Using data to improve quality of care for LTC residents in Ontario

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Using Data to Drive Improvement in Long-term Care

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Objectives

• 1) Provide an overview of health administrative data in Ontario – Focus: Long-term Care

• 2) Describe how data is used and by whom

• 3) Give concrete examples of use (from our research)
Many Sources of Health Data

Figure 1. Knowing about health: contributions to knowledge about the health of a community or population, 2010

From: Lee and Thacker, 2011 &
Evidence to Inform Action

Source: PHO, Taking Action to Prevent Chronic Disease: Recommendations for a Healthier Ontario -
Health Administrative Data

• Data from routine administration of health care
  – Administrative Purposes: Billings/payment, accountability agreements
  – Quality of Care

• Canada: Single-payer system!
  – Hospitalizations, physician services, home-care, long-term care
Health administrative data

• Data available varies
  – **Physician claims**: physician info, patient info, diagnosis codes, service provided
  – **Hospital discharges**: same; all services, procedures, many dx codes, unit/bed type
  – **Home care & Long-term care**: Resident Assessment Instrument (RAI) assessments
RAI Assessment

- Unique features:
  - Living arrangement
  - Functional Status: ADL’s, IADL’s
  - Cognitive Function
  - Allied health services: PT, OT, PSW
  - Longitudinal data
Where is the Data?

• Several Data Custodians:
  – Ministry of Health: Physician Claims
  – Canadian Institute for Health Information (CIHI): Hospitalizations, home care, LTC

• Several “Data Warehouses”/Research Institutes:
  – Institute for Clinical Evaluative Sciences
  – Manitoba Center for Health Policy
  – Population Data BC
Ontario: ICES

• Linked at the *individual level*:
  – “Continuing care”: Long-term care (LTC), Complex continuing care (CCC), Home care, Rehab
  – “Acute care”: Hospital admissions, Intensive Care Unit (ICU), Emergency Room (ER)
  – “Outpatient care”: Physician visits/claims, outpatient hospital visits, select: drugs, non-physician, labs, devices
HIGHLIGHTS FROM OUR RESEARCH PROGRAM

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The views expressed in this publication are the views of the author(s)/presenter(s) and do not necessarily reflect those of the funder.
Incidence rate of LTC Admission

Residents entering LTC (per 100,000) ON, 2010-2013

In LTC per 100,000

- 18-49: 10
- 50-59: 75
- 60-69: 261
- 70-79: 1308
- 80-89: 5557
- 90+: 11764

Bruyère
Continuing Care
Results

• What proportion of residents *had a live-in care giver* prior to entry?
  a) 0-20%
  b) 20-30%
  c) 30-40%
  d) 40-50%
  e) 50%+

• Answer: 59.8% (38,368)
Results – Low Needs

4.5% of admissions had “low” care needs -
- Cognitively Intact & No ADL restrictions

<table>
<thead>
<tr>
<th>Ontario BoC Group Number and Names</th>
<th>Cognitive performance&lt;sup&gt;1&lt;/sup&gt;</th>
<th>ADL difficulty&lt;sup&gt;2&lt;/sup&gt;</th>
<th>IADL difficulty&lt;sup&gt;3&lt;/sup&gt;</th>
<th>Presence of live-in caregiver prior to LTC home admission</th>
<th>% of all new admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Appleton</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0.29%</td>
</tr>
<tr>
<td>2) Bruni</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.07%</td>
</tr>
<tr>
<td>3) Copper</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0.82%</td>
</tr>
<tr>
<td>4) Davis</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0.18%</td>
</tr>
<tr>
<td>5) Eggerton</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>2.11%</td>
</tr>
<tr>
<td>6) Fanshaw</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1.01%</td>
</tr>
</tbody>
</table>
Results – Low Needs

- 6.0% of total admissions could likely be taken care of in the community at a lower over cost;
- 3,871 residents
- At least 1.1% (745 people) may be cared for in supportive housing
## Results – High Needs

About half (47%) have high needs
33.5%: extremely high needs: cannot be safely taken care of in the community
Conclusions

• Ontarians admitted to LTC institutions generally have high level of needs.

• Given the current options for community supports in Ontario, only a small proportion (about 1 in 20) could likely be taken care of in the community at lower costs
  – Note that these individuals will also likely deteriorate further following admission.
Discussion

• **At capacity**: Useful to think less about LTC beds, and more about creating LTC "spaces"?
  – Across **multiple settings**: private homes, supportive housing, specialized units (e.g., targeting dementia short-stays), etc.

• Many innovative approaches to supporting even high needs persons, and their caregivers, appropriately and cost-effectively.

• But... once a person gives up their community residence, transitions out of LTC are difficult!
Next Steps

• Further define the 36 groups
• What are the drivers (including modifiable ones) that make some people with the same ADL/IADL/cognition/caregiver situation be placed in LTC versus not?
  – Chronic conditions, acute care events, services received from home care, hospital, physicians, etc.
• Geographic variations ➔ best practices
Q2. Within the current system, what are drivers of outcomes in LTC?

