

How to Evaluate Brain Injury Care Quality and Equity? Connecting the silos in a disconnected healthcare system

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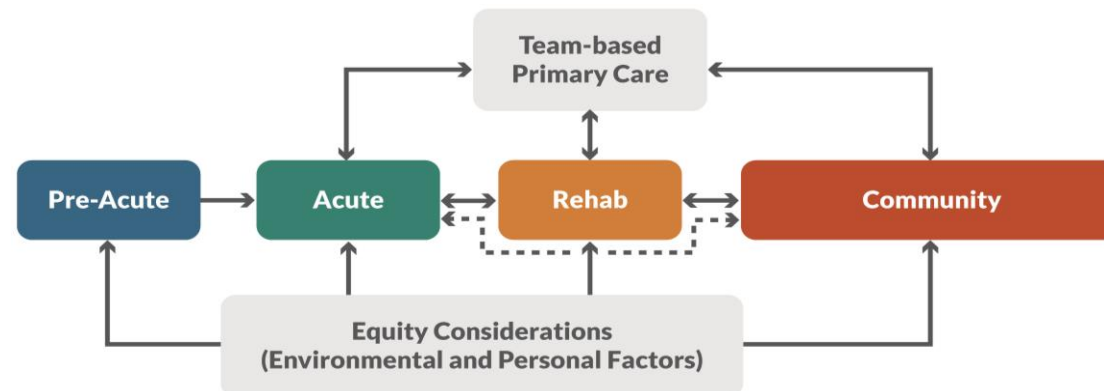


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The Problem: TBI Care and the Current Data Landscape

- **Care quality** varies for TBI because:
 - Limited availability of specialized acute care & rehabilitation
 - Little acknowledgment of chronicity and complexity
 - Lack of navigation to specialized rehab and community service
 - Access is determined by funding (public vs third party)
- BUT... there is limited cross-talk between stages of care and funding sectors, complicating care and data collection
- **SO... how can we evaluate the system and identify key gaps to drive improvements across the care continuum**



The Answer: The Neurotrauma Care Pathways Initiative

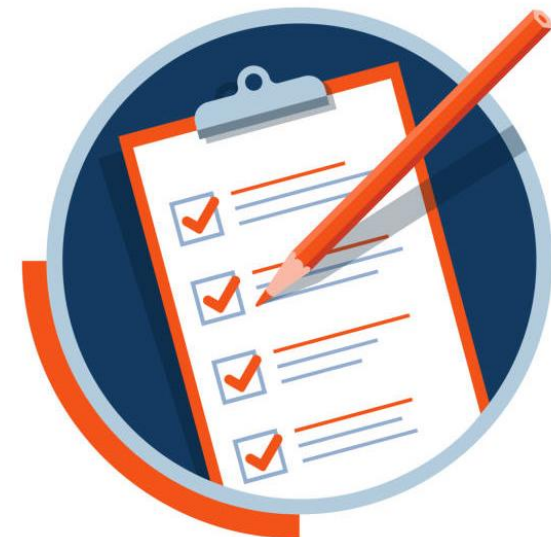
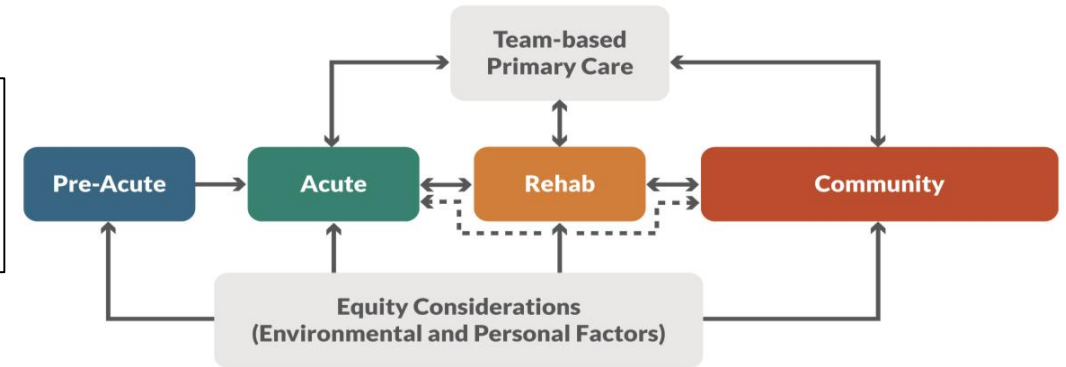
The Neurotrauma Care Pathways

