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Public health emergencies: preparedness and response

WHO's work in health emergencies

Report by the Director-General

1. This report is submitted pursuant to the requests contained in resolution EBSS3.R1 (2015) and decision WHA68(10) (2015). It provides information on all WHO Grade 3 emergencies, United Nations Inter-Agency Standing Committee Level 3 emergencies and public health emergencies of international concern that required a response by WHO between 1 January and 30 September 2022. It also responds to the request contained in Health Assembly resolution WHA73.8 (2020) concerning the methodology and the implementation and findings of the Surveillance System for attacks on health care in complex humanitarian emergencies.

ACTIVE GRADE 3 EMERGENCIES AS AT 30 SEPTEMBER 2022

2. As at 30 September 2022, WHO is responding to 50 emergencies, 39 of which are acute graded emergencies and 11 of which are protracted graded emergencies (see Annex). Eight acute Grade 3 emergencies were active during the reporting period from 1 January 2022 to 30 September 2022 (see table), including emergencies in Afghanistan, Ethiopia, Somalia, and Ukraine that were covered by United Nations Inter-Agency Standing Committee System-Wide Scale-Up protocols. Given their scale, complexity and inherent operational challenges, these Grade 3 emergencies required the highest level of Organization-wide support.

Table. Grade 3 acute and protracted emergencies as at 30 September 2022 (in order of initial grading)

Country/countries affected and nature of emergency	WHO region	Date of initial grading	Status as at 30 September 2022
Acute emergencies			
Pakistan: floods	Eastern Mediterranean	29 August 2022	Ongoing (Grade 3)
Horn of Africa: drought and food insecurity	Africa	20 May 2022	Ongoing (Grade 3)
Global: monkeypox/mpox	Global	4 June 2022 (Grade 2)	Ongoing (Grade 3; upgraded from Grade 2 on 27 July 2022); public health emergency of international concern declared on 23 July 2022
Northern Ethiopia: complex emergency	Africa	18 November 2020	Ongoing (Grade 3)

Country/countries affected and nature of emergency	WHO region	Date of initial grading	Status as at 30 September 2022
Global: COVID-19 pandemic	Global	14 January 2020	Ongoing (Grade 3); public health emergency of international concern declared on 30 January 2020
Afghanistan: complex emergency	Eastern Mediterranean	28 October 2015	Ongoing (Grade 3)
Ukraine: complex emergency	Europe	20 February 2013	Ongoing (Grade 3)
Syrian Arab Republic: complex emergency	Eastern Mediterranean	3 January 2013	Ongoing (Grade 3)
Protracted emergencies			
Democratic Republic of the Congo: complex emergency	Africa	29 August 2017	Protracted Grade 3 since 25 September 2020
Somalia: complex emergency	Eastern Mediterranean	16 February 2017	Protracted Grade 3 since 8 August 2019
Yemen: complex emergency	Eastern Mediterranean	2 April 2015	Protracted Grade 3 since 6 May 2020
South Sudan: complex emergency	Africa	12 February 2014	Protracted Grade 3 since 1 May 2017

3. In line with WHO's Emergency Response Framework, all graded emergencies are managed through WHO's incident management system. Where required, the Contingency Fund for Emergencies, which can release funding in 24 hours, was used to fund the initial response to acute events and scale up life-saving health operations in protracted crises in response to escalating needs. A total of US$ 72.89 million had been released to support WHO's emergency response operations between 1 January and 30 September 2022.

4. WHO developed strategic response and operational plans with national health authorities and partners for all graded and protracted emergencies. The Organization provided support for the efforts of national governments to increase the quality and coverage of health services; strengthen primary, secondary and hospital care by deploying mobile teams and reinforcing health facilities; improve surveillance and early warning systems; conduct vaccination campaigns; distribute medicines and supplies; and train health workers in situ and through online courses.

5. In partnership with more than 900 national and international partners, more than 90 million people across 29 countries and two regions were targeted for health cluster support during the reporting period. WHO is actively strengthening context-specific coordination and multisector collaboration in order to achieve better health outcomes in collaboration with national authorities, the United Nations Inter-Agency Standing Committee, the United Nations Office for the Coordination of Humanitarian Affairs and other global partner networks.

6. Implementing emergency response operations continues to be a challenge, with knock-on effects caused by the COVID-19 pandemic continuing to complicate supply chains and deployments. Other impediments to implementation include limited humanitarian access; lack of sufficient funding to ensure the provision of sustainable and continuous life-saving health services to crisis-affected and vulnerable populations; attacks on health care workers and facilities; and escalating field costs.

PREPAREDNESS, RESPONSE, READINESS AND COORDINATION ACTIVITIES AT GLOBAL, REGIONAL AND COUNTRY LEVELS FOR ACTIVE GRADE 3 EMERGENCIES

Pakistan floods

7. Severe monsoon floods began in Pakistan in June 2022. As at 27 August, rainfall in the country was equivalent to 2.9 times the national 30-year average. WHO assessed the severity of the emergency as Grade 3 on 28 August 2022 and activated the incident management system across the Organization on 29 August 2022. The 2022 Pakistan Floods Response Plan[1] was jointly launched by the Government of Pakistan and the United Nations on 30 August 2022, with an overall funding requirement of US$ 160 million, of which US$ 22.8 million is required for urgent health needs. The WHO Emergency Appeal was issued in September,[2] with an overall funding requirement of US$ 81.5 million for the period September 2022 to May 2023.

8. Based on rapid risk assessments, WHO has prioritized action against malnutrition, water and vector-borne diseases and other infectious diseases. WHO released US$ 10 million from the Contingency Fund for Emergencies on 31 August 2022 to fund the Organization's initial rapid response and scale-up and repurposed staff at the country level to support the large-scale response effort, with additional staff deployed at the regional and global levels.

