several other MoH services and directorates) in collaboration with the Centers for Disease Control and Prevention as well as occasional collaboration with other international organizations or institutions. The theoretical component of the training is concentrated in the beginning of the program, and then the residents are assigned to identify training sites within the structures of the MoH at national, regional or local level. The staff of the ESNP supervise them. Since its establishment, the FETP/ESP has graduated six cohorts for a total of 76 professionals in advanced programs and 30 at Basic program.

Our program’s major achievements:

- The Global Accrediting Body has determined that our program has met all indicators and standards for accreditation and has granted accreditation status to our program at the TEPHINET 10th Global Conference, Atlanta, 2019.
- The program has introduced the learning-through service concept in training based in the field.
- The program involved already the major collaborators in the country and internationally.
- In the strengthening, the workforce and introducing a new approach based in the fieldwork to epidemiology in public health.
- The FETP graduates have fully been integrated into the public health system and different United Nations agencies (UNA) like WHO in EMRO or Morocco once finished their training and are able for the vast majority to apply the newly acquired skills.
- They work at national, regional and province level in the MoH different structures, are playing an important role also in the development and follow up of work projects also with international institutions and provide evidence for decision-making.
- The FETP program is highly valued in the MoH and acknowledged as an excellent source of professionals in this time of further consolidation and reform of the public system in the country.

Our program’s major scientific achievements:

Since its establishment, the FETP/ESP has graduated 30 professionals’ health workers at Basic program. Also, with four training workshops on biosafety and biosecurity, more than 130 public health professionals, epidemiologists, clinicians, veterinarians and biologists from animal and human health sectors, civilians and militaries were trained on identification, characterization, evaluation and mitigation of biorisk within a global reflexing on biological risk management in the laboratory and in the field.
Conferences

Oral presentations

- Conception of an epidemiological surveillance system at the point of entry, Morocco 2018. Mohammed Ismaili Alaoui, Morocco, la Conférence Arabe de Santé Publique, 2019
- Alaoui Ismaili Ouafae, Determinants of loss to follow up of patients with breast or gynaecological cancers, National Institute of Oncology, la Conférence Arabe de Santé Publique, 2019
- Sofia Azrib, Epidemiology of Viral Hepatitis C in Casablanca-Settat region; Morocco; 2012-2016. Doctor epidemiologist regional observatory of health in Casablanca- settat region, Morocco, la Conférence Arabe de Santé Publique, 2019
- Mohamed Anouar Sadat et al., leptospirosis among high-risk professionals Casablanca, Morocco 2014. Conférence Arabe de Santé Publique, 2019
- Hind Majidi et al., Clinicopathological, therapeutic and prognostic features of the triple-negative Breast cancer in Morocco. Conférence Arabe de Santé Publique, 2019
- MAJIDI Hind et al; Human brucellosis outbreak, March to September 2017, South Morocco, TEPHINET 10th Global Conference, Atlanta, 2019

Poster presentations

- Dahbi ilham et al; Childhood Cancer Survival Rate and Characteristics in Morocco; A Retrospective Cohort, Hospital based study. TEPHINET 10th Global Conference, Atlanta, 2019
- Ouafa Ait Smail , "Épidémiologie de la tuberculose dans la province de Skhirat-Témara entre l’année 2013 et 2017", la Conférence Arabe de Santé Publique, 2019
- Touria Essayaghet all, Investigation of burned alcohol intoxication, Conférence in Beirut Liban, 2019.
**Topic of research** | **FETP-Graduat**
---|---
Assessment of the health impact of outdoor air pollution on the variability of asthma / COPD exacerbations in the population of Casablanca, for the period 2016-2017 | El Moussaouiti Rachid
Surveillance of Acute Flaccid Paralysis in the Province of Kenitra as part of the Eradication of Poliomyelitis | Jayche Samira
Study of the risk and prognostic factors of severe acute respiratory infections (IRAS) with multi-resistant germs at the level of the resuscitation services of the Hassan II teaching hospital in Fez between 01 January 2017 and 30 June 2019 | Lachgagui Hassan
Evaluation of the epidemiological and virological influenza surveillance system (IRAS and SG) of Morocco 2014-2019 | Touria Benamar
Assessment of the national surveillance system for acute viral bronchiolitis in infants. 2019 | Sabri Ouafaa
Acute community meningitis in children clinical and biological epidemiological profile Settat during the 2008-2018 | Hamdi Amal
Evaluation of the burden of smoking in lung cancer in the Rabat-Salé-Kénitra Region (protocol title) | Ismaili Alaoui Mohammed
Risk factors for death during tuberculosis on treatment in the provinces of Rabat and Skhirat-Témara in 2018 | Ait Smail Ouafa
Evaluation of the health surveillance system in prisons | Khalafi Nawal
Study of the determinants of the acceptability of influenza vaccination among the staff of the Ibn Zohr hospital center session 2018-2019 | Azaz Abdeljalil
Analysis of the surveillance system and description of the prophylaxis of human rabies in the communes of Libreville, Owendo and Akanda in Gabon | Makaya Nigel Igor

