WEATHER AND CHILD MORTALITY IN CAPE TOWN, SOUTH AFRICA

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Background and Aims: Evidence for the impacts of temperature upon daily mortality has been based upon studies on high income populations in Europe, East Asia and North America and children's mortality has been little studied. We describe the associations of heat and cold with child mortality in a population with a temperate climate, large heatlh inequalities and high rates of child mortality.
Methods: Individual mortality data for the population Cape Town (2001-2004) were divided into age and cause of death groups. The association of ambient temperature with daily mortality was analysed using Poisson regression models, adjusted for time varying confounders, including season, particulate air pollution, influenza, day of week, relative humidity and autocorrelation. To quantify the temperature effects, linear associations of lag 0-2 temperature above a heat threshold and lag 3-13 below a cold threshold were assumed. Here we focus on children (ages 0-14).
Results: Child mortality increased with heat, by 5.29% (95% CI 2.38,8.28) per °C above 19°C. The association was present for all causes of death and in particular for infectious diseases (6.68% (3.16,10.32)). Cold temperatures (below 12^{o}C) were also associated with excess mortality. The effects of heat on child mortality appear to be delayed and there is little evidence of short term mortality displacement.
Conclusions: Hot and cold weather have important associations with mortality in children in Cape Town. This suggests a large avoidable burden of heat on children in this population, and further research should be undertaken on potential public health interventions.