Greater Horn of Africa (Djibouti, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda): drought and food insecurity

9. More than 30 million people are projected to face crisis levels of food insecurity in the greater Horn of Africa (Djibouti, Ethiopia, Kenya Somalia, South Sudan, Sudan and Uganda) amid the region's worst drought in 40 years, combined with flooding, conflict and global supply chain disruptions. The region faces simultaneous outbreaks of measles, malaria, meningitis, yellow fever, dengue and cholera, among others. The crisis in the greater Horn of Africa is expected to last throughout 2023.

10. Since May 2022, WHO has allocated US$ 16.5 million in funding from the Contingency Fund For Emergencies for the emergency in seven countries. A total of US$ 7 million of supplies, including inter-agency emergency health kits, trauma and emergency supply kits and severe acute malnutrition kits, are being sent to countries to respond to the most pressing needs. WHO personnel have been deployed to support Member States with technical capacities across the five response pillars.[3]

Global monkeypox/mpox outbreak

11. On 23 June 2022, WHO held the first meeting of the Emergency Committee on the monkeypox virus, which was convened in accordance with International Health Regulations (2005) provisions. The

[1] Revised Pakistan 2022 Floods Response Plan: 01 Sep 2022 – 31 May 2023 (available at https://reliefweb.int/report/pakistan/revised-pakistan-2022-floods-response-plan-01-sep-2022-31-may-2023-issued-04-oct-2022?_gl=1%2A1kwn9a6%2A_ga%2AMTkzOTI3Njk4Ni4xNjY1NjU5MzUw%2A_ga_E60ZNX2F68%2AMTY2NTY1OTM0OS4xLjEuMTY2NTY1OTQzNy42MC4wLjA, accessed 13 November 2022).

[2] WHO Emergency Appeal: Health Crisis in Flood-Affected Pakistan – September 2022- May 2023 (available at https://www.emro.who.int/pak/information-resources/pakistan-floods.html, accessed 13 November 2022).

[3] Further details of WHO's response, resource requirements and work with partners can be found on the dedicated Horn of Africa crisis portal (https://www.who.int/emergencies/situations/drought-food-insecurity-greater-horn-of-africa, accessed 13 November 2022).

second meeting of the Emergency Committee on the monkeypox virus was held on 21 July 2022, following which the Director-General determined the monkeypox/mpox outbreak to be a public health emergency of international concern and issued temporary recommendations to countries.

12. The Monkeypox Strategic Preparedness, Readiness and Response Plan[1] was developed with the input of partners and public health experts, based on current global risk assessments, and was shared with Member States on 29 September 2022. It is centred on the goal of stopping the monkeypox/mpox outbreak, including three strategic objectives:

- interrupt human-to-human transmission of monkeypox/mpox, with a focus on population groups at high risk of exposure;
- protect vulnerable groups at risk of severe monkeypox/mpox disease; and
- minimize the zoonotic transmission of the monkeypox/mpox virus.

13. The monkeypox/mpox outbreak can be stopped with a strong commitment to the implementation of effective and evidence-based public health measures, particularly in the communities that need them most, including enhanced disease surveillance; the expansion of sequencing and laboratory testing; careful contact tracing to identify chains of transmission; tailored risk communication; and risk-reduction measures.

14. As at 30 September, WHO has procured 38 000 tests to support testing in 58 Member States and established a mechanism to ship specimens internationally for testing. Training in clinical management, epidemiology and laboratory testing has also been rolled out at the regional level. In addition, OpenWHO.org provides an introductory online course on monkeypox/mpox in six languages, with more than 65 000 enrolments to date, as well as an intermediate-level course on epidemiology, preparedness and response in three languages, with more than 39 000 enrolments to date. The courses have seen a surge in participation since the start of the multicountry outbreak.

15. WHO continues to urge countries to share information, diagnostic resources and data, and will continue to provide daily updates on overall epidemiology and detailed epidemiologic features, informed by analyses of the case report forms provided by Member States. Further information, including the WHO Emergency Appeal, can be found on the dedicated monkeypox/mpox crisis portal.[2]

Northern Ethiopia: complex emergency

16. The ongoing conflict in three regions (Tigray, Amhara and Afar) of northern Ethiopia has led to heightened humanitarian needs, increased displacement of people, deteriorating nutrition and food security, damage to health facilities, severe shortages in essential health services and an increased risk of disease outbreaks. There are currently an estimated 2.5 million internally displaced people in the affected regions; however, this estimated figure is certainly an underestimate as it does not account for individuals displaced as a result of the resumption of hostilities on 24 August 2022. An estimated

[1] Monkeypox Strategic Preparedness, Readiness, and Response Plan (SPRP) (https://www.who.int/publications/m/item/monkeypox-strategic-preparedness--readiness--and-response-plan-(sprp), accessed 13 November 2020).

[2] Monkeypox outbreak 2022 (https://www.who.int/emergencies/situations/monkeypox-oubreak-2022, accessed 13 November 2022).

13 million people are in need of food aid, including 5.2 million in Tigray, where almost half of the population (47%) is severely food insecure.

17. The Tigray region in particular has been experiencing severely limited humanitarian access and a lack of access to basic services and commodities, such as fuel and cash, since mid-2021. Humanitarian access has significantly improved since mid-November 2022, following the signing of an agreement to cease hostilities and restore humanitarian access and basic services. WHO's humanitarian assistance, and that of other partners, is being scaled up accordingly.

18. WHO is responding through a scaled-up health response, working with the Federal Ministry of Health, regional health bureaus, United Nations agencies and nongovernmental organizations to prevent excess mortality and morbidity by providing life-saving and essential health services, and strengthening disease surveillance and outbreak prevention and response. WHO also coordinates health sector partners. WHO has deployed dedicated subnational health cluster coordinators and information management officers in all three affected regions. By the end of the reporting period, WHO had delivered 292 metric tons of emergency health supplies, benefiting 2.3 million people. More than 2.5 million children under 5 years of age were vaccinated against measles in the three regions during the same period.

