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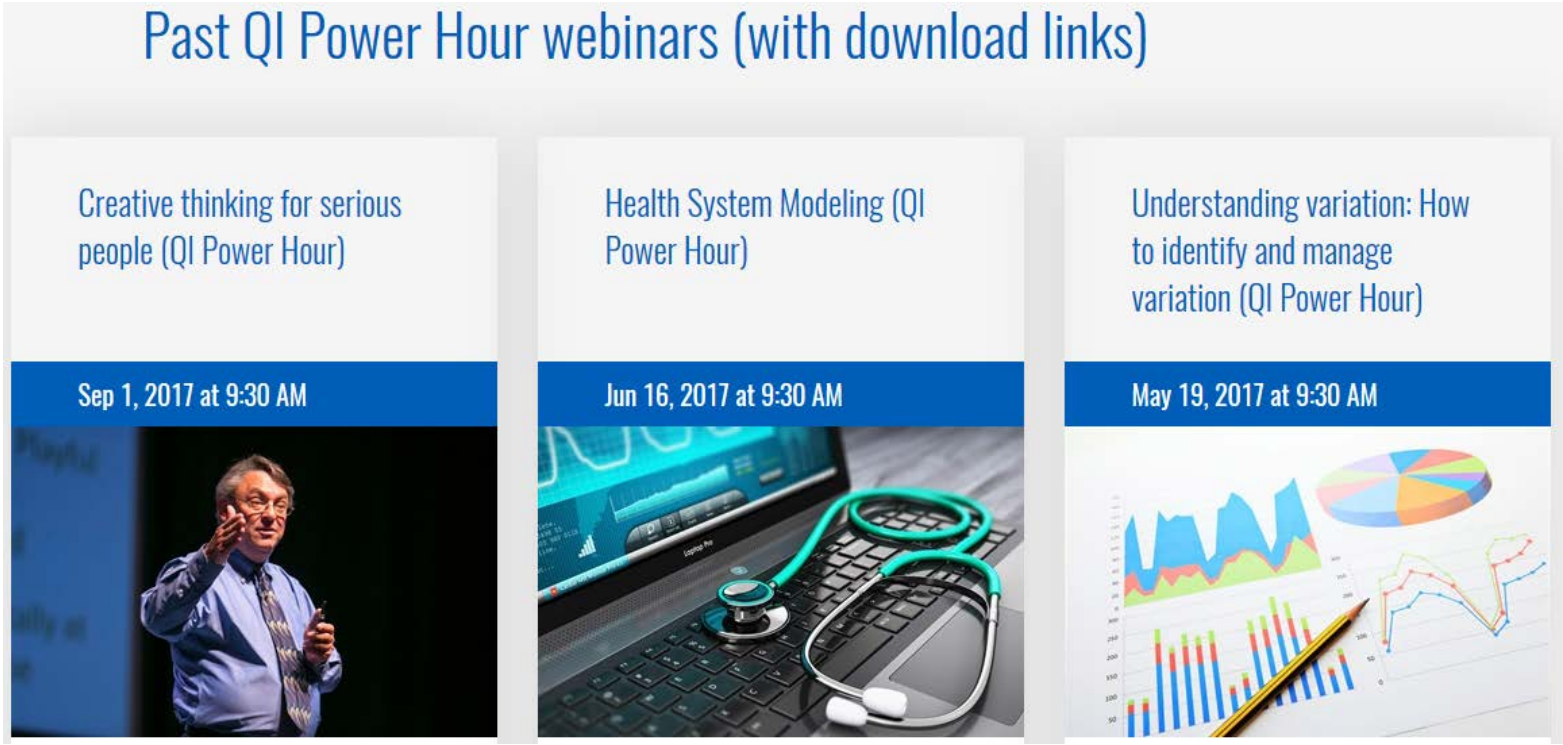

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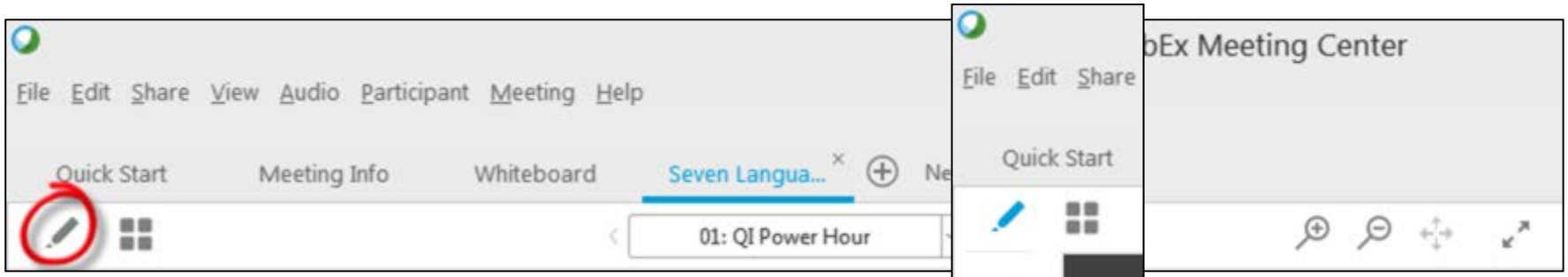

