

# Let's Talk Informatics

## The Value of Standardized Clinical Data

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Please be advised that we are currently in a controlled vendor environment for the One Person One Record project.

Please refrain from questions or discussion related to the One Person One Record project.

# Informatics...

utilizes health information and health care technology to enable patients to receive best treatment and best outcome possible.

# Clinical Informatics...

is the application of informatics and information technology to deliver health care.

AMIA. (2017, January 13). Retrieved from <https://www.amia.org/applications-infomatics/clinical-informatics>

# Objectives

At the conclusion of this activity, participants will be able to...

- Identify what knowledge and skills health care providers will need to use information now and in the future.
- Prepare health care providers by introducing them to concepts and local experiences in Informatics.
- Acquire knowledge to remain current with new trends, terminology , studies, data and breaking news.
- Cooperate with a network of colleagues establishing connections and leaders that will provide assistance and advice for business issues, as well as for best-practice and knowledge sharing.

- Understand the value of collecting standardized clinical data for clinicians, patients and the healthcare system.
- Knowledge of the C-HOBIC clinical dataset.
- Appreciate the research using the C-HOBIC dataset and how this information can be used to inform clinical practice.

# Conflict of Interest Declaration

- I do not have an affiliation (financial or otherwise) with a pharmaceutical, medical device, health care informatics organization, or other for-profit funder of this program.
- (Speakers who have no involvement with industry should inform the audience that they cannot identify any conflict of interest).
- I have/had an affiliation (financial or otherwise) with a pharmaceutical, medical device, or communications organization, or other for-profit funder of this program.

# Case Study

Mrs. Smith: 72 year old, history of COPD, lives alone in apartment in suburbs, has support from her daughter who lives nearby.

- Frequent admissions to hospital over last 2 years with ‘some fatigue’ on admission and ‘some shortness of breath’.
- Daughter states that she is having ‘a little’ difficulty ambulating and she is not sure her mother is taking her medications as prescribed.
- Usually discharged home with home care support.
- Last admission 3 weeks ago.



# The Story in the Data

- Age, gender, diagnosis
- Social support – daughter
- Fatigue severity - ?At admission/discharge
- Dyspnea severity - ?At admission/discharge
- ADL -?admission/discharge
- Readiness for discharge?
- Projected LOS?
- Likely to be discharged home? Or ALC?
- Likely to be readmitted within 7, 30, 90 days?
- Any outcomes different from last acute care admission to discharge/to home care admission assessment? To home care discharge?

**WHO knows?**

# Why collect standardized clinical outcome measures?

- 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 assists clinicians in communicating with team members at shift change and when patients are being transferred home or to another organization.
- Collection of standardized clinical data, linked with other administrative data, contributes to health care policy, planning and research for improved health.

# Challenges Associated with Collecting & Using Standards

- Challenge to move all clinicians to accept standardized measures for assessing symptoms, functional status, etc.
- Nurses 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.

# Selection Process for Dataset

- A comprehensive literature review and selection of outcome measures where there was empirical evidence linking the outcomes to nursing interventions and/or staffing models.

2<sup>nd</sup> Edition *Nursing Outcomes: State of the Science*.  
Jones and Bartlett, 2010.

# C-HOBIC Clinical Dataset

- Functional status
- Continence
- Symptoms:
  - Pain
  - Fatigue
  - Nausea
  - Dyspnea
- Falls
- Pressure ulcer status
- Therapeutic self care (readiness for discharge)

# Demonstration Projects

- Demonstration projects to assess the feasibility, utility, quality and costs associated with the collection of these measures.
  - *Nursing-Sensitive Outcomes Data Collection in Acute Care and Long-Term-Care Settings*, [Nursing Research](#) 55(2 Suppl)
  - 75-81. March 2006 Doran, Harrison, Laschinger, Hirdes, Rukholm, Sidani, Hall & Tournageau.
- The indicators are:
  - Valid: they measure what was intended to be measured,
  - Reliable: consistent over time and settings,
  - Sensitive: to changes in practice.

<b>ADL – Activities of Daily Living</b>	(InterRAI AC: G1)
	ADL SELF-PERFORMANCE - Assess for performance over full 24-hour periods, considering all occurrences of the activity
	0. <b>INDEPENDENT</b> – No assistance, set-up, or supervision in any episode
	1. <b>SET-UP HELP ONLY</b> – Article or device provided or placed within reach but no episode with supervision or physical assistance
	2. <b>SUPERVISION</b> – Oversight/cueing 3+ times – OR – Oversight/cueing 1+ time and physical assistance 1–2 times
	3. <b>LIMITED ASSISTANCE</b> – Guided <u>manoeuvring</u> of limbs 3+ times –OR– Combination of guided <u>manoeuvring</u> and more help 1 – 2 times
	4. <b>EXTENSIVE ASSISTANCE</b> – Weight-bearing support 3+ times by 1 helper where person still performs 50% or more of subtasks
	5. <b>MAXIMAL ASSISTANCE</b> – Weight bearing support 3+ times by 2+ helpers –OR– weight-bearing support for more than 50% of subtasks
	6. <b>TOTAL DEPENDENCE</b> – Full performance by other(s) during entire period
	8. <b>ACTIVITY DID NOT OCCUR</b> – during entire period
	Enter a code for each activity
Code:	a. <b>Bathing</b> – How takes full-body bath OR shower. Includes how transfers in and out of tub or shower AND how each part of body is bathed: arms, upper and lower legs, chest, abdomen, <u>perineal</u> area – EXCLUDE WASHING OF BACK AND HAIR).
Code:	b. <b>Personal hygiene</b> – How manages personal hygiene, including combing hair, brushing teeth, shaving, applying make-up, washing and drying face and hands (EXCLUDE baths and showers)
Code:	c. <b>Walking</b> – How walks between locations on same floor indoors
Code:	d. <b>Transfer toilet</b> – How moves on and off toilet or commode
Code:	e. <b>Toilet use</b> – How uses the toilet room (or commode, bedpan, urinal), cleanses self after toilet use or incontinent episode(s), changes pad, manages <u>ostomy</u> or catheter, adjusts clothes (EXCLUDE transfer on and off toilet)
Code:	f. <b>Bed mobility</b> – How moves to and from lying position, turns side to side, and positions body while in bed
Code:	g. <b>Eating</b> – How eats and drinks (regardless of skill). Includes intake of nourishment by other means, e.g., tube feeding, total parenteral nutrition.
<b>BLADDER CONTINENCE</b>	(InterRAI AC: H1)
Code:	<b>BLADDER CONTINENCE – Assess for last 24 hours</b>
	0. <b>Continent</b> – Complete control; DOES NOT USE any type of catheter or other urinary collection device
	1. <b>Control with any catheter or <u>ostomy</u> over last 24 hours</b>
	2. <b>Infrequently incontinent</b> – Not incontinent over 24 hours, but does have incontinent episodes
	3. <b>Frequently incontinent</b> – had incontinent episode(s), but some control present
	4. <b>Incontinent</b> – No control present
	8. <b>Did not occur</b> – No urine output from bladder in last 24 hours