19. In March 2022, WHO established an incident management system extending to the subnational level for the response to the drought in the south of the country. More than 60 staff have been deployed to affected regions as part of the response and more than 135.8 metric tons of medical supplies have been dispatched.

20. Excluding the three northern regions, 13.1 million people in need of health services have been identified throughout the country in the humanitarian response plan for 2022, representing a 50.6% increase since 2021. The situation is deteriorating in regions affected by the country's drought, with 17 million people in need of humanitarian support and 5.5 million people in need of health assistance. Further information on WHO's work in northern Ethiopia can be found on the dedicated northern Ethiopia crisis portal.[1]

COVID-19 pandemic: public health emergency of international concern

21. WHO's response to the COVID-19 pandemic has been rapid, coordinated and sustained on an unprecedented scale. In 2022, it continued to lead the world's response to COVID-19 in order to deliver science, solutions and solidarity to end the acute phase of the pandemic.

22. The COVID-19 strategic preparedness, readiness and response plan, first published in March 2020, was updated for a second time in March 2022,[2] setting out a number of key strategic adjustments to enable the world to end the acute phase of the pandemic if implemented rapidly and

[1] Crisis in Northern Ethiopia (https://www.who.int/emergencies/situations/crisis-in-tigray-ethiopia, accessed 14 November 2022).

[2] Strategic preparedness, readiness and response plan to end the global COVID-19 emergency in 2022. Geneva; World Health Organization; 2022 (WHO/WHE/SPP/2022.1) (https://www.who.int/publications/i/item/WHO-WHE-SPP-2022.1, accessed 14 November 2022).

consistently. WHO has continued to support all Member States to achieve this aim. The 2022 Mid-Year Report: WHO's Response to COVID-19 was published in September 2022.[1]

23. Through the Technical Advisory Group on SARS-CoV-2 Virus Evolution and its analyses of millions of genome sequence submissions to public platforms (including the Global Influenza Surveillance and Response System), WHO continued to rapidly designate variants of interest and variants of concern. In June 2022, the work of the Technical Advisory Group on COVID-19 Vaccine Composition led to the publication of global recommendations for vaccine manufacturers and regulatory agencies, including recommendations on pursuing broader immunity through vaccination with the development of Omicron-specific COVID-19 vaccines.

24. Specific information related to the COVID-19 response in the context of other Grade 3 emergencies is detailed below. Further information, including the COVID-19 dashboard, can be found on the dedicated COVID-19 portal.[2]

Afghanistan: complex emergency

25. WHO scaled up surveillance, response and preparedness to outbreaks and natural hazards in 2022. It leads the health cluster and supports the implementation of humanitarian response and recovery measures to natural and human-made disasters by providing medicines, medical supplies and logistical and technical support. With health cluster partners, WHO works to strengthen trauma care and mass casualty management, while also providing emergency primary-level and secondary-level care to vulnerable, displaced and disaster-affected populations in underserved areas.

26. In areas affected by disasters, WHO supports service provision by establishing temporary and static health facilities. Working to reduce the risks to people and health facilities, WHO supports national and provincial emergency preparedness and response strategies, policies and guidelines. WHO also provides technical assistance to water, sanitation and hygiene and nutrition clusters in humanitarian response. The WHO-supported Early Warning, Alert and Response System surveys, detects and assists in the management of infectious disease outbreaks in all provinces.

27. WHO has been able to maintain static and mobile health teams to support life-saving health service provision. Mobile health teams were crucial for providing emergency health services and outbreak response. WHO continued to supply medical kits to cover basic and specialized illnesses, including noncommunicable diseases, meeting the needs of 2.9 million people for three months, while also providing trauma and emergency surgery kits to major hospitals in the country. In addition, WHO increased outreach to health facilities and hospitals in previously unserved areas, targeting an additional 2 million people in need of health assistance.

28. Further details can be found on the dedicated Afghanistan crisis portal.[3]

[1] WHO's response to COVID-19 – 2022 Mid-Year Report. Geneva; World Health Organization; 2022 (https://www.who.int/publications/m/item/who-s-response-to-covid-19-2022-mid-year-report, accessed 14 November 2022).

[2] Coronavirus disease (COVID-19) pandemic (https://www.who.int/emergencies/diseases/novel-coronavirus-2019, accessed 14 November 2022).

[3] Afghanistan crisis (https://www.who.int/emergencies/situations/afghanistan-crisis, accessed 14 November 2022).

Ukraine: complex emergency

29. Since the start of the war in Ukraine in late February 2022, close to 7 million individuals have been displaced within Ukraine and another 7.5 million refugees have been displaced across Europe; 17.7 million people are in need of humanitarian assistance. By mid-September 2022, 14 532 civilian casualties had been reported, including almost 6000 deaths.

30. WHO has worked with the Ministry of Health of Ukraine and partners to deliver services through the existing health system, providing support in areas where it is overburdened and disrupted and strengthening community outreach in areas where it is unsafe.

31. WHO is coordinating 20 emergency medical teams from nine organizations working in 10 oblasts in the east, northeast and the western parts of the country, with work centred on trauma care, patient transfer, medical evacuation, rehabilitation, training, outpatient and inpatient care. As at 26 September 2022, 14 580 consultations had been delivered by the emergency medical teams.

