

Does Concussion Impact Long-term Healthcare Usage in Older Adults? Examining Emergency Utilization and Fall Risk in Older Adults after mTBI/Concussion

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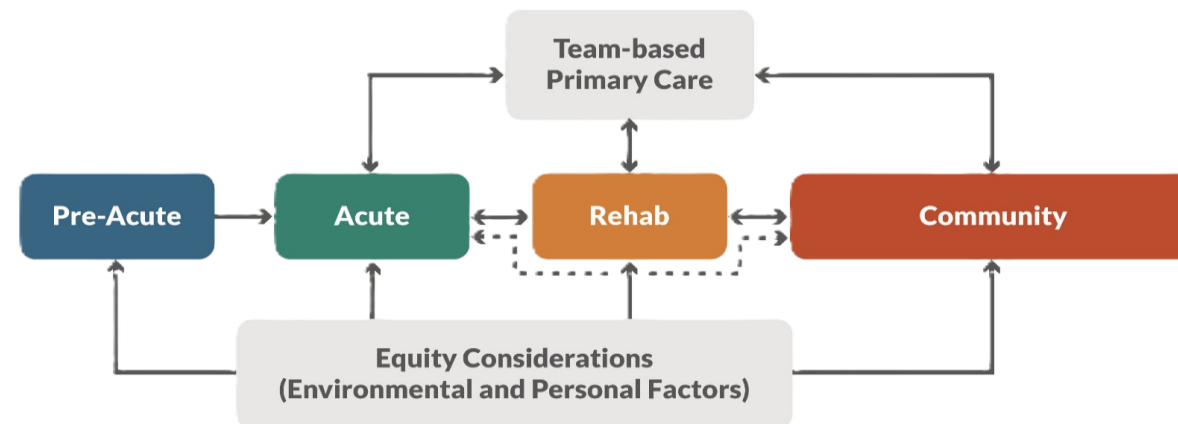
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Funding and Data Sources



Disclosures

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- This document used data adapted from the Statistics Canada Postal Code^{OM} Conversion File, which is based on data licensed from Canada Post Corporation, and/or data adapted from the Ontario Ministry of Health Postal Code Conversion File, which contains data copied under license from ©Canada Post Corporation and Statistics Canada. Parts of this material are based on data and/or information compiled and provided by the Canadian Institutes of Health Information (CIHI).
- The analyses, conclusions, opinions and statements expressed herein are solely those of the authors and do not reflect those of the funding or data sources; no endorsement is intended or should be inferred.
- No conflicts of interest to disclose

Background: A Silent Epidemic within A Silent Epidemic

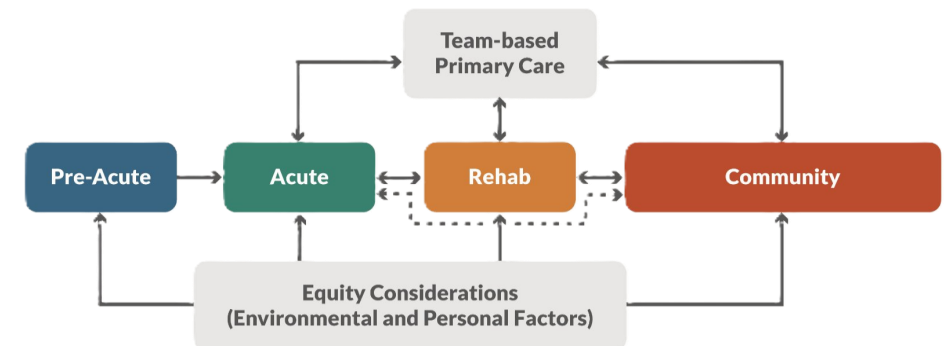
- Traumatic brain injury (TBI) has largely been perceived as an injury of younger persons, with focus on sport and military populations
- However, a large proportion of TBIs are sustained by **older adults**, often with significant comorbidities
- Older adults with TBI are more likely to have higher morbidity and mortality, slower recovery, and experience worse outcomes than younger counterparts (*Gardner, 2018*)
- While concussion has received increased attention over the last decade, concussion injuries in older adults are often overlooked...