<b>PAIN</b>	(InterRAI AC: J5a & b)
Code:	<b>PAIN SYMPTOMS – Assess for last 24 hours</b>
	Frequency with which person complains or show evidence of pain (including grimacing, teeth clenching, moaning, withdrawal when touched, other non-verbal signs suggesting pain)
	0. No pain
	1. Present but not exhibited in last 24 hours
	2. Exhibited in last 24 hours
Code:	<b>Intensity of highest level of pain present</b>
	No Pain <span style="float: right;">Worst Possible Pain</span>
<b>FATIGUE</b>	(InterRAI AC: J4)
Code:	<b>FATIGUE – Assess for last 24 hours</b>
	Inability to complete normal daily activities – e.g., ADLs, IADLs
	0. None
	1. Minimal – Diminished energy but completes normal day-to-day activities
	2. Moderate – Due to diminished energy, UNABLE TO FINISH normal day-to-day activities
	3. Severe – Due to diminished energy, UNABLE TO START SOME normal day-to-day activities
	4. Unable to commence any normal day-to-day activities – Due to diminished energy
<b>DYSPNEA</b>	(InterRAI AC: J3)
Code:	<b>DYSPNEA – Assess for last 24 hours</b>
	0. Absence of symptom
	1. Absent at rest, but present when performed moderate activities
	2. Absent at rest, but present when performed normal day-to-day activities
	3. Present at rest
<b>NAUSEA</b>	(HOBIC Scale)
Code:	<b>NAUSEA - Assess for last 24 hours</b>
	0. No nausea
	1. Mild nausea: occasionally experienced but does not interfere with eating and/or activities
	2. Moderate nausea: interferes somewhat with eating and/or some activities most days
	3. Severe nausea: interferes daily with eating and/or activities
	4. Incapacitating: remains in bed part of each day due to nausea and interferes with eating and activities
<b>FALLS</b>	(InterRAI AC: J1)
Code:	<b>FALLS</b>
	0. No fall in last 90 days.
	1. No fall in last 30 days, but fell 31– 90 days ago

<b>PRESSURE ULCERS</b>	( <del>interBALAC</del> : L1)
<b>Code:</b>	<b>MOST SEVERE PRESSURE ULCER</b> – Code for the most severe pressure ulcer present at admission and discharge
	<ul style="list-style-type: none"> <li>0. No pressure ulcer</li> <li>1. Any area of persistent skin redness</li> <li>2. Partial loss of skin layers</li> <li>3. Deep craters in skin</li> <li>4. Breaks in skin exposing muscle or bone</li> <li>5. Not <del>codeable</del>, e.g., necrotic <del>eschar</del> predominant</li> </ul>
<b>THERAPEUTIC SELF-CARE</b> ( <del>Sidanj</del> & Doran)	Each of the following questions is about an aspect of your care related to your present health condition. Indicate how much you are able to do each care related activity, by choosing the number between 0 and 2 that is most appropriate
	<p>'0' represents 'Not at all', 1 represents 'somewhat' and 2 <del>represents</del> 'very much'.</p> <ul style="list-style-type: none"> <li>- N/A (not applicable)</li> <li>- <del>N/A</del> (not available)</li> </ul> <p>Who responded to the questions?</p> <p><input type="checkbox"/> Patients      <input type="checkbox"/> Family      <input type="checkbox"/> Other, specify: _____</p>
<b>Code:</b>	1. Do you know what medication you [were taking at home before you came to the hospital] [have to take when you go home]?
<b>Code:</b>	2. Do you know why you were taking your medications?
<b>Code:</b>	3. [Did you][Are you able to] take your medications (pills, drops, creams) as ordered by the doctor?
<b>Code:</b>	4. [Were you] [Are you] able to notice symptoms (changes in your body) related to your health? Examples of symptoms: pain, feeling tired, dizzy.
<b>Code:</b>	5. [Were you] [Are 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.
<b>Code:</b>	6. [Were you] [Are you] able to do your everyday things (like bathing, shopping, preparing meals)?
<b>Code:</b>	7. [Did you] [Do you] have someone to call if you needed help to do everyday things (like bathing, shopping, preparing meals)?
<b>Code:</b>	8. [Did you] [Do you] know <del>who</del> to call in case of medical emergency?



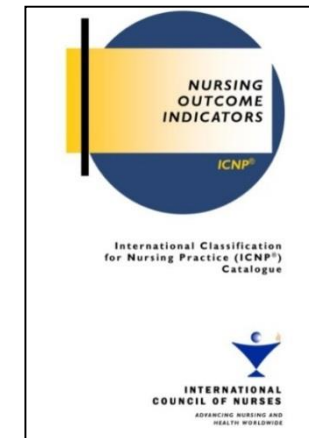
# C-HOBIC Implementation: Underlying Principles

- Emphasis on data for which there is empirical evidence that clinicians impact patient care (outcomes).
- Focus on consistent collection of data electronically at the point of care – to provide *real-time feedback* of information that clinicians can use in planning for and evaluating care.
- Maximize electronic capture through existing systems – work to build these questions into existing assessments (vendor neutral) and avoid duplication.
- Provide access to information for clinicians, healthcare managers, researchers and healthcare planners.
- Work with clinicians regarding the VALUE of this data to their practice.

