

Preparedness for cyclones, tropical storms, tornadoes, floods and earthquakes during the COVID-19 pandemic

Health advisory

29 April 2020



Background

Countries and communities worldwide are currently preparing for or responding to the COVID-19 pandemic. Health authorities and communities also need to remain alert and prepared for seasonal or emerging extreme weather events, other natural hazards and outbreaks of diseases that may occur during this time, and should implement additional precautions to ensure that the optimal response to the COVID-19 pandemic can be maintained.

This WHO health advisory provides guidance to countries on adapting all existing preparedness and response plans and procedures for cyclones, tropical storms, tornadoes, floods, earthquakes and potential outbreaks of other diseases to their COVID-19 strategic preparedness and response plans (SPRPs) (1). It also provides advice on how to test the required capacities through simulation as and when necessary to ensure the strategic objectives of pandemic response:

- slow and stop transmission, prevent outbreaks and delay spread;
- provide optimized care for all patients, especially those who are seriously ill;
- minimize the impact on health systems, social services and economic activity.

This advisory makes reference to existing WHO guidance documents on COVID-19 risk and impact management, which highlight the specific capacities that need to be in place to strengthen countries' health sectors through well-coordinated actions across government and across society (2). In addition to using the guidance provided here, countries and communities are also advised to refer to the WHO *Health Emergency Disaster Risk Management Framework* (3) to enhance support in the implementation of the International Health Regulations (2005) (IHR) (4) and the strengthening of capacities specific to the potential hazards indicated in the advisory. Countries are strongly advised to be prepared and ready for all other potential risks as indicated in their country disaster risk profiles.

WHO has collaborated with the World Meteorological Organization and other partners to highlight the priority actions in this health advisory taking the following into consideration (5–7).

- The typhoon season in the western North Pacific region typically runs from May to November.
- The hurricane season in the Americas and the Caribbean runs from 1 June to 30 November, peaking in August and September.

- The cyclone season in the South Pacific and Australia normally runs from November to April.
- In the Bay of Bengal and Arabian Sea, tropical cyclones usually occur from April to June and from September to November.
- The East Coast of Africa normally experiences tropical cyclones from November to April.

WHO advises governments and partners to consider the following aspects of preparedness.

Coordination mechanisms

Multisectoral disaster risk management and COVID-19 preparedness and response should be well coordinated. This includes collaboration at national and local levels for planning and implementation of priority actions through the engagement of all key actors, with a focus on protecting groups with higher levels of vulnerability and ensuring inclusiveness and equity. While setting up incident management support teams (IMSTs) and emergency operations centres for natural events, special attention should be given to ensure the necessary links with the COVID-19 response.

Scenario-based planning and continuation of services

Countries need to build potential scenarios that describe how the impact of the COVID-19 pandemic could affect preparedness and response for other hazards in various parts of the country, and to adjust plans, preparedness and response measures based on the prevailing COVID-19 situation: no cases; sporadic cases, clusters of cases; or community transmission. To ensure continuation of health services at different levels of the health systems, consideration should be given to potential natural events as detailed in the country disaster risk profile and to the business continuity of communities, society and organizations. Countries and communities should monitor and manage levels of stress and mental health, and psychosocial needs, including those of health care workers and emergency personnel, for example, by providing good quality communication, accurate up-to-date information and access to mental health and psychosocial support services (8).

Adaptation of national and local plans to repurpose the available resources

National and local disaster risk management plans and hazard-specific contingency plans will need to be linked with COVID-19 plans to ensure that optimal measures and capacities for both pandemic and natural events are in place. The availability of human, financial and material resources should be allocated accordingly to make optimal use of all available resources. Health authorities should advocate for the appropriation of adequate resources to address multiple events, accounting for all critical needs of communities, including water and sanitation, energy, waste and transportation.

Multisectoral actions to support the health sector and the continuity of essential services

Multisectoral prevention, preparedness and response measures should support the application of public health measures for COVID-19 and maintain the continuity of essential services to communities. Precautions to protect communities, including the emergency workforce, from COVID-19 should be applied.

