Health Data Users:
What Does a Province Want to Know?

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BC Ministry of Health
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British Columbia

- Population 4.7 million
  - Large urban population 2.8 million in Lower Mainland area

- Ministry of Health
  - Annual Budget $16+ billion in 2012/13
  - Sets policy, legislation, strategic direction and planning
  - Funds physician services, PharmaCare, other insured services

- 5 Regional Health Authorities provide
  - population health and wellness
  - community mental health and substance use services
  - hospital care
  - long term residential care, assisted living, home health care

- Provincial Health Services Authority
  - co-ordinates provincial services (Cancer Agency, Renal Agency, Transplant Agency, provincial ambulance service, Forensic Psychiatric Services, etc.)
Government Role

- **Stewardship role** - responsibility for the health and well-being of the population and for guiding the health system as a whole

- **Overall we want to know:**
  - How well is the health system in BC operating and how can it be improved?
  - How is the health of the population and what does it mean for long-term planning of health services?

- **Levers to drive change:**
  - Funding and financial incentives/disincentives
  - Provision of services directly or through delegated agencies
  - Legislation, regulation, and policy
  - Information
  - Moral suasion
Uses of Data

Data is one source we use to *learn* what needs to improve, how to make positive changes, and whether change is happening as desired

- Population health surveillance
- Strategic planning
- Performance monitoring and reporting
Population Health Surveillance, Strategic planning, Performance monitoring and reporting

What is the health of the population?

Data Sources:
- Communicable disease surveillance through BC Centre for disease control
- Chronic disease registries built from administrative data
- Population surveys, e.g., Statistics Canada Canadian Community Health Survey
Using Population Health Surveillance data to report on the health of the population

Provincial Health Officer
Part of mandate is to report to British Columbians on the health of the population and other health issues

- The health and well being of people in British Columbia, 2002
- The impact of diabetes on the health and well being of British Columbians, 2004
- 2nd Report on health and well being of Aboriginal People in British Columbia, 2007
Population health surveillance, **Strategic Planning**, Performance monitoring and reporting

Data supports identification of strategic priorities through:
- Description of current state
- Analysis of persistent, long-term issues in health care
- Identification of emerging needs in specific program areas or in particular patient/client groups)

**Data Sources:**

Administrative data bases (costs and utilization over time of)
- Physician Services
- Hospital inpatient and day procedures
- Prescription drugs dispensed in community
- Home and Integrated Community Care (home health care, long-term residential care, assisted living)

Chronic Disease Registries
Health human resources data
Strategic Planning Tool: Population Segmentation

- BC population is divided into **13 Health Status Groups** based on the condition which determines their greatest need for health care that year
  - End of Life (palliative care)
  - Frail in Care (residential care)
  - Cancer
  - High Complex Chronic Conditions
  - Frail in the Community and Severe Disability
  - Maternity and healthy newborns
  - Mental health & Substance Use
  - Medium Complex Chronic Conditions
  - Low Complex Chronic Conditions
  - Child and Youth with non-chronic conditions
  - Adults with non-chronic conditions
  - Healthy / Minor acute illness
  - Non-users
Strategic Planning Tool: Service Line Segmentation

- Health care system divided into 21 distinct service lines.
- Each service line groups services from different providers.
  
  E.g., MSP Fee for Service physician billings for services in hospital are in hospital service lines

- Primary care
- Obstetric & gynaecologic
- Inpatient mental health & substance use
- Ambulatory medical specialist
- Oncology
- Emergency medicine
- Acute medical
- Elective surgical
- Transplant surgery
- Trauma & emergency surgery
- Palliative care
- Diagnostic pathology & imaging
- Clinical support therapies
- Pharmaceuticals
- Anaesthesia & pain management
- Emergency transport
- Physical medicine & Rehabilitation
- Community case management
- Community mental health and substance use
- Community supports for daily living (home health care and supports, assisted living)
- Residential - short term
- Residential – long term