# C-HOBIC Dataset Mapping

Mapping of data is essential to facilitate collection of data in electronic health records and support interoperability.

- Dataset mapped to ICNP® (International Classification for Nursing Practice).
- Release of International Catalogue in 2012.
- Subsequently mapped to SNOMED-CT
- Released in January 2015
  - Addition of concepts such as therapeutic self care.



# 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 – database housed at Institute for Clinical Evaluative Sciences - real time database providing nurses with access to information about their patients and providing unit level reports for organizations.
- **Saskatchewan:** Implementation in **30** long-term care home in Saskatoon Health Region.
- **Manitoba:** Implementation in **2** long-term care homes and **6** home care offices - in Winnipeg Regional Health Authority.
- Prior to C-HOBIC, both Saskatchewan and Manitoba this information was being entered into a database and submitted to CIHI but the information was not provided back to clinicians at the bedside. As part of C-HOBIC nurses received reports on clinical outcomes.

# C-HOBIC Implementation: Phase 2 - 2012 - present

- This phase includes the design, development and implementation of synoptic transition reports to facilitate patient transition from one sector of the health care delivery system to another.
- The summary is generated using the C-HOBIC data and the principles of synoptic reporting.
- Working with acute care sites across Canada to include this dataset in admission and discharge assessments.

# C-HOBIC Implementation:

## Phase 2: *continued*

- **Manitoba**

- St. Boniface Hospital - an acute care hospital - questions embedded admission and discharge assessments.
- 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**

- HOBIC in Acute Care; and Home Care
- Pilot project with C-HOBIC Synoptic Transition Report is available to clinicians in the Hamilton Niagara Haldimand Brant and Waterloo Wellington Local Health Integration Network through the ClinicalConnect Portal

## C-HOBIC Sample Report

	Group One				Group Two			
	n	A1	A2	+/-	n	A1	A2	+/-
Overall Patient Score	8	18.1	18.1	0.0	8	18.1	18.1	0.0
ADL Composite	14	13.2	12.4	-0.9	14	13.2	12.4	-0.9
a) Bathing	18	2.6	2.4	-0.2	18	2.6	2.4	-0.2
b) Personal hygiene	14	1.7	1.7	0.0	14	1.7	1.7	0.0
c) Walking	18	1.7	1.5	-0.2	18	1.7	1.5	-0.2
d) Transfer toilet	18	2.3	2.4	0.1	18	2.3	2.4	0.1
e) Toilet use	18	2.1	2.1	0.0	18	2.1	2.1	0.0
f) Bed mobility	18	2.1	2.1	0.0	18	2.1	2.1	0.0
g) Eating	18	2.1	1.7	-0.3	18	2.1	1.7	-0.3
Bladder Continence	18	1.6	1.7	0.1	18	1.6	1.7	0.1
Pain Scale	8	0.9	0.9	0.0	8	0.9	0.9	0.0
Pain Frequency	8	0.8	0.8	0.0	8	0.8	0.8	0.0
Pain Intensity	10	2.3	2.3	0.0	10	2.3	2.3	0.0
Fatigue	18	1.6	1.2	-0.3	18	1.6	1.2	-0.3
Dyspnea	18	1.3	1.3	0.0	18	1.3	1.3	0.0
Nausea	18	1.9	2.1	0.1	18	1.9	2.1	0.1
Falls	18	1.2	1.1	-0.1	18	1.2	1.1	-0.1
Most Severe Pressure Ulcer	16	1.8	1.6	-0.1	16	1.8	1.6	-0.1

### Column Description

- n Number of responses/encounters used in calculation.
- A1 Assessment One.
- A2 Assessment Two.
- +/- Change in score between A1 and A2. Green = improved status. Red = worsened status.
- \* Higher score = more comprehension

# Report Output Admission

Unit: All Units

ADL	Total	0	1	2	3	4	5	6	8	Missing
a - Bathing	19	15.8%(3)	10.5%(2)	15.8%(3)	21.1%(4)	<b>26.3%(5)</b>	5.3%(1)	0.0%(0)	5.3%(1)	5.0%(1)
b - Personal hygiene	19	21.1%(4)	<b>31.6%(6)</b>	10.5%(2)	5.3%(1)	10.5%(2)	5.3%(1)	5.3%(1)	10.5%(2)	5.0%(1)
c - Walking	19	<b>21.1%(4)</b>	15.8%(3)	5.3%(1)	<b>21.1%(4)</b>	<b>21.1%(4)</b>	0.0%(0)	5.3%(1)	10.5%(2)	5.0%(1)
d - Transfer toilet	19	<b>36.8%(7)</b>	10.5%(2)	5.3%(1)	15.8%(3)	10.5%(2)	5.3%(1)	10.5%(2)	5.3%(1)	5.0%(1)
e - Toilet use	19	<b>36.8%(7)</b>	10.5%(2)	10.5%(2)	10.5%(2)	15.8%(3)	5.3%(1)	5.3%(1)	5.3%(1)	5.0%(1)
f - Bed mobility	19	<b>26.3%(5)</b>	<b>26.3%(5)</b>	10.5%(2)	0.0%(0)	5.3%(1)	5.3%(1)	21.1%(4)	5.3%(1)	5.0%(1)
g - Eating	19	21.1%(4)	10.5%(2)	5.3%(1)	10.5%(2)	<b>42.1%(8)</b>	0.0%(0)	5.3%(1)	5.3%(1)	5.0%(1)

