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## Proceedings from the 2019 National Nursing Data Standards Symposium

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Many thanks and appreciation to all of you!

*Lynn & Peggy*



# Welcome and Introduction

## **Michael Villeneuve, CEO, Canadian Nurses Association**

The Canadian Nurses Association (CNA) is focused on professional practice, leadership, and policy. CNA is currently working with Venture Communications to develop a plan for strategic thinking, governance, membership, branding, and communications. In the past year the board approved extending membership to Registered/Licensed Practical Nurses and Registered Psychiatric Nurses.

CNA is supportive of the work of the National Nursing Data Standards Symposium as CNA recognizes the need for access to information to support strategic decision-making. There is a need for data on what nurses are doing, what works, and what doesn't work. This will support shifting the thinking towards value-based health care; every decision point requires data to support our thinking.

### **CNA DRAFT POLICY PLATFORM**

- Building better models of care,
- Reimagine aging,
- Strengthen mental, spiritual, and emotional health,
- Support effective, excellent professional nursing practice,
- Engage deeply in the truth and reconciliation journey,
- Think ahead and be prepared.

### **NURSING NOW CANADA CAMPAIGN**

- Our agreement as Nursing Now Canada is to advance nursing leadership, advocate for federal and provincial/territorial government chief nurses, and strengthen Indigenous cultural safety through nursing.
- Within Canada, the current federal government structure does not have a Chief Nurse role, which is problematic on the world stage and for the state of nursing and health care in Canada.
- CNA has committed to establishing a comprehensive Canadian hub of nursing leadership development, support, and rewards for all regulated nurses to educate, empower and support them to lead, advocate, innovate, influence public policy and create sustainable change,

## CNA'S LEADERSHIP PRIORITIES

- Affiliation and recognition
  - Canadian Nursing Leadership Association
  - Canadian Academy of Nursing
- Teaching and learning
- Policy leadership
- Leadership in the areas of research/science and data.

## **Dr. Lynn Nagle, Co-Lead National Nursing Data Standards (NNDS) Initiative: Data Standards: Past, Present, Future**

The objectives of the 2019 National Nursing Data Standards Symposium are:

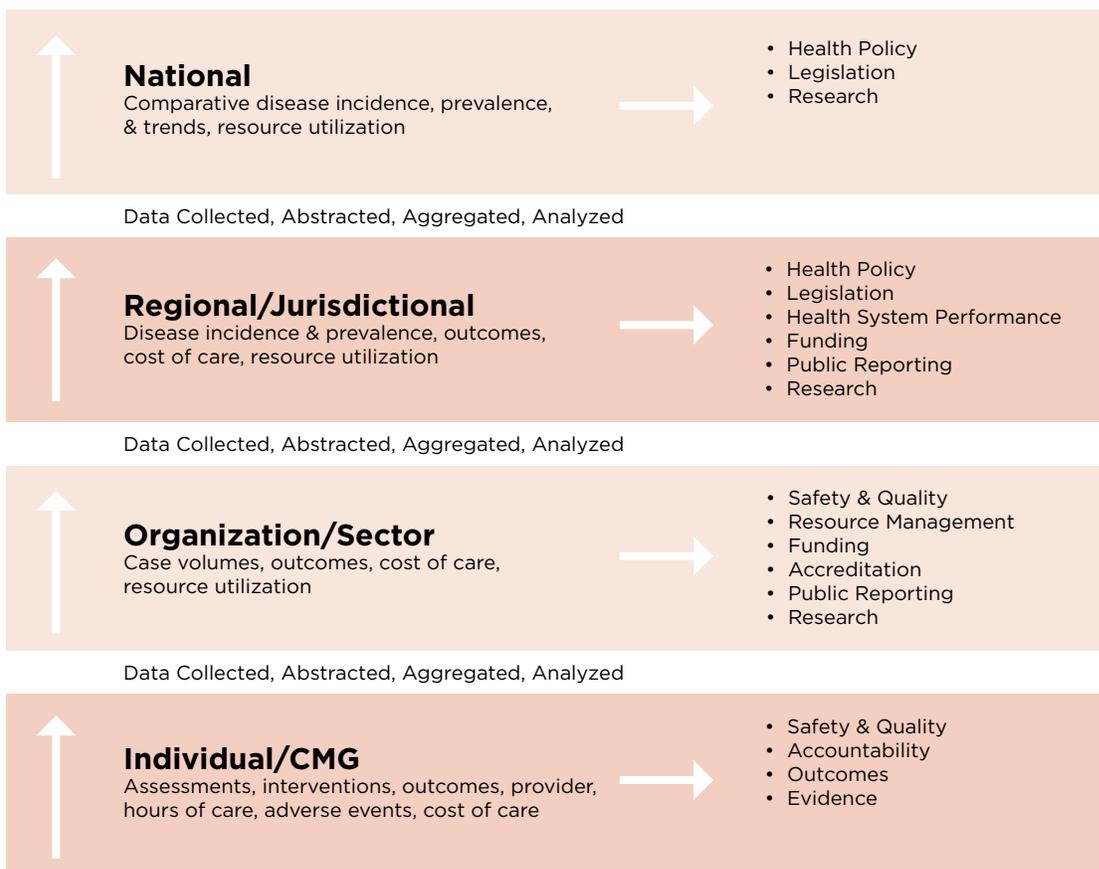
- To continue the national dialogue on the adoption of an essential, standardized nursing data set for Canada,
- To provide an update on activities and developments since the 2018 symposium,
- Identify next steps for NNDS.

This work started many years ago, but over the course of the past two decades most of the progress has focused on the Canadian – Health Outcomes for Better Information and Care (C-HOBIC) project. Work has been completed mapping C-HOBIC concepts to both the International Classification of Nursing Practice (ICNP®) and the Systematized Nomenclature Of Medicine – Clinical Terms (SNOMED-CT). The National Nursing Quality Report (NNQR) initiative examined the collection and linking of clinical data with administrative data; however much of this work involved manual data collection – this is not a sustainable approach. In addition, there was inconsistency in approaches to the collection and reporting of nursing data. As part of the C-HOBIC initiative, a pilot was undertaken to abstract the C-HOBIC data from clinical information systems and include it with the Canadian Institute for Health Information Discharge Abstract Data (DAD). This was the first time clinical data beyond physician data was included in the DAD.

The adoption of clinical data standards will allow for the aggregation of data beginning with the individual through to the organization, cross-organization, cross-region, cross-country level (see Figure 1). At present, Canadian nursing has neither comparable, sharable data and nor widespread uptake of clinical data standards. Once data standards have been adopted and a unique nursing identifier is in place, it will be possible to link a nurse's practice with the outcomes of patient care and be able to begin to understand whether the right provider is providing the right care in specific circumstances. We need better data to inform the provision of the best possible interventions for our clients, to influence health and human resource policy, and generate new evidence to underpin nursing practice.

**Figure 1.** Data collected once for multiple purposes.

Standardized Data - Collected Once, Used for Many Purposes



Nagle and White 2015

From work in this area we know for certain:

- Leadership is key,
- Engagement of clinicians is essential,
- Adoption of clinical data standards will provide consistency and comparability of clinical data.

In the future nursing will need to think about the possibility of integrating nursing data with big data sets – starting to look at nursing practice relative to things like the social determinants of health, genomics, wearables, and think about our capacity to inform best practice and get us to a point where we can be predictive in planning for care and improving health. We need to demonstrate the importance of nurses’ contributions to the health of Canadians. The infographic Figure 2 below summarizes the benefits to be derived from the adoption of an essential clinical data set across the continuum of care.

Figure 2. Infographic – Advancing an Essential Clinical Data Set.

## Advancing an Essential Clinical Data Set in Canada

The use of evidence-based clinical data standards ensures the collection of consistent, comparable clinical information from patients. Standardized data provides value to patients, clinicians and administrators and helps improve the health-care system. Standardized clinical data can support accountability by providing information that highlights effective care and reveals opportunities for improvement.

**‘Data rich but information poor’**  
 Consistent data is required because “if we cannot name it, we cannot control it, finance it, teach it, research it or put it into public policy.”<sup>1</sup>

### Collect data once, use it for multiple purposes

- Nurse assesses essential standardized clinical information
- Nurse updates patient’s electronic health record
- One-time data collection improves the patient experience



### Share standardized, comparable data

- Supports consistent communication among health-care providers
- Improves care planning, clinical decision-making and care delivery
- Facilitates easier and safer patient transfers

### Data gathering process

- **Over 2.7 million patients** admitted to acute care every year
- **200 data items** assessed on average for each admission
- **40-60 minutes** per admission spent by nurses collecting data

According to one study,<sup>2</sup> only about 25% of this data is useful. We can do better.



