A Network to Strengthen Global Health
—— 2015 Progress Report ——
Greetings from the Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET) secretariat and our global network of Field Epidemiology and Laboratory Training Programs, trainees, and graduates.

We have come a long way since our founding in 1997 as a group of 12 programs. TEPHINET was founded in Veyrier-du-Lac, France, as an initiative of the Centers for Disease Control and Prevention (CDC), World Health Organization (WHO), and the Fondation Mérieux. Its original purpose was to serve as a network for exchanging information. While TEPHINET continues to bring public health experts from all over the world together, it is now more robust than ever, having evolved into a network of 62 member programs.

The recent Ebola outbreak in West Africa proved the value of field epidemiology training programs (FETPs) supported by TEPHINET. Expertly trained and highly qualified trainees and graduates from FETPs in African countries and from around the world moved to the front lines to provide assistance to countries affected by Ebola. In fact, the Nigeria FETP served as the backbone of the workforce behind the outbreak in their country. I am proud to tell you that they have managed to control the disease.

Whether fighting Ebola, providing education on road injuries, evaluating the effectiveness of influenza vaccinations, or doing any other number of public health activities, our corps of doctors, veterinarians, environmentalists, epidemiologists, psychologists, sociologists, nurses, microbiologists, social workers, and other professionals all have a common goal: to strengthen global health and to save as many lives as possible.

With that in mind, TEPHINET continues to facilitate projects in various fields of epidemiology, support surveillance of communicable and noncommunicable diseases, and provide an accreditation program for its members. The accreditation program is an opportunity for FETPs to align with common standards that support quality training. In the future, TEPHINET envisions that even more field epidemiologists from FETPs will be deployed to disease outbreak areas.

TEPHINET also continues to host global conferences every two years, alternating with the regional conferences. These conferences are
essential to TEPHINET and allow FETP residents, graduates, mentors, directors, and other public health professionals to share information, develop professional relationships, and share program achievements with each other. TEPHINET also co-sponsors Epidemic Intelligence Service (EIS) International Night with CDC and co-sponsors the European Scientific Conference on Applied Infectious Disease Epidemiology (ESCAIDE) with the European Centre for Disease Control and Prevention (ECDC). Selected FETP trainees and graduates showcase their field studies through posters, photos, and oral presentations.

Collaboration and access to a global network of public health experts are central to TEPHINET. In 2008, TEPHINET became a member of The Task Force for Global Health, a nonprofit organization based in the United States. TEPHINET also is affiliated with local and national organizations, including research institutes, institutes of public health, universities, and other nongovernmental organizations.

The TEPHINET secretariat collaborates with CDC, WHO, and various networks from all over the world. TEPHINET also has established branch offices in Colombia, Guatemala, and Pakistan to support local projects and explore opportunities to assist other countries within the region. The direction and strategy of TEPHINET is guided by the Advisory Board of Directors with liaisons from WHO, CDC, and ECDC. They inform member programs about TEPHINET’s key objectives, project developments, and accomplishments.

We know that we cannot do this alone, so we invite you to learn more about TEPHINET, what we do, and who we serve. We welcome your suggestions and ideas for strengthening our program. On behalf of TEPHINET, we would like to thank you for your support.

Dato Fadzilah Kamaludin, MBBS, DLR, ITM, MMEDPH, IFETP
Chair of the Advisory Board

Dionisio Herrera-Guibert, MD, PhD
TEPHINET Program Director and Advisory Board Member

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Mission and Vision

MISSION
TEPHINET is the only global network of FETPs working to improve health through quality training in applied epidemiology and public health practice. TEPHINET assists FETPs in strengthening international public health capacity by supporting well-qualified professionals in field epidemiology training, service, and networking.

VISION
Improving people’s health through a global network dedicated to quality training in applied epidemiology and public health practice.

TEPHINET is the only global network of FETPs working to improve health through quality training in applied epidemiology and public health practice. Since its inception in 1997, and with the early leadership of the United States Agency for International Development (USAID) and the continued commitment of CDC, TEPHINET has become an alliance of 62 FETPs and field epidemiology and laboratory training programs (FELTPs) engaging residents to strengthen global public health capacity in 88 countries.

FETPs and FELTPs are designed to strengthen public health systems in four specific ways:

1. To increase the number and quality of field epidemiologists in the public health workforce;
2. To develop worldwide capacity for timely detection, investigation of, and response to public health emergencies;
3. To improve capacity to collect public health data through improved disease surveillance systems and use the data collected effectively;
4. To promote the use of evidence-based recommendations in public health decision-making and policies.