	Total	0	1	2	3	4	8	Missing
Bladder Continence	19	<b>36.8%(7)</b>	5.3%(1)	<b>36.8%(7)</b>	15.8%(3)	5.3%(1)	0.0%(0)	5.0%(1)

	Total	0	1	2	3	4	Missing
Fatigue	18	22.2%(4)	22.2%(4)	<b>33.3%(6)</b>	22.2%(4)	0.0%(0)	10.0%(2)

	Total	0	1	2	3	4	Missing
Nausea	18	22.2%(4)	5.6%(1)	<b>50.0%(9)</b>	5.6%(1)	16.7%(3)	10.0%(2)

	Total	0	1	2	3	Missing
Dyspnea	18	16.7%(3)	<b>38.9%(7)</b>	<b>38.9%(7)</b>	5.6%(1)	10.0%(2)

	Total	0	1	2	3	Missing
Falls	19	15.8%(3)	<b>47.4%(9)</b>	26.3%(5)	10.5%(2)	5.0%(1)

	Total	0	1	2	3	4	5	Missing
Pressure Ulcers	19	15.8%(3)	5.3%(1)	<b>52.6%(10)</b>	15.8%(3)	0.0%(0)	10.5%(2)	5.0%(1)

	Total	0	1	2	Missing	Pain Scale Invalid
Pain Frequency	18	27.8%(5)	<b>44.4%(8)</b>	27.8%(5)	10.0%(2)	40.0%(8)

	Total	0	1	2	3	4	5	6	7	8	9	10	Missing
Pain Intensity	18	22.2%(4)	0.0%(0)	11.1%(2)	0.0%(0)	5.6%(1)	11.1%(2)	16.7%(3)	5.6%(1)	<b>27.8%(5)</b>	0.0%(0)	0.0%(0)	10.0%(2)

# Report Output - Discharge

Unit: All Units

ADL	Total	0	1	2	3	4	5	6	8	Missing
a - Bathing	14	28.6%(4)	7.1%(1)	28.6%(4)	7.1%(1)	14.3%(2)	7.1%(1)	7.1%(1)	0.0%(0)	12.5%(2)
b - Personal hygiene	13	46.2%(6)	23.1%(3)	0.0%(0)	0.0%(0)	15.4%(2)	7.7%(1)	7.7%(1)	0.0%(0)	18.8%(3)
c - Walking	14	21.4%(3)	28.6%(4)	28.6%(4)	14.3%(2)	7.1%(1)	0.0%(0)	0.0%(0)	0.0%(0)	12.5%(2)
d - Transfer toilet	14	28.6%(4)	14.3%(2)	28.6%(4)	14.3%(2)	14.3%(2)	0.0%(0)	0.0%(0)	0.0%(0)	12.5%(2)
e - Toilet use	14	42.9%(6)	14.3%(2)	7.1%(1)	14.3%(2)	7.1%(1)	14.3%(2)	0.0%(0)	0.0%(0)	12.5%(2)
f - Bed mobility	14	28.6%(4)	35.7%(5)	14.3%(2)	7.1%(1)	7.1%(1)	7.1%(1)	0.0%(0)	0.0%(0)	12.5%(2)
g - Eating	14	35.7%(5)	35.7%(5)	7.1%(1)	7.1%(1)	14.3%(2)	0.0%(0)	0.0%(0)	0.0%(0)	12.5%(2)

	Total	0	1	2	3	4	8	Missing
Bladder Continence	14	28.6%(4)	14.3%(2)	28.6%(4)	14.3%(2)	14.3%(2)	0.0%(0)	12.5%(2)

	Total	0	1	2	3	4	Missing
Fatigue	14	42.9%(6)	21.4%(3)	14.3%(2)	14.3%(2)	7.1%(1)	12.5%(2)

	Total	0	1	2	3	4	Missing
Nausea	14	28.6%(4)	7.1%(1)	21.4%(3)	28.6%(4)	14.3%(2)	12.5%(2)

	Total	0	1	2	3	Missing
Dyspnea	14	28.6%(4)	28.6%(4)	35.7%(5)	7.1%(1)	12.5%(2)

	Total	0	1	2	3	Missing
Falls	14	35.7%(5)	14.3%(2)	42.9%(6)	7.1%(1)	12.5%(2)

	Total	0	1	2	3	4	5	Missing
Pressure Ulcers	14	28.6%(4)	14.3%(2)	21.4%(3)	28.6%(4)	0.0%(0)	7.1%(1)	12.5%(2)

