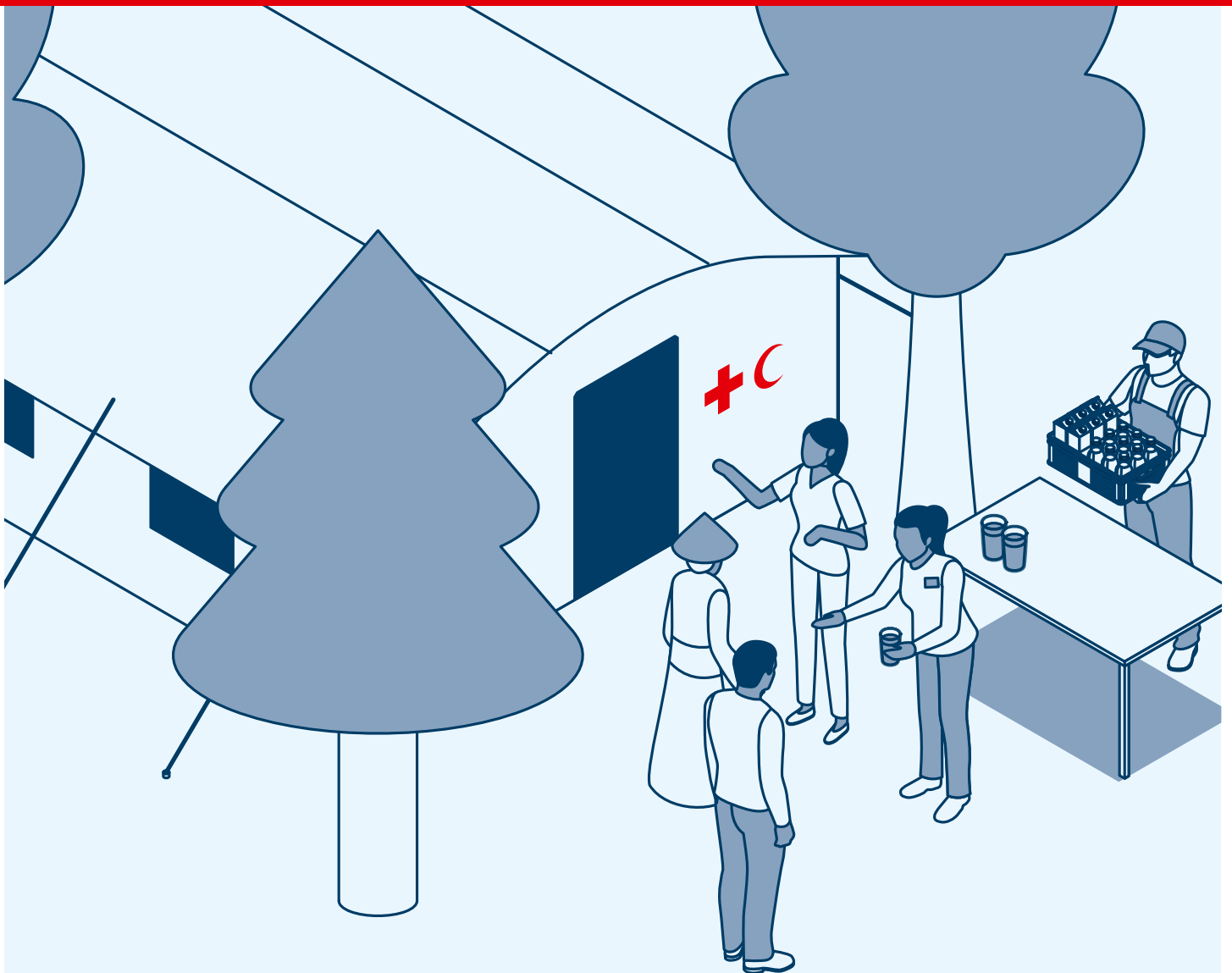


Manual

# Installation and Management of Community Cooling Centres





---

# Contents

## MANUAL

### INSTALLATION AND MANAGEMENT OF COMMUNITY COOLING CENTRES

---

<b>4</b>	<b>Foreword</b>	<b>22</b>	<b>3. Care protocols for visitors and first aid management</b>
<b>5</b>	<b>Introduction</b>	22	1. Before working in a community cooling centre (what to know)
5	Purpose of this manual		1.1. FA course for volunteers of a CCC
5	How to use this manual		1.2. Key concepts to know before working at a CCC
<b>6</b>	<b>1. Set-up of community cooling centres</b>	<b>24</b>	<b>2. Case management (what to do)</b>
6	Getting started		2.1. Assessment/screening
8	Permanent design (architecture)		2.2. First aid management
11	Temporary design (mobile architecture)	<b>28</b>	<b>4. Communication and awareness messaging</b>
14	Logistics	28	Communication
<b>16</b>	<b>2. Management of the community cooling centre</b>	29	Awareness messaging
16	Volunteer management and safety	30	Examples from practice
17	Cooling centre management	<b>32</b>	References
		<b>32</b>	Further Reading
		<b>33</b>	Abbreviations
		<b>34</b>	Legal Notice

# Foreword

Across the globe, extreme heat events are on the rise – more frequent, longer lasting and increasingly severe.

More and more regions now contend with intensified and extended periods of high temperatures, exposing a growing number of people to the harmful effects of heat. This trend is expected to persist and worsen due to the ongoing impacts of climate change.

Being exposed to extreme heat can cause heat-related illnesses, often by aggravating existing medical conditions. This exposure can result in heatstroke, heat exhaustion, disability and premature death. Heat is often referred to as a silent killer, leading to a notable increase in mortality. However, because its direct and indirect impacts on human health are complex and less obvious, it is challenging to fully comprehend the extent of its devastation. Like other hazards, heat disproportionately affects individuals who may already be marginalised due to city design, social standing or those in critical physical conditions such as children under 5, elderly people or pregnant women.

Red Cross Red Crescent (RCRC) staff and volunteers around the globe carefully monitor the impact of heat on people's health and well-being. They often take on the role of caring for individuals with worsening medical conditions, heat exhaustion or heatstroke during and after heatwaves as first responders or medical professionals.

However, the adverse health impacts resulting from prolonged episodes of extreme heat are predictable and largely preventable. To prevent or reduce the negative impact of heat on human health, RCRC National Societies may consider installing community cooling centres in heat-affected areas. These centres can be set up in response to a heatwave, but more importantly, they can also be set up in anticipation of upcoming extreme heat events. A community cooling centre can accomplish more than just providing relief from heat; it can serve as a gathering place for individuals to come together, learn and collectively address the challenges posed by heat hazards.

To assist National Societies in this endeavour, the German Red Cross (GRC) has created this manual, which is the result of a collaborative effort between GRC and

the Vietnam Red Cross (VNRC). VNRC has formulated procedures for setting up and running community cooling centres, which are operated by VNRC during heatwaves. The purpose of this manual is to document the outstanding efforts and experiences of VNRC and make them accessible to National Societies worldwide.

At the German Red Cross, we anticipate that this manual will offer valuable guidance for National Societies looking to establish community cooling centres as part of their heatwave preparedness and response efforts. It reflects the current state of knowledge and should be adjusted as knowledge and practices advance. The suitability and feasibility of proposed steps and measures will depend on and must be adjusted to the specific context. We are also eager to hear about experiences in implementing the measures outlined in this manual, as this feedback can contribute to its ongoing improvement in the years ahead.

This manual complements the [City Heatwave Guide for Red Cross Red Crescent Branches<sup>1</sup>](#) and the [Heatwave Guide for Cities<sup>2</sup>](#) developed by the RCRC Climate Centre. It is also aligned with the collaborative report on [Extreme heat: Preparing for the heat waves of the future<sup>3</sup>](#) by IFRC, UN OCHA and the RCRC Climate Centre. Its purpose is to support the global RCRC Movement's goal of enhancing protection for 250 million people from heat by 2025, within a minimum of 150 cities and towns.

I would like to express my sincere thanks to our partners for the positive collaboration we have enjoyed over the years – particularly with the Vietnam Red Cross, the RCRC Climate Centre and the Global First Aid Reference Centre. And ultimately, none of this would be possible without the remarkable efforts and dedication of RCRC volunteers and staff. Hence, I would also like to extend my genuine appreciation to everyone in the Movement involved in heat preparedness, offering assistance and providing care to those affected during extreme heat events. In doing so, you are actively reducing the impact of heatwaves and saving lives.

**Christof Johnen**  
Director, International Cooperation – German Red Cross

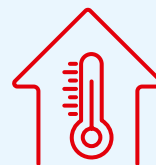
# Introduction

Heatwaves have an immense impact on the health and well-being of people around the world, especially in urban centres. Although growing in recognition, their severity often remains overlooked as a hazard or is addressed too late. This manual was developed to support humanitarians, governments and key actors to prepare for extreme heat events with the establishment of community cooling centres to support those most vulnerable.

Different conditions constitute heatwaves in different parts of the world. This is because the level of what is normal is different around the world, but man-made climate change (e.g. excess greenhouse gases such as CO<sub>2</sub> emissions) means that heat peaks are now more intense and more frequent<sup>4</sup>. There are overarching factors that produce a heatwave: **1. The temperature** itself makes it an effort for our body to regulate its temperature. While it can get hot everywhere in the countryside and in cities, dense urbanisation and sealed surfaces of asphalt store the heat within cities, which makes the urban layout an important factor: heat is stored in streets and buildings and only released over time. Increased nighttime temperatures particularly decrease our ability to regenerate at night, which may make us more prone to heat-related illnesses. **2. The humidity.** If the air around us is humid – simply put, if the air is carrying a lot of moisture – it is a challenge for our body to sweat off the heat.

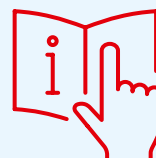
When following our normal schedules on hot days, we may overlook the symptoms of heat stress and heat exhaustion, which can also trigger adverse medical effects seemingly unrelated to the heat – which makes heatwaves a silent danger that can go overlooked. Taking a rest on these days is crucial, and it can be done in the community cooling centres promoted in this manual. Not only can a cooling centre relieve us of heat stress on hot days, but the practices applied there can be learned by the community – creating awareness of the matter.

