Perspectivas globales:
Red global de información sobre calor y salud

Joy Shumake-Guillemot
26-27 August 2019   Santiago Chile
Joint WHO and WMO Health, Environment, and Climate Action Plan

2019-2023

4 themes

- Air Quality
- Climate & Climate Services
- Water
- Extremes & Health Emergencies

2 geographic foci

- Small Island Developing States
- Urban Areas

10 Fast-track activities

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WMO Cg-18 Resolution 33 Advances Integrated Urban & Health Services

Resolution 5.5/1: Integrated Urban Services
WMO Commitment to integrating information to support impact-based forecasting and warning for disasters. Developing collaborative framework and implementation plan.

Resolution 5.5/2: Integrated Health Services
WHO/WMO Joint Action on Health, Environment, Climate, implementation and resource plan. NMHS/RCCs nominate health focal point.
10 Priority Activities
A WARMING WORLD

The hottest 20 years on record have occurred in the past 22 years, with the hottest 4 years between 2015-2018.
Selected Significant Climate Anomalies and Events July 2019

GLOBAL AVERAGE TEMPERATURE
July 2019 average global land and ocean temperature was the highest for July since records began in 1880.

ALASKA
Alaska had its warmest July since statewide records began in 1925.

HURRICANE BARRY
(July 11–19, 2019)
Maximum winds - 120 km/h
Slow-moving Barry brought flash floods to Louisiana and Arkansas. New all-time state record for most rainfall received from a tropical system was set in Arkansas.

HAWAIIAN REGION
The Hawaiian region had its second highest July temperature departure from average on record, behind 2015.

SOUTH AMERICA
South America had its 12th highest July temperature on record.

ARCTIC SEA ICE EXTENT
July 2019 sea ice extent was 19.8 percent below the 1981–2010 average—the smallest July sea ice extent since satellite records began in 1979.

EUROPE
Europe had its 15th warmest July on record. Another intense heat wave affected Europe during July, with several countries setting new national temperature records.

ISRAEL
Several stations across Israel had record-breaking temperatures during July.

KINGDOM OF BAHRAIN
The nationally averaged July 2019 mean temperature was the third highest for July since national records began in 1902.

AFRICA
July 2019 was Africa's warmest July on record.

MONG KONG
Hong Kong's July 2019 minimum temperature was the highest for July on record.

AUSTRALIA
Warmer-than-average conditions engulfed much of Australia during July 2019, resulting in the fourth highest July mean temperature for the nation.

NEW ZEALAND
New Zealand had its second warmest July on record.

Please Note: Material provided in this map was compiled from NOAA's State of the Climate Reports. For more information please visit: http://www.ncdc.noaa.gov/sotc
INCREASED RISK

Climate Change makes extreme weather more likely, and an urgent health threat for humans.

Source: Modified from IPCC, 2007

www.climatecommission.gov.au
LATEST RESEARCH

New research from 27 global institutions published in the Lancet finds that our vulnerability to heat is unacceptably high and rising in all regions of the world.

Outdoor workers, people with underlying health conditions and the urban elderly are especially at risk.

- 157 million more vulnerable people were subjected to a heatwave last year than in 2000, and 18 million more than in 2016.
- 153 billion hours of work were lost in 2017 due to extreme heat as a result of climate change. China alone lost 21 billion hours, the equivalent of a year’s work for 1.4% of their working population. India lost 75 billion hours, equivalent to 7% of their total working population. New methodologies have captured this data for the first time.
- Rising ambient temperatures are placing vulnerable populations at increased risks across all regions of the world. Europe and the East Mediterranean are particularly at risk, most likely due to ageing populations living in cities, with 42% and 43% of over 65s vulnerable to heat exposure - markedly higher than Africa (38%) and southeast Asia (34%).
- Heat greatly exacerbates urban air pollution, with 97% of cities in low- and middle-income countries not meeting WHO air quality guidelines.
- Heat stress, an early and severe effect of climate change, is commonplace and we, and the health systems we rely on, are ill-equipped to cope.
- The mean global temperature change to which humans are exposed is more than double the global average change, with temperatures rising 0.8°C versus 0.3°C. assuming each person experienced a heatwave once.

Source: The Lancet Countdown on Health and Climate Change 2018
HEATWAVE CHARACTERISTICS

Southern China 1980-2010 (weather stations)

- Higher seasonal temperatures and a longer heat season
- More frequent, longer and hotter heatwaves

Source: Prof. Gabriel Lau / Chinese University Hong Kong
HEATWAVE CHARACTERISTICS

Differences in Mean heat index in Urban/Rural Areas in Southern China

Cities are warming at a higher rate
Heatwaves could become a silent killer in African cities

Published on 20/11/2018, 12:19 pm

Sponsored content: Policy makers pay more attention to drought and flooding, but extreme heat also poses a significant health risk

India Prime Minister: Heat Wave grips India – Know why Heat waves are called Silent Disaster – Current Affairs 2018

by Modi — May 27, 2018 in MCA

Heat Wave a ‘Silent Disaster’
Extreme Heat is a disaster!
Heat is the leading cause of weather-related death in many places

Source: https://www.nws.noaa.gov/om/hazstats.shtml
HEAT RISK AMPLIFIES OTHER DISASTER RISKS

Co-occurrence with

- Droughts
- Fire
- Hazardous Air Quality
- Cyclones
- Infrastructure Outage

Heat itself is often not considered a disaster, it is not factored into emergency management planning as it should be.