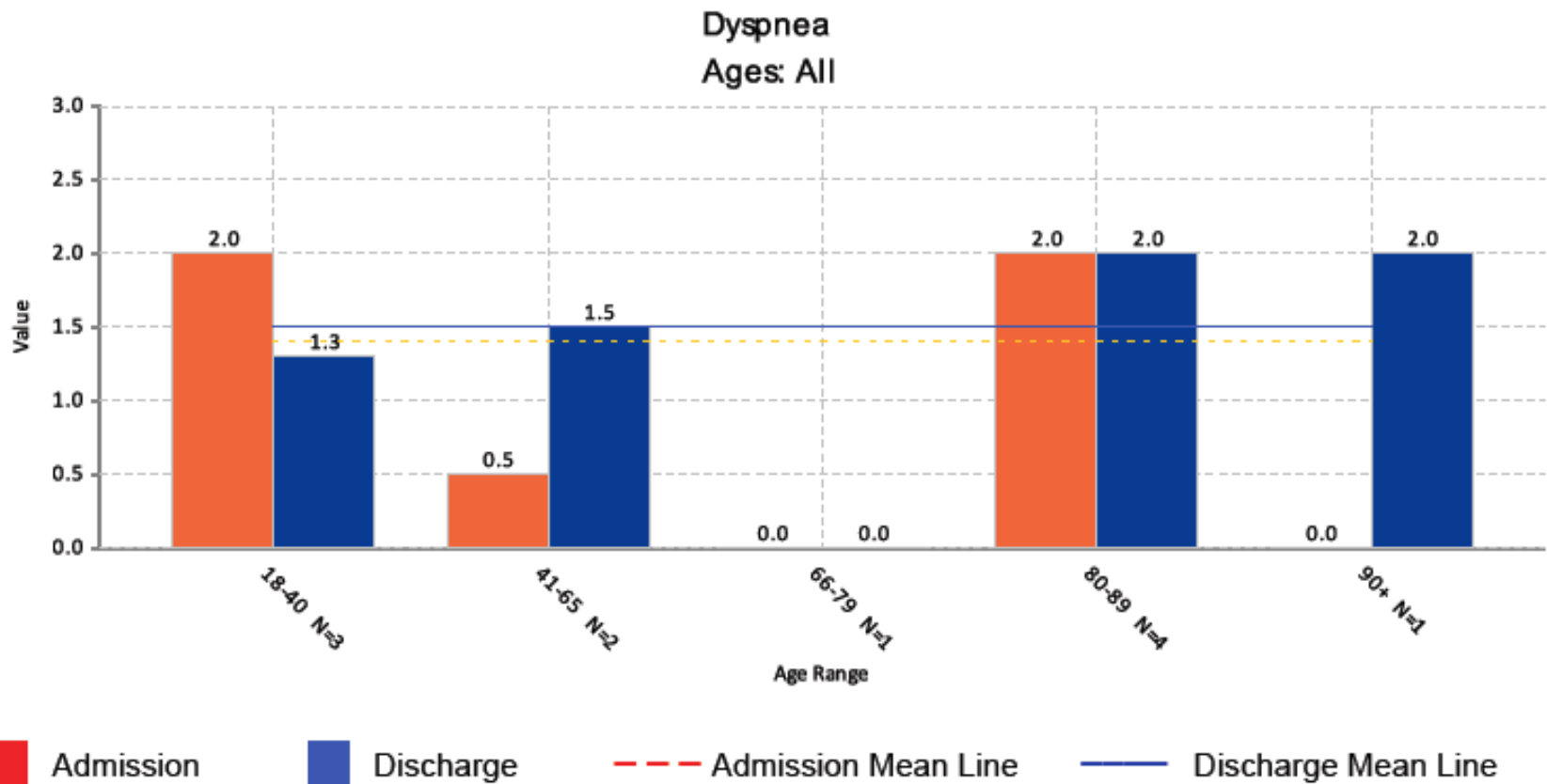
	Total	0	1	2	Missing	Pain Scale Invalid
Pain Frequency	14	57.1%(8)	21.4%(3)	21.4%(3)	12.5%(2)	12.5%(2)

	Total	0	1	2	3	4	5	6	7	8	9	10	Missing
Pain Intensity	14	64.3%(9)	7.1%(1)	0.0%(0)	14.3%(2)	7.1%(1)	0.0%(0)	7.1%(1)	0.0%(0)	0.0%(0)	0.0%(0)	0.0%(0)	12.5%(2)



# Unit level report - Dyspnea





St-Boniface  
Hospitals and Health Services

CHOBIC, test2  
SBGH-A7SO-A7027-02  
PHIN: 252452345

58y 05-Feb-1955 Female MRN: 01501036  
Attending MD: Galimova, Lena Visit: 8001918 DSC  
Reg: 545234524

Language - Rajasthani Interpreter - No

This report provides a summary (i.e. a synoptic report) of the patient's C-HOBIC scores on admission and discharge.  
The scores have been normalized to provide a quick visual snapshot.

C-HOBIC Scale Name	Admission	Discharge
<b>ADL Activities of Daily Living</b> - Higher score reflects greater need for assistance. <i>Summary ability to bath, transfer to toilet, ambulate and feed.</i> 0 - independent 1 - set up help/supervision 2 - limited assistance 3 - extensive assistance 4 - total dependence	1.24	Incomplete
<b>Bladder Continence</b> - Higher score reflects increasing incontinence 0 - Continent 1 - Control with catheter 2 - Infrequently incontinent 3 - Frequently incontinent 4 - Incontinent	3.00	1.00
<b>Pain</b> - Higher score reflects greater intensity of pain 0 - No Pain 1 - Mild 2 - Moderate 3 - Severe 4 - Worst Possible	Incomplete	1.33
<b>Fatigue</b> - Higher score reflects greater fatigue when performing normal daily activities 0 - None 1 - Minimal, diminished energy but completes normal day-to-day activities 2 - Moderate, due to diminished energy unable to finish normal day-to-day activities 3 - Severe, due to diminished energy- unable to start normal day-to-day activities 4 - Unable to commence any normal day-to-day activities due to diminished energy	4.00	3.00
<b>Dyspnea</b> - Higher score reflects increasingly greater levels of dyspnea 0 - Absence of dyspnea 1 - Absence at rest but present when performed moderate activities 2 - Absent at rest but present when performed normal day-to-day activities 3 - Present at rest	1.33	2.67
<b>Nausea</b> - Higher score reflects increasingly greater levels of nausea 0 - No nausea 1 - Mild nausea: occasionally experienced but does not interfere with eating and/or activities 2 - Moderate nausea: interferes somewhat with eating and/or activities most days 3 - Severe nausea: interferes daily with eating and/or activities 4 - Incapacitating: remains in bed part of each day due to nausea and interferes with eating	Incomplete	2.00
<b>Falls</b> 0 - No falls in the 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	1.33	0.00
<b>Pressure Ulcers</b> 0 - No pressure ulcer 1 - Any area of persistent skin redness 2 - Partial loss of skin layers 3 - Deep craters in skin 4 - Breaks in skin exposing muscle or bone 5 - Unstaged	2.00	2.00
<b>Therapeutic Self-Care</b> - Higher score reflects the greater need for assistance. Summary of a person's knowledge and ability to take their medications, manage their symptoms and perform everyday activities and ability to contact someone if there is an emergency. 0 - Assistance not required 1 - Minimal Assistance Required 2 - Heavy Assistance required	Incomplete	Incomplete