Gaps and Objectives



- **Gap:** There is a lack of research to map care quality and outcomes for older persons after TBI, resulting in little evidence to drive best practice and potential policy changes
- **Objectives:** To 1) **characterize care** received by older adults with TBI and 2) study the **impact of aging with TBI on health outcomes**
- **Approach:** Implement evidence-based quality indicators grounded in an **Ideal Care Pathway** for TBI



Methods: Cohort Creation

Cohort 1

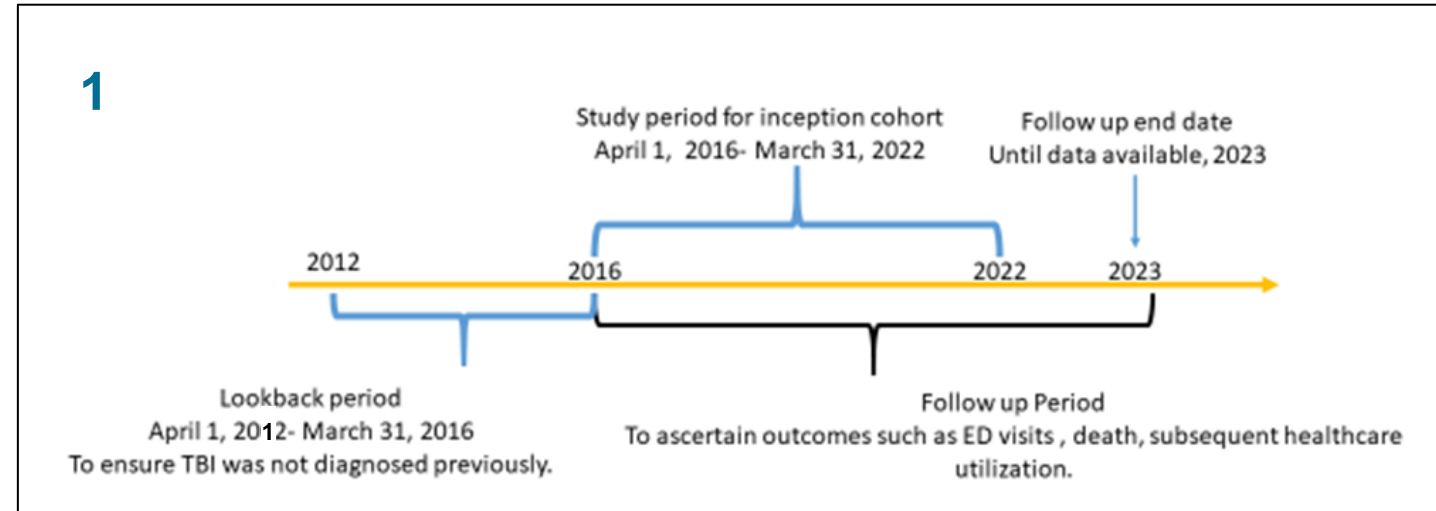
Period: 2016-2023

Min. Age at injury: 65+

Data: Various indicators

F/U: Limited

Matching: None



Cohort 2

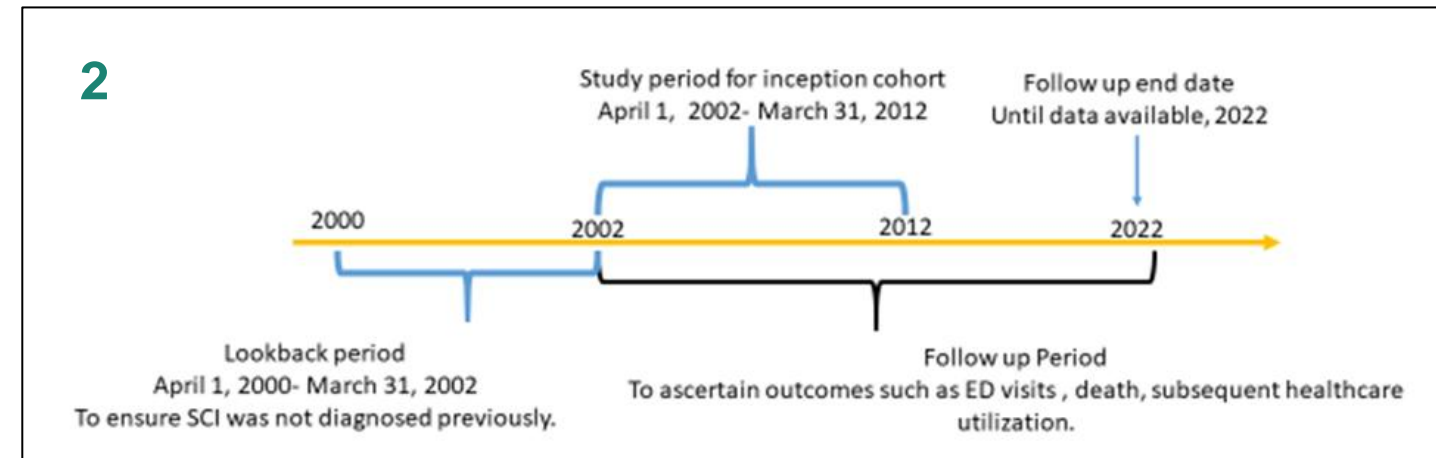
Injury Period: 2002-2012

