Towards healthy public policy for heat health: Making a case for a paradigm shift

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Abstract

Policies around heat health in India have evolved rapidly over the last decade and the National Programme on Climate Change and Human Health has emerged as a flagship programme. Management of heat related illnesses, a continuum from mild symptoms to fatalities, involve collaboration across multiple agencies. The prerogative of preventing mortality has led to an acute response in the disaster framework. Recognising heat health as a slow disaster or a long complex crisis, there is a need to evolve to more decentralised and community-centric approach.

India has taken several important and constructive steps over the last decade and the National Programme on Climate Change and Human Health (NPCCHH) has emerged as a flagship health programme on climate change and health.1 The case of heat health, pursued with the NPCCHH is a case in point.

It is important to recount a brief history of the evolution.2 Responding to the challenges in connection with climate change, the Government of India launched the National Action Plan for Climate Change (NAPCC) in 2008 to mitigate and adapt to the adverse impacts. Four new Missions were subsequently introduced in 2015: promoting wind energy, building preparedness to deal with impacts on human health, more effective management of coastal resources and harnessing energy from waste. The National Action Plan for Climate Change and Human Health (NAPCCHH) was thus prepared in 2018. The overarching goal is to reduce morbidity, mortality, injuries, and health vulnerability due to climate variability and extreme weathers and the core objective is to strengthen health care services against adverse impact of climate change on health. The conceptualisation on heat related illnesses (HRI) rightly identifies that the outcomes can be both a direct effect of exposure to heat or a worsening of underlying respiratory, cardiovascular, and renal morbidities. It was thus explicitly stated that HRIs constitute a continuum from mild symptoms to fatalities.

As with all intersections of climate change and health, heat health entails the collaboration and synergy of two streams – the meteorological and the public health including medical care. In the Indian context however, the National Disaster Management Authority (NDMA) is the nodal agency for heat risk reduction and have been tasked with preparing heat action plans. The Ministry of Health and Family Welfare (MoH&FW) is the nodal agency for the health aspects of heat wave and preparing guidelines on prevention and management of heat related illnesses and the National Centre for Disease Control (NCDC) is the implementation agency.

Heat Index is a measure of how hot it really feels when relative humidity is factored in with the actual air temperature. The India Meteorological Department (IMD) and the National Disaster Management Authority (NDMA) jointly issue colour code impact-based heat warnings. The Indian classification was introduced experimentally on 20 July 2023: Green (Heat Index less than 35 degrees Celsius), normal day; Yellow Alert (36 to 45 degrees Celsius), heat

alert; Orange Alert (46 to 55 degrees Celsius), severe heat alert for the day; to, Red Alert (higher than 55 degrees Celsius), extreme heat alert for the day.3 It was revised to higher temperature categories on 4 April 2024: Green (less than 40 degrees Celsius); Yellow (40 to 50 degrees Celsius); Orange (50 to 60 degrees Celsius); and, Red (higher than 60 degrees Celsius).4

Interestingly, at about the same time, the US National Weather Service (NWS) and the Centers for Disease Control and Prevention (CDC) introduced a new category of heat risk on 22 April, Earth Day – Magenta, a category above Red.5 It is a new online heat risk system that combines meteorological and medical risk factors with a seven-day forecast. It factors in three parameters: how unusual the heat is for the time of the year; the duration of the heat including both daytime and nighttime temperatures; and if those temperatures pose an elevated risk of heat-related impacts (based on data from the CDC). Magenta is categorised as 'extreme' - a level of rare and/or long-duration extreme heat with little to no overnight relief affects anyone without effective cooling and/or adequate hydration. The US Magenta begins at about 53 degrees Celsius and therefore corresponds to the Indian Red.

The NDMA has been assigned the role of the nodal agency for heat health (and for air pollution and health conditions), presumably for the associated risks of mortality. This has led to framing of policies and practice through an acute disaster management lens, from a standpoint of the precautionary principle. The notion of a health emergency inevitably leads to a response framework that is too immediate and the spotlight moves away from the gradual effects and impacts. The concept of slow disaster, a long complex crisis, has emerged from a more nuanced understanding of the COVID-19 response and may help build a more sensitive climate resilient health system that India needs.6 Magenta of the NWS-CDC classification characteristically deals with "long-duration heat" rather than a single day's temperature, and that is a refinement India may need to consider.

Heat health response plans in India have not yet factored in the social determinants of vulnerability to heat. Recent sensitive analyses have revealed higher ambient temperatures among communities and neighbourhoods that have lower income and are under-resourced, including densely populated urban dwellings, housing characteristics, lack of access or air cooling or air conditioning.7 Vulnerable individuals living in these disproportionately hotter settings such as the elderly, infants and young children, pregnant women, those with chronic morbidities and outdoor workers are at higher risk for HRIs.

While national, state or city level plans provide overall guidance and lay down the foundations, the last-mile challenges lie in identifying and locating communities at high risk for heat-health hazards.8 Heat vulnerability is increasingly being mapped to construct micro-climatic zones by capturing indicators of environmental and sociodemographic characteristics associated with adverse health outcomes during extreme heat events. These are overlayed with vulnerability information obtained through health surveys, analysis of mortality data, chronic disease databases if available and records of ambulance calls.

The way forward is to make a paradigmatic shift shifting from the current disaster management approach to a more decentralised one. The National Health Mission (NHM) provides ample space through its planning and communitisation models that should leverage community-derived knowledge about practices among the most at-risk individuals and strengthen local health systems to effectively respond to heat health challenges.

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