Strengthening our health system: Opportunities for physicians to drive change

Competing interests

- No pharma industry involvement
- Cross-appointment to the University of Calgary
- My family lives in Alberta

Objectives

- To outline opportunities for physician involvement in health system stewardship to effect change and optimise quality of patient care

1. Consider 'intelligent' health workforce planning

- Align with population needs
  - We have an increasing proportion of older adults
  - 50% of older adults have ≥2 chronic conditions
  - More chronic conditions equals increased risks of functional limitations, admission to acute and long-term care and health care costs.
  - 10% of the population with multimorbidities use 50-60% of the health budget.
  - This expenditure is likely to rise substantially by 2031, as the proportion of people aged ≥65 years is expected to double to 20%
    - www.statcan.gc.ca/pub/91-215; JAMA 1996;276:1478–9; BMC Public Health 2015;15:415

Tonelli et al Kid Int 2015;88:859-66

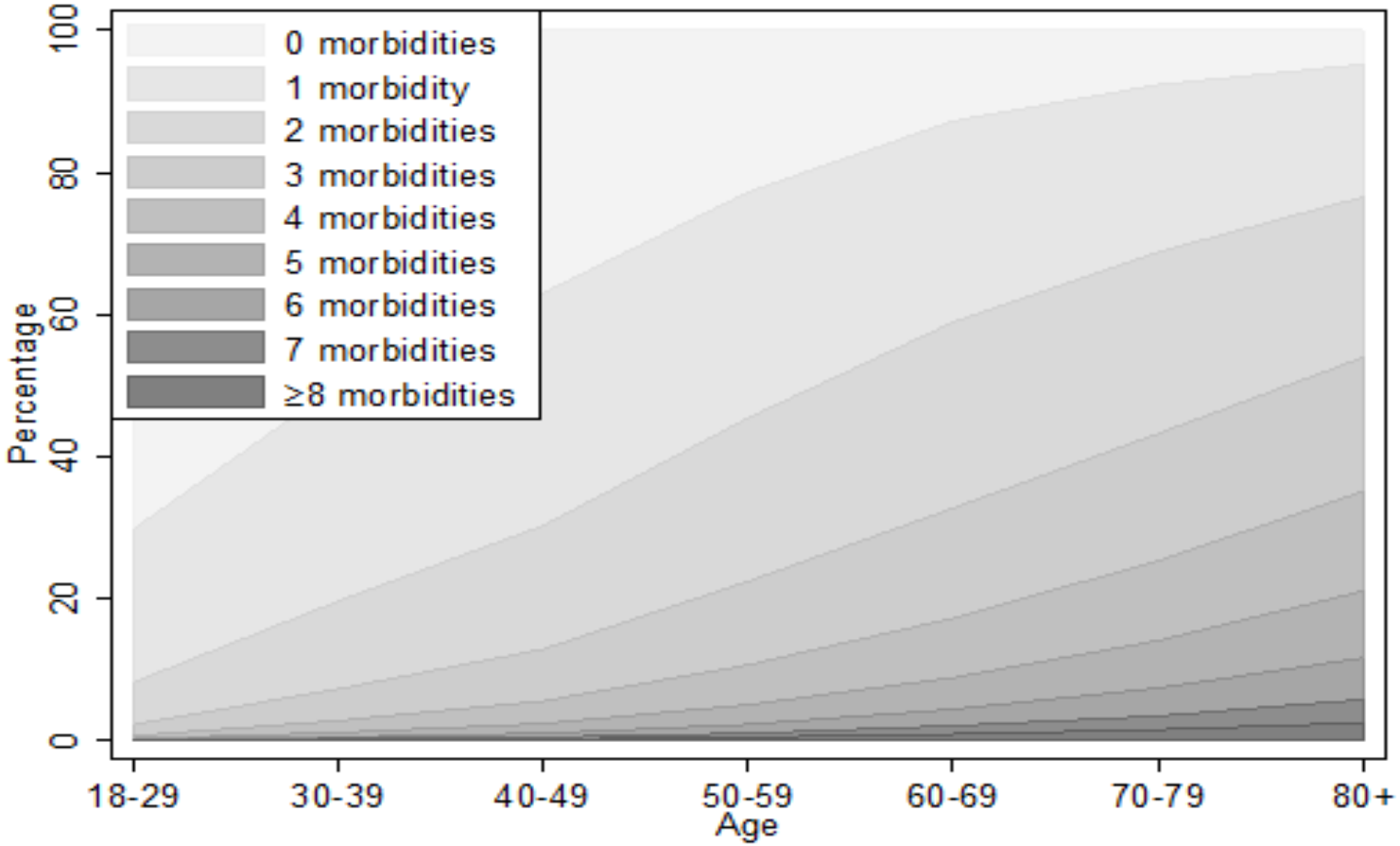


Figure 12: Cost Driver Shares of Annual Growth Rates in Alberta Hospital Expenditures, 2005-06 to 2009-10