This community cooling centre manual aims to support RCRC National Societies' preparedness efforts for heatwaves, while contributing to the global RCRC Movement target to better protect 250 million people from heat by 2025, in at least 150 cities and towns. This new manual complements the [City Heatwave Guide](#)<sup>5</sup> for Red Cross Red Crescent Branches, and the [Heatwave Guide for Cities](#)<sup>6</sup> developed by the RCRC Climate Centre.



## Purpose of this manual

The community cooling centre manual is intended to assist RCRC National Societies and branches in planning for, setting up and managing a community cooling centre during a heatwave. It informs staff and volunteers about how to recognise symptoms of heat exhaustion and manage and care for individuals affected by heatwaves and recommends the necessary first aid (FA) management steps.



## How to use this manual

The manual helps to identify measures that are relevant and suitable for your context, cost effective and realistic to install and maintain. Case studies give practical examples of how National Societies have implemented cooling centres. The authors acknowledge that there may be other existing approaches, and particularly traditional concepts, that have proven to be effective and relevant in managing the impact of heat on affected individuals. In such cases, the proposed concept may be considered complementary or an additional option to be considered.

# 1. Set-up of community cooling centres



There is no one-size-fits-all community cooling centre design. Cooling centres come in many forms depending on the context, culture and available resources but share the objective to provide protection to those vulnerable to extreme heat. They can be indoors in public buildings or outdoors in tents with cooling provisions, such as water misting. They can also make use of architectural passive design measures, such as shading, ventilation, insulation or proximity to urban blue-green infrastructure, like bodies of water and parks.

Cooling centres are installed for the benefit of everybody – but especially vulnerable groups – to help in the prevention of heat-related illnesses. All community cooling centres established by National Societies and partners should provide cooler environments for resting and recovering, and be inclusive, child-friendly spaces for the entire community.

They should provide basic hydration, such as water or juice. The trained volunteers should be able to enact care protocols, including basic first aid, and monitor needs in case urgent medical care is required. Additionally, helpful information should be provided about behaviour on days of extreme heat.

## Getting started

There are some key questions to consider when initiating the establishment of your community cooling centre, beginning with: What are the expected climate-induced heatwave trends in your city/region? What infrastructural or urban planning issues are exacerbating heatwaves in your city? How are heatwaves currently affecting those most vulnerable in your city now and in the future? Who is most at risk and why? Who is working on heat? What scientific information exists to guide your city or National Society in cooling centre decision-making (e.g. are hot spots already identified in existing Heat Action Plans)? How are warnings communicated and by whom? And what is the existing level of heat-health preparedness at the community and city-wide level?

*The Austrian Red Cross in Vienna has been operating a cooling centre for the past four years. The target groups are older people, children and those who are chronically ill. The cooling centre project aims to share information with the people of Vienna on how to manage heatwaves and what they can do to reduce heat stress and to provide a cool area without the obligation of consumption.*

Community cooling centres should be located in areas where there is a high level of heat exposure among individuals such as outdoor workers, homeless people and those who are physically active due to labour or sports or who do not have cool housing to retreat to.

### Engage stakeholders for success

Reach out to any of your partners and stakeholders who you know work on heat to understand the needs of risk groups and identify partners who can help you to facilitate, manage or communicate community cooling centre efforts, and ask them what role you should play as a National Society:

- Should you complement existing city-level Heat Action Plans (offering trained volunteer staff to support them in creating awareness campaigns or adding further cooling centre locations)?
- Should you engage with different businesses to utilise or retrofit buildings or public spaces?
- Should you establish your own community cooling centre as a National Society?

It is important to work closely with diverse stakeholders, for example, the local health department to receive reliable data, civil society organisations for the homeless, water, electricity and transport facilities or farmer/outdoor labourer unions, so you can build on already existing social networks in the city. Sometimes other actors might be more suited to communicating heat awareness measures and cooling centre efforts to the respective group. In general, working with community leaders is advantageous in urban areas, as interviewing and assessing diverse and dispersed urban communities' needs takes time and money. Engage as many groups as you can to account for diverse risk perceptions and practices.

### Consider the visitor's perspective

Commonly cited barriers to cooling centre access include inability or resistance to leave the home or work (lack of income), not wanting to leave pets behind, limited access to transport or a lack of awareness of heat stress symptoms. Thus, the site should be near public transport (within a 15-minute walk<sup>7</sup>). Also, bear in mind that not only is the location of the community cooling centre relevant but also the population's knowledge of where it is located and/or how to access it.

### Checklist for Site Selection for Community Cooling Centre Establishment:

- Is the site in a **heat-stressed** area?

---

- Is the site **accessible and visible** to the target group? Is access for people with special needs also ensured?

---

- Which community members might face **barriers** to accessing the site? How can these barriers be lowered?

---

- Is the site and construction **safe and resistant to other hazards**, such as floods or landslides?

---

- In areas of ongoing conflict or at risk of violence, is the site safe for people to access and stay in?

---

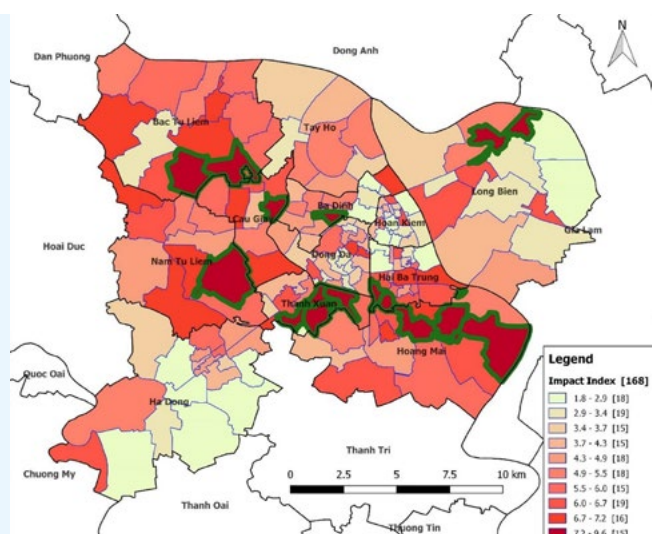
- Is the site **available** for the National Society to use, or are permits and agreements required?

---

- Are there existing **laws, policies, ordinances** or zoning laws that serve as an enabler or barrier to cooling centre set-up/access for communities?

---

- Which **partnerships and coalitions** can the National Society work with to advance or multiply cooling centres and wider heat-health planning collaboratively?



**Figure 1:** Most at-risk wards in Hanoi, Vietnam, S. Dinnissen et al.

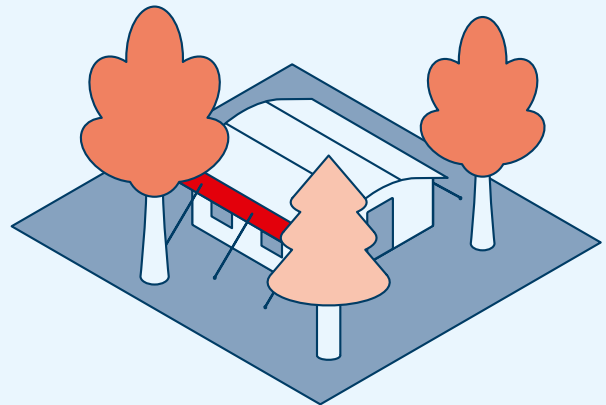
Figure 1 shows how Vietnam Red Cross and German Red Cross used demographic survey data on vulnerability and exposure. The Vietnam Institute of Meteorology used satellite data from the period of 2015-2018 to identify the areas with high heat in the Hanoi area. Using this data to compile the risk factors, the 15 most at-risk wards were identified for the implementation of anticipatory cooling centre deployment for extreme heat events<sup>8</sup>.



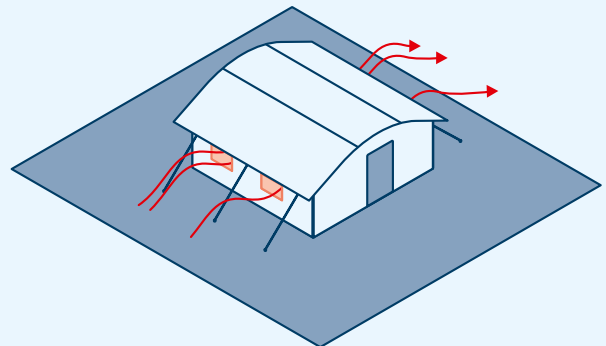
### Permanent design (architecture)

The design of community cooling centres depends on numerous factors. These include the availability of financial resources and building materials at the local level, communication channels, the National Society's capacity, prior training and local urban development plans. Housing conditions and design have an impact in both urban and rural contexts by shaping indoor heat through improper ventilation, insulation, building materials, roofing types and building typology. Design principles are as follows:

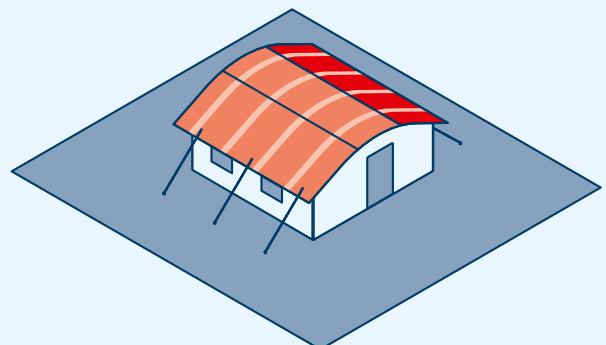
**Shading:** Cover windows, and ideally provide shading for windows from the outside: 'brise soleil', sunblinds, canvas (if not possible from the outside, covering with curtains or paper from the inside). Small roofs can be shaded using shade nets, plastic sheets or other fabrics. Corrugated iron roofs in particular should be covered with 'non-reflective' material (fabric, woven mats etc.). Try to have south and west facades shaded if possible by verandas around the house, (public) shading like greenery (trees 3 m away from houses) or architectural features (overhangs).



