

Clinicians Using Standardized Clinical Data to Inform Practice and Influence Health Policy Directions

Session D 05
43rd Biennial STTI Convention
November 7-11, 2015

C-HOBIC

Agenda

- Discuss the standardization & collection of clinical outcomes to support evidence-based practice
- Describe the evaluation of the implementation & use of C-HOBIC and the C-HOBIC Transition Synoptic Report
- Discuss the advancement of clinical data standards in Canada
- Engage audience in an open discussion regarding the above

Nurses have been documenting the outcomes of their interventions for decades but the lack of common language and associated measures for outcomes has impeded data aggregation and analysis of information about the effects of nursing practice.

Lundberg, et al, 2008

Standardizing the Collection of Clinical Outcomes to Support Evidence-Based Practice

Peggy Ann White, MN, BA, RN
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Driving Factors

- Lack of information to inform decisions regarding patient care
- Lack of information for nurse managers to evaluate the impact of resource changes on patient outcomes and examine the quality of care provided
- Need for information to support nursing's accountability

Process for Selecting Outcomes

- Expert Panel – focus on acute care, complex continuing care, long-term care homes and home care
- Consultations with nursing stakeholders
- Critical appraisal of research - concept definition, valid and reliable measure and empirical evidence linking the outcome to some aspect of nursing (indicator/intervention)

Standardized Clinical Outcomes

- A suite of clinical concepts that can be collected systematically and standardized across the health care system

Acute Care and Home Care Measures

- **Functional Status:** ADL* & Bladder Continence* (IADL* for home care)
- **Symptom management:** Pain*, Fatigue, Dyspnea, Nausea
- **Safety Outcomes:** Falls*, Pressure Ulcers*
- **Therapeutic Self-care**
- Collected on admission & discharge
- * interRAI measures

Long-term Care and Complex Continuing Care Measures

- **Functional Status:** ADL* & Bladder Continence*
- **Symptom management:** Pain*, Fatigue*, Dyspnea*, Nausea
- **Safety Outcomes:** Falls*, Pressure Ulcers*
- Collected on admission, quarterly, client condition changes, & discharge.

Implementation in Ontario

	Acute Care & CCC	Long-term Care	Home Care
As of May 31, 2015	50	122	4 providers (14 sites)
Assessments in database	982, 842	372, 037	62, 894

Implementation - Guiding Principles

- Emphasis on data for which there is empirical evidence that clinicians impact patient care (outcomes)
- Maximize electronic capture through existing systems –Integrate outcomes capture with existing assessments to avoid duplication – standardized questions with coded responses embedded into assessments
- Provide access to information for nurses and other clinicians, healthcare managers, researchers and ministry planners
- Work with clinicians regarding the value of this data to their practice

Therapeutic Self Care

Assess for performance over full 24 hour periods, considering all occurrences of activity

	Independent	Set up help only	Limited assistance	Extensive assistance	Maximal assistance	Total dependence	Activity did not occur
Bathing							
Personal Hygeine							
Walking							
Transfer Toilet							
Toilet Use							
Bed Mobility							
Eating							

*See below for clarification of grid components

{?}

- ☐ 0. Continent
☐ 1. Control
☐ 2. Infrequently incontinent
☐ 3. Frequently incontinent
☐ 4. Incontinent
☐ 5. Did not occur

(?)

- ☐ 0. No Pain
☐ 1. Present but not exhibited in last 24 hrs
☐ 2. Exhibited in last 24 hrs

☐ 10 = Worst possible pain
☐ 9
☐ 8 = Horrible
☐ 7
☐ 6 = Distressing
☐ 5 = Moderate pain
☐ 4 = Discomforting
☐ 3
☐ 2 = Mild
☐ 1
☐ 0 = No pain

- ☐ 10 = Worst possible pain
☐ 9
☐ 8 = Horrible
☐ 7
☐ 6 = Distressing
☐ 5 = Moderate pain
☐ 4 = Discomforting
☐ 3
☐ 2 = Mild
☐ 1
☐ 0 = No pain

(?)

- ☐ 0. None
☐ 1. Minimal
☐ 2. Moderate
☐ 3. Severe
☐ 4. Unable to commence day to day activities

{?}

- ☐ 0. No nausea
☐ 1. Mild nausea
☐ 2. Moderate nausea
☐ 3. Severe nausea
☐ 4. Incapacitating

Falls

- ☐ 0. No fall in last 90 days
- ☐ 1. No fall in last 30 days, but fell 31-90 days ago
- ☐ 2. One fall in last 30 days
- ☐ 3. Two or more falls in last 30 days

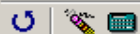
Most Severe Pressure Ulcer

- ☐ 0. No pressure ulcer ☐ 2. Partial loss of skin layers ☐ 4. Breaks in skin exposing muscle or bone
☐ 1. Any area of persistent skin redness ☐ 3. Deep craters in skin ☐ 5. Not codeable, e.g. necrotic eschar predominant



▲

1



5. Were you able to carry out treatments to manage your symptoms (changes in your body)? Example of treatments: massage painful area; work at my pace if tired; breathing exercise for shortness of breath.

☐ 0 Not at all ☐ 1 - Somewhat ☐ 2 - Very Much ☐ 8 - Unable to Assess ☐ 9 - Not Applicable

6. Were you able to do your everyday things (like bathing, shopping, preparing meals)?

☐ 0 Not at all ☐ 1 - Somewhat ☐ 2 - Very Much ☐ 8 - Unable to Assess ☐ 9 - Not Applicable

7. Did you have someone to call if you needed help to do everyday things (like bathing, shopping, preparing meals)?

☐ 0 Not at all ☐ 1 - Somewhat ☐ 2 - Very Much ☐ 8 - Unable to Assess ☐ 9 - Not Applicable

8. Did you know who to call in case of medical emergency?

☐ 0 Not at all ☐ 1 - Somewhat ☐ 2 - Very Much ☐ 8 - Unable to Assess ☐ 9 - Not Applicable

Therapeutic Self Care Score

HOBIC Reference Link



Authentication

User ID:

Password:

Organisation ID:

Log On



Organisation
Administrator
HOBIC
Logged In

Reports

Tools

Results

Find Client

Data Centre

Help

Change
Password

Logoff

Subscribed Reports

Assessments Export

- ☐ HOBIC Report 1 - Mean Indicators by Unit
- ☐ HOBIC Report 2 & 3 - Mean Indicators (Composite/Detail) by Diagnosis, Age
- ☐ HOBIC Report 4 - Patient Detail per Encounter
- ☐ HOBIC Report 5 - Percentages per Question
- ☐ HOBIC Report 6 - Mean Indicators Over Time
- ☐ HOBIC Report 7 - Submission Report
- ☐ HOBIC Report 8 - Graphing Report
- ☐ HOBIC Report 9 - ADL Scoring Report