TEPHINET manages 40 or more projects in more than 20 countries every year with an annual budget of over $6 million. These projects address key public health topics, such as Ebola, HIV, influenza, polio, and Severe Acute Respiratory Syndrome (SARS), with experts in field epidemiology sourced from around the globe.

Over the past five years, TEPHINET has provided support to FETPs in the Caribbean, Egypt, Morocco, and Pakistan. TEPHINET also has worked with several new and developing FETPs such as Bangladesh, Burma, Cambodia, Cameroon, Pacific insular countries, and West Africa. TEPHINET has supported many existing FETPs in a handful of African countries, in Central Asia, and the Middle East through funded projects, mainly from CDC. TEPHINET supports all FETPs through online networking, information sharing, scientific conferences, and minimum standards for quality training, organizational and project development, and management.

These projects are made possible through partnership with CDC and the generous support of corporate donors.
As of the beginning of 2015, 10,128 residents had graduated from a TEPHINET program.

1,231 trainees were enrolled in TEPHINET programs in 2015.

As of 2015, there were an estimated 319 FETP program staff around the globe, 229 technical supervisors overseeing work of FETP residents, 247 field supervisors, and 275 field placements in countries where residents rotate for field work experience.

85% of FETPs report having access to lab testing when needed and 81% have access to an ethics review board.

83% of FETPs receive some government support for program staff: 64% for resident salaries, 73% for basic program supplies, 76% for outbreak investigator costs, and 80% for lab testing.

FETPs most often receive requests for supporting general or event surveillance, delivering training, or completing a scientific study. They also receive requests for support in collecting data, investigating outbreaks, and analyzing and presenting data.

Other types of support requests include public communications assistance, monitoring and evaluation, presenting at national and international meetings, and international missions with WHO, CDC, and ECDC.

After graduation, approximately 59% of residents work in ministries of health in their own countries, while 19% work in epidemiology outside ministries of health.
Map of Programs

African Region
- Angola
- Burkina Faso
- Ethiopia
- Ghana
- Indian Ocean
  - (Madagascar, Mauritius, Réunion, Seychelles)
- Kenya
- Mozambique
- Namibia
- Nigeria
- Rwanda
- South Africa
- Tanzania
- Uganda
- Zimbabwe

Americas Region
- Argentina
- Brazil
- Canada
- Central America (Belize, Costa Rica, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Panama)
- Colombia
- Mexico
- Paraguay
- Peru
- United States

European Region
- Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Turkmenistan)
- European Programme for Intervention Epidemiology Training (EPIET)
- and the European Programme for Public Health Microbiology Training (EUPHEM) (European Union)
- France
- Georgia
- Germany
- Italy
- Spain
- Turkey
- United Kingdom

FETP
- (Field Epidemiology Training Program)
  - Two-year program

FELTP
- (Field Epidemiology and Laboratory Training Program)
  - Two-year program

AFET
- (Applied Field Epidemiology Training)
  - One-year program or less
TEPHINET’s Network of Epidemiologists

STEP in to Fight Ebola

A country on the brink of a public health crisis in 2000, Uganda was experiencing what was then the world’s worst recorded Ebola outbreak. By 2014, Ebola was sweeping its way through countries in West Africa. Only this time, it was on a much larger scale.

“In Uganda all those years ago, there were maybe 500 Ebola cases,” recalls Biagio Pedalino, a resident advisor with a TEPHINET FETP. “In this most recent outbreak in West Africa, there have been more than 20,000 cases. In an outbreak like this, human resources in the health system get depleted very quickly, and the whole country can get destabilized.”

Fortunately, Surveillance Training for Ebola Preparedness (STEP), a combined effort of many public health agencies in Africa and abroad, was launched to strengthen public health capacity to respond to the disease. With TEPHINET providing expert trainers and mentors from their global pool of senior epidemiologists, and CDC providing training curriculum, STEP coordinates hands-on training sessions for public health practitioners in disease surveillance and outbreak response protocols. More than 150 FETP graduates applied to be mentors through the TEPHINET network as a part of this project.

“Trainees can apply the principles they learn as part of STEP to other infectious diseases. The trainings will have a much larger and longer-term positive impact on disease surveillance and control in their own countries.”