**Investigation activities in the field, 2019**

<table>
<thead>
<tr>
<th>Title of the investigation</th>
<th>Name of graduat FETP-Morocco</th>
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<tr>
<td>• Investigation of a case of legionellosis at a hotel in Casablanca, 2019</td>
<td>El Moussaouiti Rachid</td>
<td><a href="mailto:moussaouiti@gmail.com">moussaouiti@gmail.com</a></td>
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<td>• Investigation of a case of acute community bacterial meningitis in the province of Kenitra</td>
<td>Jayche Samira</td>
<td><a href="mailto:sjayche@yahoo.fr">sjayche@yahoo.fr</a></td>
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<td>• Investigation of a case of Acute Flaccid Paralysis (PFA), 2019</td>
<td>Lachgagui Hassan</td>
<td><a href="mailto:hassanlachgagui@gmail.com">hassanlachgagui@gmail.com</a></td>
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<td>• Investigation of a Hepatitis A epidemic in Ouarzazate province, 2019</td>
<td>Sabri Ouafaa</td>
<td><a href="mailto:sabriphar@gmail.com">sabriphar@gmail.com</a></td>
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<td>• Investigation of organophosphate intoxication in the province of Settat, 2019.</td>
<td>Hamdi Amal</td>
<td><a href="mailto:amalhamdi75@yahoo.fr">amalhamdi75@yahoo.fr</a></td>
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<td>• Response to a case of acute community bacterial meningitis,2018</td>
<td></td>
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<td>• Food intoxication following the consumption of a lunch at a restaurant in Settat, 2019</td>
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• Investigation of a hepatitis A epidemic at a school level in Ben Ahmed-Settat, 2019

• Investigation of a Hepatitis A epidemic in Ouarzazate province, 2019
  Ismaili Alaoui Mohammed
  mohammed.ismaili@yahoo.fr

• Investigation of a case of AFP in the province of Ain Aouda, 2018
  Ait Smail Ouafa
  smailouafa@gmail.com

• Investigation of a hepatitis A epidemic in the province of Fnideq, January 2019
  Khalafi Nawal
  nwiyla_5@yahoo.fr

• Investigation of a suspected case of chichaoua smut, 2018
  Azaz Abdeljalil
  azazabdeljalil1@gmail.com

Publication in journals:

<table>
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<tr>
<th>Authors</th>
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<tr>
<td>Touria Essayagh et al</td>
<td>Submission 2019</td>
<td>Epidemiological profile of viral hepatitis A in Meknes and its preventive risk factors</td>
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<td>Touria Essayagh et al</td>
<td>2017 DOI: 10.4172/2329-891X.1000241</td>
<td>Foodborne Outbreak, Meknes, Morocco, June 2017: What We Need to Learn</td>
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First Basic Course in Field Epidemiology, 2018-2019
Four Training Workshops on Biosafety and Biosecurity
Participation at the 10th TEPHINET Global Scientific Conference; Atlanta, 2019

Arabic Conference, Casablanca, 2019
MOZAMBIQUE FIELD EPIDEMIOLOGY AND LABORATORY TRAINING PROGRAM

EPIDEMIOLOGY TRAINING IN HUMANITARIAN EMERGENCIES IN KAMPALA, UGANDA, NOVEMBER 11-16, 2019.

TEPHINET in collaboration with WHO, CDC and AFENET held a Humanitarian Emergency Epidemiology training from 11 to 16 November in Kampala - Uganda, attended by a total of 24 participants from various African countries, namely Mozambique, Zimbabwe, Ethiopia, South Africa, Tanzania, Kenya, and Uganda. The Mozambicans who participated were Judite Monteiro Braga and Paixão Torres who are FELTP graduates and Epidemiologists from the National Institute of Health. This training aimed to Prepare FELTP graduates for possible humanitarian emergencies.

The course included four days of theoretical training on the challenges of data collection, surveillance systems, sanitary hygiene and nutrition during the emergency response phase and followed by two days of practice.

Figure 1, 1st left: Judite in a workgroup discussion
As part of the skills development of FELTP residents, the Mozambique FELTP conduct in October 2019 at National Institute of Health a training focused in fever disease. The training was very useful and a great experience to our residents. We used the official forms from Ministry of Health to investigate the contacts and had several practices, as how to wash hands correctly, infection prevention and control and how to take body temperature of suspect cases safely. The attends were the nine residents and three graduated (2 from National Health Institute and 1 from WHO).
Figure 3. Sinésia Sitão e Fábio Mause practicing hand washing
Figure 4. Beatriz Nhatumbo and Samuel Nuvunga practicing how to take axillary temperature
PAKISTAN FIELD EPIDEMIOLOGY AND LABORATORY TRAINING PROGRAM

Pakistan FELTP graduates 11th Cohort of Advanced FETP:

Pakistan FELTP graduated its 11th cohort of Advanced FETP training. A total of 32 participants successfully completed the training including public sector doctors, veterinarians, and military personnel.

Figure 1 Group photo of graduating fellows of the 11th cohort of Pakistan FELTP

TEPHINET Accreditation:

Pakistan FELTP was awarded accreditation by the TEPHINET Advisory Board/Global Accreditation Body for demonstrating excellence in field epidemiology training in the fourth cycle of TEPHINET FETP Accreditation. The award was presented to the Technical Coordinator FELTP Pakistan during the awards ceremony of the 10th TEPHINET Global Conference in Atlanta, USA.

Figure 2 Pakistan FELTP is accredited for demonstrating excellence in field epidemiology training; Nov 1, 2019
Best picture award at the 10th TEPHINET Global Conference:

Dr. Mohammad Bashir, fellow of the 11th cohort of Pakistan FELTP won the best picture award at the TEPHINET Global Conference. The picture was from his fieldwork during an outbreak investigation of measles in District Skardu, Gilgit-Baltistan, 2018.