USA, 2017: Hurricane Irma knocks out power, amplifying impacts of a concurrent heatwave.
We are unprepared for a warming future, but can do more together, faster.
OUR VALUE

Why now?

- **Urgency:** Extreme heat is an urgent issue. We need a more active conversation, evidence and information to drive action and advocacy.

- **Connectivity:** Many nations, organizations, and individuals are working on pieces of the problem and finding creative solutions, but knowledge transfer and harmonization is lacking.

- **Capacity:** Capacity is still limited and exists in disparate pockets, especially in high risk parts of the world.

- **Information:** A better understanding of heat risks and a push to drive evidence and risk information into policy and action is needed.

- **Monitoring:** We need to better document events and impacts, how we are reacting, what the emerging issues are, and whether we are getting ahead of the risks?

**Bottom line:**
We can prevent a grand majority of heat impacts, but we are missing opportunities to work together more, better, and faster.
Our Network is enhancing efforts to address heat health risk.

GHHIN is a forum for scientists and practitioners, enhancing global-to-local learning for heat health risk reduction.
WHO WE ARE

The Network is an independent, voluntary, member-driven forum of scientists, professionals, and policymakers focused on enhancing existing efforts to address heat health risk.

It seeks to be a catalyst, knowledge broker and forum for facilitating exchange, learning and identifying needs.
OUR MEMBERS

Diverse expertise and perspectives
Our members self-select, enhancing inclusion of a broad range of organizations and professionals from around the world.

Compatible motivation
The mission and values of our members are expected to be compatible with the GHHIN vision.

Scientific integrity and shared principles
Members will be encouraged to uphold scientific integrity and principles of good public health practice.

Includes: Government agencies / academic institutions / international organizations / NGOs / private sector boundary institution / individuals in relevant fields
GHHIN OBJECTIVES

1. **Awareness**
   - urgently improving awareness of the disaster that increasing extreme heat poses to human health, wellbeing, and productivity worldwide

2. **Partnership**
   - catalyzing and sustaining interdisciplinary partnerships and co-learning between research and practitioners across relevant government, academic, private sector and civil society bodies

3. **Synthesis**
   - synthesizing and advancing science and technology available for decision making and risk reduction across sectors and time scales

4. **Expertise**
   - improving access to expert resources and opportunities for learning, exchange, and engagement

5. **Leadership**
   - identifying and promoting action to address critical gaps in research, knowledge and action

GLOBAL HEAT HEALTH INFORMATION NETWORK

#HEATHEALTH
www.ghhin.org
WHAT WE DO

We improve the capacity of governments, organizations, and professionals to protect populations from the avoidable health risks of extreme ambient heat.

FOCUS

The Network brings together the work and progress of its members to create a more holistic picture of the needs, science, and strengths across the network.

Moving towards: Affiliated research projects, technical working groups
COMMON SCIENCE PILLARS OF HEAT-HEALTH

1. Capacity and partnerships to manage heat risk
2. Understanding heat risk: research, vulnerability and impacts
3. Observation, data and forecasting, and early warning products for action
4. Actions to manage heat risks: interventions and effectiveness
5. Engagement, outreach and communication

Community building and knowledge brokering ➔ Scientific synthesis and technical harmonization
<table>
<thead>
<tr>
<th>Relevant Projects</th>
<th>Description</th>
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<tbody>
<tr>
<td>CSRD</td>
<td>Climate Services for Resilient Development</td>
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<tr>
<td>ITHRC</td>
<td>Tackling extreme heat - changing behaviours, changing policy</td>
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<td>CRPR</td>
<td>PROJECT: Deepening and Expanding Heat Health Action in India</td>
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<td>ISET</td>
<td>Protecting Urban Livelihoods from Climate Change - Building Heat Stress</td>
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<td>HEATSHIELD</td>
<td>Resilience amongst Da Nang City's most Vulnerable Worker</td>
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<td>ACASIS</td>
<td>Addressing the negative impact of increased workplace heat stress on the</td>
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<td>health and productivity of five strategic European industries: manufacturing,</td>
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<td>construction, transportation, tourism and agriculture</td>
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<td></td>
<td>ACASIS: Alert aux Carrioles Au Sahel et à leurs Impacts sur la Santé</td>
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<td>Climate Centre</td>
<td>Red Cross Red Crescent CLIMATE CENTRE: reducing the impacts of climate</td>
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<td>change and extreme weather events on vulnerable people</td>
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<td>NIHHS</td>
<td>NIHHS helps decision makers prepare for extreme heat events days, months,</td>
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<td>and years in the future.</td>
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<td>UCAR</td>
<td>UCAR Heat Wave Awareness Project</td>
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<td>Heat Wave Risk Perceptions</td>
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<td>EuroHEAT online heatwave forecast</td>
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<td></td>
<td>Developing mitigation and risk prevention and management strategies</td>
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<td>concerning the urban heat island (UHI)phenomenon</td>
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<td>EPSRC</td>
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<td>Swiss TPH</td>
<td>World Urban Database</td>
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<td>World Weather Research Programme</td>
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Learning Exchange

