

# Health impact of the 2006 heat wave based on syndromic surveillance in Gironde, France

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## OBJECTIVE

To assess health impact of heat wave occurred in July 2006 through data from emergency activity and mortality from syndromic surveillance systems in Gironde, a department in south-western France.

## BACKGROUND

In July 2006, an important heat wave occurred in France, and generated alarm of all the public health services. In Gironde, a department in region Aquitaine, the level of "warning and actions" of the Heat Health Watch Warning System, based on an analysis of weather-mortality relationship, was activated from the 16<sup>th</sup> and the 27<sup>th</sup> of July, when the limits of biometeorological indicators were reached [1].

## METHODS

The following health indicators were collected everyday from through three sources:

- Activity of emergency ambulance service (Samu) and hospitals admissions, through a monitoring system on emergency departments based on computing network in Aquitaine developed by health regional agency (Agence regionale d'hospitalisation, ARH);
- Number of visits for heat-related symptoms (heat stroke, dehydration and sunstroke) realized by SOS Médecins, an association of emergency general practitioners (GP),
- Mortality data were registered from the national institute of statistics (Insee) for Bordeaux, the biggest city in Gironde.

Moreover, each heat-related death that occurred in the department during the heat wave had to be reported by health professionals.

Meteorological temperatures observed in Bordeaux from June to August were transmitted by Meteo France (The French Meteorological office).

Two methods based on historical activity were used to identify an unusual variation of indicators: methods of "individuals controls charts" and variation percent compared with previous weeks.

## RESULTS

The heat wave generated medical consequences such as a specific increase of the activity of Samu of Bordeaux during alert days (figure 1). In addition, over the second fortnight of July, period of heat wave, activity of Samu was increased over 24% when compared to the same period in 2005. We observed an increase of emergency hospital admissions of people aged 75 and over and an increase of recourses to the GP of association S.O.S

Médecins Bordeaux for heat-related pathologies in all the age groups.

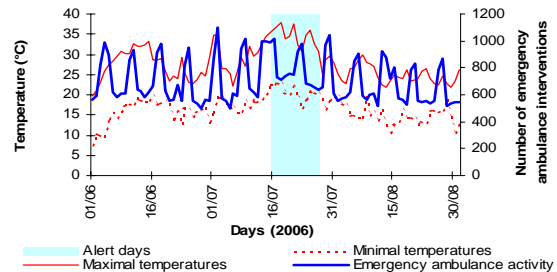


Figure 1. Number of emergency ambulance interventions (source: Samu Bordeaux) and minimal and maximal temperatures (source: Météo-France) according to the period of alert days.

Figure 2 showed an unusual increase in the number of visits reported by SOS Médecins for heat related pathologies.

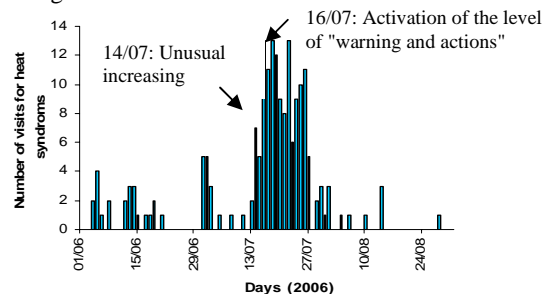


Figure 2. Number of SOS Médecins visits for heats syndromes between the first June and 31 August 2006.

Although 9 heat-related deaths were declared in Gironde, no significant increase in mortality during the heat wave was noted.

## CONCLUSION

The impact of the heat wave of July 2006 in Gironde was relatively moderate in term of morbidity and mortality compared with the heat wave of August 2003. Despite some specific variations of the medical activity, no hospital over-activity was showed in relation with the heat wave. However, the daily monitoring of the medical activity of SOS Médecins showed unusual variations of the indicators collected, suggesting a health effect on the whole population. Thus, the analyses of these data show the complementarity of the different syndromic systems in order to detect unusual situations and to adapt preventive actions, especially in period of heat wave.

## REFERENCE

- [1] Pascal M, et al. France's heat health watch warning system. *Int J Biometeorol.* 2006;50(3):144-53.