Provide evidence-based guidance for TBI care across the care continuum and facilitate standardized, ideal, and equitable care for all



Quality Indicators and Report Card

- **Evaluate** TBI care quality and equity measured against the Neurotrauma Care Pathway
- **Identify** system improvement opportunities, care gaps, and inequities using data from across the care continuum
- **Facilitate** the sharing of successes and challenges to inform services and drive accountability

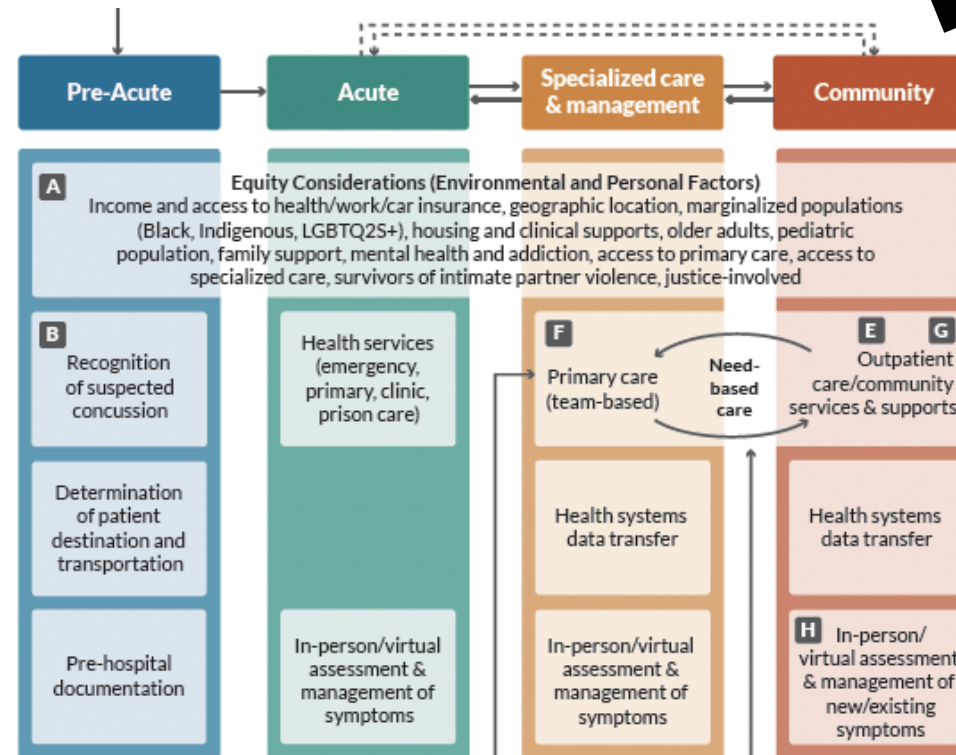


Quality Indicator Development

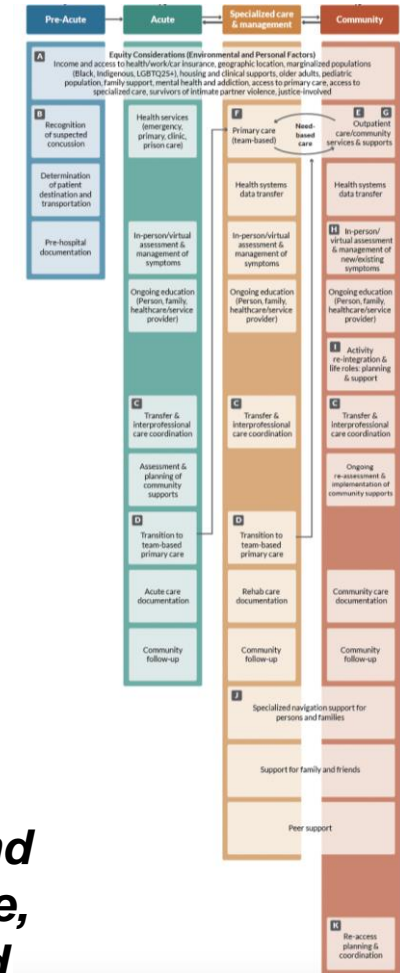
Indicators were **co-developed** and by a network of key partners. who considered analysis of research evidence, clinical consensus, needs of people with lived experience, and feasibility of data collection



