



Strengthening public health readiness for mass gatherings in the Eastern Mediterranean Region

Executive summary

Mass gatherings can be categorized into various types, including sports, cultural, religious, entertainment, business and political events. Planning and managing mass gatherings can strain or even overwhelm the resources of the host countries or communities and can stretch the health system's capacity. However, these events also present opportunities for long-term benefits, such as the development of stronger public health systems and increased awareness of disease prevention among residents and visitors. For proper planning of mass gatherings, multisectoral collaboration and risk assessments must take place to identify potential health risks, prevent and manage such risks, minimize their potential impact and respond to public health emergencies if they occur.

The WHO Eastern Mediterranean Region is host to some of the world's largest recurring mass gatherings. These include religious events (such as the Hajj, Arba'een and Ashura), sports events (such as the Dakar Rally and Grand Prix races) and cultural (such as international film festivals) and political events. Moreover, non-recurring mass gathering events are being hosted more frequently across the Region, sometimes on a major scale, such as the quadrennial FIFA World Cup 2022 (Qatar), Expo 2020 Dubai (United Arab Emirates) and COP27 in 2022 (Egypt); COP28 will be held in 2023 in the United Arab Emirates. Such large events pose challenges in managing health risks such as communicable and noncommunicable diseases and psychosocial disorders, as well as those related to other factors including extreme weather conditions, structural or transportation accidents and terrorism incidents.

In today's world, the potential impact that some mass gatherings can have on the propagation of health emergencies, including outbreaks, must be considered. A type of gathering that warrants specific attention is religious mass gatherings, events characterized by their compactness and density. As such, they can serve as a trigger for super-spreading events that can result in the rapid and widespread dissemination of viruses and other infectious agents both within and beyond geographical borders. Furthermore, these gatherings are often composed of a significant proportion of individuals who are medically vulnerable, such as older individuals or those suffering from chronic conditions. Experience across the Region demonstrates that when events are well planned, such risks can be effectively mitigated.

Countries that host regular mass gatherings have developed varying levels of capacity to ensure the safety of these events – from advanced to relatively low levels. While strong leadership and multisectoral coordination are vital for safe delivery and legacy, in many countries, mass-gathering management processes lack effective coordination with the health sector, resulting in fragmented command, control and communication structures and ineffective implementation of multisectoral plans to mitigate potential health risks. Although risk assessment is crucial to identify potential public health threats throughout mass gathering events, and risk-assessment tools are in place, their systematic use to inform public health planning remains limited. However, some events that attract large international attendance, such as the Hajj, already utilize rigorous risk-assessment exercises to inform mitigation strategies to ensure the safety of the event. Therefore, no major outbreak has been reported during the Hajj for more than two decades. Similarly, the FIFA World Cup 2022, EXPO 2020 and COP27 were held during the COVID-19 pandemic without any major reported public health events associated with them, related to robust risk assessments and solid planning.

The safe movement of populations across borders to participate in mass gatherings requires functional International Health Regulations (IHR) (2005) capacities at points of entry, a strengthening of cross-border collaboration between countries, and multilateral international collaboration. The capacity for effective risk communication and community engagement to educate the public about potential health risks and encourage healthy behaviour to prevent and minimize risks is also currently limited. Moreover, challenges exist in systematically documenting and exchanging experience and in generating a legacy regarding mass gatherings. Addressing these challenges is crucial to effectively managing public health risks and to building sustainable improvements within the health infrastructure and system of host countries.

This paper proposes a regional framework for action that would make the Region the first to enhance the readiness of its health systems for mass gatherings and to minimize the public health risks associated with such events. It builds on the extensive experiences and achievements of Member States in the Region. The paper also advocates for expanded exchange of lessons learned, both in short-term readiness and long-term improvement of health systems in host countries, as mandated by the IHR (2005).

Introduction

1. Mass gatherings, such as sporting events or religious pilgrimages, are characterized by the concentration of people at a specific location for a specific purpose over a set period of time and have the potential to strain the planning and response resources of the host country or community (1,2). They may stretch the public health resources and health systems of the host community, city or country beyond their capacity. However, these events can also have long-lasting positive health effects after the event, such as stronger public health systems or residents and visitors becoming more informed about protecting themselves from certain diseases and living healthier lifestyles.
2. Mass gatherings can be planned or spontaneous events. Planned mass gatherings include sports, religious, cultural, entertainment, business and political events. By their nature, spontaneous mass gatherings are more difficult to plan or prepare for. These are beyond the scope of this paper.
3. Mass gatherings can lead to urgent and complex health situations of varying causes and related to the purpose and type of the mass gathering, the demographics of attendees and multiple other external factors. During mass gatherings, the public health risk of infectious diseases can escalate due to close contact between people in crowded venues and accommodation. These include respiratory and airborne illnesses (such as influenza, COVID-19, pneumonia, meningitis), and food-borne and waterborne diseases (such as cholera, shigellosis, typhoid). Moreover, there are opportunities for the transmission of antimicrobial-resistant infections, requiring targeted interventions.
4. Studies suggest that respiratory diseases are the most common cause of morbidities during the Hajj, accounting for 41–61% of outpatient visits, with upper respiratory infections accounting for most diagnoses (82.5%). Other respiratory infections, including pneumonia, tuberculosis, influenza and meningococcal disease, have also been reported, while 9.3% of pilgrims report travellers' diarrhoea. Emerging infectious diseases such as MERS-CoV disease, haemorrhagic fever, COVID-19, influenza A (H1N1) and others are a major public health threat during the Hajj (3).
5. In addition to infectious diseases, noncommunicable diseases, including exacerbated morbidities from hypertension, diabetes, chronic obstructive pulmonary disease and cardiac diseases, may arise during mass gatherings. Studies suggest that cardiovascular diseases are the most common cause of death during the Hajj, accounting for 66% of all deaths (4). Other illnesses include those due to environmental and host-related risk factors. The mass movement of people from one place to another, in a short time and in a small area, significantly increases the risk of accidents and injuries, such as falling, sliding, stampede and traffic accidents. Climate change and extreme weather conditions (both hot and cold) may result in related illnesses such as heat hyperpyrexia, heat stroke, heat exhaustion, dehydration, hypothermia, frostbite and chilblains.
6. Other public health risks include psychosocial disorders, alcohol and substance abuse at recreational events, and human-induced disasters such as terrorist attacks. As mass gatherings become increasingly international in attendance, natural, accidental and deliberate risks to public health and the potential for the cross-border spread of infectious diseases have become increasingly important to address during the planning for these events.
7. Optimizing public health systems and services in preparation for the potential public health hazards associated with mass gatherings involves meticulous planning and adopting a comprehensive and collaborative approach. To accurately identify potential public health risks, systematic risk assessments and system enhancements are necessary.
8. The need for enhanced readiness for mass gatherings was highlighted during the COVID-19 pandemic as countries cancelled, postponed and modified events to curb the local spread of the disease. For example, the 2020 Hajj season in Saudi Arabia saw a significant reduction in the number of participants, with only 1000 local residents permitted to attend, compared to the usual 3.5 million

