EVALUATING THE EFFECT OF HEAT VULNERABILITY ON EMERGENCY MEDICAL SERVICE (EMS) INCIDENTS IN AUSTIN, TEXAS

Climate change has exacerbated Texas's characteristically hot climate, with hotter days and less reprieve from high temperatures. Urban heat exposure and sensitivity have been a growing concern in urban regions since the effect of urban heat is often considerably greater than that of surrounding rural environments, posing a threat to public health, water supply, and infrastructure (Bixler, 2021). Despite growing concerns about urban heat waves and relevant health issues in urban areas, limited research has been conducted on the effect of heat vulnerability during summer days on heat-related local emergency medical services incidents (Zottarelli, 2021). This study investigates the spatial distribution of heat vulnerability in the Austin-Travis County area of Texas, specifically in terms of urban heat exposure, sensitivity, and adaptive capacity. Then, using normalized quantitative indicators and geospatial bivariate maps, we identify neighborhoods with a high degree of heat vulnerability and limited EMS accessibility from transportation perspectives – in terms of heat-related EMS incidents and response time – to establish risk reduction priority areas. Finally, we investigate the effect of heat vulnerability on heat-related EMS incidents to identify spatial disparities in vulnerable neighborhoods.