

# Extreme Heat during the COVID-19 Pandemic

**This year Red Cross and Red Crescent National Societies are dealing with the dual risks of COVID-19 and extreme heat, amongst many other compound disasters. For many staff and volunteers, the heat risks may be amplified due to considerations for COVID-19 like wearing personal protective equipment (PPE). At the same time, vulnerable individuals may be reluctant to seek cool spaces during a heatwave, out of fear of infection. These guidance materials provide practical steps that National Societies can take to protect staff, volunteers, and vulnerable people from heat extremes. This material is adapted from the Global Heat Health Information Network's [Heat and COVID-19 Information Series](#).**

## WHICH PEOPLE ARE MOST VULNERABLE TO BOTH HEAT STRESS AND COVID-19?

All people can potentially fall ill to both heat stress and COVID-19. However, those who are considered the most vulnerable to both are:

- Older people (>65 years and especially >85years);
- People with underlying health conditions, including cardiovascular disease, pulmonary disease, kidney disease, diabetes / obesity, compromised immune systems, mental health issues (psychiatric disorders, depression);
- Essential workers who work outdoors during the hottest times of the day or who work in places that are not temperature-controlled;
- Health workers and auxiliaries wearing personal protective equipment;
- Pregnant women;
- People living in nursing homes or long-term care facilities, especially without adequate cooling and ventilation;
- People who are marginalized and isolated (experiencing homelessness, migrants with language barriers, old people living alone) and those with low income or inadequate housing, including informal settlements;
- People on medication: some medication for the diseases listed above impairs thermoregulation. The impact of treatment for COVID-19 is currently unknown but should be monitored to assess any additional vulnerability;
- People who have, or are recovering from, COVID-19 (which can be associated with acute kidney injury);
- People in prison, or residential institutions especially if cooling measures are not in place.

## CHECKLIST

- Collaborate with formal and informal social service systems to identify and reach vulnerable individuals with key messages and support.
- Increase the use of telephone outreach programmes for daily check-ins with the most vulnerable during heatwaves. If a system is already in place, support efforts to increase enrolment.
- Review plans for in-home safety checks. Ensure the health and safety of staff, volunteers and the people they visit through training and the provision of PPE.
- Identify your high-risk communities by reviewing where local heat islands occur, and where this may overlap with high incidence or risk of COVID-19.
- Assist efforts to review and expand social safety net programmes to support at-home cooling strategies for the most vulnerable people. For example, cities may be expanding energy subsidies to ensure households can afford home cooling measures. National Societies can assist with registration.

# HOW CAN I CARRY OUT PUBLIC OUTREACH ON HEATWAVES DURING THE COVID-19 PANDEMIC?

Communication strategies on heatwaves targeting the general public, should be scaled up to raise awareness of heightened vulnerabilities to hot weather due to the COVID-19 pandemic. Targeted approaches should also be deployed to reach the most vulnerable.

## CHECKLIST

- Keep messaging clear and short, use plain language and avoid unnecessary jargon. Appropriate language versions may be necessary to reach high-risk communities.
- Coordinate messaging across levels of government to minimize the risk of heatwave messaging contradicting COVID-19 messaging.
- Ensure that front-line staff and volunteer COVID-19 responders are well informed about heatwave risks and can convey appropriate messages to the most vulnerable.
- Adjust standard heatwave messaging to include examples of guidance that can be followed while adhering to physical distancing, including information on changes in access to public spaces and cooling facilities.
- Increase awareness that people infected with, or recovering from, COVID-19 are likely more vulnerable to heat stress.
- Mention that COVID-19 transmission does not decrease during hot weather. Exposure to sun and hot temperatures will increase heat stress and does not prevent or cure COVID-19.
- Consider the ways in which heatwave messaging may be received or acted upon differently due to the ongoing COVID-19 pandemic. Proactively address myths, risk perceptions and concerns in public messaging. Provide clarity on the mitigating measures that are in place where relevant. For example, people may be reluctant to go to cooling centres or to seek emergency medical help, even when critical.
- Encourage people to hydrate, eat healthy food and practice heat-avoiding behaviour (e.g. avoiding physical exercise, using low-tech cooling methods / air-conditioning, following guidance to cool themselves down).
- Use a range of communication channels to maximize messaging reach. This can include:
  - Broadcasts via television, radio and social media
  - Targeted media (radio, television, internet, posters), in places that vulnerable people visit frequently (parks, supermarkets, food banks, and pharmacies)
  - Mailed information (e.g. flyers, pamphlets), targeting individuals who may be at risk (e.g. using demographic data available to local governments)
  - Telephone hotlines that people can call with questions about coping with the heat.
- At-home safety checks of the most vulnerable can be undertaken. Review plans for in-home safety checks of the most vulnerable during hot weather in the context of COVID-19, ensuring the health and safety of outreach staff and volunteers through training and the provision of personal protective equipment (PPE).
- Where possible, in-person outreach should be transitioned to telemonitoring services (telephone and videocall) to reduce the likelihood of COVID-19 transmission. The most vulnerable people can be checked by: telemonitoring via a scheduled (daily) phone call or webcam; creating telephone chains among vulnerable people; or developing a buddy system that encourages local communities to check-in on vulnerable people remotely.
- For telemonitoring, a checklist can help staff to assess the safety of vulnerable people quickly and easily. Those that take care of vulnerable people (at-home services, volunteers, community/family members) should also receive targeted messaging on how to protect those who are vulnerable to heat as well as the available.

