

## Public Health Workforce Strengthening in the Eastern Mediterranean: EMPHNET's Strategic Contributions

### EMR context and workforce needs

Achieving and sustaining progress towards global health goals such as universal health coverage and health security requires a healthcare workforce that can deliver the full range of essential public health functions (EPHFs). Healthcare workforce development has typically focused on licensed occupations that are well defined under internationally recognized classifications, such as nurses, pharmacists and physicians. The same focus is required to systematically measure and build the diverse range of occupations and specialties that constitute the public health and emergency workforce and to identify gaps between their education and development, the needs of the populations they serve, and the organizations that employ them<sup>1</sup>.

The Eastern Mediterranean Region (EMR) involves countries that vary in economic growth and development level, which significantly affects the health status of the populations in these countries<sup>2</sup>. The EMR is dealing with many public health challenges, including endemic diseases, recurring outbreaks, and the emergence of novel pathogens. The region has continuously fought against a portfolio of public health threats and epidemics. These challenges are further compounded by weak health systems, political instability, ongoing conflicts,

inadequate coordination mechanisms, and shortfalls in the number of competent workforces. The recent Global Health Security (GHS) Index findings revealed that no country is fully prepared for epidemics or pandemics. All countries within the EMR scored less than 50 out of 100, with Iraq, Somalia, and Yemen marked as the least prepared<sup>3</sup>. In addition, the region suffers from natural disasters, such as the recent earthquake and floods that have struck Morocco, Pakistan, and Afghanistan<sup>4</sup>, causing tremendous impact including displacement, infrastructure damage, and loss of life. The EMR countries' need to strengthen their public health workforce in preparing for and responding to disease outbreaks and every possible public health threat is very obvious.

Eastern Mediterranean Public Health Network (EMPHNET)'s mission which is clearly stated to prevent and control diseases by supporting the public health workforce, conducting operational research, strengthening public health programs, and promoting knowledge exchange and networking while working with partners and collaborators, aims to address the pressing gaps within the public health workforce across the EMR and beyond.

The Workforce Capacity (WFC) unit which works under the umbrella of the

---

<sup>1</sup> World Health Organization, *National workforce capacity to implement the essential public health functions including a focus on emergency preparedness and response: roadmap for aligning WHO and partner contributions*, 2022.

<sup>2</sup> Al Nsour, *The Eastern Mediterranean Public Health Network: A Resource for Improving Public Health in the Eastern Mediterranean Region*, 2019.

<sup>3</sup> Nuclear Threat Initiative (NTI) et al., *Global Health Security Index: 2021 Methodology*, 2021.

<sup>4</sup> UNICEF, *Flash floods in Afghanistan posing urgent and persistent threat to children*, 2024.

Center of Excellence for Applied Epidemiology (CEAE) at EMPHNET is mainly working to enhance public health workforce capacities and competencies by planning, designing, implementing, and evaluating various training courses and programs to address identified needs of public health professionals. These training courses and programs are customized to country and regional contexts and are designed to build practice-based knowledge in applied epidemiology, emergency preparedness and response, immunization programs, interpersonal communication, bio-risk management, public health during mass gatherings, one health, climate change, research, and more. To accommodate trainee preferences, EMPHNET offers learning in a variety of formats: face-to-face, online, and blended.

The role of the WFC unit focuses on FETPs, it creates learning opportunities for existing programs while leading support for the establishment of new ones of various modalities. WFC unit also integrate fundamental concepts of field epidemiology, and more broadly applied epidemiology, into training curricula that essentially target professionals from the non-FETP field to extend this essential knowledge to as many public health workers as possible.