Early warning and risk communication

Public communication of early warnings for cyclones, tropical storms, tornadoes, floods, earthquakes and outbreaks of other diseases should include COVID-19 risk communication to reduce risks of its transmission. Risk communication messages should be adapted accordingly to inform all stakeholders regarding mitigation, prevention, preparedness and response in order to reduce the morbidity and mortality from all potential hazards.

Evacuation shelters, refugee camps and non-camp settings

In circumstances requiring evacuation, COVID-19 health measures should be implemented in evacuation shelters, including provisions for handwashing, maintaining physical distance, waste disposal and other water, sanitation and hygiene (WASH) measures. As physical distancing requirements may affect the number of people that can be accommodated in existing evacuation shelters, additional and alternative locations need to be identified, prepared and advertised as shelters. These may include schools, community facilities and religious facilities depending on their ability to provide safety measures. COVID-19 guidance relating to refugees and migrants should also be taken into consideration, as appropriate.

Emergency personnel for search, rescue, evacuation, security and medical response activities

Search, rescue and evacuation teams should be trained to perform their tasks with COVID-19 precaution measures, including personal protective equipment (PPE). Medical response teams need to be identified, trained and equipped with appropriate infection prevention and control and PPE

precautions for carrying out mobile outpatient services and onward referral. Field triage should be conducted with COVID-19 precautions and measures for suspected cases and contacts, including isolation. The emergency workforce should apply measures to protect against COVID-19 and all personnel should be monitored for symptoms of COVID-19 and isolated if showing symptoms.

Health emergency information management systems

The existing surveillance and early warning systems for infectious diseases should be strengthened to ensure wider coverage of communities, health facilities, camp and non-camp settings for refugees and migrants, slums, evacuation shelters and all other relevant locations. Information on COVID-19 positive cases should be available to health care workers so that they can take necessary measures to reduce transmission and manage the response.

Health care facilities and mass casualty management systems

Hospitals need to be prepared with effective triage, casualty management and referral systems to take account of both COVID-19 and other emergencies. Health authorities and hospital managers should consider the designation of health care facilities for COVID-19 and for other emergencies as appropriate. All hospitals designated for casualty management should have COVID-19 protection measures in place. Temporary health care facilities or modified structures to address the demand surge during emergencies should be considered within existing emergency medical team minimum standards.

Logistics, supplies and movement of emergency personnel

Owing to the restrictions on movement and transportation as a result of stay-at-home measures during the COVID-19 pandemic, the timely mobilization or pre-positioning of supplies for all emergency operations should be considered alongside optimal precautions to avoid COVID-19 transmission. The supplies should include the appropriate COVID-19 materials to facilitate safer medical management during all emergencies.

WHO support

WHO calls for local, national, regional and global solidarity to support countries and communities with high levels of vulnerability to natural hazards during the COVID-19 pandemic. WHO stands by to provide assistance to the health sectors in such countries to help them overcome future challenges.

A list of countries at high risk of natural hazards is provided in the Annex.

References

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7. Severe Weather Information Centre. Geneva: World Meteorological Organization; 2020 (<https://severeweather.wmo.int/>, accessed 4 June 2020).
8. Mental health and psychosocial considerations during the COVID-19 outbreak. Geneva: World Health Organization; 2020 (WHO/2019-nCoV/MentalHealth/2020.1; (<https://apps.who.int/iris/handle/10665/331490>, accessed 4 June 2020).

Annex: Countries at high risk of natural hazards

Below is a list of countries that may be hit by other events related to natural hazards (cyclones, hurricanes, typhoons, floods and earthquakes) concurrently with the COVID-19 pandemic in the coming months (based on data from INFORM (1) and the World Meteorological Organization (WMO) (2); countries that have a double or higher burden of risks are marked in color.

The countries are grouped by the WHO Regions.