pilgrims estimated to attend annually. Additionally, the Umrah pilgrimage was suspended for several months in 2020 and thereafter attendance was strictly managed during the COVID-19 pandemic to reduce the risk of disease transmission. Many Islamic countries also suspended the Friday Jum'ah and Ramadan Taraweeh prayers as measures to prevent the spread of COVID-19. Cancelling or altering events has had social and economic impacts on countries; however, these impacts were much greater for events where decisions about their cancellation or modification were not risk-informed or evidence-based (5,6).

9. The countries in the WHO Eastern Mediterranean Region have made many efforts to enhance public health readiness for mass gathering events. Despite these efforts, capacities remain uneven. If the host countries of mass gatherings build their readiness capacities, there will be both short-term and long-term benefits, such as the development of core capacities in line with the International Health Regulations (IHR) 2005 and the strengthening of the resilience of the health system. Additionally, the transfer of lessons learned to the planners of future events will help to ensure their success.

10. This paper is the first to call for enhanced mass gathering readiness, not only in the Region but globally. Many mass gatherings involve international travel, necessitating a comprehensive and coordinated approach to addressing the unique challenges and risks they present. By highlighting the importance of enhanced mass gathering readiness, this paper provides a basis for promoting national, regional and global collaboration and fostering collective efforts to effectively managing mass gatherings worldwide.

11. The main aim of this paper is to guide Member States in the Region to strengthen their public health readiness for mass gatherings through:

- providing a situation analysis on the current risks and capacities for hosting mass gatherings;
- presenting a regional framework that lays out clear strategic objectives and actions to enhance public health readiness for mass gatherings; and
- advocating for the need to enhance efforts and mobilize resources for the implementation of the proposed framework at country level.

Situation overview of public health readiness for mass gatherings in the Eastern Mediterranean Region

12. The Eastern Mediterranean Region is diverse and complex and has been profoundly impacted by emergencies resulting from a wide range of hazards. Despite being home to 9% of the world's population, 39% of those who need humanitarian assistance are based in the Region, and it is currently the source of 55% of the global refugee population.

13. Similar to other regions, countries in the Eastern Mediterranean Region have faced challenges in developing the IHR (2005) core capacities critical to organizing safe mass gatherings. The overall mean of the Joint External Evaluation score across 19 IHR (2005) technical areas in 21 countries/territories in the Region in 2016–2023 was 3 (7). These capacities vary within countries in the Region; higher-income countries with better political stability had an overall mean score of 4, while low-income countries with less political stability had an overall mean score of 2 (7). A similar trend has been observed in the IHR (2005) State Party Annual Reporting (SPAR). The overall mean of IHR (2005) implementation across 15 capacities stands at 66% (2022) and has remained stable around that level with no measurable improvement over the past five years.

14. The Region is host to some of the world's largest recurring mass gatherings. These include religious events of different sizes and nature such as the Hajj and Umrah, which are regularly hosted by Saudi Arabia. Annually, approximately 10 million individuals from 182 countries travel to Saudi Arabia to participate in these pilgrimages and the capacity of the country to manage these events has improved over the years (6,8).

15. Arba'een and Ashura are regularly hosted by Iraq. The number of pilgrims attending from Iraq and neighbouring countries during Arba'een has increased significantly from 3 million in 2003 to 21 million in 2019. Managing this large population poses a major burden on the already fragile health system capacity in Iraq. These challenges are compounded by an inadequate health infrastructure and lack of preparedness and planning for such large events. Arba'een poses a potential risk for outbreaks of infectious diseases, while also placing a high burden on host country health services due to traumatic injuries, noncommunicable diseases, comorbidities and heat-related disorders (9). There are increased opportunities for potential cross-border spread of infectious diseases given the proximity and shared land border between the Islamic Republic of Iran and Iraq, as well as the influx of pilgrims from neighbouring countries such as Afghanistan and Pakistan who travel through the Islamic Republic of Iran to participate in the Arba'een gathering. During Arba'een, controlling infectious diseases is challenging due to the high population density, non-resilient health infrastructure, limited control of infectious diseases and participants' perception of health risks being lower than the reality.

