
Public health preparedness and response

WHO's work in health emergencies

Report by the Director-General

1. The Executive Board at its 142nd session noted an earlier version of this report.¹ In response to comments made during the discussions at that session, this updated version includes information on cholera prevention.
2. This report is submitted pursuant to requests in resolution EBSS3.R1 (2015) on Ebola: ending the current outbreak, strengthening global preparedness and ensuring WHO's capacity to prepare for and respond to future large-scale outbreaks and emergencies with health consequences, and decision WHA68(10) (2015) on 2014 Ebola virus disease outbreak and follow-up to the Special Session of the Executive Board on Ebola. It streamlines WHO's reporting on its work in health emergencies, updating reports on coordination and response in large-scale emergencies, and the development of the Research and Development Blueprint for Action to Prevent Epidemics for potentially epidemic diseases.

WHO'S RESPONSE AND COORDINATION IN SEVERE, LARGE-SCALE EMERGENCIES

Response and coordination at a global level

3. The WHO Health Emergencies Programme has established a system for continuous event-based surveillance of public health events and verification and assessment of detected events: on average, 7000 signals are received per month, of which 300 merit follow-up and evaluation of those leads to 30 being investigated. Standardized risk assessment processes are used and their application has ensured better coordination between the three levels of the Organization. The Programme has also developed new standard packages of care for high-priority high-impact pathogens and diseases including cholera, Zika virus and influenza. These packages are linked to comprehensive training and learning packages for 15 diseases and cross-cutting technical interventions, with 20 online training units. To underpin key technical responses, new administrative systems have been put in place, including pre-cleared staff rosters for deployments, emergency standard operating procedures (including delegations of authority), fast-track recruitments and procurement. Additionally, the second

¹ See document EB142/9 and the summary records of the Executive Board at its 142nd session, fourth and fifth meetings.

edition of WHO's Emergency Response Framework,¹ which includes application of the Incident Management System, is now used to manage all graded events.

4. During the period from 1 January to 20 October 2017, WHO responded to 47 graded emergencies in more than 40 countries and territories (see Annex). These included WHO Grade 3 emergencies and United Nations Inter-Agency Standing Committee Level 3 and other large-scale emergencies. The Director-General has made no new declaration of public health emergency of international concern in 2017. At the beginning of 2017, WHO's operations were targeting 67.9 million people for humanitarian assistance,² although this number has progressively risen with new outbreaks and emergencies throughout the year.

5. Among the acute (graded and ungraded) emergencies, nine were classified Grade 3 emergencies, which is the highest severity level based on WHO's Emergency Response Framework, requiring a significant response from WHO and mobilization of substantial Organization-wide support for the collective response with partners in the field (see the Table). Out of these, three complex humanitarian crises (in South Sudan, Nigeria and Ethiopia) were later categorized as Protracted Grade 3 emergencies (persisting for more than six months, as defined in the Emergency Response Framework), for which a sustained WHO operational presence and response are still required on a major scale. The Grade 3 emergencies in the Democratic Republic of the Congo, Iraq, Syrian Arab Republic and Yemen are also Inter-Agency Standing Committee system-wide Level 3 emergencies, in which governments, United Nations agencies and civil society partners work together to meet response needs.

Table. Summary of WHO's activation of Grade 3 emergencies between 1 January and 20 October 2017 (in chronological order of activation date)

Country	WHO region	Grade 3 activation date	Status as of 20 October 2017
Syrian Arab Republic	Eastern Mediterranean	3 January 2013	Ongoing
South Sudan	African	12 February 2014	Protracted Grade 3
Iraq	Eastern Mediterranean	12 August 2014	Ongoing
Yemen	Eastern Mediterranean	1 July 2015	Ongoing
Nigeria	African	19 August 2016	Protracted Grade 3
Ethiopia	African	20 April 2017	Protracted Grade 3
Somalia	Eastern Mediterranean	9 May 2017	Ongoing
Democratic Republic of the Congo	African	29 August 2017 (Kasai region) and 13 October (for whole country)	Ongoing
Bangladesh/Myanmar	South-east Asia	8 October 2017	Ongoing

¹ WHO. Emergency response framework, 2nd edn. Geneva: World Health Organization; 2017 (<http://apps.who.int/iris/bitstream/10665/258604/1/9789241512299-eng.pdf?ua=1>, accessed 3 April 2018).