Figure 3 Best picture award (2nd Position) at the 10th TEPHINET Global Conference in Atlanta, USA.

Pakistan FELTP graduates 11th cohort of Frontline FETP:

Pakistan FELTP, in collaboration with National Institute of Health and Department of Health, Punjab, graduated its 11th cohort of Frontline FETP, on December 27, 2019, in Lahore, Punjab Province. A total of 25 participants successfully completed the program and were District Surveillance Coordinators from various districts of North and Central Punjab Province.

Figure 4 Graduation of 11th cohort of Frontline FETP, December 22, 2019

Pakistan FELTP Graduates 12th Cohort of Frontline FETP:

Pakistan FELTP in collaboration with National Institute of Health, USAID, John Snow Inc. and Contech International, and Department of Health, Khyber Pakhtunkhwa Province, graduated its 12th cohort of Frontline FETP, on December 24, 2019, in Lahore, Punjab Province. A total of 21 participants successfully completed the program and were District Surveillance Coordinators from various districts of Khyber Pakhtunkhwa Province.

Figure 5 Pakistan FELTP completes Frontline FETP training of 12th Cohort, December 2019
PERU FIELD EPIDEMIOLOGY TRAINING PROGRAM

The National Center of Epidemiology, Prevention and Control of Diseases (CDC) and the National University of San Marcos (UNMSM) have been conducting the training of the seventh cohort of the advanced FETP in Peru with the purpose of training field epidemiologists leading public health interventions for the surveillance, prevention and control of events of importance to the public health of the country.

This advanced cohort consists of 20 professionals, who completed the first cycle of training in December 2019. As part of their training, they fulfill the functions of surveillance and investigation and control of outbreaks, among others.

During the first training cycle, they have played an active role in the investigation and control of outbreaks and epidemics of great importance for public health, such as: Dengue epidemic in the department of Madre de Dios, outbreak of malaria in the department of Tumbes, outbreak of neurological syndrome in Amazonian communities of the department of Loreto, outbreak of Guillain-Barré Syndrome in the department of Lambayeque, and outbreak of Zika in the department of Cajamarca.

Eight cohorts of the Frontline (basic) Field Epidemiology Training Program of Peru were developed

In December, development was completed of a training program in basic epidemiology (Frontline) in the cities of Lima, Ica and La Libertad. In 2019, eight Frontline cohorts have been developed, having also been carried out in the cities of Chiclayo, Bagua, Tarapoto, Lima East and South Lima. In total, 149 Frontline participants have graduated who fulfill the functions of surveillance and response to outbreaks, primarily at the local level.

The development of FETP Frontline began in Peru in the 2017-2018 period with support from TEPHINET, and in 2019, it has continued to be developed by CDC Peru and the different regional governments.

Frontline aims to improve surveillance and outbreak response skills and is primarily aimed at local level personnel.
Melioidosis, also known as Whitmore’s disease, is caused by *Burkholderia pseudomallei*. Its manifestations are varied but not limited to localized infection, pulmonary infection, and sepsis and causes potentially fatal infections. The bacterium is transmitted via direct inoculation, inhalation, or ingestion of contaminated particles or aerosols. In the Philippines, there were only 42 reported confirmed melioidosis cases as of 2018.

There were increasing cases of melioidosis in the province of Isabela in Northern Luzon. Isabela is the second largest province in the Philippines in terms of land area. Farming is the most common livelihood of its residents. The residents would farm or garden without using gloves or boots. Also, drinking and domestic water sources were untreated.

The investigators reviewed surveillance and medical records. They conducted active case finding and interviewed the cases. A suspect case was defined as a previously well resident of the province of Isabela who from May 1-August 9, 2019 developed any of the following: a) Acute pulmonary infection with high fever, headache, chest pain, general muscle soreness, and anorexia OR b) Acute or chronic localized (soft tissue or organ) infection which may or may not include symptoms of fever and muscle aches and whose infection often results in ulcer, nodule, or skin abscess OR c) A disseminated infection with symptoms of fever, weight loss, stomach or chest pain, muscle or joint pain or headache and seizure. A confirmed case is a suspect case positive for *Burkholderia pseudomallei* through culture of blood, sputum, urine, pus, throat swab, or swabs from abscesses found in the body. Twenty cases with eight deaths were reported. Ages ranged from 9 to 74 years old (Median=53). Seven cases exhibited disseminated infection, six manifested pulmonary infection, and three had localized infection.

There was an epidemic of melioidosis in the province of Isabela. Unprotected exposure to soil and untreated water may have increased the risk for infection. It is recommended to use personal protection equipment such as gloves and boots prior to soil exposure. Drinking water should also be treated by boiling or chlorination. Those with signs or symptoms consistent with melioidosis, especially if with comorbidities, should seek early consultation. Lastly, it is recommended that the sub-national epidemiology and surveillance unit should establish a reporting system for melioidosis and monitor for cases in nearby towns and provinces.
REGIONAL FIELD EPIDEMIOLOGY TRAINING PROGRAM FOR VETERINARIANS

1. 25 November – 6 December 2019 – conducted outbreak investigation demonstration workshop of Marek’s disease in poultry in Thailand. The workshop integrated value chain into the investigation steps.

2. 9-13 December 2019 – finalization and presentation of trainees’ assignment on animal health situation analysis. 12 pieces of animal health situation analysis comprises 5 zoonoses, 3 food safety issues and 4 non-zoonoses had been presented by trainees.