### **Bridging Workforce Gaps in the EMR**

The health workforce is one of the key building blocks of health system strengthening. Properly trained health workers, including doctors, nurses, and community health workers, are essential for effective health care delivery. By 2030, the global health workforce is expected to face significant shortages, particularly in low-

and lower-middle-income countries, with a shortfall close to 10 million.<sup>5</sup>

Public health systems in the EMR face chronic shortages of qualified professionals, particularly in specialized areas such as epidemiology, emergency preparedness, and disease surveillance. EMPHNET's unique position as a regional network allows it to:

- **Identify workforce needs:** Through robust training needs assessments (TNAs), EMPHNET pinpoints specific skill gaps and workforce deficiencies within the countries, ensuring that interventions are targeted and impactful.
- **Tailor programs to regional contexts:** EMPHNET designs training programs and resources customized to the specific epidemiological, cultural, and resource-based contexts of EMR countries.
- **Build cross-sector collaboration:** EMPHNET leverages partnerships with ministries of health, academic institutions, international organizations, and other stakeholders to ensure that public health workforce development is aligned with both local and global priorities.

### **Developing the public health workforce: EMPHNET working areas**

#### ***Capacity building***

Investing in health workforce development is a critical factor in strengthening health systems and advancing progress toward achieving the Sustainable Development Goals (SDGs). A stronger public health workforce enhances health system performance by improving service delivery. EMPHNET's Center of Excellence for Applied Epidemiology is dedicated to building capacity in population

<sup>5</sup> World Bank, *Bridging the Gap: Strengthening Health Systems through a Resilient and Equitable Health Workforce in Africa*, 2024.

health, applied epidemiology, emergency preparedness and other priority areas.

EMPHNET's WFC unit designs and implements tailored training programs to meet the specific needs of public health professionals. Its programs focus on building practical skills in various public health areas.

The WFC offers training in multiple formats, including face-to-face, online, and blended learning. Leveraging EMPHNET's network of FETPs, EMPHNET creates opportunities for both existing and new programs while integrating essential epidemiological knowledge into curricula targeting broader public health professionals beyond FETPs.

EMPHNET collaborates with regional experts to design, develop and customize training and educational materials for public health professionals in different public health areas, including case studies, online curricula, and specialized courses. These resources are designed to enhance the training experience and ensure that public health workforce especially FETP graduates are well-prepared for public health challenges. Policy makers and managers are engaged in capacity building to ensure sustainable outcomes.

### **Field Epidemiology Training Programs (FETPs)**

The purpose of the FETPs is to increase the epidemiologic capacity of a country's public health workforce to detect and respond to health threats and develop internal expertise in area of field epidemiology.<sup>6</sup> As service competency-based training programs implemented under the supervision of qualified mentors/supervisors, these programs focus on the practice of epidemiology in real time and

real place. These programs are focused on building workforce capacity to contribute to strengthening their country's health system to detect, notify, report, and respond to events that threaten the national and international health. Moreover, FETP training plays a pivotal role in enhancing the response to unexpected health events, thereby helping to contain and prevent their spread. Integrating applied epidemiology into a range of services is essential, as skilled field epidemiologists are the backbone of a resilient and effective public health system.

EMPHNET has been playing an active role in supporting the FETPs across the EMR in their efforts to combat public health threats. EMPHNET is committed to supporting FETPs in EMR countries, as these programs are essential for ensuring core epidemiologic competencies.

EMPHNET's efforts in establishing new and supporting existing FETPs across the EMR focus on enhancing countries' public health capacity and national systems. EMPHNET collaborates with ministries of health to institutionalize FETPs within national health systems, ensuring sustainability and alignment with global standards. It provides tailored technical support in curriculum development, accreditation, and program evaluation while enhancing mentorship, fieldwork opportunities, and continuous learning. This comprehensive approach helps strengthen health systems through skilled epidemiologists prepared to tackle emerging health challenges.

Over 15 years, since EMPHNET establishment in 2009, the FETP has expanded in the region and reached more than 15 countries in the region and beyond. More than 35 FETP tiers are implemented in the countries with more than 200 cohorts and 3,000 residents and

---

<sup>6</sup> White et al., *Partnerships in international applied epidemiology training and service*, 2001.

graduates. These programs have produced around 100 peer-reviewed articles and 46 case studies, while the organization has hosted eight regional conferences, contributing over 1,000 abstracts, thus strengthening the regional public health capacity.

