

WHO's work in health emergencies

Public health emergencies: preparedness and response

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 31 December 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. The Executive Board at its 152nd session in January 2023 considered an earlier version of this report.¹ The present document contains updated information.

ACTIVE GRADE 3 EMERGENCIES AS AT 31 DECEMBER 2022

2. During 2022 WHO responded to 70 graded emergencies, of which 42 were classed as acute graded emergencies and 11 were classed as protracted graded emergencies at the end of the reporting period; an additional 17 graded emergencies had their grading removed by the end of the reporting period.

3. Nine acute Grade 3 emergencies were active during the reporting period from 1 January to 31 December 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 31 December 2022 (in order of initial grading)

Country/countries affected and nature of emergency	WHO region	Date of initial grading	Status as at 31 December 2022
Acute emergencies			
Uganda: Sudan Virus Disease	Africa	12 October 2022	Ongoing (G3: upgrade from G2 on 21 September 2022 to G3 on 12 Oct 2022)
Pakistan: floods	Eastern Mediterranean	29 August 2022	Ongoing (Grade 3)
Horn of Africa: drought and food insecurity (8 countries)	Africa/Eastern Mediterranean	20 May 2022	Ongoing (Grade 3)

¹ Document EB152/15.

Country/countries affected and nature of emergency	WHO region	Date of initial grading	Status as at 31 December 2022
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)
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 2014	Ongoing (Grade 3; upgraded from G2 to G3 on 24 February 2022)
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

4. 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\$ 87.77 million was released to support WHO's emergency response operations between 1 January and 31 December 2022.

5. 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.

6. 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.

7. Implementing emergency response operations remains 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

8. Severe monsoon floods began in Pakistan in June/July 2022. As at 27 August 2022, rainfall in the country was equivalent to 2.9 times the national 30-year average. At least 90 districts were declared calamity hit districts; 12 867 people were injured and 1738 people reported dead; and 6.4 million people required immediate humanitarian assistance.

9. Over 2000 health facilities were damaged, contributing to the disruption of referrals and immunization campaigns. The nutritional status of many people in the flood-affected districts was poor, and outbreaks of vector-borne and water-borne diseases were reported.

10. 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. Immediately after the grading, WHO released US\$ 10 million from the Contingency Fund for Emergencies to fund the Organization's initial rapid response and its scale-up, and repurposed staff at the country level to support large-scale response efforts. By September 2022, WHO had established three operational hubs (in Sukkur, Hyderabad and Naserabad) and 10 field operations centres in flood-affected districts; and had deployed senior experts in coordination, surveillance, and information management (around 20 international and 80 national staff).

11. A total of 33 districts were targeted by WHO's immediate response. Based on rapid risk assessment, the absolute priority was to enhance service delivery, case management, disease surveillance and outbreak control to prevent a health crisis.

12. By December 2022 WHO had reached 2.4 million people of the 6.4 million targeted with an integrated package of essential health services for displaced people, delivered through static and mobile health camps. WHO procured and distributed medicines and medical supplies; conducted vaccination campaigns against measles, rubella and cholera; helped improve access to clean water through the establishment of water treatment plants; strengthened the surveillance system in cooperation with the Ministry of Health; activated a prevention and response to sexual exploitation, abuse and harassment system; and delivered community-based psychosocial support through mobile and telemedicine clinics in 29 priority flood-affected areas.

13. The 2022 Pakistan Floods Response Plan¹ 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 was required for urgent health needs. The WHO Emergency Appeal was issued

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 11 April 2023).

in September,¹ with an overall funding requirement of US\$ 81.5 million for the period September 2022 to May 2023. As of December 2022, the health response had a funding gap of 82%, resulting in increasing gaps in the provision and recovery of health services in the flood-affected areas.

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

14. Amid the worst drought experienced in 40 years, by the end of 2022 an estimated 46.3 million people were living in acutely food insecure situations of level three or higher of the Integrated Food Security Phase Classification (IPC) in the greater Horn of Africa (Djibouti, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda). The drought, combined with flooding, conflict and global supply chain disruptions, has contributed to displacement, with the region currently hosting 4.5 million refugees and 13.5 million internally displaced persons. 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.

