Comparing and Contrasting the US and Canadian Healthcare Systems and Research Infrastructures

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Learning objectives

1. Raise awareness about the similarities and differences across the healthcare system and primary care structure in Canada and U.S.

2. Raise awareness about how the healthcare system and primary care structure can support research in Canada and U.S.

3. Discuss the role of clinicians in primary care research

Context Matters!!

- How does the structure of the health care delivery system and research enterprise in Canada and the U.S. impact primary care practice-based research?
  - What is needed to be in place to make research a part of the fabric of primary care practices?
  - How do the research priorities align for practices and researchers?
  - What can we learn from each of our respective countries about building the primary care research engine?

Primary Care Context and Research

- Funding and infrastructure to support primary care research stands in contrast to the organized commitment to advancing knowledge.

- Current clinical research has little to offer primary care clinicians. Most of the research is not relevant to primary care because of the focus on individual diseases, carefully selected patients, and an emphasis of physiological outcomes.

- An adequate infrastructure to support an enduring primary care enterprise is lacking.

America's Health in a New Era (1996), Institute of Medicine Committee on the Future of Primary Care

Quiz : Myths & Realities of Canadian Health Care

True or False?		
The Canadian Healthcare System is based out of Ottawa	**FALSE**	Healthcare is provincial responsibility
Almost all healthcare spending comes from public sources	**FALSE**	~70% of spending is public
Universal, first-dollar coverage for hospital, MD, & diagnostic services	**TRUE***	No copays/coinsurance for "needed" services
Universal benefit for medications, LTC, dental, home, vision care	**FALSE**	Patchwork of programs across country
Most MDs are self-employed	**TRUE**	Most self-employed and in private practice
Fee-for-service remains most common payment method in primary care	**TRUE**	FFS dominates, but growth in many Provinces/regions with alternate payments
Most patients are rostered/paneled with a PCP or clinic	**FALSE**	Most have free choice at point of care

Quiz : Myths & Realities of American Health Care

True or False?		
Healthcare insurance is a "shared responsibility" between government, employers, and individuals	TRUE	Highly fragmented insurance system with gaps in insurance coverage
The U.S. does <u>not</u> have good examples of "single payer" healthcare	FALSE	Medicare covers all US seniors with defined benefit
Most healthcare spending is private (non-government)	TRUE*	52% of US healthcare is privately financed
Many patients are covered by both public & private insurance	TRUE	Overlap in insurance is common
Most primary care physicians are self-employed	TRUE	Yes, but growth in large group practices with salaried physicians
Patients have free choice of provider or clinic	FALSE	Patients are often obliged to choose MDs in a defined network

Courtesy of Dr. Robert Reid, 2017
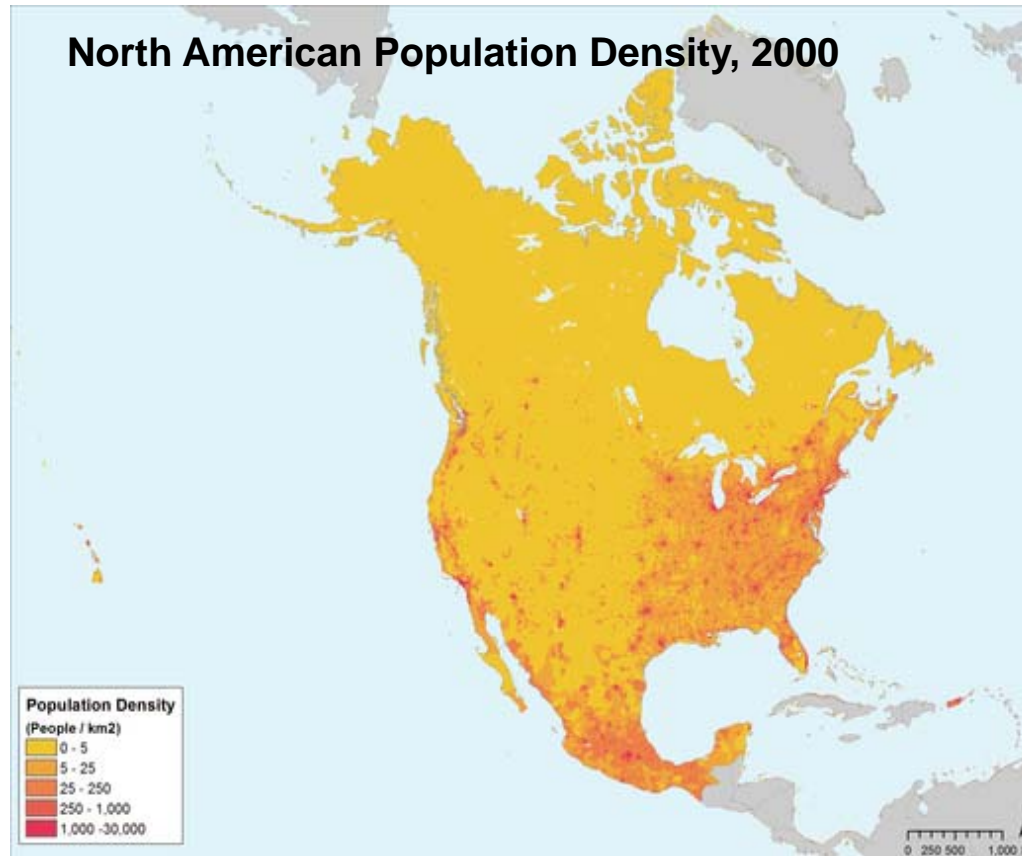
Healthcare System

