



# Guide on Tsunami Evacuation during COVID-19

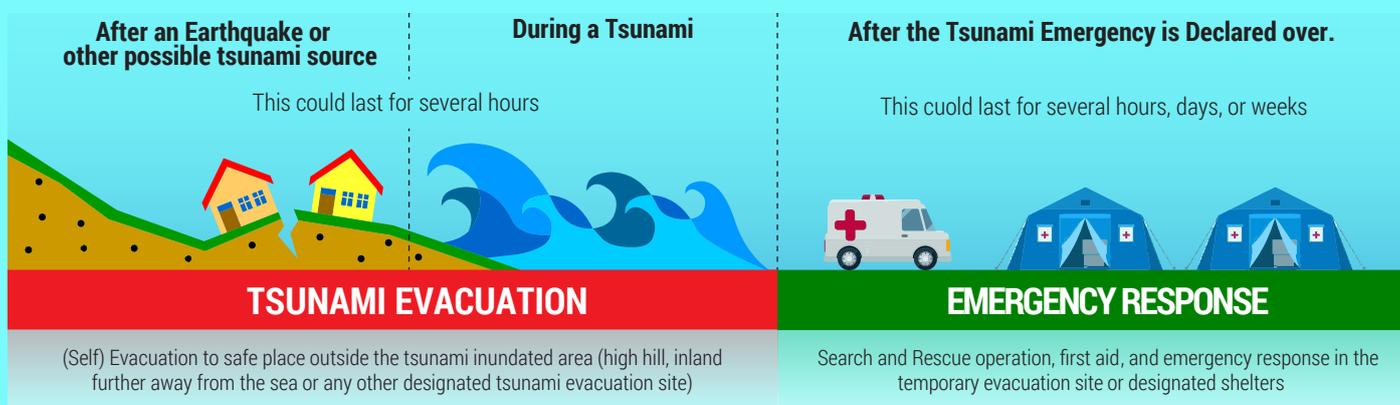
## Background

In many areas, the Coronavirus Pandemic (COVID-19) has overwhelmed humanitarian organisations and disaster management agencies. A critical question in natural disaster response in the backdrop of a concurrent pandemic is how to manage evacuations for tsunamis, cyclones, floods, volcanic eruptions, etc.

At the time of a disaster caused by natural hazards, people will tend to be in close proximity either due to limited space, such as evacuation shelter, or to get a sense of security and comfort. This is generally contrary to COVID-19 directives that request people to keep physical distance. Disregard for physical distancing may turn an evacuation site into COVID-19 infection epicentre.

Most tsunamis in Indonesia are local tsunamis caused by tectonic earthquakes. A local source tsunami can arrive in minutes. It is important to recognise the natural warning signs and evacuate quickly without waiting for official warning or evacuation orders from the authorities. Natural warning signs can include a strong earthquake that makes it hard to stand or a long earthquake that lasts more than a minute. During a tsunami emergency the community must evacuate immediately to a safe place (a designated evacuation site, elevated plateau, or away from the coast), even during this COVID-19 situation.

In conducting (self) evacuation, as much as it is possible, communities are required to continue to pay attention to the physical distancing, wearing masks, and for communities living in regions that have implemented Large-Scale Social Restriction policy (PSBB) to follow the PSBB guidance whenever possible.



*This guide address evacuation during a tsunami emergency (Part in red on the left)*

This guide addresses evacuation during a tsunami emergency time span – shortly after an earthquake (or submarine landslide or volcanic eruption in sea) is observed until the tsunami warning emergency is declared over.

This guide serves as a reference and can be adapted for evacuation and emergency response associated with other natural disasters in the backdrop of COVID-19.

## Tsunami Early Warning

InaTEWS, Indonesia's tsunami early warning system at BMKG, will continue to operate during the COVID-19 pandemic. In implementing the Large Scale Social Distancing (PSBB) policy, the number of operators in the earthquake and tsunami warning centre are reduced without limiting InaTEWS capacity to provide tsunami early warning services.