32. WHO has procured 1534 metric tons of medicines and medical supplies worth more than US$ 50 million, of which 858 metric tons have been distributed to multiple oblasts. Over the coming months, distribution capacities need to be increased to ensure that needs are met. More than US$ 3 million of trauma supplies have been distributed to enable up to 20 000 surgeries, while more than US$ 1.3 million of emergency supplies and more than US$ 1.2 million of medicines for the management of chronic diseases have been distributed, benefiting up to 1.5 million people. More than US$ 46 000 of cholera diagnostic kits have been distributed to test up to 10 000 suspected cases.

33. By August 2022, WHO had delivered 78 metric tons of supplies and equipment to Hungary, Poland, the Republic of Moldova and Romania, worth over US$ 3.2 million, to support basic health care, COVID-19 laboratory and testing supplies, trauma supplies and treatments for communicable diseases. A total of 1367 medical evacuations have been completed with the support of the European Union.

34. Further information can be found on the dedicated Ukraine crisis portal.[1]

Syrian Arab Republic: complex emergency

35. WHO maintained a swift and scalable response to meet the health needs of populations affected by conflict in all 14 governorates of the Syrian Arab Republic; continued to fill critical gaps in primary and secondary health care services; provided essential medicines and medical supplies; supported psychosocial interventions for the survivors of gender-based violence; and strengthened the provision of cross-conflict-line and cross-border medical supplies.

36. The health sector delivered assistance to people in need across the Syrian Arab Republic and ensured the continuity of essential health care. Throughout the reporting period, health sector partners in the country administered 5.6 million medical procedures and 6.2 million treatment courses, of which WHO provided 0.52 million and 4.9 million, respectively.

37. In the country's northwest, WHO provided life-saving and life-sustaining medicines and medical equipment worth US$ 12.2 million to 200 health facilities, sufficient to cover 6.7 million treatment courses in 2022. In the country's north-east, WHO positioned vaccines and surgical supplies, including

[1] Ukraine emergency (https://www.who.int/emergencies/situations/ukraine-emergency, accessed 15 November 2022).

trauma supplies, and supported COVID-19 vaccination activities, including in hard-to-reach areas and camps. WHO continues to strengthen local capacities in immunization and the treatment of mental illness and disability. Technical support included the development of a north-east Syria essential health services package, which is expected to contribute to enhancing both the access to and the quality of health services in the north-east of the country.

38. An all-hazards health risk profile was developed based on the WHO Strategic Tool for Assessing Risk (STAR). This will inform the development of Syria's first all-hazards preparedness and response strategy aimed at contributing to early recovery efforts, including emergency preparedness and response capacities and building Syria's health systems resilience. Further information can be found on the dedicated Syria crisis portal.[1]

Democratic Republic of the Congo: protracted complex emergency

39. WHO continued to respond to the graded crises in the Democratic Republic of the Congo in areas affected by humanitarian crises arising principally from displaced populations by ensuring the delivery of essential medicines and supplies and making available a package of essential health services. The Secretariat also provided technical support and coordination for integrated disease surveillance and response and the prevention of communicable diseases. Notable new outbreaks during the reporting period included an outbreak of Ebola virus disease after a case was confirmed in Mbandaka, a city in the north-western Equateur province. The outbreak was declared over on 4 July 2022. Further information can be found on the dedicated Ebola outbreak portal.[2]

Somalia: protracted complex emergency

40. Somalia is experiencing a worsening drought due to four consecutive failed rainy seasons. There are 7.7 million people in need of humanitarian assistance in Somalia. More than 3.7 million individuals have been displaced (internally or across the borders) by conflict, insecurity, forced evictions, drought and floods. By July 2022, drought had affected 7.1 million people in the country and resulted in the displacement of more than 918 000 people from their homes.

41. In cooperation with the Federal Ministry of Health, WHO is the cluster lead agency for health, working with 45 national and international partners to improve the health outcomes of the affected population. Health cluster partners are targeting more than 5.5 million people and working closely with other sectors.

42. During the reporting period, WHO supported large-scale vaccination campaigns against cholera, measles and polio. Funding was prioritized by the health and nutrition clusters for the country's most severely affected districts and rapid response teams were deployed to areas worst affected by cholera. WHO deployed 1929 community health workers overs the reporting period to conduct risk communication, community education, alert detection, reporting and screening for malnutrition. Further information can be found on the dedicated Somalia crisis portal.[3]

[1] Syria crisis (https://www.who.int/emergencies/situations/syria-crisis, accessed 15 November 2022).

[2] Ebola: Mbandaka, Equateur Province, Democratic Republic of the Congo, 2022 (https://www.who.int/emergencies/situations/ebola-%C3%A9quateur-province-democratic-republic-of-the-congo-2022, accessed 15 November 2022).

[3] Somalia crisis (https://www.who.int/emergencies/situations/somalia-crisis, accessed 15 November 2022).

Yemen: protracted complex emergency

43. There are more than 21.9 million people in need of humanitarian assistance in Yemen. WHO is working with the Ministry of Health and 69 national and international partners to target more than 12.6 million people across the country.

44. WHO and partners work to strengthen, sustain and expand access to a quality minimum service package of health services at the community, primary and secondary levels and to improve services at tertiary care levels. The minimum service package is essential to meet the needs of the most vulnerable people in Yemen. By August 2022, 5.4 million people had been reached with life-saving medical kits, medical consultations and interventions, reproductive health care services and child health services.

45. A major part of the health sector response is to work closely with the nutrition, food security and agriculture, and water, sanitation and hygiene clusters to implement the Integrated Famine Risk Reduction Framework, with the overall objective of preventing famine and mitigating hunger by increasing access to food and life-saving supplies and services; increasing purchasing power; and advocating for the measures that bring economic stability.