**Level and main content:**

Intermediate level

**Number of trainees and origin:**

12 trainees from China (1), Cambodia (1), Indonesia (1), Nepal (1), Philippines (1), Thailand (6) and Vietnam (1)

**Challenges and constraints:**

Number of field mentors
In October, KSA FETP was thrilled to welcome 13 new residents for our 32nd batch (38% female). KSA currently has four residents from Oman, cementing the program’s posture as a public health leader for the Arabian Peninsula. Several staff and residents attended TEPHINET’s biannual conference in Georgia at the end of the month, and three recent FETP graduates gave presentations. In November, three KSA FETP Residents presented at EMRO’s 2nd Scientific Conference of the Easter Mediterranean Acute Respiratory Infection Surveillance Conference in Casablanca, and resident Fatimah AlGhawi’s poster won first place in the poster competition! In the last quarter, KSA FETP residents have worked on a variety of outbreak investigations, including dengue virus, foot and mouth disease, and foodborne disease. We wish all of our FETP colleagues around the world a healthy and prosperous new year!
The Southern Africa Regional Collaborating Centre and Africa CDC came together in Johannesburg, South Africa to develop a strategic plan to facilitate the training of 200 field epidemiologists in Southern Africa. The meeting was held on 12/13th December 2019 at the National Institute for Communicable Diseases, a division of National Health Laboratory Service with representatives from Angola, Namibia, Malawi, Mozambique, South Africa, Zambia and Zimbabwe.

The objectives of the meeting were:

1. To develop an action plan to outline the next steps in achieving the goal of training 200 epidemiologists in the Southern Africa Region
2. To assess the capacity of existing FETPs in the Southern Africa Region
3. To determine the capacity of FETPs to support the training of additional epidemiologists from neighboring countries or regions
4. To develop a concept proposal document and supporting documentation as a resource to present to potential funders.

Each country in attendance presented an overview of their respective FETP program focusing on the program structure, priorities, successes as well as challenges. Common program priorities and challenges were discussed.
Through an open, facilitated discussion, current FETP regional capacity was assessed and an overarching goal of “training of 200 additional epidemiologists at an Advanced FETP level in the Southern African RCC region by 2025” was established.

The set of specific objectives aligned to this goal were to:

- Ensure the minimum standards of the FETP are reached by all FETPs in the region
- Identify sustainable funding mechanisms
- Raise awareness and advocate for the FETP within the region
- Identify mechanisms for retention and equitable distribution of field epidemiologists and staff within the region and within countries
- Identify the mechanisms of sharing regional resources
- Determine the number of field epidemiologists required by each member state to accelerate IHR implementation
- Identify and implement mentorship mechanisms to improve the quality of the FETP graduates
- Ensure gender equity within FETPs in the region

To better facilitate collaborative regional support, a RCC-FETP Task Force was established with a representative from each country in the region. The goal of this task force will be to help drive the established agenda, monitor the progress being made, and to help mobilize resources.

Further development will be communicated through various platforms.
TANZANIA FIELD EPIDEMIOLOGY AND LABORATORY TRAINING PROGRAM

Introduction

Tanzania Field Epidemiology and Laboratory Training Program (FELTP) is anchored within the Ministry of Health, Community Development, Gender, Elderly and Children under the epidemiology unit in the department of disease prevention and control. The program was 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. During the month of October to December 2019, several activities were done including outbreak investigation, surveillance evaluation and course work were conducted by the program. Below is the summary of the activities.

Residents Major field attachment, activities and Didactics

a) Dissertation/ Research Projects- The second-year residents are in the regions collecting data for their dissertations whereas the First-year residents are in the class doing their didactic sessions in Public Health Surveillance, Outbreak Investigation (AE 602) and Research Methodology (AE 603) from Nov 2019 to Jan 2020.

Graduation Ceremony- MUHAS held its 13th Graduation Ceremony on the 7th of December 2019. Sixteen of the Seventeen Cohort X residents graduated (11 Epi Track, 5 Lab Track) and were awarded MSc in Applied Epidemiology and MSc in Epidemiology and Laboratory Management respectively.

Outbreak investigations

Flue like illness- Four Cohort XI and 1 Cohort XII residents joined a team of FELTP Alumni that took part in an investigation after rumours surfaced through social media on cases of both adults and children of high fevers of unknown origin associated with cough, headache and running noses in Dar es Salaam. The reported cases displayed a similar pattern and tested negative for malaria. The objectives of the investigation were to verify the reported cases, to describe sociodemographic characteristics of reported cases with fever, cough and running noses in Dar es Salaam, to describe clinical presentation of reported cases in Dar es Salaam, to assess the cause of the presenting unknown illness in the selected hospitals. To achieve the above objectives the team conducted a retrospective record review and conducted a case count in 6 selected health facilities in Dar es Salaam (Amana RRH, Mwananyamala RRH, Temeke RRH, Bochi Hospital, Sinza Health centre, TMJ Hospital). Blood samples and nasopharyngeal swabs from patients presenting with fever, cough and running noses were also collected and analysed at the National Lab. Findings from the investigation revealed an increase in the number of patients diagnosed with different Upper Respiratory Tract Infections across all Health Facilities. Of the 34 specimens tested for influenza, 38.3% tested positive for different influenza strains. With this information the team confirmed that the “flue like illness” was due to influenza strains circulating within the population (seasonal influenza) and recommended for health education to the public.

