Why New Thinking is Needed for Older Patients: How Demographic Imperatives will force the Redesign of Acute Care Service Delivery

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Presentation Objectives

- Provide the context that highlights the disconnects that currently exist.
- Demonstrate how current care delivery paradigms are problematic and require an elder friendly approach.
- Introduce the Acute Care for Elders (ACE) Strategy as a care model that can deliver better patient and system outcomes.
## Shifting Mortality Patterns

<table>
<thead>
<tr>
<th>Causes of Death</th>
<th>Rank in 1900</th>
<th>Rank in 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Ages</td>
<td>All Ages</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Cancer</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Stroke</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Chronic Lung Diseases</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Alzheimer’s Dementia</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Diabetes</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>Influenza/Pneumonia</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Nephritis</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Accidents</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Septicaemia</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Diarrhea and Enteritis</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

## Ageing and Hospital Utilization in Central Toronto LHIN, 2005

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Age &lt;65</th>
<th>Seniors 65+</th>
<th>% Seniors 75+</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2005 Population</strong></td>
<td>1,142,469</td>
<td>87%</td>
<td>13%</td>
<td>49%</td>
</tr>
<tr>
<td><strong>Emergency Room Visits</strong></td>
<td>321,044</td>
<td>79%</td>
<td>21%</td>
<td>62%</td>
</tr>
<tr>
<td><strong>Acute Hospitalizations</strong></td>
<td>78,025</td>
<td>63%</td>
<td>37%</td>
<td>64%</td>
</tr>
<tr>
<td>w/ Alternate Level of Care Days</td>
<td>4,263</td>
<td>17%</td>
<td>83%</td>
<td>76%</td>
</tr>
<tr>
<td>w/ Circulatory Diseases</td>
<td>10,361</td>
<td>32%</td>
<td>68%</td>
<td>65%</td>
</tr>
<tr>
<td>w/ Respiratory Diseases</td>
<td>5,928</td>
<td>43%</td>
<td>57%</td>
<td>73%</td>
</tr>
<tr>
<td>w/ Cancer</td>
<td>6,743</td>
<td>53%</td>
<td>47%</td>
<td>54%</td>
</tr>
<tr>
<td>w/ Injuries</td>
<td>5,809</td>
<td>58%</td>
<td>42%</td>
<td>71%</td>
</tr>
<tr>
<td>w/ Mental Health</td>
<td>6,161</td>
<td>87%</td>
<td>13%</td>
<td>59%</td>
</tr>
<tr>
<td><strong>Inpatient Rehabilitation</strong></td>
<td>3,368</td>
<td>25%</td>
<td>75%</td>
<td>66%</td>
</tr>
</tbody>
</table>

*Toronto Central LHIN, 2006*
# Ontario Inpatient Hospitalizations, 2007

<table>
<thead>
<tr>
<th>Age</th>
<th>Discharges</th>
<th>Total LOS Days</th>
<th>ALOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population Total</td>
<td>945,089</td>
<td>6,075,270</td>
<td>6.4</td>
</tr>
<tr>
<td>Population 65+</td>
<td>370,039 (39%)</td>
<td>3,516,006 (58%)</td>
<td>9.8</td>
</tr>
<tr>
<td>65-69</td>
<td>6.9%</td>
<td>7.9%</td>
<td>7.3</td>
</tr>
<tr>
<td>70-74</td>
<td>7.7%</td>
<td>9.8%</td>
<td>8.2</td>
</tr>
<tr>
<td>75-79</td>
<td>8.5%</td>
<td>12.5%</td>
<td>9.4</td>
</tr>
<tr>
<td>80-84</td>
<td>7.9%</td>
<td>13%</td>
<td>10.5</td>
</tr>
<tr>
<td>85-89</td>
<td>5.3%</td>
<td>9.4%</td>
<td>11.4</td>
</tr>
<tr>
<td>90+</td>
<td>2.8%</td>
<td>5.3%</td>
<td>12.2</td>
</tr>
</tbody>
</table>

*Canadian Institutes for Health Information (CIHI), 2007*
Only a small proportion of older adults are consistently extensive users of hospital services (Wolinsky, 1995)
What Defines our Highest Users?

- Polymorbidity
- Functional Impairments
- Social Frailty
Chronic Disease and Hospitalization

Percent of People with Inpatient Hospital Stays

Number of Chronic Conditions

Medical Expenditure Panel Survey, 2001
The Cost of Chronic Diseases

80% of Medicare spending goes towards the 20% of its users with 4 or more Chronic Conditions.

Medicare Standard Analytic File, 2001
The Hazards of Hospitalization
The Hazards of Hospitalization

- Older people are particularly vulnerable to the risks of iatrogenic illness and functional decline.

- The pathogenesis of functional and cognitive decline is complex and involves an interaction amongst:
  - the ageing process
  - polymorbidity and acute illnesses
  - the hospitalization process
Conceptualizing Functional Decline

Functional Older Person → Acute Illness + Possible Impairment

- Depressed Mood
- Negative Expectations
- Physical Impairment and Deconditioning

Dysfunctional Older Person

The Hazards of Hospitalization
- Hostile Environment
- Depersonalization
- Bedrest / Immobility
- Malnutrition / Dehydration
- Cognitive Dysfunction
- Medicines / Polypharmacy
- Procedures

Palmer et al., 1998 (Modified)
The Hazards of Hospitalization

THE COST OF FUNCTIONAL DECLINE (Palmer, 1995)

- The loss of independent functioning during hospitalization has been associated with:
  - Prolonged lengths of hospital stay
  - Increased recidivism
  - A greater risk of institutionalization
  - Higher mortality rates
The Dilemma

- The way in which acute hospital services are currently resourced, organised and delivered, often disadvantages older adults with chronic health problems. (Thorne, 1993)
Developing an Elder Friendly approach
Acute Care for Elders (ACE) Strategy

- An Elder Friendly approach redesigns or establishes new sustainable approaches that seek to enhance and improve upon current service models.
- Requires a shift in traditional thinking that currently underpins the administration and culture of most traditional care organizations.
- Is not adverse to identifying risk factors and needs and in intervening early to maintain independence.
These dimensions work together to minimize functional decline, promote safety, and mitigate adverse social and medical outcomes.
Geriatrics at Mount Sinai

- In 2010, Mount Sinai became the *first* academic health sciences centre in Canada to make Geriatrics a core strategic priority.