Configure

	1-Jan-2009 - 26-May-2009				1-Jan-2008 - 01-Jan-2009			
	n	A1	A2	+/-	n	A1	A2	+/-
Overall Patient Score	176	10.8	7.4	-3.4	58	9.3	7.8	-1.5
ADL Composite	194	6.6	4.7	-1.9	64	4.5	4.0	-0.5
a) Bathing	217	1.4	1.1	-0.3	68	0.8	0.9	0.1
b) Personal hygiene	222	1.3	1.1	-0.2	70	0.8	0.9	0.1
c) Walking	228	1.3	0.9	-0.5	72	1.1	0.8	-0.3
d) Transfer toilet	224	1.3	0.8	-0.5	72	0.8	0.6	-0.2
e) Toilet use	222	1.0	0.6	-0.4	72	0.7	0.6	-0.1
f) Bed mobility	247	1.1	0.7	-0.3	76	0.6	0.6	0.0
g) Eating	235	0.6	0.5	-0.1	70	0.3	0.3	0.0
Bladder Continence	241	0.4	0.3	-0.1	76	0.3	0.4	0.1
Pain Scale	215	0.9	0.6	-0.3	65	1.1	1.0	-0.2
Pain Frequency	216	0.7	0.5	-0.2	66	0.9	0.8	-0.1
Pain Intensity	216	2.3	1.2	-1.0	65	3.0	2.3	-0.6
Fatigue	247	1.4	1.0	-0.4	76	1.2	0.9	-0.3
Dyspnea	246	0.8	0.5	-0.2	76	0.8	0.5	-0.2
Nausea	247	0.3	0.1	-0.2	76	0.3	0.2	-0.1
Falls	243	0.6	0.5	-0.1	74	0.3	0.3	0.0
Most Severe Pressure Ulcer	244	0.1	0.1	-0.0	75	0.0	0.1	0.1

Period: 01-Jan-2011 - 31-Mar-2011

Unit: Unit 1A

ADL	Total	0	1	2	3	4	5	6	8	Missing
a - Bathing	144	18.8%(27)	19.4%(28)	16.7%(24)	16.0%(23)	14.6%(21)	11.8%(17)	2.8%(4)	0.0%(0)	0.0%(0)
b - Personal hygiene	144	16.0%(23)	13.9%(20)	16.0%(23)	16.7%(24)	13.2%(19)	19.4%(28)	4.9%(7)	0.0%(0)	0.0%(0)
c - Walking	144	13.2%(19)	17.4%(25)	18.8%(27)	10.4%(15)	18.8%(27)	16.1%(26)	3.5%(5)	0.0%(0)	0.0%(0)
d - Transfer toilet	144	15.3%(22)	13.2%(19)	17.4%(25)	15.3%(22)	15.3%(22)	20.1%(29)	3.5%(5)	0.0%(0)	0.0%(0)
e - Toilet use	144	19.4%(28)	17.4%(25)	16.7%(24)	17.4%(25)	11.8%(17)	14.6%(21)	2.8%(4)	0.0%(0)	0.0%(0)
f - Bed mobility	144	21.5%(31)	11.8%(17)	16.7%(24)	13.9%(20)	16.0%(23)	16.7%(24)	3.5%(5)	0.0%(0)	0.0%(0)
g - Eating	144	13.9%(20)	13.9%(20)	13.9%(20)	13.9%(20)	15.3%(22)	20.8%(30)	8.3%(12)	0.0%(0)	0.0%(0)

	Total	0	1	2	3	4	8	Missing
Bladder Continence	144	20.8%(30)	18.8%(27)	23.6%(34)	31.2%(45)	5.6%(8)	0.0%(0)	0.0%(0)

	Total	0	1	2	3	4	Missing
Fatigue	144	20.1%(29)	27.1%(39)	21.5%(31)	22.9%(33)	8.3%(12)	0.0%(0)

	Total	0	1	2	3	4	Missing
Nausea	144	24.3%(35)	25.0%(36)	22.9%(33)	19.4%(28)	8.3%(12)	0.0%(0)

	Total	0	1	2	3	Missing
Dyspnea	144	33.3%(48)	26.4%(38)	31.9%(46)	8.3%(12)	0.0%(0)

	Total	0	1	2	3	Missing
Falls	144	30.6%(44)	33.3%(48)	28.5%(41)	7.6%(11)	0.0%(0)

