# Survival Rates Similar For Gunshot/Stabbing Victims Whether Brought To The Hospital By Police Or EMS

A new study from the Perelman School of Medicine at the University of Pennsylvania has found no significant difference in adjusted overall survival rates between gunshot and stabbing (so-called penetrating trauma injuries) victims in Philadelphia whether they were transported to the emergency department by the police department or the emergency medical services (EMS) division of the fire department.

"This study is an examination of current prehospital practices with an eye toward improving patient care and is by no means intended as a criticism of the highly trained and dedicated professionals of the Philadelphia Fire Department who provide outstanding care under difficult circumstances," said lead author Roger Band, MD, assistant professor of Emergency Medicine at the Hospital of the University of Pennsylvania. "The Fire Department, the Police Department, and health care professionals all share the same goal: learn all we can in order to continually improve the care and services we provide to patients and the community."

The study, published online ahead of print in the *Annals of Emergency Medicine*, examined 4,122 patients taken to eight Level I and Level II adult trauma centers in Philadelphia between January 1, 2003 and December 31, 2007. Of these, 2,961 were transported by EMS and 1,161 by the police. The overall mortality rate was 27.4 percent. Just over three quarters (77.9 percent) of the victims suffered gunshot wounds, and just under a quarter (22.1 percent) suffered stab wounds. The majority of patients in both groups (84.1 percent) had signs of life on delivery to the hospital. A third of patients with gunshot wounds (33.0 percent) died compared with 7.7 percent of patients with stab wounds.

Although patients transported by the police department were more likely to die compared with those transported by EMS (29.8 percent versus 26.5 percent), these findings appear to be explained by the more severely injured population that the police typically transport to the hospital and not the mode of transport itself.

The Penn study also found that severely injured gunshot victims transported by the police were more likely to survive. "There could be many factors contributing to this finding, such as the fact that police may have shorter response times to an event simply by virtue of how they patrol," said Band.

While previous studies suggest that trauma victims have similar mortality rates whether brought to the hospital by emergency medical services or police, the current Penn study is the largest investigation to date examining the relationship between method of transport and mortality in penetrating trauma.

More than 25 years ago, the Philadelphia Police Department began allowing police department transport of individuals with penetrating trauma to the hospital, commonly referred to as a "scoop and run." A current department directive states: "Police personal will transport: Persons suffering from a serious penetrating wound, e.g., gunshot, stab wound … to the nearest accredited trauma center. Transportation will not be delayed to await the arrival of the Fire Department paramedics." While EMS follows citywide protocols, no formal policy outlines how care should be provided to injured patients transported by police. Typically, individuals transported by police have not been rendered care, including direct pressure on bleeding extremity wounds. However, the Philadelphia Police Department has recently issued tourniquets to every police officer in the city.

For decades, there has been heavy debate among medical professionals on how to best balance the potentially competing priorities of fast transport to the emergency department (possibly in first-arriving, traditional police vehicles) with the benefits of transport by specially trained emergency medical personnel in expressly equipped vehicles. Previous studies have shown survival benefit for EMS-type transport in such cases as myocardial infarction (heart attack), respiratory arrest, cardiac arrest, and perhaps trauma.

"It is critically important to remember that our study focuses on a very specific type of patient with a specific disease process, in a densely populated urban environment and we in no way are suggesting that patients with serious medical symptoms, such as chest pain or difficulty breathing, do anything but call 911 and await the highly trained EMS personnel who have the skill and equipment to deal with the situation and any potential problems," said senior study author, Brendan Carr, MD, MS, assistant professor Emergency Medicine and Biostatistics and Epidemiology at Penn.

The research team notes that additional prospective studies in different large cities in the U.S. could help to validate the safety and efficacy of the "scoop and run" approach used in Philadelphia.

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