- Population
- Government structure
- Payment
- Healthcare Workforce/Education
- Practice context
- Major initiatives

Americans & Canadians are Unevenly Distributed

- 321 million people (2015)

- Land area: 9,148k km²

- 81% live in urban areas

- 80% within 60 miles of coast

- West region has highest urban concentration

North American Population Density, 2000

Population Density
(People / km2)
- 0 - 5
- 5 - 25
- 25 - 250
- 250 - 1,000
- 1,000 - 30,000

Source: Gridded Population of the World, Version 3 (GPWv3). SEDAC, Columbia University. Palisades, NY.

- 36 million people (2015)

- Land area: 9,093k km²

- 80% live in urban areas

- 90% within 600km of USA

- 10% spread sporadically across 90% of land mass

Courtesy of Dr. Robert Reid, 2017

Canada and United States Populations
by Approximate U.S. Race/ Ethnicity Category, 2006
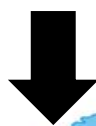
■ White ■ Asian ■ Black ■ Hispanic ■ Other

Canada

- 2,090,390 — 6.7%
- 783,795 — 2.5%
- 304,245 — 1.0%
- 204,540 — 0.7%
- 27,858,060 — 89.2%

United States

- 6,853,681 — 2.3%
- 44,017,430 — 14.7%
- 36,524,175 — 12.2%
- 12,648,451 — 4.2%
- 198,549,475 — 66.5%

© Political Calculations 2011
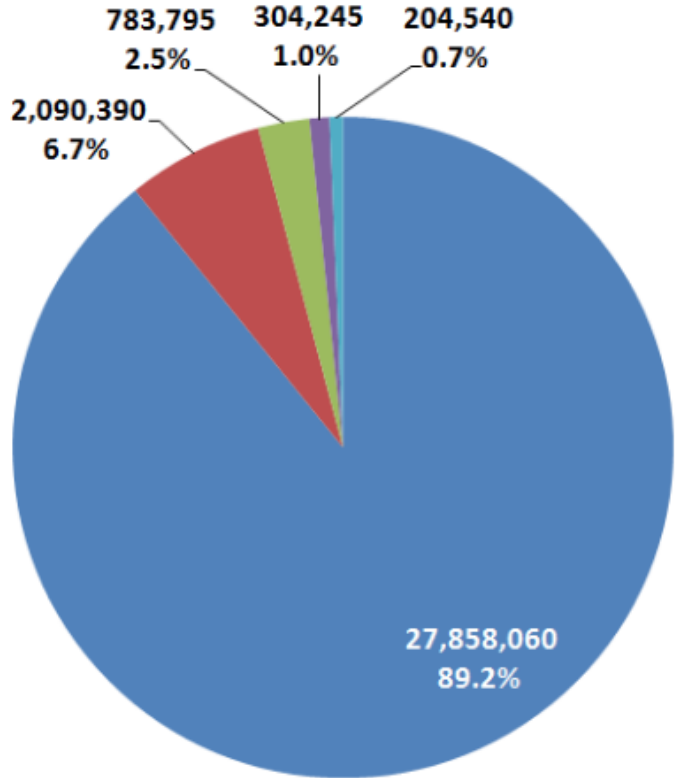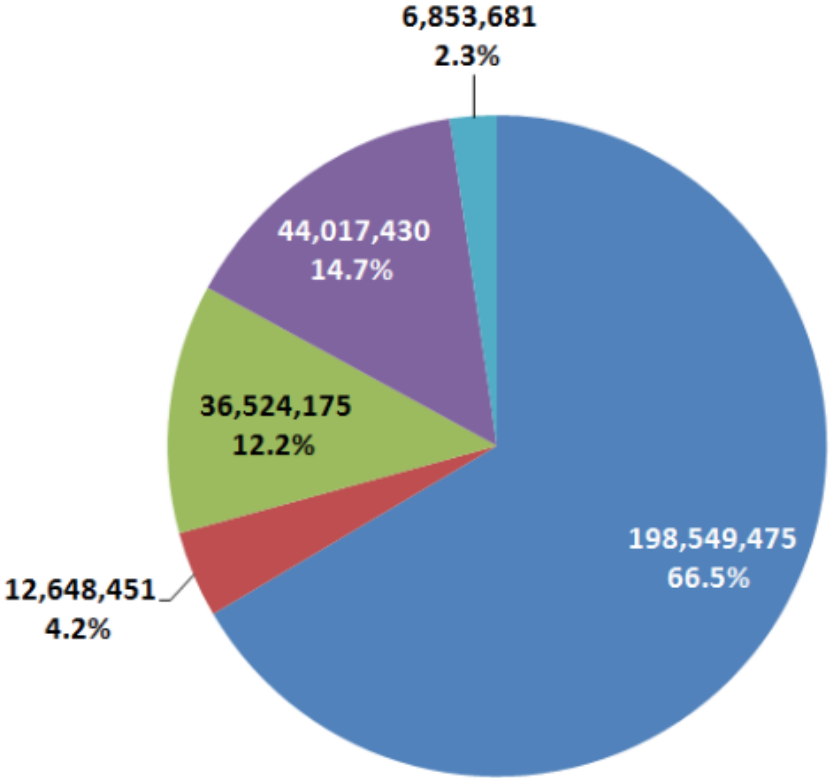
Canada's health care system