—Biagio Pedalino
Resident Advisor, TEPHINET FETP

Started in Ivory Coast in early 2015, STEP targets countries deemed to be at risk for an Ebola outbreak. STEP has also been rolled out...
in Guinea-Bissau, Mali, and Senegal, training more than 200 public health professionals to date.

“STEP takes what these epidemiologists already do in their everyday jobs—surveillance, outbreak investigation, and data analysis—and fine tunes it to deal specifically with Ebola,” explains Pedalino, who served as a trainer in three countries.

STEP focuses on ministry of health epidemiology personnel at the district and regional levels who are often the focal points for disease surveillance, data compilation and analysis, outbreak alerts, and eventual response. Trainees participate in a one-week teaching session and three weeks of fieldwork, while also receiving critical mentorship from senior epidemiologists. STEP trainers discuss elements of outbreak investigation and contact tracing.

“When someone becomes symptomatic, you have to find everyone they have had contact with since the onset of their symptoms and follow them for 21 days,” says Pedalino. “The goal is to interrupt the chain of transmission, and that takes very efficient contact tracing.”

STEP trainees also learn to use a mobile data collection and communication application for daily reporting updates.

“In controlling Ebola, time is everything,” says Pedalino. “Our ability to quickly share information allows us to respond much more rapidly, so that we can contain this deadly disease.”

Public health practitioners in Senegal recently graduated from a STEP program and are now equipped to recognize and respond to an Ebola outbreak.
Feature: Innovative Surveillance

In the midst of a disease outbreak, speed and efficiency are everything. As a result of interests by TEPHINET donors and partners, innovative surveillance, including the use of nontraditional sources of information such as social and mass media, has been a top priority for TEPHINET over the last two years. Evidence suggests that these information sources can often alert public health officials to possible disease outbreaks faster than traditional surveillance methods. In 2014, TEPHINET developed an online training program to teach field epidemiologists how to leverage technology and nontraditional sources to learn about disease outbreaks.

GOAL!
Technology Bolsters Surveillance at 2014 World Cup

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“Our goal is to bolster the ability of ministries of health to quickly detect and respond to potential disease outbreaks,” says Jonas Brant, TEPHINET senior advising consultant. “Technology is a growing communications tool that, in this day and age, people often turn to first to both report and gather information.”

The move to using more technology and nontraditional sources also included the development of an online surveillance information-sharing platform to link field epidemiologists to nontraditional sources of information that can help validate information about disease outbreaks and improve understanding of on-the-ground situations. TEPHINET also worked to develop new applications and protocols for conducting surveillance at large gatherings of people where disease can spread quickly.

In 2014, epidemiologists from the FETP in Brazil partnered with Brazil’s Ministry of Health to test a customized version of Epi Info, an informatics tool developed by CDC, coupled with a text messaging application for rapid assessment of disease outbreaks. Their ultimate goal was to use Epi Info with text messaging at the 2014 World Cup in Brazil.

Once Epi Info was developed, the next step was to test it on tablets in four large pilot projects—a religious pilgrimage in Aparecida, Carnival in Fortaleza, a parade in São Paulo, and a large hospital in Manaus. Epidemiologists who were specially trained in Epi Info gathered data on public health behaviors at each event. At Carnival and the parade, trainees used the technology at medical posts to track injuries and illnesses of event attendees.

In Manaus, trainees placed tablets in a hospital to see how Epi Info could be integrated into more routine health care.

In June and July, throughout cities where the World Cup was being played, TEPHINET fellows were dispersed to support training, data analysis, and field investigation. Fellows also helped to adapt the standard Epi Info dashboard for the needs of the World Cup. During the surveillance period at the World Cup, more than 8,000 people received medical attention and were registered in Epi Info.

“The dashboards and real-time data synchronization were useful in detecting clusters of illnesses so that we could initiate an investigation,” says Brant. “This strategy allowed health authorities to know the status of health concerns in real time.”

While far-reaching in scope, this project is just one example of the Skoll Global Threats Fund’s support of TEPHINET in promoting innovative surveillance and digital disease detection.

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“TEPHINET helps to make connections with different partners who develop technology and adapt it to each country’s needs.”

—Jonas Brant, TEPHINET Consultant
EDUCATION, PREVENTION, TREATMENT:

TEPHINET Tackles Hepatitis in Pakistan

Clockwise from left: Awareness sessions in the female community are an important tactic for hepatitis education; Participants attend the Pakistan hepatitis control planning meeting in Abu Dhabi in August 2014; A hepatitis screening camp at the Punjab Health Department draws a crowd; The World Hepatitis Walk raises awareness of hepatitis.
In Pakistan, more than 12 million people are living with hepatitis B virus (HBV) or hepatitis C virus (HCV). Treating these diseases is a challenge in itself, but an even greater issue is that most people who have these diseases do not know that they are infected.