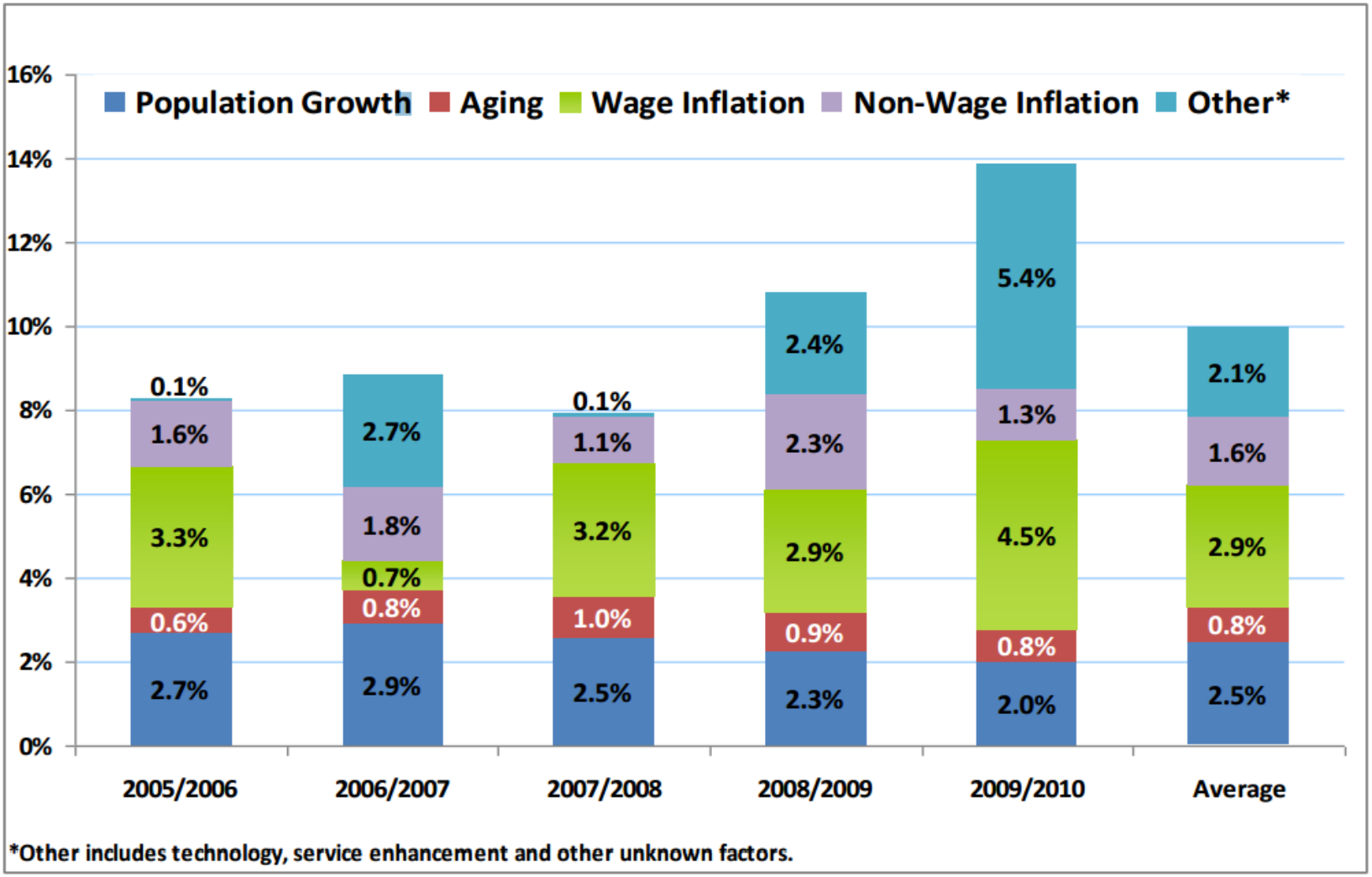