Canada's Minister of Health = GP

13 provinces and territories

13 different health care systems

The Ecology of Care in Canada

Figure 1. Canadian ecology of health care standardized monthly rates per 1000 population of those aged 15 years and older: Each box represents a separate subgroup of the total 1000 persons.

1000 persons

560 have 1 or more chronic conditions

238 contact family physicians

70 contact physicians other than family physicians

32 contact nurses

8 stay overnight in hospital

The Ecology of Care in U.S.[1,2]

The Ecology of Health Care

- 1,000 persons
- 800 report symptoms
- 327 consider seeking medical care
- 217 visit a physician's office (113 visit a primary care physician's office)
- 65 visit a complementary or alternative medical care provider
- 21 visit a hospital outpatient clinic
- 14 receive home health care
- 13 visit an emergency department
- 8 are hospitalized
- < 1 is hospitalized in an academic medical center

[1] Green LA, et al. The Ecology of Medical Care Revisited. *N Engl J Med* 2001; 344(26):2021-5.
[2] White KL, Williams TF, Greenberg BG. The ecology of medical care. *N Engl J Med* 1961;265:885-92

U.S. health care system
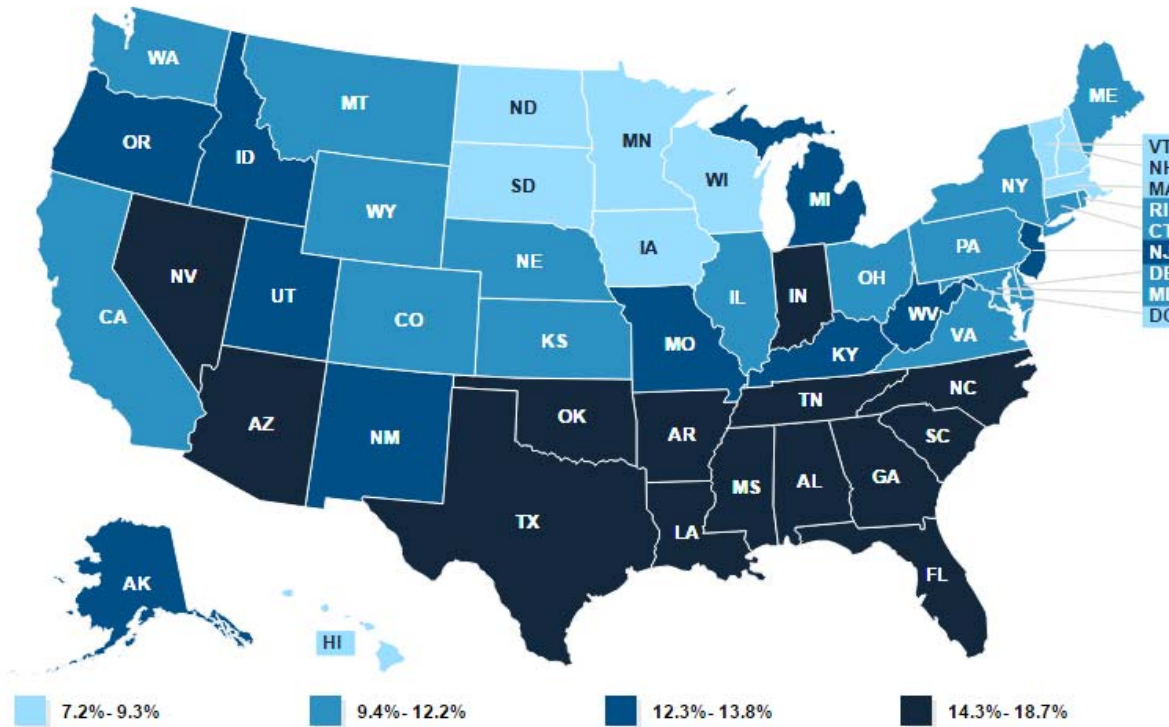
Percent of Adults Reporting Not Seeing a Doctor in the Past 12 months because of cost (2015) Kff.org

U.S. health care system

Legend: 37%-40%, 41%-48%, 49%-53%, 54%-61%
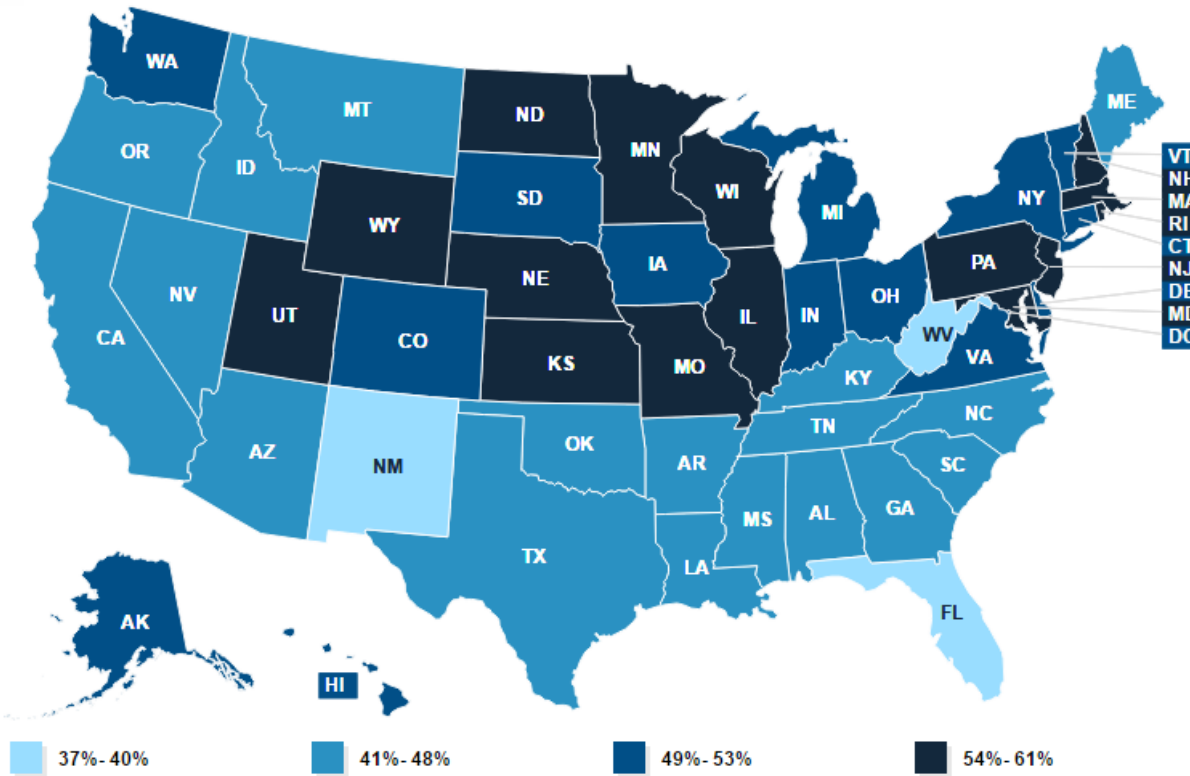
Health Insurance Coverage of the Total Population (2015) Kff.org
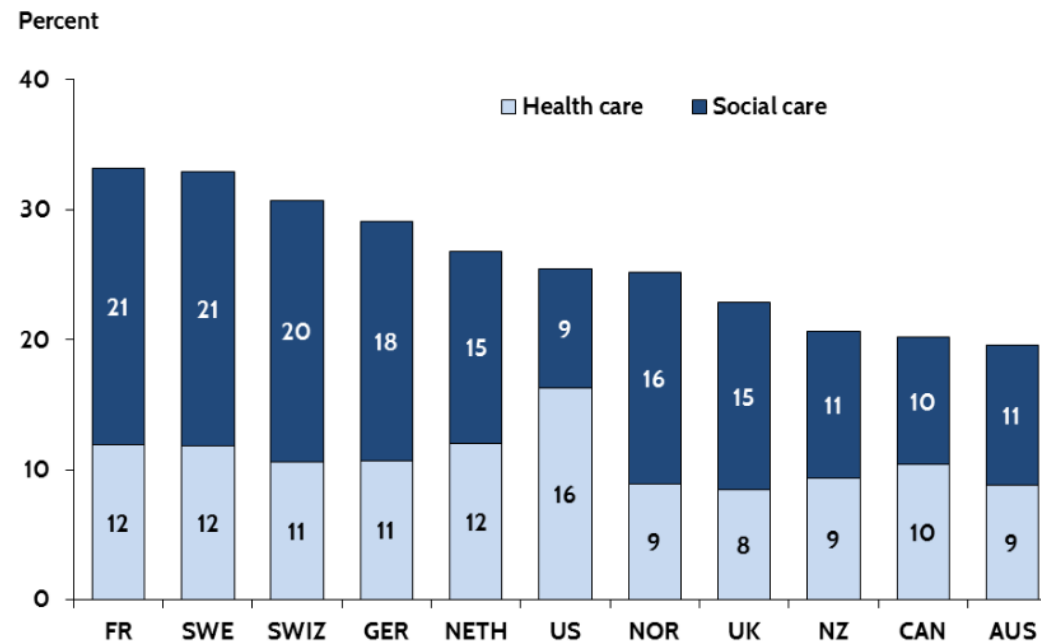
Health Care Roulette in the US

