Towards and Essential Clinical Data Set for Acute Care organizations in Canada

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Introduction

In 1992, nurses in Canada reached consensus on the clinical data elements required to understand the impact of nursing care: client status, nursing interventions and client outcomes. In addition to these clinical data, nurses in Canada identified the need for unique nurse identifiers and nursing resource intensity information to reflect the work of nurses[1]. While there has been progress in different areas to identify, define, and standardize nursing data, these data are neither consistently collected nor widely integrated into EHRs. Furthermore, these data are not captured within administrative systems nor abstracted into key data repositories. While standardization is essential to truly benefit from investments in electronic health records and facilitate quality healthcare; a majority of nurse leaders have yet to appreciate the potential value to be garnered from the use of standardized terminologies, metrics, and definitions within organizations and across the healthcare system.

Background

Over the last five years, more than 150 nursing and healthcare leaders, vendors, government representatives, and stakeholder organizations (e.g., Canadian Institute for Health Information (CIHI), Canada Health Infoway (Infoway), Canadian Nurses Association (CNA), Canadian Patient Safety Institute, Accreditation Canada) from across Canada have convened to discuss the need for and the benefits to be derived from the adoption of national nursing clinical data standards. The National Nursing Data Standards initiative (NNDS) has received financial and in-kind support from CNA, CIHI and Infoway, as well as several healthcare technology vendors.

These symposia have focused on the:

- Development of short-term objectives and action plans to promote the adoption of NNDS, and
- Identification of stakeholders, accountabilities, and sponsorship for actions to advance this work in Canada.

Focused in the areas of clinical practice, administration, research, education, and policy, working groups were established in the first year and have continued actively developing and deploying strategies to advance the adoption of national clinical data standards across Canada.

Coming out of the 2016 NNDS symposium the Policy Working Group submitted the following resolution to the Canadian Nurses Association:

- Be it resolved that the Canadian Nurses Association advocate for the adoption of two standardized clinical reference terminologies, specifically ICNP® and SNOMED-CT, as well as a standardized approach to nursing documentation in all clinical practice settings across Canada, specifically C-HOBIC and LOINC Nursing Physiologic Assessment Panel.

This resolution was passed at CNA board meeting November 2016.

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[1] Canadian Nurses Association (1993). *Papers from the Nursing Minimum Data Set Conference. October27-29, 1992.* Ottawa: Canadian Nurses Association.

The focus of this report is the outcomes of the NNDS Clinical Working Group. For more information about the work of the Policy, Administration, Education and Research Groups please visit: https://www.cna-aiic.ca/en/nursing-practice/the-practice-of-nursing/nursing-informatics

NNDS Clinical Working Group

To advance the uptake and use of clinical data standards in Canada the NNDS Clinical Working Group focused on understanding what items are currently included in admission assessments and exploring opportunities for standardization. Since there are many initiatives underway across Canada in long-term care, home care, community care and mental health related to the implementation of interRAI[2] instruments, as a first step the group decided to focus on the acute care admission assessment for Med-Surg patients. Subsequent to this work the group wanted to understand if there was a subset of essential key items that could be collected using a standardized format across the healthcare system (primary care to home care) to facilitate clinical decision-making and patient engagement in self-care, and support care transitions.

Clinical Working Group Guiding Principles:

- Assess and collect information that is essential to patient care decision-making.
- Documentation about the patient needs to improve communication to the whole healthcare team and the patient.
- Value in including 'therapeutic self-care' in assessments to support planning for care transitions and patients' abilities to manage their self-care.
- Advocate for cross-sector/setting adoption of a consistent essential minimum clinical data set.
- Focus on reducing burden of assessment and data collection for both clinicians and patients.
- Wherever possible ensure that there is evidence to justify the collection of specific information.
- Make sure that the gathering of essential clinical data is embedded as a part of usual workflow, not an additional process.
- Consider designing clinical information systems to include patient/family data entry in the future to further enhance patient-provider collaboration.

As organizations have moved from paper-based documentation to electronic health records many have failed to critically examine what clinicians are documenting and the value of this information for patient care decision-making. Furthermore, little attention has been paid to interoperability standards resulting in duplication and re-entry of data even though it may reside elsewhere, either internal to the organization or within an external system.