46. The COVID-19 pandemic had a major impact on health service delivery in Yemen. WHO and partners continue to work towards strengthening all aspects of COVID-19 response. More information can be found on the dedicated Yemen crisis portal.[1]

South Sudan: protracted complex emergency

47. In South Sudan in 2022, an estimated 8.3 million people needed humanitarian assistance, 1.6 million people were internally displaced, 2.3 million people were refugees and 7.2 million people were acutely food insecure. WHO continued to respond to the health effects of displacement, outbreaks of violence, malnutrition, flooding and communicable diseases. The Secretariat strengthened contingency planning against emerging communicable diseases and supported the vaccination of almost 1 million children in civilian areas under United Nations protection. It also provided emergency supplies to bridge gaps at the primary care level and donated emergency medical kits to health partners operating in flood-affected areas across the country. Further information can be found on the dedicated South Sudan crisis portal.[2]

HEALTH EMERGENCY PREPAREDNESS AND READINESS

48. Throughout the reporting period, the Secretariat continued to expand the monitoring and evaluation of International Health Regulations (2005) capacities in all six WHO regions, including through States Parties using the State Party self-assessment annual reporting tool. The average global score for the core capacity required by the International Health Regulations (2005) remains consistent at 64%. Detailed information on annual reporting by States Parties is published on the web platform of the State Party self-assessment annual reporting tool and other WHO websites.

49. As at 30 September 2022, 116 joint external evaluations have been completed. Over the reporting period, 185 simulation exercises, 127 COVID-19 intra-action reviews and 75 after-action reviews were

[1] Yemen crisis (https://www.who.int/emergencies/situations/yemen-crisis, accessed 15 November 2022).

[2] South Sudan crisis (https://www.who.int/emergencies/situations/south-sudan-crisis, accessed 15 November 2022).

conducted at national and subnational levels. WHO also supported the Qatar health authorities through the development and delivery of a mass casualty simulation exercise prior to the FIFA World Cup 2022.

50. The Secretariat has supported 74 countries to develop national action plans for health security (NAPHSs). To accelerate the implementation of NAPHSs and further support Member States in the development, implementation and monitoring of activities, WHO has recently developed a five-year NAPHS strategy (2022–2026).

51. During the reporting period, the Secretariat piloted the Universal Health and Preparedness Review (UHPR) mechanism in four countries: Central African Republic, Iraq, Portugal and Thailand. In continuous consultation with Member States and the UHPR Technical Advisory Group, the Secretariat is supporting the planning of the global peer-review part of the process, and has developed documentation and material to support countries who wish to undertake a pilot.

52. A total of 95 all-hazards strategic risk assessments had been undertaken by the end of the reporting period using WHO's STAR, which since its publication has helped countries to develop all-hazards country risk profiles to provide real-time evidence in planning and interventions in order to prepare for and respond to multiple hazards, including by reviewing pandemic response plans and prioritizing actions. WHO has developed an emergency and disaster risk calendar to complement the tool by mapping the seasonality of hazards, which enables national and subnational authorities to better plan, prioritize and implement timely and appropriate actions to mitigate risk, scale up capabilities and be ready to effectively respond when a health emergency occurs.

53. WHO facilitated and supported the WHO-wide initiative to promote research activities to mitigate the risk of and improve preparedness for future emergencies and disasters. The WHO Guidance on Research Methods for Health Emergency and Disaster Risk Management is the first comprehensive guidance on how to plan, conduct and report research during and after emergencies and disasters. In addition, WHO developed the Framework for Health Security Preparedness Research Development and Innovation in order to globally coordinate the conduct of both primary and operations/implementation research, systematically identify existing evidence gaps in health security preparedness, incorporate inputs from relevant evidence sources and formulate interventions to improve health security preparedness. WHO also published a series of country case studies to disseminate information and knowledge on best practices, challenges and opportunities for enhancing the implementation of the International Health Regulations (2005) and building sustainable preparedness against health emergency threats.

54. During the reporting period, WHO launched a new multi-year initiative to measure the effectiveness as well as the social, health and economic impacts of public health and social measures during epidemics. The initiative aims to generate evidence to inform the development of action-oriented guidance, mechanisms and tools for decision-makers.

55. To improve prevention, detection and response at the human–animal-ecosystem interface, national bridging workshops were conducted in 41 countries. The workshops enable the assessment of collaboration between human and animal health sectors at national level and support the development of a joint road map to improve collaboration.

56. A total of 37 joint One Health risk assessment workshops had been held by the end of the reporting period. Two new tools aiming to support countries in building One Health preparedness capacity were finalized and launched. The multisectoral One Health coordination mechanism has been used in five countries, while the surveillance and information-sharing tool has been piloted and used in

four countries. These tools were developed in collaboration with the Quadripartite group of partners (Food and Agriculture Organization of the United Nations, World Organisation for Animal Health, WHO and the United Nations Environment Programme). The Secretariat is also piloting a tool to facilitate the coordination of relevant national human health and animal health stakeholders during all phases of a zoonotic disease outbreak. On 31 March 2022, WHO launched the Global Arbovirus Initiative, an integrated strategic plan to better tackle (re-) emerging arboviruses with epidemic and pandemic potential such as the dengue, yellow fever, Chikungunya and Zika viruses.

57. Building on recent progress in the analysis of the implementation of the International Health Regulations (2005), WHO developed the dynamic preparedness metric (DPM) to gauge preparedness capacity and inform key action plans for improving capacities in countries and regions. The DPM tool is part of the Thirteenth General Programme of Work, 2019–2025 suite of metrics. To manage all preparedness-related information, WHO developed a health security preparedness system that links to other external data sources and provides a dashboard for easy visualization and export of data for analytical purposes.

58. WHO continued to develop resources on preparedness economics in order to support Member States and partners in mobilizing financial resources and improve the value for money of investments directly and indirectly linked to health emergency preparedness and response. Throughout the reporting period, WHO continued to provide resource-mapping support to countries through the implementation of its resource-mapping tool and process.