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

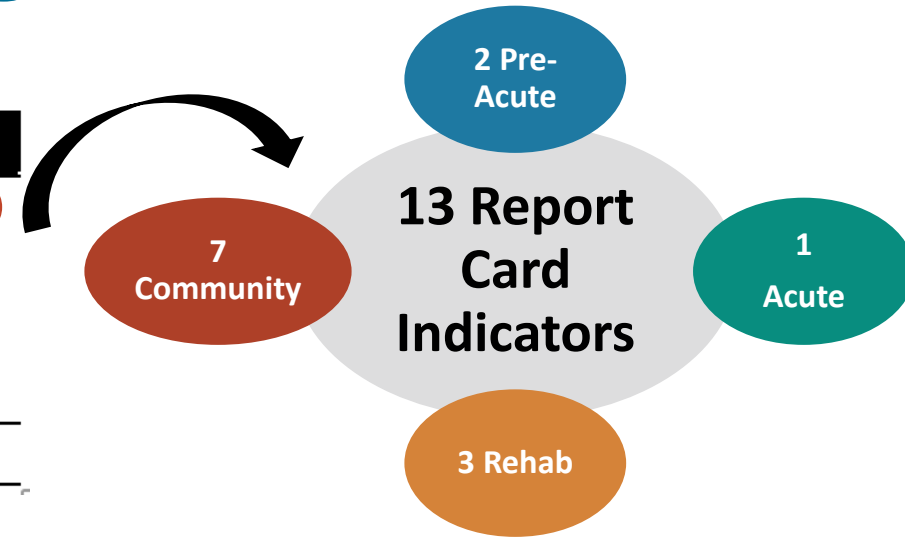


BUT due to limitations in data collection and fragmentation of data across stages of care, many building blocks cannot be evaluated



Full Set of Quality Indicators

Indicator Type	Equity	Pre-acute	Acute	Rehab	Community	Total
Core set	3	3	13	6	9	34
Must-have	3	0	2	4	5	14
Should-have	2	0	8	4	2	16
Nice-to-have	3	1	2	0	1	7
Total	11	4	25	14	17	71