F/U Period: 2012-2022

Min. Age at injury: 55+

Data: Mortality and Healthcare Utilization

Matching: Hard

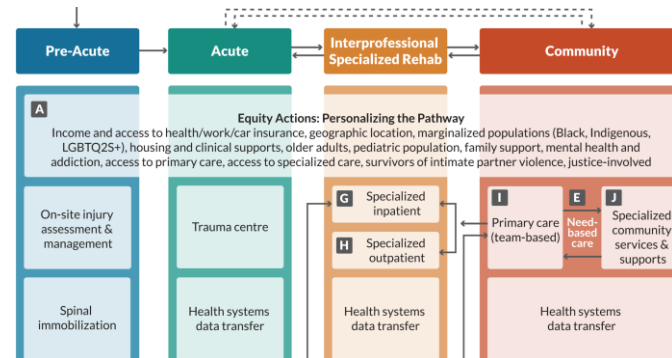


Methods: Quality Indicators and Data Collection



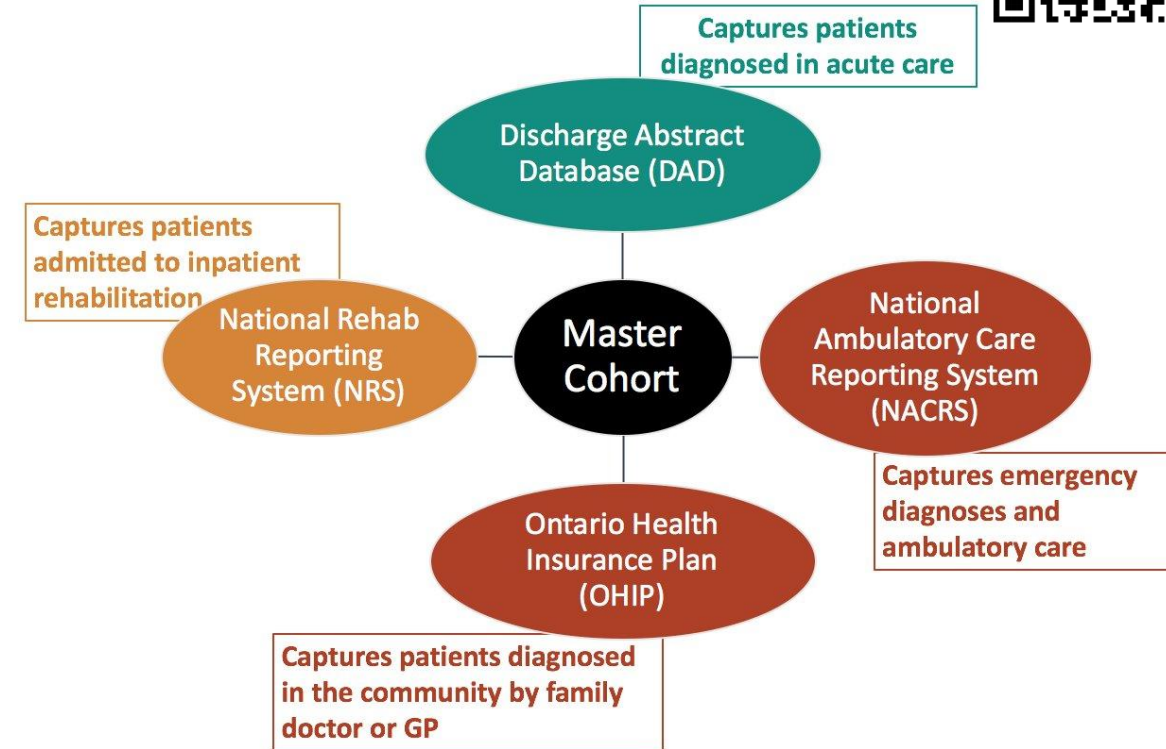
Quality Indicators were **co-developed and prioritized** by key partners who integrated research evidence, clinical consensus, needs of people with lived experience, and feasibility of data collection

Clinicians, researchers, PWLE



Indicators were developed to **map onto the Care Pathway building blocks** with particular focus on measuring care gaps

Databases



ICD-10 and physician billing codes were used to identify cases of TBI (including mTBI/concussion)