“Most of the people infected with HBV or HCV are not aware of their status, which delays diagnosis and treatment,” says Hassan Mahmood, medical officer for viral hepatitis and a consultant for TEPHINET. “Delayed diagnosis of hepatitis can lead to cirrhosis, decompensated chronic liver disease, and hepatocellular carcinoma. These diseases ultimately increase the disease burden for a low-resource country like Pakistan.”

With that in mind, for the last several years, the Pakistan Medical Research Council (PMRC), TEPHINET, and CDC Division of Viral Hepatitis (CDC DVH) have collaborated to prevent and control viral hepatitis in Pakistan. The collaboration has led to the implementation of various projects. First, with funding from TEPHINET and CDC DVH, the PMRC and CDC evaluated the Sindh Hepatitis Prevention and Control Program.

“Because Sindh is the second-largest province in Pakistan and has a huge prevalence of hepatitis, we knew we could learn a lot by identifying gaps and achievements in their program so that we could make recommendations for other programs moving forward,” says Mahmood.

Next, the PMRC implemented an infection control and injection safety campaign in 25 districts in Pakistan, where residents are at high risk for hepatitis, to educate healthcare workers about the dangers of reusing syringes, practicing poor infection control, and improperly screening blood transfusions. They also delivered injection-safety equipment to public health facilities, developed and printed guidelines and materials for healthcare staff, and trained healthcare staff on infection control, sterilization, and hospital waste management.

The Pakistan federal government also formed a national Technical Advisory Group (TAG), comprising national and international experts on the prevention and control of liver disease, to advise provinces. With the leadership of TAG, sofosbuvir, an oral antiviral agent, was registered in Pakistan, making it more affordable for low-income HCV patients. TAG also is working toward developing treatment guidelines for new drug regimens, implementing a birth dose of the HBV vaccine, and developing a national hepatitis control strategy.

“People are getting more familiar with the onset and complications of hepatitis,” says Mahmood. “As a result of different project activities, the government of Pakistan, policymakers, healthcare workers, the media, and the community have become more sensitized about the nature and transmission of the disease.”

Pakistan is one of the key countries for TEPHINET activities in the Eastern Mediterranean Region. The FETP is essential for making progress in polio eradication, outbreak investigation, and surveillance. The FETP is also helping to prevent the spread of hepatitis.
Feature: Surveillance/Flu

The IT Factor—Technology Aids in the Fight Against Influenza in Central America

In the fight against influenza, one of the most valuable tools is information—how you obtain it, how you save it, and what you do with it. With that in mind, TEPHINET, in collaboration with CDC’s Central America Regional Office, launched the FLU IT project.

FLU IT uses information technologies to improve the capabilities of data management concerning seasonal influenza and other respiratory viruses in Central American countries.

Respiratory diseases such as influenza represent a high burden to health systems in Central America. Most countries in the region lack the infrastructure to support flu vaccine programs. As a result, they have not made significant investments in this prevention strategy. Additionally, quality data and electronic immunization records are lacking, which makes it difficult to evaluate the effectiveness of the flu vaccine.

“Coverage rates of the influenza vaccine in vulnerable populations—children under 5 years old, pregnant women, patients with chronic diseases, the elderly, and health workers—are low,” says Daniel Otzoy, Project Technical Coordinator/Consultant for the FLU-IT project. “Also, registries to evaluate vaccine effectiveness are poor. Finally, public health systems in Central America are weak, and influenza doesn’t represent a priority in public health policies in many countries.”

Otzoy and his colleagues helped implement stronger IT practices in Costa Rica and Panama to support data analysis through data mining methodologies, information production, and knowledge management. These practices help generate evidence for supporting decision makers in developing or improving public policies about seasonal influenza.

“The FLU IT project is all about capacity building through epidemiological surveillance, the use of information systems, and improved laboratory diagnostic capabilities.”

– Dionisio Herrera-Guibert, MD, PhD
Program Director for TEPHINET

“Improving IT practices takes time to show visible results, so we recommend continued support of these efforts and investment complementary to other activities like surveillance, laboratory technical support, and evidence generation through research and evaluation,” says Otzoy.
Feature: Noncommunicable Diseases

HEAD SAFE. HELMET ON.