DEMOLITION PLAN: HOUSE GOP UNVEILS REPEAL BILL
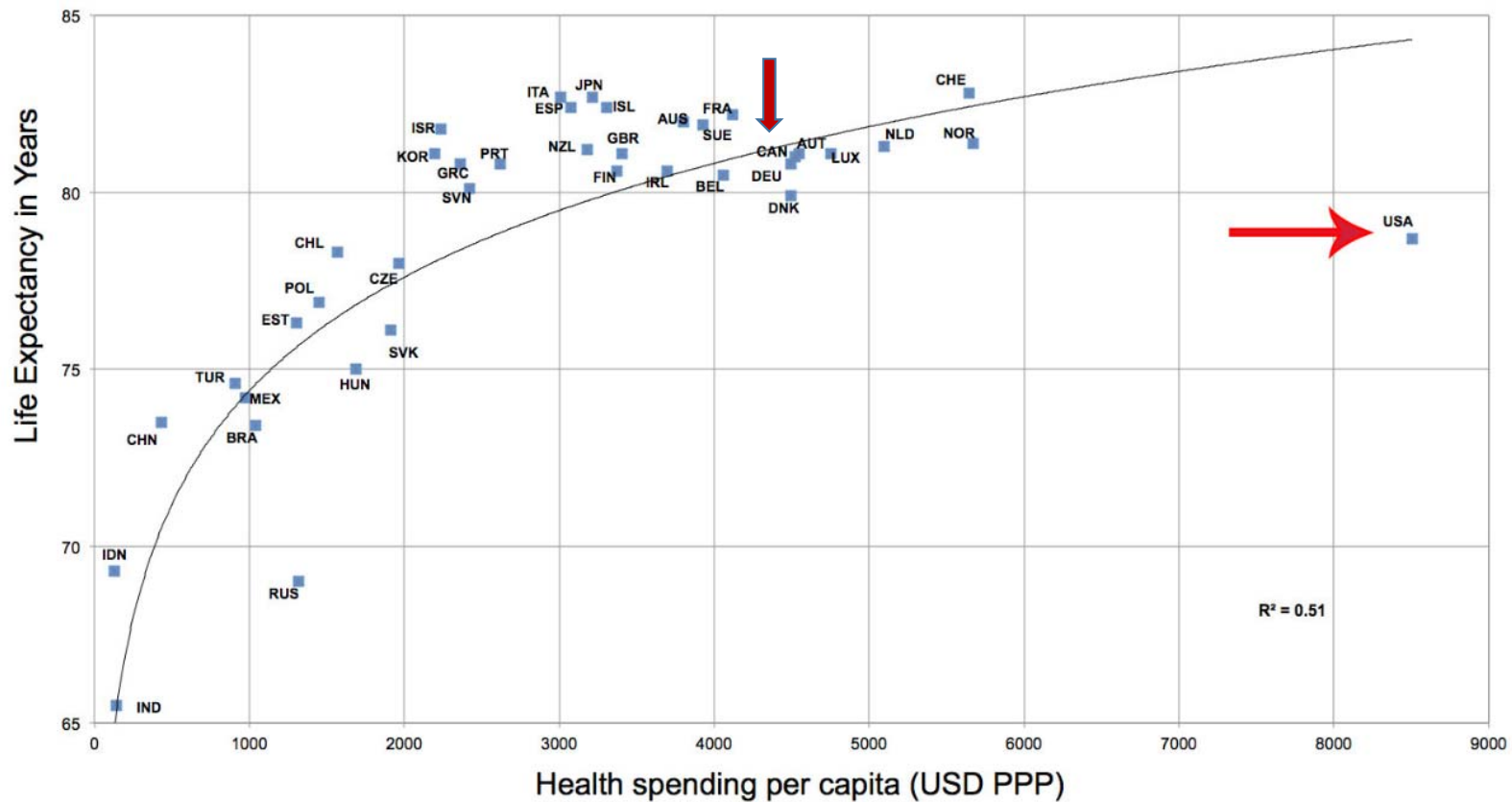
Huffington Post, 6 March 2017, 6 PM, Pacific Time

