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Insurance status may influence transfer decisions in trauma cases, study reveals

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Emergency rooms are less likely to transfer critically injured patients to trauma centers if they have health insurance, according to a new study by researchers at the Stanford University School of Medicine.

The counterintuitive finding suggests that insured patients are more at risk for receiving sub-optimal trauma care than uninsured patients are.

Although a majority of severely injured trauma patients are initially taken to trauma centers, at least one-third are taken to non-trauma centers. In these cases, emergency room doctors must assess the injuries and decide whether to admit the patient or transfer them to a trauma center. Their decision usually depends on the injury—how severe it is, what the cause was, or whether the hospital has specialists to handle particular types of injuries.

But the patient's insurance status also influences that decision, according to the study, which will be published online Feb. 19 in *JAMA Surgery*.

Stanford researchers analyzed more than 4,500 trauma cases reported at 636 hospitals in a 2009 Nationwide Emergency Department Sample put together by the U.S. Department of Health and Human Services.

They found that insured patients initially taken to a non-trauma center had a 13 to 15 percent higher rate of admission—and were likely at risk for receiving worse care—than uninsured patients.

"Insured patients may, ironically, get worse outcomes because they are taken care of at a center where there's a lower volume of resources for critically injured patients," said M. Kit Delgado, MD, the lead author and a former Stanford emergency medicine instructor. Delgado is now an emergency care research scholar at the University of Pennsylvania.

"We hypothesize that non-trauma center hospitals are more likely to want to admit insured patients presumably because they can get reimbursed for their services," he said.

Traumatic injuries—such as gunshot wounds or injuries from car accidents—are the most common causes of death in the United States among people younger than 44.

Timely access to a specialized trauma center can save lives. The risk of a severely injured patient dying at a level-1 trauma center, which has the highest level of trauma care, is 25 percent lower than at a non-trauma center, a 2006 *New England Journal of Medicine* study found.

Designated trauma centers are equipped with trained specialists and resources ready to handle critical injuries. Level-1 trauma centers have a full array of in-house surgeons and nurses working round-the-clock, specialists such as neurosurgeons and orthopedic trauma surgeons on call, designated operating rooms and medical equipment, and a 24/7 blood bank operation, apart from educational and preventive outreach programs.

The current study is one of the first population-level analyses to reveal what happens to severely injured patients seen at non-trauma centers, said Nancy Wang, MD, senior author of the study and associate professor of emergency medicine at Stanford.

"Finding disparities in quality of trauma care based on insurance is very

disturbing," said Wang. "It is important for researchers to identify and call attention to these disparities in access to care and outcomes so that all people can receive the appropriate, high-quality care regardless of their insurance status."

Wang—who is also associate director of pediatric emergency medicine—and colleagues previously found disparities in access to trauma care for children and the elderly in the state of California, with insurance status being one of the influencing factors.

"It is important that the community understands this trend so that it can be changed," she said.

The current study also found that, in addition to insured patients, older patients and those brought to urban teaching hospitals and high-volume emergency rooms had lower chances of being transferred to a trauma center.

Emergency-room encounters should be more closely monitored, the authors suggest, to ensure that patients get the right kind of care regardless of whether they can pay for it. Splitting costs between hospitals and trauma centers is another solution; it may help hospitals cover any financial loss that they expect from sending patients away.

"Study after study has shown that the more patients that a trauma team takes care of, the more experience they get—and their outcomes are going to be better," Delgado said.

Each state has different rules for designating a hospital as a trauma-care facility. Designated hospitals are reviewed by the American College of Surgeons to verify that they have all the resources listed in the association's trauma-care guidelines.

The trauma-care guidelines also spell out the steps emergency physicians should follow to decide whether an injured patient needs to be transferred.

But emergency physicians often fail to follow these guidelines, a recent University of Pittsburgh study revealed. Earlier studies have also shown that between 30 and 70 percent of all patients who meet the criteria for transfer are instead held back at non-trauma centers.

"Some of it has to do with failure to identify which conditions would do better at a trauma center, and some of it has to do with practice patterns—what the hospital is used to taking care of on its own, " Delgado said.

The implications are startling. But researchers are only now able to investigate these trends because population-wide emergency department data from non-trauma centers have only recently become available.

Delgado also acknowledged that with this database, there's no way to confirm if insured patients are receiving worse outcomes because they are being kept back.

"It's something we are hoping to figure out next," he said.

Another question that Delgado plans to explore is how much patients know about their options.

"We're doing research right now to figure out what role patients' and families' preferences play in the transfer decision," he said. "People who have insurance may not realize that they could do better if they are transferred."

Provided by Stanford University Medical Center