**Ventilation:** Make sure there is cross-ventilation in the room or community cooling centre by installing/opening windows or doors on opposite sides or by installing ventilation openings above windows or in gable walls, small wind turbines or ceiling vaults. Directing wind flow at night can be achieved through steep roofs because hot air rises and letting cool air flow in through low-rise windows or openings.

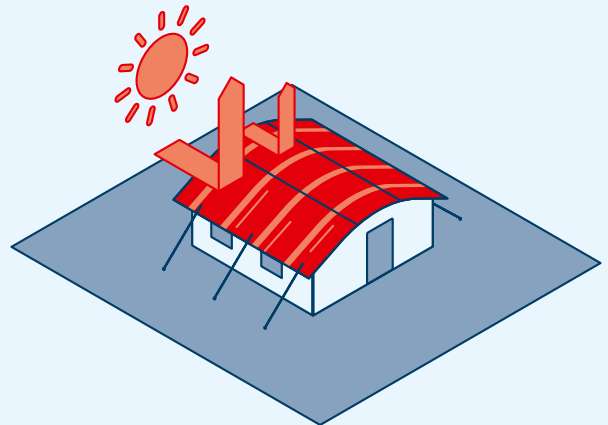


**Insulation:** Cover ceiling or the underside of thin metal roofs from the inside with downward-facing reflective foil, spray-foam insulation or fibre-glass mats to prevent warmth from coming through the roof. Green roofs are an environmentally friendly cooling solution to reduce indoor heat as well as cool the atmosphere.

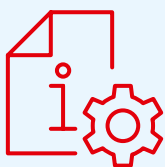
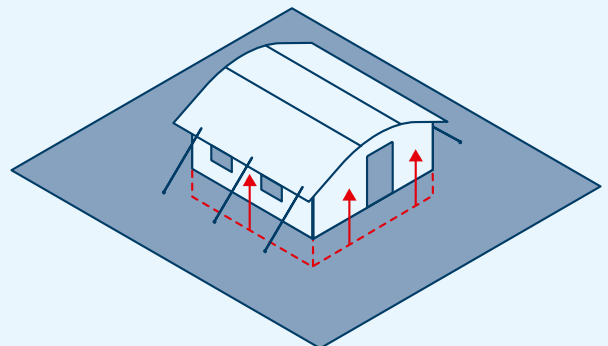




**Reflect:** Use paint or spray finish in a specific colour that reflects sunlight (lighter colours); this is also possible for tent structures. Avoid facades made out of glass, as they lead to massive indoor heat (similar to a greenhouse effect).



**Raise your shelter:** If construction material and building typology allows, e.g. bamboo construction, elevating the house and retrofitting it on stilts provides for cool airflow from underneath the house. Another advantage is that houses on stilts are also less vulnerable to flooding.



**Building typology:** The public building or community cooling centre should be built in a compact building style rather than urban sprawl. Urban sprawl is more prone to indoor heat because more building surfaces are exposed to direct sunlight. Consider dense typologies with inner courtyards, where natural ventilation flow is enabled. High ceilings are useful due to reducing/distancing the heat coming from the roof into the building.

The design of the community cooling centre is dependent on the space and availability of resources. **An estimated area of 2m<sup>2</sup> per person within the site is reasonable in order to allow enough space and air flow between visitors, thereby reducing human-caused indoor heat.** In Vietnam, a 19 by 13 feet (5.79 by 3.96 m) tent is ideal as a set-up on paved areas. A larger-sized tent would be an option to set up in park environments. The next section guides the National Societies and city stakeholders on how a community cooling centre can be established using available resources.



*Setting up traditional structures for cooling centres can be successful when incorporated with vernacular architecture that poses a lower threshold for visitors seeking help.*



© Sri Lanka Red Cross /IFRC



**Initial screening**  
A health check is performed at a Red Cross site

In low-resource settings, National Societies can consider using structures that are aligned with community-driven projects. For example, the Myanmar Red Cross Society (MRCS) uses shade tents together with first-aid posts in Yangon and Mandalay. Standards are aligned with tent designs usually found in urban settings in Myanmar, with the inclusion of specific elements that improve heat protection, such as adding “ventilation cones”, shade nets and electric fans. This makes it easy and fast to set up/dismantle in crowded spaces usually frequented by street workers, such as markets, rickshaw driver stops, etc.

Also, the conception of the spaces builds on people’s practices. For example, it considers how people usually sit and what they usually do to protect themselves from heat. This is why there are bamboo mats directly on the floor for people to sit or lie down on. Water is also available in traditional earthen pots that keep water cool naturally through evaporation.

First-aid volunteers are in charge of welcoming beneficiaries, assessing their health and acting accordingly as well as managing the shade tents. An ambulance is always nearby, for referrals of heat-stroke cases. First-aid and ambulance services are core components of MRCS expertise, thus the action builds on the NS’s existing capacities.

### Temporary design (mobile architecture)

Outdoor community cooling centres can be located on paved areas, in pocket parks and convenient open spaces. These sites should have access to electricity and water and be set up in the shade (e.g. under a tree).

### Think green and blue – pop-up structure

For outdoor community cooling centres, consider areas surrounded by large trees that are shady and breezy or areas near water features such as spray parks, fountains, lakes or rivers. Furthermore, the site should be at a distance from heavy traffic and noise if possible.

Consider having a basic provision of fans, sprinklers, misting tents and buckets of water for soaking sponges and towels.

If possible, look for urban planning elements like pedestrian zones or pavements with universal accessibility features (e.g. kerb ramps) and road safety elements like safe pedestrian connections, kerb extensions, proper edge zones for pedestrian safety, and security like street lighting. This helps to maintain visibility and accessibility of cooling centres within the urban fabric.

The community cooling centres do not need to be high tech, nor do they have to be in a fixed location. Forms of temporary, mobile or outdoor centres include:

- Mobile cooling buses (active cooling)
- Temporary cooling shelters or tents (active cooling)
- Public parks or natural amenities (passive cooling)

### Tents

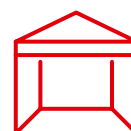
For tents set up on paved areas, early-morning installation is needed to make sure the ground does not heat up too much.

In addition, water or sprinklers can be used to ensure that the pavement does not emit a lot of heat into the tent and that the floor is cooler to support the community cooling centre's environment. If this is possible, temporary centres can be set up in tents with fans and air conditioning.

In a closed tent, the design may include cooling fans and/or air conditioning for a cooler compartment to support visitors (**but please refrain from using fans in very hot and dry environments**). To control the temperature while using air conditioning would require insulation through sealing of doors and windows in a tent so that a stable temperature can be achieved.

### The minimum requirements for outdoor closed-tent community cooling centres should be as follows:

- Portable air-conditioning
- Cooling fan
- Area for sitting, resting and cooling down, e.g. chairs, benches, mats
- A cooler room or compartment
- Hydration station – with water, tea, juice, milk etc.
- Towels and cool water for sponging
- Examination area for monitoring vital signs, especially for those with existing medical conditions
- Possibility of a misting area outside the tent
- Electricity supply
- Ideally at a convenient distance from public or accessible bathrooms



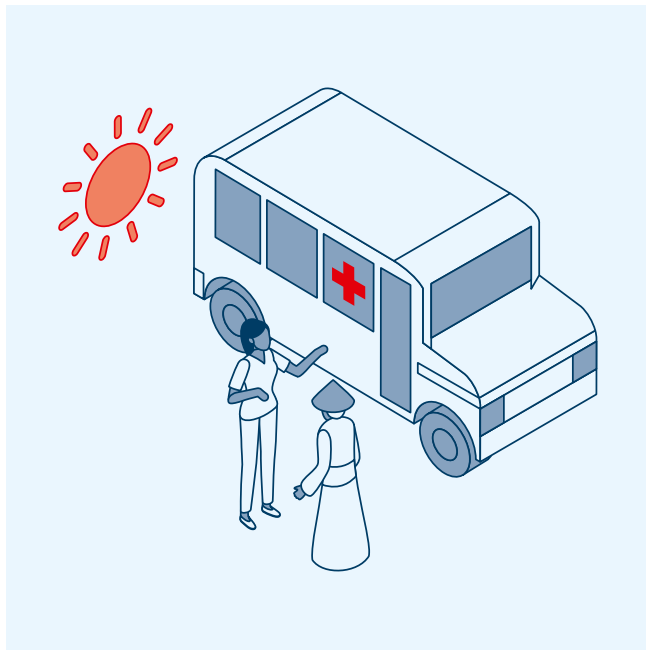
### A perspective from the Vietnam Red Cross

How can readily available items be used? Vietnam RC utilised tents that were readily available, as the model is also used for weddings, making them easily accessible. Designs were improved, sprinklers and cooling fans were added, and reflective devices were placed on the roofs.

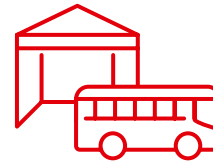
### Mobile buses

One group very exposed to heat health risks are day labourers (e.g. street vendors), who may not have the funds to take public transport to a community cooling centre or the possibility to take breaks from work.

Where the target group is dispersed, or low in size, an air-conditioned bus can be used as a community cooling centre so people can access it conveniently.



 **Figure 2:** Visitors are invited into the air-conditioned bus.



### How does Vietnam Red Cross (VNRC) operate in respect to the cooling centres

The bus and tents are combined, and the aim is for the bus to go around specific places and direct visitors to the tent. When the buses are in the street, they convey messages through loud speakers and they can stop and allow visitors inside to provide them with refreshing beverages. The overall idea is to direct visitors to the cooling centres and tents that the VNRC erects at different places. What the VNRC bears in mind is that these areas need to be accessible to the people targeted – they are the very people making a living on the streets of Vietnam, who have a lot of material to carry with them. Having bicycles and transporting many things on their back is a burden. Therefore, the VNRC found a way to provide the visitors with a cooling centre and an area for having tents in the streets, as well as a having a cooling bus.