Twinning learning and teaching opportunities through:

- Workshops
- Webinars and Teleconferences
- Hands-on training placements
- Development of training materials and courses on relevant subjects
- Professional mentoring

Assessment of Heat Action Plan Intervention Effectiveness

Conversation – observation – relationship building

Currently taking place in US, Canada, Europe – but not informed by one another.
Monthly Newsletter

Global Heat Health Digest
Knowledge and information to address the global challenges of extreme heat and human health

August 2019

Upcoming Expert Debrief on 2019 Heatwaves
The record breaking 2019 Northern Hemisphere heat season has challenged communities and resulted in thousands of preventable deaths and hospitalizations across North

Monitoring Health Impacts of Extreme Heat in North America

Pre-season trial runs of Heatwave Early Actions in Hanoi, Viet Nam
In advance of a heatwave affecting Hanoi from 19-21 July, 2019, Red Cross cooling centers and other early actions were tested in an attempt to reduce the occurrence of heat-related symptoms in vulnerable populations. Read more >>

As world warms, it's time to get serious about heat stress: lessons from India
Heat-related deaths and diseases are on the rise in India. With unprecedented high-temperature conditions in recent years, urgent action is needed to protect vulnerable populations. Read more >>

Upcoming Heat Health Events

31st annual conference of the International Society for Environmental Epidemiology (ISSEE 2019)
23-28 August 2019 / Utrecht, Netherlands

14th International Congress of Physiological Anthropology
24-27 September 2019 / Singapore

C40 World Mayors Summit
8-12 October 2019 / Copenhagen

5th International Conference on Countermeasures to Urban Heat Islands
2-3 December 2019 / Hyderabad, India

International Climate Services Conference 6
10-14 February 2020 / Paris, India

Symposium on Challenges for Applied Human Biometeorology
2-3 March 2020 / Freiburg, Germany

Are you presenting at any of these events on heat and health? Let us know, and share your presentations and outcomes with the Network!

http://www.ghhin.org/subscribe
Regional Climate Trends

In 2017, North America experienced a range of unusual temperatures across much of the continent. This was due to a combination of factors, including El Niño and the polar vortex. In some areas, temperatures were unusually high, while in others, they were below average. This resulted in a range of impacts on human health, with some regions experiencing heatwaves and others experiencing cold snaps.

Impacts of Heat on Health

Heat waves can have significant impacts on human health, as they can lead to increased hospitalizations and mortality. In North America, heat waves have been associated with a range of health outcomes, including heat-related illnesses, respiratory diseases, and cardiovascular events. The health impacts of heat waves are particularly significant in vulnerable populations, such as older adults and individuals with pre-existing health conditions.

Heat Interventions

The current heat health intervention strategies have largely been driven by local and national heat health plans. These plans often include a range of strategies, such as public awareness campaigns, early warning systems, and emergency response plans. The effectiveness of these interventions can vary depending on the local context and the severity of the heat wave.

Future Frontiers of Heat Management and Key Challenges

Heat waves have become more frequent and intense in recent years, and it is expected that this trend will continue in the future. As a result, there is a need for further research and development of new strategies to manage heat waves and reduce their impacts on human health. This includes the development of new technologies, policies, and interventions that can be used to reduce the exposure to heat and improve resilience to heat waves.
Regional Climate Information for Heat Health Preparedness

WMO has designated several Regional Climate Centers (RCCs) which provide climate predictions for their regions (temp and precip at a minimum) and provide training and capacity building.

Regional Climate Outlook Forums (RCOFs) take this information a step further by convening stakeholders to interpret and apply this information in many sectors.
An example of RCOF information from the Caribbean (CariCOF)

CariCOF produces quarterly health bulletins that interpret climate information for impacts from disease vector population changes to mental health impacts.

CariCOF also produces a separate monthly long-range heat outlook during heat season which puts predictions in a climate context.
1st Global Forum on Heat and Health
December 2018 / Hong Kong, China
Occupational heat strain directly affects workers’ health

Impacts include elevated risk of dehydration, kidney disease, work accidents, and lost work productivity.

Loss of productivity and income hinders the ability of individuals to live healthy and productive lives.
Urban environments magnify heat exposure

Dense and vertical constructions, extensive use of heat retaining materials, limited vegetation cover, and heat generation from energy use in cooling and transport all contribute to urban heat island effects.

Urban Heat Islands, and micro-heat islands within cities, increase exposure risk to local inhabitants.
2nd Global Forum on Heat and Health
July 2020 / Copenhagen, Denmark

Look for the Save the Date soon.
Sign up for our digests at https://ghhin.org/
Ways to Participate
1. Subscribe!
2. Share
3. Americas Pilot Projects
4. Identify heat plans & resources
5. Contribute to National & Regional Heat Profiles

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