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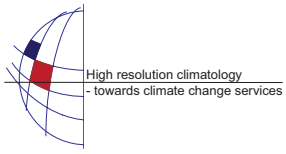

Impacts of hot and cold temperature extremes on hospital admissions for cardiovascular diseases

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Elevated mortality associated with high ambient temperatures in summer represents one of the main impacts of weather extremes on human society. Increases in mortality during heat waves were examined in many European countries; much less is known about the effects of heat waves on morbidity, measured for example by the number of hospital admissions. Relatively less understood is also cold-related mortality and morbidity in winter, when the relationships between weather and human health are more complex, less direct, and confounded by other factors such as epidemics of influenza/acute respiratory infections.

The present study examines links between hot and cold temperature extremes and daily hospital admissions for cardiovascular diseases in the population of the Czech Republic over 1994-2007. We make use of a recently completed database of all admissions for cardiovascular diseases to hospitals in the area of the Czech Republic since 1994, with a detailed classification of diseases and detailed information concerning each patient (in total 1,467,675 hospital admissions over 1994-2007). The main goals of the study are (i) to identify excess/deficit morbidity during and after periods of heat waves in summer and cold spells in winter, (ii) to compare the links for individual diseases (e.g. acute myocardial infarction, I21; angina pectoris, I20; cerebral infarction, I63; brain ischemia, I64) and to identify those diagnoses that are most closely linked to weather, (iii) to identify population groups most vulnerable to temperature extremes, and (iv) to compare the links to temperature extremes for morbidity and mortality. Periods when morbidity data were affected by epidemics of influenza and acute respiratory infections in winter were excluded from the analysis.