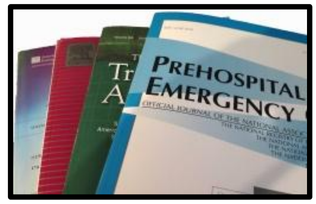
International Prehospital Medicine Institute



IPHMI Literature Review

Keeping You Up to Date with Current EMS Literature and Studies

Vol. 8.3

1. **Workplace Violence Against Emergency Medical Services (EMS): A Prospective 12-Month Cohort Study Evaluating Prevalence and Risk Factors Within a Large, Multistate EMS Agency.** McGuire SS, Bellolio F, Buck BJ, et al. *Prehospital Emergency Care* 2025;29:760–767.
2. **Elder Mistreatment Documentation by Prehospital Clinicians: An Analysis of the National Emergency Medical Services Information System Database.** Hancock DW, Haussner W, Chang E, et al*. Prehospital Emergency Care* 2025;29:725–731.
3. **Refusal of Emergency Medical Transport After a Fall: Patient Characteristics and Outcomes of Repeat Callers**. Barr J, Selman K, Hunter K, Kuc A. *West J Emerg Med.* 2025;26:5 *Full text available on-line at: https://escholarship.org/uc/item/20v4370x*
4. **Advanced Airway Practice Patterns and Out-of-Hospital Cardiac Arrest Outcomes**. Nassal MMJ, Yang BY, Hall J, et al. *JAMA Network Open* 2025;8(9):e2532334. Full text available on-line at: https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2839033

1. **Workplace Violence Against Emergency Medical Services (EMS): A Prospective 12-Month Cohort Study Evaluating Prevalence and Risk Factors Within a Large, Multistate EMS Agency.** McGuire SS, Bellolio F, Buck BJ, et al. *Prehospital Emergency Care* 2025;29:760–767.

Workplace violence (WPV) against healthcare workers has increasingly been reported in the past decade. While most of the documented studies have focused on in-hospital encounters, mainly in critical care areas, the authors of this study attempt to examine violence against prehospital care providers.

This prospective cohort study was conducted from December 1, 2022, to November 30, 2023, in a large multistate EMS agency operating 15 ground sites and 3 rotor-wing sites in the Midwest. The agency employs about 450 ground staff and 33 medical flight personnel, responding to approximately 122,000 ground calls annually, including 96,000 9-1-1 calls, 26,000 interfacility transport requests, and 5,275 flight requests, of which 582 are for fixed-wing transport. Prior to implementation of the study, education was provided to providers on what constituted verbal abuse and physical abuse via electronic, in-person, and postings at bases. An addition to the electronic call documentation system required a checkbox to complete the call, which asked, “Was violence against EMS present?” Selecting an option (‘yes- verbal’, ‘yes- physical’, ‘yes- both verbal & physical’, or ‘no’) was required to close out the documentation process. In addition, records that were not flagged for violence were reviewed for markers of violence in the provider narrative.

During the study period, there were 115,297 EMS runs. Crews arrived on scene for 102,632 case (89.0%), and the reporting checkbox was used in 98,234 of these cases (95.7%). Prehospital providers identified WPV in 843 runs (0.86 per 100 runs). This included 482 runs with verbal abuse, 142 with physical assault, and 219 with both. Overall, verbal abuse occurred in 701 runs (0.71 per 100 runs), and physical assault occurred in 361 runs (0.37 per 100 runs). Most violence was committed by patients

(89.3%), followed by unknown or undocumented perpetrators (7.9%), with small proportions involving family members, partners/spouses, or bystanders. Nearly half of the assaults were related to substance abuse calls.

The authors note several limitations to the study. Although training took place, the most prevalent issue was the provider's perception of what constituted reportable WPV. While the study was conducted in a large agency encompassing both urban and rural areas, it was still limited to a single agency, which may not be representative of other regions.

Workplace violence involving prehospital care providers is not new and occurred in approximately 1% of calls in this study. This study demonstrates that most providers will encounter some version of WPV during their careers. The correlation between WPV and substance abuse reflects a need for future research on mitigation techniques needed to keep providers safe.

2. **Elder Mistreatment Documentation by Prehospital Clinicians: An Analysis of the National Emergency Medical Services Information System Database.** Hancock DW, Haussner W, Chang E, et al. *Prehospital Emergency Care* 2025;29:725–731.

