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## Undercounted and overlooked: The hidden toll of heat waves on health

*Underestimating the actual impact of heat leads to a dangerous public perception that, as Indians, we have the tolerance to bear it. If vulnerable populations do not perceive heat as a serious threat to life, they will not prioritise protective actions and timely healthcare*



Extreme heat is no longer a seasonal inconvenience but a public health crisis

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As India reels under a scorching summer, the rising mercury is exacting a toll far greater than official figures suggest. For example, in 2019, extreme heat caused an estimated 2.28 lakh deaths in India as per the Global Burden of Disease study, compared to just 215 reported by the National Centre for Disease Control. This massive underreporting masks a growing [public health emergency](#).

Extreme heat affects the human body in multiple ways. When ambient temperature rises, the body activates its cooling mechanisms, such as sweating and redirecting blood to the skin to maintain an optimal internal temperature. Under high heat stress, these systems can crash. Initial symptoms might include heat rashes or cramps, but without intervention, conditions like heat stroke and organ failure can rapidly develop.

Heat strokes are classified into two main types. Exertional heat stroke affects young, healthy individuals engaged in physical activity in high temperatures, such as farmers and labourers. It develops quickly and, if untreated, can be fatal. The other type, the classic heat stroke, on the other hand, creeps in more gradually. Elderly, [children](#), pregnant women, and those with pre-existing medical conditions are particularly vulnerable.

Extreme heat stress also overburdens the heart, kidneys, and metabolic systems. Multiple Indian cities have shown a spike in daily deaths when temperatures exceed a certain threshold, largely due to cardiovascular, respiratory, or renal collapse. Yet, in most individual cases, heat remains an unacknowledged suspect.

There is no specific biomarker to diagnose heat stroke or heat-related death. It's a clinical diagnosis, which is done after taking cognisance of immediate environmental conditions. In the absence of an obvious link (for example, a person collapses while working in the sun and is brought to the hospital immediately), heat-related deaths often get recorded as heart attacks or organ failure. An example from a village in [Pune](#) district during our field assessments underscores this: A middle-aged woman with diabetes and hypertension collapsed in the fields on a hot afternoon, she recovered with little rest and continued working till sunset. Late in the evening, she developed acute chest pain and died. Her exposure to heat likely triggered her death, but the medical report may never reflect that.

To capture information on heat-related health impacts, India has recently launched a national heat-health surveillance system. This is a welcome step in the right direction. However, it relies only on data reported by public health centres. Beyond this, in some cases, administrative or legal pressures or compensation liabilities may discourage attributing deaths to heat. As a composite effect, heat-related deaths often go undetected and unreported.

To overcome the data gaps, researchers have used all-cause death data to identify surges in daily deaths that correlate with rising temperatures. A recent multi-city study from India found an almost 15 per cent increase in daily deaths attributable to extreme heat. Unfortunately, Indian municipalities and health departments do not publish daily all-cause death data as was done during the [Covid-19](#) pandemic. Regular and timely publication of such data is needed to better estimate the real extent of the impacts.

Underestimating the actual impact of heat leads to a dangerous public perception that, as Indians, we have the tolerance to bear it. If vulnerable populations do not perceive heat as a serious threat

to life, they will not prioritise protective actions and timely healthcare. It also has policy consequences. India is already adopting several interventions to mitigate heat-related mortality. However, most of these are driven by the narrow focus on the more visible exertional heat strokes. Most heat action plans revolve around maximum temperature warnings and public advisories urging people to stay indoors, stay hydrated, and take frequent breaks. Health facilities are geared towards managing acute cases, with provisions like cooling beds, ice packs, and increased ambulance readiness during heat waves.

While these interventions are necessary, they do not address the true scale of the effects of heat, particularly on vulnerable populations. We need long-term structural solutions to deal with the actual impact of the heat. These solutions would include better urban planning, mass adoption of climate-resilient buildings, and wider access to affordable and energy-efficient cooling technologies. Simultaneously, vulnerable communities need to be enabled to accurately assess their health risks and take proactive steps to increase their resilience.

Extreme heat is no longer a seasonal inconvenience but a public health crisis. Focusing only on visible, acute cases may offer short-term relief, but ignores the silent, systemic toll. To safeguard the communities, India must adopt a comprehensive, data-driven, and forward-looking strategy that reflects the real risks we face in an increasingly warming world.

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