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Echo Bay
Whitehorse
Great Bear Lake
NORTHWEST TERRITORIES
Juneau
Watson Lake
Yellowknife
Great Slave Lake
Fort Nelson
Hay River
Fort Smith
Rankin Inlet
Prince Rupert
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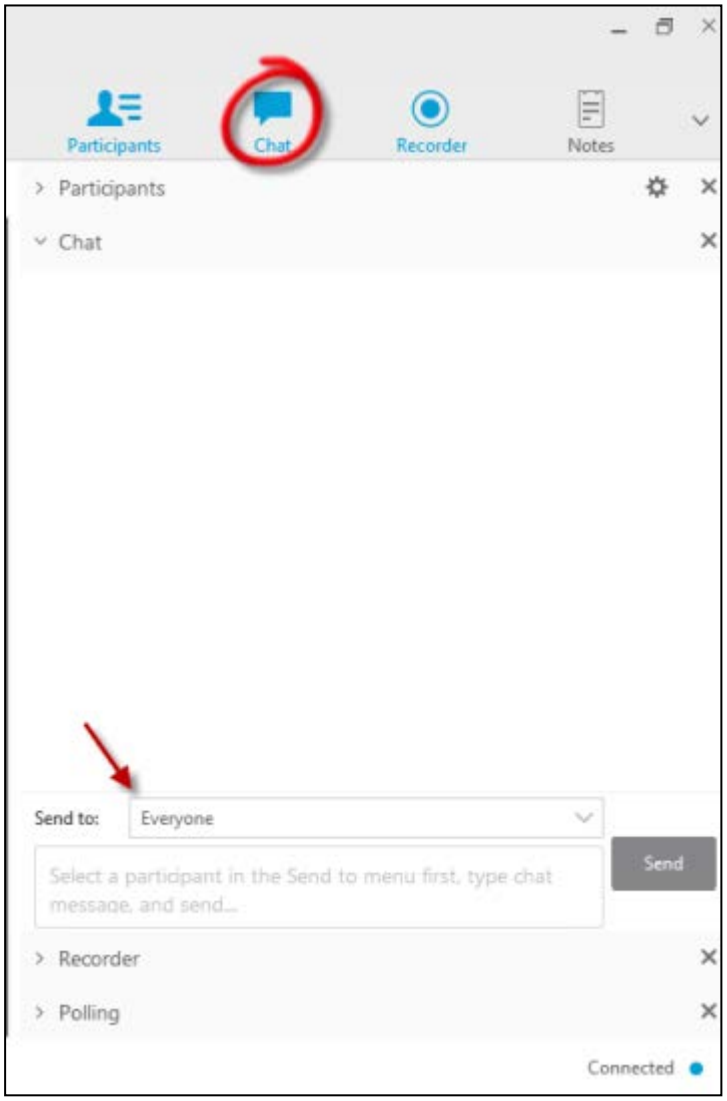

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Today's session:

High-need, high-cost patients in Saskatchewan: What we're learning about their needs and health service use

Meric Osman

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By the end of this session…

… participants will:

- understand how “high-cost patients” are identified from administrative databases;
- recognize the characteristics of high-cost patients; and,
- recognize health care patterns that may lead patients to accumulate high costs.

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Framework

$$Value = \frac{Quality + Outcomes}{Costs}$$

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Agenda

- ✓ Overview of high-cost patients and health care costs
- ✓ Overview of administrative databases and how to identify high-cost patients
- ✓ Characteristics of high-cost patients in SK (15/16)
- ✓ Patterns of health care use
- ✓ Relevant provincial initiatives
- ✓ Conclusion

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Introduction

- Health care costs are skewed, concentrated within a small number of patients (evidence from many jurisdictions)
- High-cost patients are a heterogeneous group consisting of people from all age groups with complex needs (health and/or social)

- Targeted interventions to provide better care to these individuals are implemented in many health care systems
  - Connecting to Care (Saskatoon & Regina, 2014 - ongoing)

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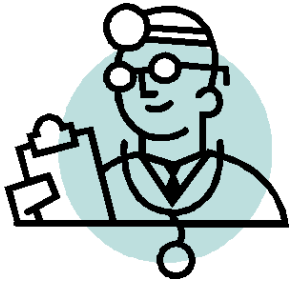
Introduction (Costs)

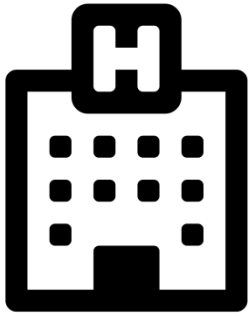
Cost values/ranges are driven from budgets and volume



$35 - 75 (per visit)

$50 (per prescription)

$370 (per visit)



$800 - 1,600 (per day)

$230 (per day)

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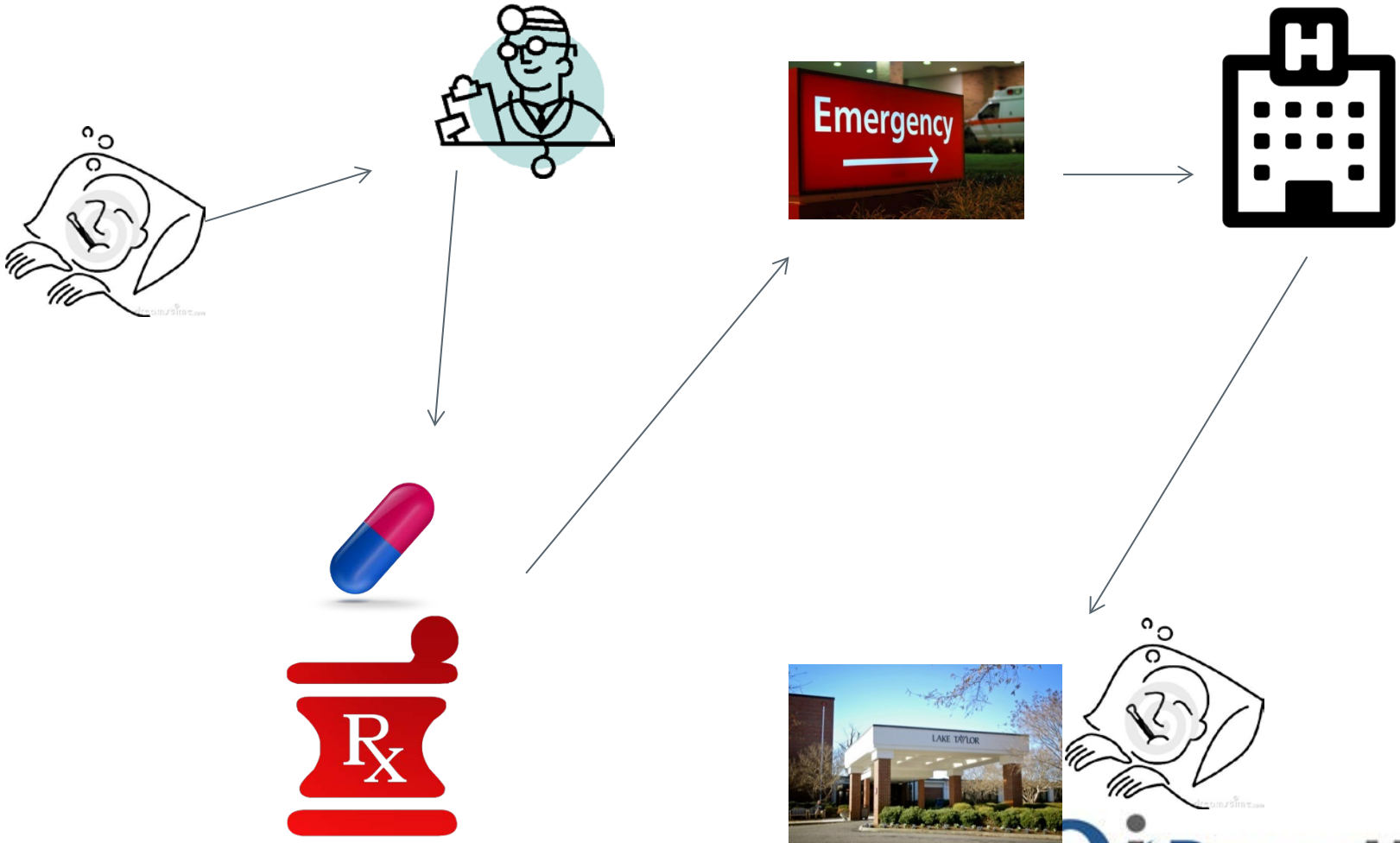
Introduction (Admin. Databases)