59. The WHO Strategic Partnership for Health Security and Emergency Preparedness portal was expanded during the reporting period in order to better include the tracking and monitoring of national preparedness investments and to include links to the COVID-19 Partners Platform. In addition, a webpage on urban preparedness was also published to help all partners and relevant stakeholders find out more about health emergency preparedness and health security work in cities and urban settings.

60. In January 2022, WHO launched the Framework on Strengthening Health Emergency Preparedness in Cities and Urban Settings. This was followed by the publication in February 2022 of the accompanying operational guidance on urban preparedness for national and local authorities. At the Seventy-fifth World Health Assembly in May 2022, Member States adopted resolution WHA75.7 on strengthening health emergency preparedness and response in cities and urban settings.

61. The Secretariat has also rolled out the World Health Emergencies Programme Gender Working Group to support the development and implementation of a gender mainstreaming strategy as a priority across its policies, strategies, operations and capacity-building action. This responds to the specific recommendations of resolution WHA74.7 (2021) on strengthening WHO preparedness for and response to health emergencies.

62. Following a series of consultations convening world leaders and influencers from a variety of disciplines to discuss the future, look at global trends and build consensus on the collective actions that the global community can take to mitigate the ongoing and anticipated risks of COVID-19 and other infectious threats, WHO launched its first foresight report, *Imagining the future of pandemics and epidemics: a 2022 perspective*,[1] in September 2022. The proposed scenarios provide an opportunity to identify possible risks and solutions, discuss implications and propose actions aimed at preventing the occurrence, or mitigating the impact, of current and future infectious threats. The scenarios were

[1] Imagining the future of pandemics and epidemics: a 2022 perspective. Geneva: World Health Organization; 2022 (https://www.who.int/publications/i/item/9789240052093, accessed 21 December 2022).

developed with the contribution of the Strategic and Technical Advisory Group on Infectious Hazards with Pandemic and Epidemic Potential (STAG-IH).

DETECTING, ASSESSING AND COMMUNICATING POTENTIAL HEALTH EMERGENCIES

63. The Secretariat uses two main channels for detecting signals of events of potential international public health concern: public health intelligence activities, which includes event-based surveillance that is currently mainly conducted using the Epidemic Intelligence from Open Sources system; or through direct reporting to WHO by States parties through national focal points (such as urgent communications under the International Health Regulations (2005) or the European Commission's Early Warning and Response System), other governmental channels (such as ministries of health and national government agencies), or partner networks (such as other United Nations agencies and the Global Outbreak, Alert and Response Network).

64. The Secretariat has dedicated teams at headquarters and the regional offices that conduct public health intelligence activities 24 hours per day, 365 days per year, in close collaboration with WHO country offices, national governments and partners. From 1 January to 30 September 2022, about 3500 relevant pieces of information were screened worldwide each day, resulting in a weekly average of 20 signals and updates being detected and monitored (excluding COVID-19 pandemic signals). Once an event is identified, the Secretariat analyses, assesses and communicates the level of risk and sounds the alarm to help protect populations from the consequences of outbreaks, disasters, conflict and other hazards. Rapid communications of public health events of potential international concern are shared with National IHR Focal Points through the confidential event information site. During the reporting period, 155 events/announcements were posted on the site.

65. WHO publishes disease outbreak news articles to inform the public, public health practitioners, the media and others of new outbreaks and new information related to specific outbreaks. Issues contain an epidemiological summary, the public health actions taken in response to the event, WHO's risk assessment results and WHO's advice. During the reporting period, 55 Disease Outbreak News articles on 21 events in 31 countries for both new and ongoing events were disseminated to the global public health community and public through the website, 13 of which involved multicountry events, such as the outbreak of severe acute hepatitis of unknown aetiology in children; yellow fever in eastern, western and central Africa; and the global monkeypox/mpox outbreak.

66. From 1 January to 30 September 2022, 384 new public health events were recorded in WHO's event management system across 154 countries: 325 (85%) were attributed to infectious hazards; 29 (8%) were disasters; five (1%) were attributed to medical products; and the remaining 25 (6%) were related to chemical, radiological or nuclear products, food safety events, and animal or undetermined events.

67. During the reporting period, a formalized rapid risk assessment was conducted for 46 events in 23 countries, including 10 assessments for multicountry events. Risk at the national level was assessed as very high or high for 74% of those events. Most assessments were for events caused by cholera, measles, monkeypox/mpox, COVID-19, dengue, Ebola disease, Lassa fever and undiagnosed diseases. Three global-level assessments for COVID-19 were conducted during the reporting period, as well as three global-level assessments for monkeypox/mpox. In addition, four regional-level assessments were developed for yellow fever, circulating vaccine derived poliovirus type 2, Salmonella typhimurium and hepatitis.

68. The WHO Secretariat is leading on and coordinating with the Quadripartite group of partners to develop One Health field epidemiology core competencies, together with curricula guidelines, a guidance for continuing education, a guidance for field epidemiology training programme mentorship, and a guidance for certification and competence evaluation.

69. As requested by the Member States, the Secretariat is working to improve the prevention, monitoring, detection, control and containment of zoonotic disease outbreaks through a One Health approach. To support this area of work, two expert groups have been established: the One Health High-Level Expert Panel and the Scientific Advisory Group for the Origins of Novel Pathogens.

70. The recommendations of these expert groups have helped shape the One Health Joint Plan of Action, in particular the common strategy on emerging zoonosis with epidemic and pandemic potential, which was launched by the Quadripartite group of partners in collaboration with key stakeholders. This five-year plan (2022–2026) focuses on supporting and expanding capacities in six areas: One Health capacities for health systems; emerging and re-emerging zoonotic epidemics; endemic zoonotic, neglected tropical and vector-borne diseases; food safety risks; antimicrobial resistance; and the environment. Concurrently, WHO is also working with partners to develop a "hotspot" map for the emergence of infectious diseases and a framework of indicators to help countries quantify the risk of zoonotic disease emergency and thereby prevent the next pandemic.