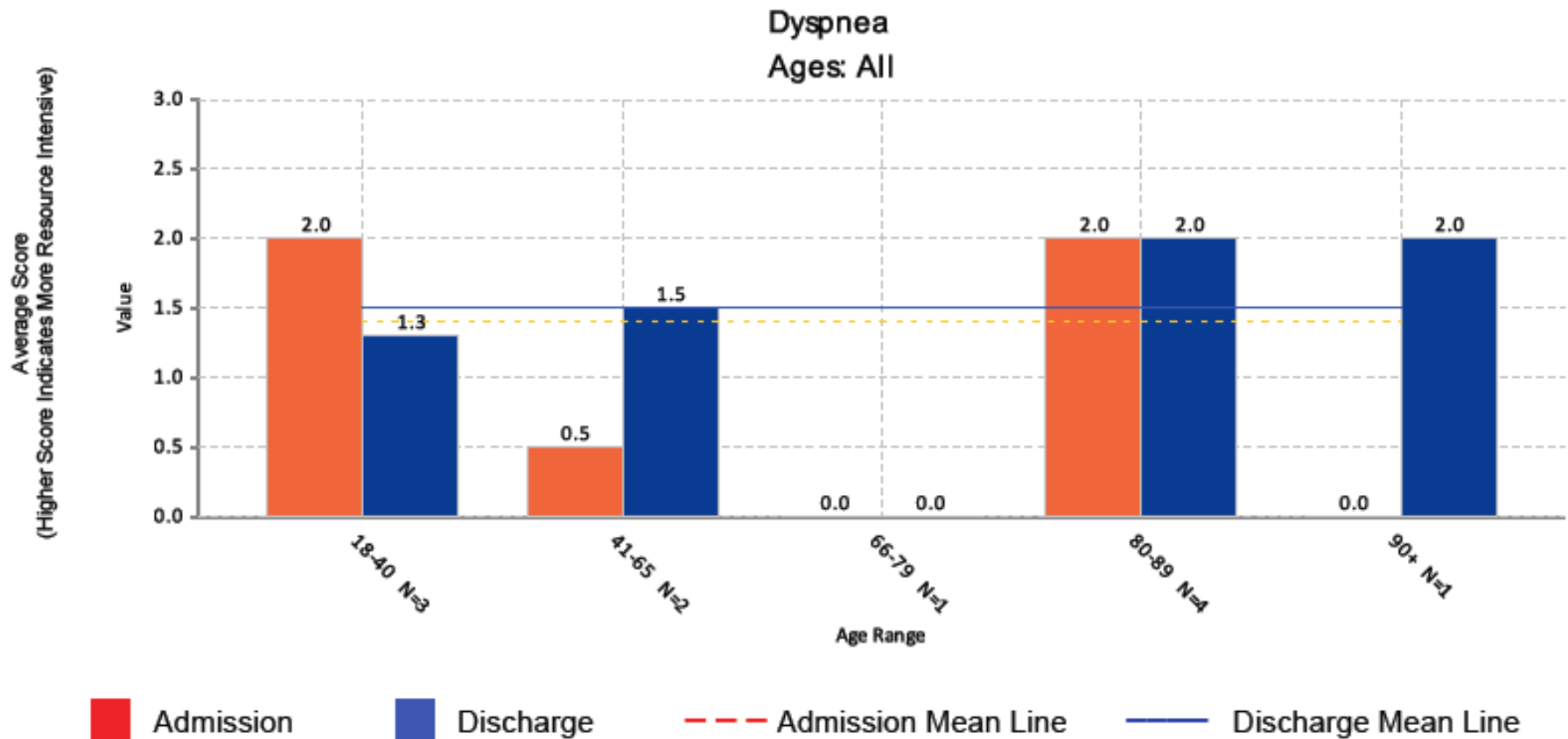
	Total	0	1	2	3	4	5	Missing
Pressure Ulcers	144	20.8%(30)	20.8%(30)	19.4%(28)	28.5%(41)	10.4%(15)	0.0%(0)	0.0%(0)

	Total	0	1	2	Missing	Pain Scale Invalid
Pain Frequency	144	38.9%(56)	49.3%(71)	11.8%(17)	0.0%(0)	0.0%(0)

	Total	0	1	2	3	4	5	6	7	8	9	10	Missing
Pain Intensity	144	88.2%	1.4%(2)	0.7%(1)	0.0%(0)	2.8%(4)	1.4%(2)	1.4%(2)	1.4%(2)	1.4%(2)	0.7%(1)	0.7%(1)	0.0%(0)

Period: 01-Jan-2009 - 31-Dec-2009

Unit: All Units



Use of HOBIC Data

- HOBIC reports at team meetings to examine outcomes
- Patient specific discharge summary to patients to follow-up with their family physicians
- Using the therapeutic self-care to assess readiness for discharge/follow-up needed in the community
- Clinical Care
 - Using HOBIC information (ADL & continence) as part of daily/weekly team rounds
 - Completing HOBIC weekly on restorative care units to monitor progress in terms of ADL
- Inclusion of HOBIC measures in Quality Improvement Plans and dashboards

Site Education/Engagement

- Site visits
 - Connect with the team around the value of standardized data
- Symposiums
 - Site presentations – use, reporting, feedback and mentoring
 - Present current research findings
 - Solicit ideas and plans for research and engagement initiatives
- Regular conference calls with groups of sites
 - Foster completion rates
 - Strategies that are working
- Monthly Webexs
 - Accessing the HOBIC reports
 - Using the HOBIC data to examine practice at the unit level
- Newsletters
 - Focus on providing information about how sites are using HOBIC data.

Annual HOBIC Reports

Health Outcomes for Better Information and Care (HOBIC)

**Acute Care and Home Care
in Ontario 2013**

June 2014



Health Outcomes for Better Information and Care (HOBIC)

ACUTE CARE IN ONTARIO

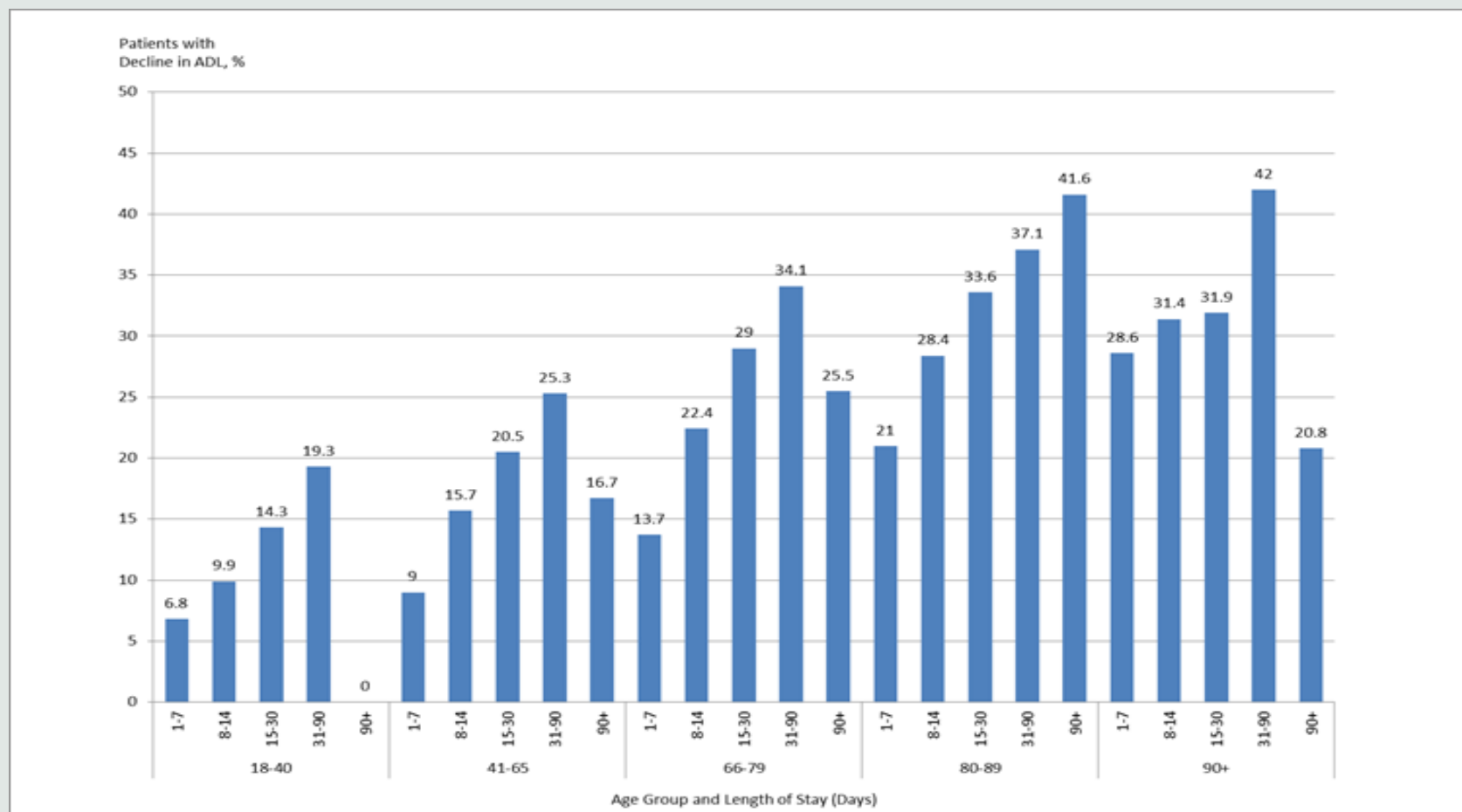
Health Outcomes for Better Information and Care (HOBIC)