² This figure is derived from the Inter-Agency Standing Committee's Humanitarian Response Plans.

6. In accordance with the principles of the Emergency Response Framework, WHO activated the Incident Management System to fulfil its six critical functions¹ and scaled up its operational and technical support so as to address immediately the health needs of and risks facing the affected population. Working with partners, the Secretariat supported national governments' efforts in life-saving interventions to increase the quality and coverage of health services, strengthen primary and secondary health and hospital care by operating mobile teams and health facilities, improve surveillance and early warning systems, conduct vaccination campaigns, distribute medicines and supplies, and train health workers. WHO also led or jointly led health sector coordination, including that of 23 activated health clusters. These actions were supported by the rapid release of funds from WHO's Contingency Fund for Emergencies: about US\$ 16 million have been disbursed in 2017 up to 20 October in order to ensure rapid expansion of WHO's response in 28 graded emergencies.

7. Constraints on the health sector response in these major crises include continuing insecurity and limited access, limited capacities of national health systems and partners, shortages of health personnel, bureaucratic constraints and insufficient funding. During the biennium 2016–2017, WHO has requested US\$ 1033 million in appeals funding (that is, for outbreak and crisis response) to respond to emergencies and health crises, of which it has received US\$ 776 million (75%).²

Response and coordination at regional and country levels

8. Over the course of the reporting period, the African Region experienced further deterioration of the humanitarian and health situation across several countries, and tackled prolonged conflicts and disease outbreaks. The major events triggering substantive WHO operations included: the food famine/pre-famine crisis across the Horn of Africa; the conflict and displacement in the north-eastern part of Nigeria; and the deteriorating humanitarian and health situations in South Sudan and Democratic Republic of the Congo. Major outbreaks also requiring a scaled-up WHO response included Ebola virus disease and cholera in Democratic Republic of the Congo, plague in Madagascar, Marburg virus disease in Uganda, yellow fever and malaria in Nigeria, malaria in Cabo Verde and necrotizing cellulitis in Sao Tome and Principe. For each of these emergencies, WHO applied the Incident Management System and ensured the provision of priority Emergency Response Framework deliverables. Detailed operational reviews were undertaken for Ethiopia, Nigeria and South Sudan.

9. The Eastern Mediterranean Region continued to experience an intensification of humanitarian and health emergencies in Iraq, Somalia, Syrian Arab Republic and Yemen. In these countries, the operating environment remained volatile with insecurity, limited access and frequent attacks on health care. In the Syrian Arab Republic, WHO has provided sufficient medicines and supplies for 10.5 million treatments (8.4 million from inside the country), and vaccinated 4.5 million children against measles and 2.4 million children against polio. WHO's response to the cholera outbreak in Yemen included establishment of 36 diarrhoea treatment centres and 138 oral rehydration corners, support for treatment of 700 000 suspected cases of cholera and delivery of emergency health supplies. In response to the Mosul crisis in Iraq WHO, in collaboration with Ninewa health authority and partners, provided trauma care to 18 500 patients, coordinated and supported primary care services for more than one million consultations, and coordinated vital vaccination activities. In Somalia, cholera

¹ Leadership, partnership coordination, information and planning, health operations and technical expertise, operations support and logistics, and finance and administration.

² Figures from the WHO Programme Budget Portal (<http://open.who.int/2016-17/budget-and-financing>, accessed on 10 April 2018).

treatment centres have been established in 40 districts to manage cases of severe acute watery diarrhoea, including cholera.

