



Enhancing Heatwave Early Actions in Hanoi



German
Red
Cross



Builders take a break to cool down in one of the Red Cross Cooling Centres, August 2019 in Hanoi

IMPROVING RED CROSS COMMUNITY COOLING CENTRES AND BUSES

From the 11th to the 14th of August in Hanoi, the trigger for heatwave was reached due to a combination of high levels of air temperature and relative humidity, creating conditions difficultly bearable for the human body. This provided for a second opportunity for VNRC and GRC to take anticipatory actions to reduce human health risks associated with extreme heat.

To cope with the heatwave, four Community Cooling centres and three buses equipped with cooling systems were set up to offer an air-conditioned rest place for vulnerable populations in the following wards: Duc Thang (one Bus), Phuc Xa (one tent and one bus), Co Nhue 1 (one tent) and Hoang Van Thu (one tent and one bus).

The focus of this test was to **enhance the capacities of the VNRC volunteers to manage the facilities** and to **provide adapted care** to the visitors. To this end, the volunteers were trained in demonstrating how to use the facilities and the material distributed to

cool down the visitors and in implementing a **strict emergency protocol** in case of need. In addition, they raised awareness for preventing and dealing with heat health impacts.

The Community Cooling Centres were complemented by Red Cross cooling buses which traveled the streets of Hanoi and conveyed awareness messages. The vehicles stopped in strategic places frequented by street vendors and motorcycle riders.



Volunteer welcomes visitors and provides awareness messages in a Red Cross cooling bus

PROMOTING BEHAVIOR CHANGE

Climate change, urban effect and a high humidity combine to intensify the magnitude of heatwaves in Hanoi, affecting mostly people working under the sun for long hours. It is of no surprise considering that the megacity is located in the Southeast Asian region, projected to be the region most affected by heat extremes¹.

Extremely high heat events are associated with increases in mortality and morbidity, also exacerbating existing diseases, such as heart and kidney related problems². In addition, working in direct sun greatly increases the risk of heat-related illness³. Indeed, during a heatwave last June in Hanoi the death of two outdoor workers was reported due to a high exposition to heat for long hours causing high fever, organ damage and cardiovascular failure⁴.

The Early Action's aim is to mitigate the impact of heatwaves on the vulnerable population, and therefore to reduce the risk of heat related illnesses and their associated symptoms.

To achieve that, the actions provided to the heat-affected people earning their living in the streets a cool shading space during day-time to rest, enabling to cool down their body. This is a very efficient way to regulate the body's temperature, and therefore to prevent from potentially harmful effects of heat exhaustion, such as heatstroke.

The health effects of extreme heat depend also on **behavioral responses**, which are related to perceived risk⁵. Consequently, the Early Action aims to **encourage the adoption of appropriate behavior**: visitors experiencing an improvement in their condition after using the cooling centres and receiving awareness on heat stress would tend to have a more positive behavior, by **making breaks in their jobs, coming back to the centres and staying longer** in case of an incoming perceived risk.



Volunteer provides fresh towels in a cooling bus

RESULTS

The centres and buses received in total **1787 visits** during the four days. 24% of the visitors were street vendors, 23% bikers and 15% free labors. An average temperature difference of almost 7° C was recorded between the outside air temperature and the air temperature inside the centres, effectively providing a cooling shelter from the outer scorching heat.

In term of promotion and adoption of appropriate behavior, **42% of beneficiaries came back at least once**, a **23% increase in recurrent visits** if compared to the previous test in July. Overall, street vendors were the group with the highest proportion of recurrent visitors, with 60% visiting more than once. **42.5% of the visitors came to the centres to reduce, get rid of or avoid symptoms** related to heat exhaustion, manifesting their ability to recognize their symptoms and a willingness to act upon them.

30.5% of the visitors came to have a rest in a cool place. During the first test in July, the main reason of their visit was to drink water (90.5%).

95% of the visitors evaluated the impact of the centres as positive or very positive, which represents a 28.5% increase in the perception of positive impact of the facilities compared to the previous test in July. As such, it was **unanimously suggested to reopen the centres** in the event of heatwaves in the future.

The cooling centres were positively perceived by the local population and authorities, and reached the targeted groups. In addition, by providing better adapted care the volunteers may have encouraged more visitors to come back and for the right purpose (rest, reduce, get rid of or avoid symptoms), thus **fostering the adoption of appropriate behavior** to cope with heat events and reduce heat health related impacts.



The cooling centres are equipped with sprinklers that provide a fresher environment

THE CARE PROTOCOL & WAY FORWARD

The objective of the **emergency care protocol** tested in August is to mitigate impacts of extreme heat and **save lives**. It's based on a series of procedures, depending on the heat-related symptoms experienced by the visitors, and a constant health monitoring by the volunteers.

It starts by welcoming and providing fresh towels to the beneficiaries, followed by different questions regarding their symptoms and a general health monitoring. In some cases it will be necessary to record the body temperature. Depending on the answers and upon judgment by the volunteers, different actions are carried out individually, with a focus on the care of the person. This enables the visitors to stay more time and effectively cool off. In addition, it allows identifying if there's a **high risk of heatstroke**, in which case the **emergency medical units are called immediately**. Luckily, no emergency was reported during the last test.

A **participatory workshop** between VNRC and GRC will be carried out in September to discuss about the management and protocols from the last test. This will provide an opportunity for partners to consider possible evidence-based improvements for the project's implementation. Special focus will be given to the emergency protocol and security.

The lessons learned from the test will be the base to finalize the **Early Action Protocol (EAP) for urban heatwaves in Vietnam** that will enable the automatic allocation of funds to carry out pre-defined activities or early actions upon reaching a forecasted trigger. Furthermore, the project will scale up to 15 wards of Hanoi and will be replicated in other cities such as Da Nang and Hai Phong.



The buses and centres work as a network

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- (3) Shah, T., Mavalankar, D., Jaiswal, A., and Connolly, M. March 2015. Addressing vulnerability to the health risks of extreme heat in urbanising Ahmedabad, India. Available at: <https://assets.publishing.service.gov.uk/media/57a08984e5274a27b2000105/CDKN-Ahmedabad-Paper.pdf>
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- (5) Howe, P. D., Marlon J. R., Wang, X., and Leiserowitz, A. 2019. Public perceptions of the health risks of extreme heat across US states, counties, and neighborhoods. *PNAS* April 2, 2019 116 (14) 6743–6748. Available at: <https://www.pnas.org/content/116/14/6743>