[2] https://www.interrai.org/instruments/

Registered nurses and Registered Practical Nurses (in some settings) assess patients as an initial step in planning for care and this assessment generally includes information about physiological, psychological, sociocultural, spiritual, economic, and lifestyle factors. This baseline assessment includes 2 components: an interview and a physical examination. Currently the RN/RPN completes both sections, however in the future systems may have the capacity for patients to complete the interview component in advance of a nurse reviewing this information with the patient on admission.

Communication with Chief Nursing Executives from across Canada in 2019 supported that nurses were spending approximately 40-60 minutes on completing the admission assessment. Research by Sengstack reports that only 25% of data nurses collect within the healthcare record is utilized[3]. The NNDS Clinical Working Group recognized the need to include items in the admission assessment that facilitate the provision of patient-centered care and enhance the patient experience. The group also identified the documentation burden for both patients and clinicians. The initial admission assessment should focus on information that needs to be assessed on admission to inform clinical decision making and that is not documented elsewhere. It should be considered whether some information might be better documented by other health care providers.

To understand what information is currently being assessed upon admission to acute care, the NNDS Clinical Working Group reached out to five sites across Canada that had recently implemented an EHR. A review of the admission assessments supported that nurses were assessing on average over 120 items on admission and that there was significant consistency in the concepts that were assessed, however most sites did not use any standardized way of assessing specific information. This lack of standardization limits the ability to abstract and share information across the healthcare system with other clinicians and patients and their families. The NNDS Clinical Working Group also found that there is a lot of duplication in the assessments specifically related to skin assessment, as there are assessments in different sections of the EHR. In addition, historically, a lot of data gathering requirements have been added in response to a particular incident or issue; typically, it is incumbent on nurses to gather these new data. Organizations have given little consideration to patients' expected lengths of stay relative to the information being required in the admission assessment. It is important to recognize that every time something is assessed on admission it adds to another click or may require the nurse to scroll through another screen and this requires more time spent on the computer. For patients with shorter lengths of stay, the requisite admission data should also be truncated to reflect only information that is truly essential to inform the anticipated care.

Survey of nursing leaders

In the fall of 2019, a survey was distributed to nurse leaders from across Canada that had expertise and an understanding of the value of using clinical data standards to:

[3] Efkin, J., & Weaver, C. (July 2016). Spring Cleaning – the informatics version. Online Journal of Nursing Informatics, 20(2),. Retrieved from http://www.himss.org/ojni

- identify items that should always be included in admission assessments;
- identify items that could be considered for deletion or collection only when necessary;
- examine who is best suited to assess specific information;
- understand the standards being utilized for acute care admission assessments.

The following questions were asked:

1. Which of the following BACKGROUND History information is essential for planning and delivering care to an adult patient admitted to acute care?
    a. Time since last admission
    b. Diet
    c. Chronic Conditions
    d. Mental Health Assessment
    e. Family History
    f. Infection History
    g. Medication Profile
    h. Allergies
    i. Advanced Directives

2. Which of the following SOCIAL History information is essential for planning and delivering care to an adult patient admitted to acute care?
    a. Living Arrangements prior to admission
    b. Employment Status
    c. Spiritual/Cultural Needs
    d. Alcohol Use
    e. Tobacco Use
    f. Substance Use
    g. Home & Environment assessment
    h. Exercise frequency
    i. Hobbies or interests

3. Which of the following COGNITIVE information is essential for planning and delivering care to an adult patient admitted to acute care?
    a. Cognitive skills for daily decision-making
    b. Acute change in mental health status from pts usual functioning: e.g.: restlessness, lethargy, difficult to arouse, altered environmental perception
    c. Memory recall ability
    d. Periodic disorientation thinking or awareness

4. Which of the following SYMPTOM Assessments is essential for planning and delivering care to an adult patient admitted to acute care?
    a. Pain frequency
    b. Pain intensity
    c. Dyspnea
    d. Fatigue
    e. Nausea

5. Which of the following COMMUNICATION Items is essential for planning and delivering care to an adult patient admitted to acute care?
    a. Making self-understood/ability to understand others

b. Hearing
c. Vision

6. Which of the following ADL information is essential for planning and delivering care to an adult patient admitted to acute care?
    a. Bathing
    b. Walking
    c. Transfer to toilet
    d. Bed mobility
    e. Continence