10. In response to the large-scale influx of more than 520 000 refugees fleeing violence in Myanmar's Rakhine State to Cox's Bazar in Bangladesh, WHO has mobilized more than 40 national and international staff from all three levels of the organization. Priority health interventions have included preventive campaigns against measles (135 000 children vaccinated), diphtheria and cholera (an oral cholera vaccination campaign for 700 000 people launched), the establishment of an early warning alert and response system, strengthening of health sector coordination, and rapid expansion of access to essential health services, including 20 mobile teams supported by WHO.

11. Other large-scale emergencies for which WHO supported the national response during the reporting period included the yellow fever outbreak in Brazil (Grade 2), Hurricanes Irma and Maria in the Caribbean (Grade 2) and the ongoing humanitarian crisis in Ukraine (Grade 2).

12. The interrelated issues of safeguarding our health security while promoting our health through universal health coverage are WHO's top priority. Outbreaks are inevitable, but epidemics are preventable. Strong health systems are our best defence to prevent disease outbreaks from becoming epidemics and to mitigate the risks caused by the breakdown of health systems in fragile settings, such as those caused by conflict. The Secretariat, through the WHO Health Emergencies Programme, will continue to work with Member States to build the alert and response systems for effective detection and responses and to build stronger national public health and health care systems that are based on principles of universal access, readiness and resilience.

CHOLERA PREVENTION

13. Cholera kills an estimated 95 000 people per year and sickens 2.9 million more. In coming years, it is expected that conflict, climate change, urbanization and population growth will create an increased risk of cholera, if prevention and response efforts are not scaled up. Every case and every death from cholera is preventable with the tools available today, and outbreaks can be prevented before they develop.

14. The Global Task Force on Cholera Control, for which WHO provides the secretariat, is a network of organizations that are intensifying efforts to control cholera at all levels through a renewed global strategy through to 2030.¹ The global roadmap has three axes:

- a multisectoral approach including provision of basic water, sanitation and hygiene services and oral cholera vaccine to control cholera in hotspots in endemic countries;
- early detection and response to contain epidemics quickly;
- an effective mechanism of coordination for technical support and resources at global and country levels.

15. Focusing on the 47 countries affected by cholera today, the partners in the Global Task Force on Cholera Control provide support to countries in order to reduce deaths due to cholera by 90% by 2030.

¹ Global Task Force on Cholera Control. Ending cholera: a global roadmap to 2030. Geneva: World Health Organization; 2017 (<http://www.who.int/cholera/publications/global-roadmap.pdf?ua=1>, accessed 3 April 2018).

RESEARCH AND DEVELOPMENT IN THE CONTEXT OF EMERGENCIES

16. In June 2015, the Secretariat initiated work on the Research and Development Blueprint for Action to Prevent Epidemics for potentially epidemic diseases. Its goal is to reduce delays between the identification of an outbreak and the deployment of effective medical interventions to save lives and minimize socioeconomic disruption. Areas covered by the Blueprint include product research and development for diagnostics, vaccines and therapeutics.

17. The following paragraphs provide details of new developments since an earlier version of this report, which was noted by the Seventieth World Health Assembly in May 2017.¹

Accelerating research and development processes: revision of the list of priority diseases and road maps for research and development

18. WHO's list of diseases for priority research and development was updated at a meeting in January 2017² and was reviewed at a consultation that took place on 5 and 6 February 2018.

19. The Secretariat has developed six vaccine target product profiles and two diagnostic target product profiles and is working on target product profiles for other key pathogens. The Secretariat and partners are developing research and development road maps for prioritized diseases through expert consultations. The first road map for Middle East respiratory syndrome coronavirus is being updated following a recent joint FAO/OIE/WHO technical meeting.³

20. Following the Director-General's declaration on 1 February 2016 of a Public Health Emergency of International Concern in regard to the clusters of microcephaly cases and other neurological disorders reported in Brazil, the Secretariat rapidly triggered a series of research and development actions.⁴ An initial workshop on Zika vaccine efficacy trials was organized (Geneva, 1 and 2 June 2017). Generic protocols for Zika vaccine evaluation are being finalized together with criteria for prioritization of vaccine candidates and selection of clinical sites.

