

Bayshore Healthcare

Neurologic Rehabilitation Institute of Ontario

A division of Integrated Care Solutions

Outcome Validation Study for 2019 and 2020

Executive Summary

The Outcome Validation Study model used by NRIO has been in place since 1997 with enhancements to the study made in 2013. The domains of the study include: post discharge life activity; level of support required at discharge; the level of social role return and the presence of interfering psychiatric or substance abuse problems. The study model also includes a durability component which tracks the outcomes of individuals discharged from the program over time. The overall domains of the study and the results observed in the years of its operation remain consistent with the long term studies of adults living with a brain injury (Kreutzer, Dawson and Chipman, Ponsford, Thommsen, Cifu, Sanders, Silver and others) as well as with the pediatric outcome study results (Campbell, Max).

This Executive Summary represents 2019 and 2020 as the COVID-19 Pandemic complicated program management, data collection and assembly and the overall Outcome review process.

Demographic Trends and Injury Severity

The long trends observed in the study demonstrate a fluctuation in the average age at injury to 29.8 in 2019 and 37.1 in 2020. Over the course of the study, the age at injury has ranged from 41.7 to 25.0. As compared to the Benchmark studies of 35.4 (Jones and Evans) and 44.92 (Malec and Kean) the persons served by NRIO tend to be younger at the time of injury. The time from injury to admission in the NRIO Study was 27.5 months that represented a longer period from injury prior to entering the NRIO program as compared to the benchmark studies. This increase in the latency period is an important factor to study in forthcoming years as a similar study operated by Community Neuro Rehab using a similar Outcome Validation Study model has identified that increased time from injury into treatment was associated with greater co-morbidity, a history of multiple failed treatments, lower outcome results and higher recidivism.

Motor vehicles accidents remain as primary causative factor with consistent role distribution (Driver, Passenger, and Pedestrian/Cyclist). On average, the male/female ratio has been consistent with prior years with the exception of 2019, which was 100% in the discharge cohort. 100% of the people discharged in 2019 and 80% of the 2020 discharge cohort had a Glasgow Coma Scale <9 which is consistent with the overall pattern in the study. The Glasgow Coma Scale is regarded as a reliable indicator of injury severity and is a factor in outcome attainment.

Outcome Attainment in 2019 and 2020

In terms of the outcomes attained: 30.0% returned to work, supported or volunteer employment in 2019 and 0% in 2020, supported employment or volunteer positions. This shift needs to be understood in the context of the discontinuation of the Community Outreach program by NRIO and the refocusing of the program on Residential and Clinic Services. Outcomes attained by individuals who are now served by the Bayshore or comparable programs are not available to the NRIO study. In 2019, 40.0% of the people served were discharged home with <2 hours/day of care and in 2020 83.3% were discharged home with <2 hours/day or less of care. The care needs of the 2019 and 2020 discharge cohorts were better than the average of 29.9%. In terms of social role return, in 2019 30.0% returned to their primary social role with no to minimal changes in role function and in 2020 16.7% were discharged with no or minimal changes to their primary social role. In the discharged groups of 2019 and 2020 respectively, 20.0% and 33.0% presented with interfering substance abuse problems at discharge, which remain in the range of the study. Interfering psychological problems affected 20.0% of the persons discharged in 2019 and 66.7% in 2020 as compared to 22.6% in the study average. These factors have a high probability to the change in program focus and the elimination of the Community Outreach program, which provided extended rehabilitation care including psychological, behavioral and substance abuse treatment. The increase in latency from injury to treatment will need to be further evaluated in subsequent years to determine the cause of the delayed entry into treatment.

Durability of Outcomes Attained

In the Durability component of the study in 2019 and 2020 there is consistency in observing sustained improvement in Vocational/avocational return; in the area of Maintaining or Improving Social Role Return; Maintaining or Improving the Level of Care/Care Discharge Environment; the Self-Management of Behavior and Physical Problems Effecting Mobility, Community Access and Health. The Durability Component of the Outcome Validation Study provides a long-term review of the status of the persons served. Over the course of the twenty-three year period of the NRIO study, the majority of the persons served have sustained positive outcomes or experienced further improvement.

The Outcome Validation Study continues to be a central aspect of the organization's self-assessment and performance monitoring. The results attained in 2019 and 2020 are largely consistent with prior years with the exceptions noted in this summary. The outcomes attained by the persons served and the durability of those outcomes indicates stable results as compared with prior years' results and importantly over the course of time. The NRIO Outcome Study supports the program's mission of enhancing independence and quality in important life domains.

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