Degree of urbanization and mortality from motor vehicular crashes.

PURPOSE: The purpose of this study is to establish whether motor vehicular crash (MVC) case fatality varies across different urbanization levels in the USA using a representative sample of crashes.

METHODS: Odds ratios (ORs) and 95% confidence intervals (CIs) for the association between urbanization level (i.e., central city (CC), suburban (SU) and others (OT)) and mortality were estimated in the 1997 - 2010 National Automotive Sampling System Crashworthiness Data System. Multiple logistic regression was used to adjust for confounders. Analysis was repeated for the occurrence of pre-hospital and hospital deaths.

RESULTS: 49,040,520 weighted occupants were included in the study. The distribution of occupants by urbanization categories was: SU 45%, OT 42%, and CC 13%. Case fatality was higher among OT occupants (0.81%) than among SU (0.51%) and CC (0.37%) occupants. Similar findings were present for pre-hospital deaths (OT 0.52%, SU 0.30%, and CC 0.21%) and hospital deaths (OT 0.29%, SU 0.21%, and CC 0.16%). Multivariate analysis revealed that adjusted odds of death were higher for OT cases [OR=1.55 (1.05-2.30)] than the CC. Adjusted odds of death for SU (OR=1.05 (0.81-1.37) were not different than CCs. Similar but accentuated findings were found for pre-hospital deaths. In contrast, adjusted odds of hospital death were not different among the 3 groups.

CONCLUSION: Occupants of vehicles crashing in OT (i.e., rural areas and small cities) experience a higher likelihood of dying after MVCs than those in CC and SU. Pre-hospital deaths, not hospital deaths, are responsible for this disparity.