Introduction (Admin. Databases)

Health care interactions of SK residents are captured in multiple administrative databases;

Physician
Prescription Drug
Emergency Department
Hospital (Day Surgery & Inpatient)
Long-Term Care
& Others

Linkable via
encrypted “health card numbers”

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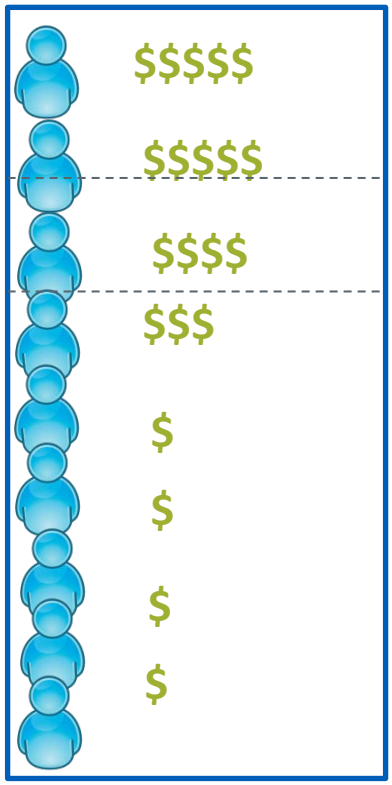
Method

2015/16

1.2M Residents



Any threshold;
Top 1, 5, 10…etc.

> $10,700 CAD

$\sum$

Costs (2015/16):

Physician
Prescription Drug
Emergency Department
Hospital
Long-Term Care

Total cost

Limitations (not available)

Diagnostic Imaging
Laboratory Data
Home Care

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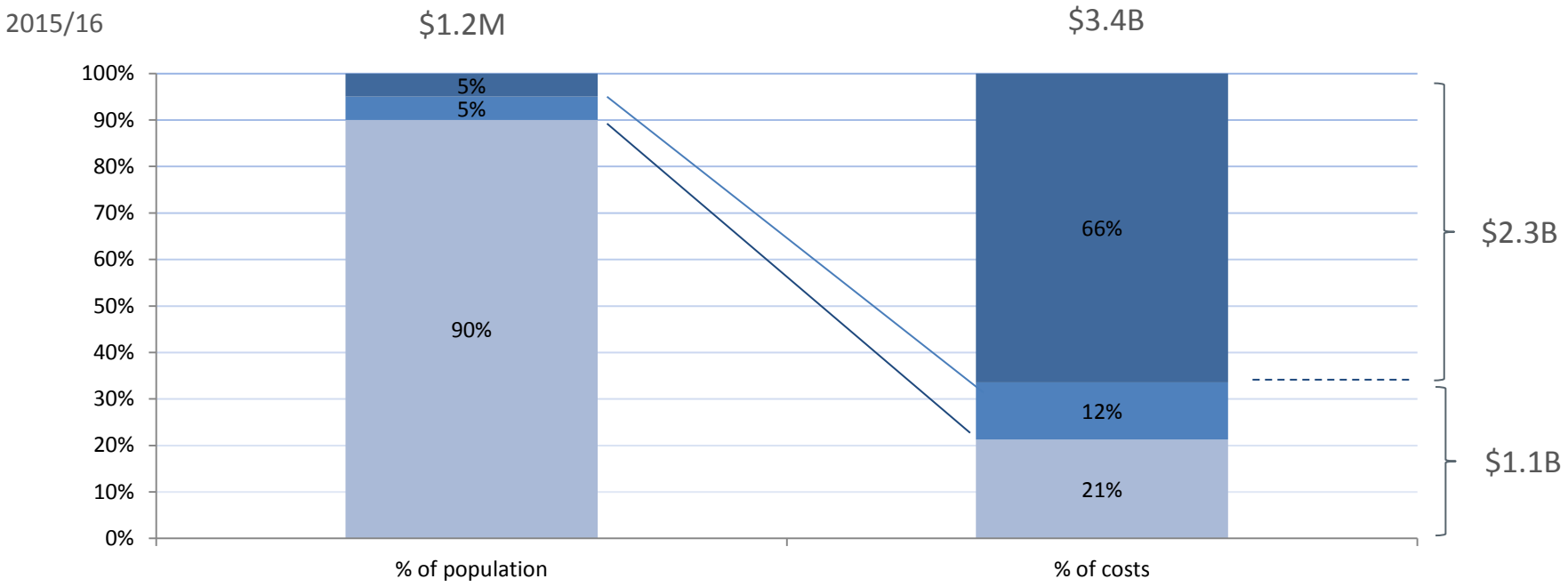
A small group consumes a large proportion of health care resources



