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World Health Organization (WHO)  
**Research Report**

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Topic 1: Creating infrastructure to prevent heat-wave-related health issues.



By Sakhi Dhagat and Amalie Tuypens

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## Introduction:

As climate change is progressing, there is a notable increase in global temperatures, gradually resulting in frequent and intense heat waves. Because of this, the global population is affected by the heat waves, and for some causing serious health problems. According to the World Health Organization, from 1998-2017, more than 166,000 people have died due to heatwaves.<sup>1</sup> In order to reduce these health effects and fatalities, there is a need for international investment in infrastructure development and funding.

## Definition of Key Terms:

**Heat waves:** A prolonged period of abnormally hot weather; extreme heat.

**Cooling centers:** An air-conditioned public facility where people may go for relief during periods of extreme heat.

**Climate change:** Long term shift in temperatures and weather patterns, which can be natural or caused by human activities.<sup>2</sup>

## Background Information:

Climate change is fueling heat waves as the global temperature is rising. Heat waves have been occurring more frequently and intensely.

Exposure to intense heat can cause severe symptoms such as heat exhaustion and heat stroke, as well as heat rash, cramps, headache, irritability, lethargy, weakness, and swelling in the lower limbs. More serious effects include severe dehydration, acute cerebrovascular accidents and contribute to thrombogenesis (blood clots). Those with chronic illnesses can be more vulnerable to the effects of heat waves, as they may have a higher risk of complications or death.

Large cities, such as Sydney, Paris, Los Angeles, are particularly vulnerable to heat waves as their current infrastructure, such as roads, parking lots, buildings, absorb more heat than natural landscapes, intensifying the heat of the heat waves.<sup>3</sup> Large cities are also home to a large percentage of countries' populations, meaning there are many people at risk of heat waves related health issues. New infrastructure has started to be implemented, such as cooling centers,

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<sup>1</sup> World Health Organization, "Heatwaves," [www.who.int, 2022, https://www.who.int/health-topics/heatwaves#tab=tab\\_1](https://www.who.int/health-topics/heatwaves#tab=tab_1).

<sup>2</sup> United Nations, "What Is Climate Change?," [Climate Action \(United Nations, 2023\), https://www.un.org/en/climatechange/what-is-climate-change](https://www.un.org/en/climatechange/what-is-climate-change).

<sup>3</sup> Umair Irfan, "The Surprisingly Subtle Recipe Making Heat Waves Worse," [Vox, June 23, 2021, https://www.vox.com/22538401/texas-heat-wave-weather-definition-record-temperature-climate-change](https://www.vox.com/22538401/texas-heat-wave-weather-definition-record-temperature-climate-change).

where people can go to cool their body temperatures down. This has been shown to be effective, however there are still many suffering from extreme symptoms of heat waves and even death.

## Major Countries and Organizations Involved:

### The United States

Has funded and supported the creation of infrastructure, such as cooling centers, for those vulnerable to the health effects of heat waves.

### Australia

Heat waves have been increasing in frequency, duration, and intensity and projections suggest that the trend will continue, due to global warming. Heat waves have killed more people in Australia than any other natural hazard. Those living in poorer conditions are especially vulnerable, due to the lack of access to air conditioning and insulation in the hot climate of Australia.<sup>4</sup>

### Afghanistan

Known as “the region of most concern” due to the lack of resources available as well as the potential for extreme heat waves that the country is not currently prepared for.<sup>5</sup>

### World Health Organization (WHO)

The United Nations agency which connects nations, partners, and people to promote health, keep the world safe, and help the vulnerable.<sup>6</sup> They work towards raising awareness on the dangers of heat waves as well as working with partners and health sectors to reduce heat wave related health issues.

### UNICEF

Protects children, who are particularly vulnerable to the effects of heatwaves, by forming policy recommendations to governments and raising awareness about the effects and preventive measures.<sup>7</sup>

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<sup>4</sup> Graham Readfearn, “Australia Urged to Name Heatwaves to Combat Dangers of Extreme Temperatures,” *The Guardian*, January 11, 2024, sec. Australia news, <https://www.theguardian.com/australia-news/2024/jan/12/australia-name-heatwaves-like-cyclones-hurricanes-temperatures-summer-weather#:~:text=time%20of%20year.->.