### Refine clinical practice decisions for continuous quality improvement

- Data informs further refinement of clinical care
- Data informs the most effective use of health-care resources (e.g., nurse staffing and skill mix)



### Evaluate evidence from standardized clinical data

- For monitoring clinical outcomes
- Informs effective clinical practice guidelines and health-care policy
- Supports clinical care and health system transformation

### What can you do?

Support and advocate for clinical data standards in your organization. Learn more and get involved by visiting [cna-aicc.ca/informatics](http://cna-aicc.ca/informatics) & [cna.ca/standards](http://cna.ca/standards).

<sup>1</sup>Clark, J., & Lang, N. (1992). Nursing’s next advance: an international classification for nursing practice. *International Journal of Nursing*, 39(4), 102-112, 128. <sup>2</sup>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>



## Vendor Panel on Advancing Data Standards in Canada

Since the initial NNDS symposium, the vendor community has been supporting and participating in the clinical data standards dialogue. This year we invited 3 of our sponsor organizations to bring their perspectives to bear on the value of clinical data standards and the work being done within their client organizations. The following summarizes their presentations and comments.

NOTE: The slides from these presentations are available on the Infoway Infocentral site at: <https://infocentral.infoway-inforoute.ca/en/resources/docs/nnds/2019-symposium>

### **Sonia Pagliaroli, Chief Nursing Officer, Cerner Canada**

Cerner has a large national and global presence in healthcare. While some other countries have made strides in population health across the care continuum, Canada needs to be more strategic in this area.

Cerner is focused on:

- Alignment to best practices,
- Continuity across venues of care – need to recognize that the patient does not just exist in acute – this does not do justice to patient-centered model. There is a need for standardization of assessments across all venues of care,
- Measuring outcomes – can compare across and within organizations and demonstrate the value that nurses contribute to healthcare delivery,
- Support increased efficiency by reducing duplication and burden for both clinicians and patients.

Cerner is working to advance the uptake and use of clinical data standards

- Grey Bruce Health System trialed the submission of the C-HOBIC dataset to the CIHI via the DAD.
- Health PEI has recently worked to integrate C-HOBIC into their adult admission assessment and use HOBIC data to inform nurse sensitive outcomes at discharge.
- Island Health has leveraged Cerner methodology to streamline the Adult History Form. Their work on the essential clinical data set examined what information was required from a regulatory, policy & procedure, and practice-based evidence to reduce the amount of documentation required by nurses.

- Cerner Canadian Client Successes – Cerner and Ontario clients participated in the Ministry of Health and Long-term Care HIS renewal project to establish standard design for the Cerner Provincial Reference Model. This work examined how all of the Cerner clients in Ontario could break down the key components of the system and create consensus in how the system should be designed (e.g. order catalogues, order sets, physician documentation and workflows). Grand River and St. Mary’s will be adopting these standards.

Cerner supports the NNDS vision and understands the value of standardization. While there is clarity of standardized tools (C-HOBIC and mapping ICNP or SNOMED CT) there is often a lack of clarity on how to integrate clinical data standards into clinical practice and workflow and a vision for how data can be leveraged across venues of care. There is a need for considerations on how clinical data standards fit into the clinical workflow as opposed to imposing a process on the way nurses work. It is important to have a toolkit in terms of how to integrate clinical data standards into assessments. There is a need to develop a proof of concept to demonstrate what is possible. This needs to look beyond acute care and think about how this data could be used downstream.

If nurses can understand the value of the data they assess and enter into EHRs then they can appreciate the importance of collecting that data. It is important that we do not clutter nurses’ documentation with data that aren’t pertinent to the patient. When designing documentation, it is important to use the 80/20 rule: if 80% of patients do not have a certain condition, we should not be showing it. Furthermore, systems need to be designed to present outcomes information to the nurse so they can see trends and alter care accordingly.

#### **NEXT STEPS**

- Extend standardization to systems assessments and examine how to embed C-HOBIC into discharge planning.
- Integrate data into practice to identify and manage risk – how do we take this data and present it to clinicians at the appropriate time; this would help with compliance of data capture.
- Use standardized clinical data to develop patient centric plans across the care continuum – start to embed some of the data into a cross-venue plan of care from a holistic perspective:
- Patient care plans across the continuum versus encounter level.
- Care plan workflow into Cerner’s mPage® component – can push to the patient portal.
- Develop proof of concept based from the lessons learned from the following organizations:
  - Grey Bruce Health System submission
  - PEI Integration into the clinical workflow
  - Island Health Essential Clinical Data
  - CST project in Vancouver.

**Chris Hobson, Chief Medical Officer, Orion Health**

There is merit in building data standards into EHRs – collect once, use for many purposes and also interoperability to support patients being asked information only once. There is a need to examine if the potential exists to streamline processes at point of care transitions and then assess how do we collect/access information to support these processes. Often with EHRs, the clinician’s job is to find the needle in the haystack and our answer has been to give them more hay.

Physicians are generally unhappy with the EHRs. There are examples of designing a care coordination tool including many data elements - it was a great tool but took over 2 hours to complete.

If data standards can be mapped to SNOMED CT or a standardized terminology then it can be imported into terminology services to leverage that data and support interoperability. Some of the other benefits from having the standards include lower cost of redeployment and easier for vendors and other users. The more that you can align with SNOMED CT the easier it becomes easier to work with the data.

**Ann Gibbons, Services Sales Executive-International, Allscripts**

The technology exists to support data standards in EHRs. We don’t need to reinvent things, we just need to leverage what already exists and build on it. ‘Meaningful use’ has impacted the US greatly and they are seeing the benefits of this in terms of standards and quality. Clinical standards should be tool built into the system that supports clinician workflow – it should not be a barrier to clinicians. Clinicians need to be able to pull data at the bedside to support their practice. As systems are designed it is important to reduce duplication of data entry and the resulting impact of this on patients and nurses.

Nursing tends to want to control and therefore we often ask the same question over and over again. Do we feel liable to ask that question or do we just need to validate the information? This might be a mindset that we need to shift to validating information versus continuing to ask the same questions again and again.

Allscripts has been involved in work in Manitoba in terms of building C-HOBIC into the clinical information system however they did not turn this component of the assessment on because nursing made the decision they weren’t going to move forward with this. This is seen over and over again and speaks to the importance of governance of data as well as engaging leadership and front line clinicians in the process. These governance structures and projects should be **clinically led** and **IT enabled**. Workflows should reflect the natural workflow, not something imposed on clinicians.

We have learned from previous unsuccessful implementations that when IT had created the flow-sheets, it wasn't embedded in the workflow clinicians needed. It is important to leverage clinical IT analysts – having nurses in the IT department is critical for success. Once any new implementation is up and running it requires ongoing monitoring.

Even if you can't make widespread change, examine where you do have data available and use this to influence changes in practice and outcomes. Start small rather than focus on big data, all data sets can be analyzed for value. For example it is important to understand costs associated with readmission - does your organization know what that cost is? Do your nurses know? Understanding the cost of supplies and care impacts how nurses work and organizations need to provide them with this information.

#### **CLIENT EXAMPLE - 400 BED HOSPITAL IN ALABAMA**

- Private hospital – they took a step back to look at readmission issues for CHF patients.
- High costs incurred for these patients and costs were higher than the national average.
- There was financial motivation to reduce preventable readmissions.
- Their leadership looked at it clinically and formulated protocols in conjunction with results coming out of the rehab centers.
- **Defined problem**
  - High cost of readmission, decrease in reimbursement for 30-day readmission.
- **Developed goal**
  - Identify what to do to reduce admissions.
  - Develop clinically driven interventions.
  - Evidence-based medicine by reviewing results and order sets.
  - Education re-development and information distribution.
  - Discharge planning with time-based flags in EHR for follow-ups and re-admissions.
- **Clinical interventions:**
  - Streamlined care and implemented new protocols based on current best practices,
  - Implemented new standard order sets for specific patient population based on clinical factors,
  - Developed education videos, and got all clinicians engaged in Discharge Planning.
- **IT enabled interventions**
  - Posted information about readmission rates on the hospital website.
  - Alerts created to identify at-risk patients.
  - Created alerts that were face up, data elements in the banner bar to alert clinicians regarding CHF patients.
  - Put data elements face up so all clinicians could see how they were doing related to 30-day readmission rates.