Diarrhoeal disease outbreak- TFE LTP alumni/residents joined the MoHCDGEC team and investigated a diarrheal disease outbreak in Lindi and Mtwara Regions. The main objective of the deployed National Team was to identify the source and causative agents of this outbreak in order to mount the long lasting and effective preventive and control measures. Specifically to; (i) mentor the regional and district rapid response teams on regular data cleaning and analysis, updating the line list and timely submission of daily...
reports, (ii) assist on specimen collection, diagnosis and plan for inter-laboratory networking within the region and beyond, (iii) facilitate for availability of medical and other supplies for effective case management and outbreak response in general, and (iv) assist on design of community based operations for outbreak control. The investigation team concluded that the outbreak was due to rotavirus. This outbreak might have been propagated with poor vaccine coverage in remote areas compounded by poor environmental sanitation. Contamination of water sources and poor hygienic practices in the community must have been the facilitating factors for the outbreak and therefore continuous health education, water treatment at the point of use and common collection points are key issues to be well addressed for controlling this outbreak. The team also recommended to intensify case management and surveillance of diarrhoeal diseases.

Health education session in one of the affected areas in Mtama Council -2019.

Scientific Conference Presentations

a) 10th TEPHINET Global Scientific Conference There were 10 accepted abstracts from TFELTP presented at the 10th TEPHINET Global Scientific Conference which was held at Stone Mountain, Georgia, USA as shown below. The presentations were Quality of Malaria Case Management under different transmission settings, Tanzania Mainland, 2019; Magnitude of road traffic injuries and factors associated with mortality, - Ilala Municipal Council, Dar es Salaam, Tanzania, 2016; Geographic Mapping of Cholera Hotspots in Tanzania, 2010-2018: A Tool for Identifying Priority Areas for Intervention; Investigation of Anthrax Outbreak in Human- Songwe Region Tanzania, 2019; Combating the persistent cholera epidemic in the complex nomadic society of Northern Tanzania: The impact of enhanced targeted micro-scale interventions – Ngorongoro District, October 2018; Factors associated with access to basic households’ water, sanitation and hygiene in Ngorongoro cholera epidemic villages-Arusha, 2019; Social, facility, and individual risk factors for poor retention in HIV care at adult HIV care and treatment clinics in Tanga and Kilimanjaro regions, Tanzania; Loss to Follow Up and Associated Factors among Women Enrolled in PMTCT Program in Mbeya Region, Tanzania, 2017; Factors Associated with Asymptomatic Malaria Infection among Primary School Pupils in Buhigwe District, Kigoma, Tanzania; Prevalence and Associated Financial Losses of Fascioliasis in Cattle slaughtered between 2012-2017 at Bukoba Municipal Abattoirs, Kagera Region, Tanzania.
b) 6th Annual Tanzania Health Summit Conference Goodluck Mwanga (Cohort X) presented his study titled Evaluation of performance of copper sulphate and hemocue methods of Haemoglobin estimation among Blood Donors in Dar es Salaam – 2019 at the Tanzania Health Summit in Dodoma.

4. TFELTP 10th Anniversary Celebration and Launching of the AFENET East African Hub
The program held its 10th Anniversary celebrations at the Naura Springs Hotel in Arusha on 29th November 2019. The Guest of Honor at the event was Hon. Dr. Faustine Ndugulile the Hon. Deputy Minister – MoHCDGEC. There were remarks from CDC, AFENET, WHO and the Acting CMO before the Keynote Presentations were made. Certificates of Excellent Performance were presented to 3 Cohort X residents.
Awards were also presented to people who have been very instrumental and resourceful in establishing TFELTP and in running its day to day activities. This was followed by a scientific conference where residents/alumni presented their work in 3 sub themes which were Public Health Surveillance, Outbreak Investigations and Response, HIV/AIDS, Malaria, Tuberculosis and other Opportunistic Infections and Non-Communicable Disease & Neglected Tropical Diseases. The 10th TFELTP Anniversary was followed by the 5th Annual General Meeting of the Tanzania Field and Laboratory Epidemiologists Association.
TUNISIA FIELD EPIDEMIOLOGY TRAINING PROGRAM

Cohort 2 Graduation Ceremony (October 10, 2019)

Under the patronage of H.E. the Minister of Public Health in Tunisia Dr. Sonia Ben Cheickh, the graduation ceremony of the second cohort of Tunisia’s Field Epidemiology Training Program (T-FETP) took place in Tunis on October, 2019. The National Observatory for Emerging and Re-emerging Diseases (ONMNE) held the event on behalf of the Tunisian Ministry of Public Health (MoH). The ceremony was attended by Dr Chokri Hamouda, the director of the primary health care direction, Dr Mahjoub Aouni, the president of the Virtual University of Tunis, the General Director of ONMNE and director of the T-FETP program Dr. Nissaf Ben Alaya, and Executive Director of GHD/EMPHNET Dr. Mohannad Al-Nsour. The ceremony was presided by Dr Nissaf Ben Alaya, and Executive Director of GHD/EMPHNET Dr. Mohannad Al-Nsour. The second cohort comprised 10 physicians and five veterinarians working in regional and central surveillance units at the Ministry of Health and the Ministry of Agriculture. The T-FETP is a one-year program where residents enroll in five modules that focus on surveillance of public health, outbreak investigation, priority diseases and one health approach, complex emergency situations and biosecurity issues, and research methodology. Each module is followed by a field activity supervised by mentors. The second cohort targeted seven governorates. A two days evaluation of portfolios workshop preceded the formal graduation ceremony. During these two days, the cohort 2 participants presented their main field activities in presence of mentors, evaluators and T-FETP director and scientific coordinator.