Elder mistreatment (EM) comprises both elder abuse and neglect. Unfortunately, it is a common occurrence, with an incidence of 10% in community-dwelling elders and up to 64% of those residing in an institution. EM is associated with adverse health outcomes, depression, and increased hospitalization. Excess medical cost from EM is estimated to be $5.3 billion. Prehospital providers are in a unique position to evaluate for EM since they are typically the only healthcare providers that can see inside the patients' homes and take note of lack of food, extreme temperatures, evidence of infestations, and extreme clutter (which can be a sign of unsafe living conditions). EMS personnel may also witness interactions between the elderly patient and family members and caretakers and note signs of fear, indifference, or overt abuse. Despite this unique opportunity to evaluate for EM, little research has been done on the practice of prehospital providers documenting EM. This study describes the prevalence and characteristics of EM, as documented by prehospital providers.

Data were collected from the National Emergency Medical Services Information System (NEMSIS) database, a repository that collects and stores standardized data on emergency response encounters across the United States. The authors reviewed 22,532,890 total EMS activations from 9,599 agencies in 43 states and territories. The data were collected from the year 2018 to avoid any potential bias from the COVID-19 pandemic. NEMSIS records International Classification of Diseases (ICD) codes for each EMS encounter in their database and these were queried for codes related to injury, physical findings suggestive of abuse, and clinician impressions suggestive of abuse or neglect.

The NEMSIS database from 2018 included 9,605,522 EMS encounters involving patients aged ≥ 60. In 1,765 encounters (0.02%), coders assigned ICD codes consistent with EM based on EMS provider documentation. Most of these were listed as the cause of injury (64%) followed by the provider's first impressions (25%). The most commonly reported location for service was at a private residency, although nursing homes were the location in 12% of calls. Of the specific types of mistreatments reported, "other/non-specified" was the most common (52%), followed by physical abuse (28%), sexual abuse (18%), neglect (9.7%), and psychological/emotional abuse (0.34%). The anatomic location of injury was noted in 81% of encounters, with "general/global" being the most common (41.6%), extremity-lower (13.2%), head (10.2%), and extremity-upper (10%).

Prehospital providers are among the few clinicians who evaluate and treat the elderly in their home. Documentation of EM is mandatory, however the data in this study suggest very few encounters of EM are documented (0.02%). A similar analysis of child abuse encounters also found it was documented in only a small number of instances. In examining child maltreatment, the authors of a study noted that providers may not be comfortable documenting the evidence based on a single encounter without a long-term context to evaluate. This may also be true for EM. Little research has examined the identification of EM in prehospital care. One study noted 68% of clinicians reported suspecting EM during the last year but only 27% of those cases were reported. Reasons for not reporting included (1) lack of knowledge of what defines EM, (2) little awareness of the mandatory reporting laws, (3) a lack of understanding of the reporting process and which agency to report to, and (4) concerns of confidentiality.

This study has several limitations. The NEMSIS database is a retrospectively collected database, with the inherent reporting errors. EMS agencies with more resources may be more likely to report to NEMSIS than those with fewer resources. The study approach relied on diagnostic documentation to indicate EM type and location. It is possible that EMS providers did take appropriate reporting steps but didn't document it. This dataset is not linked to ED or hospital data, so long-term outcomes cannot be determined.

This study indicates that EMS documentation of elder abuse and neglect is poor and has significant room for improvement. Possible solutions include the addition of identification strategies into EMS curriculum and continuing education. EMS providers are in a unique position to evaluate for EM but also carry the responsibility to document their findings adequately. Future work is needed to more accurately quantify this problem so solutions can be found.

3. **Refusal of Emergency Medical Transport After a Fall: Patient Characteristics and Outcomes of Repeat Callers**. Barr J, Selman K, Hunter K, Kuc A. *West J Emerg Med*. 2025;26:5 Full text available on-line at: https://escholarship.org/uc/item/20v4370x

EMS responses for falls are frequent occurrences and are increasing across the United States. Many of these responses result in patient care refusals and are commonly referred to as lift assist responses. For many patients, this initial fall is a sentinel event resulting in an unplanned visit with healthcare within a month. For EMS providers, these patients may become well known and referred to as "frequent flyers". Even with a proper assessment and informed refusal of care for lift assist calls, there are there underlying medical and social service conditions that result in subsequent healthcare utilization?

Their study is a one EMS system, University IRB approved, retrospective cohort study of "fall victims" who refused EMS transport. The study included adult patient contacts between July 1, 2021 and July 1, 2022. To be included in the study, the researchers reviewed the patient's EMS electronic patient care reports and their electronic healthcare records for one year following their initial lift assist call. The authors of this paper determined the likelihood of Emergency Department visits at 30- and 60-day intervals visits after the patient's first EMS lift assist call. The authors also looked at one-year mortality and demographics of lift assist patients. Patients were further separated into three groups, one-time EMS callers, repeat callers who called EMS a second time within 30 days and super users who called EMS > four times in six months.

