

Acute rehabilitation services for trauma patients improve outcomes after hospital discharge

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As more trauma patients survive their initial hospital stays, new study results show that acute inpatient rehabilitation facilities are the best places for some of these patients to go once they leave the hospital. Yet, the percentage of trauma patients sent to these facilities is in decline, according to a new study published online as an "article in press" on the *Journal of the American College of Surgeons* in advance of print.

Little research exists on survival of trauma patients a year after they leave the hospital. However, study researchers at the University of Washington, Seattle, report that trauma patients who have intensive physical, occupational, and cognitive therapy at an acute care inpatient rehabilitation facility (IRF) are more likely to eventually go home and survive a year after discharge than a matched group of trauma patients who were not discharged to an IRF.

"We believe this study is the first to investigate long-term outcomes in trauma patients discharged to IRFs," lead investigator Saman Arbabi, MD, MPH, FACS, said. "We analyzed data for 993 trauma patients in the Washington State Rehabilitation Registry discharged to an IRF in 2011 and 2012 and compared them with a matched group of 26,127 trauma patients who were not discharged to an IRF." The Washington State Rehabilitation Registry collects demographic and outcomes data on trauma patients discharged to any of the 14 IRFs in the state.

"Advances in in-hospital care have benefited the most severely injured patients who now survive to discharge," Dr. Arbabi said. "Many of these patients require post-hospital care. Over the last several years, there has been an increase in the number of trauma patients being discharged to skilled nursing facilities and a decrease in the number being discharged to inpatient rehabilitation. The data from the current study make this trend particularly concerning."

IRFs and skilled nursing facilities (SNFs) differ in many ways. A patient in an IRF must be able to follow physical therapy for three hours. IRFs have services that are focused on physical, occupational, cognitive, and social therapy with a goal of getting the patient to independently perform activities of daily living. In SNFs, the availability of therapy services can vary and are generally significantly less than IRFs. "There's huge variability among skilled nursing facilities," Dr. Arbabi said.

The researchers rated recovery by improvements in functional independence measure (FIM) scores, noting that those who went to an IRF improved on average from an FIM score of 63.7 to 92.2. These patients also had a nine times greater chance of going home after their post-hospital care and a 40 percent lower risk of death after a year than the control group of trauma patients who did not receive care at an IRF.

"We found that injured patients who received post-discharge rehabilitation care at IRFs in Washington State experienced a significant improvement in functional outcome over the course of their rehabilitation and that 78 percent of these patients were successfully discharged home from the IRF," Dr. Arbabi said. "This finding is particularly striking when one considers the fact that these are generally older and severely injured patients."

In the study, the authors noted a host of trends that do not bode well for post-trauma care. For example, the numbers of IRFs have decreased in

the past decade, according to Medicare data. The number of trauma patients discharged to rehabilitation centers has decreased nearly 50 percent in Washington State over the past 20 years, according to a previous study by Dr. Arbabi and co-authors.¹ Today only 6 percent of all hospitalized trauma patients in Washington State get discharged to an IRF. That same study showed that patients discharged to an IRF had a mortality rate of 5.5 percent after a year and 12 percent after three years, while patients discharged to an SNF had mortality rates of 18.7 percent and 34 percent at the same intervals.

Dr. Arbabi and coauthors also cited a 2015 multicenter study that showed a significant increase in the number of trauma patients discharged to SNFs compared with IRFs.²

"Rehabilitation for trauma patients is a scarce resource and our study results show that this scarce resource may be important for some trauma patients," Dr. Arbabi said.

"Post-hospital care is as important, if not more important, than hospital care for [trauma patients](#), and in that post-hospital care there should be a plan for physical therapy, cognitive therapy, and educational activities of daily living," he said. "What we call it, per se, is not important. But if we are going to send people to skilled nursing facilities, we need to ensure that these places include these important rehabilitation services as a core part of their care."

More information: Deepika Nehra et al, Acute Rehabilitation after Trauma: Does it Really Matter?, *Journal of the American College of Surgeons* (2016). [DOI: 10.1016/j.jamcollsurg.2016.09.001](https://doi.org/10.1016/j.jamcollsurg.2016.09.001)

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2. Ayoung-Chee PR, Rivara FP, Weiser T, Maier RV, Arbabi S. Beyond the hospital doors: Improving long-term outcomes for elderly trauma patients. *J Trauma Acute Care Surg.* 2015 Apr;78(4):837-43.

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