

The Relative Risks of Heat-Related Illnesses Over the Past Ten Years in Adults Over 65 at an Academic Medical Center in Kansas City, Kansas

Ethan Hunt¹, Ethan Scharf¹, Regan Konz¹, Jenna Ball, M.D.², Shelley Bhattacharya, D.O., MPH³

¹The University of Kansas School of Medicine-Wichita, Wichita, Kansas

²The University of Kansas School of Medicine-Kansas City, Kansas City, Kansas, Department of Family Medicine

³The University of Kansas School of Medicine-Kansas City, Kansas City, Kansas, Department of Family Medicine, Division of Geriatric Medicine

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Introduction. High Heat Days (HHDs), commonly called “Heat Advisories” or “Excessive Heat Warnings,” occur when predicted temperatures exceed 100°F or a 105°F Heat Index. The prevalence of HHDs has increased alongside rising national temperatures, raising concerns about heat-related illnesses, particularly in older adults (≥ 65 years). This study assessed impacts of HHDs on illness incidence and risk. While prior research has examined heat-related health effects, a paucity of studies focused on the Great Plains region.

Methods. A retrospective cohort study analyzed 11,498 adult patients presenting to The University of Kansas Medical Center Emergency Department from May-October, 2013-2023. Diagnoses were recorded and compared between Non-High Heat Days (NHHDs) and HHDs, defined as the 90th percentile Heat Index ($\geq 100.1^\circ\text{F}$). Relative risk (RR) and 95% confidence intervals were calculated.

Results. Among adults ≥ 65 ($n = 5,664$, mean 77.4 years), 31% belonged to minority groups. The ≥ 65 cohort had significantly higher RR ($p < 0.05$) for cerebral thrombosis (2.3), non-atrial fibrillation/flutter cardiac dysrhythmias (1.5), volume depletion (1.9), and heat-related illness (7.3) on HHDs. ED visit proportions on HHDs vs. NHHDs were 14.6% in ≥ 65 and 15.6% in < 65 (18-64) groups.

Conclusions. Rising temperatures necessitate targeted interventions for older adults. Although mortality was not assessed, increased morbidity may elevate mortality risk. Clinically, cautious diuretic use, blood pressure monitoring, and hydration recommendations are essential. Study limitations include a restricted range of diagnoses, possibly underestimating HHD-associated health impacts. Planning for adequate temperature relief centers, covered transit shelters, and avoiding unnecessary outdoor exposure should be considered from a community policy perspective.