Heat, heatwaves, and health in a changing climate

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• People are unnecessarily suffering & dying in the heat
  • All heat-related deaths potentially preventable
• Other heat-related effects include occupational health & productivity; increased sports injuries & illnesses; adverse pregnancy outcomes
• Core body temperature needs to be maintained within narrow range
  • Multiple factors substantially affect these limits
• Exposure to heatwaves has been increasing
  • In 2020, adults older than 65 years were affected by 3.1 billion more person-days of heatwave exposure than the 1986–2005 average

Heat illness – a spectrum
• Mild
  – Heat rash
  – Heat edema
  – Heat cramps
• Moderate
  – Heat exhaustion
• Severe
  – Heat stroke
• Heat-related mortality significantly underestimated
  – Official U.S. estimate about 700 annual deaths, based on 2004-2018 data
  – Modeled estimates around 12,000 annual deaths (7,400 to 16,500)
• Heat exacerbates inequities
• Heatwave early warning and response systems and heat action plans are critical to reduce current and future risks
  – Multiple ways to stay cool without air conditioning
  – Long-term infrastructure plans needed
• Magnitude and pattern of future health risks will depend on the extent of adaptation and mitigation
  – Without adaptation and mitigation, heat-related mortality expected to increase dramatically
  – One estimate for the US, without adaptation and mitigation, suggests by 2100 there could be 97,000 to 134,000 additional annual deaths
• Urgent investments are required in research & risk management
Heat is an all-of-society problem

**People**
Heat exacerbates risks of:
- Social inequity, illness and death

Requiring action from:
- Public health; labour; social sectors; physiology; medicine; sports; etc.

**Environment**
Heat exacerbates risks of:
- Fires; poor air quality; water scarcity and drought; cyclones; UV radiation

Requiring action from:
- Environment; meteorology; climatology; etc.

**Infrastructure**
Heat exacerbates risks of:
- Urban heat islands; emergency and power service disruptions; poor quality housing

Requiring action from:
- Architecture, engineering, urban planning; etc.
Selected sources for more information

- Global Heat Health Information Network: https://ghhin.org