USING HEALTH INDICATORS IN A HEAT WARNING SYSTEM

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Background and Aims: Since 2004, France operates a National Heat Wave Plan to reduce heat-related impacts. Preventive actions are implemented during summer and are reinforced in case of a heat wave warning. A monitoring of the health situation in the impacted regions can provide useful elements for the decision-makers to select the measures to be activated in priority. However, due to the short time available during a warning, the nature and the use of the health indicators must be clearly defined.

Methods: Based on a literature review and an expert consultation, we selected a limited number of morbidity and mortality indicators, taking into account their reactivity and data availability and quality. They were analyzed using two statistical methods to detect health impacts of heat waves: historical mean if at least two years of data are available and a control chart method if there is less than two years of data available.

Results: We initially identified 20 morbidity and mortality indicators, and restricted this list to one mortality indicator and five morbidity indicators: total mortality; total emergency admissions, for all ages and >75 years-old (which are the most vulnerable group); emergency admissions for heat-related diseases; number of calls to "*SOS médecins*", a 24-hour medical service; and number of calls to the emergency medical service centre. All are available on a daily basis, with a lag of 1 to 7 days.

Conclusions: Health indicators used during the warning must be able to rapidly identify a possible impact, in order to orientate preventive actions. They must be considered as tools for decision-makers and do not substitute to further epidemiological studies, which are necessary to better understand the vulnerability to heat, the dynamics of the health impact of heat waves, and to optimize the long-term response.