- Dashboards were also configured to review patient status with a list of flagged CHF patients and associated status.
- Create automated discharge planning.

Drastic improvement in readmission rates after getting clinicians engaged in using data to monitor progress. The project began in 2009. Readmission rates slowly declined and by 2014 they dropped below national standards. They continue to monitor to understand ongoing requirements to support sustainment.

### Q&As

QUESTIONS/COMMENTS	ANSWERS
<p>The data is there, we keep having these conversations and are typically only thinking about the top populations. What we're missing in the conversations is the related needs of all nurses. There is nothing complicated about the analytics. What's missing is why the nurses in this nation can't get there faster. Because right now when I'm the only nurse at the table and they're waiting for me to complete this work. The financial person wants me to be able to help them do this analysis. I'm struggling because the methodologies are there but how do we move faster? We haven't clearly defined our space and value. How do we optimize your methodologies or software templates?</p>	<p><b>Ann:</b> As nurses we feel like we have to have all the parts and pieces. We talk about coding this data and making decisions in Canada. You don't have to wait for that. As vendors we would love national standards but you don't have to wait, setting priorities is important.</p> <p>It's an exception when these projects have clinical people at the table. You as clinicians own the system and if you can embed more nurses into IT departments that would make a significant impact.</p> <p>A previous client implemented a CIS 4 years ago, I did some rounding and went into the ICU and asked the nurses for feedback. They responded and were able to identify 4 issues that were low-hanging fruit and related to patient safety. In 30 minutes they had identified ways to resolve those 4 issues. We need nurses to be embedded in the organization using the system.</p>

QUESTIONS/COMMENTS	ANSWERS
<p>We are well versed in understanding in how we embed it, the nice thing about C-HOBIC is the work has been done in identifying the suite of nursing sensitive outcomes. That's the place to start. It is really about the integrated workflow, do we see the next step of evolution in terms of making it easy is to map natural language processing to the C-HOBIC indicators to have data as a byproduct?</p>	<p><b>Sonia:</b> The mapping can happen behind the scenes; it's about how to make sure you're collecting the right information at the right time by the right clinicians. Later you will hear from PEI Health about some of the challenges associated with this type of work. What if some of this information is gathered before? Until you do it, it's hard to learn. We need to have clients doing this integration</p> <p>and have a proof of concept or toolkit so everyone can learn about how to do this work. It's about designing it in a way that makes it efficient for nurses to do the right thing.</p> <p><b>Peggy:</b> Engaging with nursing leadership and talking about data at all levels of the organization (unit level, project board etc.) is important. Giving that data back to the nurses is also important, as most nurses currently don't have access to real time data about their patients.</p> <p>In terms of the question about natural language processing, we have this capacity now. The challenge is that once you have more data from the documents and run it through NLP you still have to put it in the right place for uptake.</p>

## Clinical Panel on Advancing Data Standards in Canada

Among those participating in the NNDS symposia are clinicians leading jurisdictional EHR initiatives. We invited 3 jurisdictional organizations: Health PEI, Alberta Health Services and Island Health, to provide an update on their efforts to realize the integration of clinical data standards and reduce the data collection burden for clinicians.

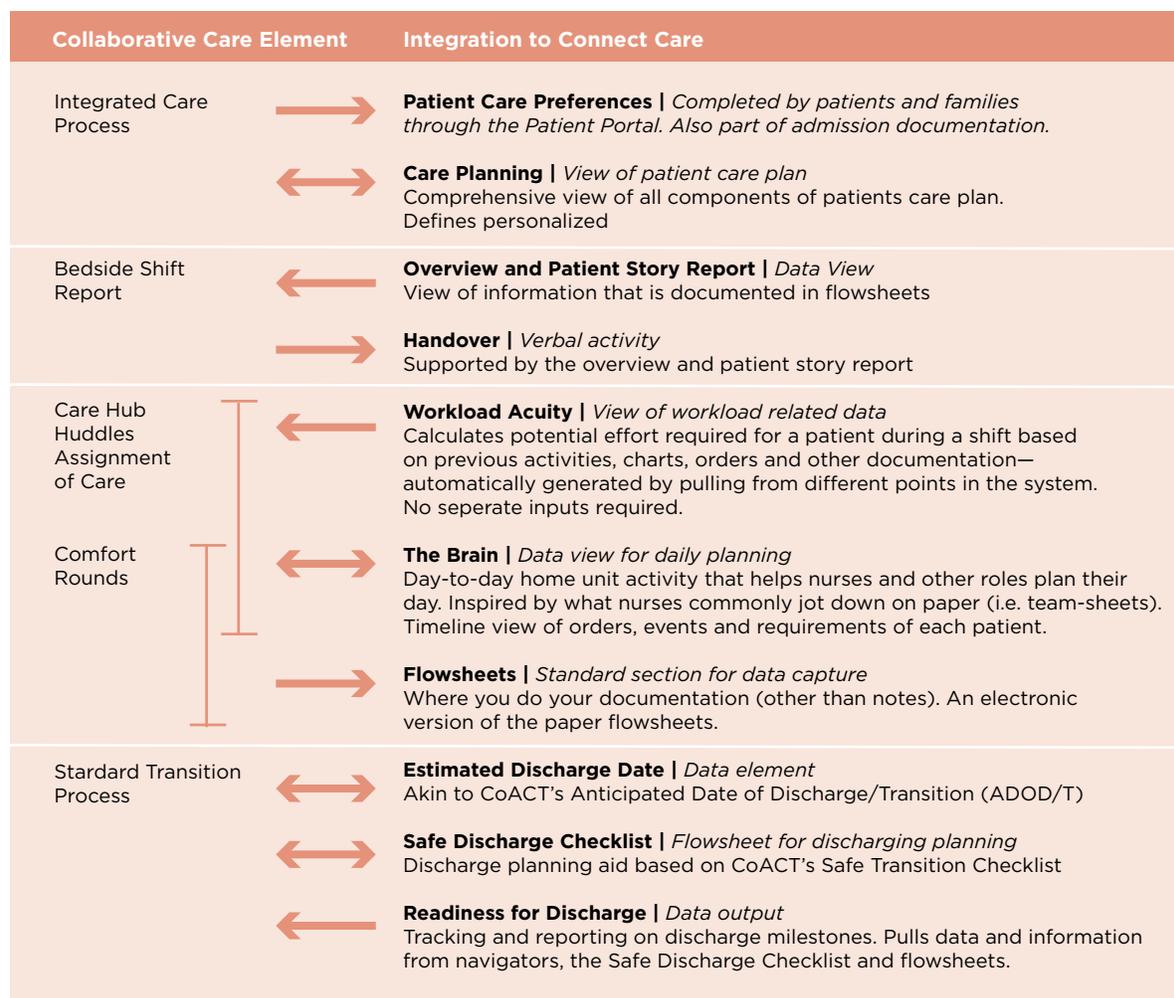
NOTE: The slides from these presentations are available on the Infoway Infocentral site at: <https://infocentral.infoway-inforoute.ca/en/resources/docs/nnds/2019-symposium>

### **Sean Chilton Vice President Health Professions & Practice, Alberta Health Services**

Alberta Health Services is in the 2nd year of a 5-year plan for implementing a CIS. They are integrating across a number of systems to create one system – includes most facets of care except private physician offices. The first go-live is planned for November of this year in Edmonton. They are currently involved in testing and are working on a training curriculum. One of the keys to the success is integration of other clinical information systems. For the most part all sites are or will be using EPIC. They are focused on province-wide standardization with collaborative care planning and assessments across the care continuum and with one instance of EPIC across the province. They have successfully integrated 12 standardized screening tools. Patient care orders, interventions and supportive care orders are standardized across all disciplines. The standardized admission assessment will drive care planning, and then this can be used for outcomes evaluation.

Collaborative Care within Alberta Health Services: The benefits of collaborative care for patients, families, and providers have been demonstrated in the literature. Within the collaborative care environment we incorporated 20 key elements that advance collaborative care. Outcomes from a paper trial of this collaborative care content were immediately realized (e.g. decreased LOS). There were 5 key elements to the process (see Figure 3).

**Figure 3.** Collaborative Care Process within AHS



The team has had conversations around which data standards to implement. Inclusion of the inter-RAI measures requires significant time and changes within the vendor system and with the short time frame that AHS planned we were unable to build in the algorithms. While we decided not to build C-HOBIC in at this time, all of the data is mapped to SNOMED CT so when the time is right AHS can create those linkages and look at outcomes related to the collaborative practice model and then how to contribute to the broader evidence required for the future. Going forward AHS will continue to focus on the documentation piece and how patients can be included in this process.