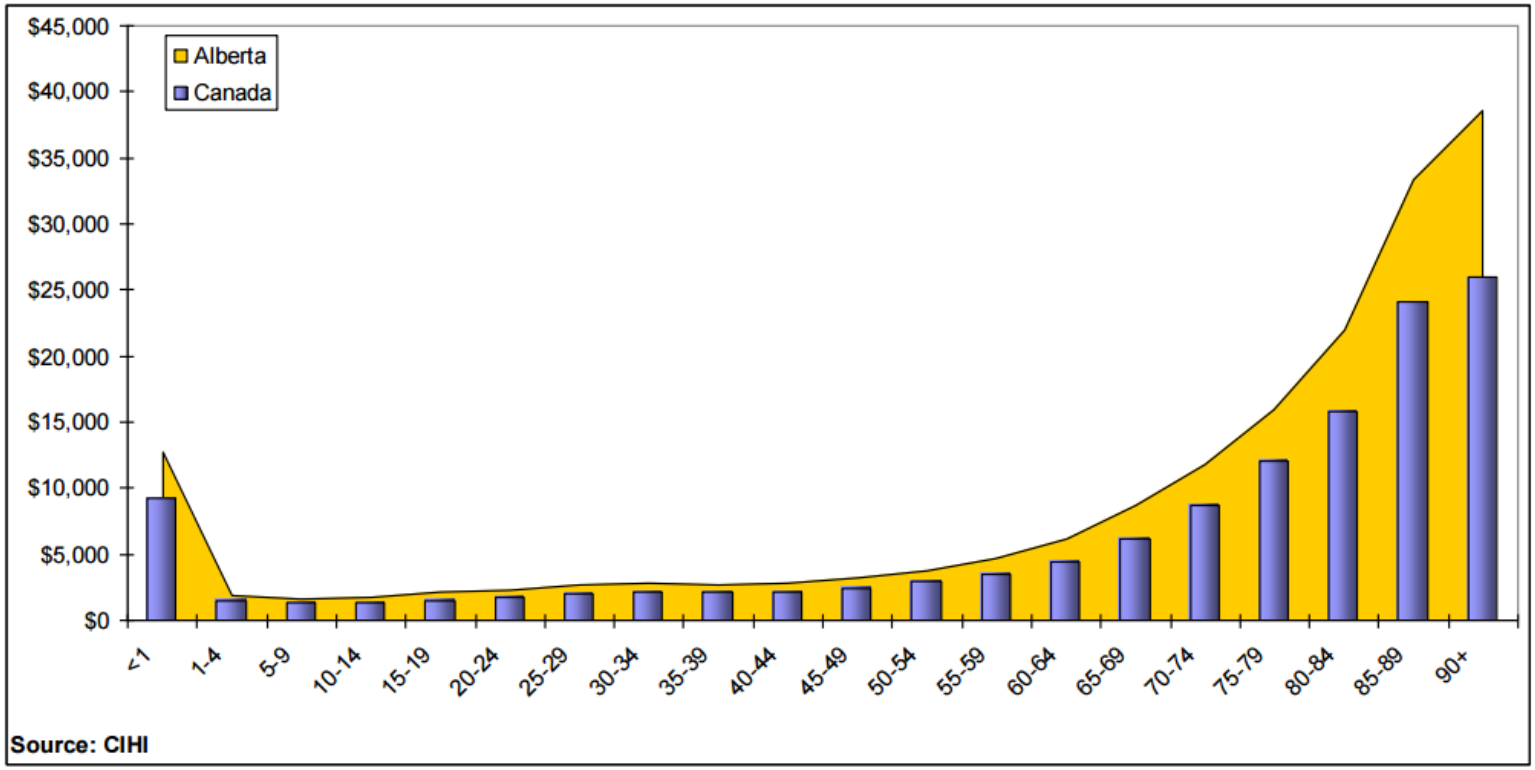


