

Enhancing outbreak and pandemic alert and response in the Eastern Mediterranean Region

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The WHO Eastern Mediterranean Region (EMR) is home to nearly 700 million people, and comprises 22 countries and territories, each characterized by a unique blend of features in terms of wealth, development, political stability, health system resilience, and outbreak and pandemic preparedness (1). Six of the countries and territories are classified as high-income, boasting advanced levels of economic development, infrastructure and health care services (2), although some of these have been identified as having inefficient healthcare systems (3). Twelve countries are grappling with conflict and humanitarian emergencies (4,5), a situation that often leads to serious weakening of health systems, heightened population mobility, and limited surveillance and laboratory capabilities, and contributes to the emergence and transmission of infectious diseases (6).

The Joint External Evaluations (JEE) and the uneven implementation of National Action Plans for Health Security (NAPHS), which are voluntary and initiated at the request of Member States, highlight varying levels of pandemic preparedness across the region (7). For example, while countries like Jordan and United Arab Emirates (UAE) maintain relatively strong surveillance systems and score high on workforce development, those embroiled in prolonged conflicts, such as Sudan, encounter significant challenges (8–11). Similar disparities exist in other core capacities, including laboratory systems, emergency response operations and risk communication.

In recent years, outbreaks have occurred at an alarming rate in the EMR countries. The COVID-19 pandemic has exposed the existing vulnerabilities and further disrupted health care delivery by severely limiting access to essential services for many people (12,13). EMR was among the most severely affected, with substantial disruptions to communicable and non-communicable diseases, mental health, maternal and child healthcare, and emergency and critical care services (14). Thirty-one major outbreaks were recorded in 2021 across 11 countries (15), and by 2022, the number surged to 61 incidents in 20 countries (16). This heightened frequency persisted in 2023, with over 70 outbreaks documented in 21 countries in the region (17). The reported diseases include acute

watery diarrhoea, cholera, Crimean-Congo haemorrhagic fever, Dengue fever, diphtheria, HIV, Legionnaires' disease, malaria, measles, MERS, Mpox, polio, cVDPV2, and Influenza B. Many of these outbreaks happened concurrently, often exacerbated by complex emergencies arising from military conflicts or natural disasters. Such crises, which are common in several EMR countries, increase the fragility of the affected healthcare systems and reduce the ability of countries to respond effectively and efficiently (18,19).

Addressing the complex health challenges in the EMR requires robust partnerships and a range of initiatives to bolster preparedness, surveillance and response. Member States are already engaged in multiple efforts to strengthen core capacities for International Health Regulations (IHR), such as strengthening public health emergency operations centres (20) and enhancing disease surveillance (21). The Global Outbreak Alert and Response Network (GOARN), a global technical network founded on the principles of mutual support and solidarity and coordinated by WHO, is dedicated to swift and efficient action against acute public health crises by rapidly deploying personnel and resources. Network partners provide specialized services to ensure comprehensive, multisectoral response that includes outbreak investigation, laboratory diagnosis, infection prevention and control, clinical case management, risk communication, response coordination, logistics support, health system strengthening, and research. Since its launch in 2000, GOARN has implemented over 170 operations and deployed more than 3500 experts worldwide (22).

Coordinating partners and resources during an emergency can present considerable challenges and GOARN plays a vital role in organizing multidisciplinary stakeholders during preparedness, readiness and response (22,23). Comprising over 300 technical institutions worldwide, its members pool resources and expertise to bolster response by national health authorities to public health emergencies (24). The network adopts a comprehensive approach across various activity domains, including alert and risk assessment, capacity

building and training, rapid deployment capabilities, and operational research, ensuring not only multidisciplinary but also multifaceted response to crises.

