



**EMPHNET**  
The Eastern Mediterranean  
Public Health Network

# BIORISK MANAGEMENT

► GHD | EMPHNET: working  
together for better health



# OUR APPROACH



## Cross-border Collaboration

EMPHNET builds cross-border networks to improve surveillance, response, and information sharing. It promotes cooperation for knowledge exchange, resource access, and coordinated risk communication.



## A Focus on Sustainability

EMPHNET supports SOP development and creates educational tools to institutionalize biosafety and biosecurity best practices. It provides technical materials to align policies with global standards.



## Multi-sectoral Approach through One Health

EMPHNET applies its biorisk efforts across sectors, embedding them in One Health to maximize impact across human, animal, and environmental health sectors.



## A Focus on the Workforce

EMPHNET addresses workforce gaps through cascade training in lab systems, diagnostics, and safety practices, emphasizing mentorship, hands-on learning, and provision of essential equipment.



# WHY EMPHNET IS INVOLVED



The 2021 *Global Health Security (GHS) Index* highlights that all countries remain “dangerously” unprepared for future epidemics and pandemics. Biosafety and biosecurity—key components of health security—are among the weakest areas. In the Index’s “Prevention” category, which includes these indicators, most EMR countries, especially conflict-affected ones like Afghanistan, Iraq, Libya, Syria, and Yemen, score well below the global average (Global Health Security Index, 2021).



Research shows that LMICs face persistent challenges in building sustainable biosafety and biosecurity capacities.



Regional instability and limited resources increase the risk of accidental or intentional laboratory releases. Weakened health systems and diminished oversight further erode labs’ ability to support disease detection and reporting.



Laboratories are foundational to public health; without their capacity, core functions such as surveillance, diagnostics, and outbreak response cannot be fulfilled.