16. The Region also hosts recurring mass gatherings for sports events such as the Dakar Rally and Grands Prix races that took place in United Arab Emirates in 2009–2022, Bahrain in 2004–2010 and 2012–2023, and Qatar in 2021. Thousands of people usually attend these gatherings. Moreover, other countries in the Region hold summer cultural festivals and concerts, conferences, summits and other sporting events that attract large international attendance.

17. Non-recurring mass gathering events have also taken place in the Region, such as the quadrennial FIFA World Cup 2022 (Qatar), the Expo 2020 Dubai (United Arab Emirates) and COP27 in 2022 (Egypt) and will continue to take place; COP28 will be held in 2023 in the United Arab Emirates, for example. Such large events pose challenges in managing health risks during the event as well as opportunities for enhancing capacities.

18. In 2022, Qatar became the first Middle Eastern country to host the FIFA World Cup – a mega sports event. Over the four weeks of the tournament, approximately 3.4 million visitors attended, with a maximum number of approximately 500 000 at one time. Despite the challenges posed by the ongoing COVID-19 pandemic, no significant increase in disease transmission was documented. Qatar and WHO collaborated closely with FIFA to implement joint activities that prioritized health security, healthy lives and physical and mental well-being.

19. For the Dubai Expo 2020, the United Arab Emirates made significant investments in infrastructure, structured command, control and communication (C3) systems and risk-based planning, which resulted in the postponing of the event to 2021 and the design of measures to mitigate the COVID-19 pandemic. Despite the pandemic, the event was attended by over 24 million people from 192 countries, with no major public health problems (10,11). The high-level 18th Francophonie Summit planned in Tunisia for 2020 was also postponed (to 2022) due to the COVID-19 pandemic. Such mega events are highly instructive to those looking for ways to safely organize mass gatherings during pandemics, underlining the importance of cooperation, innovation and prioritizing public health and the safety of attendees during the event.

20. The complex sociopolitical landscape, characterized by conflict, social unrest, political instability and economic constraints, in some countries of the Region has resulted in unplanned and unforeseen events, which are difficult to prepare for and respond to. The inherent nature of unplanned mass gatherings, which by definition usually lack planning and preparation, poses additional hurdles. These events can be unpredictable in terms of size, nature and associated health risks. The varying capacity of countries within the Region to manage such gatherings further exacerbates the situation. Countries, especially in low-resource settings, have struggled to cope with the sudden surges in the demand for health care services due to a lack of emergency plans, resources, and stakeholder and community engagement.

21. During the COVID-19 pandemic, several countries employed a risk-assessment approach that informed attendance and mitigation measures for high-profile events, particularly for events that attracted an international audience. For example, the Hajj in 2020 utilized a rigorous risk-assessment exercise which was updated and adapted during the preparedness stage. The assessment took into account the quickly evolving epidemiological evidence and country capacity, resulting in a modified observance with limited international attendance in 2021, and a mandatory COVID-19 vaccination policy in 2021 and 2022. Expo 2020 Dubai was postponed until 2021 based on the findings of the risk assessment that was conducted which carefully weighed national capacities along with the changing risk throughout the period (11). A risk assessment was also conducted for Arba'een in 2020 that resulted in additional mitigation measures and limiting participation to Iraqis. In 2021, the risk assessment for Arba'een allowed participation from neighbouring countries with proof of COVID-19 vaccination.

Current gaps, challenges and capacities in the management of mass gatherings in the Region

Command, control and communication

22. Strong, well-established leadership and coordination with different sectors are vital for the safe delivery of mass gatherings. In many countries, mass gathering events are usually led by event organizers and are not well coordinated with the health sector or are managed at times by non-health sectors such as the ministries of interior or foreign affairs or at cabinet level for high-profile events. Some countries in the Region that host large mass gatherings regularly have established command, control and communication (C3) structures with clear roles and responsibilities for different sectors, such as the well-established C3 structure for the Hajj in Saudi Arabia. The United Arab Emirates put in place a high-level governing body to oversee coordination among various authorities to ensure smooth functioning during Expo 2020 Dubai, and participation from local authorities helped to facilitate decision-making and integration during the planning phase for the event and for its legacy (11). Similarly, Qatar put in place a high-level governing body linked to local and international FIFA offices to oversee coordination among various authorities for the FIFA World Cup 2022 and established a tactical group with defined roles and responsibilities. Egypt established C3 coordinating bodies and command and control centres for COP27. The health sector was integrated into the relevant coordination structures for each of these events.

23. However, in many countries in the Region, C3 structures for mass gatherings are not institutionalized, the health sector's role and its linkage with other sectors remains fragmented, and coordination platforms for mass gatherings are not integrated with national public health emergency operation centres. Moreover, comprehensive emergency management systems remain underinvested in or lacking in many countries.

Risk assessment

24. Systematic and ongoing risk assessment is vital to inform the strategic planning and delivery of mass gatherings. In most contexts, preparations for mass gatherings require substantial investment and capacity-building for a range of identified risks. Risk assessment enables public health authorities and event organizers to identify and assess the potential public health impact of mass gatherings and the measures required to deliver the event safely (1). It is therefore imperative to enhance capacities for risk assessment.

25. During the COVID-19 pandemic, events were cancelled or restricted in size without conducting risk assessments, which had significant impact on the economy of the host countries (12). For instance, hosting-related businesses, such as hotels and restaurants, experienced revenue loss, and workers in the event planning and hospitality industries lost jobs due to postponed or cancelled events, demonstrating the need for a stepwise risk-based approach.

