High Cost Users

Driving Value with a Patient-Centred Health System

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June 20, 2013
Health Links and Beyond: The Long and Winding Road to Person-Centred Care

Leveraging the Culture of Performance Excellence in Ontario’s Health System

HSPRN is an inter-organization Network funded by the Ontario Ministry of Health and Long Term Care
Acknowledgments

- Institute for Health Policy Management and Evaluation, University of Toronto
- Health System Performance Research Network
- Institute for Clinical Evaluative Sciences
- The Commonwealth Fund
- The Toronto Rehabilitation Research Institute, UHN
Collaborators

- Geoff Anderson
- Peter Austin
- Susan Bronskill
- Ksenia Bushmeneva
- Andrew Calzavara
- Ximena Camacho
- Eyal Cohen
- Ashley Corallo
- Irfan Dhalla
- David Henry
- Sudeep Gill
- Andrea Grunier
- Astrid Guttmann
- Betty Lin
- Alice Newman
- Milica Nitikovic
- Jeff Poss
Overview

1. Government spending on high cost health care users.
2. Target populations for health system improvement.
3. What outcomes matter?
4. Risk for adverse outcomes: hospital and Long Term Care admissions.
5. Summative thoughts.
Most people are healthy throughout their lives and incur their highest costs later in life. This is borne out in higher average costs for just about every sequential age.

*note increase at age 65 in spending attributable to ODB coverage at age 65
Total Annual Government Health Spending in Ontario

Total spending is a composite of both average spending for a given population (here by age) and the number of people in that group.
Forecasted Annual Government Health Spending in Ontario

2008 and estimated 2031 Total Annual Health System by projecting population and using 2008 spending patterns

Total Health Spending in Millions

Age

2008
2031
Implications for Sustainability

1. Most of the projected spending increase is for older persons (mostly with complex medical needs)

2. Future spending will be about 80% higher if we don’t change the way that we care for older adults (in today’s dollars)
Using administrative databases at ICES we identified all Ontarians in 2007 with a valid health card.

We measured and summed (for all health sectors) the total health system cost for everyone and ranked 13.7 million individual’s data in order of total health system cost.

We identified groups representing 1%, 5%, 10% and 50% of the total population with the highest health care spending.
The Concentration of Healthcare Spending in Ontario

On average, health care spending is highly concentrated with the top 5% of the population (ranked by cost) accounting for 66% of expenditure.
We fixed $7Billion from gaps in data (inpatient mental health, primary care capitation payments, ED docs, Outpatient oncology and dialysis)…

…and updated the analysis to 2010/11

• The stability of cost concentration is remarkable!
The Concentration of Healthcare Spending in Ontario

Annual Concentration of Health Spending

Ontario Population: 100%
- 1%: $282 (2008 Dollars)
- 5%: $3,620 (2009 Dollars)
- 10%: $7,408 (2010 Dollars)
- 50%: $39,294

Health Expenditure 2008: 100%
- 1%: $39,294
- 5%: $7,408
- 10%: $3,620
- 50%: $282

Health Expenditure 2009: 100%
- 1%: $40,236
- 5%: $7,721
- 10%: $3,764
- 50%: $300

Health Expenditure 2010: 100%
- 1%: $41,526
- 5%: $7,597
- 10%: $3,668
- 50%: $307
What conditions do they have?

Conditions among the top 1% users:

• **Mostly Chronic Disease:**
  * Heart Failure, Chronic Obstructive Pulmonary Disease, Myocardial Infarction, General Signs and Symptoms
  * Infection (Pneumonia & Urinary Tract)
  * Stroke & Hip Fracture
  * End of Life
  * Cancer
Implications

• This is largely an actuarial exercise and clarifies the need for insurance (we don't know when or how much health care we're going to need).

• It doesn't really help us manage costs though. Managing costs requires attention to the ways in which there might be opportunities to:
  - better manage and coordinate physician care,
  - reduce or avoid unnecessary acute hospital admissions in hospital (but not reduce necessary treatments),
  - avoid/delay LTC admissions.