Cohort 3 Participants Orientation Meeting (December 4, 2019)

In October 2019, a call for application for cohort 3 had been published through circulars that were sent to all MoHP sectors, health directorates, districts, and Institutions of Veterinary Services. Inclusion criteria listed on the announcement based on MoHP requirements. Interested candidates were asked to fill an application. The application consists of open and closed-ended questions. Data were extracted, edited and cleaned. Twenty six (26) completed application forms for cohort 3, out of which, only 21 candidates met the selection criteria were invited to participate to the information meeting that took place at the ONMNE on December 4th 2019.

During this meeting, the T-FETP technical staff introduced the audience to the FETP approach and structure, and oriented them about the T-FETP objectives, rules, reporting requirements, and deliverables. After this meeting, participants took a test on biostatistics, public health surveillance, and field epidemiology and computer skills. Then candidates sat for an interview with the T-FETP managers. The 16 candidates (10 physicians and 6 Veterinarians) who got the highest overall score were officially accepted as the residents of the T-FETP third cohort that will start on January 6th, 2020.

Cohort 3 Mentors Workshop (December 16-18, 2019)

An announcement for the recruitment of mentors for cohort 3 had been published on October 2019, through circulars sent to all MoH regional and central directorates and to institutions of Veterinary Service and through the ONMNE website. Applicants were first invited to a pre-selection meeting at the ONMNE on November 21st 2019. They get a face to face interview regarding their skills, qualifications and experience. For the third cohort, 8 mentors have been selected and invited to the mentor’s workshop.
The T-FETP conducted a 3 days mentors workshop in Tunis between December 16 and 18, 2019 facilitated by the T-FETP scientific coordinator.

The specific objectives of the training workshop were to allow mentors to practice the basic mentoring skills, get familiar with the contents of the T-FETP material, assignments and tools, and learn about the monitoring and assessment tools used for the fieldwork.

The mentors who also introduced to the use of the e-learning platform dedicated to the T-FETP mentoring process. The T-FETP is the first program that integrates the use of technology, as collaboration has been formed between the T-FETP and the Virtual University of Tunisia (VUT) to enhance mentoring by facilitating field interaction between mentors and residents. This workshop was concluded with a meeting between the mentors and residents, to explain to the latter’s their field assignments and their responsibilities during fieldwork projects.

Field Investigations and Fieldwork

Titled, “Research methodology and scientific writing,” the fifth module of T-FETP cohort 2 took place in Tunis from 27 to 31 July 2019. This one-week workshop training in research methodology consisted of all the components required in the research cycle and aimed to improve participant’s research projects and to help them to do quality research in the field. At the end of this workshop, as for cohort 1 (2017/2018), participants of cohort 2 elaborated the protocol of their fifth fieldwork research project, “Retrospective study of the surgical incidence of hydatid cyst in Tunisia, 2013-2017”. It is a national retrospective public hospital-based survey of patients having undergone surgery for hydatidosis from January 2013 to December 2017. The data collection started on November 2019.

Participation in the 10th TEPHINET Global Scientific Conference

The abstract titled, “A case control study of human brucellosis in Douz district. Tunisia, 2018” of Dr Nejib Charaa, Cohort 1 FETP graduate, has been accepted as an oral presentation and pre-selected for an oral presentation award for the General Presentation Sessions at the 10th TEPHINET Global Scientific Conference.

The abstract titled, “Measles outbreak investigation and public health response in Kasserine district, Tunisia, 2019” of Dr Dalel Mhamdi, Cohort 1 FETP graduate, has been accepted for oral presentation at the 10th TEPHINET Global Scientific Conference.
The second cohort IES- Interventional Epidemiological Service (IES) – Ukraine completed non-communicable disease and scientific writing course in October. This update describes the two field activities IES residents participated between October and December 2019.

Picture 1. Cohort 2
1. Minced Meat Identified as Cause of Salmonellosis Outbreak, Chernivtsi Region, Ukraine, October 2019

On October 1, 2019, public health authorities reported 131 people with diarrhea and vomiting after a wedding banquet in Chernivtsi region. The high attack rate prompted an investigation to find the source and mode of transmission of this outbreak and make recommendations to prevent future outbreaks. A case-control study was conducted using available wedding guests (80 out of 250). There were 155/250 (62%) wedding attendees who became sick after the banquet. *Salmonella enteritidis* was isolated from 57/73 (78%) hospitalized patients, 0/3 cooks and from four meat dishes. None of seven cooks reported illness. We interviewed 55 case-patients and 25 control participants. Suspected foods were stuffed cabbage rolls (OR 10.0, CI 1.8-53.9) and pork and beef barbecue (OR 4.5; CI 1.3-15.3). Meat for cabbage rolls was ground four days before stuffed into rolls. Rolls were boiled in water for 13 hours on a wood-fired stove one day before the banquet and stored at room temperature for 24 hours before serving. Onions in the barbecue marinate was minced in the grinder. Minced meat was the probable source of the outbreak. Undercooking and improper storage of cabbage rolls allowed survival and growth of *Salmonella*. Onions were cross-contaminated when minced by grinder. Recommendations for proper food handling were provided to cooks and village residents.
Interviewing wedding attendees.