26. Some countries such as Qatar and Iraq have utilized a WHO risk-assessment tool to inform policy decisions and the Jeddah tool developed in Saudi Arabia has been used to conduct the risk assessment for the Hajj. WHO has conducted orientation sessions for countries on the risk-based approach to planning for mass-gatherings that takes into account the characteristic of the event, its context, risk identification, risk mitigation, and risk communication during the event.

All-hazard preparedness and response

27. Mass gatherings often attract global attention and a substantial number of attendees, thereby posing formidable challenges. Due to the potential public health risks associated with them, it is critical to incorporate multisectoral planning (13). Such planning requires substantial and resource-intensive coordination and collaboration among various bodies, including the public health and hospital sectors, the security sector, the event organizers and other relevant authorities, to prioritize the safety of attendees, allocate resources, facilitate effective information sharing (11) and identify roles and responsibilities.

28. The integration of mass gatherings in all-hazard and multisectoral preparedness and response plans is a standard process carried out by countries, especially those hosting regular large mass gatherings, based on risk assessments and taking into account various scenarios, such as infectious disease outbreaks, natural disasters and security incidents. These plans can be tested through simulation exercises, such as took place in Egypt for COP27 and Qatar for the FIFA World Cup 2022.

29. However, the majority of countries hosting mass gatherings lack clear operational plans, guidelines and standard operating procedures to prepare for mass gatherings and to respond to emergencies that may arise during the events. Even if plans exist, they often remain untested and some sectors remain unaware of them, resulting in challenges to their implementation. Therefore, the proposed regional framework calls for enhanced all-hazard preparedness and response planning as a key element in the delivery of safe mass gatherings.

Early warning, surveillance and information management system

30. Although most countries have developed capacities for indicator-based surveillance systems (7), event-based surveillance systems remain inadequate and fragmented. Some countries have made concerted efforts towards enhancing surveillance for mass gatherings through, for example, early warning functions to support the Hajj and Umrah pilgrimages and sentinel surveillance to support the Arba'een gathering.

31. Challenges persist in many countries of the Region in linking surveillance and health information systems so that data can be utilized to ensure timely detection and guide responses and decision-making during mass gatherings. Surveillance systems and international contact tracing are neither well defined nor linked during large mass gathering events.

Points of entry, travel measures and cross-border collaboration

32. IHR capacities at points of entry are vital for the response to an influx of travellers to a country to prevent and manage health risks in a timely manner. Countries in the Region have developed routine capacities (scoring 60%) at points of entry, as documented in the 2022 SPAR and the 2016–2019 JEE, but capacities to respond to emergencies remain inadequate (7). Limited point-of-entry preparedness capacities were observed during the COVID-19 pandemic. This included: a lack of coordination and communication between different service providers; a lack of awareness of the IHR (2005) and the competent authorities' role in implementing them; a lack of integration of points-of-entry surveillance data within the national surveillance system; and the unavailability of public health contingency plans.

33. Significant investment is needed to apply a risk-assessment approach to travel-related measures, all-hazard emergency planning preparedness, and operational and functional standard operating

procedures for rapid response. In this context, a useful example from the Region is the COVID-19 mitigation plan of Saudi Arabia, which produced travel advice to inform pilgrims of diagnostic, vaccination and other requirements during the Hajj pilgrimage in 2021 (14).

34. As the potential cross-border transmission of infectious diseases is a significant risk associated with mass gatherings, cross-border, regional and global collaboration during mass gathering events has been improved, as is evident for the Arba'een gathering and other mass gatherings in Iraq and the Islamic Republic of Iran (2). Nonetheless, high-level support is needed in the Region for more effective collaboration and exchange of experience, and for enhancing the preparedness and readiness for, and response to, the public health events associated with mass gatherings.

Risk communication and community engagement

35. Public health risks begin and end with communities. Accordingly, raising awareness and ensuring the availability of comprehensive and relevant resources for decision-makers, organizers, health networks, partners and communities (including residents, travellers and various other groups) is essential to ensure effective preparedness for health risks during mass gathering events. Every public health emergency has the potential to affect communities differently, and each context has its own challenges and limitations that impact a country's readiness to respond to health emergencies during mass gatherings. Risk communication and community engagement (RCCE) is an integral part of the risk assessment and public health response planning for mass gatherings. It provides the necessary information to fully assess risks at the community level, gauge community awareness and readiness, and identify at-risk populations and coordination mechanisms. RCCE is crucial in leveraging existing capacities, maximizing collaboration and coordination, ensuring public trust and readiness, and suggesting effective community-led solutions to strengthen health emergency response management before, during and after a mass gathering.

36. The 2022 FIFA World Cup in Qatar serves as one of the best examples of the management of mass gatherings in the Region. The centralized approach to communication, under the leadership and guidance of the Supreme Committee for Health Care Communication, unified decision-making in all communication-related areas based on the various health risks identified in the risk-assessment for the World Cup. Currently, Qatar is actively working on compiling best practices and lessons learned in a legacy document that will contribute to overall learning and capacity development in RCCE for mass gatherings in the Region.

37. Despite the challenges, the COVID-19 pandemic also provided an opportunity for better RCCE planning for mass gatherings due to the establishment of much-needed coordination mechanisms and capacity-building in this area. It will be important for countries to maintain this momentum by building on these existing capacities and incorporating RCCE in planning to ensure a better response to planned and unplanned mass gatherings.