<sup>5</sup> FP Explainers, “Burning Hot: These Regions Are Likely to Witness Record-Smashing Heat Waves,” Firstpost, April 26, 2023, <https://www.firstpost.com/explainers/heat-waves-extreme-temperatures-study-weather-afghanistan-climate-change-12509972.html>.

<sup>6</sup> World Health Organization, “About WHO,” Who.int, 2023, <https://www.who.int/about>.

<sup>7</sup> UNICEF, “1 in 2 Children in Europe and Central Asia Are Exposed to High Heatwave Frequency, Double the Global Average,” [www.unicef.org](https://www.unicef.org), accessed December 22, 2023, <https://www.unicef.org/press-releases/1-2-children-europe-and-central-asia-are-exposed-high-heatwave-frequency-double>.

## Relevant UN Resolutions:

### WHA 64.10

Topic of “*Strengthening national health emergency and disaster management capacities and resilience of health systems*”<sup>8</sup>

### A/HRC/RES/29/15

“*Emphasized the urgency of continuing to address the adverse consequences of climate change for all and called for a panel discussion and analytical study on the impacts of climate change on the enjoyment of the right to health.*”<sup>9</sup>

## Previous Attempts to Solve the Issue:

### WHO

Works with the health sector to strengthen governance, preparedness, and response to heat waves by developing plans which map risks, vulnerability, and availability of resources.

Works with partners to respond to ensurement of food, restoration of primary care services, assembly of mobile health teams, epidemic surveillance, and call for emergency funding.<sup>10</sup>

### United States

Implementation of cooling centers in large cities such as New York City, Los Angeles, Chicago, and Boston to support vulnerable groups during heat waves.<sup>11</sup>

### UNICEF

In order to protect children and vulnerable communities from worsening heatwaves, UNICEF calls on governments to protect children by adapting social services (Water, Sanitation and Hygiene (WASH), health, education, nutrition, social protection and child protection) and prepare children to live in a climate changed world by providing more education.

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<sup>8</sup> World Health Organization, “Strengthening National Health Emergency and Disaster Management Capacities and Resilience of Health Systems,” 2011, [https://apps.who.int/gb/ebwha/pdf\\_files/EB128/B128\\_R10-en.pdf?ua=1](https://apps.who.int/gb/ebwha/pdf_files/EB128/B128_R10-en.pdf?ua=1).

<sup>9</sup> ODS Team, “ODS HOME PAGE,” [documents-dds-ny.un.org](https://documents-dds-ny.un.org/doc/UNDOC/GEN/G15/163/60/PDF/G1516360.pdf?OpenElement), 2015, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G15/163/60/PDF/G1516360.pdf?OpenElement>.

<sup>10</sup> World Health Organization, “Heatwaves,” [www.who.int](https://www.who.int/health-topics/heatwaves#tab=tab_1), 2022, [https://www.who.int/health-topics/heatwaves#tab=tab\\_1](https://www.who.int/health-topics/heatwaves#tab=tab_1).

<sup>11</sup> Amudalat Ajasa, “Cooling Centers Save Lives in a Heat Wave — If You Can Get There,” *Washington Post*, July 15, 2023, <https://www.washingtonpost.com/weather/2023/07/15/cooling-centers-limitations-heatwaves-cities/>.

## Possible Solutions:

1. Establishing infrastructure which can warn civilians of the natural hazard, cool them down in the midst of a heat wave, and protect current infrastructure from heating damage. Instating a reliable weather forecast or news system can raise awareness of the potential rise in temperature, so that the population can take their own preventative measures.
2. Improving current infrastructure with additions such as cooling roofs, pavements, and vegetation. These types of infrastructure may support citizens in cooling down during these high temperatures. Providing heat resistance to current infrastructure, e.g. transport, roads, power lines, may allow these structures to withstand intense heat.<sup>12</sup>
3. Cooling centers and/or air-conditioned zones. These areas are air-conditioned and insulated where those suffering from heat waves can take refuge during the extreme temperatures. This is heavily recommended by the World Health Organization as well as other health organizations such as the U.S. Centers for Disease Control and Prevention. These centers are especially important for those vulnerable to heat. The effectiveness of an air-conditioned environment was tested by the Environmental Health Perspectives in 2023. The results showed that exposure to the cooled environment led to a reduction in core temperature and cardiovascular strain, and therefore a reduction in physiological strain during heat waves.<sup>13</sup>