15. Since May 2022, WHO has received US\$ 53.2 million in funding for the emergency in seven countries, starting with an allocation of US\$ 16.5 million from the Contingency Fund for Emergencies. WHO sent supplies, including inter-agency emergency health kits, trauma and emergency supply kits and severe acute malnutrition kits, to countries to respond to the most pressing needs. In addition to supporting outreach services and vaccination campaigns (including oral cholera vaccination and measles), thousands of health workers were trained on surveillance and nutrition-related topics such as Integrated Disease Surveillance and Response (IDSR) and community-based and in-patient case management across all countries. WHO personnel have been deployed to support Member States with technical capacities across the five response pillars.²

Global: monkeypox/mpox

16. 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 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.

17. The Monkeypox Strategic Preparedness, Readiness and Response Plan³ was developed with input from 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.

18. 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

¹ 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 11 April 2023).

² Further details of WHO's response, resource requirements and work with partners can be found on the dedicated Horn of Africa crisis portal, with detailed results for 2022 outlined on the GHoA Appeals page. (<https://www.who.int/emergencies/situations/drought-food-insecurity-greater-horn-of-africa> (accessed 11 April 2023)).

³ Monkeypox Strategic Preparedness, Readiness, and Response Plan (SPRP) ([https://www.who.int/publications/m/item/monkeypox-strategic-preparedness--readiness--and-response-plan-\(sprp\)](https://www.who.int/publications/m/item/monkeypox-strategic-preparedness--readiness--and-response-plan-(sprp)), accessed 11 April 2023).

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.

19. As at 31 December, WHO had procured more than 38 000 tests to support mpox testing in 58 Member States and had established a mechanism to ship specimens internationally for testing. Training in clinical management, epidemiology and laboratory testing has also been rolled out at regional level. In addition, OpenWHO.org provides an introductory online course on monkeypox/mpox in six languages, with more than 65 000 enrolments by 31 December 2022, 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 multi-country outbreak.

20. 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.¹

Northern Ethiopia: complex emergency

21. The conflict in three regions (Tigray, Amhara and Afar) of northern Ethiopia in 2022 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. At the end of the reporting period there were an estimated 2.6 million internally displaced persons in the affected regions. This figure is certainly an underestimate, as no data are available for large parts of Tigray. In addition, the intercommunal conflict in Oromia spurred further displacement from the Oromo region into Amhara region.

22. A total of 13 million people are in need of food aid, including 5.2 million in Tigray, where 89% of the population is food insecure and almost half of the population (47%) is severely food insecure; 29% of children under 5 years are acutely malnourished.²

23. Humanitarian access has been extremely limited in Tigray in particular, which has also suffered from a lack of access to basic services and commodities, such as fuel and cash, since mid-2021. Humanitarian access began to improve significantly from mid-November 2022, following the signing of the Cessation of Hostilities agreement, and access to basic services has gradually started to be restored. WHO's humanitarian assistance, and that of other partners, is being scaled up accordingly.

24. WHO continues to operate a scaled-up health response, working with the Federal Ministry of Health and the regional health bureaus in Amhara, Afar and Tigray, 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.

¹ Monkeypox outbreak 2022 (<https://www.who.int/emergencies/situations/monkeypox-oubreak-2022>, accessed 11 April 2023).

² Crisis in Northern Ethiopia (<https://www.who.int/emergencies/situations/crisis-in-tigray-ethiopia>, accessed 11 April 2023).

25. By the end of the reporting period, WHO and partners had supported 3.4 million people in need of health assistance in the three regions (1.15 million in Tigray, 0.52 million in Afar, and 1.71 million in Amhara). WHO delivered 340.9 metric tons of emergency health supplies, benefiting 92 health facilities in the three regions. Over 2.5 million children under 5 years of age were vaccinated against measles in the three regions during the same period. More than 1.45 million people have been vaccinated against COVID-19 in Tigray with the support of WHO and partners, as the region could not be included in the national vaccination programme.

26. In March 2022, WHO established an incident management system extending to the subnational level for the response to the drought and food insecurity in the south and east of the country, where the Somali and Oromia regions were most affected. A total of 75 staff have been deployed to affected regions as part of the response, and more than 245.5 metric tons of medical supplies have been dispatched. More than 2.9 million people in need of health services were reached by WHO and partners throughout 2022. WHO, in collaboration with the Ethiopia Public Health Institute (EPHI) and the regional health bureau (RHB), successfully implemented reactive measles campaigns for over 730 000 children aged 6 months to 10 years in Oromia, Somali, and the Southern Nations, Nationalities, and Peoples' Region (SNNPR); oral cholera vaccination for over 1.3 million people in Oromia and Somali regions; novel oral poliomyelitis vaccine type 2 (nOPV2) campaigns; and two rounds of COVID-19 vaccinations. Additional support has been provided to routine immunization programmes.