7. Which of the following RISK screening is essential for planning and delivering care to an adult patient admitted to acute care?
    a. Falls history
    b. Risk of falls
    c. Presence of skin breakdown
    d. Risk of developing skin breakdown
    e. Risk of suicide

8. Which of the following SAFETY items is essential for planning and delivering care to an adult patient admitted to acute care?
    a. ID band on
    b. Allergy band on
    c. Unit orientation
    d. Call bell within reach
    e. Smoking policy
    f. Scent free policy
    g. Belongings policy
    h. Patient informed re: not allowed to leave unit without informing nurse

9. Which of the following DISCHARGE READINESS information is essential for planning and delivering care to an adult patient admitted to acute care?
    a. Knowledge of medications
    b. Ability to manage symptoms
    c. Ability to manage care

10. Are there any other items or information that should ALWAYS be assessed or gathered upon admission of the adult Med-Surg patient into acute care?

For the following questions respondents were asked <u>who is the best person to ask/assess the item:</u> No one, as it is not necessary, Admitting clerk, Registered Nurse/Practical Nurse, Physician, Social Worker, Physiotherapist, Occupational Therapist, Discharge Planner, Respiratory Therapist, Other:

11. Who is the best healthcare person to collect the following BACKGROUND HISTORY at the time of admission to acute care?
12. Who is the best person to collect the following SOCIAL information at the time of admission to acute care?

13. Who is the best healthcare person to collect the following COGNITIVE information at the time of admission to acute care?
14. Who is the best healthcare person to collect the following COMMUNICATION information at the time of admission to acute care?
15. Who is the best healthcare person to collect the following ADL information at the time of admission to acute care?
16. Who is the best healthcare person to collect the following SYMPTOM information at the time of admission to acute care?
17. Who is the best healthcare person to collect the following RISK screening information at the time of admission to acute care?
18. Who is the best healthcare person to collect the following SAFETY information at the time of admission to acute care?
19. Who is the best healthcare person to assess/collect the following DISCHARGE READINESS information at the time of admission to acute care?

Participants were also asked to identify any standardized tools being utilized in assessments and whether there is other information that nurses needed to assess on admission to acute care:

20. Please specify any standardized tools being used in your organization to gather/assess the following information upon admission of adult Med-Surg patients to acute care?
21. Do you have any other comments or suggestions regarding the use of clinical data standards related to adult med-sur acute care admission assessments?

Summary of Findings

See Appendix A for detailed survey findings

For the most part respondents supported the need to collect Background, Social, Cognitive, Symptom, Communication, ADL, Risk, Safety and Discharge Readiness information on admission, however there were a few items within each category that some respondents did not believe needed to be assessed on admission such as: employment status; home and environment assessment; exercise frequency; smoking/scent free policy; informing patients about the importance of notifying the nursing staff if leaving the unit. Respondents added that it was important to ask about patient goals on admission.

The majority of the respondents stated all of the items should be asked/assessed by a RN/RPN. One exception was advanced directives as respondents strongly supported that this should be completed by the physician. There was some support for physiotherapists assessing the ADLS and asking information regarding exercise frequency. In addition, respondents felt that items such as time since last admission, id band on; smoking, scent and belonging policies could be asked by the admitting clerk.

While some respondents reported use of standardized tools within the admission assessment, the results varied by site. The C-HOBIC items are utilized by some sites across Canada. C-HOBIC

uses items from the inteRAI measures[4] to assess to assess the following evidence-based nursing sensitive outcomes: functional status, continence, symptoms (pain, fatigue, nausea, dyspnea) falls, pressure ulcers and readiness for discharge. The interRAI tools are used in home care, long-term care, mental health and community care settings across Canada and the goal of C-HOBIC was to bring the collection of these items into a standardized format to allow items to be shared across the continuum of care. The C-HOBIC measures have been mapped to both ICNP® and SNOMED CT to support interoperability. In British Columbia some sites utilize the 48/6 Model of Care for hospitalized seniors (aged 70 and older)[5]. This model addresses six care areas through patient screening and assessment: bowel and bladder management; cognitive functioning, functional mobility; medication management, nutrition and hydration; pain management. Screening and/or assessments are then supported by the development of an individualized care plan to address key areas of health for the senior.