# IS IT SAFE TO USE OUTDOOR PUBLIC SPACES FOR COOLING?

Yes, provided physical distancing guidelines can be followed and high-frequency touch points are disinfected.

## CHECKLIST

- Encourage local authorities to use outdoor cool spaces during hot weather and heatwaves, while respecting local rules to minimize COVID-19 transmission.
- Increase the availability of shaded outdoor public spaces in urban areas by assisting authorities to expand access to school yards, grounds of public buildings, parks, trails/ multi-use paths, plazas, limiting vehicle access to certain streets.
- Assist authorities to install temporary shade structures, particularly in areas that have fewer natural or man-made structures that provide shade.
- Encourage opening hours of parks and outdoor cool spaces to be extended to increase access. Identify and advocate against exclusionary policies (e.g. entrance fees) that may discourage the most vulnerable from accessing cool spaces.
- Encourage authorities to ensure drinking water fountains and public hand-washing facilities remain open and frequently touched surfaces, such as knobs, spigots, handles, etc. are regularly disinfected.
- Assist authorities to display signage on physical distancing, especially at all entry points for parks, plazas and paths. Roving staff and volunteers can reinforce messaging.
- Ensure adequate public access to water, especially for people experiencing homelessness.
- Encourage local authorities to close high-touch structures like playgrounds and exercise equipment to prevent the spread of COVID-19.
- Follow local guidance on the use of swimming pools and recreational waters, while following COVID-19 control measures. [See example, 'Local guidance' here.](#)

# SHOULD COOLING CENTRES BE OPENED DURING THE COVID-19 PANDEMIC?

Local authorities will decide whether to open a cooling centre during the COVID-19 pandemic.

This will depend on factors such as the law, the availability of staff and the ability to ensure physical distancing guidelines are followed. Staying at home instead of using cooling centers may seriously compromise the health of vulnerable groups during heatwaves.

National Societies can provide surge support to authorities by helping to open and operate cooling centers, in accordance with local guidelines.

## CHECKLIST

- Assist authorities to review the availability of listed cooling centres and check whether they are still willing/able to offer cooling spaces.
  - Ensure that physical distancing requirements can be followed; and assess the need for additional cooling centres because of requirements for reduced occupancy.
- Follow local guidelines when managing a cooling center. In addition:
- Consider physical layout of facilities and needs for separating spaces, clearly marking one-way circulation paths, etc. which increase physical distance.
  - Prioritize cooling-centre access to those who are most vulnerable to extreme heat in the event that demand exceeds occupancy restrictions.
  - Collect contact information according to local protocols for all visitors to cooling centres in case of the need for contact tracing.
  - Work with health authorities to provide cooling facilities for COVID-19 patients with mild symptoms or recovering.
  - Raise awareness of the difference between signs of heat stress and fever.
  - Offer voluntary registration for the most vulnerable to receive heatwave check-ins, where systems exist.
  - Post signs at entrances and in strategic places at all cooling centres, providing guidance on recognizing the symptoms of COVID-19 as well as highlighting the importance of hand and respiratory hygiene, cough etiquette, and wearing face masks.
  - Identify and address potential language, cultural and disability barriers to communicating the risk of COVID-19, as well as the protective and preventive measures being taken by the cooling centre.
  - Provide educational materials about COVID-19, as well as the details of mental health and social support resources.
- Ensure that everyone at the cooling centre is wearing a face mask. Simple face masks should be made available for anybody who needs one.
  - Ensure sufficient space between people (e.g. 1.5-2 metres / 6-10 feet) as locally recommended, unless they are from the same household.
  - Ensure staff and volunteers are equipped with and trained to use appropriate PPE.
  - Plan for potential staff sickness absences and cross-train essential staff to ensure continuity of operations.
  - Ensure the adequate supply of water for drinking/cooling and handwashing/hygiene. Ensure water provision limits contact between people to avoid contamination.
  - Ensure that each cooling centre is frequently cleaned and disinfected to minimize the spread of COVID-19, following local guidelines.
  - Ensure all air conditioning and industrial ventilation systems in high occupancy buildings are inspected, maintained, and cleaned regularly to prevent COVID-19 transmission. Set temperatures between 24°C/75°F and 27°C/80.5°F and a relative humidity between 50 and 60 per cent.
  - Avoid fan usage. If the use of fans is unavoidable, increase outdoor air exchange, and minimize air blowing from one person directly at another to reduce the potential spread of any airborne or aerosolized viruses.
  - If local cooling centre procedures involve the transportation of at-risk people to the site, implement protective measures for the transportation service. Provide PPE for drivers and other relevant staff. Consider using alternative vehicles that can be retrofitted for driver safety, such as vans with plastic dividers.
  - Consider strategies to reduce the need for cooling centres, for example, by providing energy utility assistance that would allow people to maintain a cool environment in their homes.

