

## COVID-19 and heatwaves: a double whammy for Indian cities



The world urgently needs a planetary health perspective to properly address the challenge posed by COVID-19.<sup>1</sup> The COVID-19 pandemic and extreme heat events are already coinciding, further threatening community health in many cities across the globe. The onset of the hot season presents individuals and local decision makers with new challenges on the optimal ways to stay safe from both heat stress and COVID-19.

The India Meteorological Department has predicted that heatwave conditions are likely to be severe in 2020.<sup>2</sup> In India, heatwaves typically occur between March and July.<sup>2</sup> By May, the temperature had already started soaring in India, and some cities had already reported maximum temperatures of more than 48°C.<sup>3</sup>

Effective public health interventions for the prevention of heat-related illnesses and mortality during heatwaves—such as leaving home for cooler public spaces, shopping malls, or gardens, seeking ambulatory medical care, and checking on vulnerable people<sup>4</sup>—might be impossible or in contradiction to public health advice on social distancing and the stringent lockdown measures for containing the transmission of COVID-19.

In India, extreme heatwave conditions might exacerbate and introduce additional challenges for individuals, health workers, health facilities, and communities in the management of COVID-19, considering India's health inequalities, marked economic and social disparities, and distinct cultural values and geographical conditions. Severe heat waves in Indian cities could endanger the lives and health of people living in poorly ventilated, hot, crowded homes, low-income urban slum dwellers, people with poor options for self-quarantine or for maintaining the requisite hygiene levels. Furthermore, many of the people who are most vulnerable to COVID-19 are also vulnerable to extreme heat, including older people, those with pre-existing medical conditions (such as cardiovascular disease, respiratory illness, or diabetes), homeless people, and outdoor workers.

India's historically hot summers are being intensified by climate change, with deadly consequences. In 2010, the city of Ahmedabad in Gujarat state suffered a record-breaking heat wave that killed more than 1344 people.<sup>5</sup> In the wake of this silent disaster, the Ahmedabad Municipal Corporation collaborated with public health and policy experts to develop and implement a heat

action plan. Ahmedabad's 2013 plan was the first heat action plan and early warning system in south Asia.<sup>6</sup>

The Ahmedabad heat action plan aims to provide a framework for the implementation, coordination, and evaluation of extreme heat response activities. Important activities under the heat action plan include public awareness and community outreach to communicate the risks of heatwaves, an early warning system and inter-agency coordination, and building the capacity of medical officers and frontline health workers for the prevention and management of heat-related illnesses.<sup>6</sup> According to a 2018 study,<sup>7</sup> this was associated with a reduced death rate on hot days, with more than 1100 deaths avoided each year after it was implemented.<sup>7</sup> It is now widely recognised that many heat-related risks are manageable through timely warnings about an impending event and adoption of a heat action plan.

Public health services and government machinery at all levels are embroiled in the battle to contain the spread of the COVID-19 pandemic, but cities also need to be ready to deal with the adverse effects of severe heatwaves. Indian state and local city administrations should update their heat action plans as required by the National Disaster Management Authority<sup>2</sup> and should implement various activities for the prevention and management of heat-related illness. For example, the personal protective equipment (PPE) used by frontline workers makes it more difficult to lose body heat. To optimise endurance and cognitive performance while wearing PPE, workers should seek to lower their body's core temperature at the onset of work and attenuate it during work,<sup>8</sup> and cooling down, hydrating, and recovering between shifts should be advised, because heat stress can increase with consecutive days of exposure.

In the present situation, outreach and communication about heat stress is even more important. City administrations should emphasise remote services such as telehealth, community phone trees, and telephone hotlines, which check in on vulnerable people on a regular basis during the heatwave and can be lifesaving. The ambulatory and medical staff should be alert to recognising potential hyperthermia cases and facilitating correct testing, diagnosis, and treatment.

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In the face of the compounded risks from rising heat and COVID-19, communities should be prepared through effective awareness raising and early warning. The local city administration and state government needs to implement appropriate policies for enhancing community and health system resilience. It is also important to coordinate with government and non-governmental social services to reach out to those who are most vulnerable to both risks.

Indian cities should treat heatwaves with the same urgency as the COVID-19 pandemic; a heat action plan, along with other essential measures, will enable better management of the complex and intersecting health risks of COVID-19 during periods of excessive heat and heatwaves.

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