

Learning from COVID-19 to prevent and prepare for pandemics in the Eastern Mediterranean Region

Richard John Brennan,¹ Ziad A Memish ,^{2,3} Arash Rashidian,⁴ Abdinasir Abubakar,¹ Wasiq Khan,¹ Abdul Ghaffar ⁵

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¹WHO Health Emergencies Programme, WHO Regional Office for the Eastern Mediterranean, Cairo, Egypt

²Research and Innovation Center, King Saud Medical City, Riyadh, Saudi Arabia

³College of Medicine, Alfaisal University, Riyadh, Saudi Arabia

⁴Science, Information and Dissemination, WHO Regional Office for the Eastern Mediterranean, Cairo, Egypt

⁵Alliance for Health Policy and Systems Research, World Health Organization, Geneva, Switzerland

Correspondence to
Dr Abdinasir Abubakar;
abubakara@who.int

Preparing for and responding to health emergencies in the Eastern Mediterranean Region (EMR) presents major technical, operational and political challenges. Effective response to health and humanitarian emergencies is often constrained by insecurity, disrupted health systems, limited local capacities, bureaucratic impediments, insufficient partners with operational presence and underfunding.¹ The Region, a geographical nexus between East and West, displays some of the world's high levels of labour migration.² In addition to the world's highest levels of labour migration, the Region is home to leisure tourist sites, religious pilgrimage and trade; providing an ideal environment to facilitate fast spread of infectious disease.

As COVID-19 pandemic has shown, respiratory viruses and diseases such as influenza and coronaviruses are a threat to human development and security. Given the ease with which these viruses can both mutate and transmit, it is essential to enhance real-time surveillance to ensure these high-threat pathogens are detected timely and cannot spread out of control, causing localised outbreaks, cross-border spread and even pandemics. In the case of influenza, for example, the virus mutates quickly enough that scientists must race to update existing vaccines every year to ensure some degree of community protection against newly arising variants. In the EMR, Middle East respiratory syndrome, a coronavirus, has been circulating since 2012, causing localised outbreaks, with the majority of cases reported from Saudi Arabia.³ As of 30 May 2022, more than 21 million SARS-CoV-2 infections and 342 000 associated deaths have been reported from the Region.⁴

Given the high likelihood that future pandemics will be caused by respiratory pathogens,⁵ it is essential for the public health community in the EMR to develop and

sustain effective preparedness and response systems in light of lessons emerging from the COVID-19 pandemic. This series of joint special issues of *BMJ Global Health* and WHO Regional Office for the Eastern Mediterranean (EMRO) on EMR⁶ aims to discuss practice lessons and research gaps in pandemic preparedness and emergency health response revealed during the COVID-19 pandemic and how these could be effectively addressed to prevent future pandemics caused by respiratory pathogens amid vulnerabilities of this Region.

Tempia *et al.*, in light of COVID-19 lessons, highlight the need for an integrated approach to surveillance for emerging respiratory viruses of epidemic and pandemic potential in the Region. The authors argue that COVID-19 response was facilitated by existing influenza surveillance and preparedness platforms in countries making a good case for an integrated approach towards respiratory pathogen surveillance and sustainability of public health and security systems against future pandemics. In a region where 19 out of 22 countries and territories have functional influenza surveillance, the use of these platforms to detect and monitor other respiratory viruses with epidemic potential is cost-effective. Pilot studies for respiratory syncytial virus surveillance have been conducted using existing influenza sentinel surveillance systems in five countries in the EMR and provide other existing experience to build upon for integrated surveillance approach in the Region.^{7,8}

In the EMR, sentinel surveillance sites underpin the influenza surveillance mechanism in the countries.⁹ Well-managed sentinel surveillance is a cost-effective and efficient way to collect high-quality data in a timely manner so that information can be applied for action among communities at higher risk

of developing severe disease. In a paper from Lebanon, we are introduced to two distinct surveillance systems implemented during COVID-19: an influenza and COVID-19-like illness sentinel surveillance programme and a mortality-based surveillance programme. Both programmes use voluntary networks of hospitals, doctors and care providers to track diseases as they occur and their outcomes (mortality).¹⁰

Influenza poses a persistent epidemic and pandemic threat.¹⁰ Abou El Naja *et al* discuss the influenza activity during the pandemic in the EMR and highlight that implementation of non-pharmaceutical interventions to control the COVID-19 pandemic may have impacted the spread of influenza causing low activity seasons in 2020 and 2021. However, the authors caution against lowering the guard and not to ignore the need for continued surveillance as the observed low circulation and the associated potential immunity gap may result in increased transmission and severity of postpandemic influenza seasons.

El Mahal *et al* have discussed the functionality of public health emergency operations centres in health emergencies like the COVID-19 pandemic. The authors argue that despite the importance of such a coordination and response mechanisms in Ministries of Public Health to manage emergencies, these centres face issues in overall positioning in the health sector, governance, infrastructure, planning and data flow. WHO provides support to strengthen such mechanisms and countries could benefit from this support to strengthen the response to future events such as pandemics.

Variations in the appropriate application of effective control measures are what often lead to inequitable disease outcomes across diverse geographies. Vaccination is one of the significant techniques that can equalise disease burden and outcomes by conferring a degree of protection on everyone regardless of social or economic ability or background. But across the globe, inequitable access to vaccines has been one of the most concerning features of the international response. In the EMR, Yvan *et al* have discussed inequities in the deployment of COVID-19 vaccine during 2020–2021. As of 12 April 2022, the average vaccination rate in the EMR was only 42%, with a range of 1%–97%; 4 of 22 countries (18%) still had coverage rates of less than 10% and only 11 (50%) had reached the country-specific target of 40% by the end of 2021. In preparing for future pandemics, lessons of vaccine inequity must be used to correct structural imbalances by adopting a normative approach towards health equity.¹¹

According to the WHO, an ‘abundance of information’, irrespective of its accuracy reflected as massive infodemic, has been witnessed during the COVID-19 pandemic.¹² In this issue, Heidi Ghanem *et al* have presented and discussed the analysis on use of social media in epidemic and pandemic response in the EMR. The analysis emphasises that real-time, transparent and relevant information posted on different social media

platforms, especially governmental official social media accounts, contributed to strengthening the early detection and follow-up of public health events in the Region.

COVID-19 has taught us that the global community needs to strengthen health security strategies, collective emergency management approaches and platforms to develop comprehensive, equitable pandemic preparedness and response.¹³ To ensure equity, we must capitalise on our regional and global solidarity¹⁴ to eliminate health threats anywhere they arise, even in the most fragile of conflict zones like those in the Eastern Mediterranean. This calls for responsible and proactive leadership from the highest levels of government,¹⁵ effective early warning systems and public health intelligence, and active risk communication and community engagement to inform and empower local communities.

Preparing health systems for early detection needs to be taken to the next level by strengthening the surveillance systems, particularly genomic surveillance. Public health and social measures have proven effective in COVID-19 pandemic.¹⁶ It is time to structure more evidence on what works best among these measures and how to contextualise them. COVID-19 has yet again reinforced the significance of research. To start with, a deeper analysis of what worked, why it worked and will it work in future needs to be carried for effective preparedness. With significant vulnerabilities surrounding the EMR, the preparedness agenda specifically for respiratory pathogen pandemics needs urgent attention, implementation and regular revision by the public health community.

Twitter Wasiq Khan @wasiqk

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ORCID iDs

Ziad A Memish <http://orcid.org/0000-0002-5099-0714>

Abdul Ghaffar <http://orcid.org/0000-0002-8629-4526>

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