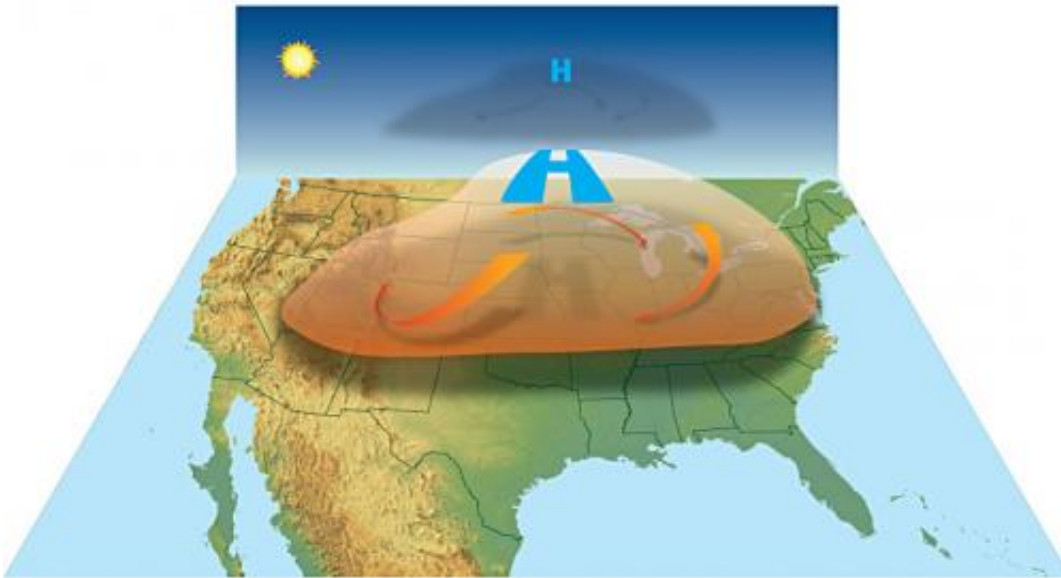


# 2011 Houston heat wave led to significant rise in emergency department visits

February 10 2015, by Hannah Rhodes

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Formation of a heat wave. Credit: U. S. National Weather Service

Houston experienced its hottest summer on record in 2011, resulting in 278 excess emergency department visits per day during the August heat wave, according to research from The University of Texas Health Science Center at Houston (UTHealth) published recently in *Environmental Health*.

"The 2011 heat wave led to significantly more emergency department visits than would be typical of that period; however, [mortality rates](#) did not change much," said Kai Zhang, Ph.D., assistant professor in the

Department of Epidemiology, Human Genetics & Environmental Sciences at UTHealth School of Public Health.

For 30 out of 31 days in August, temperatures exceeded 100 degrees in Houston. Emergency department admissions among those ages 65 and older rose by 8.9 percent during the heat wave. Studies have shown that the elderly are especially affected by excess heat.

Previous research has established that [heat waves](#) in California and Chicago led to high mortality rates and emergency department visits, especially in Chicago where a heat wave caused 692 fatalities.

"It could be that the mortality rate did not change much in Houston because 98 percent of residents had air conditioning and were acclimated to the hot weather. In Chicago, only 76 percent of residents had air conditioning, which may have been a factor for the number of heat wave-related deaths there," said Zhang.

A health-based heat warning system may help prevent emergency department admissions in the future in Houston, Zhang says. According to the National Weather Service Houston/Galveston office, the criteria used for heat advisories is having two consecutive days with a heat index at 108 degrees or higher, either forecast or observed. Heat index is a combination of temperature and relative humidity.

"These findings could provide insights for local government agencies and communities to design better preparation to reduce adverse health effects of future heat waves," said Charles Begley, Ph.D., co-author of the study and professor in the Department of Management, Policy & Community Health at UTHealth School of Public Health.

Provided by University of Texas Health Science Center at Houston

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