Part of matrix but no administrative data:
- Healthy living
- Environmental health
- Health emergency management
Strategic Planning Tool: “The Blue Matrix”

1. Divide the Population into Different Segments reflecting their Health Status
2. Look at the Specific Health Care Services Used
3. Measure the Services used in a Year

Shade of Blue indicates intensity of service
Blue Matrix View across the Health care System

- Blue Matrix provides insight into $9,210 million of publicly funded health care (out of total Ministry Budget of $16,000 million)

<table>
<thead>
<tr>
<th>Use of Publicly Funded Health Care 2009/10</th>
<th>People (thousands)</th>
<th>Millions of Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Physician</td>
</tr>
<tr>
<td>Non User</td>
<td>606 13%</td>
<td>$0</td>
</tr>
<tr>
<td>Healthy</td>
<td>1,671 37%</td>
<td>$345</td>
</tr>
<tr>
<td>Major all ages</td>
<td>159 3%</td>
<td>$179</td>
</tr>
<tr>
<td>Low Complex Chronic Conditions</td>
<td>1,271 28%</td>
<td>$673</td>
</tr>
<tr>
<td>Medium Complex Chronic Cond.</td>
<td>343 7%</td>
<td>$377</td>
</tr>
<tr>
<td>Mental Health and Substance Use</td>
<td>103 2%</td>
<td>$142</td>
</tr>
<tr>
<td>Maternity and Healthy Newborns</td>
<td>117 3%</td>
<td>$166</td>
</tr>
<tr>
<td>Frail In The Community_Disability</td>
<td>14 0%</td>
<td>$24</td>
</tr>
<tr>
<td>High Complex Chronic Conditions</td>
<td>184 4%</td>
<td>$362</td>
</tr>
<tr>
<td>Cancer</td>
<td>56 1%</td>
<td>$118</td>
</tr>
<tr>
<td>Frail In Care (In Residential Care)</td>
<td>37 1%</td>
<td>$60</td>
</tr>
<tr>
<td>End Of Life</td>
<td>14 0%</td>
<td>$42</td>
</tr>
<tr>
<td>All Population Segments</td>
<td>4,574 100%</td>
<td>$2,491</td>
</tr>
</tbody>
</table>

Use of Publicly Funded Health Care
2009/10

People

<table>
<thead>
<tr>
<th></th>
<th>Grand Total</th>
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<tr>
<td>All Population Segments</td>
<td>100%</td>
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</table>

British Columbia
Projected Demand from Population Growth and Aging Only

- Impact of population growth alone from applying population growth projections to age structures of these health status groups

- Note: These projections do not consider any other drivers of demand
- This single graph had the greatest impact on Ministry’s strategic planning
Lessons learned from Blue Matrix

- Chronic conditions and co-morbidities, not age, are the major drivers of need for health care; patterns in the trajectory of chronic conditions is key modelling information
- People use a suite of services: Need for co-ordination of services; Need to plan care pathways
- Challenge for sustainability: If current patterns continue the growth in demand will far exceed future capacity
- Result: Ministry’s Innovation and Change Agenda
BC Innovation and Change Agenda

Strategy Map

**Improve Population Health, Enhance Patient & Provider Experience Of Care & Reduce Costs Of Providing Health Care**

**Population Health**
- Disease, injury & disability prevention.
- Environmental health.
- Emergency health management.
- Health improvement.

**Effective Health Promotion & Prevention**
- Improve population health through core public health programs and implement targeted health promotion and prevention initiatives to reduce the incidence of chronic disease.

**Quality Clinical Services**
- Effective
- Accessible
- Patient-centred
- Appropriate
- Safe

**Integrated & Targeted Primary & Community Health Care**
- Implement an integrated model of primary and community care to more effectively meet the needs of British Columbians, especially frail seniors and patients with chronic and mental health and substance use conditions.