2. Chicken fillet as a probable cause of salmonellosis outbreak at the wedding, Lviv region, Ukraine, 2019
On November, 2019, public health authorities reported 25 people who attended a wedding in Lviv were hospitalized with diarrhea and vomiting. We initiated an investigation to identify the source and mode of transmission. We conducted a case-control study.

IES residents interviewed 92 of the 132 people attending the wedding, among those 37 additional respondents who reported the symptoms were identified. There were 62 cases and 30 controls. The highest ORs were for Caesar salad with chicken, chicken and pork barbecue, and zucchini rolls with feta. Caesar salad with chicken (OR 6.9; CI 4.9-75.2) and chicken barbecue (OR 2.9; CI 4.7-110.1) remained high after logistic regression.

*S. enteritidis* was isolated from 5/25 (20%) hospitalized patients, 0/18 cooks and from two meat dishes (chicken and pork barbecue).
The main batch of chicken fillet was purchased from a regular supplier. Additional chicken was bought from a retail store and used in the Caesar salad and chicken barbeque. Chicken fillet remained in a dry marinade for two hours prior to cooking in the electric oven. Meat and vegetables were prepared in the same area. Cutting utensils were not labeled. Raw chicken was not available for testing.

Chicken fillet is the most likely cause of the outbreak. There were several hygiene violations in the restaurant and cooks poorly handled the food. This allowed spread and growth of salmonella, and cross contamination of other food production.

Recommendations for proper food handling were provided to restaurant cooks.

Picture 4. Salmonella outbreak at the wedding party in Lviv region
Interviewing wedding attendees.
Picture 3. Salmonella outbreak at the wedding party in Lviv
Interviewing wedding attendees.
Vietnam’s Renovated Field Epidemiology Training Program

Since 2009, Vietnam’s FETP has continuously conducted the advanced, 2-year training program. In addition, various short courses have been conducted throughout the country. To improve FETP training effectiveness and to respond to a reorganization of the health system in Vietnam, in 2018, WHO supported the General Department of Preventive Medicine (GDPM)-MoH to conduct a training needs assessment of preventive medicine staff, focusing on provinces and cities throughout the country. GDPM then collaborated with epidemiologists of the four Regional Institutes of MOH, medical and public Health Universities, WHO and US-CDC to review and revise the FETP short course program based on the results of the training needs assessment and by adapting the Frontline model.

Accordingly, the short course has been renovated to include three one-week workshops and nine weeks of field work, providing basic epidemiology knowledge and skills to surveillance staff at provincial and district preventive health centers. During March and September 2019, two cohorts of renovated FETP short courses have been conducted with 30 graduates from four Regional Institutes and 25 provinces. The improved program will strengthen Vietnam’s surveillance systems and enhance its capability to implement high quality surveillance, detection, and response to public health problems.

*FETP short course 1 – trainees were discussing causes of data quality problem*
Training courses for mentors of FETP short course

In parallel with the piloting of renovated FETP short courses, a four-day mentor training has been developed and implemented since March 2019. The mentoring program then began a critical component to enhance the quality of the Field Epidemiology Training Program (FETP) in Vietnam. Mentoring of field-based projects in epidemiology is one of the most important factors that distinguishes FETP from other types of epidemiology training (such as university-based master’s degrees). The mentors will provide technical support to provincial surveillance staff who are completing field work for the 12-week FETP. Up to December 2019, three cohorts of mentor training have been held, totaling 34 trained mentors nationwide. These trained mentors will effectively contribute to the expansion of renovated FETP short course training in 2020.

Diphtheria response action plan for provinces in the Central Highlands of Vietnam

During August - September 2019, an outbreak of diphtheria occurred in Dak Lak province in the Central Highlands region of Vietnam with four confirmed cases including one death. Diphtheria outbreaks have been re-emerging in the Central Highlands recently, presenting a major public health problem. This outbreak in Dak Lak province was the first reported since 2004, leading local authorities to deploy one FETP short course training fellow to conduct an investigation and report the results during her short course, structured very similar to Frontline. As a result of this investigation, Vietnam FETP has initiated a collaboration with Tay Nguyen Institute of Hygiene and Epidemiology (TIHE), with technical support from US-CDC and WHO, to develop an overall plan to respond to diphtheria in the region.

The action plan began with an After-Action Review (AAR) to highlight good practices, lessons learned, and gaps that need to be improved in future responses to similar events. The results of AAR showed that recurring diphtheria in Dak Lak and other Central Highland provinces in the past decade has been the
result of not only low immunization coverage but also a weak surveillance system that fails to detect cases early enough and to provide a sufficiently robust response to interrupt transmission. Thus, building surveillance capacity at the provincial and district levels is critical for detection, prevention, and control of future outbreaks. To provide long-lasting capacity for surveillance and response, the Central Highlands will receive district-level short-course training, a first since the program was renovated in 2019.

10th TEPHINET Global Scientific Conference

During October 28 – November 1, 2019, the 10th TEPHINET Global Scientific Conference was held in Stone Mountain, Georgia, USA. The annual TEPHINET Conference is attended by public health leaders from ministries of health, national health institutes, NGOs, academic institutions, the World Health Organization and other key players. A Vietnamese delegation of 5 persons attended this year and included a member of the Vietnam FETP Steering Committee, a National FETP Technical Advisor, a FETP two-year fellow, and 2 staff from US CDC.