Acute Care in Ontario 2012

September 2013



Figure 3: Percent of Patients with a Decline in ADL Across All Participating Sites by Age and Length of Stay, from December 1, 2006 to March 31, 2014



HOBIC and Health System Use

HOBIC data linked to other datasets held ICES

- Therapeutic self-care (TSC) scores showed a consistent and significant protective effect for readmission to acute care at 7, 30 and 90 days. TSC scores was associated with approximately a 10% reduction in the likelihood of readmission
- Nausea was more strongly related to early readmissions (3, 7, and 30 days)
- Dyspnea was more strongly related to readmission at later stages (30 and 90 days)

Increasing Patient Self Care to Avoid
Hospital Readmissions

Demonstrating Value with HOBIC Data - Toronto, ON. February, 2012

Wodchis, McGillis-Hall, & Quigley

HOBIC and Health System Use... *continued*

HOBIC scores on admission as a predictor of ALC and LOS

- Higher fatigue and dyspnea scores on admission were significantly related to a longer length of stay
- High scores for fatigue and falls and, to a lesser extent, a high ADL composite score on admission were more likely to be discharged to either complex continuing care, long-term care homes or rehabilitation facilities than discharged home

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

Jeffs, Jiang, Wilson, Ferris, Cardiff, Lancetta, White & Pringle

HOBIC and Health System Use... *continued*

- TSC scores in relation to:
 - the use of health care resources, including new emergency room visits /unplanned hospital readmissions;
 - safety outcomes, including client falls; unintended weight loss; new urinary tract infection; ADL decline; new pressure ulcer or ulcer deterioration; non-compliance/adherence with medication; and new caregiver decline
- Found that clients with high TSC ability experienced fewer adverse events
- Need to focus on improving client self-care functioning, a domain frequently overlooked by all health care professionals

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

Sun & Doran

Evaluating the Implementation and Use of C-HOBIC and the Transition Synoptic Report

Lynn M. Nagle, PhD, MScN, BN, RN, FAAN
*Lawrence S. Bloomberg, Faculty of Nursing,
University of Toronto, Toronto, ON, Canada*

C-HOBIC Implementation:

Phase 1 – 2007- 2009

- Ontario (funded by Ministry of Health and Long-term Care) 122 sites collecting the C-HOBIC suite of measures – abstracted real time to central database providing nurses with access to information about their patients and providing unit level reports for organizations
- Saskatchewan: Implementation in 30 facilities ranging from 17 to 237 beds for a total of 2131 LTC beds in Saskatoon Health Region
- Manitoba: Implementation in 2 long-term care homes for a total of 1005 long-term care beds and 6 home care offices - approximately 3,300 clients in home care in Winnipeg Regional Health Authority

C-HOBIC Implementation: Phase 2 – 2012 - present

- **Manitoba**

- St. Boniface Hospital - an acute care hospital - questions embedded into Allscripts system and collected on admission and discharge
- C-HOBIC Synoptic Transition Report to be shared with other sectors (long-term care and home care) as people move from one sector to another

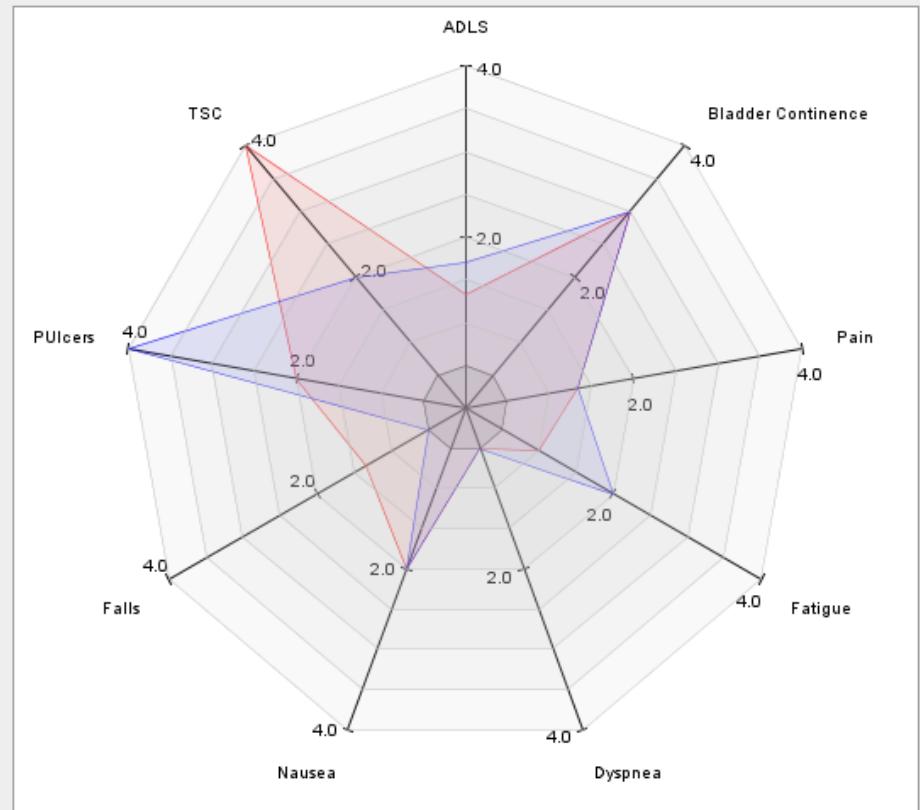
- **Ontario**

- C-HOBIC Synoptic Transition Report developed and available to clinicians in the Hamilton Niagara Haldimand Brant and Waterloo Wellington region through the ClinicalConnect Portal