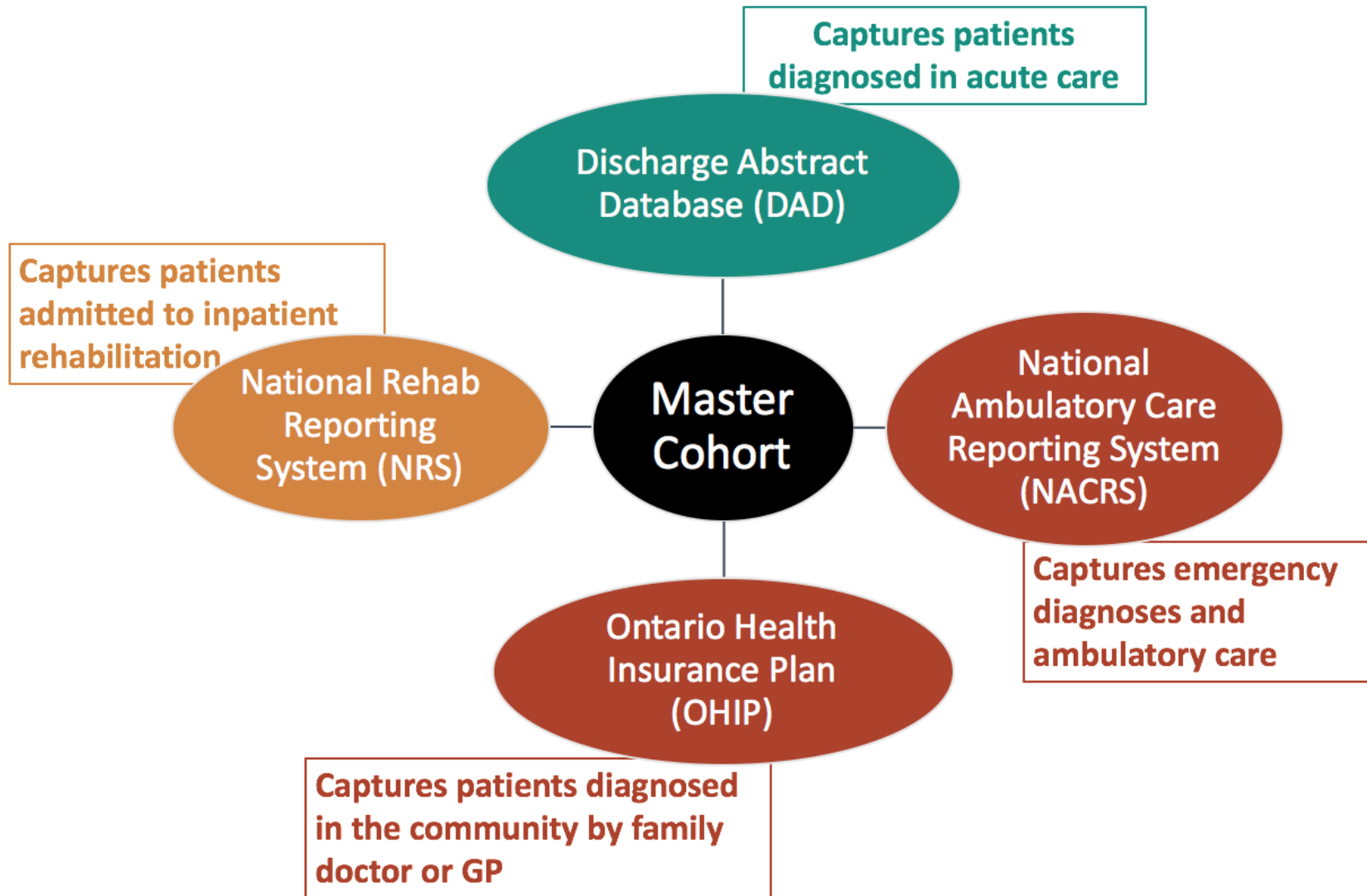


- Each Ideal Care Pathways building block of care includes
 - the definition and technical specifications of the Quality Indicator to evaluate the care stage
 - the status/feasibility of using the Quality Indicator
- Some building blocks contain multiple Quality Indicators that evaluate different aspects of that stage