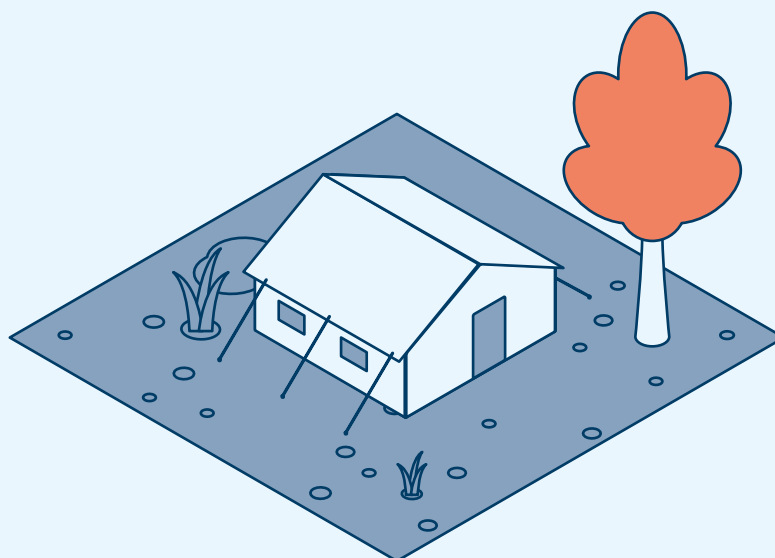
### The following features should be considered for mobile bus cooling centres:

- Portable air-conditioning
- Area for sitting, resting and cooling down, e.g. chairs, benches, mats
- Privacy of patients in the front and back parts of the bus
- Hydration station – with water, herbal tea, juice, milk etc.
- Towels and cool water for sponging
- Examination area for monitoring vital signs, especially for those with existing medical conditions
- Electricity supply, second car battery
- Ideally, accessible bathrooms

### Site set-up

The selection and set-up of community cooling centres should be supported by all relevant authorities and stakeholders involved for the safety and security of all visitors who will be accessing the venue. Selecting multifunctional sites, such as public libraries, recreational or community centres, sports facilities, shopping centres and places of worship allows for greater utilisation of the cooling centre. Making the regular visitors to such locations aware of the heat conditions and what would be beneficial for visitors is thus crucial.

- The community cooling centre site should be in an area accessible to ambulances, with door widths that accommodate wheelchairs and ambulance stretchers.
- It is also advisable to set up in areas near a park or water retention basin (which leads to a cooling environment) or even in a pocket park.
- Setting up the tent, pavilion or cooling centre in a south-facing orientation is not advisable, as it is exposed to long hours of direct sunlight, leading to indoor heat. On the other hand, a northern or north-eastern orientation of the building prevents exposure to strong southern sunlight.
- The space around the cooling centre should be shaded, for example by trees, to prevent people waiting from being exposed to direct sunlight.
- The centre should preferably not be set up on asphalt or concrete, as sealed surfaces do not allow the earth to cool down, instead absorbing heat (and releasing it at night); set it up on permeable paving materials where possible.
- Setting up the cooling centre along urban planned 'fresh air corridors' supplies the environment around the centre with cool and fresh air as well as reducing indoor heat.



## Logistics

The logistics involved in the installation and management of a community cooling centre require prior planning and provisioning of the non-food items (NFIs) before the onset of the heatwave season. The following resources can be considered by National Societies based on priority areas and the levels of intervention. The list below is exhaustive, so National Societies are to consider what is of relevance to their contexts and capacities.

### Community Cooling Centre Resources

---

#### Tents

- Canopy tents
  - Dome or frame tents/canopies
  - Pop-up canopy tents
  - Ridge tents
  - Misting tents
  - Water hose
  - PV-coated tents
- 

#### Furniture and amenities

- Bench/chairs/tables
  - Water dispensers/clay pots/clay jugs/clay cups
  - Beds/mattresses
  - Ice box, cold pack
  - Basins/buckets
  - Umbrellas/parasol
  - Hygiene kit/dignity kits/baby kit/sanitary bins
- 

#### First aid/medical

- First aid kits (specific to the National Societies and legislation).  
Examples can be found [here](#)<sup>9</sup>.
  - Oximeter
  - Blood pressure machine
  - Automated External Defibrillator (AED) where possible
  - Wheelchairs
- 

#### Generator

- Generator
  - Spare parts
  - Filter
  - Fuel jerry can
-



## Community Cooling Centre Resources

### Electrical items

- Solar lamps
- Extension cable/reel
- Kettles
- Portable air conditioning units/systems or
- Evaporator air cooler
- Cooling fans
- Mobile phones

### Perishable items

- Bottled water
- Sweet drinks (low-sugar)
- Tea
- Sugar/salt – Oral Rehydration Solution (ORS) supplement
- Ice packs

### Misting stations

- Overhead water sprinklers/Misting tents
- Lawn sprinklers



© Gero Breloer/GFC

**Logistical planning**  
 All items are procured and logged by the logistician



## 2. Management of the community cooling centre

### Volunteer management and safety

At the most local of levels, local actors such as Red Cross Red Crescent staff and volunteers are on the front lines of extreme heat in towns and cities around the world.

The RCRC volunteers should be familiar with the role their National Society plays in heatwave management. To build volunteer capacity in the preparation, installation and management of community cooling centres and heatwave awareness, necessary training needs to be provided. It is important that they understand the heat risks they face, work with officials and partners to prepare for heat action, and integrate simple, low-cost, life-saving actions into routine activities.

Such a project should use the pre-existing network of volunteers and encourage the inclusion of already trained volunteers like first aiders, first responders and community health volunteers as well as newcomers.

In urban areas, the higher number and diversity of highly skilled urban residents offers a bigger and more diverse potential volunteer pool with diverse talents or a bigger reach when it comes to messaging EWS. Furthermore, the larger number of schools and universities in cities, along with their campuses, are promising platforms as entry points for recruiting volunteers. For example, the Bangladesh Red Crescent Society (BDRCS) with the support of the German Red Cross (GRC) trained students at Dhaka University as skilled first responders called “University Central Response Teams”, which could be included in the volunteering activities of a cooling centre.

Volunteers help provide a safe and cool space for vulnerable populations. In doing so, they may be confronted by people with diverse needs. Some may need medical attention, some may cause trouble, or some may attempt to engage in drug use during their visit.

Every situation should be handled with utmost care, mutual respect and good judgement. At the same time, empathy and understanding of individual needs are crucial.

#### Skills, qualifications or requirements

- Good communication and interpersonal skills
- Create welcoming spaces and interrupt oppression
- Balanced judgement
- Flexibility
- Caring
- Team worker
- Organisation and administrative skills
- Compassionate
- Open-minded

Volunteers should be aware of the local protocols for engaging with the communities and assisting visitors to the community cooling centres. Cultural norms should be respected at all times. Volunteers should receive on-site training provided by on-site staff.

#### First aid and emergency medical care (chapter 3)

Volunteers should be trained in emergency first aid to help people exhibiting signs of heat stress. Existing first aid training and materials should be reviewed and updated to reflect best available and specific guidance on heatwave treatment. Volunteers who are first aid certified but have not received specific training on treating heat-related illnesses should be given additional training.

Check out the International Federation of Red Cross and Red Crescent Societies (IFRC) First Aid application, which includes heatwaves. Basic first aid for heat-related illnesses can also be integrated into Red Cross or Red Crescent Action Team (RCAT) training. National resources from the Ministry of Health should be taken into account, if they exist.



### Extreme heat

During community consultations to assess needs on days of extreme heat, temperatures in Hanoi, Vietnam, are already approaching 40°C.

## Cooling centre management

To be able to set up and manage a cooling centre, three components must be in place:

- The National Society, its volunteers and staff must be prepared; this includes having a procurement set-up and budget.
- Arrangements with stakeholders need to be in place (e.g. with the local government or a business owner, whose facilities are rented out).
- Community outreach and engagement needs to be underway (see chapter 4).

For a community cooling centre to run successfully and smoothly, volunteers need to be informed and their concerns about access and transport need to be addressed.

With their support, the community cooling centre can be set up according to the feasibility and resources available to the Red Cross Red Crescent Branch/Chapter, in accordance with the information provided in chapter 1.

Once this has been achieved, the community cooling centre will be operational and ready to receive visitors.

### ***How exactly will they be received?***

The visual on page 21 provides an overview and can be printed and displayed in the community cooling centre to remind staff and volunteers.

### Safety of volunteers

During a heatwave, it is crucial to ensure volunteer safety. Volunteering can be intensive and stressful in the heat, and volunteers can be overwhelmed during management of cooling centres and awareness activities as well as assisting with distributing water.

- Volunteers need constant reminders to hydrate, take as many breaks as needed and consider their own wellness.
- Volunteer positions should be well staffed so that shifts can be short.
- Volunteers should wear a lightweight RCRC jacket or just a badge/name tag to identify them as part of the staff.
- If volunteers display signs of heat discomfort or stress, they should be provided with appropriate first aid or medical treatment immediately.

**The volunteers should be briefed and trained on the content of this manual, which includes:**

- 1 How to set up the community cooling centre in the given context.**
- 2 The community cooling centre management and the care protocol, including first aid for heat illnesses.**
- 3 Heatwave awareness: how to communicate key recommendations for hot days and raise awareness about the services of the community cooling centre.**



## Anticipating extreme heat

When extreme heat is anticipated, it is optimal to follow the warnings and guidance of the Ministry of Health and the national meteorological services. Ideally and as part of the preparation for the community cooling centre, these organisations and their alerts are checked. Will the Ministry of Health or the local department of health issue information about extreme heat? Can weather bulletins by the meteorological service be used before the peak of the heatwave? If this is the case, the days before the heatwave can be used efficiently. For example, to set up the cooling centre, procure materials and intensify the communication and awareness messaging about

the community cooling centre and adaptation to heat (see chapter 4). However, there are some countries where national systems do not yet take possible disastrous impacts of extreme heat into account, and no alerts or guidance are issued. Where possible, in these cases there should be advocacy with the government on the topic. And if resources are available for cooling centres, alert thresholds and guidance might be developed by the organisation itself, using examples from other countries and international forecasts, for example. However this can always only be a temporary solution and will not be as good as one with national alerts and guidance.

