GLOBAL HEAT HEALTH INFORMATION NETWORK

Call to Action from the First Global Forum on Heat and Health

December 2018 / Hong Kong, China

Call to Action

The First Global Forum on Heat and Health (Hong Kong, China, 17-20 December 2018) brought together over 120 interdisciplinary experts and practitioners from 33 countries to formally launch the Global Heat Health Information Network and inform a global common action agenda for heat risk management.

This international Forum enabled participants to share experiences, identify priorities for action, and strengthen interdisciplinary cooperation that can build the capacity of governments, organizations, and professionals to protect populations from the avoidable health risks of extreme and ambient heat.

At the Forum, experts confirmed the challenges that extreme heat poses in all world regions, and that heat-related deaths are largely preventable.

About the Global Heat Health Information Network (GHHIN)

GHHIN is an independent, voluntary, and member-driven forum of scientists, practitioners, and policymakers focused on enhancing and multiplying the global and local learning regarding resilience-building for heat health.

The network is spearheaded by the World Health Organization and World Meteorological Organization Joint Office for Climate and Health and the United States National Oceanic and Atmospheric Administration (NOAA) and it includes health and meteorological practitioners and scientists from all populated continents.

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Key Messages

Extreme heat poses challenges in all world regions, and heat-related deaths are largely preventable.

Heat stress is a serious and urgent health threat for humans.

It is a leading cause of weather-related death; and can result in permanent damage to the brain, central nervous system, and other internal organs exacerbating cardiovascular, respiratory, and psychological distress, injuries, and infectious disease; and contributing to lost productivity and well-being.

Extreme heat waves are disasters.

Similar to hurricanes, tsunamis, and earthquakes, they can result in significant mortality and morbidity, as well as economic damages and destruction of property that can overwhelm response systems.

Dangerous heat conditions can also manifest during heat spells outside the hot season, prolonged periods of locally relevant elevated daytime and night time thermal conditions, and in specific-microclimates. Heatwaves are increasingly accompanied by cascading environmental or socio-economic impacts from heat triggered wildfires and drought to food, energy, water, and transport infrastructure failures. The true global scale and magnitude of the impacts of heat on society are recognized to be under-reported and underestimated.

All populations are affected by rising ambient temperatures.

However, some populations are more vulnerable to heat stress and increased risk of death or illness due to a combination of high exposure, physiological preconditions and socioeconomic status. These include the rural and urban poor, populations in regions that are already very hot and humid, regions with colder climates that are facing warmer summers, older adults, infants and children, pregnant women, indoor and outdoor labours (formal and informal sectors), athletes, and attendees of outdoor events (mass gatherings), and those with some pre-existing medical conditions.

Occupational heat strain directly affects workers' health.

Impacts include elevated risk of dehydration, kidney disease, work accidents, and lost work productivity. Heat may be indirectly influencing global health in significant ways, as the loss of productivity and income hinders individual ability to live healthy and productive lives.

Urban environments magnify heat exposures.

This is due to dense and vertical constructions, extensive use of heat retaining materials, limited vegetation cover, and heat generation from energy use in cooling and transport, that all contribute to urban heat island effects. Urban Heat Islands, and micro-heat islands within cities, increase exposure risk to local inhabitants.

The mental health impacts of heat are an emerging area of interest.

It is important because of the influence heat has on brain functioning and human behaviour; the vulnerability of persons with mental health problems and prescribed medications which limit the body's natural cooling functions; as well as the importance of social connectivity to risk reduction.

Heat-related problems are destined to increase for decades to come.

This is due to greenhouse gases already in the atmosphere today that are rapidly warming the earth's climate. The degree and rate of future warming and impacts beyond 2100 will depend on the success of climate change mitigation efforts. Taking appropriate action and preparedness to face a warming world is imperative and urgent.

Solutions

Global expertise and response capacity exists, and is improving in multiple critical domains to provide necessary solutions.

Prevention

Detrimental impacts of extreme heat can be markedly reduced if appropriate strategic planning, early warning systems, public preparedness, urban design and engineering solutions, legislation, and health interventions that focus on prevention are effectively implemented

Information and solutions should be derived and applied across the broad range of disciplines, time scales, and actors already making important strides to manage heat risks.

Preparedness

Seasonal and sub-seasonal preparedness, complemented by short-term heat early warning systems, are key components of heat action plans, health interventions and emergency response actions.

All well-functioning action and alert systems rely on strong cross-disciplinary and multi-agency collaboration with effective communication between stakeholders including national and local governments, universities, media, healthcare and social protection systems, NGOS and humanitarian actors, as well as, affected populations.

Location and context specific Management

Heat risk management is location and context specific. Epidemiological studies, social science, risk assessment and heat forecasting capabilities are fundamental to incorporate the differentiated needs of vulnerable groups, and inform appropriate and effective responses.

Multi-disciplinary understandings of the risk context and perceptions are critical to effective intervention design.

Development planning

Strategic and environmentally sustainable urban and rural development planning that accounts for energy-efficient technical and biophysical solutions are essential for long-term heat risk management. Notably, cost-effective improvements to the built environment, especially housing and building design.

Challenges

Common challenges requiring investment across all world regions include:

Heat risks and impacts are inadequately recorded and monitored.

This limits research and underlies an insufficient awareness and appreciation of the urgency and magnitude of the cumulative and systemic impacts of extreme heat on people, society, health, wellbeing, and local economies; the complex dependencies and risks of cascading system failures; and the concomitant risks of poor air quality, drought, water stress, and poorly planned urbanization that all place society at greater risk.