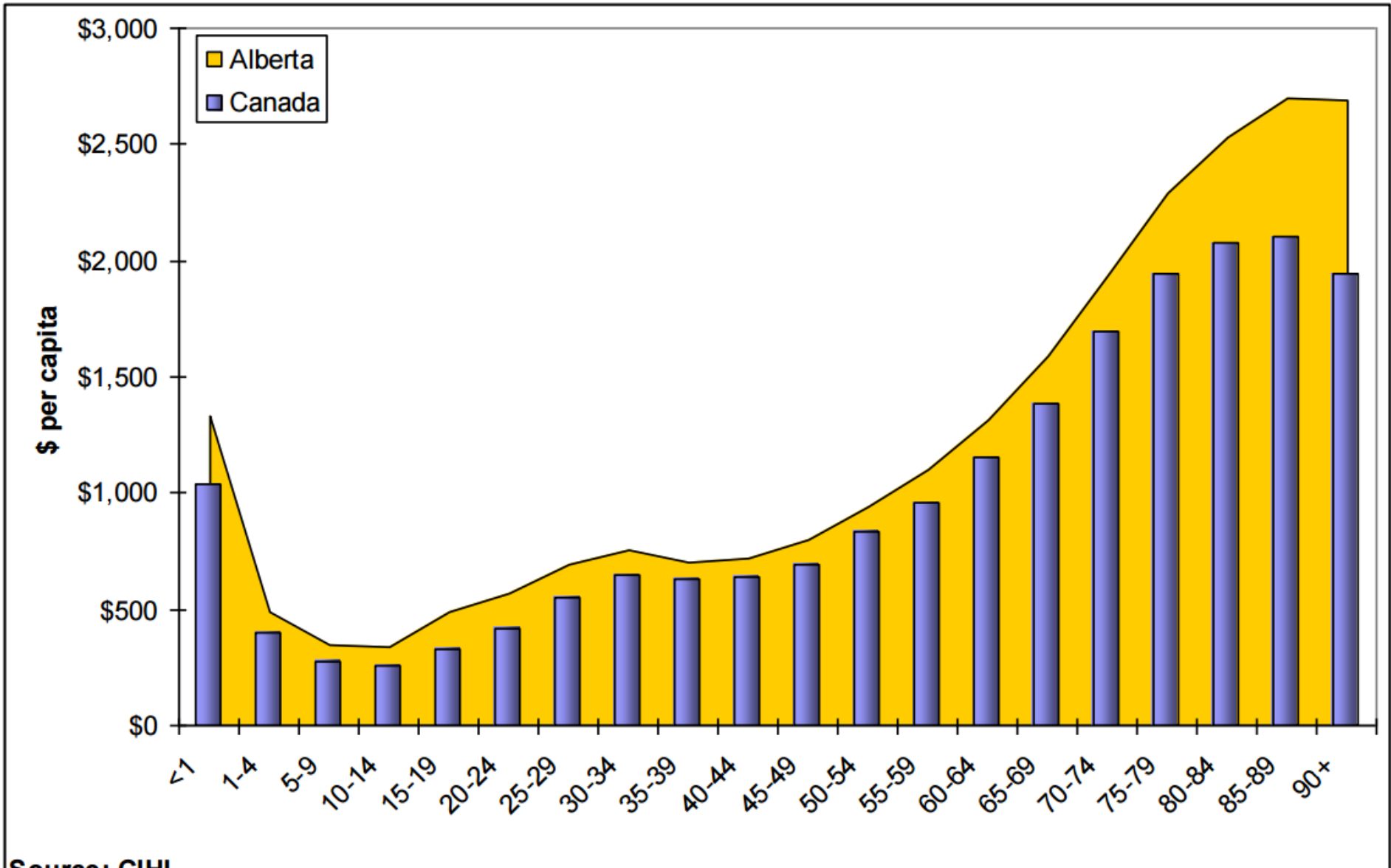
Figure 13 shows the contribution of drivers to the growth in hospital expenditures during the 2005-06 to 2009-10 period. Wage inflation was the largest contributor to hospital