38. The infodemics which accompanied the COVID-19 pandemic highlighted the lack of risk communication strategies – a challenge often exacerbated by instability, lack of trust, poor utilization of available information and reliance on one-way messaging for communication. There is a need for the development of national RCCE strategies, risk-tailored messages and plans, based on effective social listening and rumour detection, to ensure that the general public is informed and engaged in an effective and timely manner, and to manage infodemics during mass gatherings.

Legacy generation and the exchange of experience

39. A key aim for those involved in the preparation of mass gatherings should be leaving a viable public health legacy, including sustainable improvements to the health infrastructure, health behaviours, health systems and IHR (2005) core capacities of the host country. This legacy should also include improvements in the ability to deliver safe mass gatherings in the future. In addition, it includes building

the evidence base and sharing this knowledge globally. This depends on taking an open approach to identifying and learning from both good practices and challenges. Several countries of the Region have documented their mass gatherings, organized and participated in international scientific conferences and published scientific papers to share their experience with mass gathering organizers. One of the main objectives of the Global Center for Mass Gatherings Medicine in Saudi Arabia is to promote collaboration and share experience with countries hosting or planning mass gathering events (15). Despite this, challenges exist to the systematic documentation of lessons learned and the exchange of expertise in the Region, and there is no established platform to facilitate the sharing of experience.

WHO support for public health readiness for mass gatherings in the Region

40. The IHR (2005) mandate that WHO work with Member States to develop core capacities, necessary policies, measures, guidelines and instruments for controlling potential public health threats, including hazards posed by mass gatherings and preventing cross-border spread of diseases (16). WHO's work on mass gatherings was strengthened by decision EB130(3) of the 130th Session of the WHO Executive Board in 2011 (17). The decision states that the WHO Director-General should, where appropriate, work closely with Member States that are planning and conducting mass gatherings to support cooperation and communication between the concerned health authorities in each country and strengthen capacities to better utilize the IHR (2005).

41. WHO advocates a risk-based approach to planning, modifying, postponing and cancelling mass gatherings. The Organization supports Member States in the Region, at their request, in conducting risk assessments – most recently in Egypt for COP27, Iraq for Arba'een in 2020–2023 and Qatar for the Arab Cup in 2021 and the FIFA World Cup 2022. Furthermore, it has provided support in developing mitigation strategies and communication messages, conducting training programmes and undertaking simulation exercises to test capacities, which suggests increasing Member State interest in this approach as public health threats will always pose a risk during mass gatherings. Similarly, several orientation sessions and technical support missions have been provided to countries in the Region to conduct risk assessments for mass gatherings in the context of the COVID-19 pandemic, the monkeypox outbreak and other hazards to resume organizing mass gatherings in the Region.

42. WHO, in collaboration with global mass gathering partners, developed comprehensive key recommendations for COVID-19 in February 2020 (18). Since then, and with the evolution of the COVID-19 pandemic, risk-assessment tools have been updated to guide a risk-based approach to planning for generic, sports and religious mass gathering events. A COVID-19 risk-assessment tool was followed by the development of an all-hazard risk-assessment tool for mass gathering events to inform the comprehensive planning of mass gatherings globally. In addition to global policy and technical recommendations, WHO developed specific interim guidance and technical guidelines for various events hosted in the Region during the COVID-19 pandemic, including Nawroz, Eid al-Fitr (19) and Eid al-Adha (20), and safe practices during the Islamic holy month of Ramadan (21).

43. The Global Center for Mass Gatherings Medicine in Saudi Arabia is a WHO Collaborating Centre that works to address the challenges of mass gatherings such as the Hajj and Umrah pilgrimages. As a leading organization in the field of mass gatherings, the Center has a robust set of capabilities, including unified C3 governance and coordination, extensive expertise in hosting and planning mass gatherings, and the ability to perform risk assessment, develop risk management strategies and conduct capacity-building exercises. The Center has made significant contributions to the field of mass gathering medicine, and continues to play a leading role in the development of evidence-based public health policies for mass gatherings (22).

44. WHO supports cross-border coordination and collaboration on the religious mass-gatherings hosted in Iraq and Islamic Republic of Iran between these countries and with other countries, including Afghanistan, Jordan, Kuwait, Lebanon and Pakistan. This support focuses on identifying and prioritizing

public health threats, establishing preparedness modalities and facilitating the exchange of information and experiences to strengthen public health measures in the context of mass gatherings (2).

45. WHO played a key role in supporting Qatar in the development of readiness, preparedness and response plans and their implementation to ensure the safety of the 2021 FIFA Arab Cup and the FIFA World Cup 2022, amid the COVID-19 pandemic, the monkeypox outbreak and other public health threats. WHO also developed an e-learning course on chemical, biological, radiological and nuclear considerations in mass gatherings in preparation for the FIFA World Cup 2022 (23).

A regional framework for strengthening public health readiness for mass gatherings

46. The purpose of the regional framework is to provide guidance to countries in the Eastern Mediterranean Region to strengthen their public health readiness for mass gatherings. It is based on best practices and lessons learned from previous experiences and extensive consultation with Member States. Consultation with the Global Center for Mass Gatherings Medicine in Saudi Arabia was also undertaken and findings from country visits and after-action review reports utilized to inform the framework. The framework is designed to be agile and adaptable to local needs and contexts. Essential components include: risk assessments; all-hazard risk mitigation plans; strengthened surveillance systems; expanded public health and health system capacities, including access to health care services; and coordination and collaboration among event organizers, stakeholders and countries to ensure the safety and well-being of attendees and document the legacy of the event.