**Samantha Stockand, Clinical Strategist & Senior Specialist, Clinical Informatics, Island Health**

Since 2015 Island Health has been using Cerner electronic Powerforms. In a review of the patient history we found that there were a significant number of forms that were not signed (approximately 9%)

which adds up into nursing hours. We wanted to understand why the nursing staff was not finishing the form. Feedback from nurses supported that:

- The time required to complete the assessments is unmanageable;
- Nurses assumed they needed to complete all the data elements;
- It was difficult to isolate the need to know versus nice to know;
- There was varying quality within the completed forms;
- There were four locally developed unsanctioned paper versions of an essential data set on admission being used by different acute care units.

#### **REVIEW OF PROCESS & METHODOLOGIES**

- Needed to identify data elements that should remain in the form versus those that should be removed.
- Guiding principle: use the evidence to inform decisions.
- Looked to many sources of requirements as to what should be included.
- Extracted a year's worth of data for analysis.
- Examined regional usage of data for all data items currently within the form.
- Examined whether the data was captured elsewhere other than in the PowerForm.
- Asked if the right person was collecting the right information at the right time.
- Review of a) evidence-based practice, b) Accreditation Canada-required organization practices, c) Island Health standards.
- Asked what was the purpose of the Admission History Assessment and what is the clinical intent of capturing information?
- If a patient is being asked a question, the information should be used in a meaningful way.
- Clinically led collaboration between the Clinical Informatics staff, operational nursing staff, leadership and professional practice.

#### **WORKSHOP PROCESS**

- Prior to workshops they performed a pre-review of data elements to categorize elements. This pre-review set the stage for the larger group process.
- Key stakeholders were brought to a workshop.
- Posted all the data points on posters.
- Workshop involved the use of colored sticky notes (i.e., red, yellow, green) to determine what to keep (green), what to let go of (red) and what items required further discussions (yellow).
- Worked to reach consensus.
- During the full day workshop and lifecycle, it was important to have transparency of stakeholders.

#### ISLAND HEALTH'S ESSENTIAL CLINICAL DATASET FOR ADMISSION

- Made a change from 156 to 51 questions.
- Communication of the change was done through change experts and ongoing education.
- Staff who participated were happy with the process and the methodology.
- Less variance in time spent documenting.
- Lower rates of saved versus signed forms.
- Greater degree of quality documentation.
- Greater degree of satisfaction and perceived usefulness of the data captured.
- Post Change Data Capture -Average time of completion was reduced to 12 min.
- Signed versus Saved Forms - Dropped by 2%, equates to 9 hours a week
- Quality of documentation was significantly increased - Quality measured by number of completed sections, 14% increase in the controls section; 55% decrease in amount of time spent documenting in the form.
- Overwhelmingly positive qualitative responses from nursing staff.

#### **Marion Dowling, Chief Nursing, Allied Health & Patient Experience, Health PEI & Dorothy Dewar, Nurse Research Lead, Health PEI**

Health PEI has a provincial standardized EHR across acute care sites; same admission form for any patient that is admitted. They integrated the C-HOBIC questions into the acute care EHR. The goal of this work was to link with the organization's strategic directions;

- to support a culture of quality, safety and security, determine and report how nursing patient care information will be collected and used to measure performance,
- inform practice improvement and maximize patient outcomes and to demonstrate, evaluate and report on the impact of nursing care on patient health outcomes.

Health PEI was successful in receiving support from the Canadian Foundation for Healthcare Improvement (CFHI) to integrate patient outcome measures as part of the CFHI EXTRA Executive Training Program. They engaged three other nursing leaders from across the organization to lead this team-based fellowship in Health Care Quality Improvement. Their current documentation was not patient outcome focused and did not support care planning. Additionally nurses were spending a lot of time completing the admission assessment documentation.

#### PROCESS

- Patient journey mapping exercise with patients about their admission experience.
- Demonstrated that patients wanted to ensure their problems / issues were being addressed.
- Asked nurses about their satisfaction with the admission process and documentation.

- Aims – executed on 2 units.
- Patient outcomes will be measured and improve for adult medical/surgical patients
- Nurses will use outcomes for focused assessment and planning care.

#### **PROJECT AT A GLANCE**

- Established steering committee, working groups, site implementation teams to lead this work.
- Evidence based patient outcome measures adopted as a provincial nursing standard.
- Sites and resources identified.
- Outcome measures integrated into the acute care electronic documentation.
- Workflow and processes reviewed – for surgical patients, many were admitted through day surgery, or the admission was completed in the surgical daycare or emergency department so needed to determine when the nurse completes the C-HOBIC items.
- Report comparing admission and discharge patient outcome measures.
- Reports on rate of documentation completion.
- Weekly check-ins with the implementation teams.
- Recently built and implemented care planning documentation.
- Admission Assessment & Discharge Assessment.
- Integrated C-HOBIC into the PowerForm – introduced key data elements.
- Uses conditional logic to document head to toe assessment.

#### **CARE PLAN**

- Care plan form initiated provincially. There was a need to communicate this change across the province and support nursing in using the new care plan.
- Brought discrete C-HOBIC documentation into a care plan for review at project sites, no C-HOBIC information viewable at other sites.
- Nurses to document the problem/goals, planned interventions, and updates/outcomes.
- The information will eventually be available to all nurses across the province.
- Results Review tab: to bring forward the C-HOBIC indicators and allow clinicians to compare information chronologically.

#### **OPPORTUNITIES**

- Involvement of patient family advisors in the process.
- Unit, Administrative, Provincial level opportunities to look at the status of patients being admitted to facilities, what interventions are being employed and what are the patient outcomes due to those interventions.
- Recognizing and demonstrating nursing staff intensity of work.
- Patient Impact - Positive feedback related to the changes, qualitative feedback regarding the level of satisfaction with the care provided.
- Care Plan form initiated provincially.

## CHALLENGES

- Functionality and build within EHR.
- Partial implementation leaves 2 different forms; however it is beneficial to start with a small change and learn from this.
- There were some issues with nursing workflow/process issues.
- C-HOBIC documentation – this was a new build within the Cerner system and therefore we were on our own in designing this.
- Staff had issues with the interpretation of therapeutic self-care questions. Some patients didn't seem to understand some of the questions (local colloquialisms) and it was a challenge for people with impairments.
- Require guidance and support from the clinical group to identify standards for when it is important to document these assessments.
- Linkages were established with home care resources.
- Staff need to understand the value of measuring patient outcomes related to nursing care and interventions; value to their patient, value to nursing, value to health care systems.
- Reports that were built were not user friendly however in order to increase engagement, it's important to give the data back to the nurses.
- Need to determine the appropriate patient population for C-HOBIC. Chose adult med/surg population, not using in some patient populations (e.g. obstetrics, pediatrics).
- Looking for guidance from national nursing leaders in terms of identifying appropriate patient populations for C-HOBIC.

## RESULTS

- Symptom scores & ADL summary scores improved.
- Nursing staff report that access to data is important.
- Beneficial to team functioning: Able to execute on key drivers for change within the organization.

## NEXT STEPS

- Further engagement of clinicians and analysis of results.
- Decision regarding where to implement next (e.g. small scale versus province wide).
- Refinement of workflow processes.
- Need to look at additional data, length of stay and re admission rate, and other factors that may have improved as a result of this project.
- Work with the external stakeholders: RN and LPN provincial regulators.
- Develop a business case to bring to the executive leadership group to have continued resource allocation.