C-HOBIC Transition Synoptic Report (TSR)

Scale Name	Admission	Discharge
A. ADL - Activities of Daily Living	1.3	1.7
B. Bladder Continence	3	3
C. Pain Scale	1.3	1.3
D. Fatigue	1	2
E. Dyspnea	0	0
F. Nausea	2	2
G. Falls	1.3	0
H. Pressure Ulcers	2	4
I. Therapeutic self-care scale - revised	4	2

C-HOBIC Transitions Report



- Admission - Discharge

Evaluations Completed

Sector Focus

Fall 2008 – Long-term and Home care SK & MB

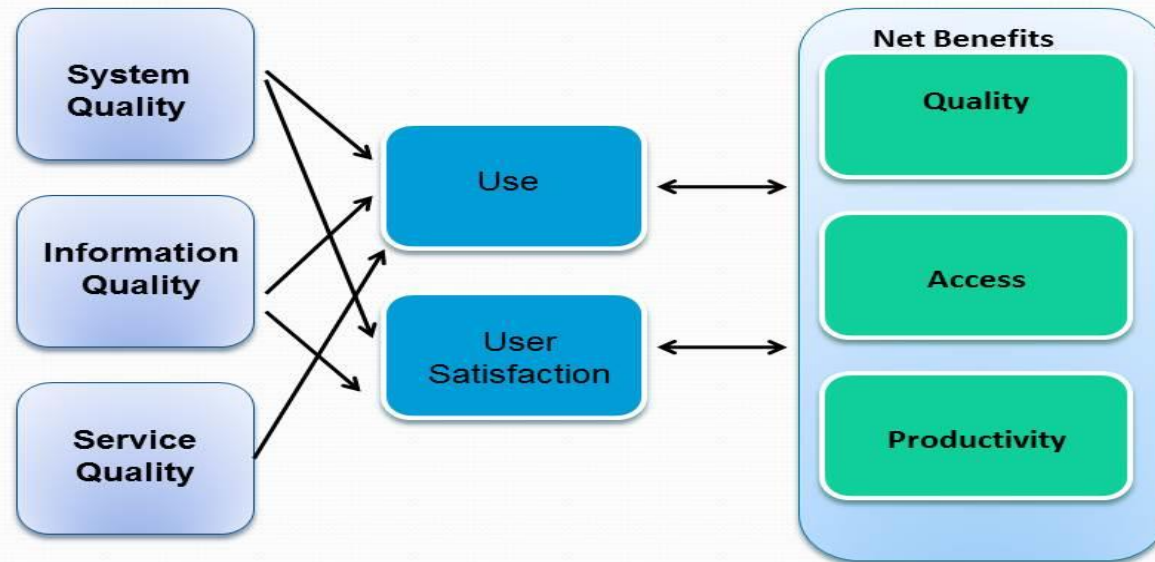
Fall 2010 – Homecare in ONT

Fall 2014 – Acute Care in ONT & MB

Methods

- System access & use
- Surveys
- Focus Groups
- Interviews

Evaluation Framework



Canada Health Infoway Benefits Evaluation Framework.
Adapted from DeLone & McLean, 2003

BIG Lessons Learned

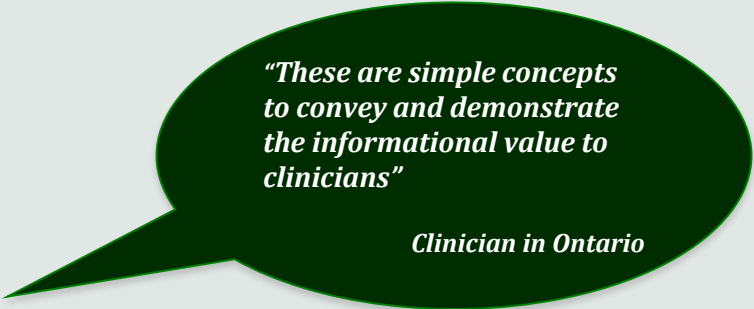
1. Leadership is key
2. Clinician engagement from the outset is essential
1. Project management and effective change management are crucial and must be sustained over the long term
2. Consistent and continuous communication of value proposition and benefits realized to healthcare providers/organizations
3. Consider complexities, other priorities, and politics within and between healthcare providers and sectors

Lessons Learned: Implementations & Evaluations

Standards Integration

- Review existing standardized tools at the outset of implementation to determine whether any redundant tools are already in use
- Identify opportunities for the elimination of redundant clinical documentation
- Provide guidelines for integration of clinical data standards into systems
- Recognize that not all vendor solutions will support a graphic representation of data
- Privacy legislation will likely necessitate data sharing agreements across sectors of care
- Identify interface requirements internally and externally

Use and Usability



*"These are simple concepts
to convey and demonstrate
the informational value to
clinicians"*

Clinician in Ontario

- Consider existing workflow/documentation processes and need for redesign
- Avoid requirements for duplicate documentation
- Evaluate the use and usability and impact of standardized outcome measures at 6, 12, and 18 mos.
- Identify clear and consistent processes and accountabilities for the documentation and use of outcome measures

Applicability of Outcome Measures

- Need to review applicability of specific outcome measures for different patient populations
- Implementation guidelines should clearly identify the intended clinical populations for use and timing of completion

Completion of Measures on Admission and Discharge

- Identify strategies to increase the completion of outcomes at admission AND discharge to ensure clinical comparability
- Discuss opportunities to use outcomes as a basis for discussions and discharge planning with patients and families
- Completion of a standardized discharge summary by nurses is new

Supporting Care Transitions

- Continue the pursuit of cross sector flow of outcomes information as clients move between sectors of care
- Engage in multi-sector discussions regarding the potential value outcomes in supporting care transitions
- Expect delays and other challenges in working across sectors of care given organizational and vendor differences and legislative requirements

"The report is easy to use and provides a quick overview of the patient's status but has not been built into the processes for planning patient discharge to Long Term Care Facilities and the use of Home Care Services"

Clinician in Manitoba

“There is a need to explore how the information gathered could be used by the health care team during the patient’s stay and in the discharge planning”

Clinician in Manitoba

Education and Training

- Provide opportunities to learn about the value of clinical data standards and the specific outcomes
- Separate training and education on outcomes measures from that provided for use of the clinical information system
- Provide post go-live follow-up education and support, including a multi-sector workshops for the sustainable and effective use of outcomes and reports