47. The guiding principles of the framework are:

- **Multisectoral coordination.** The effective management of mass-gathering risks requires multi- and cross-sectoral coordination among government agencies. The main stakeholders for a mass gathering can vary depending on the type and purpose of the gathering, but typically they include event organizers, public health authorities, local government authorities, emergency medical services, security agencies, planning, finance and foreign affairs authorities, vendors and suppliers, attendees and participants, community groups and organizations, public transportation services and international organizations such as WHO. Considering the national and international implications for health security, coordination is a critical aspect of any successful strategy and plan for safe delivery and to ensure the legacy of the event.
- **Partnerships.** Establishing strategic partnerships with influential international organizations, academic institutions, relevant civil society groups and WHO Collaborating Centres, such as the Global Center for Mass Gatherings Medicine, is needed for support and guidance. This not only facilitates the sharing of valuable experiences and lessons learned from other countries, but also lays the foundation for continued success in managing mass gatherings.
- **Planning and preparation.** To ensure a comprehensive approach to managing mass gatherings, careful planning and preparation must be undertaken. This includes integrating a country's mass-gatherings plan with existing relevant plans, such as the national all-hazards emergency preparedness and response plan, national action plan for health security and hazard-specific plans, to promote a cohesive response to potential threats.
- **Health system strengthening.** In order to ensure that the capacities developed during mass gatherings translate into long-lasting benefits and leave a positive legacy, it is crucial to create linkages with the strengthening of the overall health system. This involves enhancing capacity, organizational structures, infrastructure and resource allocation in alignment with broader health system priorities so that the enhancements contribute to sustained improvements in the health system beyond the immediate needs of the event.

- **Gender, rights and equity.** It is important to adopt a gender, rights and equity approach to promote gender equity and empower women and other vulnerable groups. Specific actions can be taken to ensure the inclusion of all individuals, especially vulnerable groups, in the planning and execution of mass gatherings and in alignment with the targets of the Sustainable Development Goals.

48. The proposed framework for strengthening public health readiness for mass gatherings in the Eastern Mediterranean Region, 2023–2028 is presented in Annex 1. It is designed to guide the countries and territories of the Region in establishing the necessary institutional arrangements, strengthening core multidisciplinary capacities and implementing practical interventions to prepare for hosting mass gatherings and to prevent, detect and respond to any associated public health threats.

49. The strategic objectives of the framework are to:

- **Improve multisectoral coordination between public health authorities, event organizers and relevant stakeholders for joint risk assessment and planning and to ensure timely and effective action.** This also includes the establishment of a clear command, control and communication structure based on the incident management system and the utilization of a fully-functioning public health emergency operation centre (PHEOC) for the management of mass gatherings.
- **Establish a standardized approach to conducting risk assessments for mass gatherings to guide the planning and development of risk mitigation plans.** This involves: identifying and forecasting public health risks in the host country and in the countries from which people travel to the planned mass gathering; assessing public health capacities guided by the IHR (2005); assessing health system capacities; developing a system for proactive RCCE to collect and analyse insights to inform messaging and other public health interventions; and ensuring the availability of resources and logistic support.
- **Strengthen public health and health system capacity to prevent, prepare for, detect and respond to the public health risks posed by mass gatherings.** Guided by the risk assessment, develop all-hazard risk mitigation plans that cover: enhanced surveillance and diagnostic capacity to ensure the early detection of health risks; strengthened systems for the monitoring of water, food, vector, air and waste management; strengthening capacities to provide medical services and manage mass casualties in pre-hospital and hospital settings to ensure an effective response to accidental and deliberate events, including chemical, biological, radiological and nuclear events; promoting the use of innovation and digital technologies and applications across various public health interventions to facilitate their implementation; and developing the capacity of the multidisciplinary workforce, including rapid response teams and emergency medical teams, for the implementation of the different plans.
- **Establish cross-border collaboration with neighbouring countries for the safe movement of participants across borders during mass gatherings.** This includes developing arrangements for collaboration with countries and building IHR (2005) capacities at points of entry for the effective surveillance and management of public health risks, including the implementation of travel requirements and advice.
- **Develop a public health research agenda for mass gatherings to generate evidence to inform public health interventions.** This includes the documentation of practices to generate a legacy and participating in different platforms, including scientific conferences, to exchange knowledge and inform public health preparedness and readiness for future mass gatherings in other countries.

Way forward

50. Member States are recommended to take the actions listed below, arranged by phases. Details related to the different actions are described in the framework.

In the pre-event phase

- Promote a C3 structure and engage relevant stakeholders with clear roles and responsibilities during mass gatherings.
- Conduct a comprehensive risk assessment of the potential public health risks associated with mass gatherings and develop a contingency plan that addresses all identified risks and ensures the availability of resources and logistics support to address them.
- Enhance public health functions and health service delivery to cope with the increased influx of participants.
- Build the capacity of health care workers and volunteers on relevant public health risks and response procedures.
- Develop and implement RCCE and infodemic management strategies.

During the event

- Regularly update risk assessments to monitor the evolution and impacts of potential public health risks and activate the contingency plan if needed.
- Ensure adequate staffing levels, supplies and medical equipment to respond to any emergencies.
- Develop regular reports to inform the decision-making process and provide public health education and communication to attendees on how to protect themselves and others.

In the post-event phase

- Conduct a post-event debriefing or after-action review with all relevant stakeholders to identify best practices, challenges and the way forward.
- Prepare a final report documenting the overall public health response to the mass gathering and provide recommendations for future events.
- Document the event legacy and share lessons learned and best practices with other countries and organizations to improve global readiness for mass gatherings.