NCD Program in Cambodia Aims to Increase Passenger Helmet-Wearing Rates

According to CDC, noncommunicable diseases (NCDs), such as cancer, heart disease, diabetes, chronic respiratory disease, and injury are responsible for more than 75 percent of deaths worldwide. The toll is substantially worse in countries with weak health systems.

FETPs regularly conduct surveillance on NCDs and develop and evaluate NCD interventions. Through TEPHINET, eight countries participated in NCD mini projects awarded to residents this past year. “Head Safe. Helmet On.” is a program in Cambodia focused on implementing road traffic injury surveillance and increasing helmet use. In Cambodia, road traffic crashes, including motorcycle crashes, are a significant public health concern. In 2013, motorcycle crashes accounted for 14,226 injuries and more than 2,000 fatalities.

With funding from USAID, FIA Foundation, UPS Foundation, CDC, and AIP Foundation, the project works to prevent road traffic fatalities and injuries through education, enforcement of helmet laws, and provision of helmets. Through its monitoring activities, TEPHINET has determined that the project interventions are working. In the project’s 18 target schools, more students used helmets when compared to students in schools who did not receive helmets and road safety education. Additionally, as a result of the project’s advocacy activities, the Cambodian government implemented a passenger helmet law, mandating that all motorcycle riders, including passengers and children, wear helmets on motorcycles.

More children in Cambodia are wearing helmets thanks to the “Head Safe. Helmet On.” initiative supported by TEPHINET.
FETP Accreditation

Accreditation is an opportunity for programs to align with common standards that support quality training and increased recognition of the value of FETPs to support country public health priorities.

The standard and process for accreditation were developed over a five-year period with input from the global network of programs and partners. The standards are grouped into four main domains:

- Management, infrastructure, and operations
- Integration with public health service and value
- Staffing and supervision
- Selection and training of residents

There are four basic phases to the accreditation process that may take up to a year to complete. They include:

- Self-assessment
- Accreditation application
- Site visit by external review team
- GAB review/decision

Learn more about the accreditation process and how to apply at http://library.tephinet.org/groups/accreditation-fetps
Bringing People Together: TEPHINET Conferences and Workshops

Since the first global TEPHINET Scientific Conference was held in Canada in 2000, TEPHINET has co-sponsored a global conference every two years in various countries, including Brazil, Jordan, Malaysia, South Africa, and Spain. Global scientific conferences connect FETP residents, graduates, mentors, directors, and other public health professionals with one another to share information, develop professional relationships, and highlight their program achievements.

The sharing of scientific information has increased significantly over the years. The first global conference had a few hundred abstracts submitted for presentation, while the most recent global conference had more than 800 abstracts submitted from all regions of the world. The increase in the number of abstracts submitted reflects the increase in the number of programs, but also the number of residents with abstracts approved by their programs to be submitted.

Typically, 10-15 workshops precede TEPHINET global scientific conferences. The host country FETP, CDC, and WHO often sponsor a workshop along with other health organizations that collaborate with the network and sponsor residents to attend.

Regional conferences, which provide opportunities for FETP members to network on more local levels and share their experiences with colleagues from neighboring countries, are held during odd years in each of the six regions. They often focus on issues that are endemic to that region. Examples of workshops offered at conferences include: laboratory biosafety, scientific writing, intercountry surveillance system design, grant writing, developing online surveys, ethics, zoonotic diseases, noncommunicable diseases, and mobile-based surveillance for large gatherings.

Additionally, Epidemic Intelligence Service (EIS) International Night occurs every year during the CDC-EIS Conference. On this night, selected FETP trainees and graduates showcase their field studies through poster and oral presentations. Co-sponsored by TEPHINET and CDC, International Night is an EIS tradition that offers a valuable opportunity to incorporate international perspectives into a local conference. Every year, TEPHINET also co-sponsors the European Scientific Conference on Applied Infectious Disease Epidemiology (ESCAIDE) with the ECDC and participation from the European FETPs.

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The TEPHINET advisory board of directors includes representatives from the six regions of the world; liaisons from WHO, CDC, and ECDC; and the director and chair of TEPHINET. They provide guidance on TEPHINET activities and inform program members about key objectives and accomplishments.

Dato Fadzilah Kamaludin, MBBS, DLR, ITM, MMEDPH, IFETP  
Chair

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