Further investment in monitoring and evaluation capabilities, including meteorological observations, health surveillance of heat-related mortality and morbidity, and other measures such as impacts on productivity, worker safety, and economics are imperative to improve our understanding of vulnerability and how short and long-term prevention can be strengthened.

Inadequate access to appropriate tools and information

Low levels of preparedness and planning are compounded by inadequate availability and access to appropriate tools and information to confront current and future impacts of extreme heat to human health, wellbeing, and society.

Evidence to policy translation gaps and poor risk communication

Current evidence is not being translated in a timely manner to application and policy, and poor risk communication is resulting in inadequate efforts by public health and disaster management laws, policies and frameworks.

Furthermore, efficacy of interventions is inadequately measured, and heat related risks remains outside many mechanisms, that could assist and prevent avoidable health impacts including disaster risk management.

System fragmentation

Many countries and communities lack effective integrated systems and have fragmented and insufficient expertise and capacity to address the scale and complexity of current and future heat risks. Noting, harmonization and standards are lacking in many technical areas. Sharing of scientific knowledge and collaboration on implementation of good practices, particularly at a regional scale and across disciplines is critical.

Recommended Action Agenda

Launch the Global Heat Health Information Network (GHHIN)

Officially launch the GHHIN Network (hereafter the Network) dedicated to sharing scientific and operational information to improve methods and tools for more effective management and evaluation of heat's health effects and become a global resource for the dissemination of good-practice procedures.

It was agreed a network approach will enable the specialties and strengths of Members to be leveraged, and amplify solutions and impacts in meaningful ways by helping to hasten peer learning; engagement and collaboration between a wide-range of professions and institutions, including the public; and foster translation of local knowledge and actions into collective global knowledge and response.

Transform knowledge to action

Recognize the mission to accelerate the assembly and transmission of knowledge for taking action, through five common goals:

1. to urgently improve awareness of the disaster that increasing extreme heat pose to human health, wellbeing, and productivity worldwide;
2. to catalyse and sustain interdisciplinary partnerships and co-learning between research and practitioners across relevant government, academic, private sector and civil society actors;
3. to synthesize and advance science and technology available for decision-making and risk reduction across sectors and time scales;
4. to improve access to expert resources and opportunities for learning, exchange, and engagement;
5. to identify and promote action to address critical gaps in research, knowledge and action.

Create a coordination function

Create a coordination function to respond to the needs for intensified coordination, normative and technical guidance, knowledge sharing, and collaboration notably at global and regional levels, and to support the implementation of agreed upon actions. Noting, an advisory and oversight mechanism that reflects the needs and values of the network, should be further established, appropriate to the agreed upon structure and mechanisms of the network. An action plan, including key priorities, future directions and targets should be developed by mid-2019; and the Second Global Heat and Health Forum should be organized no later than 2020 and be informed by regional or local meetings which may be organized prior.

Be inclusive

Welcome participation from all parts of the world, all relevant research areas, all public or private organizations aiming at improving individual and public health in the face of a warming world - counteracting the negative effects of climate change.

Ensure the Network is flexible, interdisciplinary and agile

The Network should be flexible, interdisciplinary and agile to adaptively learn and respond to the needs of the community. They recommended where possible, it should draw upon existing mechanisms and structures to provide scientific and normative guidance.

Noting the importance of the WMO, the WHO, the International Federation of Red Cross and Red Crescent Societies, and other international and regional bodies and professional societies[1], and encourages them to build upon the partnership with the Network to support and engage demand driven research and action for heat risk management.

1. including among others, the Scientific Committee on Thermal Factors within the International Commission for Occupational Health, the World Organization of Family Doctors, the Hi-Weather Research Community, GEO Health Community of Practice, the Climate Commission within the International Society for Biometeorology; the Lancet Climate and Health Commission and Planetary Health Commissions, etc.

Leverage institutional processes to support global policy frameworks

Encourage all partners to better leverage institutional processes and appropriate authorities to implement the Sendai Framework for Disaster Risk Reduction 2015-2030, the Paris Agreement for Climate Change, the Global Framework for Climate Services, and the Sustainable Development Goals.

Foster research, innovation and collaboration

Create opportunities and enabling environments to cultivate an understanding of research and operational requirements for heat prediction and advisory; and for enhanced collaborative innovations, research, and interventions, (such as support to innovation platforms, technical cooperation, sharing of good practice, novel networking approaches, personnel and scholar exchanges, pilot programming and partnerships) that will facilitate interdisciplinary learning and action at global, regional, and local levels.

Identify and address gaps

Recognize and advocate for action to address specific gaps in areas of occupational health; in understanding and managing complex heat exposures in urban contexts; enhancing global heat prediction capabilities across timescales; evaluation of intervention effectiveness; development of effective communication practices; and the need for standards for collection and management of relevant health and environmental data.

Facilitate co-design and co-production of tools and information

Adopt an integrated systems approach to facilitate the co-design and co-production of information and tools across varied disciplines. A holistic five pillar framework will guide actions of the network, under the following work streams:

- Partnerships and capacity building;
- Data, science, and research for understanding health risks of heat;
- Climate and weather information for decision-making and action;
- Effective interventions to prevent heat exposure and negative health outcomes;
- Communications and outreach.

Understand and invest in current and future needs

Recognize considerations across timescales are vital in all research and interventions, as is simultaneous investment to address both current and future health risks of extreme heat.

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