27. Excluding the three northern regions, 13.1 million people in need of health services were 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

28. WHO's response to the COVID-19 pandemic has been rapid, coordinated and sustained on an unprecedented scale. In 2022, WHO 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.

29. The COVID-19 strategic preparedness, readiness and response plan, first published in March 2020, was updated for a second time in March 2022,¹ setting out a number of key strategic adjustments to enable the world to end the acute phase of the pandemic if implemented rapidly and 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 2022.²

30. 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

¹ Strategic preparedness, readiness and response plan to end the global COVID-19 emergency in 2022. Geneva: World Health Organization; 2022 (document WHO/WHE/SPP/2022.1) (<https://www.who.int/publications/i/item/WHO-WHE-SPP-2022.1>, accessed 11 April 2023).

² 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 11 April 2023).

agencies, including recommendations on pursuing broader immunity through vaccination with the development of Omicron-specific COVID-19 vaccines.

31. 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.¹

Afghanistan: complex emergency

32. WHO scaled up surveillance, preparedness and response to outbreaks, health emergencies and natural hazards in 2022. It continues to lead 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.

33. 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. In 2022, WHO responded to 935 alerts in coordination with the national disease surveillance and response.

34. 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. In 2022, WHO supplied a total of 5217 metric tons of basic and specialized medical kits to cover illnesses including noncommunicable diseases, and 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, reaching 12.9 million people in need of health assistance.

35. WHO increased women-focused services through opening the National Advanced Referral Center for Survivors of Violence, which provided health services and treatment to 423 survivors of violence. The Organization also supported the In-Patient Department-Severe Acute Malnutrition (IPD-SAM) centres in 116 hospitals and 11 Comprehensive Health Centres plus across the country; more than 46 000 SAM children with complications were admitted in 2022, the highest figure over the past three years.

36. Further details can be found on the dedicated Afghanistan crisis portal.²

Ukraine: complex emergency

37. Since the start of the war in Ukraine in late February 2022, 5.9 million individuals have been displaced within Ukraine and another 7.8 million refugees have been recorded across Europe;

¹ Coronavirus disease (COVID-19) pandemic (<https://www.who.int/emergencies/diseases/novel-coronavirus-2019>, accessed 11 April 2023).

² Afghanistan crisis (<https://www.who.int/emergencies/situations/afghanistan-crisis>, accessed 11 April 2023).

17.6 million people are in need of humanitarian assistance. By 26 December 2022, 17 831 civilian casualties had been reported, including almost 6900 deaths.

38. 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.

39. WHO has coordinated 21 emergency medical teams from nine organizations working in 10 oblasts in the east, northeast and western parts of the country, with work centered on trauma care, patient transfer, medical evacuation, rehabilitation, training, outpatient and inpatient care. As at the end of 2022, some 18 744 consultations had been delivered by the emergency medical teams.

40. WHO has procured 1553 metric tons of medicines and medical supplies worth more than US\$ 63 million, of which 1360 metric tons have been distributed to multiple oblasts. Over the coming months, distribution capacities will have to be increased to ensure that needs are met. More than US\$ 3.6 million of trauma supplies have been distributed to enable up to 28 050 surgeries, while more than US\$ 1.35 million of emergency supplies for a catchment population of up to 3 million people for three months and more than US\$ 2 million of medicines for the management of chronic diseases have been distributed, benefiting up to 2.6 million people. In addition, over US\$ 10 000 of pneumonia kits have been distributed to cover up to 1700 pneumonia cases, and close to US\$ 300 000 of cholera diagnostic kits have been distributed to test up to 5000 suspected cases.

41. By December 2022, WHO had delivered 129 metric tons of supplies and equipment worth over US\$ 11 million, including COVID-19 laboratory and testing supplies, trauma supplies and treatments for communicable diseases, to Hungary, Poland, the Republic of Moldova, and Romania, to support basic health care. A total of 1635 medical evacuations have been completed with the support of the European Union.