Within the EMR, 19 organizations from 12 countries are members of GOARN, spanning academic institutions to departments within the ministries of health and the national public health and research institutes. Each member organization is represented by at least one dedicated GOARN focal person who coordinates secretariat functions of the network, thus ensuring efficient and streamlined communication. Several GOARN focal persons at the WHO Regional Office for the Eastern Mediterranean (WHO/EMRO) oversee the development and activities of the network in the region, steering collaborative efforts and facilitating implementation of the GOARN initiatives.

In recent years, GOARN deployed experts to respond to disease outbreaks in some EMR countries. For instance, a health coordinator was deployed to Sudan in 2019 to support response to cholera outbreak, and an epidemiologist was deployed to assist with cholera response in Yemen in 2024 (25). A particularly notable instance is the assistance provided during the 2019 HIV outbreak in Pakistan, where GOARN experts supported response, outbreak investigation, clinical case management, infection prevention and control, and blood safety (26,27).

GOARN is currently supporting epidemiology, health information management and partner coordination in response to the crisis in Gaza. Following a request for assistance issued in November 2023, the network received 47 offers, leading to the deployment of 14 experts with an average mission duration of 68 days (25). These experts played a critical role in developing a comprehensive health management strategy for the Gaza response, ensuring effective delivery of health services and supplies from Egypt to Gaza in collaboration with WHO and the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA). Because of the challenges of deploying experts directly to the Gaza Strip, the specialists were embedded in WHO and UNRWA offices in Amman and Cairo.

Beyond the deployments, GOARN has increased its involvement in other critical preparedness and response activities in the EMR, such as capacity building and south-south and north-south institutional engagement. This notable shift in the network's primary focus, is highlighted in the GOARN 2022–2026 strategy (28) in alignment with lessons from the COVID-19 pandemic: the inevitability of new infectious disease outbreaks (29). To strengthen the resilience of countries against disease outbreaks, the strategy emphasizes the need to build national public health capacities by focusing on preparedness and readiness, not just response. This involves fostering intentional strategic collaborations

among GOARN member institutions, with diverse disciplines and expertise, towards increased regional cooperation and peer-to-peer support (30). GOARN is implementing a twinning initiative that allows the pairing of its members in the EMR with global north institutions to enhance cooperation in critical areas like outbreak alerts and early warning systems.

To ensure seamless execution of the new GOARN strategy, WHO regions need to develop and agree on regional implementation approaches that outline region-specific and context-relevant actions. The WHO/EMRO has adopted such tailored approach, anticipating that outbreaks will become more frequent in the EMR, largely due to the impacts of climate change, political conflicts and natural disasters (31–33). By harnessing the expertise, resources and networks of partners to promote international collaboration for surveillance and alert systems, strengthening capacity through training and facilitating joint research efforts, the GOARN strategy should significantly enhance the ability of EMR to respond effectively to public health emergencies and build resilient health systems. The first steps include the twinning initiative with EMR partners, fostering knowledge exchange, mutual capacity building, and the development of standardized operating procedures.

Enhancing outbreak and pandemic preparedness and response requires active engagement and cooperation among stakeholders across all relevant fields. Such collaborative approach was demonstrated during the COVID-19 response, when GOARN activated its network and deployed 249 experts to 46 countries and territories, despite the restrictions on international travel (22). In its role as a knowledge hub, GOARN continues to engage with member institutions through regular calls, partner meetings, webinars, and training.

EMR Member States have made significant progress in integrating response actions, especially in laboratory diagnostics, integrated surveillance and research (34). However, persistent challenges remain alongside untapped opportunities to maximise the benefits from these achievements. Through collaborations GOARN can become a valuable platform for enhancing pandemic preparedness. Given the challenging situation in the EMR, the GOARN regional implementation plan advocates the enhancement of capabilities of the network in the region and adoption of a holistic approach to outbreak and pandemic response that emphasizes multidisciplinary involvement, information sharing and the provision of technical support during emergencies. By acting collectively and in a coordinated manner, GOARN member institutions in the EMR can help strengthen resilience to public health emergencies while prioritizing community wellbeing.

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