

Commentary

A critical comment on heat wave response plans

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The *European Journal of Public Health*,¹ among others,^{2,3} has recently reported that heat waves are one of the main health risks stemming from climate change. Environmental studies have shown that heat waves will become more intense, more frequent, and longer in the near future.⁴ The way to deal with this risk is a city heat wave early warning system. In this regard, we like to remark a significant point to which most heat wave response plans fail to give proper consideration.

Most warning systems developed in European cities are activated when ambient temperature exceeds an established threshold. Nevertheless, this threshold is usually based on the relationship between mortality and temperature, to the detriment of other health outcomes, such as hospital admissions. It has recently been shown that mortality and hospital-admission patterns are different during heat waves. In the city of Madrid, the main difference between mortality and hospital-admission patterns has been reported to be due to heat-related disease causes,⁵ meaning that, when there is a heat wave, circulatory diseases are the main cause of mortality, though not of hospital admission. These results agree with those previously published on the short-term effects of heat waves in Greater London.⁶ High temperatures provoke increased platelet and red cell counts, blood viscosity, and plasma cholesterol levels during heat stress, and mortality from coronary and cerebral thrombosis.⁷ Within a short time of exposure to high temperatures, affected subjects rapidly progress to fatal health outcomes.⁸ Accordingly, such persons die before they can be admitted to hospital, a factor that is of the essence when it comes to designing heat wave warning systems. Heat wave response plans should therefore be triggered before the arrival of the heat wave, and this can be easily achieved thanks to the fact that meteorological forecasting is highly reliable within a 24–48 h timeframe. Early activation of prevention plans,

particularly insofar as social services are concerned, allows for early observation of persons susceptible to being affected by heat waves and implementation of actions before onset of the first symptoms can lead to premature death due to excess heat.

In conclusion, prevention of adverse heat wave-related health effects must be set in motion 1 or 2 days before and *not* on the same day as the designated mortality–threshold temperature is exceeded.

References

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