# C-HOBIC Transitional Synoptic Report for Manitoba

Confidential Patient Information

Report Requested By: Fradkov, Marianna (Analyst)

Printed From: SBGH-zNonpatient - EPRCIS

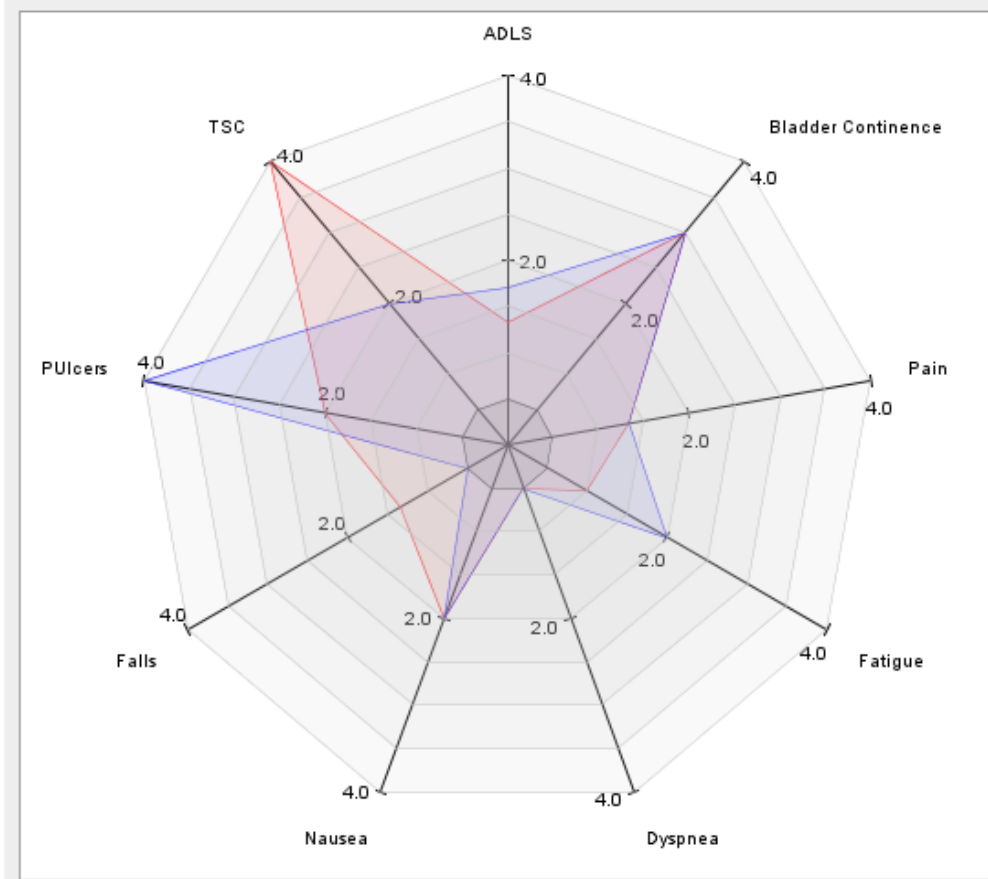
Printed On: 05-Jul-2013 9:18

End of Report

Page: 1 of 1

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

C-HOBIC Transitions Report



- Admission - Discharge

# C-HOBIC Transitional Synoptic Report for Ontario

# C-HOBIC Phase 3

## Inclusion in Discharge Abstract Database

- Pilot with the Canadian Institute for Health Information (CIHI) re: inclusion of the C-HOBIC dataset in the Discharge Abstract Database (DAD).
- Value in being able to link this dataset with other datasets such as the home care and long-term care homes datasets to understand clinical outcomes across the continuum of care.
- Initially the submission of the C-HOBIC dataset using the special projects fields in the DAD. 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.**

# Clinical Intelligence

Clinical intelligence is the electronic aggregation of accurate, relevant and timely clinical data into meaningful information and actionable knowledge in order to achieve optimal structures, processes, and outcomes.