Country/territory/area	Natural hazards					Data Source	
	Cyclones	Hurricanes	Typhoons	Floods	Earthquakes	INFORM	WMO
WHO African Region							
Algeria	–	–	–	–	Yes	√	–
Botswana	Yes	–	–	–	–	–	√
Chad	–	–	–	Yes	–	√	–
Comoros	Yes	–	–	–	–	–	√
Congo	–	–	–	Yes	–	√	–
Democratic Republic of the Congo	–	–	–	Yes	–	√	–
Eswatini	Yes	–	–	–	–	–	√
Kenya	Yes	–	–	–	–	–	√
Lesotho	Yes	–	–	–	–	–	√
Madagascar	Yes	–	–	Yes	–	√	√
Malawi	Yes	–	–	–	–	–	√
Mauritania	–	–	–	Yes	–	√	–
Mauritius	Yes	–	–	–	–	√	√
Mozambique	Yes	–	–	–	–	–	√
Namibia	Yes	–	–	–	–	–	√
Niger	–	–	–	Yes	–	√	–
Nigeria	–	–	–	Yes	–	√	–
Seychelles	Yes	–	–	–	–	–	√
South Africa	Yes	–	–	–	–	–	√
Somalia	–	–	–	Yes	–	√	–
South Sudan	–	–	–	Yes	–	√	–
United Republic of Tanzania	Yes	–	–	–	–	–	√
Zimbabwe	Yes	–	–	–	–	–	√

Country/territory/area	Natural hazards					Data Source	
	Cyclones	Hurricanes	Typhoons	Floods	Earthquakes	INFORM	WMO
WHO Region of the Americas							
Antigua and Barbuda	Yes	Yes	–	–	–	√	√
Bahamas	Yes	Yes	–	–	–	√	√
Barbados	–	Yes	–	–	–	–	√
Belize	Yes	Yes	–	Yes	–	√	√
Bolivia	–	–	–	–	Yes	√	–
Brazil	–	–	–	Yes	–	√	–
British Caribbean Territories (Anguilla, British Virgin Islands, Cayman Islands, Montserrat, Turks and Caicos Islands)	–	Yes	–	–	–	–	√
Canada	–	Yes	–	–	–	–	√
Chile	–	–	–	–	Yes	√	–
Colombia	–	Yes	–	–	Yes	√	√
Costa Rica	–	Yes	–	–	Yes	√	√
Cuba	Yes	Yes	–	–	–	√	√
Dominica	Yes	Yes	–	–	–	√	√
Dominican Republic	Yes	Yes	–	–	Yes	√	√
Ecuador	–	–	–	–	Yes	√	–
El Salvador	–	Yes	–	–	Yes	√	√
Guatemala	–	Yes	–	–	Yes	√	√
Haiti	Yes	Yes	–	–	Yes	√	√
Honduras	–	Yes	–	–	Yes	√	√
Jamaica	Yes	Yes	–	–	Yes	√	√
Mexico	Yes	Yes	–	Yes	Yes	√	√
Nicaragua	–	Yes	–	–	Yes	√	√
Panama	–	Yes	–	–	Yes	√	√
Peru	–	–	–	–	Yes	√	–
Saint Lucia	–	Yes	–	–	–	–	√
Suriname	–	–	–	Yes	–	√	–
Trinidad and Tobago	–	Yes	–	–	–	–	√
United States of America	Yes	Yes	–	–	Yes	√	√
Venezuela	–	Yes	–	–	Yes	√	√

Country/territory/area	Natural hazards					Data Source	
	Cyclones	Hurricanes	Typhoons	Floods	Earthquakes	INFORM	WMO
WHO South-East Asia Region							
Bangladesh	Yes	–	–	Yes	Yes	√	√
Bhutan	–	–	–	–	Yes	√	–
Democratic People's Republic of Korea	–	–	Yes	Yes	–	√	√
India	Yes	–	–	Yes	Yes	√	√
Indonesia	Yes	–	–	Yes	Yes	√	√
Maldives	Yes	–	–	–	–	–	√
Myanmar	Yes	–	–	Yes	Yes	√	√
Nepal	–	–	–	–	Yes	√	–
Sri Lanka	Yes	–	–	–	–	–	√
Thailand	Yes	–	Yes	Yes	–	√	√
Timor-Leste	Yes	–	–	–	–	–	√
WHO European Region							
Albania	–	–	–	–	Yes	√	–
Armenia	–	–	–	–	Yes	√	–
Azerbaijan	–	–	–	–	Yes	√	–
Bosnia and Herzegovina	–	–	–	Yes	–	√	–
Cyprus	–	–	–	–	Yes	√	–
France	Yes	Yes	–	–	–	–	√
Georgia	–	–	–	–	Yes	√	–
Greece	–	–	–	–	Yes	√	–
Hungary	–	–	–	Yes	–	√	–
Iceland	–	–	–	–	Yes	√	–
Israel	–	–	–	–	Yes	√	–
Italy	–	–	–	–	Yes	√	–
Kyrgyzstan	–	–	–	–	Yes	√	–
Netherlands	–	Yes	–	–	–	–	√
North Macedonia	–	–	–	–	Yes	√	–
Romania	–	–	–	Yes	–	√	–
Russian Federation	–	–	–	Yes	–	√	–
Serbia	–	–	–	Yes	–	√	–
Tajikistan	–	–	–	–	Yes	√	–
Turkey	–	–	–	–	Yes	√	–

