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Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWMS)

Guidelines for Tsunami Warning Services, Evacuation, and Sheltering during COVID-19

Purpose

This document is aimed at national authorities responsible for the organisation of tsunami warning and emergency response. It clarifies the status of the regional tsunami services for the Indian Ocean and suggests best practices for national and local actions during the COVID-19 pandemic.

The document recognises that current national, regional and local responses to the COVID-19 may differ depending upon a number of conditions, such as the phase of the pandemic, transmission in the community, demographics, response capabilities, etc. ICG/IOTWMS Member States are therefore strongly encouraged to develop nationally coordinated guidelines based on this document to suit specific national circumstances and protocols, thus contributing to a common understanding of how to handle tsunami warnings and evacuations under COVID-19 pandemic conditions. Additionally, it is essential that the public in every country is properly sensitised to the resulting guidelines in advance of a tsunami event, so that they can act appropriately during a tsunami emergency.

Context

The current COVID-19 response has resulted in a shift of priorities, alterations in work processes and venues (home office), physical distancing, self-isolation and quarantine measures, as well as temporary lockdowns of entire communities. This may create ambiguity or confusion with regards to tsunami warning services and response actions like evacuation, under co-existing COVID-19 protocols.

In particular, it must be taken into account that the rapid-onset nature of tsunamis not only requires immediate action by official authorities to provide warnings and initiate evacuation processes, but may also require quick and autonomous decisions on the part of the population for self-evacuation in the case of near-field threats. This is of course also true in COVID-19 times and it is therefore necessary to ensure that the population is not prevented from taking life-saving action by possible official restrictions aimed at the containment of the virus. As has been shown tragically in the past, tsunamis can also claim thousands of lives.

Indian Ocean Regional Tsunami Services

The Agency for Meteorology, Climatology and Geophysics (BMKG, Indonesia), Joint Australian Tsunami Warning Centre (JATWC, Australia), and Indian Tsunami Early Warning Centre (ITEWC, India), as the Tsunami Service Providers (TSPs) for the IOC-UNESCO's IOTWMS, will continue to operate 24 x 7 to provide tsunami threat services to the Indian Ocean according to the [IOTWMS TSP Service Definition Document \(2019\)](#).

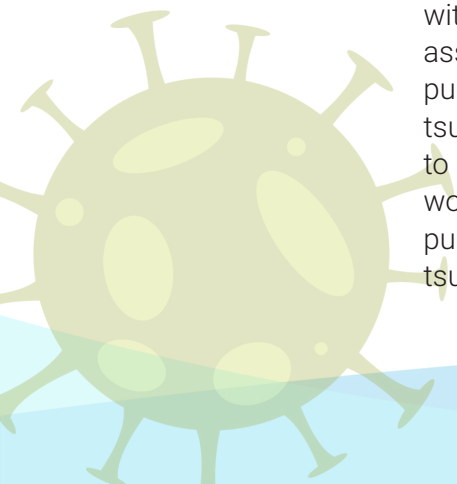
As all three TSPs cover the entire Indian Ocean region, the drop-out of one of the TSPs, though very unlikely, will be fully compensated by the others. Each TSP must review its business continuity and contingency plan to ensure their services can be maintained to the maximum extent possible. In addition, the IOTWMS will continue to monitor any immediate, short-term and long-term impacts of COVID-19 on monitoring networks and the TSPs capacities to deliver regional service. In the case that operations of one or several of the TSPs, or of the overall regional system is affected, a communication will be issued to its stakeholders, including IOTWMS official Tsunami National Contacts (TNCs), Tsunami Warning Focal Points (TWFPs) and National Tsunami Warning Centres (NTWCs).

It is important to reiterate that each country is solely responsible for the safety of its own population from tsunami hazards. The country's NTWC or Disaster Management Organisation (DMO) is the authority for issuing a tsunami warning for any or all of its coastlines, and the IOTWMS TSP information is only advisory in nature.

Suggested National and Local Best Practices during COVID-19

A) Ensure that agreed tsunami preparedness measures are in place and adapted to COVID-19 conditions before a tsunami event (there will be no time to do so during an event):

1. It is important for the public to understand that **A TSUNAMI EVACUATION ORDER SHOULD TAKE PRIORITY OVER A COVID-19 STAY-AT-HOME ORDER**. Immediate life-safety is the priority when evacuations are required. **THIS ALSO APPLIES FOR SELF-EVACUATION PROCESSES IN AREAS WITH NEAR-FIELD TSUNAMI THREATS**. Communities should be made aware about these protocols and any requirement for physical distancing when sheltering at an evacuation site during a tsunami event.
2. National authorities and responsible agencies should discuss and coordinate national preparedness. NTWCs and DMOs should have institutional business continuity and contingency plans in place and reviewed to ensure optimal functioning of the monitoring networks, warning services and emergency responses capabilities during COVID-19. Any business continuity issues that arise (e.g. maintenance of monitoring networks, staffing issues in NTWCs and DMOs due to lockdown measures) should be urgently communicated and coordinated amongst the relevant national authorities and organisations for prompt corrective actions.
3. 24/7 arrangements of national and local authorities to provide timely warnings to the relevant organisations, media and the public should be ensured. Back-up and contingency arrangements should be reviewed and in place.
4. Plans for tsunami assembly areas and shelters should be reviewed to take into consideration physical distancing and medical isolation needs related to COVID-19. Identify if these sites are within COVID-19 cluster areas and epicentres. Wherever possible, tsunami assembly areas and shelters should not be used for COVID-19 treatment or other purposes in general. However, if needed, additional places can be assigned for tsunami assembly and shelters by utilising places that are currently closed due to COVID-19, such as schools, student dormitories, offices where employees work from home, guest-houses and hotels with no visitors / tourists, etc. If so, the public **MUST** be made aware before a tsunami event occurs where the alternative tsunami assembly areas and shelters are.