BMKG has established a back-up InaTEWS operation in its regional office in Bali. During this COVID-19 situation, InaTEWS operates simultaneously at these two centers, in Jakarta and Bali. InaTEWS continues to issue tsunami early warnings in less than 5 minutes and continues to operate in accordance with its Standard Operating Procedures.

- Tsunami Early Warning Message according to the real event:**

|                  |  |
|------------------|--|
| <b>PDT-1</b>     | Earthquake information with potential tsunami.   |
| <b>PDT-2</b>     | Updated information of the EQ parameter with tsunami arrival time and estimated height information.  |
| <b>PDT-3.1-n</b> | Updated information with areas that has been hit by tsunami. The number of bulletin-3 issued depend on the need based on sea level observations. |
| <b>PDT-4</b>     | Information that the tsunami warning caused by the earthquake has ended.   |

- Tiga tingkatan (level) Peringatan Dini Tsunami :**

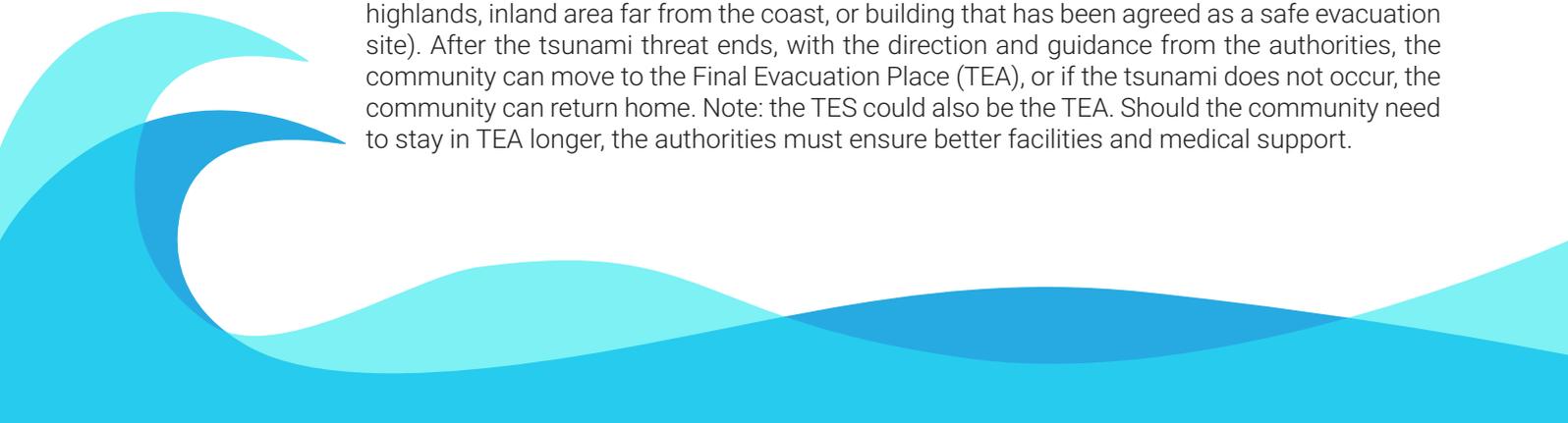
|                      |                                    |  |
|----------------------|------------------------------------|--|
| <b>MAJOR WARNING</b> | Estimated tsunami height > 3m.     | Provincial / Regional / City Governments are advised to immediately direct the community for overall evacuation.                   |
| <b>WARNING</b>       | Estimated tsunami height 0.5 - 3m. | Provincial / Regional / City Governments are advised to immediately direct the community for evacuation                            |
| <b>ADVISORY</b>      | Estimated tsunami height < 0.5m.   | Provincial / Regional / City Governments are advised to immediately direct the community to stay away from beaches and river banks |

- Disaster Management Offices and Communities should remain alert for the possibility of tsunamis not caused by earthquakes, such as underwater landslides and volcanic eruptions in the sea (like seen in Palu Bay in 2018 and Anak Gunung Krakatau Eruption in Sunda Strait 2018).**

## Tsunami Evacuation during COVID-19

BPBD and the local government need to implement special measures to prepare for community evacuation, should an earthquake with tsunami potential occur during this COVID-19 condition. Tsunami evacuation must be prioritised to save lives.