42. Further information can be found on the dedicated Ukraine crisis portal.¹

Syrian Arab Republic: complex emergency

43. 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.

44. 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.

45. 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 northeast, WHO pre-positioned vaccines and surgical supplies, as well as 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

¹ Ukraine emergency (<https://www.who.int/emergencies/situations/ukraine-emergency>, accessed 11 April 2023).

illness and disability. Technical support included the development of a northeast Syria essential health services package, which is expected to contribute to enhancing both the access to and the quality of health services in the northeast of the country.

46. 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

47. 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

48. Somalia is experiencing a worsening drought due to five consecutive failed rainy seasons. More than 3.7 million individuals have been displaced (internally or across the borders) by conflict, insecurity, forced evictions, drought and floods. By December 2022, droughts had affected 8.3 million people in the country and resulted in the displacement of more than 1.4 million individuals, and an estimated 43 000 excess deaths. High levels of malnutrition, as well as outbreaks of cholera, measles, malaria, and circulating vaccine-derived poliovirus type 2 (cVDPV2) were recorded across the country during 2022.

49. In cooperation with the Federal Ministry of Health, WHO is the cluster lead agency for health, working with 55 national and international partners to improve the health outcomes of the affected population. Health cluster partners targeted more than 4.9 million people and reached 4 million beneficiaries in 2022. WHO funded trainings for health cluster partners on prevention of sexual exploitation and abuse (PSEA) and the Mental Health Gap Action Programme (mhGAP).

50. 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 2164 community health workers over the reporting period to conduct risk communication, community education, alert detection, reporting and screening for malnutrition. WHO

¹ Syria crisis (<https://www.who.int/emergencies/situations/syria-crisis>, accessed 11 April 2023).

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 11 April 2023).

also deployed 148 mobile outreach teams across the country and trained health staff on a wide variety of topics. Further information can be found on the dedicated Somalia crisis portal.¹

Yemen: protracted complex emergency

51. In 2022 Yemen was affected by conflict and insecurity, severe drought, intense flooding, and an unstable economy. Due to the collapse of the health system, access to health services is limited. Malnutrition was widespread, while disease outbreaks during 2022 included COVID-19, measles and polio. There are more than 21.9 million people in need of humanitarian assistance in Yemen. WHO worked with the Ministry of Health and 47 national and international partners to target more than 12.6 million people across the country. Due to funding constraints (only 42% of required funding was raised), only 7.8 million beneficiaries were reached during 2022.

52. 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. During 2022 WHO facilitated the provision of medical consultations and interventions, especially for reproductive health care services and child health services, by providing life-saving medical kits, staff training, procuring fuel for generators, and paying incentives for critical health staff.

53. As part of its critical and broad-ranging emergency response efforts in Yemen, WHO responded to outbreaks of measles and circulating vaccine-derived poliovirus type 2 (cVDPV2) by supporting surveillance efforts and vaccination campaigns. Improvements in pre-hospital trauma care services were achieved through technical support, training and educational campaigns, which successfully reduced time to reaching treatment, and improved call center and triage capacity in Aden. The flood response in August 2022 saw WHO teams supporting trauma care, strengthening local surveillance and response capacity, and providing emergency health kits. Regarding malnutrition, WHO supported a number of Therapeutic Feeding Centers across Yemen to address critical gaps in the capacity to care for severely malnourished children with medical complications.

54. The COVID-19 pandemic has had a major impact on health service delivery in Yemen. WHO and partners continued to work towards strengthening all aspects of COVID-19 response. This included the installation of oxygen plants, provision of technical assistance in line with the Emergency Response Framework, training of health staff on key skills (e.g. over 1200 health workers on basic and advanced life support), and strengthening surveillance and response efforts, including by the provision of training and equipment for improving laboratory capacity. More information can be found on the dedicated Yemen crisis portal.²

South Sudan: protracted complex emergency

55. In South Sudan in 2022, an estimated 8.9 million people needed humanitarian assistance; 2.2 million people were internally displaced; 319 000 people were refugees in South Sudan, 2.3 million South Sudanese were refugees in the neighboring countries; and an estimated 6.6 million people were expected to be acutely food insecure (IPC Phase 3/crisis and above). About 1.4 million were acutely malnourished and in need of treatment, including 345 893 children with severe acute malnutrition. In

¹ Somalia crisis (<https://www.who.int/emergencies/situations/somalia-crisis>, accessed 11 April 2023).