System Considerations

- Vendor system design capabilities
- Data & Reports
 - Cross-sector access
 - Interprofessional access
 - Point-of-care, real-time access
 - Use with patients/families
 - Process & Quality improvement opportunities

Implementation
≠
Information use

Advancing Clinical Data Standards in Canada

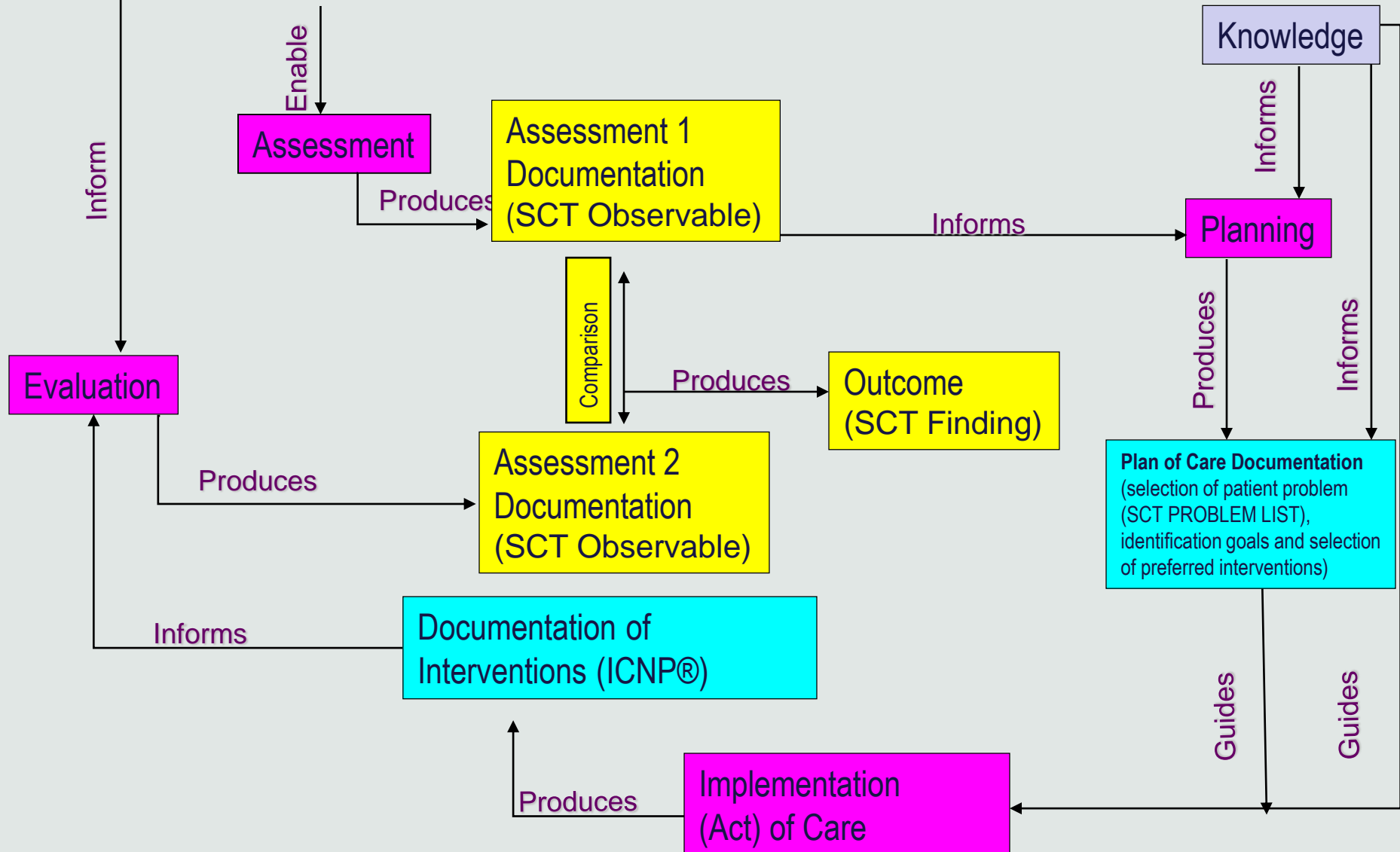
Kathryn J. Hannah, C.M., PhD, MScN, BScN, RN, FAAMI
School of Nursing, University of Victoria, Calgary, AB, Canada

Standardized Clinical Measures and Data

Why Collect Standardized Clinical Measures and Data?

- **Clinical accountability** is part of the larger movement of accountability driven by the public and policy makers, whereby all healthcare professionals must provide evidence of the role they play in patient outcomes
 - Standardized measures are essential to:
 - Evaluate clinical interventions, and
 - Implement informed quality improvement initiatives
- Standardized data such as C-HOBIC assists clinicians in **communicating with team members** at shift change and when patients are being transferred home or to another organization
- Collection of standardized data, linked with other administrative data, contributes to **informing health care policy, planning and research** to improve the health of Canadians

Relationship Between C-HOBIC and the Nursing Process



THE Challenge Associated with Using Standards

- Challenge to move clinicians to accept standardized measures (questionnaires, instruments, tools) for assessing symptoms, functional status, etc.
- Clinicians are educated to assess & describe patients in narrative terms:
 - very, much, more/less, a lot, a bit
 - Limitations include:
 - Inconsistency of descriptions across nurses and to other health providers
 - Incompatibility with transfer to database

Overview of the need for health data standards

Standards and interoperability are two sides of the same coin.

Standards make things fit together, so that all stakeholders can communicate and understand each other seamlessly.

Interoperability

Goal:

the ability of health information systems to work together within and across organizational boundaries in order to advance the effective delivery of healthcare for individuals and communities

Interoperability

- Types of interoperability
 - Functional
 - » message transport from one point to another
 - Semantic
 - » the meaning of the message content is understood by both the sender and receiver

Standardized Clinical Terminology

Definitions

- **Concept**
 - A single idea, action, or thing with a unique meaning
- **Term**
 - one or more words used to describe a concept or data element
- **Code**
 - An expression of a term or concept
- **Coding**
 - Processing or assigning a code to a specific concept; usually performed within a system or by health information personnel
- **Classification (Classification system)**
 - Ordered systems of concepts for a domain with explicit order principles; definition depends on expected use; both nomenclature and terminologies can be presented in classifications
- **Nomenclature**
 - Subset of terms for a given domain, including both terms and relationships; no hierarchical structure; usually presented by an official group that uses the terminology