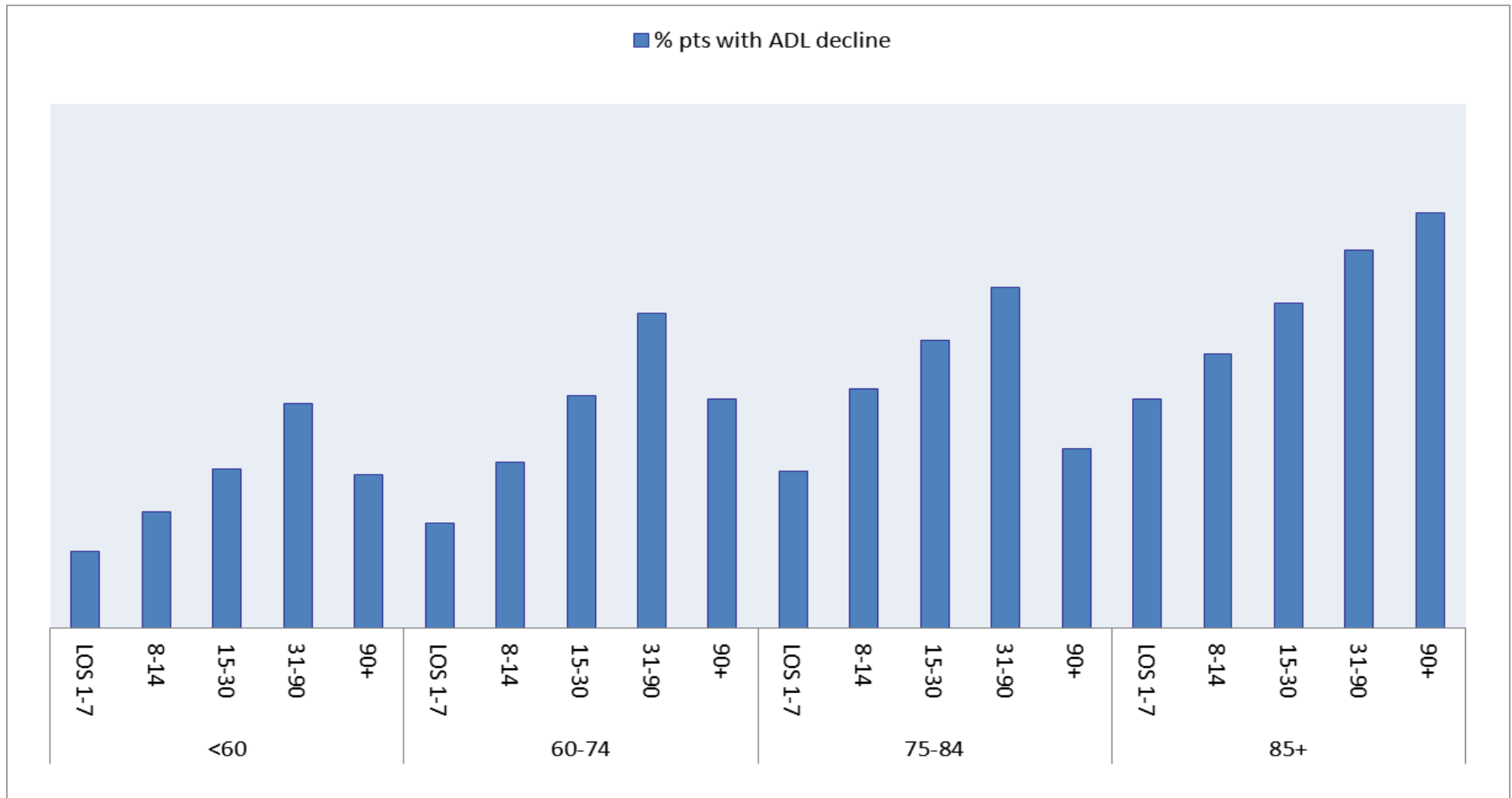
Harrington, 2012

# Research Using the Dataset

C-HOBIC Ontario data linked to other datasets held Institute for Clinical Evaluative Sciences.

- 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).

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, 2011



# Research....*continued*

## C-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



# The Cost of Readmissions

- Hospital readmission rates cost the health care system as much as \$1.8 billion per year (Monette, 2012, CMAJ September 4).
- Canadian Institute for Health Information, *All-Cause Readmission to Acute Care and Return to the Emergency Department* (2012)
  - About 8.5% of acute care patients were readmitted to an acute care hospital within 30 days of their initial discharge,
  - Nine percent of acute care patients in Alberta, Ontario and Yukon returned to the ED, with one-sixth of that group returning multiple times within seven days of their initial discharge,
  - Readmission rates and costs were greatest for medical patients (patients initially hospitalized for medical care), followed by surgical patients.

# Research....*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

# Why is this important to Clinicians

- It is critically important at this time of fiscal constraint that all clinicians demonstrate the impact of their practice on patient outcomes.
- C-HOBIC provides us a means to do that while simultaneously improving patient and organizational outcomes.



# Key Lessons Learned

- Leadership is key.
- Clinician engagement and impact on workflow from the outset is essential.
- Project management and effective change management are crucial and must be sustained over the long term.
- Consistent and continuous communication of value proposition and benefits realized to healthcare providers/organizations.

# Leadership Strategies

- By linking to priorities of staff as well as patients, organizations can create momentum for change.
- By focusing on the improvements between admission and discharge organizations can create positive energy.
- By posting results and developing care plans, organizations can engage patients and families as partners in their care.
- Management attention ensures that clinicians value and use the data.

# Case Study

- Mrs. Smith -72 year old, history of COPD, lives alone in apartment in suburbs, has support from her daughter who lives nearby, last admission 3 weeks ago – presents today in emergency.
- On admission
  - Dyspnea level was **3** (Present at rest) & fatigue level was **4** (Unable to commence any normal day-to-day activities – Due to diminished energy)
  - Ambulation was **3** (Limited assistance needed)
  - When asked about her knowledge of meds and why she was taking them Mrs. Smith stated “they keep changing them so I some times get mixed up about what I am taking and why” Score of **0**
- On discharge
  - Dyspnea level was **2** (Absent at rest, but present when performed moderate activities) and fatigue level **1** (Minimal – Diminished energy but completes normal day-to-day activities)
  - Ambulation was **0** (independent)
  - When asked about her knowledge of meds and why she was taking them Mrs. Smith stated that “the education by the nurses and pharmacist about her meds was helpful” Score of **2**
- **Ideally** in an integrated system - On admission to home care, the home care provider accesses the C-HOBIC dataset from acute care & in the follow-up visit to her GP, the GP accesses the C-HOBIC dataset.