71. On 30 March 2022, WHO launched the *Global genomic surveillance strategy for pathogens with pandemic and epidemic potential, 2022–2032*,[1] which provides a high-level unifying framework to leverage existing capacities, address barriers and strengthen the use of genomic surveillance worldwide. This strategy is a toolbox to help countries and other stakeholders to tackle the shortcomings highlighted during the COVID-19 pandemic related to genomic sequencing capacities – starting with local disease surveillance – and ensure that the world is better equipped to prepared and respond to future disease outbreaks.

72. The STAG-IH will hold its annual meeting in October 2022, with a focus on the future of surveillance based on two key objectives: identify critical needs, gaps and opportunities of surveillance for better epidemic and pandemic preparedness and prevention; and develop strategic and priority actions.

RESEARCH AND INNOVATION

73. The R&D Blueprint for Epidemics continues to accelerate clinical research on diseases that have epidemic or pandemic potential and for which there are no or insufficient medical countermeasures.

74. During the reporting period the R&D Blueprint for Epidemics coordinated the identification of knowledge gaps and research priorities in response to the COVID pandemic, Marburg virus, monkeypox/mpox and Sudan ebolavirus. Over 50 global open scientific consultations were held to discuss and prepare, for each virus: the research and innovation roadmaps; the landscapes of candidate vaccines and of candidate treatments; target product profiles; and generic protocols for clinical trials for their evaluation. In addition, the Solidarity Trial Therapeutics enrolled thousands of patients in 28 countries in six regions with the objective of evaluating four treatments for COVID, and the Solidarity Trial Vaccines enrolled thousands of volunteers in over 50 locations in six countries to evaluate four new generation COVID-19 vaccines.

[1] Global genomic surveillance strategy for pathogens with pandemic and epidemic potential, 2022–2032. Geneva: World Health Organization; 2022 (https://apps.who.int/iris/handle/10665/352580, accessed 15 November 2022).

75. A new exercise to prioritize pathogens that can cause outbreaks and require a public health emergency of international concern to be declared was initiated. It has adopted a viral family approach to identify representative viruses (or prototypes) within a viral family as a pathfinder to guide research efforts. It will also include bacteria and the potential threat of a "Disease X". The revised list is expected to be publicly available in the first half of 2023 and will guide targeted efforts by the R&D Blueprint for Epidemics and the global scientific community.

76. Working with the Ministry of Health in Uganda, an effort coordinated by WHO started as soon as the Ebola outbreak was declared. Research priorities were defined, manufacturing capacity was swiftly activated, and the trial protocol and trial team were promptly prepared. The developers of the cAd3 (Sabin Vaccine Institute and the Biomedical Advanced Research and Development Authority-BARDA, United States of America), cAdOx1 (Jenner Institute, University of Oxford, the Government of the United Kingdom of Great Britain and Northern Ireland, and the Serum Institute of India) and rVSV SUVD (International AIDS Vaccine Initiative (IAVI), Merck, Sharp & Dohme (MSD) and BARDA) produced, tested, put into vials and deployed doses in Uganda in record time (79 days) – faster than the equivalent sequence during the COVID-19 pandemic. Equally rapidly and in a collaborative approach, several partners including the Coalition for Epidemic Preparedness Innovations (CEPI), Government of Canada, European Health Emergency Preparedness and Response Authority (HERA) allocated funds to facilitate the trial implementation. The response to this outbreak has demonstrated the ability of a collaborative approach to provide rapid solutions. In addition, WHO, CEPI and Gavi, the Vaccine Alliance are providing support to ensure that sufficient doses of candidate vaccines are available beyond the trial.

DOCUMENTING ATTACKS ON HEALTH CARE

77. WHO continued to collect data on attacks on health care in 2022, using the Surveillance System for attacks on health care and focusing on countries with complex humanitarian emergencies. The system was launched in December 2017 and allows WHO to collect data on the incidence of attacks on health care directly from primary sources and disseminate verified information through its online platform. Verification is done by WHO staff members through the triangulation of information and evidence on the occurrence of the incident and the immediate impact in terms of the number of deaths and injuries of health care workers and patients. Each incident is given a certainty level based on the strength of the information used for verification. Information on events with a degree of certainty is then published on the online dashboard, which shows minimal data points to illustrate the incident. WHO neither verifies nor publishes data related to perpetrators or the type and provenance of weapons used in each incident. The reporting aims to ensure safe access to essential health services that is unhindered by any form of violence or obstruction.

78. The number of countries reporting attacks on health care has increased steadily. Between 1 January and 30 September 2022, the System received reports from 15 countries and territories of 791 incidents that had resulted in 2101 deaths and 285 injuries among health care workers and patients.

79. Throughout the reporting period, the use of heavy weapons was the most common type of attack reported (471 incidents). The majority of these incidents using heavy weapons were reported from Ukraine (448 incidents). The next most frequent types of incidents were attacks using individual weapons (177 incidents) and the removal of health assets (114 incidents). This again reflects the change in the context dynamics from which attacks on health care are being reported. WHO uses this information to highlight the issue and advocate for prevention against such attacks and the protection of health care. The information is also used so that measures for health care protection against attacks can be better incorporated into emergency operations.

ACTION BY THE EXECUTIVE BOARD

80. The Board is invited to note the report; in its discussions it is further invited to provide guidance on how the Secretariat can best provide support to the Member States in:

(a) accelerating their implementation of national action plans for health security (NAPHS), including through implementation of the new five-year NAPHS strategy (2022–2026);

(b) enabling them to make effective use of data-driven tools such as the dynamic preparedness metric to enhance the implementation of the International Health Regulations (2005) and build sustainable preparedness for health emergencies;

(c) expanding their capacities in the priority areas identified in the One Health Joint Action Plan.