If the community feels a strong earthquake that makes it hard to stand or a long earthquake that lasts more than a minute, they should immediately self-evacuate to a Temporary Evacuation Place (TES, a safe place that has been designated as a tsunami evacuation site, such as the highlands, inland area far from the coast, or building that has been agreed as a safe evacuation site). After the tsunami threat ends, with the direction and guidance from the authorities, the community can move to the Final Evacuation Place (TEA), or if the tsunami does not occur, the community can return home. Note: the TES could also be the TEA. Should the community need to stay in TEA longer, the authorities must ensure better facilities and medical support.



## Tsunami preparedness plans during the COVID-19 pandemic include but not limited to:

- 1. Re-assess COVID-19 designated hospitals.** Assess whether the hospitals designated to care for COVID-19 patients are in tsunami inundation areas. If so, consider moving to other hospitals that are earthquake resistant and far away from the reach of a tsunami. If not possible to move to other hospitals, the authorities (BPBD, Hospital and Health Department) need to prepare a specific protocol for evacuation of these patients and medical staff
- 2. Preparation of TES and TEA.** The designated TES and TEA capacities need to be reviewed to allow community to maintain physical distancing as best as possible during evacuation. If necessary, disinfect the TES and TEA, and prepare for additional TES and TEA before the disaster occurs. Additional TES and TEA must be located in areas safe from the reach of tsunami by taking advantage of places that are currently empty due to COVID-19, such as schools, student dormitories, offices where employees work from home, government guesthouses, hotels with no tourists, etc. Ensure these places are earthquake safe. The BPBD, local government, together with the community must prepare hygiene facilities including clean water, hand washing equipment, soap and/or hand sanitisers in TEA and TES.
- 3. Protocol for social workers.** BPBD together with the local government and the community need to prepare facilities and protocols to protect social workers who will provide evacuation support (these are most likely volunteers from the community). Ensure the availability of COVID-19 standard Personal Protection Equipment (PPE) for them to use while helping evacuation including thermometers as part of first aid kit.
- 4. Evacuation plan and health protocol.** BPBD needs to prepare health plan and protocol for evacuation for this COVID-19 situation. As best as possible, general public should maintain physical distancing, wear masks and maintain hygiene (personal and surrounding) during evacuation. BPBD and the community need to ensure the availability of masks, clean water, soaps, hand sanitizer, and medical kits including thermometers in TES and TEA. BPBD need to ensure socialisation of this plan and protocol early on, before a tsunami threat occurs. Healthy persons do not need to use medical masks, instead they can use self-made fabric masks.
- 5. Evacuation plan based on the classification of COVID-19 affected people are suggested as follows:**
  - a. Patient under care (PDP):**

Most likely these are patients being treated in hospitals designated for COVID-19. **These COVID-19 patients should not be treated in areas with high disaster risk to avoid the need to mobilize them when a disaster occurs, as it will increase the risk of spreading of the virus.**

However, if they are treated in a tsunami threat area, the BPBD and local government need to prepare a special evacuation protocol to evacuate patients and their medical workers.

    - Re-assess the hospital to ensure it is safe from earthquake (location and building standards) and tsunami inundation;
    - If the hospital has several floors, place the PDP on the top floor, safe from the possible reach of the tsunami;
    - If evacuated, provide a special mark for the PDP for easy identification and assistance;
    - If evacuated to TES and TEA with the general public, as much as possible, place the PDP separate from others;
    - Medical staff need to be informed of the location and route of evacuation for the PDP and non-PDP patients respectively and given training in treating COVID-19 patients in tsunami evacuation situations;

### COVID-19

In COVID-19 pandemic emergency, the government adopted a policy of maintaining physical distancing, the use of masks, and Large-Scale Social Restriction (PSBB) as an effort to prevent the spread of COVID-19. There are also several classifications of people who have been affected by COVID-19:

#### • Pasien Dalam Pengawasan (PDP) - Patients Under Care:

- a. People with acute respiratory infections (ARI), i.e. fever ( $\geq 38^{\circ}\text{C}$ ) or a history of fever; accompanied by one of the symptoms / signs of respiratory disease such as: coughing / shortness of breath / sore throat / runny nose / pneumonia mild to severe AND no other cause based on a convincing clinical picture AND in the last 14 days before symptoms appeared having a history of travel or living in the country / areas where there are local transmissions.
- b. People with fever ( $\geq 38^{\circ}\text{C}$ ) or a history of fever or ARI AND in the last 14 days before symptoms developed have a history of contact with COVID-19 confirmed cases.
- c. People with severe ARI / pneumonia who need treatment in hospital AND no other cause based on a convincing clinical picture.

#### • Orang Dalam Pemantauan (ODP) - Person under Observation

- a. People who have a fever ( $\geq 38^{\circ}\text{C}$ ) or a history of fever; or symptoms of respiratory system disorders such as runny nose / sore throat / cough AND no other cause based on a convincing clinical picture AND in the last 14 days before symptoms appeared to have a history of travel or living in a country / region where local transmission is present.
- b. People who experience symptoms of respiratory system disorders such as colds / sore throat / cough AND in the last 14 days before symptoms developed have a history of contact with COVID-19 confirmed cases.

#### • Orang Tanpa Gejala (OTG) - Person without symptoms

A person who is asymptomatic but has a risk of contracting COVID-19.

- Social workers and volunteers need to be trained and assigned to assist in the evacuation of PDP during emergencies, and they should be equipped with the COVID-19 standard PPE and first aid kits;
- As much as possible, ensure the availability of the special equipment needed for COVID-19 patients (i.e. ventilators) and the hygiene and sanitation equipment to be able to continue to treat the patient in the evacuation site.

**b. Person Under Observation (ODP):**

These are people who are ordered to do self-quarantine / self-isolation at home.

- BPBD needs to coordinate with the Department of Health to have the name and location of ODP and to identify those who live in tsunami-inundated zone;
- As best as possible when evacuating, provide a special mark for the ODP with coloured ribbon for easy identification and assistance;
- When evacuated to TES and TEA, as best as possible, to ensure ODPs are in one evacuation place, i.e. by preparing a special place for ODPs separated from healthy people or people without symptoms;
- The ODPs need to be informed of their evacuation location and route;
- Social workers (i.e. volunteers from the community) need to be trained and assigned to assist and manage the evacuation of ODP during emergency and equipped with PPE and first aid kits including thermometers;

**c. Person without Symptoms (OTG):**

These are people who have no symptoms or clinical signs of COVID-19 but have a risk of Coronavirus. They can evacuate in the same place, as much as possible maintaining physical distance, wearing masks, and be self-reliant.

If there are evacuees among the OTG who showed symptoms of fever ( $\geq 38^{\circ}\text{C}$ ) or a history of fever; or symptoms of respiratory system disorders i.e runny nose / sore throat / cough, separate them as much as possible until the tsunami threat is over and further taken care by medical personnel.

**#BersatuLawanCOVID19**

**#DiRumahAja**

**#TidakMudik**

**#CuciTanganPakaiSabun**

**#JagaJarak**

**#maskeruntuksemua**

For more Information:

On COVID-19



- Website: COVID19.GO.ID
- Hotline: 119
- WhatsApp COVID-19: 0811 33 39 9000
- HALO KEMKES: 1500 567

On Disaster Management



- Pusdalops BNPB  
0812 1237 575  
021 29827666
- Call Center : 117

email:  
bnpb.pusdalops@gmail.com  
pusdalops@bnpb.go.id

Mobile Apps Ina Risk  
<https://play.google.com/store/apps/details?id=com.inarisk.bnpb>

On Tsunami Early Warning System



- Operasional InaTEWS:  
021-6546316
- www.bmkg.go.id
- www.inatews.bmkg.go.id

Mobile Apps WRSBMKG  
<https://play.google.com/store/apps/details?id=id.bmkg.wrsbmkg>

On Indian Ocean Tsunami Information Centre



- IOTIC  
iotic@unesco.org  
021-739 9818 ext 978