Country/territory/area	Natural hazards					Data Source	
	Cyclones	Hurricanes	Typhoons	Floods	Earthquakes	INFORM	WMO
Ukraine	–	–	–	Yes	–	√	–
United Kingdom	Yes	Yes	–	–	–	–	√
Uzbekistan	–	–	–	–	Yes	√	–
WHO Eastern Mediterranean Region							
Afghanistan	–	–	–	Yes	Yes	√	–
Egypt	–	–	–	Yes	–	√	–
Iran (Islamic Republic of)	Yes	–	–	–	Yes	√	√
Iraq	–	–	–	Yes	–	√	–
Jordan	–	–	–	–	Yes	√	–
Lebanon	–	–	–	–	Yes	√	–
Oman	Yes	–	–	–	–	–	√
Pakistan	Yes	–	–	Yes	Yes	√	√
Qatar	Yes	–	–	–	–	–	√
Saudi Arabia	Yes	–	–	–	–	–	√
Somalia	–	–	–	Yes	–	√	–
Sudan	–	–	–	Yes	–	√	–
Syrian Arab Republic	–	–	–	–	Yes	√	–
United Arab Emirates	Yes	–	–	–	–	–	√
Yemen	Yes	–	–	–	–	–	√
WHO Western Pacific Region							
Australia	Yes	–	–	–	–	–	√
Cambodia	–	–	Yes	Yes	–	√	√
China	–	–	Yes	Yes	Yes	√	√
Cook Islands	Yes	–	–	–	–	–	√
Fiji	Yes	–	–	–	–	–	√
French Polynesia	Yes	–	–	–	–	–	√
Japan	–	–	Yes	–	Yes	√	√
Kiribati	Yes	–	–	–	–	–	√
Lao People's Democratic Republic	–	–	Yes	Yes	–	√	√
Malaysia	–	–	Yes	–	–	–	√
Marshall Islands	Yes	–	–	–	–	–	√
Micronesia (Federated States of)	Yes	–	–	–	–	–	√

Country/territory/area	Natural hazards					Data Source	
	Cyclones	Hurricanes	Typhoons	Floods	Earthquakes	INFORM	WMO
Nauru	Yes	–	–	–	–	–	√
New Caledonia	Yes	–	–	–	–	–	√
New Zealand	Yes	–	–	–	Yes	√	√
Niue	Yes	–	–	–	–	–	√
Palau	Yes	–	–	–	–	–	√
Papua New Guinea	Yes	–	–	–	Yes	√	√
Philippines	Yes	–	Yes	Yes	Yes	√	√
Republic of Korea	Yes	–	Yes	Yes	Yes	√	√
Lao People's Democratic Republic	–	–	Yes	Yes	–	√	√
Samoa	Yes	–	–	–	–	–	√
Singapore	–	–	Yes	–	–	–	√
Solomon Islands	Yes	–	–	–	Yes	√	√
Tokelau	Yes	–	–	–	–	–	√
Tonga	Yes	–	–	–	Yes	√	√
Tuvalu	Yes	–	–	–	–	–	√
Vanuatu	Yes	–	–	–	Yes	√	√
Viet Nam	–	–	Yes	Yes	–	√	√

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WHO continues to monitor the situation closely for any changes that may affect this health advisory. Should any factors change, WHO will issue a further update. Otherwise, this health advisory document will expire 2 years after the date of publication.

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