*To distinguish between heat stress from fever caused by infection, let the individual rest in a cool environment for at least 30 minutes. If core body temperature remains elevated during this time, it may be fever - consult a health expert immediately and explain the person's condition. If you observe a substantial drop in body core temperature (of 0.5°C or more, towards the normal 37°C) and the individual feels better after resting in a cool environment, it is more likely to be heat-stress related. In this case, ensure that the individual is hydrated and has no other indications of COVID-19 infection.*

## HOW CAN RESIDENTS STAY COOL AT HOME WHEN THEY LACK AIR CONDITIONING?

Strategies include: closing windows and blinds during the day, creating night-time cross breezes, drinking cool water before feeling thirsty, and wetting clothing.

### CHECKLIST

- Educate residents on low-cost strategies they can use to cool their homes without air conditioning, including:
  - closing blinds/drapes/shutters during the hottest parts of the day to reduce direct sun exposure
  - when it is cooler than 35°C (95°F) opening windows on opposite sides of the building, and use an electric fan to create a cross-breeze
  - avoiding cooking food indoors during the hottest parts of the day
  - unplugging large electronics, such as televisions, that produce heat
  - in low-humidity environments, using electric fans and a setting a bowl of cold water or ice in front of the blowing air to create a cool breeze.
- Educate residents on the most effective ways to cool themselves down, including:
  - wearing lightweight, light-coloured and loose-fitting clothing
  - avoiding strenuous activities, especially during the hottest parts of the day
  - drinking cool water before feeling thirsty; avoiding alcoholic and caffeinated beverages
  - when it is not humid, wetting clothing or taking a cool bath or shower and allowing the water to evaporate from the body to cool off
  - keeping water cool for drinking and bathing by storing it in the coolest and darkest place in the home, such as the basement/cellar.

## WHICH PARTNERS ARE IMPORTANT WHEN RESPONDING TO HEAT DURING COVID-19?

In addition to communities and national and local emergency management authorities, it is important to coordinate with a variety of government and non-governmental social services.

Local government, along with offices and services for the aging, child and family services, services for people living with disabilities and other social safety net programmes are all key partners. These offices can reach vulnerable people during hot weather, as most will have established virtual and tele-access options for continuing support during COVID-19. It is also important to coordinate with prisons and other types of residential institutions, especially if they lack air-conditioning.

Civil society and religious institutions that perform social service functions are important too. This could include places of worship, community associations and clubs, food banks and homeless shelters.

### CHECKLIST

- Assist local authorities to mobilize formal and informal social service programmes to identify vulnerable people among their clientele and ensure these individuals are contacted regularly via telephone with key messages.
- Train people in places of worship or voluntary organizations on heat stress warning signs and safety precautions related to COVID-19 so they can support in-person safety checks, with adequate PPE.
- Liaise with non-traditional partners that could supplement social service functions. For example, hotels may be willing to donate empty rooms as temporary accommodation for people experiencing homelessness. Shopping malls could be used as cool spaces.
- Encourage local authorities to ensure the providers of life-sustaining utilities (water, energy and internet/ communications) do not cut customers' services if they fail to pay their bills.
- Provide basic training to formal and informal partners on heat risks, identifying the most vulnerable and how to reduce their risks.
- Coordinate with relevant authorities and implementing partners in advance of a heatwave to review COVID-19 restrictions and how these impact local heatwave risks and management plans.
- Work with partners to plan for how to continue COVID-19 operations in the event of a heat triggered power cut that may affect critical services.
- Integrate heat-risk planning into ongoing COVID-19 coordination discussions.
- Encourage health facilities to plan and prepare for a surge in admissions in the event of a heatwave, which may be on top of a surge due to COVID-19.
- Mass casualties could result from a combination of COVID-19 and a severe heatwave. [See example, 'Good practice'](#).