## Q&As

QUESTIONS/COMMENTS	ANSWERS
<p>Since C-HOBIC has been put into place, there's no doubt that the LOS for med/surg patients has decreased. Have you seen that there is less of a change from admission to discharge because the LOS is now shorter?</p> <p>Follow-up comment: It may be more difficult to see these changes with a shorter LOS.</p>	<p><b>Peggy:</b> We don't have the national data; some of the ON sites are switching to new systems so not currently using the C-HOBIC questions. Hopefully in the future we will have data to make some of those assessments.</p> <p>Follow Up Answer: When we initially looked at how many people were admitted to acute care with high fatigue levels we were surprised and this challenges us as nurses to understand when is the right time to provide patient teaching - need to look across the continuum of care.</p> <p><b>Kathryn:</b> When I look at the PIE charts from PEI, we're able to see a difference. Intuitively it's making a difference, this might be different from what would have happened a few years ago.</p> <p><b>Samantha:</b> It wasn't just about embedding C-HOBIC into the system, there is a lot of education for nursing associated with using these data elements. Now what do I do with this information? At least we can initiate that as a conversation point. A lot of translation is required to understand what needs to happen with that data. For the most part the outcomes are showing improvement, some are showing decline (e.g. pain for surgical patients). We initiated numerical data elements for 'unable to capture' which caused issues in the reporting.</p>

QUESTIONS/COMMENTS	ANSWERS
<p>Sean mentioned explicitly that primary care is not yet part of all this change. When will it be?</p>	<p><b>Samantha:</b> While primary care was not a user of the form, the control data flows across the patient record for use in primary care. Primary care consumers are able to see it in a meaningful way.</p> <p><b>Marion:</b> All other care providers have access to review the results; a lot of work still needs to be done related to the meaningfulness of it. It isn't just about the number and result. Theoretically, that same snapshot will be captured and your primary care consumers will be able to see the historical trends.</p> <p><b>Sean:</b> While at AHS primary care is not documenting in the same tool, the flow of information gets to them. It's a one-way flow right now but we need to get to a two-way flow of information. It's going to take a much bigger force to move that forward, however, we need to start talking about this.</p>

## ACCESS 2022

### **Shelagh Maloney, Executive Vice President, Engagement and Marketing, Canada Health Infoway**

Access 2022 was launched in November of 2018 and is intended to be a movement - a ground swell. The slogan is 'a new day in healthcare is coming'. Canada has recently been going down in the international rankings (specifically with access measures) and we know that we can do better in healthcare. We know that technology can make a difference but everyone has to work towards the same goal.

One of the Access 2020 initiatives is engaging multiple stakeholders and identifying people who are innovators in the digital health space (e.g. Kids Help Phone and their national texting service; Community EMR by First Nations for First Nations; #HCLDR twitter chat). To view testimonials visit: <https://access2022.ca>

Infoway is working to create awareness about data standards as we recognize the value of standards. We know that interoperability is an issue and we have had a hard time implementing standards at a national scale. There is tremendous variability across the country in terms of the progress.

The Driving Access to Care Strategy is 100% funded by Health Canada. The vision is for healthier Canadians through innovative digital health solutions such as Prescribe IT and Access Health.

#### **PRESCRIBE IT**

- Live in 3 provinces where hospitals/doctors are sending prescriptions electronically to the pharmacy of the patient's choice.
- There is an automatic electronic communication between the two.

#### **ACCESS HEALTH**

- The goal is to provide Canadians with access to their personal health information and tools for them and their clinicians to use to support better care.
- We know that patients who have access to their health information are more confident,

knowledgeable, and have better interaction and communication with healthcare clinicians resulting in better health outcomes.

- The Gateway – a national cloud-based gateway utility built on a pan-Canadian framework with standard interfaces. Consent and identity management is a challenge but this is being addressed.
- Access Atlantic – priority in the mental health area and providing patients with access to their lab results and medication information.

#### PATIENTS OF TOMORROW

Infoway conducted some focus groups to see what access patients wanted. Patients want to pick the right services for them; own their data and control access to their data; a health care record that is kept up to date; ability to verify their identity with authentication methods they already use; and to see the big picture of their health. In order to make this happen, standards need to be identified and used.

#### Q&As

QUESTIONS/COMMENTS	ANSWERS
<p>I admire what's happening; however I'm part of the front edge of the baby boomers. What's in it for me? There's a lot of attention to care providers, not a lot of attention to lay caregivers who are increasingly burdened, who need mental health, respite support, and guidance in terms of the care they're giving. It causes me concern.</p>	<p><b>Shelagh:</b> I was at the session yesterday and ageism. One of the videos is SEFutures (St. Elizabeth Health Care). It's the aging community and is about supporting people being in the 'homespital'. Future strategies for this organization is about the patient's voice. They have an interactive device in the home that is voice activated and put into the home for clinicians to do assessments.</p>
<p>What are the security measures or identifiers are being put in place? I can see the information getting into the wrong hands.</p>	<p><b>Shelagh:</b> Cyber security is big in health care. There is more value for healthcare information on the black market. This is part of the RFP for identity management that we are working with police and banks. There is a privacy forum to bring the national and provincial privacy commissioners together, as well as ongoing conversations to address this. We also recognize it's important to educate people about being responsible.</p>

QUESTIONS/COMMENTS	ANSWERS
<p>We ended with these digital health technological advancements. We heard about an opportunity to implement provincially and different vendors about the breadth and depth of data that can be collected. Where are we going to next? There's so much here and how do we scale up in a strategic way quickly? We're not demonstrating the value of nursing. In terms of healthcare, I believe the nursing profession has more power and influence south of the border and is moving these interventions forward.</p>	<p><b>Shelagh:</b> In terms of bringing it all together, there is the potential of where we can go and what we can do. We need leaders on the ground, the people that are doing the work and the industry and governments to recognize what step's need to be taken. We're competing against things that are seen different politically. Don't ignore that there is a lot of hard work that goes into it.</p> <p><b>Peggy:</b> One of the things Lynn and I have focused on over the last few years is making sure that this work is action focused. I'm on a nursing working group in the US around nursing documentation and they are struggling with the same issues. There is a lot more regulation south of the border. Nurses in Canada need to speak up about what we do and the difference we make - we're not very good at this.</p>

## Reports from NNDS Working Groups

NOTE: The slide presentations for each of these reports can be found at: <https://infocentral.info-way-inforoute.ca/en/resources/docs/nnds/2019-symposium/reports-wg>

### **Informatics Competencies for Nurse Leaders: Gillian Strudwick Independent Scientist, Centre for Addiction and Mental Health, & Assistant Professor, Institute of Health Policy, Management and Evaluation, University of Toronto**

While this work is not specific to the data standards work, the data standards work is an important component of this research. There are two pieces of work that were completed to date to identify and support the development of nursing informatics competencies for nurse leaders in Canada: a literature review and a Delphi study.

#### **BACKGROUND**

There is a growing concern with nurses in leadership roles that they don't have the requisite informatics competencies to be able to perform their roles effectively. Many Canadian healthcare organizations are in the midst of significant decision-making regarding health information technology system implementation and optimization. There was recognition by the NNDS Administration Working Group that core informatics competencies should be identified, validated, and disseminated in Canada. While competencies have been identified for the US, the competency statements did not resonate with the Canadian nursing informatics community for a number of reasons, namely due to the differing maturity of health information technology systems between the two countries.

#### **LITERATURE REVIEW**

In undertaking the literature review, we asked specific questions related to identifying: 1) existing competencies, 2) frameworks or theories that informed competency development, and 3) instruments to assess competencies (and their psychometric properties).

- *Methodology*
  - Worked with a research librarian to complete a comprehensive search and used an established literature review framework (scoping review).

- **Findings**

- 15 articles globally, most of which were from the US.
- Some authors identified 10-25 competencies - one identified more than 100 competencies.
- The competencies varied in terms of their relevance (e.g. ability to use email).
- Competency themes were identified – knowledge, skills, and other.
- We identified a number of competencies that we could use to begin to identify which were relevant for Canada.

#### **THE DELPHI STUDY**

The purpose of the Delphi study was to identify informatics competencies of priority to Canadian nurse leaders.

- Started with the literature to inform the initial list of competency statements; then had an expert panel provide feedback, prioritize competency statements over 3 iterations.
- A total of 25, 24 and 23 participants completed the survey in Rounds 1, 2 and 3 respectively.
- Consensus was achieved at the end of Round 3 with the inclusion of 24 competency statements. All of the statements had a mean of 5 or greater on a 7 point Likert scale (1=low priority and 7=high priority).
- Unfortunately, we were unable to get participants from every province due to the limited number of informatics experts in Canada.

#### **NEXT STEPS**

- Manuscript - Identifying nurse leader informatics competencies in the Canadian context: Results of a Delphi study has been published ahead of print in the International Journal of Medical Informatics
- Funding received from CIHR for targeted dissemination of findings.
- Two other countries (Australia & Denmark) are using the initial findings from the literature review and will be conducting replication studies.
- Create a protocol for the development of a self-assessment instrument – Consider where (if anywhere) the outputs of the self-assessment go
- Identify strategies for nurse leaders to develop the core knowledge and skills
- Identify a home for this work
- This study was purposefully informatics focused but there are other unique competencies that we need to consider in the larger digital healthcare space.