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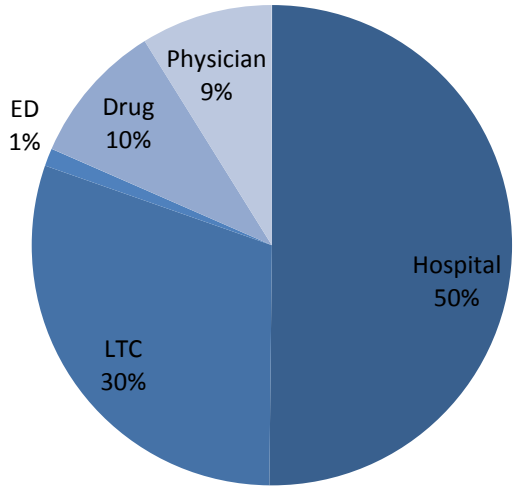
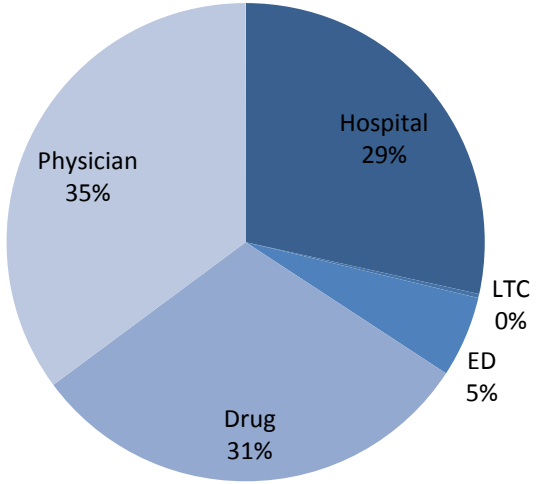
Cost Distribution

Top 5% (n=59,349)



Rest of Population (n=1.14M)



Average Costs

$ 38,000

$ 1,000

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Characteristics of High-Cost Patients

Literature:

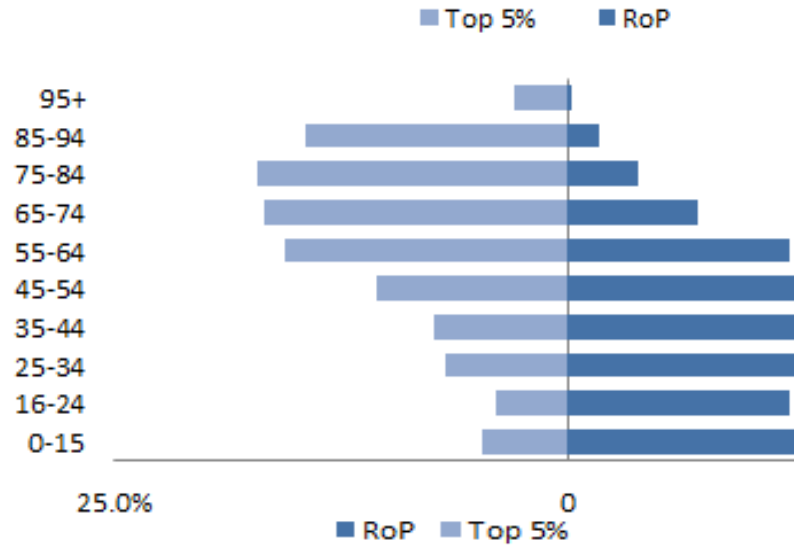
- Older
- Lower household income
- Have multiple chronic conditions
- Report poorer self-perceived general and mental health

Charlson Index (1 year)

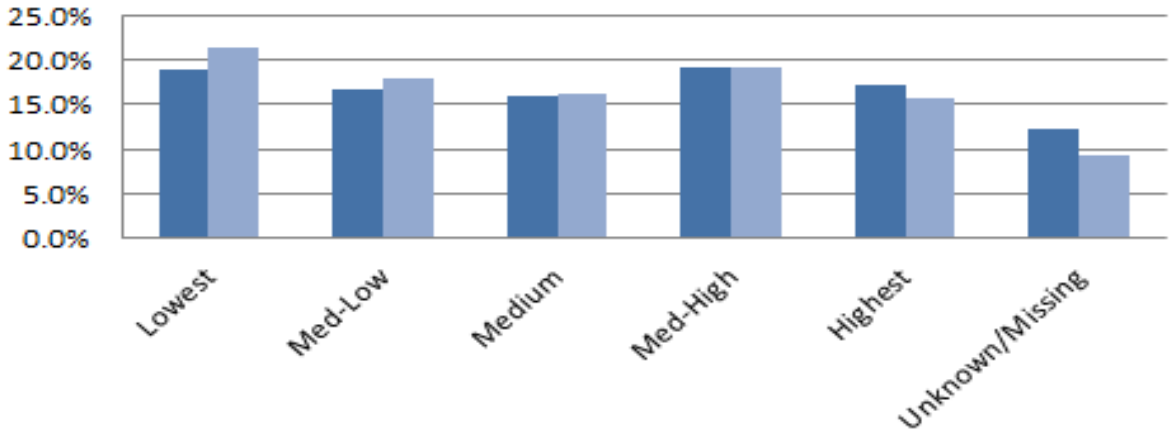
Top 5%	1.54 (2.2)
RoP	0.12 (0.5)

Age Distribution (SK)

Age (avg.)	61.3	36.8
Male	45%	50%



Income Quintiles (SK)



Emerging Patterns

Age ≤ 1

Serious perinatal conditions, extreme low birth weights…etc.