Figure 14: Provincial Government Hospital Expenditure by Age, Alberta vs. Canada, 2010



Alberta's population is growing and aging. The percentage of seniors is projected to increase from approximately 11 per cent in 2011 to 15 per cent in 2021. By 2031, it is projected that

Figure 21: Provincial Government Physician Expenditures by Age and Sex, Canada vs. Alberta, 2010



Source: CIHI

Mrs. M

- You see a 74 year old woman (Mrs. M) in clinic with a history of
  - Osteoporosis and history of vertebral fracture
  - Type 2 diabetes (on oral agents)
  - Hypertension
  - Chronic kidney disease (secondary to diabetes)
- How much time is required to implement recommendations from relevant chronic disease practice guidelines?

Applying relevant practice guidelines

Patient Sub-Group	Time Required/pt (minutes)	Patients	Total time (hours)
Any patient aged 55 and over	61	160 (100%)	162.67
Male diabetics	8.3	23 (14%)	3.18
Diabetics with neuropathy	6.9	4 (3%)	0.46
Diabetics with blood pressure greater than 130/80	5.1	12 (8%)	1.02
Diabetics with left ventricular dysfunction	5.1	3 (2%)	0.26
Diabetics with an estimated glomerular filtration rate less than 60	1.1	12 (8%)	0.22
Type 1 diabetics	24	1 (1%)	0.40
Type 2 diabetics	25	44 (28%)	18.33
Diabetics on only a single oral anti-hyperglycemic	10	19 (12%)	3.17
Diabetics on 2 or more anti-hyperglycemics	5	13 (8%)	1.08

Mrs. M

- How much time is required annually to manage these conditions (assuming no complications arise)?
  - 129.2 minutes/year
  - Mrs. M is seen for 36 minutes/year
    - Kerr J et al. CGS 2013

1. Consider intelligent workforce planning

- Mismatch in current production
  - 0.5 geriatricians for every 10000 patients >65 years of age
  - In Canada in 2015,
    - 21 geriatric medicine trainees
    - 54 cardiology trainees
    - 37 critical care trainees
    - 30 nephrology trainees
    - 35 gastroenterology trainees
      - Can Geriatr J 2012;15:68-79;www.carms.ca

1. Consider intelligent workforce planning

- Mismatch in current production
  - 1 in 6 new specialists/subspecialists did not have a job
  - In Alberta, approximately 23% did not have a job
  - Specialists reporting most difficulty included gastroenterologists, critical care physicians, nephrologists, general surgeons, orthopedic surgeons…
    - www.royalcollege.ca/portal/rc/common/documents/policy/employment_report2013

1. Consider intelligent workforce planning

- Anticipate population needs
- Use evidence of effective models of care
- Consider impact of technology
  - e.g. EHRs may increase or decrease productivity
- Consider changes in physician workflow
  - Lifestyle choices – e.g. reduced work hours
  - Retirement rates

2. Explore scope of practice

- Comprehensive geriatric assessment (CGA) is effective
  - CGA is an interdisciplinary diagnostic and management process focused on determining an older person's medical, psychological, functional, cognitive and social capability
  - It can occur via different models including acute hospital consultation, acute care of the elderly units, rehabilitation, home visits, day hospitals, telehealth and outpatient clinics
  - Cochrane review of 22 trials found CGA
    - Improved ability to stay independent in community
    - Decreased risk of death
    - Improved cognition
      - CDSR 2011;CD006211.pub2

- But, what models of CGA are most effective given the scarcity of geriatricians?
  - Acute inpatient consultation service?
    - Proactive geriatric trauma consultation service?
    - Proactive orthopedic service?
  - ACE Unit?
  - Outreach?
  - Day hospital?....
- And, what are the most effective 'geriatrician-interventions'?

2. Explore scope of practice

- Implementing top 6 chronic disease guidelines in typical primary care practice
  - Would require 266 days per year, just to address the initial recommendations
- How can health care teams work to meet these challenges?
    - Kerr et al, CGS 2013

2. Explore scope of practice

- Cochrane review of 16 RCTs on substitution of doctors by nurses in primary care
  - Quality of care no different
  - Nurses saw fewer patients than physicians
  - Nurses ordered more tests
- More recent review of 12 RCTs on physician-nurse task shifting in primary care
  - Trained nurses achieved similar outcomes to physicians when following structured protocols
    - CDSR 2005;2;CD001271; Human Res H 2015;13:55

- Cochrane reviews of
  - Nurse-led titration of heart failure meds
  - Nurse-led asthma management
  - Specialist nurse-led diabetes management
    - Overall, no difference in outcomes but small studies, short follow-up
      - CDSR 2015;4:CD00989.pub2; CDSR 2013;2:CD009296; CDSR 2003;2:CD003286

- Physician assistants
  - In Manitoba, showed increased surgical volumes and decreased wait-times with their use in orthopedic surgery
  - In Ontario, their use in 6 ERs reduced wait times
  - Limitations in evaluation
    - Need to look at effectiveness and cost-effectiveness
      - Can J Surg 2010;53:103-8;CJEM 2009;11:455-61.

