Eight Major Interventions to Improve Health Outcomes and Reduce Costs

Patrick Parfrey
Faculty of Medicine, Memorial University
2017 NL Provincial Budget

- Total spending $8.1 billion
- $1.1 billion spent servicing debt
- $777 million deficit

Net debt to GDP ratio

- Newfoundland
- Quebec
- New Brunswick
- Ontario
- Nova Scotia
- Manitoba
- Prince Edward Island
- Federal
- British Columbia
- Saskatchewan
- Alberta

36% on health

Sources: CBC/RBC
Provincial Population

Median age of population, 2017

Canada
Newfoundland
New Brunswick
Nova Scotia
Prince Edward Island
Quebec
British Columbia
Ontario
Manitoba
Saskatchewan
Alberta

20% of NL population 65+ years in 2017

Source: Statistics Canada
34% of NL population 65+ years projected in 2038
Per Capita Spending by Age

NL government health expenditure by age, 2015

Source: CIHI
Provincial government health expenditure, 2017

Canada (average)
Newfoundland
Alberta
Manitoba
Saskatchewan
Prince Edward Island
Nova Scotia
New Brunswick
Quebec
British Columbia
Ontario

Dollars per capita

Source: CIHI
Health System Scoring

Health System Performance

Care Processes
- Preventative Care
- Safe Care
- Coordinated Care
- Engagement and Patient Preferences

Administrative Efficiency
- Affordability
- Timeliness

Access

Equity

Health Care Outcomes
- Population Health Outcomes
- Mortality Amenable to Health Care
- Disease-Specific Outcomes

Source: Commonwealth Fund
Health care value (outcomes/costs) is poor in NL in comparison to other provinces.
Health Care Outcomes

Difference from international average

Source: C. D. Howe Institute/Commonwealth Fund
Life Expectancy

Life expectancy at birth

Canada
British Columbia
Ontario
Quebec
Alberta
Prince Edward Island
New Brunswick
Nova Scotia
Saskatchewan
Manitoba
Newfoundland

Source: Statistics Canada
Improve Health and Decrease Cost

**Social Determinants**
- Spend more on the social determinants of health and do not increase the proportionate size of health care budget

**Restructure Health Care**
- Fewer acute care hospitals and more community-based facilities locally (primary/emergency/long term care)

**Integrated Health Care**
- Enhance an integrated health care system with primary care reform and e-technology

**Unnecessary Care**
- Reduce unnecessary interventions and tests, and create a Quality of Care Accountability structure

**Quality of Care**
- Improve access and quality of care by getting the right intervention to the right patient at the right time

**Pharmacare**
- Support a National Drug Formulary under Medicare

**Innovative Health Care**
- Knowledge translation on innovative health care delivery

**Culture Change**
- Change the culture so that all citizens support the health system
Social Determinants

WHAT MAKES CANADIANS SICK?

50% 
YOUR LIFE
INCOME
EARLY CHILDHOOD DEVELOPMENT
DISABILITY
EDUCATION
SOCIAL EXCLUSION
SOCIAL SAFETY NET
GENDER
EMPLOYMENT/WORKING CONDITIONS
RACE
ABORIGINAL STATUS
SAFE AND NUTRITIOUS FOOD
HOUSING/HOMELESSNESS
COMMUNITY BELONGING

25% 
YOUR HEALTH CARE
ACCESS TO HEALTH CARE
HEALTH CARE SYSTEM
WAIT TIMES

15% 
YOUR BIOLOGY
BIOLOGY
GENETICS

10% 
YOUR ENVIRONMENT
AIR QUALITY
CIVIC INFRASTRUCTURE

Source: CMA
Social Determinants

Source: Dutton et al., CMAJ, 2018
Spending one more cent on social services for every dollar spent on health, life expectancy in Canada could have increased by 5% and avoidable mortality dropped by 3% (Dutton et al., CMAJ, 2018)

- Reduce NL health spending by $26 million (1%)
- Increase NL social spending by $26 million

Improved Health

Life expectancy increased by 5%
Social Determinants

Problem
• Too little spent on social determinants of health

Solution
• Increase spending on social determinants of health in lieu of increased spending on health care
Provincial government spending on institutional health care

