Advancing National Clinical Data Standards in Canada

Briefing Note

Issue
Canada needs a standardized essential clinical dataset in acute care settings.

- Every acute care organization in Canada continues to use customized variations and approaches to clinical assessment documentation – this needs to change;
- There is compelling evidence to support the use of a standardized clinical data set to inform clinical decision-making, support consistency of information shared across providers and sectors, and improve clinical outcomes;
- The use of clinical data standards can reduce documentation burden for clinicians by focusing on information that is essential for clinical assessment and evaluation;
- The use of standardized clinical data is essential to inform appropriate health human resource planning and allocation at unit, organization, and system levels;
- Vendors, clinicians, and other stakeholders need to collaborate to design systems to generate care plans and clinical acuity based on standardized clinical assessment data;
- Standardized data provides value to clinicians, administrators, policy makers and researchers and facilitates a learning health-care system.

National Clinical Data Standards
As Canada emerges from the pandemic it is more important than ever to collect clinical information that will improve our healthcare system and health outcomes for Canadians. A prevalence of chronic health conditions and an aging demographic require management by different clinicians across many different settings, therefore standardization is fundamental to enable seamless communication of essential clinical information throughout the healthcare care system. Green contends that the collection, use and reuse of relevant clinical data enables a better, more connected healthcare experience for people[1]. The availability of comparative data and information for benchmarking, public reporting and transparency is of increasing importance in terms of perceived value for investment in health services. Furthermore, accountability for clinical and financial outcomes can be better understood relative to health human resource use in all sectors.

All clinicians across the healthcare system assess health status information to plan and evaluate health interventions. Clinical information on function, symptoms, safety outcomes and the ability to manage self-care is essential information about individuals' health. When collected in a standardized format, these data can provide valuable information for clinicians to evaluate outcomes from admission to discharge with the goal of understanding what interventions lead to improved outcomes, and how to best support care transitions from one sector to another. The use of evidence-based clinical data standards ensures the collection of consistent, usable, comparable clinical information that is person-centric.

There is evidence that citizens are becoming increasingly engaged in the management of their

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[1] Green, M. (2022) Interoperability standards in healthcare context: The art of the possible Healthcare Technology, May 2022, p16.

health. Responses to an IPSOS survey reflect that within the next 10 years, 77% of Canadians anticipate having access and contributing to their own health data and information beyond that gathered by clinicians[2]. As we think of a future where people have access to their health data and are engaged in self-care, it will be important that the entire healthcare team is using standardized health measures to inform and facilitate that engagement.

The appropriate use of health human resources; amount, type and context are becoming an increasingly important consideration in the delivery of Canadian healthcare. With shifting scopes of practice, current and anticipated workforce shortages and the emergence of new roles, the changing landscape of health human resources necessitates more evidence to guide allocation decisions. Overall, access to comparable, sharable data derived from the use of clinical data standards may provide support for human resource and other health policy decisions at local, regional, and national levels.

Capturing a standardized essential dataset in clinical information systems offers the opportunity to not only support decision-making but to develop predictive models to inform treatment plans for similar groups of people with similar diagnoses. As we plan for a future where artificial intelligence is foundational to facilitate evidence-informed decision-making, it is vital that we have standardized clinical data to inform care decisions and resource allocation.
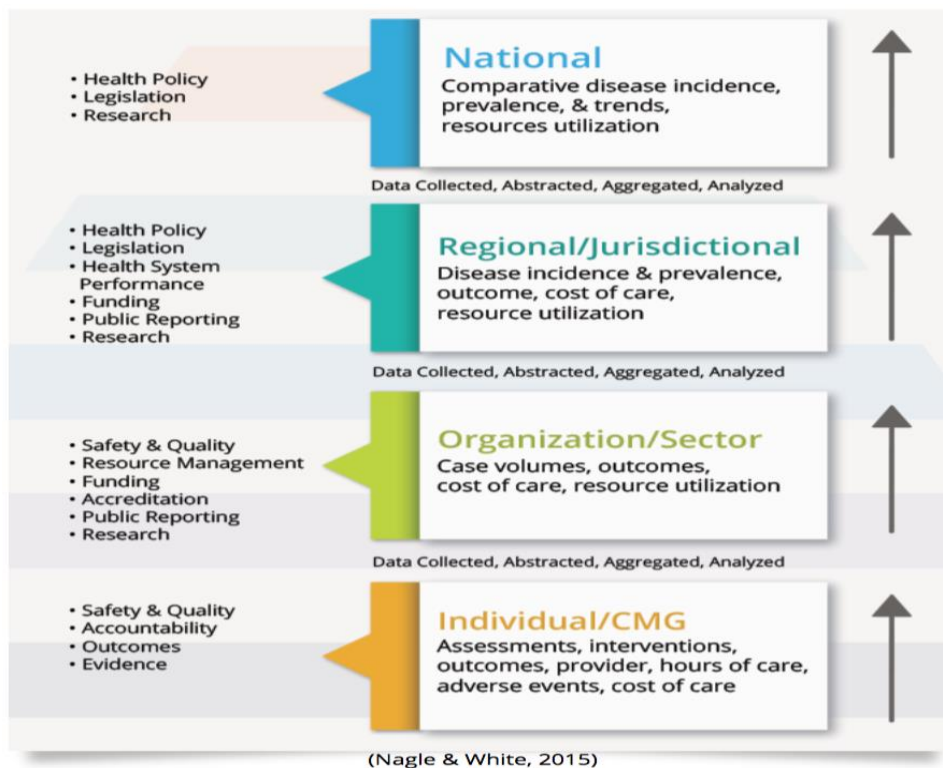
Figure 1. Standardized data - Collected once used for many purposes.