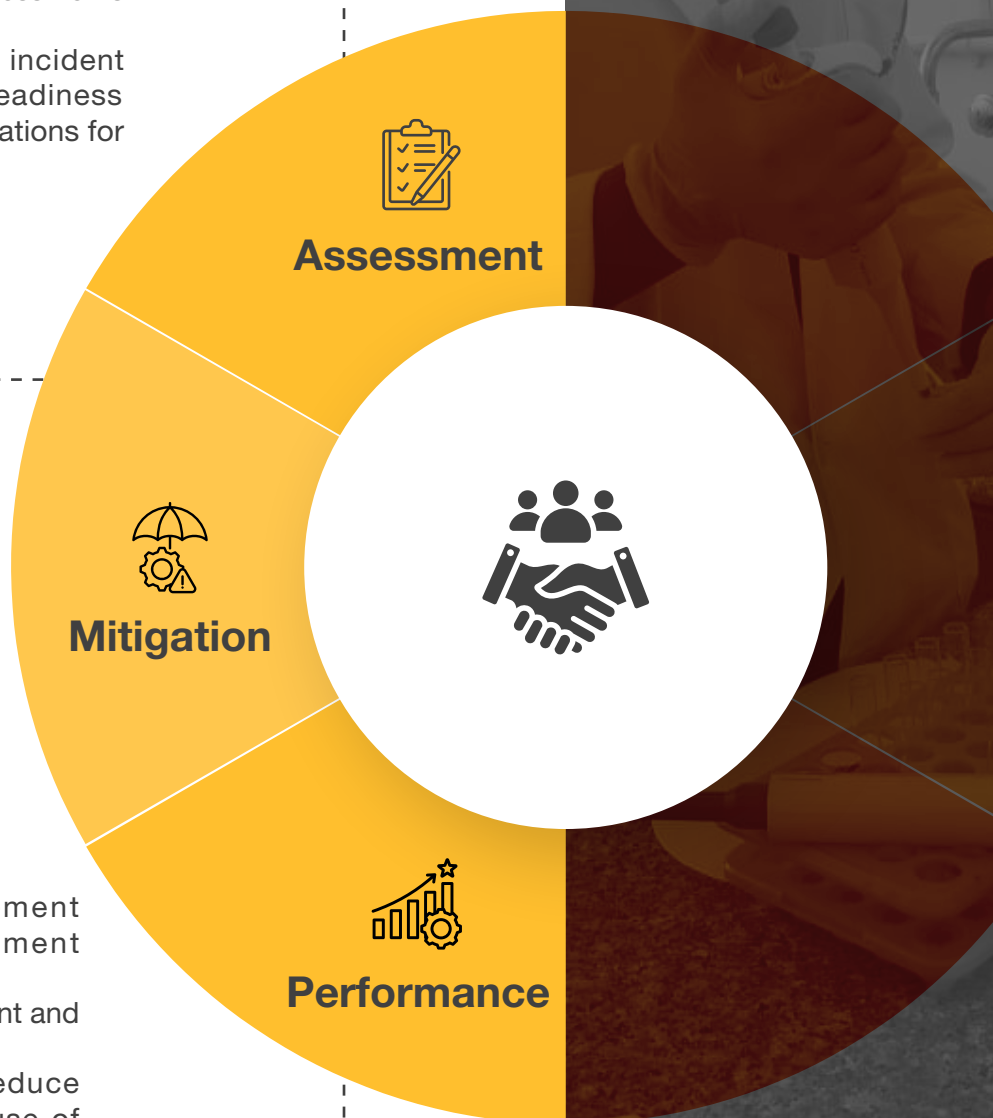
# THE BIORISK MANAGEMENT PROCESS: WHERE EMPHNET IS INVOLVED

EMPHNET's involvement across all stages of the biorisk management cycle enables it to play a complete and effective role in supporting countries to implement and sustain biorisk management systems.

1. Conducts country-specific assessments to identify gaps and needs
2. Develops tools to evaluate incident reporting, SOPs, and lab readiness
3. Supports multi-sectoral evaluations for cross-border biosurveillance

1. Designs and delivers tailored training on biosafety and biosecurity best practices
2. Builds national and regional workforce capacity through in-person and online courses
3. Implements standardized systems, including SOPs and inventory software

1. Establishes risk management frameworks and containment procedures
2. Provides modern lab equipment and inventory control solutions
3. Promotes awareness to reduce biological threats and misuse of dual-use agents



# AN INVESTMENT IN SYSTEMS: A SYSTEMIC APPROACH

To ensure sustainability in biorisk management, EMPHNET moves beyond one-time interventions by putting long-term systems in place. This includes training local trainers, integrating practices into national protocols, and developing follow-up mechanisms to monitor and reinforce implementation. By embedding these elements within existing structures and promoting ongoing collaboration and knowledge exchange, EMPHNET ensures that biorisk management becomes a continuous and institutionalized practice, not a temporary project.

## COUNTRY-LEVEL SYSTEMS

- ✓ Developed and implemented SoPs for packaging, transport and safe disposal of reagents in **Afghanistan**
- ✓ Developed and implemented SOPs for medical waste management (MWM) in **Libya**
- ✓ Developed and implemented Inventory management software at priority life science facilities in Amman, **Jordan**
- ✓ Co-developed an officially endorsed National Biorisk Management Guidelines in **Jordan**
- ✓ Supported the calibration of lab equipment to fulfill ISO 15189 requirements in **Iraq**

## HOW IT WAS DONE

- ✓ Conducted facility-based assessments to identify gaps and needs
- ✓ Developed and customized SOPs in local languages through close collaboration with local teams and international experts
- ✓ Trained national laboratory staff, built technical capacities, and provided ongoing oversight to ensure implementation

## REGIONAL SYSTEMS AND NETWORKS

- ✓ Developed a methodology to improve communication and effective engagement for crossborder surveillance and outbreak investigation between **Libya** and **Tunisia**
- ✓ Developed an inventory system to secure pathogen samples across 10 public laboratories in Libya and Tunisia
- ✓ Established the Invasive Bacterial Disease Surveillance Network in **Africa, Middle East, and Eurasia: Meningitis and Septicemia Mapping Network (MenMap)**
- ✓ Established the Regional Consortium for Biosafety and Biosecurity to safeguard laboratories in **North Africa**, which developed common protocols across partner countries and aligned them with international standards and frameworks, including the creation of unified Terms of Reference

## HOW IT WAS DONE

- ✓ Facilitated coordination between ministries and sectors
- ✓ Supported knowledge exchange through joint trainings
- ✓ Developed shared protocols and regional frameworks



# WORKFORCE CAPACITY BUILDING

EMPHNET contributed to a series of workforce development efforts at both national and inter-country levels, combining theoretical knowledge with hands-on practical experience. These efforts were carried out in collaboration with different stakeholders, including national entities, academic institutions as well as international organizations. Notably, EMPHNET's experience extended beyond the Eastern Mediterranean Region to include initiatives in West Africa and Central Asia.