5. Hospitals, clinics, and health care facilities treating COVID-19 patients located in at-risk tsunami impact areas should be identified and plans developed for their evacuation to minimise further spread of the virus.
6. Personal Protection Equipment (PPE), such as masks, should be provided to protect all likely to be involved in managing and leading community evacuations and sheltering required by a tsunami warning. All infected with COVID-19 MUST be directed to have masks and to wear them during evacuation and sheltering. Ensure a sufficient supply of PPE (such as masks, clean water, soaps, hand sanitiser, and medical kits including thermometers) are stored at evacuation sites for all to use.
7. Develop a national public communication strategy, possibly involving multi-hazards under one strategy. Ensure that the public is informed about all essential procedures and any changes to them. As these may change during the pandemic, updates should be provided as necessary. For communication with the public, communication channels and mechanisms already established for COVID-19 purposes should be used as far as possible to ensure consistency in messaging and public uptake, as well as reduce workloads for authorities already engaged in managing COVID-19.
8. Provide public information on COVID 19-specific individual preparedness measures and rules of conduct during a tsunami emergency as:
 - *Personal or family emergency 'grab bag'/emergency backpack should be supplemented with disposable tissues, alcohol-based hand sanitiser, disinfectant wipes, and possibly face masks, in consideration of heightened sanitation and hygiene needs of COVID-19.*
 - *The public should adhere to all COVID-19-related hygienic advice provided by national and/or local authorities, such as those related to the wearing of face masks, as well as sneezing or coughing into disposable tissues, avoiding direct contact with people and physical distancing wherever possible.*
 - *Visit _____ for more information about what to do in an emergency.*

B) Principles for tsunami warning and evacuation (During an event):

1. When the NTWC and/or the DMO issues a tsunami warning, the desired action for the public is to follow the advice of the authorities, including evacuation from identified at-risk locations as required. **Warning message content may be considered and modified to highlight that a tsunami evacuation order should take priority over COVID-19 requirements to stay at home.**
2. In countries/regions that are at risk of tsunamis generated by nearby local sources, the public needs to continue to use natural tsunami warning signs as cues for self-evacuation, i.e. if people are near the coast and experience any of a tsunami's natural warning signs, they should quickly leave at-risk locations and move inland or to higher ground. The natural tsunami warning signs are strong or long ground shaking (from an earthquake), a sudden change of the sea level or a loud roar from the sea (from a tsunami).
3. Keep actions and desired responses from communities at risk as simple and consistent as possible. For example, it is preferable not to over complicate evacuation orders by having separate evacuation paths for those infected with COVID-19.
4. All persons known to be infected with COVID-19 MUST wear masks during evacuation. Where possible all people evacuating should wear masks to help prevent further spreading of COVID-19, for example by those who may not have been tested or asymptomatic. For those thought not to have COVID-19, the mask may not need to be a medical mask, and a cloth mask may possibly suffice.

5. It may not be practical for those involved in evacuation to maintain any recommended physical distancing, especially for tsunami events generated by nearby local sources, but also for distantly generated tsunamis. Time is of the essence in rapid onset tsunami events. The priority must be saving of lives from the imminent tsunami threat and managing any resultant COVID-19 infections immediately afterwards.

C) Sheltering (During an event):

1. It is important that risks of COVID-19 spreading among the public during sheltering are managed to the greatest extent possible and according to national and/or regional and/or local protocols and laws (e.g. physical distancing, wearing of masks, provision and use of hand sanitiser etc.).
2. Identify and segregate wherever possible those known to be COVID-19 infected.
3. It may not always be possible to ensure physical distancing in evacuation sites (e.g. vertical evacuation buildings) or assembly areas due to space limitations. In such cases, priority should be given to saving lives from the tsunami threat and then managing any possible infections.
4. It is recommended that the names and addresses of those at evacuation sites should be recorded to the extent possible in order to help track and subsequently manage any COVID-19 transmissions and clusters resulting from the sheltering.
5. If people do NOT live in a tsunami evacuation zone, then they should continue to shelter in place to avoid unnecessary exposure to COVID-19. No evacuation is necessary. It is important that tsunami evacuations are not used by some not in tsunami risk zones as an excuse to ignore COVID protocols.

Further References

Example of national guideline of Indonesia: "[Guide on Tsunami Evacuation during COVID-19](#)"

For More Information:



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