- Canada (average): 50.5%
- Newfoundland: 60.7%

Source: CIHI
Restructure Health Care

Hospitals

Long Term Care Centres

Community Clinics/Health Centres
Restructure Health Care

Problem
• Excessive spending on institutional care

Solution
• Decrease number of acute care hospitals
• Provide long term/primary/emergency care locally
• One provincial health authority to execute this mandate
Integrated Health Care

Transformative Change in Primary Health Care

- Patient enrollment with a primary care provider
- Inter-professional health care teams
- Group practices and networks
- Blended payment schemes, including capitation
- Financial incentives for quality of care
- Primary health care governance
- Rostered evening and weekend call
Integrated Health Care

Acute hospital care

Community care Primary/ER/LTC

Long Term Care

Community care Primary/ER/LTC

NP

NP

NP

NP

NP

NP

NP
Integrated Health Care

EMR/EHR
- e-ordering
- e-decision making

Remote monitoring

Long term care utilization

E-technology in primary care

E-practice in hospitals
Integrated Health Care

Problem
- Fragmented care delivery
- Communication gaps across sectors
- Underserviced regions

Solution
- Transform community care
- Use e-technology and integrate sectors
Antibiotic prescriptions, 2014

- Newfoundland: 12
- Saskatchewan: 8
- Alberta: 7
- Nova Scotia: 6
- New Brunswick: 6
- Prince Edward Island: 6
- Ontario: 6
- Manitoba: 6
- British Columbia: 6
- Quebec: 5

Defined daily dosage
Unnecessary Care

CT scans per 1,000 population

- Benefits of imaging
- Harms of radiation

21 guidelines from Choosing Wisely Canada on appropriate use of CT scans

CT Scans Performed

- Newfoundland
- Canada
Potentially inappropriate medication prescribed to seniors (%)
Unnecessary Care

Appropriateness and Effectiveness

- Providing care to only those who could benefit; this reduces the incidence, duration, intensity and consequence of health problems.

<table>
<thead>
<tr>
<th></th>
<th>Newfoundland and Labrador</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potentially Inappropriate Use of Antipsychotics in Long Term Care 2016–2017</td>
<td>38.3%</td>
<td>21.9%</td>
</tr>
<tr>
<td>Restraint Use in Long Term Care 2016–2017</td>
<td>14.2%</td>
<td>6.5%</td>
</tr>
</tbody>
</table>

Source: CIHI
Unnecessary Care

- Pre-op testing in patients at low/moderate surgical risk having low/moderate risk surgery

<table>
<thead>
<tr>
<th></th>
<th>Patients</th>
<th>Creatinine</th>
<th>INR</th>
<th>Hemoglobin</th>
<th>CXR</th>
<th>ECG</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016 (pre)</td>
<td>3997</td>
<td>4235</td>
<td>1573</td>
<td>4756</td>
<td>1135</td>
<td>2787</td>
</tr>
<tr>
<td>2017 (post)</td>
<td>4039</td>
<td>4027</td>
<td>1223</td>
<td>4621</td>
<td>607</td>
<td>1711</td>
</tr>
<tr>
<td>Reduction N</td>
<td>208</td>
<td>350</td>
<td>135</td>
<td>528</td>
<td>1076</td>
<td></td>
</tr>
<tr>
<td>Reduction %</td>
<td>5%</td>
<td>22%</td>
<td>3%</td>
<td>47%</td>
<td>39%</td>
<td></td>
</tr>
</tbody>
</table>

Actual cost savings: $97,053
Potential additional cost savings: $100,568
Blood urea testing by family doctors in EH: 6-month update

• Baseline (2015/16): 205,754 tests
• 6 month post: 46% reduction
• Actual cost savings: $90,656
• Potential annual cost savings: + $300,000
Sodium test occurrences by the number of hospitalization at medical/surgical units in EH, 2014-16
Unnecessary Care

Fourth tests in hospitalizations where previous tests were normal
Unnecessary Care

Problem

• No restraint on patient demand
• No control of doctor decisions

Solution

• Public education
• ?? Economic disincentives for unnecessary interventions
• Doctor audit, feedback, and education
• Economic incentives to reduce unnecessary care
• Quality of Care Council NL
Quality of Care