Major acute events such as stroke, accidents, coma…etc.

Major cancers such as leukemia, ovarian, brain, lung…etc.

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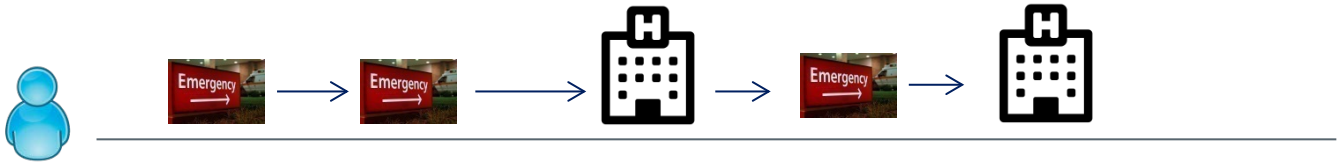
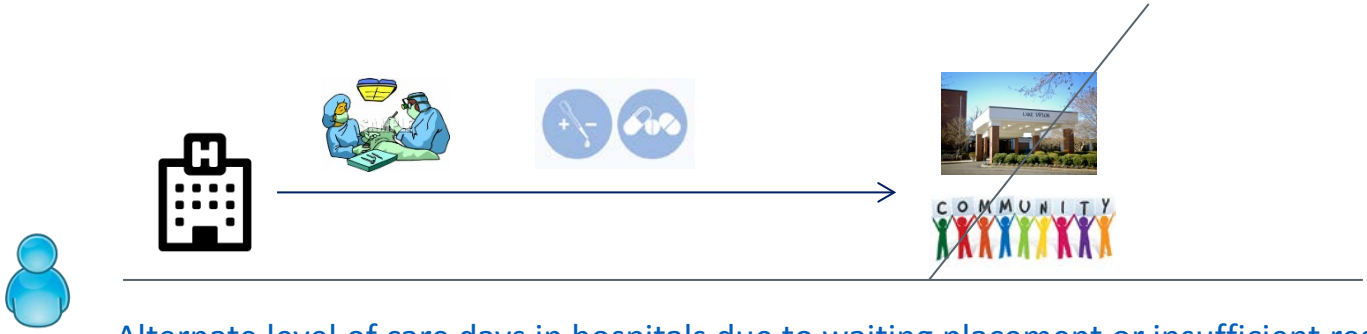
Emerging Patterns (Cont.)

(Using 2013/14 data)

Potentially avoidable adverse hospital events such as sepsis or patient harm



Insufficient management of chronic conditions, mental health, and addiction issues



Alternate level of care days in hospitals due to waiting placement or insufficient resources in communities

Canadian Institute for Health Information (CIHI): *When a patient is occupying a bed in a facility and does not require the intensity of resources/services provided in that care setting*

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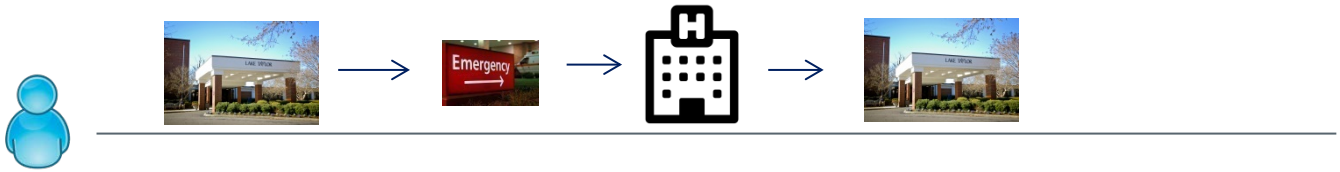
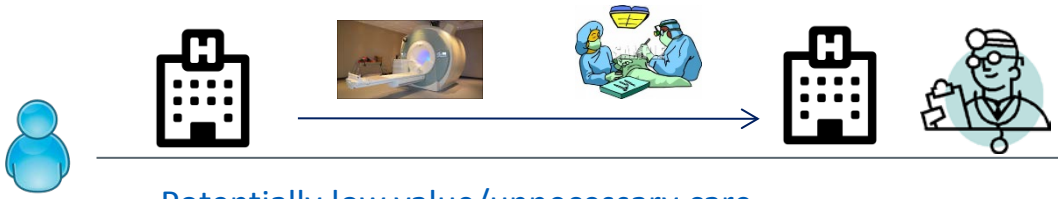
Emerging Patterns (Cont.)



LTC residents and potentially avoidable ED and hospital visits

Palliative care

Emerging Patterns (Cont.)



Potentially low value/unnecessary care

From research literature

Guilcher et al. (2016)

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Reasons for Health Care Utilization

CIHI Grouper

Top 5% (N=59,349)

1. Analyzes individuals' previous health care utilizations (2014/15 – 2015/16)
2. Then, assigns each individual to a health profile group (mutually exclusive);
   - Based on the main condition driving their health care needs

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Reasons for Health Care Utilization

CIHI Grouper

Top 5% (N=59,349)

ALC

Mental Health

Major Chronic N=12,923 $565M	Major Acute N=11,482 $466M	Major Mental Health N=7,365 $414M	Moderate Chronic N=10,801 $264M	Palliative N=3,173 $167M	Moderate Acute N=3,906 $92M	Major Cancer N=2,877 $90M
Skin Ulcer Diabetes w/ CKF AMI w/HF Heart Failure	Musculoskeletal infections Respiratory failures GI/Peritonitis Sepsis	Delusional disorders (incl. Schizophrenia) Mental Dis. from brain injury Eating disorders Dementia	Urinary Incontinence w/comorb. HIV w/comorb. Rheumatoid/ Osteoarthritis CAD	Palliative state (acute)	Cerebrovascular Dis. (excl. stroke) Peptic ulcer Seizure Metabolism disorders	Leukemia/Lymphoma Ovarian Oral/Ear/Nose/ Throat Lung

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Reasons for Health Care Utilization