**The WFC provides support to the countries in the following activities:**

- **Training Need Assessment (TNA):** The WFC develops TNA tools to assess public health competencies specially competencies related FETPs, FETP TNA tool was designed to identify the areas and topics of applied epidemiology required for the country who will start new FETP, add new level or aim to update and enhance its curriculum to strengthen ongoing disease surveillance, outbreak response, and other public health program management. The assessment forms are automated and distributed to MoH workers and stakeholders responsible for disease surveillance and reporting. In the recent years, the WFC conducted TNA for Lebanon, KSA, Libya, Bangladesh, Oman and Qatar.
- **Customizing and updating the training curriculum to fit the country's context and needs:** The WFC customizes and regularly updates its training programs to align with the specific needs and contexts of the countries it supports. This involves tailoring the curriculum to reflect local public health priorities, epidemiological challenges, and health system capacities. For instance, training modules may incorporate country-specific diseases, unique health crises, or local cultural considerations. The following versions of FETP has been developed or updated:
  - o **Public Health Empowerment Program- Surveillance for Polio Officers (PHEP-SPO):** This three-month program equips surveillance and EPI officers with the skills to strengthen polio surveillance

systems, supporting eradication efforts through early detection and response to cases, especially in high-risk areas. This program has been implemented in Afghanistan, Lebanon and Sudan.

- o **PHEP- WASH:** Focuses on building capacity in Water, Sanitation, and Hygiene (WASH) to prevent the spread of diseases, particularly in vulnerable communities where access to clean water and sanitation is limited. It was translated into Arabic and implemented in Yemen.

- o **PHEP-One Health:** This three-month program integrates the interconnectedness of human, animal, and environmental health. It prepares professionals to respond to zoonotic diseases and public health threats that arise from animal-human interactions, environmental changes, and other factors. The program started recently with Egypt, Lebanon and Bangladesh FETPs.

- o **PHEP-COVID-19:** This targeted program was developed in response to the COVID-19 pandemic. It trains public health professionals on surveillance, contact tracing, testing, and response strategies to manage and control the spread of COVID-19. This training was implemented in Egypt, Iraq, Lebanon and Tunisia.

- o **Intermediate FETP – One Health:** This intermediate-level program provides training in One Health approaches, enabling participants to apply epidemiological skills to issues that span human, animal, and environmental health. It aims to strengthen multisectoral collaboration for better disease prevention and control. It will be implemented in Egypt.

**FETP sustainability assessment and plans**

Sustainability of public health programs is of much importance since it helps in maintaining and improving existing health system structures.<sup>7</sup> Recognizing FETPs as valuable for addressing national health priorities has helped to institutionalize and sustain the programs. Many programs have been operating independently for years and have become national resources for disease surveillance, public health emergency response, and priority public health disease prevention and control programs.<sup>8</sup>

EMPHNET is committed to support the sustainability of FETPs by providing continuous support in various capacities related to sustainability planning, assessment and operationalization. This includes ensuring the long-term viability of FETPs through strategic planning, capacity building, and maintaining robust training and operational frameworks. By sustaining FETPs, the unit contributes to the ongoing development of skilled epidemiologists who can effectively respond to public health challenges in the region. In the EMR, EMPHNET has played a pivotal role in supporting FETP sustainability. EMPHNET, in collaboration with the Centers for Disease Control and Prevention (CDC), has spearheaded initiatives such as conducting workshops and developing sustainability frameworks tailored to EMR-specific challenges. In March 2022, EMPHNET hosted a regional workshop focused on developing national sustainability plans for FETPs, providing participants with tools and methodologies to enhance the program's existence and impact. This workshop also emphasized critical areas such as

resource mobilization, institutionalization, and partnership building to support FETP sustainability in the region.

Moreover, EMPHNET has worked to strengthen partnerships at both national and international levels, helping FETPs in the EMR build networks with stakeholders like universities and public health institutions. This collaborative approach supports ongoing program needs, such as financial support and access to technical expertise. EMPHNET's efforts extend to monitoring and evaluation practices, aiming to refine FETP quality and align with global standards, further ensuring the program's impact and sustainability across EMR countries.