One hundred and ninety-four EMS calls met the initial qualifying criteria. Eighteen patients accounted for 63 of those calls. After excluding patients for incomplete patient records, 116 patients were included in the study. The mean age of those patients was 66.3 years old. Fifty five percent were Black and 53.6% were female. Repeat callers accounted for 37.9% of the patient group, with 21.8% of the patients identified as super users. Both repeat and super users had a greater odds ratio of visiting an emergency department at 30 days and six months than non-repeat patients. Hospitalizations at 30 days and six months were also greater in the repeat and super user groups than the non-repeat patients. Anti-coagulation medication use and non-ambulatory status of the repeat caller group proved to be a statistically significant medical history finding.

The retrospective design, single EMS system inclusion and small cohort of patients limited this study. The authors were not able to account for patient living conditions or other social service challenges. The nature of the call and "fall" determinant were assigned by dispatchers based on the information they acquired from the caller. This may have resulted in missed patient encounters or inaccurate information. Lastly, the authors were unable to capture patients that initially wanted to refuse care by EMS but subsequently consented to transport after persuasion by the EMS providers.

Lift assist calls may be sentinel events for patients as their health begins to decline and should serve as a red flag for EMS providers. EMS providers should not become complacent with regulars or "frequent flyers". Full patient assessments including vital signs and capacity to refuse care should be evaluated prior to accepting a refusal of care. Patients with repeat calls for falls have an increased chance of hospitalization within one to six months.

4. **Advanced Airway Practice Patterns and Out-of-Hospital Cardiac Arrest Outcomes**. Nassal MMJ, Yang BY, Hall J, et al. *JAMA Network Open* 2025;8(9):e2532334. Full text available on-line at: https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2839033

American Heart Association guidelines for out-of-hospital cardiac arrest (OHCA) recommend advance airway placement which generally includes endotracheal intubation (ETI) or supraglottic airway (SGA) placement, The authors of this study sought to determine the relationship between advanced airway practices and outcomes in treating OHCA.

The authors conducted a cross-sectional analysis using data from the Cardiac Arrest Registry to Enhance Survival (CARES) database. Inclusion criteria were patients >18 y/o treated by EMS agencies that had at least 25 OHCA cases per year between 2016 and 2022. They compared the use of ETI and SGA. They categorized the use of advanced airway use in the agencies as "ongoing ETI", "Ongoing SGA", "Transitioning from ETI to SGA" and "Transitioning from SGA to ETI".

The study included 350,216 patients treated by 254 EMS agencies and 214 of the agencies were classified into the four groups described. Return of Spontaneous Circulation (ROSC) rates declined across all groups from 2019 onwards from 36.5% to 30.7% for ongoing ETI and from 32.4% to 26.4% for ongoing SGA. The use of SGA devices increased significantly from 2016 to 2022 from 65 agencies to 113. There was an increase in ROSC in agencies transitioning from ETI to SGA from 25.7% to 29.1% with a survival to discharge from the hospital increasing slightly from 5.6% to 6.3%.

The 52 EMS agencies (n = 63,877 patients) with the lowest survival rates were evaluated separately. Those with ongoing ETI and ongoing SGA use were associated with lower odds of ROSC and survival to hospital discharge similar to the overall results. However, unlike the overall results, ongoing SGA use was associated with slightly higher odds of survival with good neurologic recovery. The 15 EMS agencies (n = 20 860 patients) with the lowest survival rates that transitioned from ETI to SGA had higher odds of ROSC (from 25.7%to 29.1%, and survival to hospital discharge (from 5.6%to 6.3%, but not survival with good neurologic recovery (from 3.8% to 4.1%. EMS agencies with the top 3 survival rates had ORs for outcomes similar to those for the overall study.

There are a number of limitations to this study. This was a retrospective study which allows for determining an association but not specific causation. They also noted that while an EMS agency could have multiple AA devices available for use, they did not identify the order in which AA devices were actually used. They also pointed out that the database may not represent rural agencies and their patients.

The authors proposed that the decline in ROSC and survival rates after 2019 were linked to the COVID-19 pandemic which affected bystander CPR rates and patient care delays.

The findings of this study suggest that SGA may be a more effective Advanced Airway Practice in lower performing agencies. In fact, one-third of the reporting agencies transitioned from ETI to SGA and those that did had slightly better outcomes. They pointed out the importance of EMS agencies to adapt their strategies based on performance metrics. Further research is needed to validate these findings and explore their applicability across diverse populations and settings.