CIHI Grouper

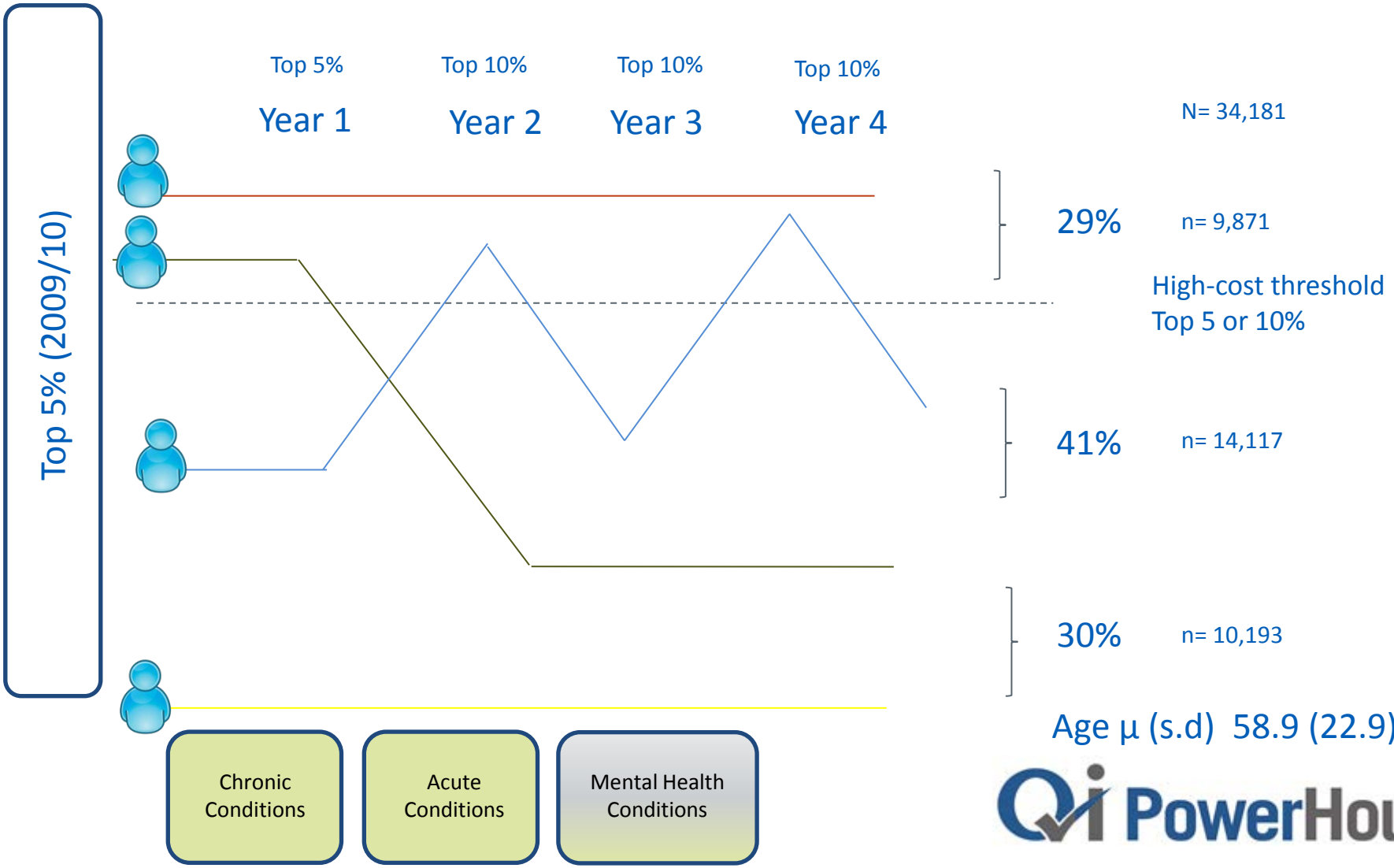
Top 5% (N=59,349)

ALC

Mental Health

	Major Chronic N=12,923 $565M	Major Acute N=11,482 $466M	Major Mental Health N=7,365 $414M	Moderate Chronic N=10,801 $264M	Palliative N=3,173 $167M	Moderate Acute N=3,906 $92M	Major Cancer N=2,877 $90M
Age μ (sd)	67.8 (21.2)	62.4 (21.4)	69.7 (24.6)	58.6 (18.9)	74.5 (15.3)	53.4 (22.7)	65.2 (16.4)
Hosp. (Mean)	1.7	1.8	0.9	0.8	2.4	1.2	1.7
LOS (mean, days)							
Total	20.2	17.8	26.7	5.7	33.7	6.5	13.9
Acute	18.1	16.5	22.0	5.5	30.2	6.2	13.2
ALC	2.1	1.3	4.7	0.2	3.4	0.3	0.7
Cost (mean)	$44,000	$41,000	$56,000	$23,000	$53,000	$24,000	$31,000