## Q&As

QUESTIONS/COMMENTS	ANSWERS
<p>It would be interesting to try and connect the competencies with our 'coaching out of the box' leadership courses that provide new leaders guidance going forward.</p>	<p>.</p>
<p>As you have heard, a number of organizations undergoing HIS renewal, for Trillium we're focusing on practice readiness and part of that work is focusing on manager/educator level. I can't help but think we could leverage that opportunity and engagement point by embedding the underlying informatics competencies within the dialogue.</p>	<p><b>Gillian:</b> We have another study that examines some effective strategies to support direct care managers use of EHRs.</p>
<p>I'm struggling with thinking about the question about the home for this. One of the things is the Canadian College of Health Services and Accreditation Canada. Nurse executives need these competencies and they don't necessarily like to learn with their staff. This might be a place where they could help coaching around some of these competencies. The real home could be CNA. We don't want to have our professional knowledge administered by someone else. Nurses need to stand up and own their knowledge. When I think about the role of nurse leadership with CNA it might fit in there.</p>	<p><b>Gillian:</b> The funding from the grant is to gather a group of folks to think through that process about what happens next with the competencies.</p>
<p>I also wonder about nurse regulators. We have our own responsibility for competency. There is a national group of nurse regulators that comes together. It worries me about how much we are putting on front line nurse leaders and manager. While I don't disagree, we have to figure out how to build competencies into our education programs.</p>	<p><b>Margie Kennedy:</b> This is not an extraneous competency that we're downloading on to you. In the same way we have expectations surround patient care, fiscal responsibility, technology is ubiquitous, and I think we need to shift the narrative this is required. The responsibility is on education, clinical partners, and educators in a way that doesn't add undue burden.</p>

**Identifying Research Priorities to Advance the Value and Uptake of Clinical Data Standards: Nancy Purdy, Associate Professor, Daphne Cockwell School of Nursing, Ryerson University**

The NNDS Research Working Group was focused on exploring ways to leverage the research process to advance the agenda for uptake of clinical nursing data standards. There hasn't been a lot of work related to clinical data standards but there is work focused on research priorities for nursing informatics more broadly. A lot of research has been done about how to acquire and implement HIS's; but less around informatics from a nursing practice or data standards perspective. There is value in identifying research priorities and by making declarative statements that others can use it to justify their particular studies and legitimize the need for funding. In order to identify research priorities, we conducted a modified Delphi study with purposive sampling.

**SAMPLE**

- The original sample of 42 was based on the identification of leading authors and experts in the field of informatics in Canada.
- Of the 21 who agreed to participate, 14 completed all rounds of surveys (67%).
- Participants were employed in research, education, administration, consulting and clinical roles although none were vendors or worked primarily in policy.
- Western, central and eastern regions of Canada were represented and participants possessed an average of 13 years of informatics experience.

**METHODS**

- The original set of research priority statements were formulated from a literature search on informatics and adapted to focus specifically on nursing clinical data standards.
- The draft statements were reviewed and revised by the research team resulting in the creation of 22 statements that were categorized as dealing with the quality of care, uptake and education related to nursing clinical data standards.
- The research priority statements were sent to the participants to get feedback on the clarity of the statements and identify gaps in content.
- In round 3, participants were sent the revised 22 statements and were asked to rate the level of importance of each statement.
- In the final round, participants received the results of their individual ratings and those of the total group. They were asked to review and possibly revise their ratings and to specify the rationale for any changes.
- Consensus was defined as achieving > 70% agreement for ratings within the top 2 categories of the 7-point likert scale for each statement. The same 6 top priorities statements were identified throughout rounds 3 and 4 indicating stability and no further rounds were needed. All statements had a mean of 6.1-6.9 on a scale of 1-7 where 7= highest priority.

## RESULTS

The top 6 priorities for research on nursing clinical data standards are:

1. Use of standardized clinical data to evaluate outcomes of nursing practice for patients/clients.
2. Value of using standardized clinical data to support clinical decision making and care planning skills processes.
3. Incorporation of standardized clinical data into the design and management of clinical information systems to support patient care and research.
4. Impact of using clinical data standards on nurses' work practices and work patterns/workflow.
5. Identify clinical outcomes associated with the quality of nursing care that are important to patients, which can be used to evaluate the quality of care provided by nurses.
6. Identification of preferred formats and presentation of data and real time reports that would be of value to support nursing decision-making in practice and administration.

The priority areas for research on nursing clinical data standards focused on issues of importance to nurses in clinical practice.

## NEXT STEPS

- Explore and define issues specific to each research priority.
- Review current evidence for each research priority and identify gaps.
- Dissemination to key stakeholders to encourage program(s) of research for each priority e.g.
  - Consider preparing an infographic to convey a quick message,
  - Working on a publication - could potentially be a briefing note,
  - Struggle with which platform should be used to create a community to create sustained interest,
  - Potentially going to the organizations where data standards are being used to test out some of the questions that relate to these priorities.

## Q&As

QUESTIONS/COMMENTS	ANSWERS
Next steps for sharing information, there is a social media platform called research gate to gather a different community of audience/interest. Some key international experts are involved.	<b>Nancy:</b> Yes this would be a popular place. <b>Peggy:</b> We have a page for the NNDS on the Infoway website where we will post slide decks
Were there any priorities that didn't make the cut that surprised you?	<b>Nancy:</b> I was surprised there wasn't more around education specifically. I was surprised with the alignment of nursing informatics priorities period.

## **An Opportunity to Incorporate Clinical Data Standards in Nursing Assessments: Peggy White, Co-Lead NNDS Initiative**

### **C-HOBIC CLINICAL DATASET**

While the term ‘nursing sensitive’ is used to describe the C-HOBIC concepts (functional status, symptoms, falls, pressure ulcers, therapeutic self-care), they also have value for the whole team and the patient. There is strong evidence that collecting standardized clinical data can support clinical practice:

- In a recently completed pilot study, C-HOBIC was included in the DAD submission to CIHI from 2 acute care organizations. Any improvement in therapeutic self-care scores showed a consistent and significant protective effect for readmission to acute care at 7, 30 and 90 days. Nausea was more strongly related to early readmissions (3, 7, and 30 days), while dyspnea was more strongly related to readmission at later stages (30 and 90 days). Wodchis, W., McGillis Hall, L., & Quigley. (2012). *Increasing Patient Self Care to Avoid Hospital Readmissions – Demonstrating Value*. Toronto, ON. February, 2012.
- Research supports that higher fatigue and dyspnea scores on admission were significantly related to a longer length of stay. Furthermore, patients with high scores for fatigue and falls were more likely to be discharged to either complex continuing care, long-term care homes or rehabilitation facilities than discharged home. Jeffs, L. Jiang, D., Wilson, G et al. (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*, 2013, 25(4), p 48-62.
- Research on therapeutic self-care in the home care sector examining the use of health care resources and safety outcomes found that clients with high TSC ability experienced fewer adverse outcomes. The study indicates that there is a need to focus on improving client self-care functioning, a domain frequently overlooked by health professionals. Sun, W. & Doran, D. (2014). *Understanding the Relationship between Therapeutic Self-Care and Adverse Events for the Geriatric Home Care Clients in Canada*. *Journal of the American Geriatrics Society*, 2014, 62, supplement 1.

### **WHAT WE WANT FROM AN EHR**

- Assessments that are intuitive to clinicians (systems approach).
- Visual trends in assessment information: compare current assessment to last assessment or compare assessments over time and from different sectors.
- Report on clinical outcomes that can be generated on discharge to support transitions.
- Nursing documentation is a reflection of nursing professional practice and that the critical thinking of nurses is represented.
- Documentation needs to tell the patient story and to improve communication between clinicians and the patient.
- Recognizing the value of standardized clinical data across the continuum of care.
- Understand that anything that impacts nursing also impacts the patient.
- Ensure the emphasis is on the ideal workflow.

## **NURSING DOCUMENTATION REVIEW**

- Reviewed out 5 admission assessments from across Canada.
- An informal survey of nurse leaders from across Canada supports that nurses are spending 40-60 minutes completing an admission assessments however research from US supports that only 25% of the data nurses collect is utilized.
- There is significant duplication in assessments.
- A lot of information is related to historical practice and over years we just keep adding to the nursing assessment.
- Not considering average LOS (typically getting shorter) in relation to what information we collect
- Every time you add something it can add up to another click or required nurse time.
- Certain data should be pulled forward into assessment screens.

## **REVIEW OF 'CHARTING BY EXCEPTION'**

- Not understood by all clinicians.
- If it's not charted, it's not done.
- Some organizations have statements stating 'within defined limits' but do all clinicians know what this means.

