OPINION

To forestall heat deaths, bolster our health data

India was rocked by a cascade of severe weather events in the past few weeks. A late monsoon stalled in the south, a severe cyclone pummelled the northwest, and heavy rains and floods inundated the northeast. The rest of the country was baked by scorching heat waves. The maximum temperatures over central and north India shot up by 5–6 degree Celsius above normal. In Uttar Pradesh and Bihar alone, close to 100 people died in hospitals in the hinterland, as local health officials indicated that their existing ailments were made worse by the searing temperatures.

Roxy Mathew Koll

These severe weather events come with a cost. The sluggish monsoon might delay and stoke uncertainty in the sowing of summer crops. The cyclone and floods displaced tens of thousands of people and resulted in deaths, and a loss of property. The extreme heat caused several deaths and affected the health and wellbeing of a large population across north and east India.

All these seemingly independent events are interlinked. The atmosphere is a sea of floating air above the globe. Perturbations in the air in one place lead to weather changes in another. An early El Niño, characterised by warm waters in the Pacific, weakened the trade winds and delayed the monsoon onset over India.

Weak monsoon winds along with an exceptionally warm Arabian Sea laid the grounds for Biparjoy. This time, the cyclone formed close to when the monsoon was setting in, and sucked the monsoon moisture away. This led to the central and north Indian states hitting a 70–80% deficit during the first 20 days of June. The cyclone, while leading to moist air convection and cloudy skies in the Arabian Sea, also resulted in hot dry air accumulation and clear skies over India. The dry hot air accumulating, clear skies that bring in more of the sun's heat, and the rainfall deficit, ratcheted up the temperature.

The climate crisis has ensured that additional heat accumulates during these events, resulting in more intense heat waves. The El Niño is also getting stronger as oceans absorb more than 93% of the additional heat from global warming. It is, hence, no surprise that the flurry of extreme weather coincided with the global average surface air temperature rise temporarily crossing the 1.5 degrees Celsius threshold during early June. Future climate projections indicate a six-fold rise in heat waves over India by 2060. Geographically, the heatwave zone lies diagonally across the Indo-Pak region and areas covered by it will only expand.

Efficient forecasts and disaster management has reduced the number of deaths due to cyclones and floods. The mortality rate of tropical cyclones plunged by 94% in the past two decades, while that of floods dipped by 49%. This is evident if we compare the 1998 Gujarat cyclone and the 1999 Odisha super cyclone — both of which killed thousands of people — with recent cyclones where deaths are in two digits at the most. This is despite the fact that the number and intensity of cyclones rose dramatically in the Arabian Sea. Though economic and infrastructure loss is still high, the reduction in deaths is a big success story for India.

This is, unfortunately, not the case for heat waves. An assessment by the ministry of earth sciences showed that the mortality rate due to heat waves increased by 62% in the past two decades, corresponding to a 138% increase in heat waves.

Heat waves used to be the third-most severe weather event responsible for mortalities, after floods and cyclones, but jumped to the second spot, behind floods.

To address this, the government initiated a raft of measures. After the deadly heat waves in 2010, Ahmedabad came out with the first heat action plan and several cities followed suit. These plans include early warning systems based on forecasts, public awareness campaigns, and other efforts such as cooling centres and accessible drinking water. This needs to be expanded and made more practical.

What else can we do? The first step is to acknowledge that heat waves are now an annual affair and will intensify in the future. The next step is to assess hotspots where heat waves are on the rise and identify vulnerable communities that need targeted assistance. There is an urgent need for policies that prioritise ecosystem-based urbanscaping that can keep cities and towns cool, architecture and building codes that keep our indoors cool at work and home, and improved health care infrastructure fostering community resilience. Regardless of how long-term policies unfold, if you are caught in a heat wave, stay indoors, reduce physical activity, and try to keep your body cool and hydrated.

But most of all, we need more robust health data. Mortality due to heat waves is very high in Andhra Pradesh, Rajasthan, Uttar Pradesh, Bihar, and Odisha. Long-term climate data is available to identify local heat wave hotspots within the states, so that we can prepare precautions and policies customised for each locality. Though climate data is publicly available and accessible, health and mortality data are scattered and underreported. It is a struggle to obtain even for research purposes.

On average, about 350 deaths per year are directly attributed to heat waves. This is often an underestimation because the mortality data accounts only for the fatalities directly from heatwaves, usually due to heatstroke for outdoor workers. Indirect deaths due to existing ailments aggravated by heat, and deaths that might have occurred later are not counted.

It is possible to predict climate-sensitive diseases and heat-related incidences well in advance, by training forecast models with past climate and health data. The same strategy can be used to foresee potential changes in heat-related health impacts for the next few decades. These predictions can save lives and livelihoods but are feasible only if we have access to health data.

Roxy Mathew Koll is a climate scientist at the Indian Institute of Tropical Meteorology and a lead author and reviewer of recent IPCC reports
The views expressed are personal