Definitions cont'd

- **Synonyms**
 - Different terms that represent the same concept
 - MI & heart attack; pyrexia & febrile, knowledge deficit or lack of knowledge
- **Homonyms**
 - Different terms that are spelled and pronounced the same but have different meanings
 - Rose – a flowering shrub or the past tense of 'rise'
- **Natural language**
 - Broad use of language to express concepts, may include native language or expressions
- **Controlled language**
 - Terminology & vocabularies

Vocabularies & Terminologies

Vocabulary

- A set of terms within a specific domain available for use to individuals or groups

Controlled Vocabulary

- A set of terms limited or constrained for use in a specific environment (eg., PICU, orthopedics, neurology, etc)
 - Counterpart of natural language for systems, with restricted terms and grammar rules
 - Can provide a list of terms for users to select

Output Vocabulary

- Terminologies used for information analysis; system tools derive information from the reference terminology

Terminology

- The set of words or word groups with specific meaning in a domain

Interface Terminology

- a controlled vocabulary from which users can choose a term in a list to enter in a system; may include all lexical varieties, acronyms, abbreviations, all with their own context-dependent meaning

Reference Terminology

- Set of all terms or words to represent a specific domain
- Can consist of multiple interface terminologies

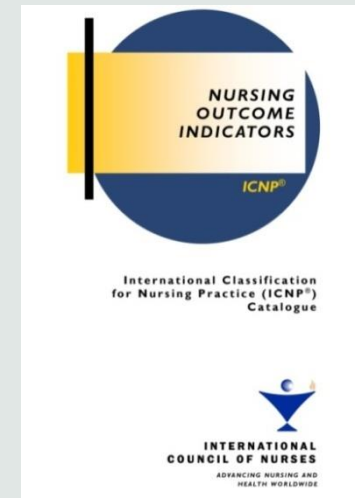
The Trouble with Nursing!

"If we cannot name it, we cannot control it, finance it, teach it, search it or put it into public policy" (Clark and Lang, 1992, p. 109)

Clark, J., and Lang, N. Nursing's next advance: An international classification for nursing practice. *International Journal of Nursing* 1992;39(4):102-112, 128

C-HOBIC Dataset: Mapping for Inclusion in EHRs - ICNP

- Initially mapped to ICNP® version 1
- With the release of ICNP® version 2 the C-HOBIC concepts were mapped to ICNP Version 2
- Mapping validated by international ICNP® experts and C-HOBIC team
- Release of International Catalogue on March 6, 2012



C-HOBIC Dataset:

Mapping for Inclusion in EHRs - SNOMED CT

- A major aim of this work was to investigate potential approaches to harmonisation of the ICNP® catalogue and SNOMED-CT while meeting the Canadian requirements for SNOMED CT (SCT) and ICNP® outcome concepts to be used to represent the content of the C-HOBIC dataset
- On June 22nd 2012, 16 nursing terminology experts assembled in Montreal - four from the IHTSDO Nursing SIG, five from the International Council of Nurses ICNP® Programme and seven from Canada
- A draft document had been prepared in advance by the UK NHS SNOMED-CT team
- Mapping of C-HOBIC to SCT Observables was completed at this meeting and over the following months the mapping to SCT Findings was completed

Standardized Data

- Interoperability of clinical systems
- Patient safety – standardized clinical information at the point of care (falls, symptoms, pressure ulcers)
- Standardized clinical information across the continuum – improved continuity & *coordination of care for the patient during transitions*
- Better information on patient needs ... *the right information at the right time*
- Better information on clinical patient outcomes ... *ability for facilities to use in benchmarking and to compare effectiveness of treatments*
- Opportunity to **transform** the delivery of care through use of standardized clinical patient outcomes to support evidence informed practice

Standardization - Supports Inclusion in National databases (CIHI DAD)

- Recognition of the value in being able to link this dataset with other datasets such as the home care dataset and long-term care homes dataset to understand clinical outcomes across the continuum of care
- Model will see the submission of the C-HOBIC dataset by 2 acute care sites using the special projects fields in the DAD to identify resources required for the submission - Once this work is completed, other sites that are collecting the C-HOBIC dataset will be able to include these data with their DAD special projects fields submission
- Eventually the C-HOBIC dataset would be part of the DAD core submission and available on the CIHI portal to support:
 - Health System Use and benchmarking at a system level
 - Health policy related to “how well is the system doing in improving outcomes for people within the system?”
- **First time clinical data beyond physician data** is included in the DAD

Value of C-HOBIC

C-HOBIC Value: to Patients and the Health System

- Patient safety – standardized clinical information at the point of care (falls, symptoms, pressure ulcers)
- Standardized clinical information across the continuum – improved continuity & *coordination of care for the patient during transitions*
- Better Information on patient needs ... *the right information at the right time*
- Better information on clinical patient outcomes ... *ability for facilities to use in benchmarking and to compare effectiveness of treatments*
- Opportunity to **transform** the delivery of care through use of standardized clinical patient outcomes to support evidence-based practice

The Opportunity for Healthcare Leaders

- **Standardized data**

- Accountability: Clinicians/managers/organizations need data to know where they are doing well and where practice needs to improve
- Allows for the capability to analyze health service outcomes on the basis of: Diagnoses, Age, Region/Sector, Cost of care, Skill mix, Staff ratios
- Provides information to inform: Health Care Policy, Allocation of Resources, Delivery of Services, Quality of Care

Benefits to the Health Care System

- Patient Safety & Quality of Care
- Primary Health Care Reform
- Clinical Accountability
- Care Planning, Continuity of Care & Continuity of Information
- Senior Care and Transitions
- Data Aggregation

C-HOBIC: Value for Provincial EHRs and the DAD

- Standardize assessment and documentation of patient outcomes by clinicians in Canada thereby facilitating abstracting for the DAD
- Standardize terminology used for entry of patient-centred clinical outcomes into jurisdictional EHRs by clinicians in Canada thereby facilitating abstracting for the DAD
- Develop a consistent methodology that will contribute to outcomes data for the EHR and for the DAD
- Foster user uptake of the EHR by clinicians by providing content in the EHR that is useful in practice