**Sustainable Publicly Funded Health Care System**
- Meet budget targets
- Efficient
- Value for money

**High Quality Hospital Services**
- Implement a guideline-driven clinical care management system to improve the quality, safety and consistency of key clinical services and improve patient experience of care.

**Improved Innovation, Productivity & Efficiency In The Delivery Of Health Services**

**Driving Innovation & Efficiencies**
- Use patient focused funding to increase access and cost-effectiveness.
- Drive LEAN across health service sector to redesign and improve services and functions.
- Optimize the efficiency and effectiveness of emergency health services.
- Achieve greater efficiency in the delivery of quality diagnostic services.
- Reduce the cost of drugs, equipment and supplies.
- Achieve savings through consolidating lower mainland administrative services.

**Physicians & Health Human Resources**
- Optimize use of health human resources to improve clinical care and productivity.
- Strengthen assessment and support for performance of medical professionals.

**System Accountability**
- Optimize governance, leadership and operational and change management capacity.

**IM/IT**
- Improve patient safety and access to records through enhancements to the health care card.
- Complete the implementation of eHealth.

**March 2012**
Population health surveillance, Strategic planning, **Performance Monitoring and Reporting**

Use data to:

- **Assess performance for accountability**
  - *Are the desired changes taking place?*
  - *Are targets being met?*

- **Inform and support understanding**
  - *What changes are taking place?*
  - *What seems to be driving the changes (or lack of change)?* *What are the dynamics in the system that support or resist needed changes?*

- **Make decisions**
  - *What changes or actions are needed, and what should our strategic priorities be next year?*
  - *What do we need to do to help reach our goals?*
Measuring the Ripple Effect: Micro to Meta

Specific Service Change
- Immediate term, attributable to specific change activity at service level; Targets for accountability
  - Example: % GPs who provide chronic disease management

Specific System Impact of Change
- Medium term, relatively attributable to specific change activity; Other dynamics of system may also be involved; Targets for accountability
  - Example: ACSC hospital admissions rate, <75 and 75+

General System Performance
- Long term, general monitoring of system performance irrespective of change agenda; May be vaguely attributable to specific change activity over a long time period; No accountability targets
  - Example: % seniors 75+ not admitted to hospital

Population Health
- Very long term (generational), not attributable to specific change activity; No accountability targets
  - Example: Healthy life expectancy
Performance Measurement Framework

- A model for organizing, classifying and grouping measures for monitoring performance of the BC health care system by domains of performance

**Measurement Domains**

- Acceptability / Client Centeredness
- Accessibility
- Appropriateness
- Compliance with Standards / Guidelines
- Coordination / Continuity
- Effectiveness [Outcomes

- Efficiency
- Equity
- Safety
- Service Volumes
- Resources: Expenditures, Capital, HR
- Population / Patient / Client Characteristics
### Public reporting: Annual Service Plan Report

<table>
<thead>
<tr>
<th>Goal 2: British Columbians have the majority of their health needs met by high quality primary and community based health care and support services</th>
<th>2011/12 target</th>
<th>2011/12 actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per cent of general practitioner physicians providing chronic disease management</td>
<td>85%</td>
<td>88%</td>
</tr>
<tr>
<td>Percent of population 75+ receiving home support services</td>
<td>16%</td>
<td>Data Not Available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Goal 3: British Columbians have access to high quality hospital services when needed</th>
<th>2011/12 target</th>
<th>2011/12 actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average wait time for high demand non-emergency surgeries</td>
<td>19 weeks</td>
<td>22 weeks</td>
</tr>
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</table>
What else would we like to know if data available?

- Improved health surveillance in chronic disease, environmental health
- Community sector, including public health, home & community care, mental health and addictions services – administrative data bases less well developed than in acute sector
- Quality of care – use proxy measures, most focus on access
- Outcomes of care – clinical and functional (e.g., PROMS)
- National and international benchmarks – to support more evidence based setting of performance targets
- Process measures – how do we monitor implementation of large scale change initiatives when outcomes may not be evident for several years
Questions and Comments?