

COMMENTARY

THE GLOBAL FIELD EPIDEMIOLOGY ROADMAP: ENHANCING GLOBAL HEALTH SECURITY BY ACCELERATING THE DEVELOPMENT OF FIELD EPIDEMIOLOGY CAPACITY WORLDWIDE

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THE COVID-19 PANDEMIC reminds us yet again of the critical importance of an effective field epidemiology workforce to safeguard and promote the health of countries' citizens, prevent the spread of infectious disease, and strengthen global health security. For the past 4 decades, field epidemiology training programs (FETPs)^{1,2} have worked to address precisely this need in countries throughout the world. FETPs are service-based, hands-on programs that emphasize learning by doing. They are designed to develop skilled and experienced field epidemiologists who can detect, investigate, and control disease outbreaks; conduct surveillance; analyze epidemiological data; measure the impact of interventions; and carry out applied epidemiological studies. Today, more than 85 FETPs are providing invaluable field epidemiology services to ministries

of health in more than 165 countries and territories,³ and, as cases surge, the COVID-19 pandemic offers myriad examples of impactful contributions of FETP trainees and graduates to the response around the globe.⁴

Since the FETP initiative began in 1980 as a strategy to strengthen the global public health workforce, several challenges and opportunities have emerged.⁵ The growth in the number and kinds^{1,2} of FETPs has created challenges related to assuring quality, sustainability, and shared learning. For example, insufficient funding has been a barrier to sustainability and institutionalization of FETPs in host country ministries of health and national public health institutes.⁶ Although the US Centers for Disease Control and Prevention (CDC) remains the largest single investor and technical assistance provider to FETPs, many

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programs now receive substantial technical and financial support from the European Union as well as individual country governments. In the face of increasing threats to global health security, field epidemiology capacity development must be accelerated and better integrated with related World Health Organization (WHO) programs and priorities. New communications tools, information technologies, and data science capacities offer rich opportunities that should be seized to enhance current approaches to disease detection, investigation, and control. To accomplish these and other goals, a broader partnership-driven approach is needed to lead global FETP efforts.

To begin to address these challenges and opportunities, senior leaders in field epidemiology and partners from across the globe met at the Rockefeller Foundation Bellagio Center in Bellagio, Italy, in June 2018 and again at WHO headquarters in Geneva, Switzerland, in February 2019. These meetings had 2 goals: to develop an action plan to enhance and accelerate the development of global field epidemiology capacity and to better integrate field epidemiology capacity development efforts with related global health initiatives of WHO and allied organizations. Reports of the 2 meetings, including lists of participants and detailed action steps, are available online.^{7,8}

Recognizing the breadth and global reach of FETP, the group coined the term “FETP Enterprise” to represent the totality of the leaders, funders, implementing partners, government agencies, and other stakeholders engaged in this effort, along with associated workforce competency targets, standards, agreements, technologies, etc. that undergird this work. They established a clear vision for the FETP Enterprise: “To ensure that every country has the applied epidemiology capacities needed to protect and promote the health of its own population and to collaborate with others to promote global health.”⁷ The essential functions of the FETP Enterprise were identified as providing FETP fellows with real-world experience in applied epidemiology, mobilizing fellows for response to epidemics and other health emergencies, providing quality assurance, and institutionalizing FETPs into country public health systems.

As part of the plan for enhancing and accelerating the development of field epidemiology capacity worldwide, 8 recommendations were developed that comprise the *Global Field Epidemiology Roadmap*⁸:

1. A strategic leadership group (SLG) of senior global health leaders, partners, and stakeholders should be established to be a driving force for progress for the FETP Enterprise and to monitor the need for change and enhancement.
2. The SLG should continually monitor and assure needed improvements and changes in the FETP Enterprise, particularly the expansion and modernization of FETP core competencies and curricula.
3. The SLG should promote the development of applied epidemiology workforce targets at each level of exper-

tise to support a workforce capable of meeting country-specific public health and global health security needs.

4. The SLG should assure the development of a cadre of specially trained FETP fellows and alumni who would be available for rapid response to health emergencies, including major outbreaks of infectious disease.
5. The SLG should work with country partners to accelerate FETP institutionalization—programmatically, technically, and financially—into country health systems.
6. The SLG should continue, strengthen, and expand efforts to assure and improve the quality of FETPs, including supporting network-level elements of the FETP Enterprise.
7. The SLG should promote and work to assure sustainable funding for all elements of the global FETP enterprise.
8. The SLG should foster enhanced alignment and integration of the FETP Enterprise with key global health programs and priorities, including global health security, One Health, and universal health coverage.

The first recommendation was especially important: to establish the SLG to monitor progress, ensure accountability, and be a driving force for progress for the FETP Enterprise. The permanent SLG cochair is the WHO Assistant Director-General for Emergencies Response and the US CDC Director of the Center for Global Health. The US CDC and WHO officially launched the Global Field Epidemiology Roadmap at the 10th Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET) Global Scientific Conference in October 2019.

Although progress in constituting the SLG was necessarily slowed by the immediate demands of the global pandemic response, a broad array of global health leaders enthusiastically agreed to become members of the SLG. At this writing, the SLG comprises highly experienced directors of field epidemiology programs as well as senior leaders from WHO; the US CDC; the European Centre for Disease Prevention and Control; the Africa Centres for Disease Control and Prevention; the Food and Agriculture Organization of the United Nations; TEPHINET; regional field epidemiology support organizations in Africa, the eastern Mediterranean, and Asia; and the Bill & Melinda Gates Foundation. The first full meeting of the SLG was held April 13, 2021.

Since the beginning of the COVID-19 pandemic, FETP trainees and alumni have been at the center of the response in every country served by such a program.⁹ Globally, FETPs have been engaged in each of the 10 pillars of public health emergency preparedness and response identified by WHO.¹⁰ They have served on and led rapid response teams and trained health workers and contact tracers. They have investigated suspected and confirmed cases, analyzed vast amounts of surveillance data, and created new dashboards and other ways to visualize data. At airports and other

points of entry, they have screened countless travelers and helped to set up and manage quarantine facilities. In emergency operations centers across the world, they have helped to respond to hotline callers reporting COVID-19 cases or seeking information and to disseminate information about COVID-19 prevention within their communities.

The WHO International Health Regulations 2005 (IHR)¹¹ calls for countries to establish core competencies for surveillance and response to achieve global health security. The Joint External Evaluation tool,¹² part of the IHR Monitoring and Evaluation Framework, includes having FETP in place as a key indicator for “functional public health surveillance and response at all levels of the health system and the effective implementation of the IHR.” In the face of the most devastating pandemic since 1918, it is essential that all countries accelerate their efforts to ensure a robust public health workforce that can prevent, detect, and quickly respond to public health threats like COVID-19. The Global Field Epidemiology Roadmap provides a systematic plan for achieving this goal, a plan that we encourage the global public health community to review, endorse, and identify ways to support without delay.

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