² Yemen crisis (<https://www.who.int/emergencies/situations/yemen-crisis>, accessed 11 April 2023).

addition, 540 000 pregnant and lactating women were acutely malnourished and in need of treatment. Of these, 61 000 people are in catastrophe (IPC Phase 5).

56. The Health Cluster led by WHO coordinated the delivery of humanitarian health services through 62 national and international partners targeting 3.4 million people out of 5.5 million people in need of health services in South Sudan. Additionally, WHO procured medicines and medical supplies worth more than US\$ 6.3 million, of which medical supplies worth US\$ 1.2 million were distributed to partners in different States and health facilities. WHO continued to respond to the health needs of the displaced populations, outbreaks of violence, malnutrition, flooding and disease outbreak including multicounty measles outbreaks, and cholera and hepatitis E virus outbreaks within host communities and camps for internally displaced persons. 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. WHO 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.¹

HEALTH EMERGENCY PREPAREDNESS AND READINESS

57. 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.

58. As at 31 December 2022, 116 joint external evaluations had been completed in over 100 countries. Over the reporting period, 185 simulation exercises, 127 COVID-19 intra-action reviews and 75 after-action reviews were 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.

59. 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).

60. 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.

61. 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,

¹ South Sudan crisis (<https://www.who.int/emergencies/situations/south-sudan-crisis>, accessed 11 April 2023).

prioritize and implement timely and appropriate actions to mitigate risk, scale up capabilities and be ready to effectively respond when a health emergency occurs.

62. 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.

63. 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.

64. 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.

65. 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.

66. 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.

67. 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.

68. 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.

69. 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 (2022) on strengthening health emergency preparedness and response in cities and urban settings.

70. 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.

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

72. 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).

73. 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 31 December 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

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 11 April 2023).

with National IHR Focal Points through the confidential event information site. During the reporting period, 197 events/announcements were posted on the site.

74. 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, 74 Disease Outbreak News articles on 27 events in 37 countries for both new and ongoing events were disseminated to the global public health community and public through the website, 16 of which involved multi-country 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.

75. From 1 January to 31 December 2022, 498 new public health events were recorded in WHO's event management system across 158 countries: 422 (85%) were attributed to infectious hazards; 33 (7%) were disasters; and the remaining 43 (8%) were attributed to medical products; chemical, radiological or nuclear products; food safety events; and societal events.

76. During the reporting period, 65 formalized rapid risk assessments were undertaken for 53 events in 30 countries, and 14 multi-country or global events. Risk at the national level was assessed as very high or high for 90% of those events. Most assessments were for events caused by cholera, measles, monkeypox/mpox, COVID-19, dengue, and meningitis. Four global-level assessments for COVID-19 were conducted during the reporting period, as well as three global-level assessments for monkeypox/mpox and one global assessment for cholera. In addition, six regional-level assessments were carried out for yellow fever, circulating vaccine-derived poliovirus type 2, *Salmonella typhimurium* and hepatitis.

77. 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.

78. 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.

79. 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.

80. 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 prepare for and respond to future disease outbreaks.

81. The STAG-IH held 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

82. 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.

83. During the reporting period the R&D Blueprint for Epidemics coordinated the identification of knowledge gaps and research priorities in response to the COVID-19 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 road maps; 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-19, and the Solidarity Trial Vaccines enrolled thousands of volunteers in over 50 locations in six countries to evaluate four new generation COVID-19 vaccines.

84. 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.

85. 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

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 11 April 2023).

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

86. 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.

87. The number of countries reporting attacks on health care has increased steadily. Between 1 January and 31 December 2022, the System received reports from 16 countries and territories of 1248 incidents that had resulted in 232 deaths and 451 injuries among health care workers and patients (reports received as of 24 March 2023).

88. Throughout the reporting period, the use of heavy weapons was the most common type of attack reported (753 incidents). The majority of these incidents using heavy weapons were reported from Ukraine (842 incidents). The next most frequent types of incidents were attacks using individual weapons (257 incidents) and the removal of health assets (186 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 HEALTH ASSEMBLY

89. The Health Assembly 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.

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