- What about task shifting to lay health care workers?
  - Cochrane reviews showing effectiveness in low and middle income countries
    - HIV, TB management
    - Contraception/prenatal assessments…
      - CDSR 2014;CD007331.pub3

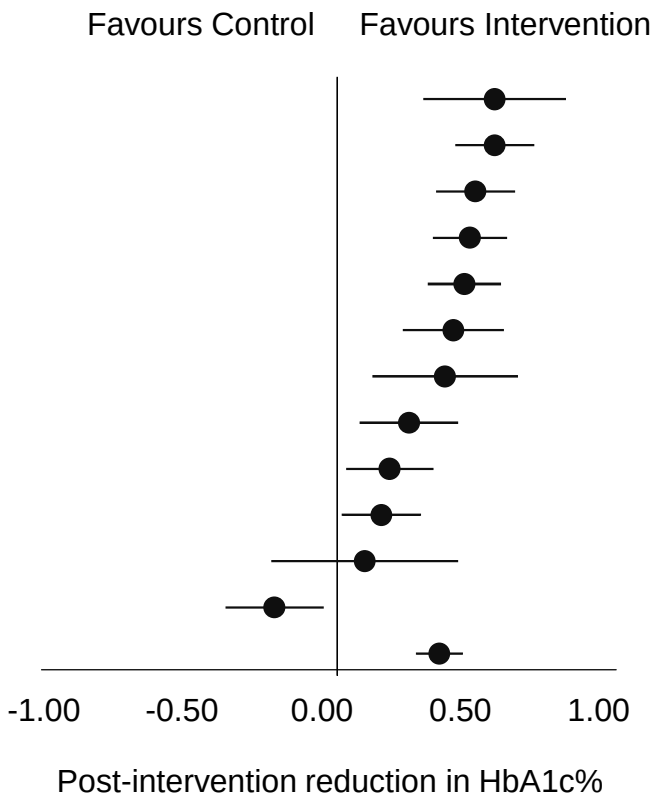
- TAPESTRY
  - Teams Advancing Patient Experience: Strengthening Quality
  - Led by Lisa Dolovich and Doug Oliver, McMaster University
  - Uses an interprofessional primary health care team delivery approach involving community volunteers
  - Engages volunteers to meet the patients in their homes and create personal health record
    - Healthtapestry.ca

3. Engage health care team

- To examine the influence of KT/QI interventions in patients with diabetes mellitus on the following:
  - glycemic control
  - vascular risk factor management
  - microvascular complication monitoring
  - smoking cessation
  - harms
    - Tricco et al. Lancet 2012; 379:2252-61

Results: Glycemic - HbA1c meta-analysis

Quality Improvement Strategy	# RCTs	MD	95% CI	
★ Promotion of Self-management	60	0.57	0.31	0.83
Team Changes	48	0.57	0.42	0.71
Case Management	57	0.50	0.36	0.65
★ Patient Education	52	0.48	0.34	0.61
Facilitated Relay	32	0.46	0.33	0.60
Electronic Patient Register	27	0.42	0.24	0.61
★ Patient Reminders	21	0.39	0.12	0.65
Audit and Feedback	8	0.26	0.08	0.44
Clinician Education	15	0.19	0.03	0.35
Clinician Reminders	18	0.16	0.02	0.31
Financial Incentives	1	0.10	-0.24	0.44
Continuous Quality Improvements	2	-0.23	-0.41	-0.05
All Interventions	**120**	**0.37**	**0.28**	**0.45**