“JAMDA paper”

Hospitalization and mortality rates in long-term care facilities: Does for-profit status matter? +

Peter Tanuseputro, Mathieu Chalifoux, Carol Bennett, Andrea Gruneir, Susan E Bronskill, Peter Walker, Douglas Manuel %
This study examines, at a population level:

1) Who is entering LTC
2) What are their rates of outcomes
3) Describes the predictors of outcomes
Methods

• Retrospective cohort study

• All “first” nursing home admissions in Ontario January 1, 2010 to March 1, 2012

• Data: Continuing Care Reporting System (CCRS) – based on RAI-MDS assessments

• 53,739 incident admission

• 640 publicly funded LTC facilities (384 for-profit, 256 not-for-profit)
Methods

• Outcomes: All incident admissions:
  – Linked to hospitalization data (CIHI-DAD)
  – Linked to mortality data (RPDB)
  – Examined for 4 publically reported indicators
• Looked at both crude & adjusted numbers
• Publication:
Why the Ownership Angle?

• Considerable academic and policy discussion
  – E.g., review: Comondore et al. BMJ, 2009 – inconsistent results over 80+ studies

• Largely unanswered questions when it comes to “hard outcomes” of mortality/hospitalizations

• Considerable heterogeneity across Canada & Internationally on financing structures
Results – Crude Rates

Crude Rates, per 1,000 Person Years, 6 months

- Hospitalizations: 565.4
- Mortality: 251.8

For-profit: 416.1
Not-for-profit: 215.7
Variation of Rates - Mortality

Range in Mortality Rates, per 1,000 PY, at 12 months
Variation of Rates - Hospitalizations

Range in Hospitalization Rates, per 1,000 PY, at 12 months

Quintile 1  Quintile 2  Quintile 3  Quintile 4  Quintile 5
Results – Adjusted Model

- Age, Sex, Marital Status
- Resident Income Quintile (prior to entry)
- Facility urbanicity
- Where residents are admitted from
- Facility Size
- Ownership
Results

• At 6 months after entry:
  – Age predicts mortality, not hospitalizations
  – Females: lower mortality/hospitalization rates
  – CHESS score: highly predictive of mortality, and moderately for hospitalizations
  – FP: 16% higher rate of mortality
  – FP: 33% higher rate of hospitalizations
  – Larger facilities: higher hospitalization rates, lower mortality rates
• Not much difference in publically reported indicators

<table>
<thead>
<tr>
<th>Quality Indicators</th>
<th>On Admission, % Residents</th>
<th>3-Months After Admission, % Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>For-Profit</td>
<td>Not-For-Profit</td>
</tr>
<tr>
<td>Physical restraints</td>
<td>4.7</td>
<td>6.4</td>
</tr>
<tr>
<td>Any pressure ulcer</td>
<td>11.4</td>
<td>9.4</td>
</tr>
<tr>
<td>Worsening pressure ulcer</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Any incontinence</td>
<td>54.0</td>
<td>51.9</td>
</tr>
<tr>
<td>Worsening incontinence</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Falls</td>
<td>21.3</td>
<td>21.0</td>
</tr>
</tbody>
</table>

Note: The dashes signify that the values were not measured.
Study Conclusions

- Significant facility level predictors for hospitalizations and mortality
  - Proprietary status
  - Facility size

- Difference are not seen with HQO indicators once baseline is accounted for
Next Steps

- Unpack & Focus on Variations
- Provincial reporting of hospitalizations & mortality
  - discussion with:
    - LTC sector & Health Quality Ontario & MOHLTC
    - Reporting scheme? Adjustments? Benchmarking? Other concepts?
- Work together to improve – including tools at front lines: [www.projectbiglife.ca/elderly](http://www.projectbiglife.ca/elderly)
Burdensome transitions @ EOL

- Transfer to another LTC facility within 90 days before death
- 2 Hospitalizations or 1 Hospitalization for pneumonia, UTI, dehydration, sepsis in last 90d
- ICU in the last 30 days before death
- Any institution use (Acute, ER, CCC, Rehab) in the last 3 days before death
Application of Research

https://www.projectbiglife.ca/elderly
Conclusions

• Overview of health admin data – including LTC

• Aging – concerns RE caring for LTC needs
  – LTC beds are already at capacity
  – Demand increasing

• We need to pay attention to reforming ‘LTC spaces’ and at same time improving current care in LTC beds
Questions?

Thank-you!

PTANUSEPUTRO@OHRI.CA
Using of your Facility’s RAI-MDS Data to Improve Care

Kathy Greene - Director of Decision Support, Admissions & Health - Records -
What is the Resident Assessment Instrument?

Comprised of 3 components:

- Minimum Data Set version 2.0 (MDS)
- Resource Utilization Group (RUG) – determined by select MDS elements
- Resident Assessment Protocol (RAP)
Who Uses the RAI-MDS?

• All Ontario LTC facilities are mandated by the Ministry of Health & Long-Term Care to use the RAI-MDS 2.0 - RUG 34

• RAI-MDS provides invaluable resident level data as well as at the facility & system level.