21. The Secretariat, working with experts, is developing, and will publish methodological guidelines, decision-making tools, models and generic protocols to evaluate vaccine efficacy during outbreaks. In addition, the Secretariat convened in Utrecht (the Netherlands) a first consultation in December 2017 to initiate the development of tools and materials to evaluate therapeutics for use during outbreaks.

¹ See document A70/10 and the summary records of the Seventieth World Health Assembly of Committee A, first meeting, section 3, second meeting, section 3, third meeting, section 3 and fourth meeting, section 1 (document WHA70/2017/REC/3. http://apps.who.int/gb/or/e/e_wha70r3.html, accessed 3 April 2018).

² WHO Research and Development Blueprint. 2017 Annual review of diseases prioritized under the Research and Development Blueprint: informal consultation, Geneva, 24 and 25 January 2017: meeting report (<http://www.who.int/blueprint/what/research-development/2017-Prioritization-Long-Report.pdf?ua=1>, accessed 3 April 2018).

³ FAO-OIE-WHO Global technical meeting on MERS-CoV (Geneva, 25–27 September 2017).

⁴ Zika R&D (<http://www.who.int/blueprint/priority-diseases/key-action/zika/en/>, accessed 3 April 2018).

Stakeholder coordination

22. In 2017, the establishment of the Global Coordination Mechanism for Research and Development to Prepare for and Respond to Epidemics was finalized. In November 2017, its terms of reference and core membership were discussed and standard operating procedures for regular communication among members and interaction with existing independent advisory groups of experts informing the global research and development community were outlined. The Secretariat has also developed a visualization tool to facilitate access to information on stakeholders involved in research on various priority pathogens and products.

23. The Coalition for Epidemic Preparedness Innovations, with which WHO signed a memorandum of understanding in September 2016, has committed itself to working on the diseases prioritized in the R&D Blueprint and according to the critical characteristics identified in WHO's target product profiles. One example of collaboration was the accelerated development by the Secretariat of target product profiles for vaccines against Lassa fever, Nipah virus and Middle East respiratory syndrome coronavirus in order to aid the Coalition's first call for proposals.

Regulatory capacity

24. Efforts to strengthen national regulatory and ethics bodies to respond to public health emergencies are under way. In May 2017, the Secretariat held an informal consultation on options to improve regulatory preparedness to address public health emergencies for vaccines, diagnostics and therapeutics for priority pathogens. A confidentiality agreement to share the diagnostic assessment data, pending approval from manufacturers, on Zika virus diagnostics dossiers submitted through the WHO Emergency Use Assessment and Listing procedure was signed between WHO and the Brazilian Health Regulatory Agency.