**System
Evaluation**



Implementing the Indicators: Data Sources and Gaps



Data Limitations

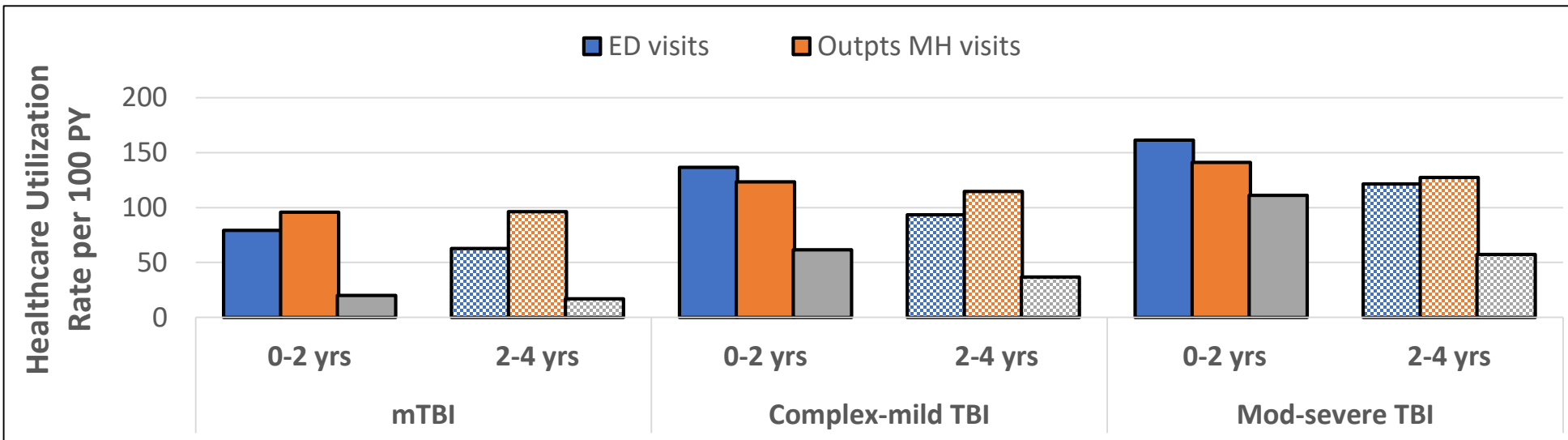
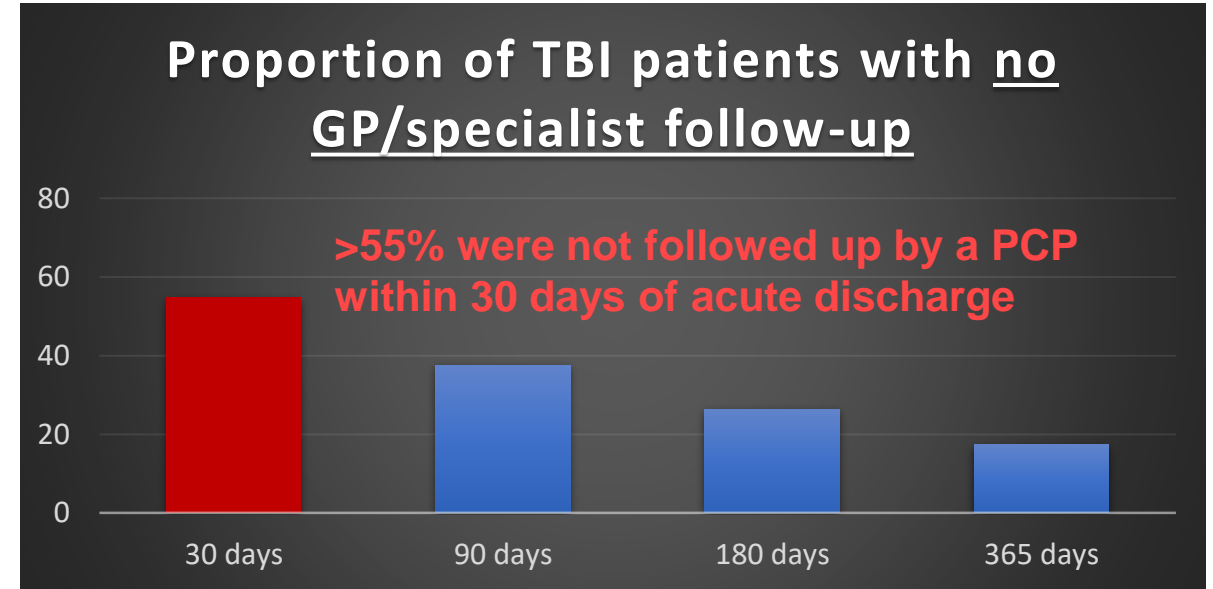
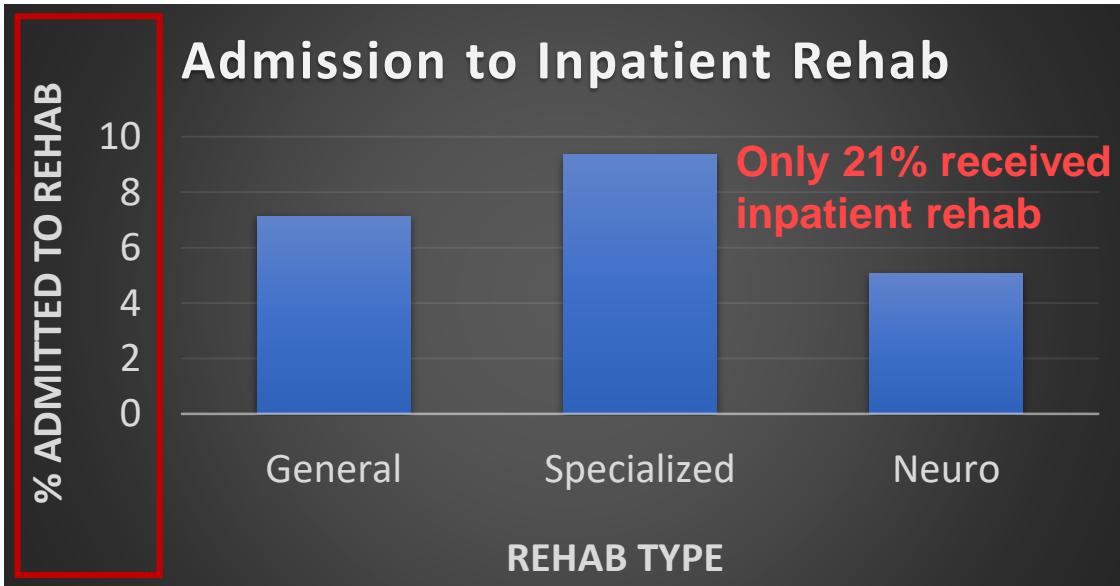
- Care received in the community is challenging to characterize (no linked database)
- Indicators only capture publicly-funded care and are medically skewed; lack of outcome data for insurance-funded care
- Limited availability of equity-related data

