

The Deadly Heat Wave of Pakistan, June 2015

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Heat wave is an extreme weather condition and the most lethal type of weather phenomenon that is characterized by a prolong period of excessively hot weather with or without high humidity. There is no uniform definition for the “heat wave” as it varies relative to the usual weather conditions in the region and is relative to the normal temperatures for the season. “Heatstroke” is defined as hyperthermia exceeding 41 °C and anhidrosis along with altered mental status.¹ It is associated with high morbidity and mortality, especially if treatment is delayed.²

The Sindh province of Pakistan was recently hit by a devastating heat wave that claimed the lives of more than 700 people in June, according to health officials. Most of the recorded deaths, primarily from heatstroke and severe dehydration, had been in the city of Karachi, occurring within a span of three days. Temperatures in the city went up to over 40 °C and the mercury touched 45 °C on June 22, just short of an all-time high in the city of 48 °C on May 9, 1938.^{3,4}

Hot weather is not unusual during the summer season throughout Pakistan, however, the high temperatures were made worse by frequent power outages that not only aggravated the heat but also crippled the city's water supply system, hampering the pumping of millions of gallons of water to consumers. Moreover, these events unfortunately coincided during the holy month of *Ramadan*, where majority of Muslims observe fasting of approximately

15 hours, during which eating and drinking are ritually forbidden from sunrise to sunset.

The government of Pakistan not realizing the sheer scale of this problem, acted late and inadequately to tackle this mounting crisis. The gravity of situation could be assessed to some extent by the fact that most of the hospital morgues and morgues of social welfare organizations, such as the Edhi Foundation, had been packed to capacity with heatstroke-related deaths. They had to expedite the process of burial of unclaimed bodies earlier to make room in the morgue and also because the temperatures were too high for the cooling facility.

Similarly, government-run hospitals had been swamped with patients suffering from heatstroke and dehydration. A state of emergency was declared in hospitals with medics battling to treat patients. The heatstroke ward in each hospital was either packed to capacity or lacked the facility to manage such patients, forcing the doctors to admit patients in general ward with no heatstroke-specific management facilities.

Recently, the government of Pakistan activated the National Disaster Management Authority to solve this matter. Meanwhile, the Pakistan army and the Pakistan rangers were asked for their support and various relief camps had been set up.³ Plans for using cloud seeding technology to produce artificial rain were also under consideration but experts warn this could take several weeks before the desired effect

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could be seen.⁵

Due to global warming, it is suggested that “mega-heatwave” will become increasingly more common in future (up to 10 times more likely over the next 40 years). Therefore, due to previous events of heat waves in the country as well as in neighboring India claiming hundreds of lives, this current death toll could have been prevented if authorities took serious and timely decisions.

We must follow the example set by Ahmedabad, India, as they initiated South Asia's first early warning system against extreme heat waves, *ie*, “Ahmedabad's Heat Action Plan.” By following this plan, the government should map out areas with high-risk populations, set-up “cooling spaces” inside mosques, public buildings, and malls. However, the most important aspect of this plan is to increase the public awareness using different media, such TV, newspaper, and social media. Providing them simple, but life-saving information such as not venturing out in the afternoon, drinking plenty of fluids, abstaining from fasting if physically weak in these tough conditions.⁶

The government should also alert the residents to forecasts of very high temperatures. Moreover, the health workers should be trained to recognize the early signs and symptoms of heatstroke and initiate timely management. The government should also ensure allocation of adequate

beds for such patients and provisions of adequate water, ice-packs, and continuous supply of electricity.

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