ACTION BY THE HEALTH ASSEMBLY

25. The Health Assembly is invited to note this report.

ANNEX

**LIST OF ACTIVE GRADED EMERGENCIES IN THE REPORTING PERIOD
(1 JANUARY–20 OCTOBER 2017)**

Country/territory	Region	Date of initial grading	Type of crisis	Initial grade	Date of last grading	Latest grade
Bangladesh/ Myanmar	South-East Asia	08/10/2017	Rakhine conflict	3		
Democratic Republic of the Congo	African	29/08/2017	Kasai region/acute humanitarian crisis	3	13/10/2017	Grade 3
Somalia	Eastern Mediterranean	09/05/2017	Complex emergency/drought/ cholera outbreak	3		
Ethiopia	African	20/04/2017	Severe acute watery diarrhoea/cholera outbreak	3	11/08/2017	Protracted Grade 3
Nigeria (north-east)	African	18/08/2016	Complex emergency	3	01/06/2017	Protracted Grade 3
Yemen	Eastern Mediterranean	01/07/2015	Complex emergency/ cholera outbreak	3		
Iraq	Eastern Mediterranean	12/08/2014	Conflict/civil strife	3	26/08/2015	Grade 3 extension
South Sudan	African	12/02/2014	Conflict/civil strife	3	01/05/2017	Protracted Grade 3
Syrian Arab Republic	Eastern Mediterranean	03/01/2013	Conflict/civil strife	3	25/08/2015	Grade 3 extension
Madagascar	African	22/09/2017	Plague	2		
Caribbean islands	Americas	18/09/2017	Hurricanes Irma and Maria	2		
Cabo Verde	African	11/09/2017	Malaria outbreak	2		
Myanmar	South-East Asia	12/06/2017	Conflict/civil strife	2	11/06/2017	Protracted Grade 2
Democratic Republic of the Congo	African	15/05/2017	Ebola virus disease outbreak	2		
Sudan	Eastern Mediterranean	24/04/2017	Drought/food insecurity	2		
Sao Tome and Principe	African	14/02/2017	Necrotizing cellulitis	2		
Brazil	Americas	01/02/2017	Yellow fever outbreak	2		
Democratic Republic of the Congo	African	23/06/2016	Cholera outbreak	2	23/08/2017	Protracted Grade 2
Libya	Eastern Mediterranean	03/03/2016	Armed conflict escalation	2	17/05/2017	Grade 2 extension
United Republic of Tanzania	African	15/12/2015	Refugee crisis/cholera outbreak	2	23/08/2017	Protracted Grade 2
Niger	African	01/04/2015	Conflict/civil strife	2	01/05/2017	Protracted Grade 2
Cameroon	African	01/04/2015	Conflict/civil strife	2	01/05/2017	Protracted Grade 2

Country/territory	Region	Date of initial grading	Type of crisis	Initial grade	Date of last grading	Latest grade
Central African Republic	African	03/06/2015	Conflict/civil strife	2	01/05/2017	Protracted Grade 2
Ukraine	European	20/02/2014	Conflict/civil strife	2	12/02/2015	Grade 2 extension
Saudi Arabia	All regions	01/06/2014	Multi-state outbreak of Middle East respiratory syndrome coronavirus	2		
Democratic Republic of the Congo	African	20/07/2013	Complex emergency	2	01/05/2017	Protracted Grade 2
Chad	African	15/09/2017	Cholera outbreak	1		
Pakistan	Eastern Mediterranean	30/08/2017	Dengue outbreak	1		
Nepal	South-East Asia	18/08/2017	Floods	1		
Sierra Leone	African	16/08/2017	Mudslides and flooding	1		
Myanmar	South-East Asia	31/07/2017	Influenza A(H1N1) outbreak	1		
Philippines	Western Pacific	29/07/2017	Marawi conflict	1		
Burundi	African	06/07/2017	Malaria outbreak	1		
Sri Lanka	South-East Asia	05/07/2017	Dengue outbreak	1		
Bangladesh	South-East Asia	07/06/2017	Cyclone Mora	1		
Sri Lanka	South-East Asia	29/05/2017	Floods	1		
Kenya	African	20/04/2017	Drought/food insecurity	1		
Uganda	African	13/04/2017	Drought/food insecurity	1		
Peru	Americas	05/04/2017	Floods	1		
Angola	African	08/02/2017	Cholera outbreak	1		
Chad	African	06/01/2017	Hepatitis E outbreak	1		
Papua New Guinea	Western Pacific	31/05/2016	Complex emergency	1	06/06/2017	Grade 1 extension
Occupied Palestinian territory, including east Jerusalem	Eastern Mediterranean	05/11/2015	Conflict/civil strife	1	17/05/2017	Grade 1 extension
Afghanistan	Eastern Mediterranean	28/10/2015	Displacement	1	17/05/2017	Grade 1 extension
Mali	African	16/10/2015	Complex emergency	1	01/05/2017	Protracted Grade 1
Pakistan	Eastern Mediterranean	20/06/2014	Displacement	1	17/05/2017	Grade 1 extension

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