Only 13/34 planned indicators can be implemented in light of these gaps

Report Card Indicator Summary

No	Definition	
1	Annual age- and sex-adjusted TBI incidence rate per 100,000 population	Pre-Acute
2	Risk-adjusted mortality rate within a) 30 days of admission to hospital and b) 30 days of discharge from hospital per 100 patients	
3	Proportion of alternate level of care (ALC) days to total length of stay (LOS) in acute care	Acute
4	Proportion of TBI patients admitted to acute care who receive inpatient rehab within 1 year of discharge, stratified by rehab type	Rehab
5	Median time from TBI onset to admission to inpatient rehab, stratified by rehab type (spec, gen, neuro)	
6	Median FIM change and efficiency in inpatient rehab, stratified by rehab type (spec, gen, neuro)	
7	Median time from acute care or inpatient rehabilitation discharge to first Ontario Health atHome visit from a)physiotherapy, b)occupational therapy, c)speech-language pathology and social work	Community
8/9	Proportion of TBI patients discharged from acute care or rehab with a follow-up assessment by a general practitioner or specialist	
10	Proportion of patients with TBI discharged from acute care to a)Long-term care (LTC)/Complex continuing care (CCC), b)Home with services arranged, c)Home without services arranged	
11	Age- and sex-adjusted all-cause readmission rate for people with TBI per 100	
12	Proportion of patients with TBI discharged from in-patient rehabilitation to Long-term care (LTC)/Complex Continuing Care (CCC)	
13	Healthcare utilization in the community as indicated by emergency visits, mental health-related outpatient visits, inpatient usage rate, and fall-related healthcare during a)the first two years after index event, b) the 2-4 years after injury	

Why Indicators Matter: Data Highlights



Healthcare utilization, especially for mental health remains high 2-4 years after injury, signaling ongoing need

Next Steps – Understanding Third-party funded Care

Data source (sector)	# of Structure & Surveillance Indicators	# of Process Indicators	# of Outcome Indicators
Healthcare administrative databases (Public system)	Total of 2: Incidence, length of stay	Total of 7: Acute discharge disposition, admission to rehab (2), discharge destination from rehab, community follow-up care and services (3)	Total of 4: Mortality, functional gain in rehab, hospital readmission, healthcare utilization
HCAI database (MVC)	Total of 3: Number of claimants and cost of Neurotrauma claims by various stratifiers (age, sex, region)	Total of 5: Providers involved in care and associated cost (4), rate of insurer-initiated examinations	None
WSIB database (Workplace injury)	Total of 5: Number of claimants & cost of Neurotrauma claims by various stratifiers (age/sex, cause of injury, industry etc.)	Total of 3: Duration of benefits, access to programs of care and subsequent assessment, type of care received	Total of 3: Return to work, days lost, non-economic loss

Lack of robust outcome data collected in the insurance funded brain injury care sector

Key Takeaways

- **Data collection practices must improve** across funding sectors to better capture the complexity, chronicity and long-term outcomes of TBI
- More data integration work needs to be done between public and third-party funded providers to gain a true understanding of TBI care
- To identify solutions to gaps in TBI care, **we must start by asking the right questions** – this is the goal of the Quality Indicators



Without data there appears to be no need for change



Are you collecting the right data?

Thank you!

Here's how you can stay in touch:

- **Our contact information**

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