

Patients with traumatic brain injuries face challenges navigating healthcare system

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- JOHANNE ELIACIN, PHD



 Regenstrief Institute

Many traumatic brain injury (TBI) survivors needed extensive healthcare services in the year after their injury, and a quarter of them were super-utilizers, having three or more emergency department visits or inpatient encounters or more than 26 outpatient visits during the year. Credit: Regenstrief Institute

Patients who suffer from traumatic brain injuries (TBI) often need a great deal of healthcare services after the injury, but the extent of care utilization is unknown. A new study from research scientists affiliated with the U.S. Department of Veterans Affairs (VA), Regenstrief Institute and IUPUI is one of the first to analyze how much care TBI patients use and identify areas of unmet need.

"There is not a lot of information about traumatic brain injury care utilization available," said primary study author Johanne Eliacin, Ph.D., a Regenstrief research scientist and core investigator at the VA Health Services Research and Development Center for Health Information at Richard L. Roudebush VA Medical Center. "In fact, until a few years ago, TBI was viewed as a one-time event. The goal of this study was to look at the care sought by survivors in order to understand the struggles they face and address them."

The study used the Indiana TBI registry for its cohort. The registry, funded by the Indiana Department of Health, contains all individuals diagnosed with mild, moderate and severe TBI listed in the Indiana Network for Patient Care (INPC), which is managed by Indiana Health Information Exchange. The research team looked at patients who were hospitalized with a TBI from 2005 through 2014 and examined healthcare utilization data for one year after the TBI event. That data was broken down into three categories: emergency department, inpatient and outpatient care.

Researchers found that many TBI survivors needed extensive healthcare services in the year after their injury, and a quarter of them were super-utilizers, having three or more emergency department visits or inpatient encounters or more than 26 outpatient visits during the year.

The results indicate that [health](#) insurance impacted the amount and type of care utilized, as did race, gender and residency status. Study authors say these potential disparities are an important area to focus on in future research.

"Because this is one of the first studies looking at these data, we are just beginning to identify patterns," said Dr. Eliacin. "More work is needed to dig into the social determinants of health that impact a TBI survivor's outcomes and to understand the struggles faced by those who are high utilizers of the healthcare system."

A previous qualitative study published by Dr. Eliacin presented some of the challenges patients and caregivers reported, which included the struggle to understand what care was available and where to access it.

"The Indiana TBI registry is an important resource to be able to understand the healthcare journeys of TBI patients," said study author Brian Dixon, Ph.D.,

MPA, Regenstrief and Indiana University Richard M. Fairbanks School of Public Health at IUPUI director of public health informatics. "We can leverage these data to identify population needs and develop interventions to improve quality of life as well as the access to and utility of their care."

"Characterizing health care utilization following hospitalization for a [traumatic brain injury](#): a retrospective cohort study," was published in the journal *Brain Injury*.

In addition to Drs. Eliacin and Dixon, authors on the paper are Ziyi Yang, M.S. of IUPUI and Jacob Kean, Ph.D., of the VA Salt Lake City Health Care System and the University of Utah School of Medicine.

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IHIE is a non-profit, software development organization that operates the INPC—the nation's largest inter-organizational clinical data repository which houses more than 14 billion pieces of patient data from 95% of Indiana.

More information: Johanne Eliacin et al. Characterizing health care utilization following hospitalization for a traumatic brain injury: a retrospective cohort study, *Brain Injury* (2020). DOI: [10.1080/02699052.2020.1861650](https://doi.org/10.1080/02699052.2020.1861650)

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