## Bibliography:

- Ajasa, Amudalat. “Cooling Centers Save Lives in a Heat Wave — If You Can Get There.” *Washington Post*, July 15, 2023. <https://www.washingtonpost.com/weather/2023/07/15/cooling-centers-limitations-heatwaves-cities/>.
- FP Explainers. “Burning Hot: These Regions Are Likely to Witness Record-Smashing Heat Waves.” Firstpost, April 26, 2023. <https://www.firstpost.com/explainers/heat-waves-extreme-temperatures-study-weather-afghanistan-climate-change-12509972.html>.

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<sup>12</sup> OAR US EPA, “Adapting to Heat,” [www.epa.gov](http://www.epa.gov), June 17, 2014, <https://www.epa.gov/heatlands/adapting-heat>.

<sup>13</sup> Robert D Meade et al., “Efficacy of Cooling Centers for Mitigating Physiological Strain in Older Adults during Daylong Heat Exposure: A Laboratory-Based Heat Wave Simulation,” *Environmental Health Perspectives* 131, no. 6 (June 1, 2023), <https://doi.org/10.1289/ehp11651>.

- Irfan, Umair. “The Surprisingly Subtle Recipe Making Heat Waves Worse.” Vox, June 23, 2021. <https://www.vox.com/22538401/texas-heat-wave-weather-definition-record-temperature-climate-change>.
- Meade, Robert D, Sean R Notley, Ashley P Akerman, James J McCormick, Kelli E King, Ronald J Sigal, and Glen P Kenny. “Efficacy of Cooling Centers for Mitigating Physiological Strain in Older Adults during Daylong Heat Exposure: A Laboratory-Based Heat Wave Simulation.” *Environmental Health Perspectives* 131, no. 6 (June 1, 2023). <https://doi.org/10.1289/ehp11651>.
- Readfearn, Graham. “Australia Urged to Name Heatwaves to Combat Dangers of Extreme Temperatures.” *The Guardian*, January 11, 2024, sec. Australia news. <https://www.theguardian.com/australia-news/2024/jan/12/australia-name-heatwaves-like-cyclones-hurricanes-temperatures-summer-weather#:~:text=time%20of%20year.->
- Team, ODS. “ODS HOME PAGE.” documents-dds-ny.un.org, 2015. <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G15/163/60/PDF/G1516360.pdf?OpenElement>.
- UNICEF. “1 in 2 Children in Europe and Central Asia Are Exposed to High Heatwave Frequency, Double the Global Average.” [www.unicef.org](http://www.unicef.org). Accessed December 22, 2023. <https://www.unicef.org/press-releases/1-2-children-europe-and-central-asia-are-exposed-high-heatwave-frequency-double>.
- United Nations. “What Is Climate Change?” Climate Action. United Nations, 2023. <https://www.un.org/en/climatechange/what-is-climate-change>.
- US EPA, OAR. “Adapting to Heat.” [www.epa.gov](http://www.epa.gov), June 17, 2014. <https://www.epa.gov/heatislands/adapting-heat>.
- World Health Organization. “About WHO.” [Who.int](http://who.int), 2023. <https://www.who.int/about>.
- ———. “Heatwaves.” [www.who.int](http://www.who.int), 2022. [https://www.who.int/health-topics/heatwaves#tab=tab\\_1](https://www.who.int/health-topics/heatwaves#tab=tab_1).
- ———. “Strengthening National Health Emergency and Disaster Management Capacities and Resilience of Health Systems,” 2011. [https://apps.who.int/gb/ebwha/pdf\\_files/EB128/B128\\_R10-en.pdf?ua=1](https://apps.who.int/gb/ebwha/pdf_files/EB128/B128_R10-en.pdf?ua=1).