- Our ACE Strategy is being operationalized through the implementation of a comprehensive and integrated strategic delivery model that utilizes an interprofessional team-based approach to patient care.

- Our Strength relies on the partnership of our Geriatric Medicine, Geriatric Psychiatry, Primary Care and Palliative Medicine programs.
The Mount Sinai Geriatrics Continuum

The Older Patient and Caregiver Experience at Mount Sinai Hospital

Ambulatory

- Outpatient Geriatric Medicine, Psychiatry and Palliative Services
- “Centre for Integrated Care”

Inpatient

- Geriatric Medicine, Psychiatry and Palliative Services
- Orthogeriatrics Program
- ICU Geriatrics Program
- ACE Unit
- MAUVE Volunteer Program

Community

- Home Based Geriatric Primary/ Specialty Care Program
- Temmy Latner Home Based Palliative Care Program
- CCAC - ICCP Pilot Site
- Reitman Centre
- Seniors Wellness
- Community and Staff Education Programs

Emergency Department

- ISAR Screening
- GEM Nurses
- ED Geriatric Mental Health Program
The Setting, The Problem

- St. Paul’s Hospital is a 500 Bed Hospital in Vancouver
- 39 Bed Acute Geriatrics Unit with a focus on frail elders.
- Using the VCH database – we identified the five problems that associated with prolonged lengths of stay:
  - Functional Mobility
  - Delirium
  - Medication Use
  - Urinary Indwelling Catheter Use
  - Nutrition and Hydration
- ALOS/ELOS = 1.35 in 2006 from AGU Admissions
The Vancouver Interprofessional Practice (VIP) Statements Initiative

- Evidence-Informed Practice Statements targeting five key areas for care improvement:
  - Functional Mobility
  - Delirium
  - Medication Use
  - Urinary Indwelling Catheter Use
  - Nutrition and Hydration

- Aim was to improve care quality, reduce functional decline and decrease overall lengths of stay
What at Happens at St. Paul’s?

VIP STATEMENTS INITIATIVE (Sinha et al. 2009)

- Sustained ALOS: ELOS reduction of 39%! (1.35 to 0.83) @ 30 M

 Includes:
 Age 70+ VCH residents only
 CMGs grouped by guideline
 Excludes:
 COPD (CMG 139) & Stroke

Reduction of acute days by 12,300 per year!
Drawing Conclusions
Concluding Thoughts

- Whereas hospitalization offers older patients potential benefits it also exposes them serious risks.
- Elder Friendly care strategies, although poorly disseminated, have been developed that can deliver economic and social benefits.
- Creating an Elder Friendly Hospital requires a *shift* in traditional thinking.
- Implementing the ACE Strategy will allow us to remain leaders in the delivery of complex medical care.
Questions?

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The Conundrum of Chronic Care
Table 1. Relevance of Clinical Practice Guidelines for the Treatment of Older Patients With Diabetes Mellitus, Hypertension, Osteoarthritis, Osteoporosis, and Chronic Obstructive Pulmonary Disease (COPD)

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Quality of evidence discussed for type of patient?</td>
<td>Older: yes Multiple comorbidities: yes Quality of evidence poor, requires extrapolation for nutrition recommendations</td>
<td>Older: yes Multiple comorbidities: no Quality of evidence good for treating hypertension in older patients</td>
<td>Older: no Multiple comorbidities: no</td>
<td>Older: no Multiple comorbidities: no</td>
<td>Older: no Multiple comorbidities: no</td>
</tr>
<tr>
<td>Specific recommendations for patients with 1 comorbid condition?</td>
<td>Yes Diseases: hypercholesterolemia, hypertension, congestive heart failure, chronic kidney disease, cardiovascular disease, peripheral vascular disease, benign prostatic hypertrophy</td>
<td>Yes Diseases: coronary artery disease, diabetes mellitus, metabolic syndrome, sleep apnea, chronic kidney disease, gout, left ventricular hypertrophy, erectile dysfunction, peripheral vascular disease, congestive heart failure, stroke, dementia, renal transplantation, renal artery stenosis, urinary outflow obstruction</td>
<td>Yes Diseases/drugs: anticoagulants, glucocorticoids, peptic ulcer disease, chronic kidney disease, hypertension, congestive heart failure</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Specific recommendations for patients with several comorbid conditions?</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Time needed to treat to benefit from treatment in the context of life expectancy discussed?</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

[^19]: Limited to the possible effects of antihypertensive treatment on preventing cognitive decline, not management of hypertensive patients with mild cognitive impairment or dementia.
[^22]: Limited to patients at highest risk of gastrointestinal tract bleeding with certain therapies.
This patient would have to...

Take 12 Medications in 19 separate doses over 5 times each day.

Follow 14 non-pharmacological recommendations - some which contradict each other.

How congruent are these plans with our patient’s goals and preferences?

How often do we even ask?