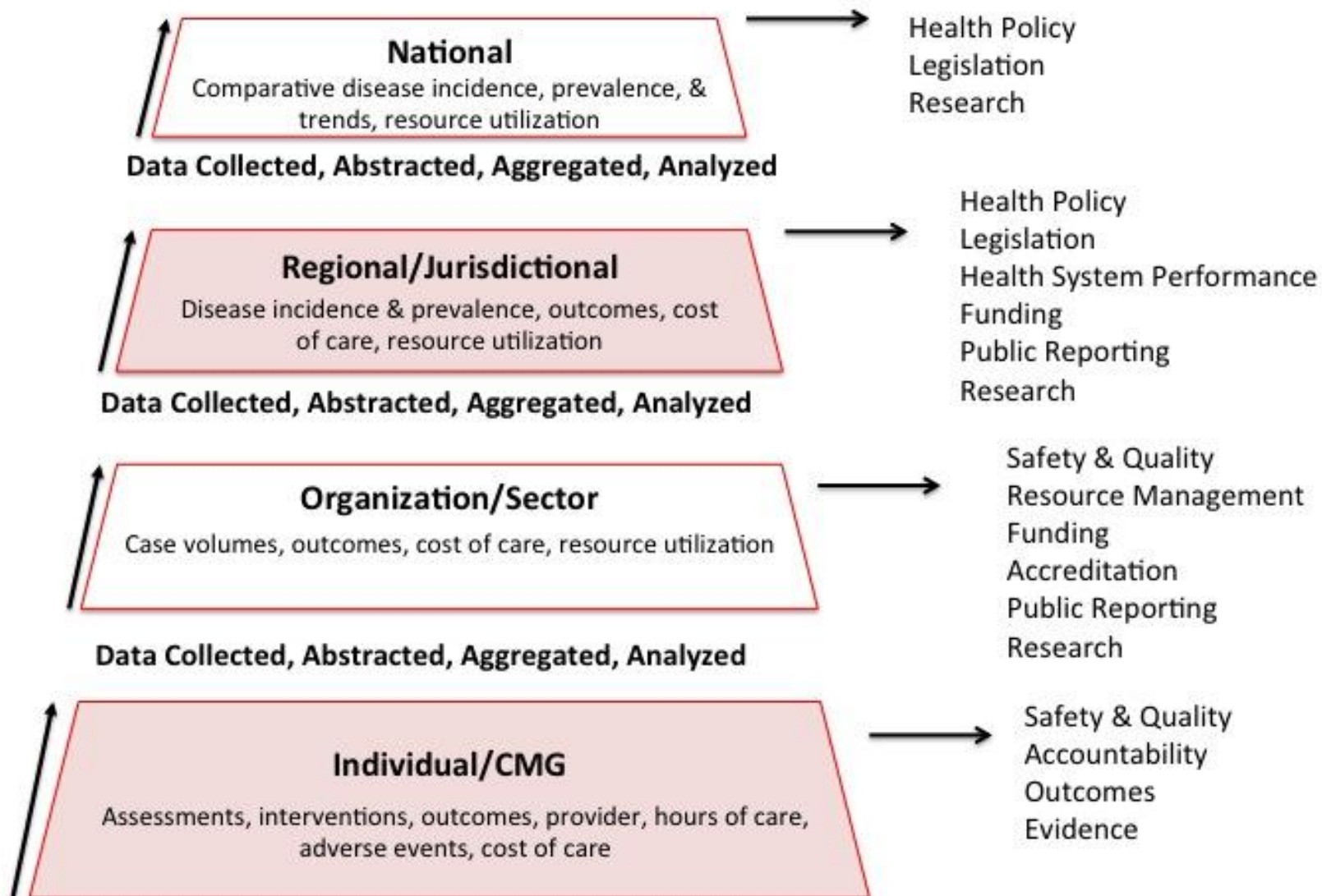
# The Story in the Data

- Age, gender, diagnosis
- Frequent admissions x 2 years
- Social support – daughter
- Fatigue on admission **4** - discharge **1**
- Dyspnea on admission **3** - discharge **2**
- ADL on admission **3** - discharge **0**
- TSC related to meds on admission **0** - discharge **2**

- Based upon outcomes, projected LOS? Likely to be discharged home? Or ALC?
- Likely to be readmitted within 7, 30, 90 days?
- Any outcomes different from acute care discharge to home care admission assessment? To home care discharge?
- How does she compare to similar patients?
  - In the same unit, hospital, region, province?
- What else might she benefit from at home? Telehomecare? Other type of follow-up?



## Standardized Data – Collected Once, Used for Many Purposes



# Aggregating the Data

- Person-specific comparative information across the continuum of care.
- Consistent measurement of clinical 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.

# A few comments about Nursing Documentation

- A lot of information is related to historical practice and over the years we just keep adding to the nursing assessment.
- No consideration regarding the average length of stay of most patients related to what information we collect on admission to acute care.
- Every time you add something it can add up to another click or requires the nurse/clinician to scroll through another screen – TIME. How many descriptors are necessary for urine/stool/sputum.

## A few comments ...continued

- When building documentation look for opportunities where items, such as ‘social history’ ‘home environment’ ‘allergies’ etc. that are attached to the person can be pulled forward into assessment screens – reduce burden of questions to patient.
- Do not include specific section on ‘Past history’ as this information comes out when doing initial assessment.

# What we want from an EHR

- Need to build/lay out assessments so that they are intuitive to clinicians - 'systems approach'.
- Visual flow sheet of essential data to support practice. Staff need to see trends in assessment information: compare current assessment to last assessment and also capacity to trend all assessment information over time to support practice decisions.
- Report on clinical outcomes that can be generated on discharge to support transitions.
- Documentation needs to tell the 'patient story'.

# The Opportunity from Standardized Clinical Data

## Patients/Families

- Communication
- Determine discharge readiness
- Information to support continuity of care

## Clinicians

- Improve communication within team
- Enhance satisfaction - demonstrating measurable results
- Identify how clinical practice leads to improved outcomes
- Shift clinicians from task focused care to 'outcomes focused care'
- Clinical Accountability

## 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

## Health Care System

- Learning system through more timely information and better data to address research questions to inform clinical practice & health system - capability to analyze health service outcomes on the basis of: Diagnoses, Age, Region/Sector, Cost of care, Skill mix, Staff ratios
- Information to support results driven patient focused care
- Public reporting – measurable results

- Create a culture of clinical care driven by *“real-time information & knowledge”* and supported by *“technology as an enabler”*



~~Nurses~~ Clinicians need to continue to explore and unlock the potential of innovation in enhancing quality and demonstrating impact and outcomes of care as the future is dependent on their ideas, creativity and willingness to engage and change

McSherry & Douglas, 2011



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- College of Family Physicians of Canada and the Nova Scotia Chapter for 1 Mainpro+ credit.
- Digital Health Canada for 1CE hour for each presentation attended. Attendees can track their continuing education hours through the HIMSS online tracking certification application, which is linked to their HIMSS account.

*Thank you for attending this event.*