## **TOWARDS AN ESSENTIAL CLINICAL DATA SET**

- Need to consider what we need to collect now and when we have systems interoperability what will be available across care sectors.
- InterRAI – series of tools for different sectors; recent release of interRAI-AC being piloted in a few acute care sites. There is a need to consider the intellectual property related to use of these measures, as well as licensing costs.

## **NEXT STEPS**

- Conduct a modified Delphi to get input from nurses across Canada.
- Connect with Accreditation Canada regarding what we are proposing.
- Set up patient focus groups.
- Make recommendations for an acute care admission assessment.
- Develop guidelines and a toolkit defining criteria for what data should be added or removed.

## **CONSIDERATIONS FOR ADOPTION**

- Visual depiction of data in real time whenever possible.
- Triggers or alerts based upon documentation trends (e.g.: if a patient is being discharged and the therapeutic self-care score reflects that the patient is not ready have an alert to the issue).
- Advocate for cross-sector adoption of a consistent essential minimum clinical data set.
- Avoid duplication.

- Make sure the gathering of essential clinical data is embedded as part of the usual workflow.
- Review clinical documentation tools to see if the data elements are still essential – suggest yearly.

**CONSIDER LIMITATIONS OF CHARTING BY EXCEPTION.**

- Nursing judgment should prevail to determine whether data needs to be gathered and recorded.
- Consider designing for patient-centered documentation so that in the future patients can contribute to their healthcare record.
- Focus on reducing burden of assessment for both clinicians and patients.
- Assess and collect information that is essential to patient care decisions – “is this information going to be used?”
- Documentation is built for a competent clinician.

**VALUE OF NURSING SENSITIVE CLINICAL DATA STANDARDS**

- Creates visibility for nursing.
- Supports professional accountability.
- If you’re collecting data you can do research in a much more timely manner.
- Informs health human resource planning.
- Strengthens decision-making.

**Q&As**

QUESTIONS/COMMENTS	ANSWERS
<p>It feels like some of these things have talked about for a while. Is there a feeling in the clinical group that we’re well positioned to make some big leaps?</p>	<p><b>Peggy:</b> I think as we move forward, we need to speak more and learn from each other. I think the HIMSS sites are doing some of this but there are a lot of small hospitals just starting this journey. If we have guidelines we can make a difference.</p>
<p>Some thoughts that we are going through as we plan our patient care journey from admission to discharge, part of our frame of reference is the actual physical admission forms with a discrete start and end from ED to admission. It’s not the current climate that we work in, there are patients staying longer periods of times in different departments. We have to look at it more around an encounter that has phases that are different. If our model is around primary nursing care and primary nursing assessment, then I need to understand from an evidence perspective why the nurse in the unit after the patient’s ED stay, needs to do that process again.</p>	<p><b>Peggy:</b> We need to be aware of where the information is captured and build it on. We need to design systems so that when the patient is coming to the unit nurses know what information has been assessed and what do they need to assess to develop a plan of care.</p>

QUESTIONS/COMMENTS	ANSWERS
<p>One of the big challenges we're grappling with in standardization is that the different clinical specialties hold on to the language and words they are familiar with. It is a challenge to try and change tools that they are used to using.</p> <p>Follow Up (for Sean) Do you think having the patient advisor in the room is important?</p>	<p><b>Peggy:</b> In the future if patients have access to their chart and find that different disciplines/sectors are using different tools for assessment that may be confusing for patients and impact their ability to be truly involved in their self-care. As a profession we need to get nursing in order first.</p> <p><b>Sean:</b> It's been a hard journey but the conversations need to happen. At the end of the day we need to remember it's about patients and improving outcomes to override some of the professional and personal preferences. Without the governance structures to support the decision making it becomes difficult. We've been successful with this structure and the teams were saying it has been successful.</p> <p>Follow Up Answer</p> <p>Yes. Absolutely.</p>
<p>I was disappointed to hear Primary care was left out of it. I feel like it is the entry point into the healthcare system and a lot of this information is collected in primary care. If we could align each individual with a primary care provider as we have all of this information. When we can't connect into acute care we're disjointed. Are we getting anywhere? I'm not sure we are. We are missing the boat if we don't start looking at primary care in this game.</p>	
<p>Agree with above. It's nice to see that there has been some progress. There is also some consideration about an annual review, if you're trying to get to a national standard of a nursing assessment and build this into clinical information systems, you need to be thoughtful about the review process because you may lose standardization in that process.</p>	
<p>We're developing nursing assessments in the long-term care sector, has there been uptake of C-HOBIC?</p>	<p><b>Peggy:</b> C-HOBIC is focused on wherever possible using interRAI measures and bringing that standardization to the acute care sector to support following clinical data across the continuum. We are also focused on getting information back to the clinicians in real time.</p>

## **Digital Health in Nursing Education: 2018 Survey Results: Lynn Nagle, Co-Lead NNDS**

A study was supported by Canadian Association of Schools of Nursing (CASN) and funded by Canada Health Infoway to assess digital health capacity among nurse educators and administrators in the schools of nursing in Canada. The findings from a survey in 2002 indicated that there was limited integration of digital health/informatics content within Canadian schools of nursing, but the overall use of ICT's in clinical settings was also limited at that time. Considerable progress has been made in the integration of ICT's into clinical practice settings since that time hence the study focused on: 1) the capacity of nurse educators to integrate digital health into curricula, 2) administrative support for same, 3) use of the CASN teaching tools, and 4) curricular integration of digital health.

### **MIXED METHODS APPROACH**

- Utilized the CASN database of nurse educators and snowball sampling approach
- Administrator & Educator Surveys were created and administered online from May – October 2018
- 1 focus group in conjunction with the CASN education conference and 10 one on one telephone interviews
- *Respondents*
  - 35 nurse administrators
  - 360 respondents represented 75 of the 94 schools

### **RESULTS**

- Use and awareness of CASN digital health resources found to be limited; in particular the uptake of the whiteboard animation on the value of clinical data standards was found to be very minimal.
- Educators and Administrators supported the importance of integrating digital health into undergraduate curricula and that informatics entry to practice competencies are important for graduating nurses.

### **OVERALL FINDINGS**

- Limited use of resources and EHRs in the teaching environment.
- There are inconsistencies between the administrators and educators in their views of digital health competency and curricular integration.
- Clear willingness and eagerness to have more capability in this space.
- As was true in 2002, people still equate the technologies they use to teach (learning management systems) with digital health.
- Some of the frustration that was expressed is that it's one thing for us to teach standards and EHR functionality, but when students go into practice environments, there is variability in EHR use and student access to EHRs.

- Just as we create variations of clinical documentation in practice settings, so do schools of nursing teach variations to students; not a standardized approach.
- In sum, the occurrence of digital health in nursing curricula is currently not intentional, but needs to be.

#### IMPLICATIONS

- Administrators see digital health content as being important.
- There needs to be additional capacity development among nurse educators.
- Need to look at different approaches for EHR training in order to minimize the burden on health organizations in relation to training.
- Student computer literacy does not equal informatics competency.

#### Q&As

QUESTIONS/COMMENTS	ANSWERS
<p>A potential reason as to why people are hesitant for student nurses to use the system is often related to the functionality of the system and the need for their entries to be signed off.</p>	
<p>We could do a much better job in preparing nurses for practice and speaking about data standards so they understand the importance of this. That means when they enter practice they will be advocating for it.</p>	
<p>Shouldn't we be pressuring CASN to develop an EHR sandbox to test out using standards?</p> <p>FU comment: Some of the regulations associated with the institutional and structural barriers to conduct some of that research, it's not just EHRs. We have program implementations of mobile devices and telemonitoring systems that could also be used in the context of care.</p>	<p><b>Shelagh:</b> CASN: We would be happy to but it hasn't been an approach that's been identified. We need to find a way of communicating well with each other and a strategy for sharing across boundaries.</p> <p><b>Glynda Rees:</b> We've had the conversation with the BC Group around how we want to integrate informatics into undergrad education. Understanding and working with EHRs is integral. Most of the vendor options were cost prohibitive, so we developed an open education electronic health record. We were part of a focus group with Infoway. After a needs assessment we came to the decision to support the work that we're doing, the reason that CASN wasn't on the radar because it's nursing focused and this was an interprofessional system.</p>

**Embedding Nursing Data Standards in Nursing Education: Margaret Kennedy,  
Chief Nursing Informatics Officer and Managing Partner, Gevity**

We know the Canadian context from the findings of the surveys that have been done in relation to informatics competencies. There are known constraints to our progress and we are sensitive to the burden of downloading this information on managers, educators etc. There is variability across the country regarding course and content availability for nurses and educators to advance their understanding of nursing informatics and clinical data standards. Some of the continuing challenges are:

- Lack of prioritization for informatics in an education context.
- Variance across the country and even across provinces themselves.
- No tangible incentive to add this to a curriculum, especially if you don't see the value in it.
- Is this something we really need to add into a jam-packed curriculum?
- Technology is ubiquitous, the practice domain and the larger landscape is different.
- We have lots of competency statements and tools, but we also have academic freedom.
- Dispersion of informatics content throughout curriculum does little to generate a coherent body of knowledge – this information would need to be communicated in a consistent manner.
- Without grounding data standards in a foundational informatics course and integrating concepts, principles, and language consistently throughout the program, progress will be challenging.