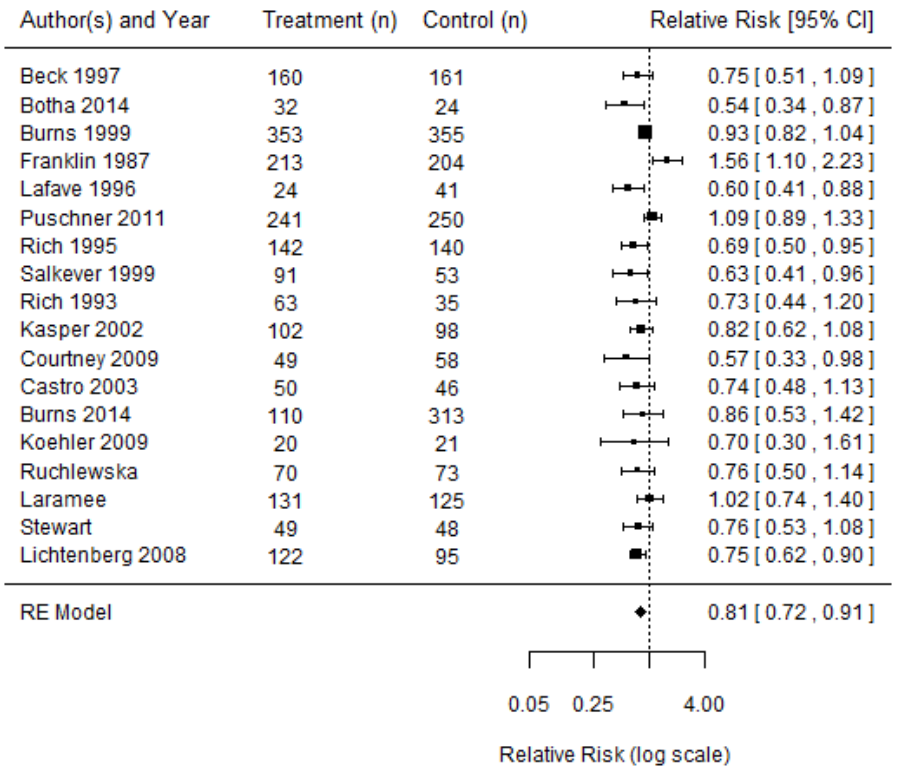
★ PLUS health systems/provider intervention

Tricco et al. Lancet 2012; 379:2252–61

Frequent users of the health care system

CMAJ. 2014 Oct 21;186(15):E568-78

Care coordination/case management/team changes effective at reducing hospital admissions!



4. Use evidence on effective strategies for engaging physicians in strengthening health care

- Strategies where health care providers are the targets
  - Does performance-based remuneration for health practitioners affect patient care?
    - 10 studies of preventive care/screening found modest improvements in immunisation rates
    - 20 studies of chronic conditions showed little benefit
    - Insufficient evidence to support widespread implementation of pay for performance
      - Ann Intern Med 2012;157:889-99.

- The UK Quality Outcomes Framework (QOF)
  - National primary care incentive scheme introduced in 2004
  - Up to 25% of primary care physicians' income linked to performance on >100 quality indicators
  - Most QIs relate to chronic disease management
  - In 2011, the 19 incentivised conditions represented data from 62% of the registered patients

- When the contract was signed, it was expected that GPs would on average, achieve 75% of the maximum score
- Better than expected performance cost primary care trusts $352M more than planned
  - BMJ 2005;331:800

- Did QOF work?
  - Significant improvements in quality for 23 indicators between 2001 and 2007
  - At the expense of small, detrimental effects on aspects of care that were not incentivised (19 quality indicators)
    - Examples include bisphosphonates for osteoporosis
      - BMJ 2011;342:d3590

- Did QOF work?
  - Evidence for improved patient outcomes is contradictory – ER admissions decreased for those with diabetes but not for those with coronary artery disease
  - Longitudinal spatial study of population of England from 2007-2012
    - Overall quality of care (measured by achievement across QOF indicators) was not associated with subsequent reduction in mortality rates
    - Area characteristics such as material deprivation, urbanicity, or unmeasured factors have greater impact on mortality than variations in quality of care provided by general practices
      - BMJ 2015;350:H904

- Strategies when health care providers are targeting change
  - Choosing Wisely – started in 2009
    - >400 items and growing
    - Services included on the lists vary in terms of potential impact on care and spending
    - American Academy of Orthopedic Surgeons named use of
      - Over-the-counter supplement
      - 2 small durable medical equipment items and a rare minor procedure
      - No major procedures on the list though documented wide variation in elective knee replacement and arthroscopy
        - NEJM 2014;370:589-92
    - Similar list produced in Canada

- Canadian Gastroenterology Society lists specific uses of endoscopy as 2 of its ‘top 5’ practices
- Participating societies generally named other specialties’ services as low-value
  - e.g. radiology, cardiac testing

- Canadian Geriatrics Society
  - List includes largely items that would be done by primary care clinicians
    - e.g. avoid meds known to cause hypoglycemia to achieve A1C <7.8%
    - No mention of optimising use of cholinesterase inhibitors in patients with Alzheimer's dementia
- Little evidence of impact of Choosing Wisely
  - Publishing lists is not sufficient to change behaviour
    - www.canadiangeriatrics.ca; JAMA Int Med 2015;175:1913-20