Emerging Patterns - Over Time



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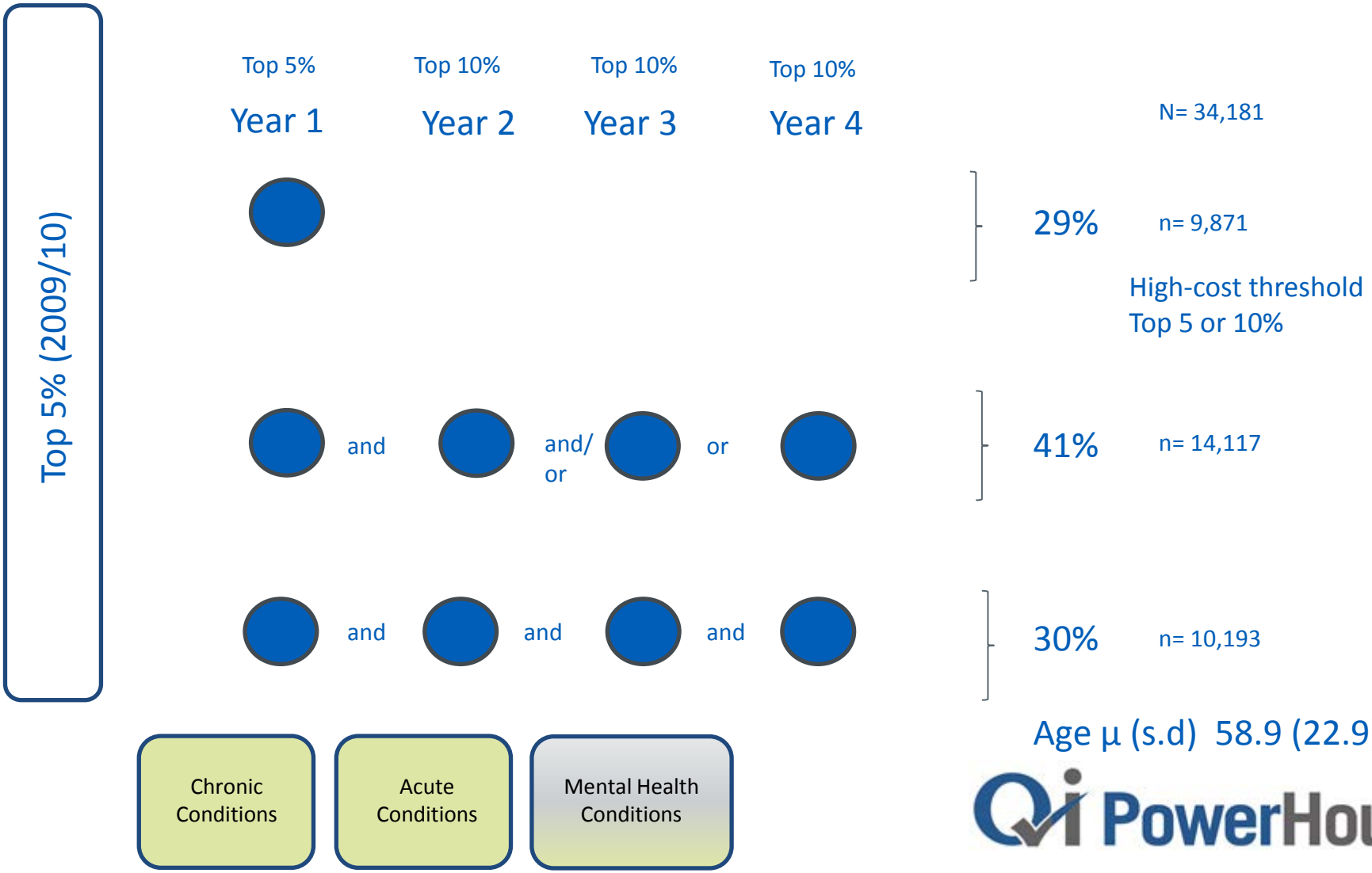
Emerging Patterns - Over Time



Summary

- High-cost patients consume a higher proportion of health care dollars
- While some of the associated costs may be appropriate (unavoidable), some may be avoidable through better care
  - High costs can be an indication of poor quality (i.e. unnecessary care)
  - Care might be appropriate but the location of care might not
  - Community based care (lower cost, higher quality)

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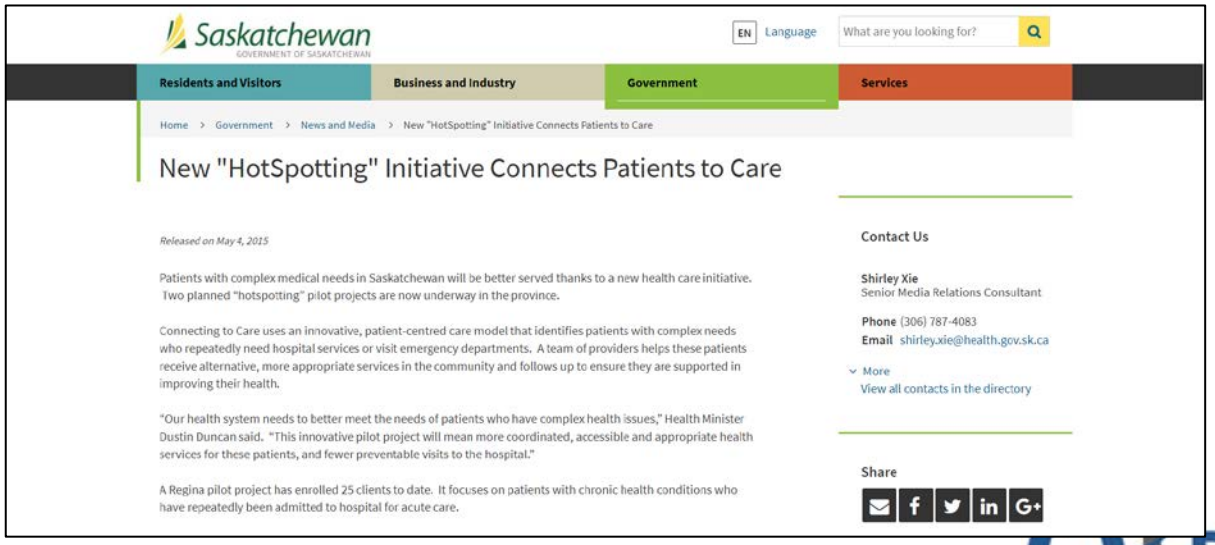
Relevant Provincial Initiatives

- Connecting to Care (HotSpotting)
  - Focusing on “case management” for patients with chronic conditions and/or mental health and addictions