51. WHO will support the adaptation, implementation and monitoring of the regional framework at country level, with a focus on countries with limited capacities for hosting mass gatherings. Moreover, WHO will provide technical support to enhance the capacity of countries and facilitate cross-border and regional collaboration to promote the exchange of experiences during mass gatherings and country-to-country support and learning.

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Annex 1. Framework for strengthening public health readiness for mass gatherings in the Eastern Mediterranean Region, 2023–2028

Strategic objectives	Actions	Expected deliverables
1. Improve multisectoral coordination between public health authorities, event organizers and relevant stakeholders for joint risk assessment and planning and to ensure timely and effective action	<p>1.1 Map and engage relevant stakeholders with clear roles and responsibilities during mass gatherings, including responsibilities related to venue security and emergency response.</p> <p>1.2 Establish a command, control and communication (C3) structure based on the incident management system for mass gatherings that ensures effective communication and coordination and reporting between all stakeholders.</p> <p>1.3 Develop standard operating procedures (SOPs) and plans for coordination and information sharing among sectors.</p> <p>1.4 Review, test and update reporting and information cross-cutting plans and SOPs for multisectoral coordination.</p> <p>1.5 Strengthen the public health emergency operations centre (PHEOC) with a trained team and tested and updated plans that are connected to stakeholders.</p> <p>1.6 Train the PHEOC team in their roles and responsibilities.</p> <p>1.7 Ensure linkages between the PHEOC and the other EOCs exist in the country and engaged in the mass gatherings.</p>	<ul style="list-style-type: none"> Stakeholder mapping conducted to identify stakeholders engaged in organizing mass gatherings. C3 framework for mass gatherings established and implemented. Command-and-control structure established for mass gatherings with clear roles and responsibilities for all relevant sectors. SOP and plans developed for coordination and information sharing among stakeholders. SOPs and plans tested and updated on a regular basis. PHEOC established and utilized for mass gatherings, linked with surveillance and other information system and operating effectively. PHEOC team trained and ready to respond to any emergencies. PHEOC plans tested and updated regularly. PHEOC connected with all stakeholders and other EOCs.
2. Establish a standardized approach to conducting risk assessments for mass gatherings to guide the planning and development of risk mitigation plans	<p>2.1 Conduct or update a comprehensive risk assessment of the potential public health risks associated with mass gatherings using accepted methodology (e.g. WHO tools).</p> <p>2.2 Conduct or update assessment of public health functions and health system capacities utilizing existing IHR-related assessments and reviews.</p> <p>2.3 Develop a risk communication and community engagement (RCCE) and infodemic management plan for mass gatherings.</p> <p>2.4 Strengthen national RCCE capacities in the areas of risk communication, infodemic management, message development and testing, and social and community listening, and employ behavioural insights, tools and knowledge.</p> <p>2.5 Identify all effective communication channels, both in-person and online, to ensure effective community awareness and engagement.</p> <p>2.6 Develop RCCE messages for identified priority risks for attendees and the general public.</p> <p>2.7 Put effective and responsive RCCE mechanisms in place and adjust responses based on needs identified through effective community listening.</p>	<ul style="list-style-type: none"> Training conducted on the risk assessment tool and method for various types of mass gathering. Existing International Health Regulations (IHR)-related assessments and reviews utilized for the capacity assessment. Risk assessment conducted and updated regularly before and during the event to identify and regularly update the potential public health threats associated with mass gatherings. Informed by the risk assessment, an RCCE plan developed and implemented for mass gatherings. A system developed for the collection of behavioural insights to inform interventions and messaging A channel of communications identified for two-way communication during mass gathering events for the public, attendees and decision-makers. Staff trained on RCCE, including on developing targeted messages and communication to the public. RCCE messages developed and regularly updated for priority risks during mass gatherings.
3. Strengthen public health and health system capacity to prevent, prepare for, detect and respond to the public health risks posed by mass gatherings	<p>3.1 Develop risk mitigation plan based on the risk assessment.</p> <p>3.2 Develop guidelines and SOPs to expand national surveillance systems to monitor potential public health threats and detect any early warning signs during mass gatherings.</p> <p>3.3 Develop or update SOPs and plans for early warning and event-based surveillance, including possible visual triage during mass gathering events.</p> <p>3.4 Review and revise relevant reporting tools, case definitions, syndromes and mechanisms for the surveillance of public health events and information sharing during mass gatherings.</p> <p>3.5 Develop and disseminate an all-hazard situation report from various information sources, including environmental-related sources to inform decisions during mass gatherings.</p> <p>3.6 Strengthen the linkage and information sharing mechanisms between laboratory data and the national surveillance system.</p>	<ul style="list-style-type: none"> The necessary resources and logistic support available to implement the risk mitigation plan. Updated national guidelines and SOPs to monitor potential public health threats and detect any early warning signs during mass gatherings in place and implemented. SOPs/plans updated for the early warning and event-based component of the surveillance system during mass gathering events. Surveillance and rapid response teams trained on case definitions and reporting during mass gatherings. Surveillance and situation reports generated to guide decision-making during mass gatherings. Laboratory data linked with the surveillance system. Laboratory system enhanced for priority conditions.

