

The Utilization of Physician Assistants in the Prehospital Setting

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Background

- Physician assistants (PAs) are highly trained medical professionals seen in a wide area of medical specialties and settings. PAs are educated at a master's degree level obtaining more than 2,000 hours of direct patient care experience, receive broad training across all areas of medicine, and take medical histories, conduct physical exams, make diagnoses, order and interpret diagnostic tests, develop treatment plans, prescribe medication, and perform medical procedures.¹
- While many PAs have a background in Emergency Medical Services (EMS) or work in emergency medicine, PAs are rarely found in the prehospital setting- caring for critically ill patients in remote settings before reaching a hospital.
- It was found that 50% of PAs worked in a prehospital care setting before attending PA school, with prehospital care primarily defined as transporting critically ill patients to hospitals.²

Purpose of Research

- While the United States primarily relies on EMTs and paramedics in the prehospital setting, many European countries use physicians or nurses instead, especially in more critical cases.
- The goal of this research is to evaluate how PAs can be better utilized in the prehospital setting and how they can improve patient outcomes

PICOT

In trauma patients, does treatment by a medical practitioner result in better outcomes when compared to paramedics during the prehospital phase?

Design & Methods

- Keywords:** Prehospital medicine, physician assistant or PA, EMS, outcomes, association, mortality
- Inclusion:** Studies published within the last five years, English language
- Exclusion:** Significant study limitations, significant bias

Synthesis of Evidence

- Databases used include Summon, PubMed, Journal of the American Academy of Physician Assistants, and BioMed Central.
- The American Academy of Physician Assistants and Society of Emergency Medicine Physician Assistants websites were also utilized
- A total of 11 articles were reviewed and analyzed, with retrospective studies being the most common

Results

- Beneficial information for physician staffed helicopter emergency medical service (P-HEMS) dispatch: mechanism of injury (MOI), predicted extrication time >20 minutes, ejection from a vehicle, magnitude of injuries, value of vital signs, and logistical factors.³
- P-HEMS is associated with improved odds of survival⁴
- Physician-led trauma management has higher success rates for interventions when compared to paramedic-led management
- Physician-led management allows for flexible and precise clinical decisions rather than uniform management.⁵
- The following populations are most likely to benefit from physician-led hospital management compared to paramedic-led management: patients <65 years, total transportation time <60 minutes, severe injuries with injury severity score (ISS) >25, or injury with abbreviated injury scale (AIS) >3 in the pelvis or lower extremities.⁵
- When comparing specialist prehospital critical care teams (PHCCTs) that include a physician to non-PHCCTs, patients treated by PHCCTs had a significantly reduced mortality with an odds ratio of 0.56.⁶
- A significant number of patients have died due to limitations in care before reaching a hospital with the most common reasons being airway obstruction, chest injuries, and hypovolemic shock.⁶
- Compared to EMS, physician staffed HEMS units had a decreased incidence of prehospital hypoxia, increased number of patients with secured airways, and improved neurological outcomes in patients who sustained a traumatic brain injury.⁷

Discussion

- As a result of their advanced training, PAs have the capability of completing advanced procedures that emergency medical technicians (EMTs), paramedics, and nurses do not perform.
- While the advanced training and ability to perform advanced procedures is not needed for many low acuity calls, the limited scope of paramedics can delay the time in which critical patients receive advanced interventions. By utilizing PAs in high acuity calls, patients can receive immediate intervention that otherwise would have been delayed until they reach the hospital, leading to better patient outcomes and lower mortality rates.

Limitations & Further Study

- Unfortunately, as the majority of prehospital care in the US is provided by EMTs and paramedics, there is very limited research including medical providers such as physicians, PAs, and NPs in the prehospital setting in the US, resulting in major study limitations. As a result, major limitations of the study include limited academic literature on the topic, studies conducted outside of the US, and evidence primarily based on physician outcomes.
- There is a desperate need for additional research in the prehospital setting, especially in the US. The first step to gaining beneficial research is to establish an optimal dispatch criteria for a prehospital physician or PA.
- As the role of an EMS PA is better established, developing a uniform description of the roles and competencies is necessary, followed by establishing a uniform training for PAs in prehospital care.

Conclusion

- After an extensive review of the literature, no definitive evidence demonstrates the benefits of utilizing physician assistants in the prehospital setting at this time, however this is likely a reflection of limited available research, small number of PAs working in the prehospital setting, and PAs being a rather new profession. As literature demonstrates that patients under the care of physicians have reduced mortality rates, improved neurological outcomes, and overall better patient outcomes, it could be assumed that patients under the care of PAs would have similar results. As PAs are trained in multiple specialties and can perform whatever physician responsibilities are delegated to them, such as advanced procedures, this would be fair to assume.
- In less critical cases, PAs can also be utilized in the prehospital setting to decrease the burden on emergency departments by treating patients on scene when dispatched and not requiring subsequent transport to the hospital.

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