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2 IPSOS (2019). Canadians optimistic over the role technology will play in the health care system of the future. Factum, August 8, 2020. Retrieved May 18, 2021, from: https://www.ipsos.com/en-ca/news-polls/The-Future-Of-Connected-Health-Care.

Background

In early 2000, work was undertaken in Ontario to identify and standardize an essential, evidence-based dataset that would add value to nurses, the interprofessional team and patients[3]. Building upon the Canadian Institute for Health Information's (CIHI) pan-Canadian collection of interRAI data in homecare, long-term care, and community care, this work was extended to encompass the collection of an essential standardized data set within acute care settings, using interRAI measures where feasible. The essential data set includes the following items: functional status, symptom status (e.g., pain, fatigue), safety outcomes and therapeutic self-care ability. Most of these measures are already assessed on admission to acute care but not in a standardized format. Early efforts focused on building this essential dataset into clinical information systems while simultaneously attempting to reduce the burden of data collection for clinicians. A study conducted in 2019 found that over 2.7 million patients are admitted to acute care every year and nurses are collecting over 200 data items on admission to acute care, spending an average or 40-60 minutes for each admission assessment. Given that only 25% of these data are deemed useful and relevant to the healthcare encounter[4], there is an opportunity to examine the volume and value of data that nurses are currently gathering on admission. Optimally, assessments should be focused on the collection of information that adds value to clinicians in planning and evaluating care, as well as provide support for people to be better prepared to manage their symptoms and self-care on discharge.

The aforementioned essential clinical dataset is currently being collected in acute care sites in Ontario, Prince Edward Island, Vancouver Coastal Health, Yukon, and Alberta Health. A pilot project demonstrated the capacity to abstract the essential clinical dataset into the Discharge Abstract Database at CIHI[5]. The use of consistent language and measures provides the capacity to analyze clinical actions and outcomes within and across clinical populations and sectors. In particular, when linked with other datasets that are held at CIHI, such as the homecare and community care dataset, the consistent capture of standardized clinical outcomes has the potential to support longitudinal research on the outcomes of care for specific populations across care sectors.

Research has validated the predictive ability of this dataset on admission, demonstrating potential to inform care that may shorten lengths of stay and prevent readmissions[6789].

[3] Doran, D. M. Ed. (2003). Nursing-sensitive outcomes: State of the Science. Jones & Bartlett.

4 Effken, J., & Weaver, C. (July 2016). Spring cleaning — the informatics version. Online Journal of Nursing Informatics, 20(2). Retrieved from http://www.himss.org/ojni

[5] Canadian Institute for Health Information (2013) C-HOBIC Information Sheet Available at: https://www.cihi.ca/sites/default/files/document/c-hobic-infosheet-en.pdf

[6] Sun, W., & Doran, D. (2014). Understanding the Relationship between Therapeutic Self-Care and Adverse Events for the Geriatric Home Care Clients in Canada. JAGS, 62, supp 1.

[7] McGillis Hall, L., Wodchis, W.P., Ma, X & Johnson, S. (2012). Changes in Patient Health Outcomes from Admission to Discharge in Acute Care. J Nurs Care Qual. DOI: 10.1097/NCQ.0b013e3182665dab

[8] Jeffs, l., Jiang, D., Wilson, G., Ferris, E., Cardiff, B., Lancetta, M. White. P & Pringle, D. (2013). Linking HOBIC Measures with Length of Stay and Alternate Levels of Care: Implications for Nurse Leaders in Their Efforts to Improve Patient Flow and Quality of Care. Nursing Leadership, (25) 4, p58-62.

[9] Wodchis, W. P., McGillis Hall, L., & Quigley, L. (2012). Increasing Patient Self Care to Avoid Acute Care Readmissions. Unpublished data presented at the HOBIC Symposium: Demonstrating Value with HOBIC Data. Toronto, ON.

Furthermore, a recent publication has further demonstrated the value of this essential data set for clinicians and people within the healthcare system[10].

While this work started as a 'nursing initiative' by the Ontario Ministry of Health, the value of a standardized clinical dataset for all healthcare providers, caregivers, and patients has been demonstrated across all sectors of care. Despite the demonstrated and potential value, efforts to advance this work have failed to garner the financial and leadership support needed for a Pan-Canadian deployment. Unlike the interRAI dataset reported to CIHI, the lack of a mandate has largely limited wide scale adoption of standardized clinical outcomes data in acute care.

Recommendations
- Implement a standardized essential clinical data set in acute care to inform clinical decision-making, support consistency of information shared across providers and sectors, and improve clinical outcomes;
- Identify a national sponsor that recognizes the value of a core standardized clinical data set; one that can provide the leadership to substantially advance this work;
- Work with vendors, clinicians, and other stakeholders to design systems that generate care plans and clinical acuity based on standardized clinical assessment data.

Value of National Clinical Data Standards
The adoption of national clinical data standards will:
- Allow for consistent monitoring of outcomes across the continuum of care, thereby facilitating safety, quality, and continuity of care;
- Enable national, peer-group comparability, providing both macro and micro insights to guide decision-making and inform funding requirements and health human-resource planning; and
- Improve population health by enabling individuals to use consistently named, defined, and measured clinical outcomes data to understand and manage illness and improve the health of patients.

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[10] White, P., Nagle, L.M., & Hannah, K. (2022). C.W., Canadian Health Outcomes for Better Information and Care: Making the Value of Nursing Visible through the Use of Standardized Data. In Nursing and Informatics for the 21st Century – Embracing a Digital World, 3rd Edition. Productivity Press, Weaver, C, Senseimer, J., Pruinelli, L., & Weber, P. EDs