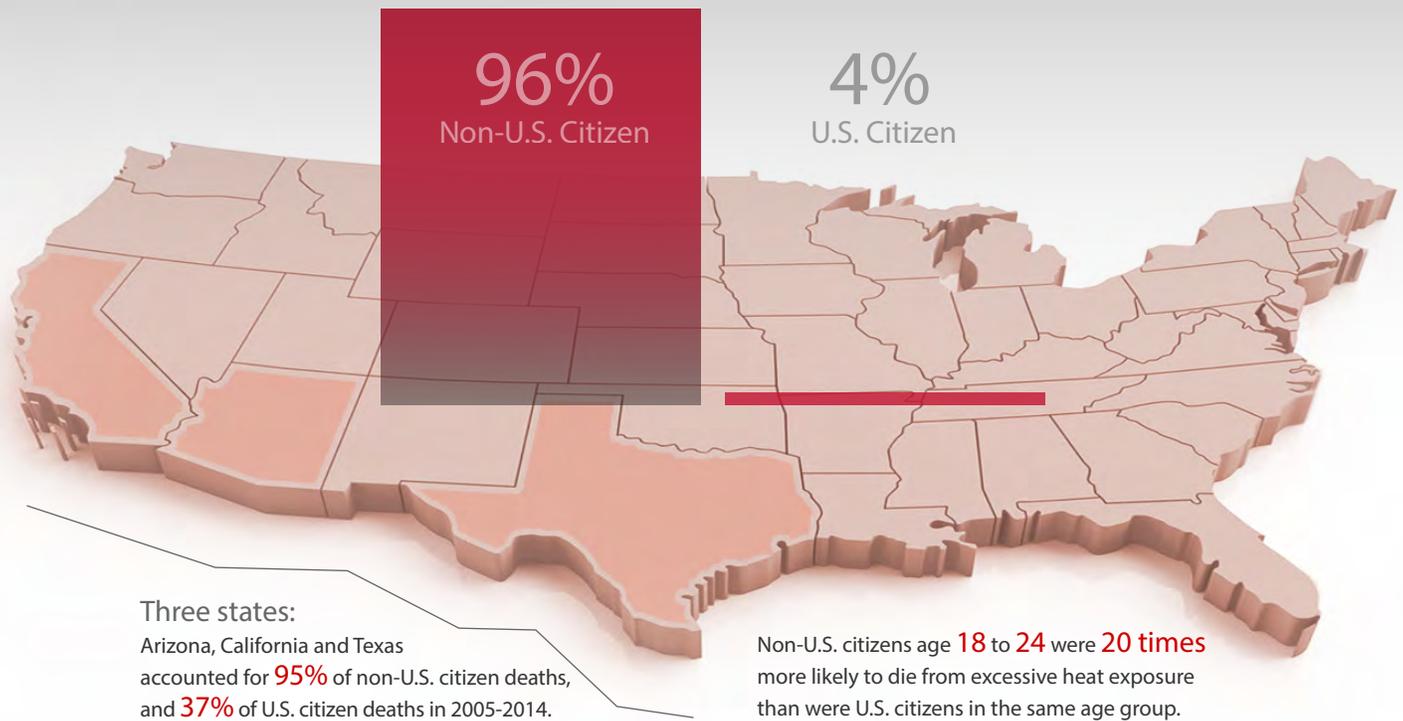


Differences in Heat-related Mortality by Citizenship Status: United States 2005-2014

Estimated Percentage of Heat-related Deaths by Citizenship (2005-2014)



Heat-related deaths accounted for 999 (2.23%) deaths among non-U.S. citizens compared with 4,196 (0.02%) deaths among U.S. citizens.

BACKGROUND

Heat-related illnesses are a leading cause of death from natural weather or environmental events.

In the U.S., an average of 658 people died per year from 1999 to 2009 due to exposure to excessive natural heat.

Crop workers, who are more likely to be young adults and reside in Southwestern states, are at higher risk of heat-related death or illness.

Crop workers are more likely to be non-U.S. citizens.

Climate change is increasing the overall temperature and number of extreme heat events (USGCRP, 2016). These changes can cause fatal heat stress conditions, such as heat stroke.

The identification of racial, ethnic, geographic and socioeconomic health disparities can inform interventions to advance health equity.

PUBLIC HEALTH IMPLICATIONS

With climate change, long-term heat-related mortality is expected to increase. There is a significant disparity in the number of heat-related deaths for non-U.S. citizens. If continued, this will greatly effect the loss of life and the economy in our communities.

Climate change and extreme heat threaten everyone's health, but current public health interventions may not help prevent heat-related deaths for non-U.S. citizens.

Excluding non-U.S. citizens studies on heat-related morbidity and mortality could result in underestimating the number of heat-related deaths in the U.S. by almost 20%, which may affect our ability to prepare for and respond to heat events.

Compared to U.S. citizens, the young age at which non-U.S. citizens have died due to excessive heat exposure is concerning and emphasizes the importance of reducing risks for this vulnerable population.

RECOMMENDATIONS

Data collection should be standardized nationally to identify how risk factors differ by citizenship status. Also: 1) Researchers should more clearly characterize risk for excessive heat exposure among non-U.S. citizens, such as dangerous border crossing or migrant or seasonal farmwork. 2) States should track non-U.S. citizen deaths and implement specific interventions to prevent or reduce heat exposure, including addressing language and cultural barriers to ensure protection for high-risk groups. 3) Federal agencies, with help from state and regional representatives, should standardize public health case definitions that currently exclude non-U.S. citizens and cause underestimation of the burden of heat-related deaths.

Methods: Researchers used mortality data from the National Vital Statistics System from 2005 to 2014. American Community Survey was used for population estimates of citizens and non-U.S. citizens. Researchers calculated the standardized mortality ratio and relative risk for heat-related deaths between non-U.S. and U.S. citizens nationally.

Taylor et al. 2018. *AJPH* 108, no. S2, S131-S136.