Strategic objectives	Actions	Expected deliverables
	<p>3.7 Expand and enhance the diagnostic capacity for priority conditions (based on the risk assessment) while ensuring a maintained quality management system.</p> <p>3.8 Train surveillance, laboratory and rapid response teams to be deployed during mass gatherings.</p> <p>3.9 Facilitate domestic and international contact tracing for confirmed public health threats.</p> <p>3.10 Enhance vector management programmes based on the findings of the risk assessment.</p> <p>3.11 Strengthen the system to monitor food (restaurants, catering services, vendors, etc.) and water quality and waste management in the mass gathering venues, main accommodation and lodging sites and develop plans for managing water- and food-borne diseases.</p> <p>3.12 Establish/strengthen a system to monitor indoor and outdoor air quality in mass gathering venues.</p> <p>3.13 Enhance the capacity of health care services, including increasing staffing levels, medications, vaccines, supplies and medical equipment.</p> <p>3.14 Develop and disseminate guidance on the availability (model of care) and coverage of different types of services for local and international participants of mass gatherings.</p> <p>3.15 Develop contingency plans for health care response to potential emergencies, including deliberate events.</p> <p>3.16 Strengthen, establish and train emergency medical teams for service provision and for managing mass casualties during mass gatherings.</p> <p>3.17 Develop, test and update plans and capacity for mass casualty management during the event.</p> <p>3.18 Enhance the infection control programme and ensure the availability of standards and resources for a safe environment in health facilities.</p> <p>3.19 Conduct drills and simulation exercises to test the functionality of the different elements of the plan.</p> <p>3.20 Carry out capacity-building for organizers and health care workers and emergency medical teams, among others, for mass gathering management.</p> <p>3.21 Establish/update technology infrastructure to support digital applications for the implementation of interventions during mass gatherings.</p>	<ul style="list-style-type: none"> • Multidisciplinary staff trained on surveillance, laboratory, investigation and response. • Contacts of confirmed cases listed, identified and traced. • SOPs and arrangements developed for the international tracing of contacts. • Food- and water-related risks prevented and plans in place to respond to related disease outbreaks. • Vector surveillance sites strengthened and resources in place to deploy control measures, as needed. • Standards for indoor air quality maintained. • The necessary resources and logistic support available to implement the health care service plan. • Guidance in place on how and where to access medical services. • Health care services capacitated to respond to any emergencies at mass gatherings. • Staff trained to prepare and respond to potential emergencies identified by the risk assessment. • Emergency medical teams trained for managing mass casualties. • Health care services and hospitals identified to respond to emergencies during mass gatherings, with a clear referral system. • Mass casualty plan developed, tested and updated regularly. • Infection prevention and control programmes capacitated for safe health care and essential services delivery and prevention and control of health care-acquired infections. • Drills and simulation exercises designed and conducted. • Mass gathering organizers and health care workers trained on mass gathering management. • Capacities for utilization of digital applications during mass gatherings developed.
<p>4. Establish cross-border collaboration with neighbouring countries for the safe movement of participants across borders during mass gatherings</p>	<p>4.1 Develop and implement a cross-border risk assessment and management plan.</p> <p>4.2 Establish joint rapid risk assessment and rapid response teams for public health emergencies.</p> <p>4.3 Establish and maintain a network of contact points at points of entry.</p> <p>4.4 Establish collaboration mechanisms among countries (e.g. a memorandum of understanding) to facilitate information sharing during mass gatherings, including public health surveillance data.</p> <p>4.5 Facilitate joint simulation exercises, drills and capacity-building plans for points-of-entry teams across borders to enable early detection and respond to cross-border public health threats.</p> <p>4.6 Build IHR (2005) capacities at points of entry for effective surveillance and management of public health risks.</p> <p>4.7 Train staff at points of entry on IHR core capacity requirements and procedures.</p> <p>4.8 Develop travel advice and disseminate to countries participating in mass gatherings.</p> <p>4.9 Establish a monitoring system to track the implementation of travel requirements and advice.</p>	<ul style="list-style-type: none"> • Plan developed for cross-border risk assessment and management. • Joint rapid risk assessment/rapid response teams identified to jointly respond to public health emergencies. • Cross-border collaboration framework established for mass gatherings. • Operational linkages established for cross-border collaboration during mass gatherings. • Cross-border collaboration mechanism (e.g. memorandum of understanding) plans developed and agreed upon. • Points of entry equipped to detect and respond to public health risks. • Drills/simulation exercises and capacity-building programme conducted for cross-border public health team. • Points-of-entry staff trained on core capacity requirements. • System established for developing, disseminating, communicating, enforcing and monitoring travel measures.

Strategic objectives	Actions	Expected deliverables
5. Develop a public health research agenda for mass gatherings to generate evidence to inform public health interventions	<p>5.1 Identify research gaps and priorities in mass gatherings.</p> <p>5.2 Allocate funds to research projects to address gaps.</p> <p>5.3 Conduct research to identify effectiveness of public health interventions during mass gatherings.</p> <p>5.4 Collaborate with academic institutions to advance research on public health and mass gatherings.</p> <p>5.5 Conduct post-event debriefings or after-action reviews with all relevant stakeholders to identify and document successes and areas for improvement.</p> <p>5.6 Organize twinning programmes to allow the participation of observers for the exchange of knowledge and expertise for future major sports events.</p> <p>5.7 Promote the use of lessons learned and best practices through different regional and global forums and platforms to improve readiness for mass gatherings.</p>	<ul style="list-style-type: none"> • Research gaps and priorities identified for mass gatherings. • Research projects conducted on mass gatherings. • Effective public health interventions identified and implemented during mass gatherings. • Public health research capabilities and knowledge on mass gatherings enhanced. • After-action reviews conducted for mass gatherings and legacy of events documented and disseminated. • Observer programmes established for exchange of experiences during mass gatherings. • Lessons learned and best practices shared with other countries and organizations. • Increased global readiness for mass gatherings.