## WHAT SPECIFIC CONSIDERATIONS APPLY FOR HEATWAVES IN INFORMAL SETTLEMENTS DURING THE COVID-19 PANDEMIC?

Indoor temperatures in informal settlements can be dangerously high. Staying indoors during a heatwave will not be possible, especially during the hottest times of the day, regardless of physical distancing mandates that may be in place.

Additional measures need to be introduced to reduce the spread of COVID-19, while allowing people to leave their homes to seek respite from the heat. People will take necessary risks to ensure their health and safety, meet their basic needs, and ensure access to essential services (particularly food and water).

### CHECKLIST

- Ensure frequent cleaning and disinfection of shared water, sanitation and hygiene facilities. Water access is especially crucial during hot weather. Volunteers can be trained to oversee the disinfection process.
- Install temporary shade structures where possible.
- Provide (cloth) face masks for everyone and teach people how to put them on, remove them and clean them safely.
- Collaborate with community leaders and representatives to disseminate information and address the needs of the most vulnerable.
- Provide transparent information on infection rates and fatalities to keep people fully informed.
- Supplement water access through mobile water stations for hand washing and drinking water distribution. Ensure distancing measures are in place to minimize COVID-19 spread.

# HOW CAN YOU REDUCE HEAT STRESS WHILE WEARING PERSONAL PROTECTIVE EQUIPMENT (PPE)?

There are three ways to reduce heat stress while wearing PPE:

- start cool
- reduce rises in core body temperature at work
- improve heat tolerance through acclimatization and fitness.

## CHECKLIST

- Before work: start cool
  - Acclimatize by working in the heat for more than an hour each day for at least seven days.
  - Drink cold fluids or an ice slurry prior to putting on your PPE.
- During work: reduce rises in core body temperature.
  - Stay hydrated and eat regularly to maintain an electrolyte balance when sweating heavily or for prolonged periods.
  - Reduce additional heat from exertion: minimize the equipment you carry, be efficient in your movements, pace yourself.
  - Use work/rest schedules to minimize an excessive rise in body heat.
- Recognize signs of heat stress and take breaks before feeling unwell.
- Drink cold fluids or ice slurry during breaks, find cool spots to rest in.
- Reduce clothing layers underneath PPE. Consider using cooling devices under your protective garment like a vest with phase-change materials, ice, etc.
- Recover:
  - Cool down, hydrate and recover between shifts, as heat stress can increase with consecutive days of exposure.
  - Avoid alcohol.

# HOW CAN SUPERVISORS PROTECT STAFF AND VOLUNTEERS FROM HEAT-RELATED ILLNESS DURING COVID-19?

Working while wearing PPE can increase heat stress. Managers should: ensure staff and volunteers are familiar with heat illness symptoms, manage activities and schedules to limit heat exposure, ensure frequent breaks for adequate hydration and nutrition, and provide formal monitoring and treatment.

## CHECKLIST

- Brief staff and volunteers on heat illness symptoms, risk factors and the extra heat burden from wearing PPE. Hang posters to reinforce messages.
- Monitor staff and volunteers for signs and symptoms of heat stress. Create a critical incident log to record heat illness and 'near misses'. Use it to train new staff and inform future policies.
- Encourage staff and volunteers to self-report heat-stress symptoms and create a 'buddy' system for informal peer-to-peer heat-stress monitoring.
- Ensure adequate staffing levels to avoid staff working alone, to enable frequent breaks and to rotate staff in and out of high-risk activities.
- Provide a cool area for staff and volunteers to rest and recover during breaks.
- Provide cool water and food within clean (and cool) areas.
- Ensure adequate access to toilet facilities so that staff and volunteers are less likely to reduce their fluid intake to avoid urinating.
- Encourage staff and volunteers to self-monitor their hydration by displaying urine-colour charts or providing scales in changing rooms to monitor fluctuations in their body mass (i.e. hydration level).
- Provide ice slurries when cooling facilities are not available or are insufficient. This requires safe and hygienic provision of a blender, water and ice. Clean the blender regularly and sanitize the exterior after each use.
- Encourage heat acclimatization planning and use progressive exposure to improve heat tolerance.
- Ensure first aid provisions are in place in case it is necessary to reverse excessively high body temperatures.
- Use a short, anonymous survey to monitor heat stress concerns and the adequacy of safety strategies.
- Note that fans may help transmit the virus indoors, and in very hot and dry environments they can increase heat stress.