5. Beware ISLAGIATT

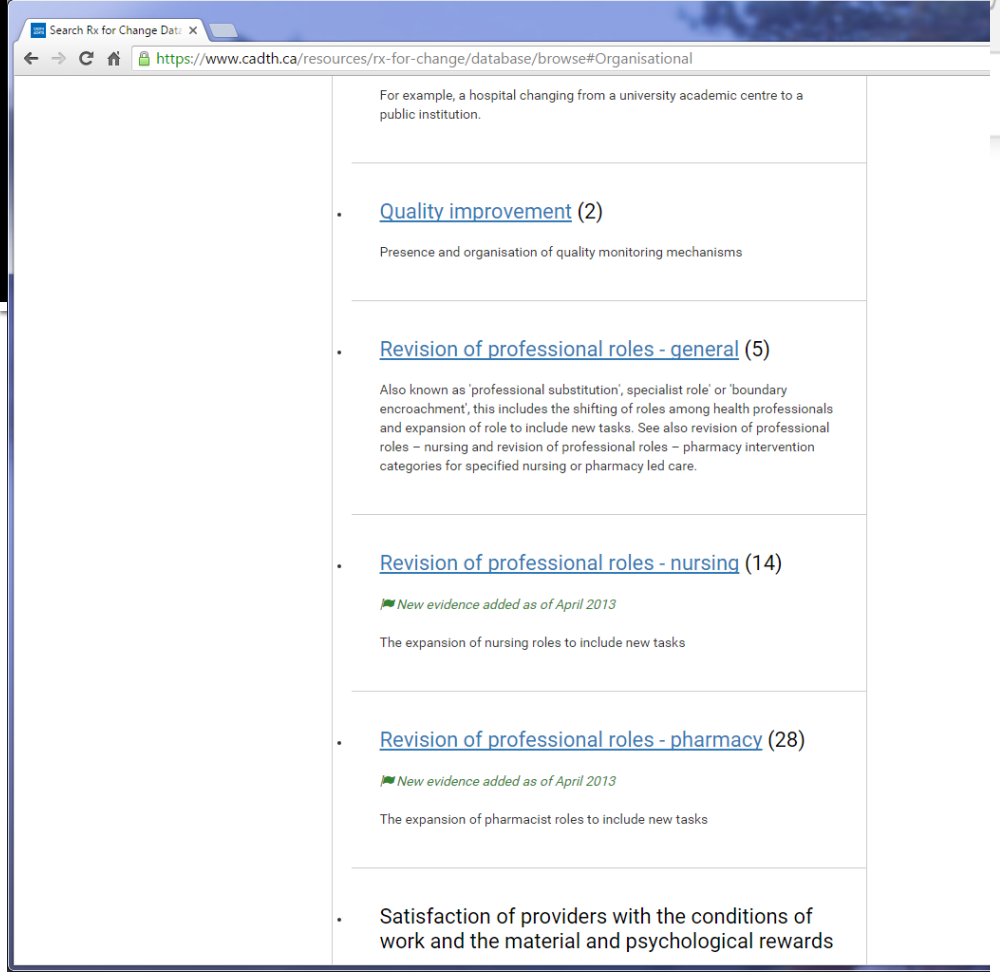
- Need rigorous evaluation
  - Including access to valid data
- Watch for unintended consequences

Example

- Consider a major teaching hospital that implemented a clinical pathway on the surgical service in an attempt to reduce length of stay
- Length of stay was measured in this hospital before and after this pathway was implemented
- Length of stay decreased by 67% following the implementation
  - Should we implement the pathway at other hospitals?

- When the length of stay was analysed for the same procedures in other hospitals
  - Same or greater decrease was found
- Changes were likely due to changes related to economic pressures to decrease length of stay
- Bottom line: A simple QI implementation project would have missed that this intervention wasn't effective
  - Am J Med 2001;110:175-88.

- There isn't a single magic bullet
  - Systematic review of interventions to enhance primary health care for chronic disease management found 75 studies
    - 54 studies reported a positive outcome
    - Multiple and linked strategies targeting different levels of the health care system were most likely to show impact
      - BMC Health Serv Res 2012;12:415



Search Rx for Change Database

Browse

Professional ↓

Financial ↓

Consumer ↓

Regulatory ↓

Organisational ↓

Professional

Interventions that target professionals directly, aiming to improve practice.

- Audit and feedback (45)

  New evidence added as of April 2013

  Any summary of clinical performance of health care over a specified period of

‘Evidence-based medicine should be complemented by evidence-based implementation’

R. Grol BMJ 1997

6. Engage patients

- Everything begins and ends with patients