Other standardized tools being utilized in some settings are:

- Nutrition – Canadian Nutrition Scale
- Medication - Best Possible Medication History
- Alcohol – CAGE
- Cognitive – Mini Mental State Examination, Montreal Cognitive Assessment (MOCA), Cohen Mansfield Agitation Inventory
- Pain: 0-10, Faces
- Falls: Morse Fall scale
- Skin: Braden scale
- Suicide: Columbia Suicide Severity Rating Scale (CCRS), ISPATHWARM
- Safety Information: Modified Early Warning Score (MEWS), Sepsis Risk Scale

Discussion

National and jurisdictional endorsements of standards such as SNOMED-CT and ICNP have set the stage for the adoption of standards more broadly in Canada. In nursing, specific initiatives such as C-HOBIC[6] have begun to enable the standardized collection of nursing data within healthcare organizations. While healthcare organizations are increasing their focus on transitions of care, particularly for the elderly with chronic disease, there is still a lack of understanding as to what clinical information is most important, in what format and in which settings.

Components of documentation are required to demonstrate that quality patient care has been provided. Required documentation often includes data elements required by individual healthcare organizations, as well as those mandated by government, regulatory and other agencies. However, some documentation is self-imposed – "we've done it to ourselves". In

[4] https://www.interrai.org/instruments/

[5] https://bcpsqc.ca/wp-content/uploads/2018/05/Key-Messages-for-48_6-24Sept2012-1.pdf

[6] Hannah, K.J., White, P., Nagle, L., & Pringle, D.M. (2009). *Standardizing Nursing Information in Canada for Inclusion in Electronic Health Records: C-HOBIC* . JAMIA, 16(4), 524-530.

addition, organizational culture can influence what is assessed and documented - often this exceeds the documentation required for patient care but rather is due to "we've always done it this way"[7]. In EHRs items such as 'social history' 'home environment' 'allergies' etc. are attached to the person and therefore organizations need to explore ways for this information to be pulled forward into future assessments in order to reduce the burden of questions to patients.

The collection of standardized clinical data should provide information for health care leaders, nurses and other 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. Standardized measures are essential to evaluate the effectiveness of clinical interventions and related clinical outcomes. Standardized clinical data assists clinicians to communicate with team members at shift change and when patients are being transferred home or to another organization. Additionally, clinical accountability is part of the larger movement of accountability driven by the public and policy makers, whereby all healthcare professionals should provide evidence of the role they play in patient outcomes within the healthcare system.

People within the healthcare system are being provided with increased access to their health information and it is important that they have access to essential clinical information to support ongoing self-care. To this end, the use of standardized tools with consistent language and measures across care settings will be imperative; patients and families will become familiar with these and more likely to engage in self-monitoring of same. This will support them in being active participants in their healthcare. In some instances, patients and families living with chronic conditions are already providing this type of information for ongoing review by clinicians.

Next Steps

Since many of the items currently being assessed within the acute care admission assessments are consistent, the opportunity for standardization exists. The Clinical Working Group will seek funding to bring together Chief Nursing Executives, CNIOs (nursing informatics experts) and vendor representatives from across Canada to:

- Examine items within admission assessments and get input for the delineation of an Essential Clinical Data set for Med-Surg patients in acute care sites in Canada.
- Determine opportunities for standardized measures as part of this Essential Clinical Data Set.

[7] Sengstack, P., Adrian, B., Boyd, D., Davis, A., Hook, M., Hulett, S.L., Karp, E., Kennedy, Heermann Langford, L., & Niblett, T. A. (2020). *The Six Domains of Burden: A Conceptual Framework to Address the Burden of Documentation in the Electronic Health Record*. Position Paper of the American Nursing Informatics Association Board of Directors.

- Identify a suite of items from within this Essential Clinical Data Set that should be collected across all sectors the healthcare system.

Conclusions

All healthcare leaders need to recognize the value of usable and reusable clinical information for clinicians and people receiving healthcare services. As the largest contingent of health care providers, nurses' contributions to the health of Canadians will be fully realized with the adoption of national clinical data standards and consistent reporting in practice settings nationwide.

The adoption of national clinical data standards will:

- Allow for consistent monitoring of outcomes across the continuum of care, thereby facilitating safe, quality care and the 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.