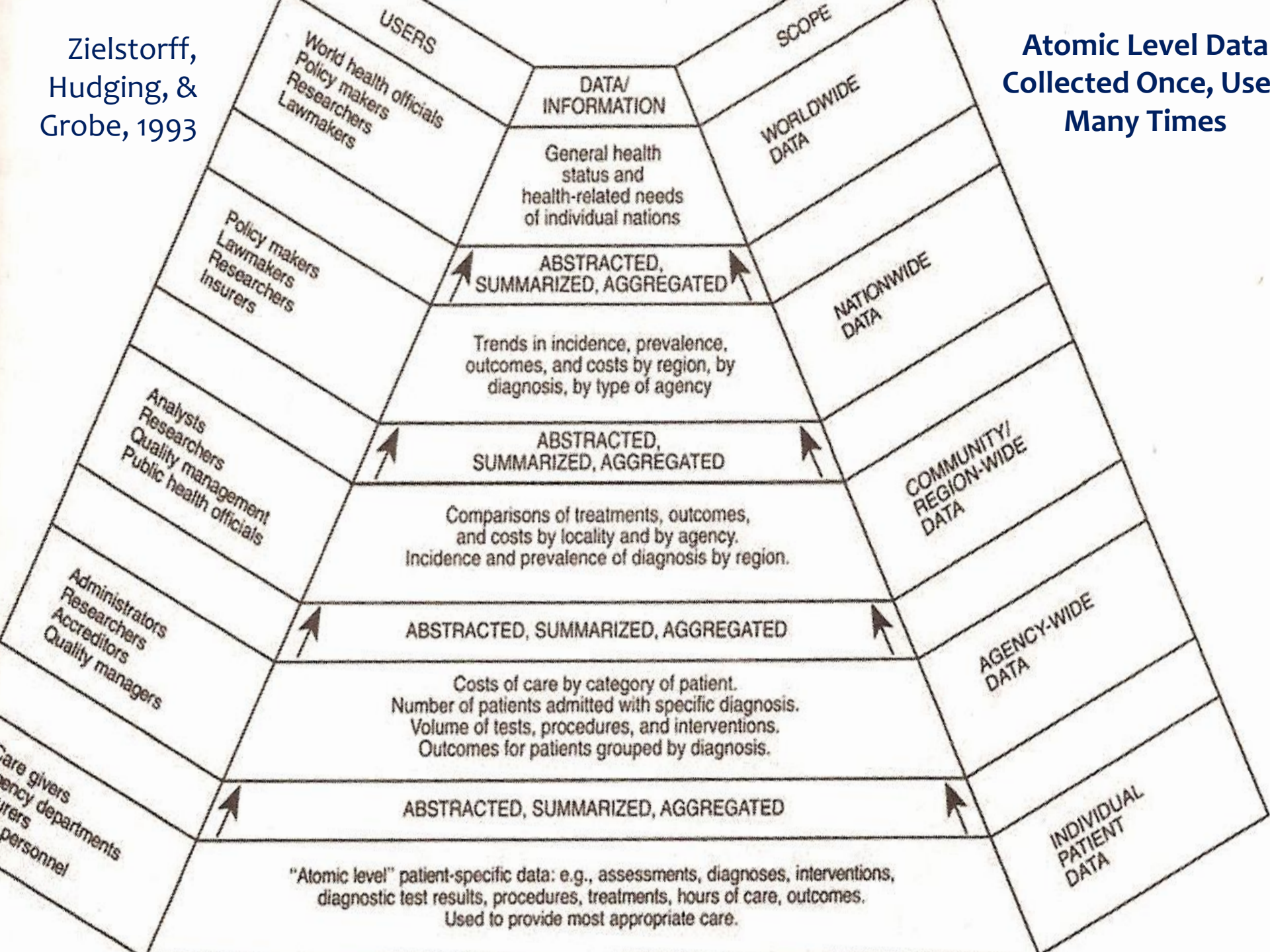
C-HOBIC: Aggregating the Standardized Data

Atomic to global level data that provides

- Person-specific comparative information across the continuum of care
- Consistent measurement of outcomes
- Correlational and predictive analytics
- Local to national to international comparisons
- Information that leads to new knowledge and understandings about the impact of specific interventions and outcomes

Zielstorff,
Hudging, &
Grobe, 1993

Atomic Level Data
Collected Once, Use
Many Times



C-HOBIC Value: Analysis of Aggregated Data

Changes in C-HOBIC scores from admission and discharge scores

- Significant improvements in all of the C- HOBIC outcomes, with the exception of pressure ulcers.
- Suggests that nursing care interventions are having the desired effect on clinical outcomes, leading to an improvement in the outcomes by discharge.

Changes in Patient Health Outcomes from Admission to Discharge in Acute Care (2013).
Journal of Nursing Care Quality 28 (1). McGillis Hall, Wodchis, Ma, & Johnson

C-HOBIC Value: Analysis of Aggregated Data

Dr. Walter Wodchis et. al. (2012)

- C-HOBIC data was linked to other datasets held at the ICES. Therapeutic self-care (TSC) scores showed a consistent and significant protective effect for readmission to acute care at 7, 30 and 90 days.
- TSC scores was associated with approximately a 10% reduction in the likelihood of readmission. 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).

Dr. Lianne Jeffs et al. (2013)

- examined the C-HOBIC scores on admission as a predictor of ALC and LOS and found that higher fatigue and dyspnea scores on admission were significantly related to a longer length of stay.
- Patients with higher scores for fatigue and falls and ADL composite score on admission were more likely to be discharged to either complex continuing care, long-term care homes or rehabilitation facilities than discharged home.

C-HOBIC Value: Analysis of Aggregated Data

...continued

Winnie Sun PhD (cand) et al. (2014)

- analyzed C-HOBIC TSC scores in relation to two types of adverse events:
 - the use of health care resources, including new emergency room visits /unplanned hospital readmissions;
 - safety outcomes, including client falls; unintended weight loss; new urinary tract infection; ADL decline; new pressure ulcer or ulcer deterioration; non-compliance/adherence with medication; and new caregiver decline
- found that clients with high TSC ability experienced fewer adverse events
- indicates that there is a need to focus on improving client self-care functioning, a domain frequently overlooked by all health care professionals

The Vision for C-HOBIC Data

Clinicians

- Improve communication within the team – standardized data
- Enhance satisfaction by demonstrating measureable results
- Identify how clinical practice leads to improved outcomes
- Shift clinicians from task focused care to 'outcomes focused care'
- Clinical Accountability

Patients

- Facilitate communication
- Identify safety risks
- Inform proactive care
- Determine discharge readiness

Healthcare Executives

- Standardized information for comparative analysis within organizations and benchmarking
- Information to evaluate operational decisions and resource allocation
- Information to identify areas for quality improvement
- Information to support accreditation surveys - ROPs
- Information to support continuity of care across the continuum

Health Care System

- Information to support results driven patient focused care
- Public reporting – measurable results
- Standardized information for electronic health records

Health System Use

- More timely information and better data to address research questions to inform clinical program management, health system management

Questions

For more information

C-HOBIC webpage

http://c-hobic.cna-aiic.ca/about/default_e.aspx