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**PETROCHEMICAL RELEASES DISPROPORTIONATELY AFFECTED SOCIALLY
VULNERABLE POPULATIONS ALONG THE TEXAS GULF COAST AFTER
HURRICANE HARVEY**

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Hurricane Harvey hit the Texas Gulf Coast and resulted in hazardous chemical releases from petrochemical facilities. Unprecedented flooding and strong winds resulted in fires, explosions, and unplanned shutdowns at many petrochemical facilities in the region, leading to massive releases of hazardous chemicals. To clarify the environmental justice implications of these releases, we analyzed tract-level social inequalities in exposure to 42 petrochemical facilities with Harvey-associated releases in the Texas Gulf Coast region (n=1,099 tracts). We paired facility locational information from the Texas Commission on Environmental Quality with sociodemographic data from the American Community Survey. Using geographic information system-based spatial analytic techniques, we allocated petrochemical release Hazard Density Index (HDI) scores to census tracts based on the density of chemicals emitted from each facility in the area of the tracts. We employed generalized estimating equations (GEEs) to conduct multivariate analyses. Results from GEEs demonstrate that tracts with higher proportions of residents who were Black, Hispanic, in poverty, disabled, or under 15 years of age had greater densities of petrochemical facilities with releases. There was a synergistic relationship between neighborhood poverty and black composition such that under conditions of higher proportion black composition, the positive effect of poverty on facility density was amplified. Greater facility density was counterintuitively associated with lower proportions of limited English households. Our results provide evidence of environmental injustices in neighborhood-level exposures to petrochemicals after Harvey and have practical implications for protecting communities from such exposures in future events.