Besides attending the selected sessions of the conference, the delegates had meetings with several institution and agency representatives, including the Thailand FETP, Australian FETP; CDC’s FETP monitoring and evaluation team, and CDCs Chief of the Epidemiology Workforce Branch. The delegation also met CDC’s HIV laboratory staff to discuss HIV phylogenetic analyses in Vietnam. One delegate attended the Accreditation Workshop and two attended the TEPHINET Program Directors Meeting. As a result, the delegates returned to Vietnam with a much stronger understanding of multiple aspects of FETP, such as the integration of NCD into FETP, advocacy and mobilization of resources for FETP, coordination and collaboration with partners for implementation of FETP, development and maintenance of the network of FETP fellows and partners, monitoring and evaluation, impact of FETP, and experiences for FETP training models.
Vietnam FETP has brought to the Conference an oral presentation by 2-year fellow Hoang Nghia Thang with the title “Japanese Encephalitis vaccination coverage and its associated factors in Phu Thien district, Gia Lai province, Vietnam, 2018”.

Special Session of the Viet Nam Field Epidemiology Training Program (FETP) at the Pasteur Institute of Ho Chi Minh city's 20th Scientific Conference

Pasteur Institute of Ho Chi Minh city is a regional institute with the function of scientific research, professional guidance at the front line, epidemic prevention, training of specialized personnel in microbiology of medicine, immunology, and epidemiology for 20 provinces in the southern region of...
FETP Updates

Vietnam. Every 2 years, the Institute conducts a scientific conference to share knowledge and experience among scientists, policy activists and managers from units inside and outside the health sector and research institutes.

The theme of Pasteur Institute’s Scientific Conference was "Research for public health: The challenge of public health in the era of globalization". Held on December 6, 2019, more than 300 participants traveled from public health agencies, research institutions, and universities from the 20 southern provinces, the whole country, and outside Vietnam.

On this occasion, the Vietnam FETP held a special session on field epidemiology integrated in this scientific conference. The session provided updates on Vietnam FETP in recent years with directions toward the future, highlights on fieldwork products of FETP 2-year’s and FETP short course’s fellows. The session was a place for epidemiologists and health experts to share the experiences on disease surveillance, detection and prevention, and a chance to raise the voice of field epidemiology activists in Vietnam health system.

Vietnam FETP trainers, facilitators and presenters at the FETP special session
Vietnam FETP staff, trainers with national and international partners at the Conference
ZAMBIA FIELD EPIDEMIOLOGY TRAINING PROGRAM

Launch of Cohort 5 Frontline FETP 18-22 November, 2019
During 18-22 November, 2019, Zambia Field Epidemiology Training Program (ZFETP) launched a fifth cohort of frontline field epidemiology training comprised of 20 residents (Figures 1, 2 and 3). Among the 20 participants in cohort 5 are surveillance officers, environmental health officers, public health nurses, and a medical officer. Cohort 5 also has the highest proportion of female participants (80%) of a frontline training so far. Participants are drawn from four districts in Lusaka Province, where the burden of disease is high. Frontline cohort 5 is fully funded by Government of the Republic of Zambia. To date, 71 Ministry of Health staff have completed ZFETP Frontline Training.

Figure 1: Frontline cohort five participants with facilitators

Frontline Cohort Five mentorship
All cohort five residents were assigned at least one mentor to guide them during workshop one field assignments; field assignment one focusses on data quality audits and surveillance. The mentors comprised of ZFETP faculty staff, current advanced FETP residents and graduates of advanced (Figures 4, 5, and 6).
Participation in International Conferences and Meetings
Three advanced cohort two graduates from Zambia FETP participated in the 10th TEPHINET global conference held in Atlanta during 28 October through 1 November 2019. Two of the residents made poster presentations while one gave an oral presentation (Figure 7, 8 and 9).
During the fourth quarter of 2019, Zambia participated in a meeting held in South Africa to discuss training of 200 field epidemiologists in the Southern African region; Zambia FETP committed to contributing to training of the field epidemiologists.

**Current Advanced FETP Cohort Three**

All ten current advanced residents are in field sites offering services, including surveillance and outbreak investigations, and learning at the same time; two of the residents at the National Malaria Elimination Centre participated in a malaria nationwide data audit during the fourth quarter of 2019. Other activities conducted by current advanced FETP residents in the fourth quarter 2019 in Zambia included investigating a cluster of rashes among people living with HIV; preparing for investigating an anthrax outbreak in Western Province; assessment of an outbreak of trypanosomiasis in Eastern Province; and analysis of malaria trends in Southern Province.

**FETP Involvement in Circulating Vaccine Derived Polio (cVDPV2) Outbreak**

Both current and advanced FETP graduates participated in responding to a polio outbreak in the country. The activities included monitoring the supplementary immunisation in the communities using standardised tools; conducting AFP surveillance; and conducting a polio case investigation (Figure 10, 11 and 12).
FETP Alumni Network Meeting
On 10th of October 2019, the ZFETP held its first FETP alumni meeting that convened over 70 graduates to share various experiences, inter alia, outbreak investigation and publications; how skills acquired during training are utilized post-graduation; and career paths. During the meeting, time was allocated to discuss the formation of the Zambia FETP Alumni Network; the alumni network was formed and named the Zambia Field Epidemiology Network (ZAFENET); a constitution is being developed to ensure its operations have clearly defined terms and conditions. The meeting was graced by both the country director of the Centers for Disease Control and Prevention, and Director of the Zambia National Public Health Institute.