## WHAT WE HAVE DONE



Conducted assessments to identify training gaps and needs



Developed a biorisk management training curriculum



Designed and implemented training workshops



Provided access to online educational resources

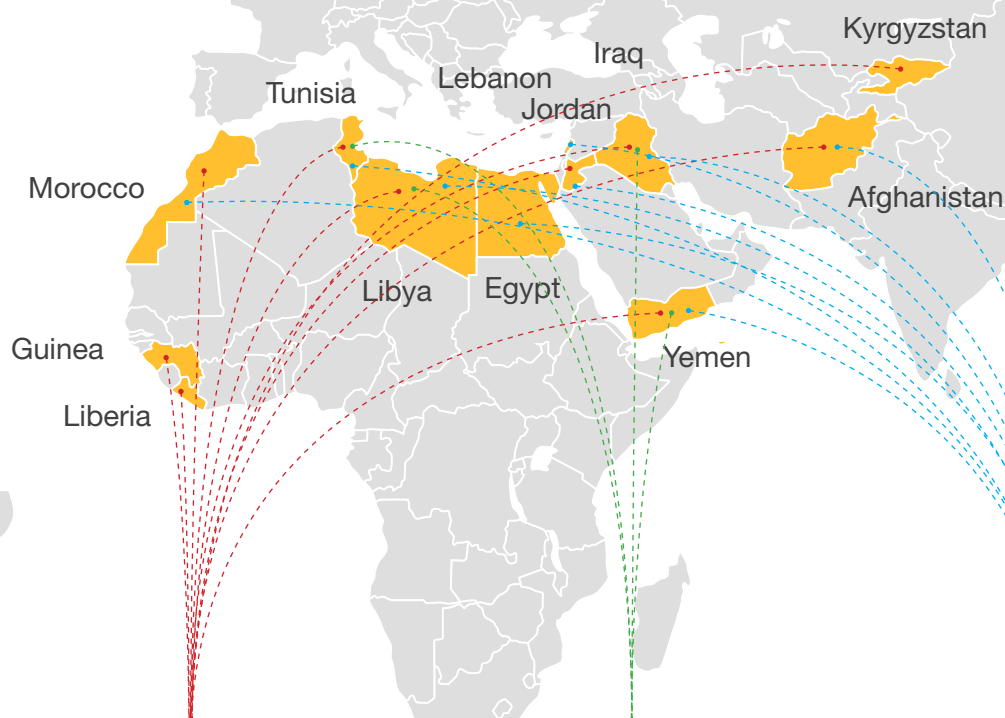


Established a follow-up mechanism to support implementation and sustainability of knowledge at the facility level





## WORKFORCE CAPACITY BUILDING: GEOGRAPHIC REACH



### Countries Targeted in Training Workshops

EMPHNET conducted biorisk management workshops to enhance national capacities in safe laboratory practices.

- Afghanistan, Iraq, Jordan, Libya, Morocco, Tunisia, and Yemen, Liberia, Guinea, Kyrgyzstan

### Countries with Customized Training Curricula

Tailored training curricula were developed to address country-specific needs to institutionalize biosafety and biosecurity practices.

- Iraq, Libya, Tunisia, Yemen

### Logistic and Infrastructure Support

EMPHNET supported central public health laboratories by providing modern equipment, inventory management systems, and comprehensive logistical support.

- Afghanistan, Egypt, Iraq, Jordan, Lebanon, Libya, Morocco, Tunisia, Yemen





## FOUNDATIONAL TOPICS



- ✓ Philosophy of Risk
- ✓ Roles & Responsibilities
- ✓ Design Features
- ✓ Risk Group Definitions
- ✓ Bio-Risk Assessment
- ✓ Waste Management
- ✓ Occupational Surveillance

## BIOSAFETY



- ✓ General Lab Safety Guidelines
- ✓ BSCs
- ✓ Containment Levels
- ✓ Spill Procedures
- ✓ PPE & Disinfection
- ✓ Emergencies
- ✓ GLP
- ✓ LAIs
- ✓ Bloodborne Pathogens

## BIOSECURITY



- ✓ Biosecurity
- ✓ Dual Use & Bioethics
- ✓ Shipping Infectious Substances

*The curriculum is complemented by hands-on training, simulation exercises, locally relevant case examples, and the provision of essential test materials and kits*





# WORKING TOGETHER FOR BETTER HEALTH.



**EMPHNET**

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**JOIN THE CONVERSATION**



## **GHD|EMPHNET: Working Together for Better Health**

The Eastern Mediterranean Public Health Network (EMPHNET) is a regional network that focuses on strengthening public health systems in the Eastern Mediterranean Region (EMR) and beyond. EMPHNET works in partnership with ministries of health, non-government organizations, international agencies, private sector, and relevant institutions from the region and the globe to promote public health and applied epidemiology. To advance the work of EMPHNET, Global Health Development (GHD) was initiated to build coordination mechanisms with partners and collaborators. Together, GHD|EMPHNET is dedicated to serving the region by supporting efforts to promote public health policies, strategic planning, sustainable financing, resource mobilization, public health programs, and other related areas.

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