ANNEX

TABLE 1: GRADED EMERGENCIES DURING THE REPORTING PERIOD (1 JANUARY–30 SEPTEMBER 2022)

Country/area of emergency	Region	Type of emergency (year of initial grading)	Most recent grade
Northern Ethiopia	Africa	Humanitarian response 2020–2022	Grade 3
Global	Global	COVID-19 (2020)	Grade 3
Afghanistan	Eastern Mediterranean	Complex emergency (2015)	Grade 3
Ukraine	Europe	Conflict 2013–2022 (2013)	Grade 3
Syrian Arab Republic	Eastern Mediterranean	Complex emergency (2013)	Grade 3
Global	Global	Monkeypox (2022)	Grade 3
Horn of Africa	Africa	Drought and food insecurity (2022)	Grade 3
Pakistan	Eastern Mediterranean	Floods (2022)	Grade 3
Democratic Republic of the Congo, Beni	Africa	Ebola (2022)	Grade 2
Ethiopia	Africa	Drought emergency (2022)	Grade 2
Gambia	Africa	Acute kidney injury (2022)	Grade 2
Ghana	Africa	Marburg (2022)	Grade 2
Iraq	Eastern Mediterranean	Crimean-Congo Haemorrhagic Fever (2022)	Grade 2
Madagascar	Africa	Floods (2022)	Grade 2
Malawi	Africa	Tropical Storm Ana (2022)	Grade 2
Pakistan	Eastern Mediterranean	Cholera (2022)	Grade 2
Africa	Africa	Polio (cVDPV2) (2019)*	Grade 2
Eastern Mediterranean Region	Eastern Mediterranean	Polio (cVDPV) (2020)*	Grade 2
Sahel Region	Africa	Humanitarian crisis (2022)	Grade 2
Sao Tome and Principe	Africa	Dengue (2022)	Grade 2
Lake Chad Basin	Africa	Yellow fever (2021)	Grade 2
South Sudan	Africa	Floods (2021)	Grade 2
Cameroon	Africa	Cholera (2018)	Grade 2
Sierra Leone	Africa	Explosions (2021)	Grade 2
Madagascar	Africa	Malnutrition (2021)	Grade 2
Tajikistan; Krygyzstan; Ukraine; Uzbekistan	Europe	Polio (cVDPV) outbreak (2021)*	Grade 2
Myanmar	South-East Asia	Humanitarian crisis (2021)	Grade 2
Djibouti	Africa	Floods (2019)	Grade 2
Pakistan	Eastern Mediterranean	HIV (2019)	Grade 2
Djibouti	Africa	Malaria (2019)	Grade 2
Sudan	Eastern Mediterranean	Complex emergency (2017)	Grade 2
Libya	Eastern Mediterranean	Complex emergency (2016)	Grade 2

Country/area of emergency	Region	Type of emergency (year of initial grading)	Most recent grade
West Bank/Occupied Palestinian Territory	Eastern Mediterranean	Complex emergency (2014)	Grade 2
African Region	Africa	MERS CoV (2014)	Grade 2
Uganda	Africa	Sudan virus disease (2022)	Grade 2
Syrian Arab Republic	Eastern Mediterranean	Cholera (2022)	Grade 2
Benin	Africa	Cholera (2022)	Grade 1
South Sudan	Africa	Floods (2020)	Grade 1
Namibia	Africa	Hepatitis E (2018)	Grade 1
Democratic Republic of the Congo	Africa	Complex emergency (2017)	Protracted 3
Somalia	Africa	Complex emergency (2017)	Protracted 3
Yemen	Eastern Mediterranean	Complex emergency (2015)	Protracted 3
South Sudan	Africa	Humanitarian crisis (2014)	Protracted 3
Mozambique, Cabo Delgado	Africa	Humanitarian crisis (2020)	Protracted 2
Cameroon, Northwest and Southwest Regions	Africa	Humanitarian crisis (2018)	Protracted 2
Myanmar, Rakhine State; Bangladesh	South-East Asia	Conflict (2017)	Protracted 2
Myanmar	South-East Asia	Conflict/civil strife (2017)	Protracted 2
Iraq	Eastern Mediterranean	Complex emergency (2014)	Protracted 2
Central African Republic	Africa	Humanitarian crisis (2013)	Protracted 2
Ethiopia	Africa	Humanitarian crisis (2015)	Protracted 1
Mozambique	Africa	Tropical Storm Gombe	Grade removed
Democratic Republic of the Congo, Equateur	Africa	Ebola	Grade removed
Chad	Africa	Complex crisis	Grade removed
Belarus/EU border	Europe	Migration crisis	Grade removed
Democratic Republic of the Congo, Tshopo	Africa	Meningitis	Grade removed
Central African Republic	Africa	Measles outbreak	Grade removed
Democratic Republic of the Congo	Africa	Measles outbreak	Grade removed
Burkina Faso	Africa	Humanitarian crisis	Grade removed
Horn of Africa	Africa/Eastern Mediterranean	Polio outbreak	Grade removed
Niger	Africa	Conflict/civil strife	Grade removed
Cameroon	Africa	Conflict/civil strife	Grade removed
Nigeria	Africa	Lassa Fever outbreak	Grade removed
Niger	Africa	Flooding and cholera	Grade removed
Madagascar	Africa	Plague	Grade removed
Nigeria	Africa	Cholera	Grade removed
Mauritania	Africa	Rift Valley Fever	Grade removed
Chad	Africa	Chikungunya	Grade removed

*Multiple national outbreaks consolidated into graded emergencies at regional level; the date of onset refers to the date of consolidated grading.

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