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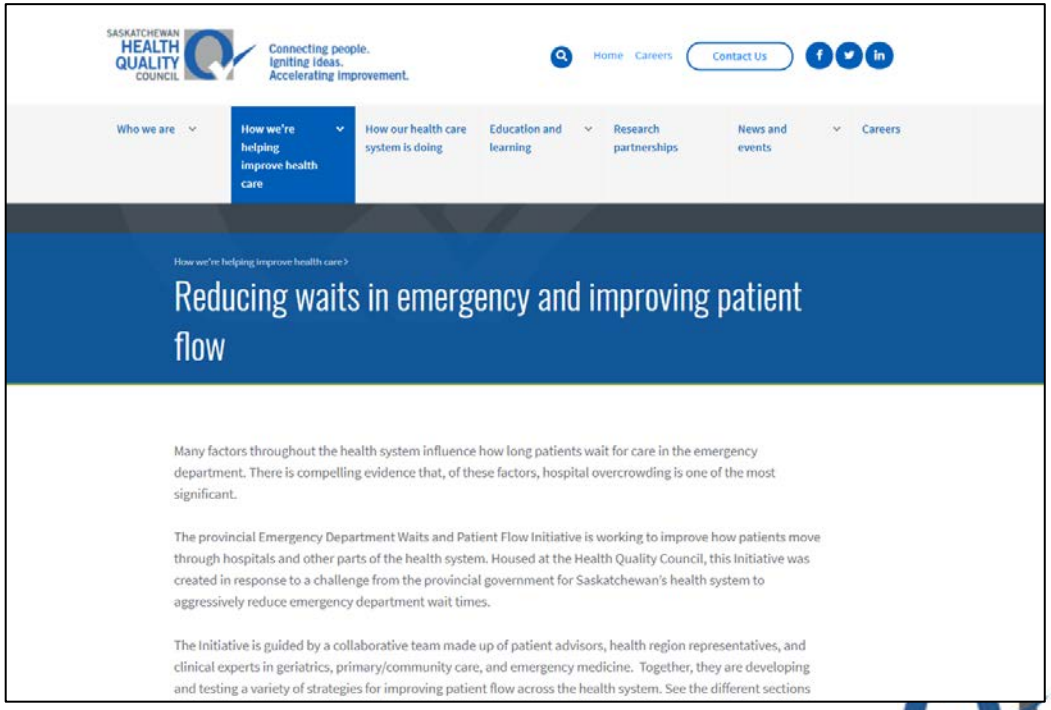
Relevant Provincial Initiatives (Cont.)

- Emergency Department Wait Times and Patient Flow



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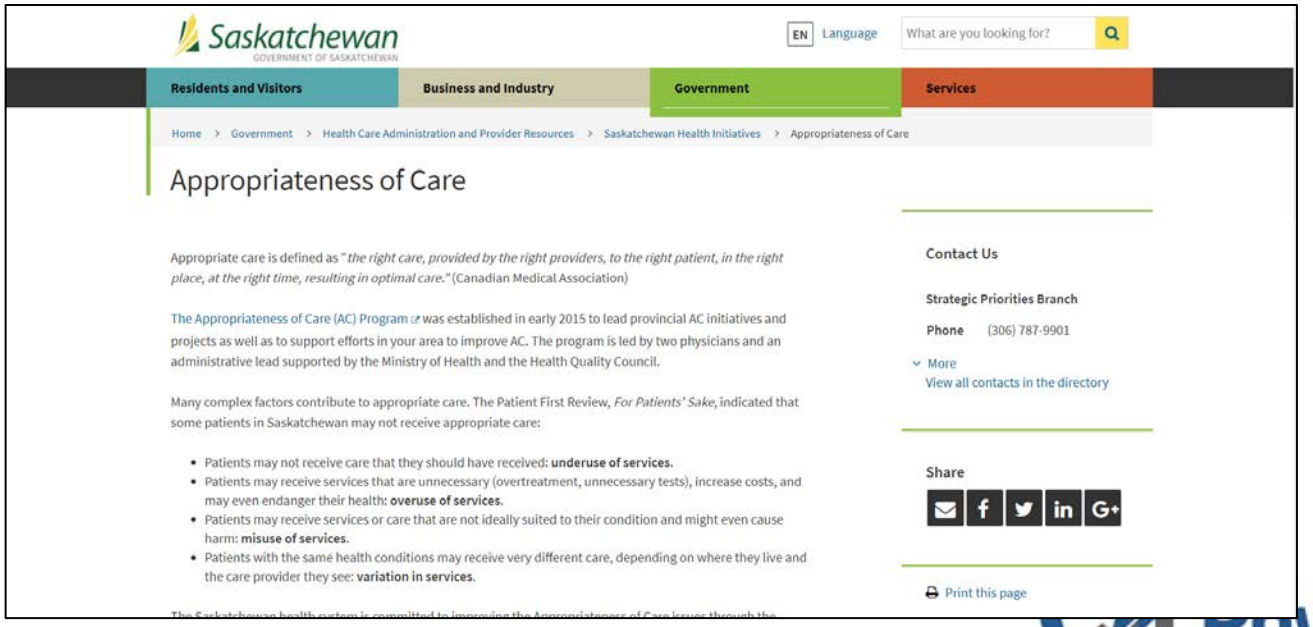
Relevant Provincial Initiatives (Cont.)

- Appropriateness of Care
  - Implementation of CT Lumber Spine Checklist
  - Development of pre-operative testing guidelines



From: saskatchewan.ca

Relevant Provincial Initiatives (Cont.)

- Seniors' Care
  - Community based initiatives such as: Senior House Calls; Home First; and, Paramedicine community assist programs
- Mental Health and Addictions
  - Implementation of Mental Health and Addictions Action Plan
  - Utilize a stepped care framework to ensure mental health and addictions services are based on assessed needs

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Conclusion

- One size does not fit all
  - There are different reasons why patients may pass a certain cost threshold
  - Interventions must be designed based on a thorough understanding of the targeted population's specific needs

$$Value = \frac{Quality + Outcomes}{Costs}$$

Location & type of services

Under/over testing

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Conclusion (Cont.)

- Databases and further analyses identifying high-cost utilization could be used to better inform:
  - decision making;
  - when, where, and how to intervene;
  - QI programs; and,
  - health care policy.

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Thinking upstream: Improving health and wellness through intersectoral quality improvement

Friday, March 16, 2018
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