The Growing Burden of Hypertensive Emergency in U.S. Emergency Departments (2017-2022)

Authors

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Objectives
Hypertensive emergency is a critical presentation in the emergency department (ED). Despite advances in antihypertensive therapy and evolving hypertension management guidelines, the national burden of hypertensive emergency in the United States remains poorly characterized. We aimed to evaluate national trends in hypertensive emergency ED encounters, associated mortality, and ED financial cost in the United States.

Methods
We conducted a descriptive retrospective analysis of nationally representative ED visits from 2017–2022 utilizing the Nationwide Emergency Department Sample. Adult encounters with hypertensive emergencies were identified using ICD-10 diagnosis codes for severe hypertension in the presence of acute end-organ damage. The primary outcome was in-hospital mortality. Secondary outcomes included temporal trends in hypertensive emergency encounters, patient, hospital admission, and ED and total hospital charges.

Results
From 2017–2022, a total of 1.75 million ED encounters for hypertensive emergencies were identified. The annual frequency of hypertensive emergency encounters increased from 198,564 (11%) in 2017 to 363,223 (21%) in 2022, representing an 83% rise over the study period. Most encounters resulted in hospital admission (85.5%). Overall, ED mortality was low (0.06%), but in-hospital mortality occurred in 56,706 (3.2%) encounters. Importantly, the absolute number of patients who died in the hospital doubled, from 6,210 (0.3%) in 2017 to 11,854 (0.7%) in 2022. Mean ED charges per encounter increased from $5,158 in 2017 to $8,149 in 2022, a 32.3% increase after adjustment for inflation. The mean total hospital charges rose from $73,389 to $107,333, a 22.5% increase after adjustment for inflation.

Conclusion
Our findings show the increasing national burden of hypertensive emergencies in the emergency department setting. These trends highlight the emergency department as a critical setting for blood pressure screening and early intervention to mitigate the growing public health impact of hypertensive emergencies in the United States.