• Interventions should be targeted to specific identifiable populations.
Implication for Sustainability:  
It’s not that many people

- We need to better manage the *health* of 13.2 Million Ontarians
- But we don’t need to better manage the *health care* of 13.2 Million Ontarians.
- 50% of the population or 6.7 Million Ontarians used $307 or less in 2010 health care dollars, totalling 2% of all spending

We do need to better manage the care of complex older adults

- Top 1% spenders in the population is about 132,000 people
- ~ 110,000 of these are aged 65+
- 5% of the population aged 65+ is about 92,000 people
Target Populations for System Improvement

In order to improve patient experience and population health while containing costs it is important to define populations that can be linked to potentially effective interventions or system redesign strategies.

Among Older Adults…
Target Populations for System Improvement

Among Older Adults:

1. Identify the Ontario prevalence of populations that have been included in prior care transition interventions (From acute to home).

2. We examined three different patient populations of older people at hospital discharge: patients with multiple ambulatory care sensitive conditions (MACSC), cardiac arrhythmia, and hip fracture patients.

3. 

4. Examine the treatment and follow-up patterns of care for these patients.

5. Examine health system costs associated with total 1-year care for this population.
Target Populations for System Improvement

Patients discharged from acute care in Ontario in 2007/08 with select diagnoses

<table>
<thead>
<tr>
<th>Acute Diagnosis</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac Arrhythmia</td>
<td>14,976</td>
</tr>
<tr>
<td>ACSC (&gt;1 diagnosis)</td>
<td>7,351</td>
</tr>
<tr>
<td>Hip Fracture</td>
<td>5,749</td>
</tr>
</tbody>
</table>

Chronic ACSC conditions include: Angina, Asthma, Chronic Obstructive Pulmonary Disease, Epilepsy, Heart Failure, Hypertension
Some Ontario Data

Average 1-year costs after discharge from acute care in 2007/08 for 3 target populations: Different Trajectories

- ACSC
- ARRHYTHMIA
- HIPFRACT

Costs range from $- to $35,000.
High cost population

How well do we manage care?  
... for the high cost population?

Focus for a moment on those with 2 or more Ambulatory Care Sensitive chronic Conditions.
The Continuum of Care

- Acute (ED, IP, SDS)
- Rehab / CCC / Sub-acute Care
- CCAC
- LTC
- Home Care
- Primary Care
- Specialist Care
- Pharmacy

Patient Flow
Patient Rebound
Patients see different providers

Percent of (2+) ACSC by Number of Different Providers in One Year

Percent of Patients

Number of Different Providers
Some patients have many encounters

Number of visits among (2+) ACSC patients

Number of Visits/Encounters with different healthcare providers in 1 year
Burden is High, Care is Sub–Optimal

- Seniors with three or more reported chronic conditions account for 40% of reported health care use among seniors

- Gaps exist in preventive and collaborative care for seniors

- Though most seniors have access to PHC:
  - fewer than half (48%) reported talking at least some of the time to a health professional about their treatment goals.

What Outcome Measures Matter?

Independence (76%)
- Pain Relief (46%)
- Symptom Relief (32%)

Staying Alive (11%)
- Independence (66%)
- Pain Relief (31%)

Pain Relief (7%)
- Independence (57%)
- Symptom Relief (39%)

Symptom Relief (6%)
- Independence (66%)
- Staying Alive (19%)

Fried TR, MD; Tinetti ME, Iannone L, O’ Leary JR, Towle V, Van Ness PH,
Health Outcome Prioritization as a Tool for Decision Making Among Older Persons With Multiple Chronic Conditions
Arch Intern Med. 2011;171(20):1854-1856
What to do?

• Many good intervention ideas

• How to identify “service package” for different clients

• Targeting may be key:
  ✷ Who is at risk for what outcome?
  ✷ What is the best intervention to avoid that outcome?

• For example: We have found important differences in risk of acute readmission (medical) and LTC placement (functional)
INTRODUCTION

Advancing age is often associated with an increase in chronic conditions and sometimes a decline in cognitive functioning (as shown throughout this report). In turn, both developments are met with more trips to the doctor, more visits to the emergency department, more prescribed medications and more hospital admissions. Among Canadians identified with chronic conditions, nearly half of those aged 65–79 and almost 60% of those 80 and older reported having at least two high-prevalence or high-impact health conditions. Treating multiple chronic conditions often means that older people must seek the services of different health care providers, with treatment itself often challenged by inadequate service coordination and continuity of care. Appropriately targeting services to reach those with complex, continuous and considerable care needs may play an important role in optimizing their health trajectory and in easing the total care burden on and costs to the health system.

