

DAILY MORTALITY AND OFFICIAL THRESHODLS FOR HEAT WAVES IN SPAIN

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Background and Aims: After the 2003 heat wave the Spanish Ministry of Health developed a heat health watch warning systems based on simultaneous exceeding of city-specific thresholds for minimum and maximum daily temperatures. The aim of this study is to quantify the effects of heat waves, based on official thresholds, on total daily mortality.

Methods: Total daily mortality and minimum and maximum temperatures for the 51 capital cities were collected from June to September for the period 1995-2004. Data was analysed using GEE for Poisson regression. Relative Risk (RR) of total daily mortality was quantified for the current and previous day of official threshold exceeded.

Results: The number of days in which the thresholds were exceeded show great inconsistency, with provinces with great number of exceeded days adjacent to provinces that did not exceed or rarely exceeded. Highest effects of extreme hot days were more frequent in lag one than for the current day, ranging from 11 to 56%. Only in the largest cities like Madrid, Barcelona and Seville were short-term effects for both lags were also statistically significant.

Conclusions: Thresholds for the Spanish heat health watch warning system do not reflect well the impact of heat on mortality. Criterion for the choice of thresholds must be based on epidemiological instead of only on meteorological basis.