Invite visitors to sit down, loosen their clothes and take off their hat, according to customs. Offer visitors a drink: ideally, water, low-sugar juices and herbal teas. Do not offer sugary drinks or coffee/black tea.



*Especially when starting a community cooling centre, make sure you have plenty of volunteers and staff on site in case there is a rush of visitors wanting to enter at once. Staff and volunteers can work together to respond to this peak of visitors. Bottled water and additional umbrellas/parasols will come in handy in such a situation.*

Once visitors have settled in, use the time to advise them on how to behave during days of extreme heat (chapter 4 contains information and material that you can use).

After visitors have had enough rest and before they leave, hand out information on how to find the community cooling centre and when it is open, as well as a feedback survey in accordance with your National Society's community engagement and accountability guidelines.

Ideally, the community cooling centre is embedded in the community so that visitors can also be referred to social clubs in the community that can be visited, which have amenities that are favourable in days of heat. Through such information, vulnerable community members such as elderly people living alone have a place to go when their residence becomes hot.

Assess the health of visitors (see chapter 3 for detailed steps) and respond accordingly. Visitors may be referred for further medical care or remain in the cooling centre if their health is good.

### Accessibility

The community cooling centre should be a safe and supportive place, free from discrimination, stigmatisation and exclusion. Cultural values should be embodied and respected in the management of community cooling centres. Separate rooms or tents for men and women should be considered. To make the centre inclusive, there should be as few entry barriers as possible (e.g. no ID required). It should be accessible for people with a variety of disabilities (e.g. sensory needs, mobility).

### Characteristics

It is important that the characteristics of the community are considered, as they say a lot about the visitors. This includes the location (region/state), the context (urban/suburban/rural/mixed), the population density, the neighbourhood characteristics, air conditioning prevalence, greenspace, built environment, crime levels, and the availability and reliability of public transport.

It is also necessary to consider which population groups particularly need the community cooling centre in this specific context. These could be the following groups:

- Adults over 65
- Individuals with chronic medical conditions
- People with mental illness
- Children under five years old
- Women and girls
- Pregnant and lactating women
- Outdoor workers
- People living alone
- Individuals with disabilities
- Overweight and obese individuals
- Individuals of low socio-economic status
- Migrants and refugees
- People living in poor-quality housing
- Homeless people
- Individuals unable to read and non-native language speakers
- Tourists
- Animals/pets



Heatwave awareness-raising campaign by Srikakulam district branch.

### Barriers to access or use of cooling centres

- Limited access to transport
- Fear of leaving home
- Inability to leave home
- Not wanting to leave pets behind
- Self-assessment as non-vulnerable
- General stigma of cooling centres, e.g. being just 'for old people'
- Fear of being bored
- Fear of being discriminated against
- Fear of returning to a hot environment after the visit
- Limited operating hours
- Fear of losing income
- Fear of fees/charges

Many of these barriers can be overcome with adequate communication and education of the public about community cooling centres and their purpose. This refers both to the general benefit of such facilities and to the specific context (see chapter 4 to reduce barriers by communication). It is especially important to identify vulnerable groups in order to increase utilisation and save lives and increase well-being.

It may be that a pick-up and delivery service is needed during a heatwave, especially if there is only a limited number of public cooling centres open and they are not easily accessible to all.



© Indian Red Cross Society



## Amenities

<b>Security</b>	<ul style="list-style-type: none"> <li>• Store belongings, including strollers and mobility devices (this is particularly important for supporting access among people experiencing homelessness)</li> </ul>
<b>Hygiene</b>	<ul style="list-style-type: none"> <li>• Public bathroom availability</li> <li>• Water access</li> <li>• Free masks and hand-sanitising station</li> </ul>
<b>Food and drinks</b>	<ul style="list-style-type: none"> <li>• Microwaves and fridges</li> <li>• Snacks or meals, or access to food close by</li> </ul>
<b>Comfort</b>	<ul style="list-style-type: none"> <li>• Private and quiet spaces</li> <li>• Variety of seating options (e.g. chairs with armrests)</li> <li>• Reusable ice/gel packs, towels</li> </ul>
<b>Engagement, education and programming</b>	<ul style="list-style-type: none"> <li>• Wi-Fi, charging outlets and tables; offering programmes and/or activities, such as cards, games, books and magazines; spaces for children to play; toys</li> <li>• Opportunities for social connection</li> <li>• Educational materials on heat and health in multiple languages</li> </ul>
<b>Accessibility</b>	<ul style="list-style-type: none"> <li>• Convenient operating hours</li> <li>• Public transport, walkable, free car parking, etc.</li> </ul>

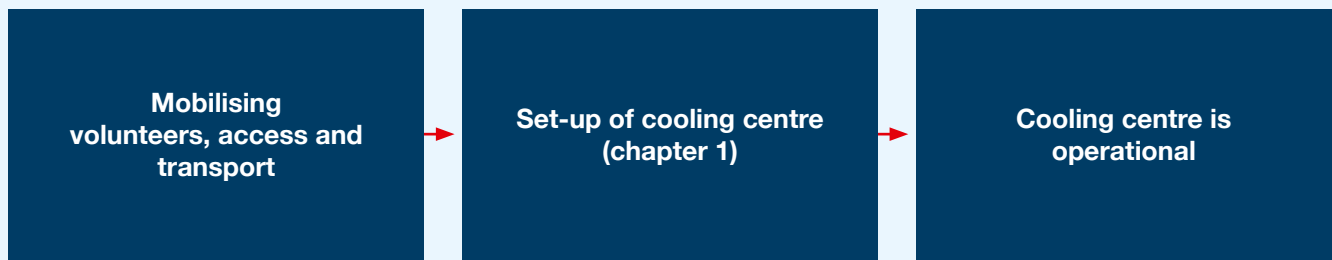


Vietnam Red Cross managing the community cooling centre.

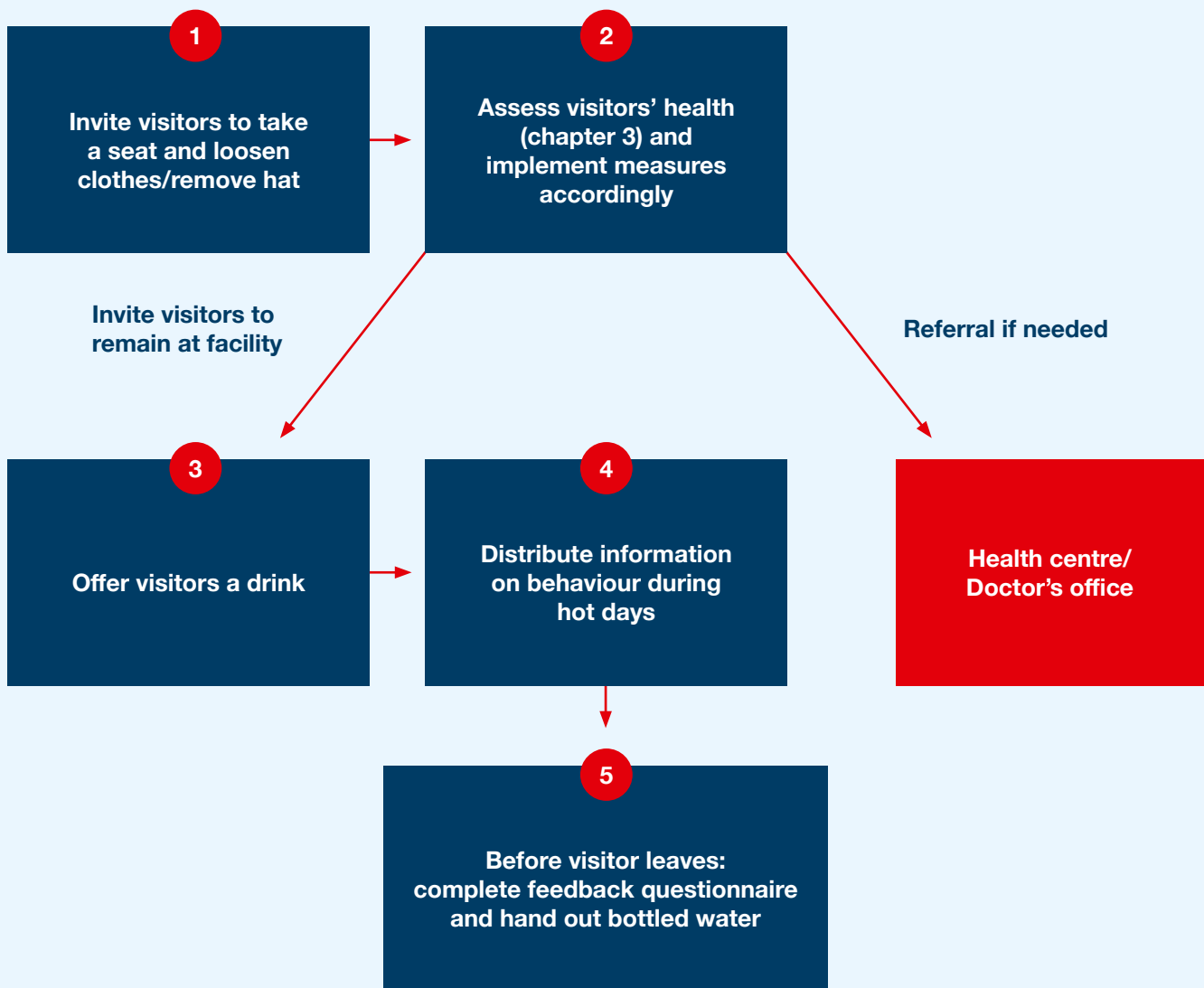


© VNRC

## Community Cooling Centre Management



## Reception of visitors



Print this page and display it at the community cooling centre along with the Case Management Protocol

# 3. Care protocols for visitors and first aid management

## 1. Before working in a community cooling centre (what to know)

Every volunteer working at a community cooling centre must meet two conditions:

- 1 **Attended a basic FA course**
- 2 **Familiarity with the main heat-related illnesses or conditions**

### 1.1. FA course for volunteers of a community cooling centre

Heat can induce a range of conditions, illnesses and injuries. Every volunteer working in a community cooling centre must have received FA training including at least the following topics:

- Hyperthermia (mild, moderate and severe)
- Dehydration
- Fainting
- Seizures
- Breathing difficulties
- Cardiopulmonary resuscitation (CPR)
- Bleeding
- Recovery position

If there are no first aid training capacities within the National Society, please contact IFRC for further support (either your nearest IFRC regional office or the IFRC Global First Aid Reference Centre – [first.aid@ifrc.org](mailto:first.aid@ifrc.org)).