As the population ages, older people are increasingly being admitted to and discharged from hospital ‘quicker and sicker.’ When transitioning from hospital to home, older people typically require community-based and home care services to help stabilize their medical condition and ensure that the resources are in place that will enable them to remain in the community. Yet gaps in care and poor communication between service providers during transitions remain a concern. Uncoordinated transitions are associated with preventable complications, medication errors and inappropriate or insufficient follow-up care. Common and costly consequences of poor care transitions include the needless duplication of tests and services, re-hospitalization, admission to long-term care (LTC) and even death—outcomes which studies suggest can be improved by designating a specific health care provider to be responsible for individuals during care transitions and by providing individuals with comprehensive outpatient or community care.

Efforts to improve care transitions and contain the associated system costs require an understanding of the complexity and frequency of these transitions, allowing those who are at heightened risk of adverse outcomes to experience transitions that are client-centred, comprehensive and evidence-informed. There are many examples of the types of interventions and care that individuals need as they transition from acute hospitalization.
Methods – Study Population

- Long-stay home care clients with RAI-HC assessments admitted to acute care in 2007/08 with conditions that were identified in past trials of care transition interventions:

Acute Diagnoses:
- 2 or more chronic ACSC diagnoses (angina, heart failure, hypertension, asthma, COPD, diabetes, grand mal or epileptic convulsions, pulmonary edema)
- Or any one of: Cardiac arrhythmias, stroke, hip fracture, spinal stenosis, deep vein thrombosis/pulmonary embolism, peripheral vascular disease.
Methods – Measures/Analysis

• We compared acute care readmission rates at 30 and 90 days and compared LTC admission rates at 365 days according to risk:
  ◦ LACE (medical care-driven risk score for readmission or death within 30 days)
  ◦ MAPLe (functionally driven risk score for admission to LTC within 365 days)
Risk: Acute Care versus LTC

Complex Adults Discharged from Acute care in 2007/08:
Disease Predicts Acute; Function for LTC

MAPLe Measures Function; LACE measures medical complexity
Implications

- Acute care admissions were predicted primarily by diagnostic and utilization information.

- Long term care admissions were predicted primarily by functional impairment information.

- There was little or no overlap or additional contribution of functional or diagnostic information for the alternative outcome.

- Targeting services to those who may benefit the most is important to increase value in the health system.
We need to know more about opportunity for improvements

- There needs to be an appreciation that there are different types of issues presenting within the ‘High Cost Users’ including for example:
  - Multiple Chronic Conditions
  - Mental Illness
  - End of Life/Palliative
  - Complex Children

- These different populations require different responses on the part of policy and providers.
High Cost Users: Children, Adults and Senior Populations

Average Annual Health System Cost Population and HSPRN Cohorts
Ontario 2007–08

- Older Adults
- Mental Health
- Pediatrics
- Avg cost per person in Ontario

[Graph showing average annual health system cost by age for different populations.]
Patient-centered strategies
Measurement that follows patients

Acute (ED, IP, SDS) → Rehab / CCC / Sub-acute Care → CCAC

CCAC → LTC

CCAC → Home Care

Home Care → Specialist Care

Home Care → Pharmacy

Home Care → Primary Care

Patient Flow

Patient Rebound
Summative Comments

- Health system spending is highly concentrated among a few.

- These are generally individuals with many health concerns and who currently have many encounters/visits with the health system and many different providers.

- Care for these individuals is complex, most have multiple conditions and a series of uncoordinated disease management programs are not going to be very helpful.
Summative Comments

• We need to learn from positive deviance (not deviants). Some high risk populations have very good outcomes – how did that happen?

• All providers need to work differently to ensure continuity of information, relationships and coordinated care management with other health system providers.
What to do?

• Many good intervention ideas

• How to identify “service package” for different clients

• Targeting may be key:
  - Who is at risk for what outcome?
  - What is the best intervention to avoid that outcome?
Patient–centered strategies

- Acute (ED, IP, SDS)
- Home Care
- Specialist Care
- Pharmacy
- Community Support Services
- Primary Care

Shared Patient-Centered Care Plan
What’s it all about?

- It’s about population-based health

And...

- it’s about person-centered health care for (particular) populations