Emergency Medical Services Transport for Nonemergent Emergency Department Visits in the United States

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Abstract

Objectives:
To characterize patient demographics, presenting complaints, and diagnostic and therapeutic interventions among nonemergent emergency department (ED) visits transported by emergency medical services (EMS) in the United States.

Methods:
We retrospectively analyzed the 2016–2022 National Hospital Ambulatory Medical Care Survey, focusing on ED visits with Emergency Severity Index levels 4–5 transported by EMS. Variables included demographics, presenting complaints, diagnostic testing, medications, disposition, and 72-hour return visits. Descriptive and temporal trend analyses were performed. Multivariable logistic regression accounting for the complex survey design identified independent predictors of EMS utilization.

Results:
During the study period, 13,880,015 low-acuity ED visits arrived via EMS. Mean age was 53 ± 21 years, 51% were female, and 84.7% resided in private residences. Testing included imaging (60%), complete blood counts (36%), and comprehensive metabolic panels (30%). Hospital

admission occurred in 13% of encounters, and 10% resulted in return ED visits. The predictive model was significant ($p < 0.001$). Increasing age, public or other insurance, Northeastern location, and non-Hispanic Black race (aOR = 1.251; 95% CI, 1.005–1.556) predicted EMS transport. Compared with private residences, homeless/shelter residence (aOR = 4.549; 95% CI, 3.305–6.260) and other residence types (aOR = 5.451; 95% CI, 3.780–7.861) were the strongest predictors. Sex was not significant.

Conclusion:
Nonemergent EMS transported ED visits primarily involved middle-aged adults with pain-related complaints and frequently required testing and medications, although most were managed without admission. These findings may inform resource allocation and alternative care pathways for low-acuity patients.