### 1.2. Key concepts to know before working at a community cooling centre

#### Hyperthermia

Hyperthermia is a condition in which the body reaches abnormally high temperatures because it cannot regulate its internal temperature. It is caused when the body produces or absorbs too much heat or both. A person can experience hyperthermia through intense physical activity, from being in a very hot or humid environment, or due to a combination of both. Children and the elderly are most at risk. The most severe form of hyperthermia

is heatstroke. If left untreated, heatstroke can lead to a seizure or a coma, and be life-threatening. A key concept for first aid providers is to recognise the different grades of hyperthermia and be able to identify cases of heat exhaustion and heatstroke.

#### Heat exhaustion

This is the body's response to an excessive loss of water and salt, usually due to profuse sweating.

#### Symptoms:

- Heavy sweating
- Pale, clammy, cool skin
- Nausea / upset stomach / vomiting
- Dizziness / confusion / irritability
- Rapid pulse and breathing
- Normal or mildly higher temperature
- Muscle cramps
- Headache
- Tiredness / weakness
- Decreased urine
- Fainting

#### Heatstroke

Heatstroke is the most alarming heat-related illness. It happens when the body temperature becomes dangerously high and the body fails to cool itself. Heatstroke can cause permanent disability or be life-threatening if the person does not receive emergency medical care.

#### Symptoms:

- Very high body temperature > 40°C
- Confusion, altered mental status, slurred speech
- Rapidly worsening condition leading to being unresponsive
- Loss of consciousness
- Hot, flushed and dry skin (not sweating)
- Rapid, strong pulse
- Headaches or dizziness
- Seizures



## Other relevant concepts and conditions related to heat exposure

Concept	Definition	Main symptoms
<b>Dehydration</b>	<p>Occurs when the body loses more water than it takes in. It usually happens because of excessive sweating in a hot weather environment. It is especially dangerous for young children and older adults.</p> <p><i>*Note: Thirst isn't always a reliable early indicator of the body's need for water. Many people, particularly older adults, don't feel thirsty until they're already dehydrated. That's why it's important to increase water intake during hot weather or when you're ill.</i></p>	<p><b>Infant or young child</b></p> <ul style="list-style-type: none"> <li>• Dry mouth and tongue</li> <li>• No tears when crying</li> <li>• No wet nappies for three hours</li> <li>• Sunken eyes, cheeks</li> <li>• Sunken soft spot on top of skull</li> <li>• Listlessness or irritability</li> </ul> <p><b>Adult</b></p> <ul style="list-style-type: none"> <li>• Extreme thirst</li> <li>• Less frequent urination</li> <li>• Dark-coloured urine</li> <li>• Fatigue</li> <li>• Dizziness</li> <li>• Confusion</li> </ul>
<b>Heat syncope</b>	<p>This is a fainting (syncope) episode or dizziness that usually occurs when standing for too long or suddenly standing up after sitting or lying in the heat.</p>	<ul style="list-style-type: none"> <li>• Fainting (short duration)</li> <li>• Dizziness</li> <li>• Light-headedness</li> </ul>
<b>Heat cramps</b>	<p>Muscle spasms secondary to excessive sweating. The sweating depletes the body's and muscles' salt and water levels, causing painful cramps. Heat cramps may also be a symptom of heat exhaustion.</p>	<ul style="list-style-type: none"> <li>• Muscle cramps</li> <li>• Pain</li> <li>• Spasms in abdomen, arms or legs</li> </ul>
<b>Heat rash</b>	<p>Skin irritation caused by excessive sweating during hot, humid weather.</p>	<ul style="list-style-type: none"> <li>• Red clusters of pimples or small blisters</li> <li>• More common on the neck, upper chest, groin, under the breasts, and in elbow creases</li> </ul>
<b>Sunburn</b>	<p>Hot and sore skin caused by too much sun exposure.</p>	<ul style="list-style-type: none"> <li>• Hot to touch</li> <li>• Painful or sore feeling</li> <li>• Flaking or peeling</li> <li>• Blisters (if severe)</li> </ul>

## 2. Case management (what to do)

### 2.1. Assessment/screening

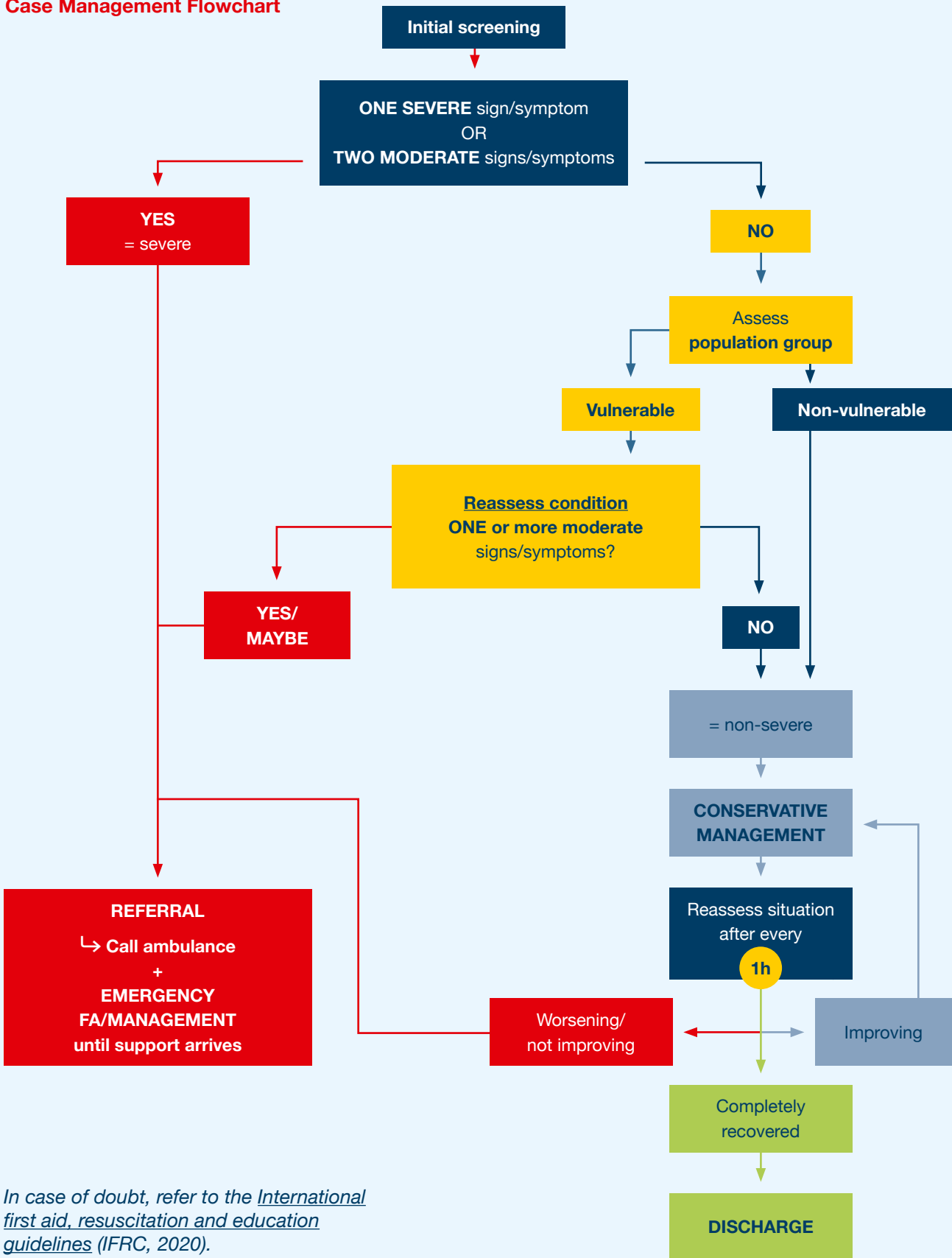
#### Can the person be assisted at the community cooling centre or should they be referred?

Identifying whether a person can be assisted at the community cooling centre or should be referred to a health facility will be the first and most important task of the volunteers. For this, follow the algorithm.