• Are you leveraging your facility level data?
  ➢ Invest in pressure relief mattresses versus low rise beds to prevent falls
RAI Usage across Sectors -

RAI is used across the healthcare continuum

- RAI Mental Health
- RAI Contact Assessment used by CCAC
- RAI-MDS in Complex Continuing Care (RUG-44)

Data is used by both government & health organizations to inform health planning & funding

Data is linked across sectors to inform healthcare usage -
Why Use the RAI-MDS?

- Standardized tool completed at point of care to provide real-time data on a resident’s needs.
- Ensures providers use common language & assessments to:
  - Plan a resident’s care
  - Identify risks
  - Measure resident outcomes from baseline scores

Facility level use of data
- Monitor quality indicators (falls, pain, pressure ulcers)
- Understand resource intensity of residents
Flow of RAI-MDS Data -

- Completed on all admitted residents & then each 92 days afterwards.

- Data submitted quarterly to the Canadian Institute of Health Information (CIHI).

- Data flows to the MOHLTC & organizations such as Health Quality Ontario (HQO).

- Your facility’s data is used by decision makers!
Data Usage in the Public Forum -

Expectation from the public for data transparency -

- HQO Patient Safety Public Reporting - (hospital hand washing compliance) -
- Provincial Stroke report card – identifies high performing Stroke care providers
- Health Quality Ontario public reporting for LTC & Home Care

High level of public interest in certain indicators
<table>
<thead>
<tr>
<th>Home Name:</th>
<th>ELISABETHBRYUYERE RESIDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Health</td>
<td>Champlain</td>
</tr>
<tr>
<td>Integration Network:</td>
<td></td>
</tr>
<tr>
<td>City:</td>
<td>OTTAWA</td>
</tr>
<tr>
<td>Postal Code:</td>
<td>K1N 5C8</td>
</tr>
<tr>
<td>Number of Beds:</td>
<td>71</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicator results for this home</th>
</tr>
</thead>
<tbody>
<tr>
<td>YEAR</td>
</tr>
<tr>
<td>PROVINCEAL AVERAGE 2013/14</td>
</tr>
<tr>
<td>Benchmark</td>
</tr>
<tr>
<td>2013-14</td>
</tr>
<tr>
<td>2012-13</td>
</tr>
</tbody>
</table>
Importance of Knowing your Data -

Knowing & using facility level data is vital to:

Understand your residents' needs
- Resource intensity of residents across units
- Types of care interventions & impact on educational needs

Understand if quality concerns exist

Target improvement initiatives & monitor for change
Importance of Data Quality -

Availability & use of data heightens need for accurate data.

Dimension of data informing a facility’s funding

Data quality must be owned by clinicians & mgmt.

Value of learning to extract data from CIHI e-reports in addition to vendor software

CCRS@cihi.ca
Resources Available through CIHI

Education and Related Resources

Education Opportunities
Visit the [CIHI Learning Centre](#) to view the full course catalogue and to register for any course sessions, including those listed below.

<table>
<thead>
<tr>
<th>Date</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 10</td>
<td>Calculating a Quality Indicator</td>
</tr>
<tr>
<td>March 16</td>
<td>Building Your CCRS eReports</td>
</tr>
</tbody>
</table>

Home Care Education – Workshops
Factors Impacting Data Accuracy

- Importance of remaining current with RAI-MDS coding guidelines (revised restraint guidelines) -
  - CIHI CCRS Bulletins
- Knowledge of RAI-MDS coders
- Strategy to monitor data accuracy (i.e. audits)
- Organizational commitment towards data quality
Where to Start with using Your Data?

Review your raw data - monthly & quarterly

- Compare current results to past performance
- Bring data directly to front-line staff
- Does it make sense?
- What can be done to improve results?

<table>
<thead>
<tr>
<th>EBR RAW DATA # Residents who have Fallen in the Last 30 Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>EBR 5</td>
</tr>
<tr>
<td>EBR 6</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
Bring Data to Your Clinicians - Falls -
Look for Opportunities to Showcase Results -
Leverage your MDS Data to Measure Quality -

Sounds obvious, but not always practiced

At Bruyere, MDS data forms the basis of quarterly quality reports to the Board

- % of residents whose bladder continence worsened
- % of residents who fell in the last 30 days
- % of residents whose Stage 2 to 4 pressure ulcer worsened
- % of residents in daily physical restraints
- % of residents who had a newly occurring Stage 2 to 4 pressure ulcer
- % of residents whose ADL self-performance worsened
- % of residents whose behavioral symptoms worsened
- % of residents whose mood symptoms of depression worsened
- % of residents whose pain worsened
Know Your Audience -

Data must be understood to be used:

- Trend over time & risk adjust where possible
- Presented visually in addition to table format
- Compared to established benchmarks (HQO, provincial average, high performing peers)
- Contrasted to other types of data
Risk Adjusted Data for Peer Comparisons -

Residents Who Fell in the Last 30 Days
Q3 2014 - Q2 2015

- Prov. Average: 15.0%
- Bruyère SLR: 15.8%
- Bruyère EBR: 9.0%

HQO Benchmark: 9%
HQO 25th percentile: 10.8%
HQO 50th percentile: 13.7%
Time for Questions

KEEP CALM AND ASK QUESTIONS

kgreene@bruyere.org %