Secondary stroke rate as percent of total strokes

- Canada
- Newfoundland

Percent

0 2 4 6 8 10 12 14 16 18 20
### Utilization at St. Clare’s Vascular Lab 2007-15

<table>
<thead>
<tr>
<th>Service</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carotid artery studies</td>
<td>17,600</td>
</tr>
<tr>
<td>Indicated based on symptoms</td>
<td>40%</td>
</tr>
<tr>
<td>Not indicated based on symptoms</td>
<td>60%</td>
</tr>
<tr>
<td>Test result shows high-grade stenosis</td>
<td>33%</td>
</tr>
</tbody>
</table>

- Most requests arrive too late after symptom onset
- Access to urgent testing is diminished by a waitlist for tests that are not indicated
Quality of Care

Thrombolysis rate for ischemic stroke

Percent

<table>
<thead>
<tr>
<th></th>
<th>St. John's</th>
<th>Clarenville</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Quality of Care

Problem
• Failure to get the right intervention to the right patient at the right time

Solution
• Practice improvement teams
• E-ordering
• Quality of Care Council NL
Quality of Care

Provincial mandate and budget

Trusted third party to evaluate care

Apply Choosing Wisely Canada guidelines

Facilitate right patient, right intervention, right time

Knowledge translation

Communicate with the public

Quality of Care Council NL
Provincial government drug expenditure, 2017

Canada (average)  
Ontario  
Alberta  
Quebec  
Nova Scotia  
Saskatchewan  
Newfoundland  
New Brunswick  
Manitoba  
Prince Edward Island  
British Columbia

Source: CIHI
**Problem**
- Access to potentially beneficial drugs is limited

**Solution**
- Decrease costs for drugs by partnering in national Pharmacare program
- Increase access to drugs demonstrated to improve outcomes
Knowledge translation of successful interventions in other countries, provinces, and regional health authorities

Province has the potential to embark on interventions that can improve health outcomes at reduced cost

- Small population, geographically isolated
- Close linkages between stakeholders
- State-of-the-art electronic information system
Innovative Health Care

Problem
• A 50-year old health system providing low value, costing 36% of provincial budget, at a time of economic stress, and pending demographic change

Solution
• Grasp the opportunity for innovation and become a leader in transforming Canadian health care
Culture Change

- Focus on health outcomes
- Public education
- Reduce no-shows
- Unnecessary use of interventions
- Return of service for medical students
- Union demands
- Health as a political football
- Media reporting
Culture Change

Clinical Frailty Scale*

1. Very Fit
2. Well
3. Managing Well
4. Vulnerable
5. Mildly Frail
6. Moderately Frail
7. Severely Frail
8. Very Severely Frail
9. Terminally Ill

Scoring frailty in people with dementia
The degree of frailty corresponds to the degree of dementia.
Culture Change

Nursing workforce, 2016

Canada
Newfoundland
New Brunswick
Prince Edward Island
Nova Scotia
Manitoba
Saskatchewan
Alberta
Quebec
British Columbia
Ontario

Source: CIHI
Culture Change

Cost of absenteeism/overtime for nurses, 2016

- Canada
- Newfoundland
- Saskatchewan
- Quebec
- Prince Edward Island
- New Brunswick
- British Columbia
- Nova Scotia
- Manitoba
- Alberta
- Ontario

Dollars per capita

Source: Canadian Federation of Nurses Unions/Statistics Canada
Problem
• Patient demand, doctors’ practice and remuneration, union demands, political competition, and media reporting predispose to fragmentation

Solution
• Change culture to support of a major provincial asset
• 10-year health accord by stakeholders to sustain a universal access health care system
HEALTHCARE

COMMUNICATION

POLITICS  CULTURE

NLMA  UNIONS  SILOS

ECONOMICS  STRUCTURE  DEMAND  GATEKEEPERS
10 Year Health Accord NL

- All stakeholders to sign
- Focus on improving health outcomes
- Change culture from demand to support for Medicare
- National Pharmacare
- Independent Quality of Care Council
- % of budget to be spent on health
- Increase budget for social programs
- Restructure to community based care