Through these actions, EMPHNET has significantly contributed to FETP sustainability and continues to work on initiatives that address evolving health challenges. Moving forward, EMPHNET plans to reinforce these sustainability efforts by enhancing resource mobilization capacities, increasing visibility for FETP graduates, and building cross-border collaborations to build a resilient and adaptive field epidemiology workforce in the EMR.

### **Monitoring and evaluation (M&E) for training programs**

Trainings and capacity building interventions are important strategies to reinforce the public health workforce, building skills and confidence in key competency areas, many training modalities exist for public health workers, but limited data are available on the resulting longer-term outcomes.<sup>9</sup>

<sup>7</sup> Bando et al., *Sustainability of a field epidemiology and laboratory training programme: the Ghanaian story*, 2019.

<sup>8</sup> Jones et al., *Building Global Epidemiology and Response Capacity with Field Epidemiology Training Programs*, 2017.

<sup>9</sup> Leong et al., *Building public health workforce capacity: Longer-term effectiveness of a capacity building intervention to improve community-based public health prevention work*, 2024.



Evaluation and monitoring of FETPs is essential to improve the programs and to inform decisions about future resource allocations. The evaluation helps to determine the impact of the program and how its components work toward supporting the desired outcomes. It also helps to achieve and maintain high-quality training and assure the effectiveness of the program in improving public health. There are some studies that evaluated the FETPs and reported the experiences and the lessons learned. These studies showed that the training programs have contributed to the development of a skilled workforce in field epidemiology.<sup>10</sup> However, they indicated that further efforts are required to scale up the program.

The WFC develop and implement comprehensive M&E plans and guides for training programs, projects, interventions, and research including FETPs to assess their effectiveness and impact. This involves creating logical frameworks, performance measurement tools, and conducting evaluations to ensure the continuous improvement of these programs.

### FETP Evaluation

Evaluation and monitoring of FETPs can be used to improve the programs and to inform decisions about future resource allocations. The evaluation helps to determine the impact of the program and how its components work toward supporting the desired outcomes. It also helps to achieve and maintain high quality training

and assure the effectiveness of the program in improving public health.

There are some studies that evaluated the FETPs and reported the experiences and the lessons learned. However, they indicated that further efforts are required to scale up the program. It is of paramount importance to conduct a comprehensive review of previous evaluations of FETPs and identify existing gaps.

EMPHNET has been actively engaged in the monitoring and evaluation of FETPs and has published papers in this area, include:

- Evaluation of Field Epidemiology Training Programs: A Scoping Review<sup>11</sup>
- Evaluation of the Blended Public Health Empowerment Program: Basic Field Epidemiology in the Eastern Mediterranean Region<sup>12</sup>
- Evaluation of Advanced Field Epidemiology Training Programs in the Eastern Mediterranean Region: A Multi-Country Study<sup>13</sup>

These studies collectively highlight the impact and development of FETPs in the region. EMPHNET Adopts the Kirkpatrick Evaluation Model in evaluating its training programs whether they are conventional, blended, or self-paced, because it allows to assess not only the immediate reaction of the participants but also the long-term impacts and outcomes of the training.

<sup>10</sup> Bhatnagar et al., *Seven years of the field epidemiology training programme (FETP) at Chennai, Tamil Nadu, India: an internal evaluation*, 2012; Dey et al., *The United Kingdom field epidemiology training programme: meeting programme objectives*, 2019.

<sup>11</sup> Al Nsour et al., *Evaluation of field epidemiology training programs: a scoping review*, 2024.

<sup>12</sup> Alsouri et al., *Evaluation of the blended public health empowerment program-basic field epidemiology in the Eastern Mediterranean Region*, 2024.

<sup>13</sup> Al Nsour et al., *Evaluation of Advanced Field Epidemiology Training Programs in the Eastern Mediterranean Region: A Multi-Country Study*, 2021.

The Kirkpatrick Evaluation Model serves as a robust framework for assessing the efficacy of training programs and has evolved into one of the most extensively employed models for this purpose. It proposes four levels for evaluating the effectiveness of training programs.

