

Spatial Variation in the Effect of Extreme Heat Events on Warm Season Pediatric Acute Care Utilization

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BACKGROUND

Climate change is increasing the frequency and severity of extreme heat events. Pediatric patients are uniquely susceptible to high temperatures due to their physiology and behavioral limitations.

METHODS

1. All unscheduled pediatric (0-19 years) hospitalizations and ED visits during the warm season (May-September) from 2005-2019 obtained from California HCAI
2. Time stratified case crossover to assess association between extreme heat and acute care utilization
3. Within-community matched design coupled with Bayesian model to assess spatial variation
4. Random effect metaregression conducted to examine how community level characteristics modify heat’s effects

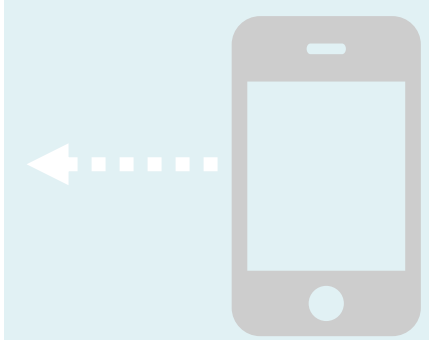
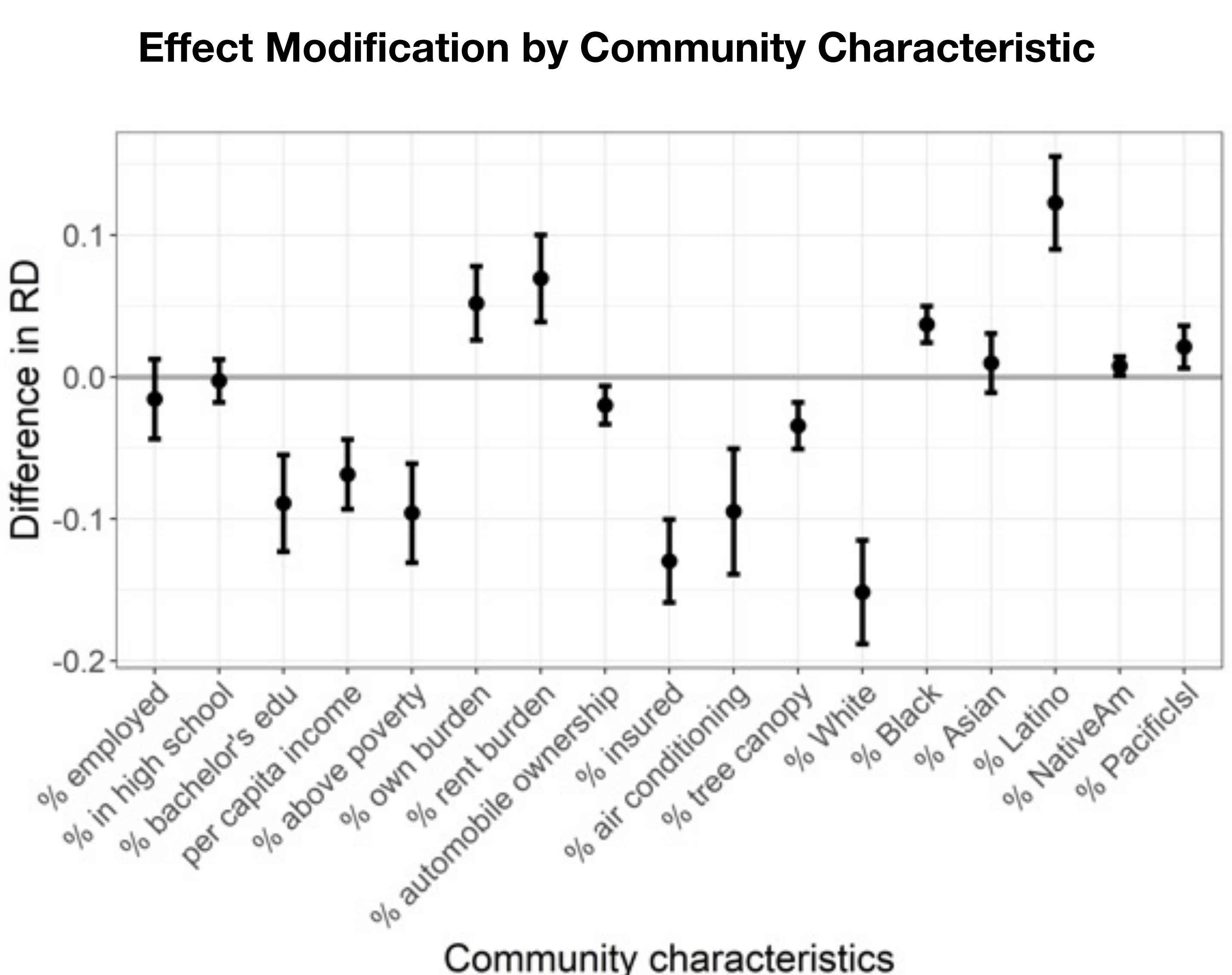
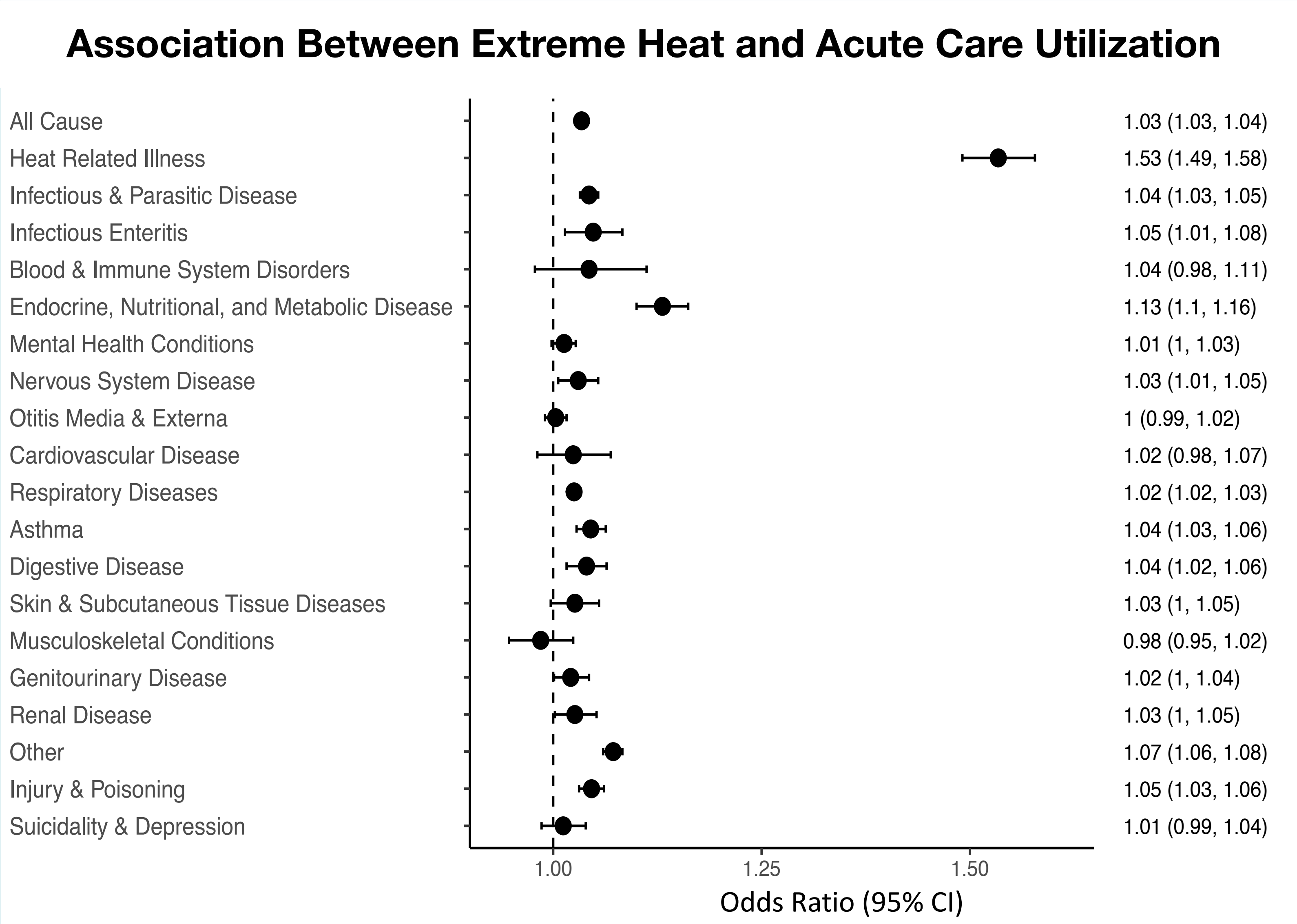
RESULTS

- Over 7.2 million unscheduled hospitalizations and ED visits occurred during study period
- Extreme heat events associated with increased odds (OR = 1.03) of all-cause acute care utilization
- Communities with lower incomes, lower education levels, and higher percentages of Black, Latino, and Pacific Islander residents were most vulnerable during extreme heat events

DISCUSSION

- Extreme heat events were associated with higher rates of acute care utilization among pediatric patients in California
- We found significant variation in heat’s consequences, with historically disadvantaged and under-resourced communities being most impacted

Extreme heat events are associated with disproportionate increases in pediatric acute care utilization in California



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