**Community Cooling Centre**  
Drinks and information are passed to visitors

**Case Management Flowchart**



*In case of doubt, refer to the International first aid, resuscitation and education guidelines (IFRC, 2020).*

**Print this page together with the below table and display it at the community cooling centre along with the Community Cooling Centre Management Flowchart**

### Refer any patient with

At least **ONE severe or TWO or more moderate** signs or symptoms

OR

**Vulnerable population group:** at least **ONE moderate** sign or symptom

OR

Any patient whose **condition worsens or does not improve after 1 hour of conservative management**

#### Severe signs & symptoms

- Body temperature of 40°C or higher
- Rapidly worsening condition
- 2 or more fainting episodes in < 1 hour
- Decreased consciousness
- Altered mental status: confusion/delirium
- Seizures/convulsions
- Chest pain

#### Moderate signs & symptoms

- High temperature > 38 < 40 °C
- Throbbing headache
- Skin changes (hot, flushed, dry OR pale, profuse sweating)
- Heart rate over > 100 ppm
- Upset stomach/vomiting
- Difficulty to breath/hyperventilation
- 1 fainting episode in < 1 hour

#### Minor signs & symptoms

- Heavy sweating
- Dizziness
- Paleness
- Tiredness
- Weakness
- Muscle cramps
- Numbness

#### Especially vulnerable population groups

- Children under 5 years of age
- Children under 14 years of age
- Adults of more than 65 years of age
- Individuals with medical with chronic medical conditions
- Pregnant women
- People with disabilities
- Overweight/Obese

In case of doubt, refer to the [\*International first aid, resuscitation and education guidelines \(IFRC, 2020\)\*](#).

## 2.2. First aid management

### 2.2.1. Key first aid messages

**NEVER**

give drinks or food to someone with convulsions or with severely altered consciousness (to avoid choking or injuries).

**ALWAYS**

be prepared for CPR if someone stops breathing.

**RAPIDLY**

cool the person to reduce the body temperature.

### 2.2.2. SEVERE CASES – possible heatstroke

**1** Appoint someone to call an ambulance or Emergency Medical Services (EMS) immediately.

**2** Move the person to a shady area or indoors.

**3** Do not give the person fluids.

**4** Cool the body by:

- Removing any unnecessary clothing
- Placing wet sheets, sponges or icepacks in the armpits, neck and groin area
- Spraying a mist of cold water over the body
- Wetting the skin with cold water using sponges (sponge bath) or wet sheets
- Fanning
- Spraying with a garden hose
- Placing the person from the neck down in a cool (not cold) bath or shower where possible<sup>10</sup>



**Note:**  
Cool baths or showers require supervision

Continue to do this until the ambulance arrives or temperature falls below **39 °C (102.2 °F)**.

Be ready to practise **CPR** if someone stops breathing.

Severe hyperthermia can be **life-threatening**.

### 2.2.3. NON-SEVERE CASES – possible heat exhaustion

**1** Cool the body with<sup>10</sup>:

- Cool, non-alcoholic beverages
- Rest
- A cool (not cold) bath, shower or sponge bath
- Moving to an air-conditioned room
- Removing any unnecessary clothing

Make sure you reassess the condition of the person after every **1 hour**.

If the initial condition remains unchanged or gets worse, refer them to a medical facility.

# 4. Communication and awareness messaging

## Communication

Communication is very important to make the public and visitors aware of the cooling centres.

- What is a community cooling centre? (make use of visuals)
- What services are offered there?
- Where are they located?
- What are the opening hours?

And: is there **always** a cooling centre open when the heat surpasses a known limit (28, 30, 35, 40 degrees Celsius)?

Ideally, the community can be informed before the heat occurs so the visitors can plan their day and a visit accordingly (anticipatory action against heat). However, information should be continuously shared, even when the heat is already there.

In order to reach everyone and especially the most vulnerable, it is crucial to use multiple channels of communication. Importantly, you should build on the positive experiences made in the past to reach the community:

- via the phone (text messaging),
- television and radio (building on cooperation with media partners),
- face to face (community and community leader conversation),
- via the internet and suitable social media platforms,
- and through distribution of leaflets and display of posters.

**All information should include the locations and types of facilities.**

All information can easily be shared and accessed with other partners, such as clubs, initiatives or schools, so that wider circles in the community have access to the information.

### How to advertise the community cooling centre in the street

Visitors on their way to the community cooling centre as well as pedestrians passing by are supported through visual markers. This could be RC flags, posters, arrows on walls or the ground or even a community cooling centre logo. Make sure you have these set up close to the community cooling centre so people who are visiting the area for the first time can easily find their way to the cooling centre.



### Worth considering

- Share information about how to reach the community cooling centre (e.g. public transport stops) and if there is a pick-up for some community members.
- Is there a possibility to store items safely?



## Awareness messaging

Awareness messages on how to adapt to heat can be passed to a public audience in the street or when visitors have settled in a cooling centre. This information on individual behaviour is a cornerstone of reducing heat-related illnesses. Messages can be passed through various media, such as posters, leaflets, telephone, mobile messaging, radio, TV, online and face-to-face education. What is relevant when conveying messages on heat?

- The messages are simple and consistent – also with the information from other partners.
- Ideally, the messages are conveyed before and during the heat period.
- The messages are appropriate for the respective audiences: parents with children, elderly/senior citizens, (outdoor) labourers, people with medical conditions.

### What is the most crucial information on adaptation on days of extreme heat?

- Heat is a danger – share this information with neighbours, friends and family.
- Simple measures will make a difference!
- Drink enough water (or low-sugar tea)
  - Take a bottle of water when out and about
  - Make drinking water part of your daily routine
  - Avoid caffeine and alcohol
  - Replenish electrolytes through oral rehydration solution<sup>11</sup>
- Take breaks in shaded areas, adapt your schedule and avoid physical stress in the afternoon.
- Dress according to the heat (wear hats and sunglasses; wear lightweight, light-coloured, loose-fitting clothing).
- NEVER leave children or pets alone in closed vehicles or places.
- Apply sunscreen (SPF 15 or higher).

*The Hong Kong Red Cross is involved in awareness-raising through disaster preparedness, first aid and psychosocial first aid. Heat-wave messages are included in books, games and social media. There is also a mobile disaster education truck.*

### Worth considering:

- The architecture of a cooling centre can be 'leading by example' for cooling techniques and climate-sensitive design, which can inspire other actors to follow (e.g. overhangs, green roof, proper ventilation concepts, reflective facade etc.) This design may give visitors the inspiration to take small measures to adapt their own residence (such as overhangs).

### Additional information on the display of heat messaging can be found [here](#)<sup>12</sup>.



© Willing-Holtz/GRC



#### Making the morning count

Taking people who rely on a wheelchair out on summer mornings, dressing appropriately and drinking plenty of water.



## Examples from practice

### A case study of the Vietnam Red Cross Society

In 2018, VNRC and the German Red Cross started to implement a heatwave project in the aim of reducing the adverse effects of heatwaves on Hanoi's most vulnerable population. The Forecast-based Financing (FbF) methodology was applied in cooperation with the Vietnam Institute of Meteorology, Hydrology and Climate Change (IMHEN) to predict the onset of heatwaves and take anticipatory measures before the heatwave begins. It is one of the first forecast-based financing projects to focus on extreme heat events. One of the main elements of the project is the identification of early actions with a focus on the most vulnerable. With the early action protocol in place, cooling tents and buses have been piloted in slum areas and the plan has been tested in three cities. Buses were equipped with cooling systems to offer air-conditioned resting places for vulnerable people. The cooling buses travelled the streets of Hanoi, sharing awareness messages and stopping in strategic places to reach street vendors and motorcycle riders. Volunteers were also trained in emergency first aid to help people exhibiting signs of heat stress. The cooling centres were well received, with 95 per cent of visitors evaluating the impact of the centres as 'positive' or 'very positive'. VNRC uses three layers of data or information for implementation of early action in selected areas. The first is the vulnerability of the affected population: the percentage of elderly people, people living with disability and children under five years. The second layer is the exposure of the heatwave in a given population, such as the percentage of people living in slums with no air conditioning, and the third layer is the Urban Heat Island that is identified by IMHEN. The developed maps allow VNRC to identify the areas of implementation, where most at-risk groups are living.

The FbF-ready project in Vietnam involved a broad coalition of international and local stakeholders, including UN agencies, international and domestic non-governmental organisations, Red Cross partners and the government with the leadership of Vietnam Red Cross from city and district levels. The main objective of the FbF project was to develop an early action protocol for extreme heat. The main target groups identified were slum residents, builders, elderly people, couriers and street vendors. The Knowledge, Attitude and Practices (KAP) survey showed that 66 per cent of the vulnerable



© Vietnam Red Cross

#### Reaching the most vulnerable

Structured interviews were used to identify the most vulnerable population groups in Hanoi.

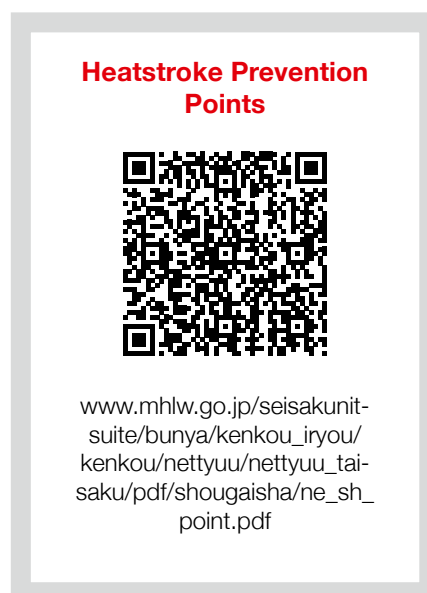
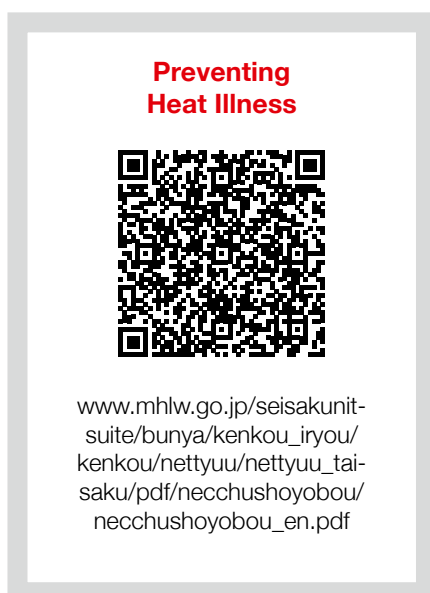
groups had experienced four to six heat exhaustion symptoms during the most recent heatwave. The KAP survey also noted that only 24 per cent of the interviewees were able to recognise the signs of heat-related illness.