Methods: Injury Definition

The Master Cohort was created using validated ICD-10 codes for TBI and OHIP Dx codes for mTBI/concussion
To define severity, the cohort was divided into three groups based on acute care length of stay:

mTBI/Concussion

No days in hospital
+ OHIP code



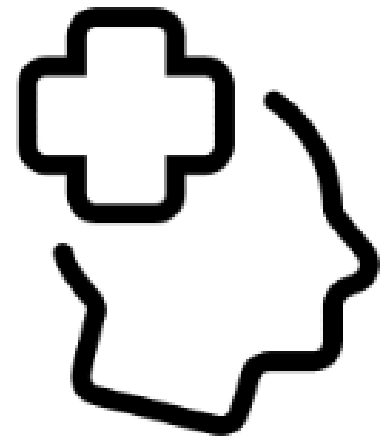
Complex-mild TBI

1-3 days in hospital



Mod-severe TBI

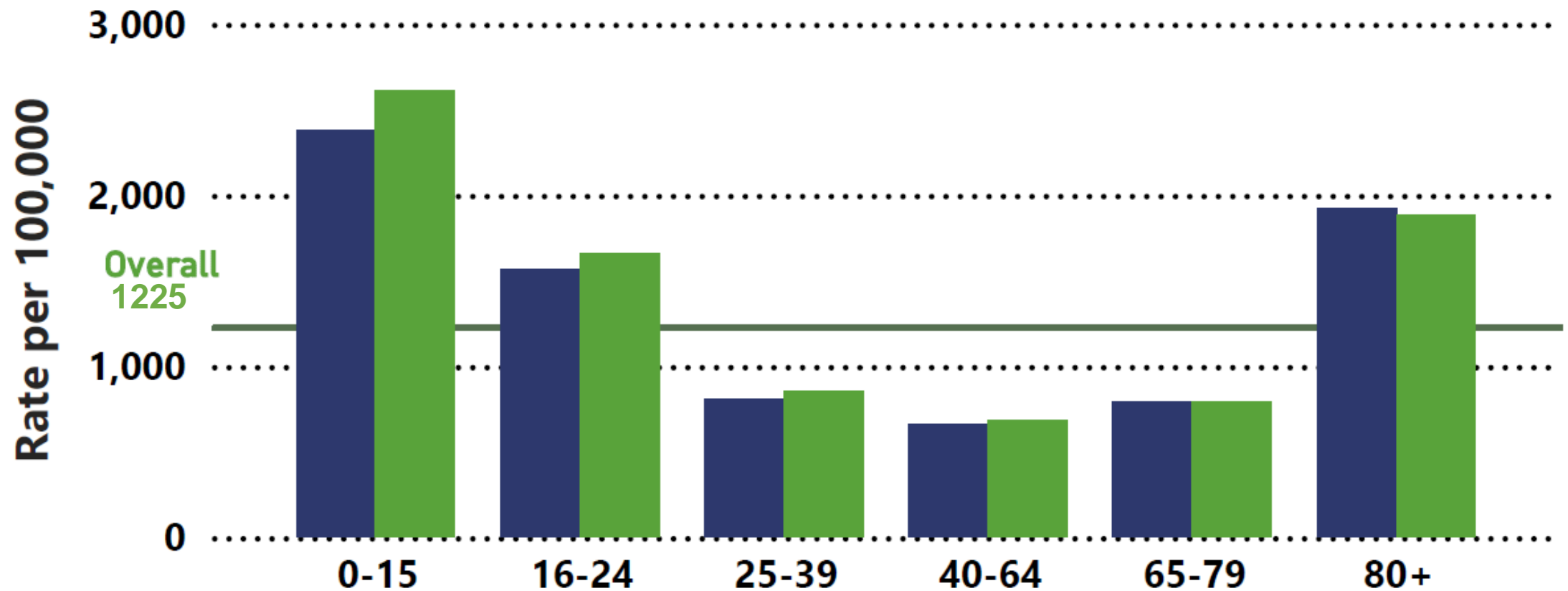
4+ days in hospital



Incidence of Concussion/mTBI

Age Group (sex-adjusted)

Year ● 2022/23 ● 2016/17-2022/23



Summary of the Data

- Incidence is high and emergency care utilization rate within one year of injury was higher in people with mTBI/concussion compared to matched controls (10.6 vs 5.2 visits per 100 PY).
- The fall-related healthcare utilization rate for those aging with mTBI/concussion was nearly double that of matched controls, suggesting that mTBI/concussion may increase fall risk in older adults (16.33 vs 8.97 per 100 PY).
- Similar trends were observed within 3-, 5-, and 10-years post-injury.

Policy Implications

1. Systematic implementation of **evidence-based fall prevention and fall injury prevention** interventions, particularly for those at high risk
2. **Effective Management of Long-Term Needs:**
Ensure people aging with TBI receive person-centered, integrated primary care and support in the community to improve quality of life and outcomes



Thank you !

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Website

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