The NNDS Education Working Group is focused on understanding the challenges and opportunities with changing the culture and fostering faculty support and while providing them with innovative tools and leveraging existing resources.

**WORK ACTIVITIES & PRIORITIES:**

- Support deans, directors, and nurse educators to understand the value of this.
- To understand that clinical data standards are essential content for understand nursing programs.
- Targeted meetings with CASN, CCRNR, and others.
- Faculty survey – redirected to funded research.
- Influencing the Canadian accreditation/program approval process:
  - Document developed outlining value.
  - Mapping competencies from CASN to requirements of nurse regulators group.
  - Primary goals are to support deans, directors, and nurse educators.
  - Build out specific indicators indicative of the competencies, for example learning objectives across multiple years.

**NEXT STEPS:**

- Expand WG Membership - Ongoing process.
- Knowledge campaign – currently tabled so the larger NNDS group can provide input.

- Partnerships – CASN and CCRNR needs to be at the table; if we are going to create change and affect culture we need these stakeholders involved – these are used to create an incentive that is meaningful and tangible. Need to continue conversation with them and influence the existing requirements.
- Opportunity to have Nursing Informatics Interest Group at CASN.
- Simulation solution – there is the potential for sharing across multiple organizations.

# Appendices

## Appendix A - Symposium Sponsors

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## Appendix B – Symposium Agenda

Agenda		
Lawrence S. Bloomberg, Faculty of Nursing, 155 College Street, Toronto, Ontario 6th Floor Auditorium		
Friday May 3, 2019		
08:00-08:30	Breakfast	
08:30-08:40	Welcome	Michael Villeneuve, CEO, Canadian Nurses Association
08:40-09:00	Data Standards: Past, Present, Future	Lynn Nagle, Co-Lead National Nursing Data Standards Initiative, & Adjunct Professor, University of Toronto
09:00-10:15	Vendor Panel on Advancing Data Standards in Canada	<ul style="list-style-type: none"> <li>• Sonia Pagliaroli, Chief Nursing Officer, Cerner Canada</li> <li>• Chris Hobson, Chief Medical Informatics Officer, Orion Health</li> <li>• Ann Gibbon, Services Sales Director-International, Allscripts</li> </ul>
10:15-10:30		
10:30-11:45	Clinician Panel on Advancing Data Standards in Canada	<ul style="list-style-type: none"> <li>• Sean Chilton, Vice President of Collaborative Practice, Alberta Health Services</li> <li>• Samantha Stockand, Clinical Strategist &amp; Senior Specialist, Clinical Informatics, Island Health</li> <li>• Marion Dowling, Chief, Nursing, Allied Health &amp; Patient Experience, Health PEI</li> <li>• Dorothy Dewar, Nurse Research Lead, Health PEI</li> </ul>
11:45 -12:15	ACCESS 2022	Shelagh Maloney, Executive Vice President, Digital Health Engagement and Marketing, Canada Health Infoway
12:15-13:00	Lunch & Networking	
13:00-13:20	Informatics Competencies for Canadian Nurse Leaders	Gillian Strudwick, Scientist, Centre for Addiction and Mental Health & Assistant Professor, IHPME, University of Toronto
13:20-13:40	Identifying Research Priorities to Advance the Value and Uptake of Clinical Data Standards	Nancy Purdy, Associate Professor Daphne Cockwell School of Nursing, Ryerson University
13:40-14:00	An Opportunity to Incorporate Clinical Data Standards in Nursing Assessments	Peggy White, Co-Lead National Nursing Data Standards Initiative
14:00-14:15	Break	
14:15-14:35	Digital Health in Nursing Education: 2018 Survey Results	Lynn Nagle
14:35-15:05	Embedding Nursing Data Standards in Nursing Education	Margie Kennedy, Chief Nursing Informatics Officer & Managing Partner, Clinical Informatics, Gevity Consulting
15:05-15:45	Discussion	Peggy White

## Appendix C – Symposium Participants

National Nursing Data Standards (May 3, 2019) Attendee Names and Organizations			
First Name	Last Name	Jurisdiction	Organization
Michelle	Allard	MB	Family Medical Centre
Marilyn	Ballantyne	ON	Holland Bloorview Kids Rehabilitation Hospital
Tanya	Baker	ON	Bayshore Health
Maximillian	Besworth	BC	Clinical & Systems Transformation
Siobhan	Bond	ON	CASN
Sue	Bookey-Bassett	ON	University Health Network
Richard	Booth	ON	Western University
Rita	Boutette	ON	Patient and Family Advisory Council
Brenda	Brake	SK	Saskatchewan Health Authority
Cardiff	Bren	ON	Trillium Health Partners
Stephanie	Buchanan	ON	Think Research
Sean	Chilton	AB	Alberta Health Services
Caitlin	Cornish	ON	Sunnybrook Health Sciences Centre
Natalie	Damiano	ON	Canadian Institute for Health Information
Dorothy	Dewar	PEI	Health PEI
Erin	Doherty	ON	St. Joseph's Healthcare Hamilton
Marion	Dowling	ON	Health PEI
Catherine	Duffin	ON	St Joseph's Hospital Hamilton
Helen	Edwards	ON	SickKids Hospital
Sharon	Foster	ON	RPNAO
Jodi	Found	SK	Saskpolytechnic
Kaiyan	Fu	ON	SE Health
Karen	Furlong	NB	University of NB
Connie	Gehring	ON	LHSC Regional Sites
Ann	Gibbons	WI	Allscripts
Rebecca	Gonser	ON	Sunnybrook Health Sciences Centre
Kayleigh	Gordon	ON	University of Toronto
Valerie	Grdisa	ON	Thunder Bay Regional Health Sciences Centre
Kathryn	Hannah	AB	CNA
Michelle	Hennessy	ON	St Joseph's Health Care London
Christopher	Hobson	ON	Orion Health
Helen	Kelly	ON	Toronto General Hospital
Margie	Kennedy	NS	Gevity Consulting inc

Nick	Kuffel	WI	Epic
Michelle	Kungl	ON	Patient Representative
Alyson	Lamb	ON	IWK Health Centre
Liz	Loewen	MB	Shared Health MB
Andrea	MacLean	ON	Canada Health Infoway
Eric	Maillet	PQ	University of Sherbrooke
Shelagh	Maloney	ON	Canada Health Infoway
Cody	May	WI	Epic
Sabrina	Millis	SK	Saskatchewan Health Authority
Lynn	Nagle	NB	University of Toronto
Emily	O'Sullivan	ON	KPMG
Sonia	Pagliaroli	ON	Cerner Canada
Petroiya	Paterson	ON	Trillium Health Partners
Debbie	Pinter	AB	AB Health Services
Nancy	Purdy	ON	Ryerson University
Jeff	Reed	ON	London Health Sciences Centre
Glynda	Rees	BC	BC Institute of Technology
Cheryl	Reid-Haughian	ON	CellTrak Technologies Inc
Sally	Remus	ON	Western University
Tracie	Risling	SK	College of Nursing, University of SK
Wendy	Robinson	ON	St. Joseph's Health care London
Josette	Roussel	ON	Canadian Nurses Association
An-Qi	Shen	ON	Think Research
Ann-Marie	Spindler	ON	Think Research
Samantha	Stockand	BC	Vancouver Island Health Authority
Gillian	Strudwick	ON	CAMH and U of T
Michelle	Turner	AB	AB Health Services
Sue	VanDeVelde-Coke	ON	Kerry's Place Autism Services
Mike	Villeneuve	ON	Canadian Nurses Association
Larisa	Volman	ON	St. Joseph's Healthcare Hamilton
Barbara	Wasilewski	MB	Shared Health
Sheryl-Ann	Wasson	YT	Government of Yukon
David	Wells	NB	University of New Brunswick
Peggy	White	ON	C-HOBIC
Sarah	Xiao	ON	University of Toronto Faculty of Nursing