EMPHNET is working on a guide to standardize evaluation tools for the Public Health Em-powerment Program - Basic Field Epidemiology (PHEP-BFE), aimed at providing stakeholders with general guidelines for curriculum evaluation.

### **Support response to public health emergencies**

EMPHNET demonstrates a strong capacity in leveraging its network of FETP graduates and a comprehensive roster of experts to respond effectively to public health emergencies. This capacity is evident in its rapid deployment of trained professionals to address disease outbreaks, natural disasters, and other crises.

For instance, FETP teams have played essential roles in outbreak investigations, including the Crimean-Congo Hemorrhagic Fever (CCHF) outbreak in Iraq, measles outbreaks in Jordan and Sudan, anthrax investigations in Bangladesh, and suspected cholera cases in Sudan. Additionally, EMPHNET has mobilized resources for emergency preparedness and response efforts, such as flood relief in Afghanistan, critical support during the armed conflict in Sudan and the current war in Gaza.

The contributions extend to strengthening disease surveillance and monitoring, exemplified by Egypt FETP's deployments to mass gatherings at Hajj sites in Saudi Arabia and Iraq, as well as its involvement in the Hepatitis C elimination program. These efforts highlight EMPHNET's strategic role in ensuring that

skilled professionals and resources are available to address regional and global public health challenges effectively.

### **Strengthening scientific writing and communication skills**

EMPHNET works on enhancing scientific writing skills by encouraging and supporting the production of scientific publications by public health workers and experts. These publications contribute to the global public health knowledge base and highlight the achievements and findings of FETPs in the EMR through different online courses and national and regional workshops.

### **E-learning Solutions**

EMPHNET has achieved a distinguished accomplishment upon establishing the EMPHNET Learning Management System (EMPHNET LMS) and offering the blended FETPs. Recognizing the effectiveness of the implemented blended FETPs and in response to the growing demand for online training, the WFC established the eLearning Unit, that's dedicated to designing and developing tailored free of charge eLearning solutions for public health professionals, with a particular focus on Field Epidemiology in EMR and other priority countries.

With robust capabilities, the eLearning Unit develops a wide array of online courses, ranging from academic subjects to professional development and vocational training. These courses incorporate interactive learning modules hosted on the EMPHNET LMS, offering self-paced online learning that caters to diverse interests and geographic locations within the region and beyond. Nowadays, EMPHNET LMS hosts more than 130 self-paced learning hours as online courses, six cohort based blended FETPs at both Frontline and Intermediate levels in addition to 13 instructor-led case studies.

Moreover, the eLearning Unit contributes to digitizing Training Needs Assessment (TNA) tools and collaborates closely with technical experts to review, assess, and update learning materials, transforming conventional content into engaging digital formats. And it has the capacity to

support partners, organizations and networks, seeking to deliver impactful learning experiences, and collaborate with countries to establish and enhance their Learning Management Systems (LMS) while building the capacity of staff responsible for LMS management.

### Reference List

AL NSOUR, MOHANNAD. 2019. „*The Eastern Mediterranean Public Health Network: A Resource for Improving Public Health in the Eastern Mediterranean Region.*“ *JMIR public health and surveillance* 5 (3): e14992. <https://doi.org/10.2196/14992>.

AL NSOUR, MOHANNAD, YOUSEF KHADER, HAITHAM BASHIER AND MAJD ALSOUKHNI. 2021 „*Evaluation of Advanced Field Epidemiology Training Programs in the Eastern Mediterranean Region: A Multi-Country Study.*“ *Front. Public Health* 9:684174. <https://doi.org/10.3389/fpubh.2021.684174>.

AL NSOUR, MOHANNAD, GHENA KHASAWNEH, YOUSEF KHADER AND HAITHAM BASHIER. 2024 „*Evaluation of Field Epidemiology Training Programs: A Scoping Review.*“ *Front. Epidemiol.* 4:1376071. <https://doi.org/10.3389/fepid.2024.1376071>.