### Understanding of heatstroke and its preventive measures – a case study of Japan

The Japanese Red Cross Society provides awareness and first aid management guidance on heatstroke. Awareness activities include Information, Education and Communication (IEC) materials and videos at some branches. First aid training is provided to prevent and reduce heat-related illnesses. The general medical treatment for heatstroke patients in the Japanese Red Cross hospitals (at 91 locations) is provided by registered doctors and nurses, and during special occasions such as seasonal festivals and big events like marathons, the Red Cross hospitals deploy doctors and nurses to the venues to take care of any wounded or sick people, who may include heatstroke patients.

The national and local government public messaging tools are available in more than 10 different languages.

For further reading, links are available here:



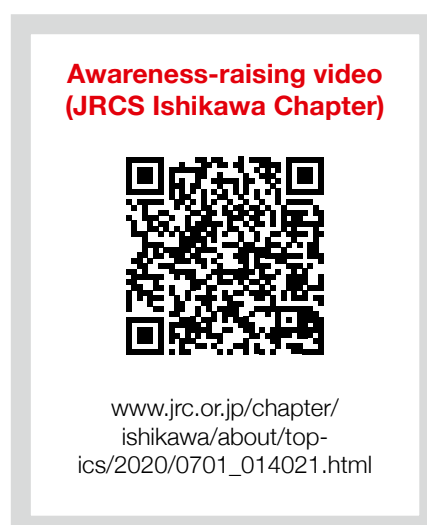
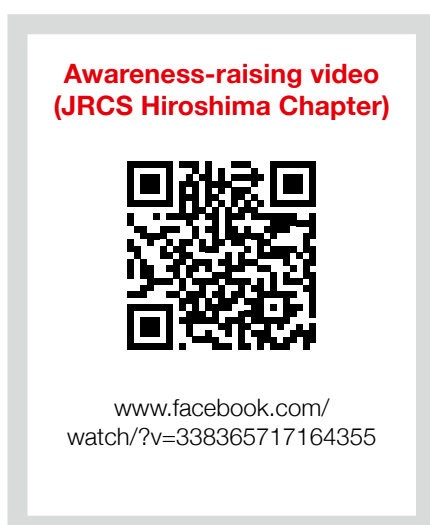
There are other resources in local languages, such as heatstroke prevention for those affected by disasters, prevention of heatstroke at workplaces and heatstroke prevention for farmers.

In Japan, around 5000 cases of heatstroke incidents occur in schools every year. To promote awareness and proper knowledge as well as implementing tangible preventive measures, the Ministry of Education, Culture, Sports, Science and Technology worked with the Ministry of Environment to develop new heatstroke preventative measures guidelines for schools. It is mandatory for every school to set up and implement

their own heatstroke prevention manuals and implementation guidelines.

The Ministry of the Environment in partnership with the Japan Meteorological Agency worked on providing a heatstroke alerting system, which became operational in the summer of 2021. The alerting system is activated when an extremely high temperature is forecast for a few days, and this is communicated through the news, television or text messages.

**The Japanese Red Cross Society has developed the following awareness videos:**



## Endnotes

- 1 Arrighi, J., Singh, R., Khan, R., Koelle, B., Jjemba, E., City Heatwave Guide for Red Cross Red Crescent Branches. 2020. Red Cross Red Crescent Climate Centre. <https://www.ifrc.org/document/city-heat-wave-guide-red-cross-red-crescent-branches>
- 2 Singh, R., Arrighi, J., Jjemba, E., Strachan, K., Spires, M., Kadihasanoglu, A., Heatwave Guide for Cities. 2019. Red Cross Red Crescent Climate Centre. <https://www.ifrc.org/document/heat-wave-guide-cities>
- 3 Puley, G., Extreme Heat: Preparing for the Heat Waves of the Future. 2022. United Nations Office for the Co-ordination of Humanitarian Affairs, International Federation of Red Cross and Red Crescent Societies, Red Cross Red Crescent Climate Centre. <https://www.ifrc.org/document/extreme-heat-preparing-heat-waves-future>
- 4 Kishore P., Basha G., Venkat Ratnam M., Agha Kouchak A., Sun Q., Velicogna I., Ouarda TBJM. Anthropogenic influence on the changing risk of heat waves over India. Sci Rep. 2022 Feb 28;12(1):3337. doi: 10.1038/s41598-022-07373-3
- 5 Arrighi, J., Singh, R., Khan, R., Koelle, B., Jjemba, E., City Heatwave Guide for Red Cross Red Crescent Branches. 2020. Red Cross Red Crescent Climate Centre. <https://www.ifrc.org/document/city-heat-wave-guide-red-cross-red-crescent-branches>
- 6 Singh, R., Arrighi, J., Jjemba, E., Strachan, K., Spires, M., Kadihasanoglu, A., Heatwave Guide for Cities. 2019. Red Cross Red Crescent Climate Centre. <https://www.ifrc.org/document/heat-wave-guide-cities>
- 7 Widerynski. S., Schramm, P., Conlon, K., Noe, R., Grossman, E., Hawkins, M., Nayak, S., Roach, M., Shipp Hilts, A. The Use of Cooling Centers to Prevent Heat-Related Illness: Summary of Evidence and Strategies for Implementation. 2017. Climate and Health Technical Report Series Climate and Health Program, Centers for Disease Control and Prevention. doi: 10.13140/RG.2.2.32267.59688
- 8 Dinnissen, S.; Faucet, J.; Van, T.; Vu, T.; Dinh, T.; & Quang, T. Fostering anticipatory humanitarian actions for heatwaves in Hanoi through forecast-based financing. Climate Services. 2020. 18. doi: 10.1016/j.cliser.2020.100171
- 9 Global First Aid Reference Centre. Standard Criteria for First Aid Kits – South Asia. 2009. <https://www.globalfirstaidcentre.org/resource/standard-criteria-for-first-aid-kits-south-asia/>
- 10 Centers for Disease Control and Prevention. Infographic: Avoid Spot Treat: Heat Stroke & Heat Exhaustion. Last updated: 2020-12-21. <https://www.cdc.gov/orr/infographics/ast-heat.htm>

## References

Dinnissen, S.; Faucet, J.; Van, T.; Vu, T.; Dinh, T.; & Quang, T. (2020). Fostering anticipatory humanitarian actions for heatwaves in Hanoi through forecast-based financing. *Climate Services*. 18. 100171. 10.1016/j.cliser.2020.100171.

Kishore, P.; Basha, G.; Venkat Ratnam, M.; Agha Kouchak, A.; Sun, Q.; Velicogna, I.; Ouarda T. B. J. M. (2022). Anthropogenic influence on the changing risk of heat waves over India. *Sci Rep*. 2022 Feb 28;12(1):3337. doi: 10.1038/s41598-022-07373-3

Widerynski, S.; Schramm, P.; Conlon, K.; Noe, R.; Grossman, E.; Hawkins, M.; Nayak, S.; Roach, M.; Hiltz, A.S. CDC Climate and Health Technical Report Series; Climate and Health Program, Centers for Disease Control and Prevention, <https://www.cdc.gov/climateandhealth/docs/UseOfCoolingCenters.pdf>

## Further reading

Prepare Center Heat Toolkit

<https://preparecenter.org/toolkit/heat/>

International first aid, resuscitation and education guidelines, IFRC Global First Aid Reference Centre, 2022

<https://www.globalfirstaidcentre.org/resource/international-first-aid-resuscitation-and-education-guidelines-2020-2/>

## Abbreviations

<b>AED</b>	Automated External Defibrillator	<b>IFRC</b>	International Federation of Red Cross and Red Crescent Societies
<b>BDRCS</b>	Bangladesh Red Crescent Society	<b>IMHEN</b>	Institute of Meteorology, Hydrology and Climate Change
<b>CDC</b>	Centre for Disease Control and Prevention	<b>KAP</b>	Knowledge, Attitude and Practices
<b>CPR</b>	Cardiopulmonary Resuscitation	<b>MRCS</b>	Myanmar Red Cross Society
<b>EMS</b>	Emergency Medical Services	<b>NFI</b>	Non-Food Items
<b>FbF</b>	Forecast-based Financing	<b>ORS</b>	Oral Rehydration Solution
<b>FA</b>	First Aid	<b>RCAT</b>	Red Cross or Red Crescent Action Team
<b>GRC</b>	German Red Cross	<b>RCRC</b>	Red Cross Red Crescent National Societies
<b>IEC</b>	Information, Education and Communication	<b>VNRC</b>	Vietnam Red Cross

## Legal Notice

### **Publisher**

German Red Cross e.V.,  
Carstennstrasse 58, 12205 Berlin, Germany

### **Contact**

Thomas Smarczyk, German Red Cross  
t.smarczyk@drk.de

### **Authors**

Tabea Junker, German Red Cross  
Álvaro Paz Martín, German Red Cross  
Clara Peter, German Red Cross  
Thomas Smarczyk, German Red Cross

### **The authors would like to thank the following people for their valuable contributions to shaping this manual:**

Axel Auerbach (German Red Cross), Rafael Díaz-Regañón Jiménez (German Red Cross), Hans-Jürgen Ebbing (German Red Cross), Jerome Faucet, Franziska Kellerhaus (German Red Cross), Ramiz Khan (Red Cross Red Crescent Climate Centre), Stefanie Lux (German Red Cross), Malini Nair, Carolina Pereira Marghidan (Red Cross Red Crescent Climate Centre), Timo Seimetz (German Red Cross), Sendy Veerabadren (International Federation of Red Cross and Red Crescent Societies Global First Aid Reference Centre)

### **Layout**

STÜRMER & DRÄNGER GmbH,  
www.stuermer-draenger.de

### **Status**

March 2024



**German Red Cross e.V.**

Carstennstrasse 58  
12205 Berlin, Germany

Tel. 030 85404 – 0  
Fax 030 85404 – 450  
DRK@drk.de  
[www.drk.de](http://www.drk.de)