ALSOURI, RUBA KAMAL, YOUSEF KHADER, HAITHAM BASHIER, MIRWAIS AMIRI, SARA ABDELKARIM MORSY, ZAINAB NASEER ABBAS, ZEINA ELIAS FARAH AND MOHANNAD AL NSOUR. 2024. „*Evaluation of the Blended Public Health Empowerment Program-Basic Field Epidemiology in the Eastern Mediterranean Region.*“ *Front. Med.* 11:1391219. <https://doi.org/10.3389/fmed.2024.1391219>.

BANDO, DELIA AKOSUA, ERNEST KENU, DONNE KOFI AMEME, SAMUEL OKO SACEY, FREDRICK WURAPA AND EDWIN ANDREW AFARI. 2019. „*Sustainability of a Field Epidemiology and Laboratory Training Programme: The Ghanaian Story.*“ *The Pan African Medical Journal* 33:68. <https://doi.org/10.11604/pamj.2019.33.68.16431>.

BHATNAGAR, TARUN, MOHAN D. GUPTA, YVAN J. HUTIN, PRABHDEEP KAUR, VASANTHAPURAM KUMARAS-WAMI, PONNAIAH MANICKAM, MANOJ MURHEKAR, VIDYA RAMACHANDRAN AND RAMACHANDRAN RAMA-KRISHNAN. 2012. „*Seven Years of the Field Epidemiology Training Programme (FETP) at Chennai, Tamil Nadu, India: An Internal Evaluation.*“ *Hum Resour Health* 10 (1): 36. <https://doi.org/10.1186/1478-4491-10-36>.

JONES, DONNA S., RICHARD C. DICKER, ROBERT E. FONTAINE, AMY L. BOORE, JARED O. OMOLO, RANA J. ASHGAR AND HENRY C. BAGGETT. 2017. „*Building Global Epidemiology and Response Capacity with Field Epidemiology Training Programs.*“ *Emerging Infectious Diseases* 23 (13): S158-65. <https://doi.org/10.3201/eid2313.170509>.

LEONG, DONNA, JEANNE W. LAWLESS, CHEYANNA FROST AND GENEVIVE R. MEREDITH. 2024. „*Building Public Health Workforce Capacity: Longer-Term Effectiveness of a Capacity Building Intervention to Improve Community-Based Public Health Prevention Work.*“ *AJPM focus* 3 (6): 100268. <https://doi.org/10.1016/j.focus.2024.100268>.



NUCLEAR THREAT INITIATIVE, JOHNS HOPKINS CENTER FOR HEALTH SECURITY AND ECONOMIST IMPACT. 2021. „Global Health Security Index: 2021 Methodology.“ <https://tinyurl.com/y8fb4m7m>.

UNICEF. 2024. „Flash floods in Afghanistan posing urgent and persistent threat to children.“ <https://tinyurl.com/5ckrwc55>.

WHITE, M. E., S. M. MCDONNELL, D. H. WERKER, V. M. CARDENAS AND S. B. THACKER. 2001. „Partnerships in International Applied Epidemiology Training and Service, 1975-2001.“ *American journal of epidemiology* 154 (11): 993–99. <https://doi.org/10.1093/aje/154.11.993>.

WORLD BANK. 2024. „Bridging the gap: Strengthening health systems through a resilient and equitable health workforce in Africa.“ <https://tinyurl.com/223rxx5w>.

WORLD HEALTH ORGANIZATION. 2022. *National Workforce Capacity to Implement the Essential Public Health Functions Including a Focus on Emergency Preparedness and Response: Roadmap for Aligning WHO and Partner Contributions*. Geneva: World Health Organization.

All internet sources were accessed and verified on June 20, 2025.

### Your Permanent Address in Berlin



**Kronenstraße 1, 10117 Berlin**

**What we offer:**

1. Display your own company logo
2. Attain a Berlin telephone number for call forwarding to your head office
3. Located in the government district in the heart of Berlin
4. Optional temporary use of work desks with a Wi-Fi connection and a meeting room for bilateral talks

Host your seminars, meetings, conferences, training courses, exhibitions and company presentations in the NUMOV Conference Centre in Berlin, without any catering obligations.

+49 (0)30-206410-10  
[numov@numov.de](mailto:numov@numov.de)