Health and Social Care Spending as a Percentage of GDP

Percent

Notes: GDP refers to gross domestic product.
Source: E. H. Bradley and L. A. Taylor, *The American Health Care Paradox: Why Spending More Is Getting Us Less*, Public Affairs, 2013.

Life Expectancy and Health Spending Per Capita

OECD Data - Organization for Economic Co-operation and Development - 2013

Selected Population Outcomes and Risk Factors

	Life exp. at birth, 2013[a]	Infant mortality, per 1,000 live births, 2013[a]	Percent of pop. age 65+ with two or more chronic conditions, 2014[b]	Obesity rate (BMI>30), 2013[a,c]	Percent of pop. (age 15+) who are daily smokers, 2013[a]	Percent of pop. age 65+
Australia	82.2	3.6	54	28.3[e]	12.8	14.4
Canada	81.5[e]	4.8[e]	56	25.8	14.9	15.2
Denmark	80.4	3.5	–	14.2	17.0	17.8
France	82.3	3.6	43	14.5[d]	24.1[d]	17.7
Germany	80.9	3.3	49	23.6	20.9	21.1
Japan	83.4	2.1	–	3.7	19.3	25.1
Netherlands	81.4	3.8	46	11.8	18.5	16.8
New Zealand	81.4	5.2[e]	37	30.6	15.5	14.2
Norway	81.8	2.4	43	10.0[d]	15.0	15.6
Sweden	82.0	2.7	42	11.7	10.7	19.0
Switzerland	82.9	3.9	44	10.3[d]	20.4[d]	17.3
United Kingdom	81.1	3.8	33	24.9	20.0[d]	17.1
United States	78.8	6.1[e]	68	35.3[d]	13.7	14.1
OECD median	81.2	3.5	–	28.3	18.9	17.0

OECD Health Data 2015

Snapshot of Population Health Challenges

Percent of adults reporting:	Multiple chronic conditions*	Experiencing emotional distress in past year they couldn't cope with alone	Unable to do daily activities or work full-time because of health
AUS	15	20	12
CAN	22	27	20
FRA	18	12	24
GER	17	7	15
NETH	14	19	19
NZ	16	21	15
NOR	16	20	23
SWE	18	24	22
SWIZ	15	21	13
UK	14	17	15
US	28	26	21

* Chronic conditions asked about were: 1) joint pain or arthritis; 2) asthma or chronic lung disease; 3) diabetes; 4) heart disease; 5) hypertension.

The COMMONWEALTH FUND

Pre-existing health conditions

- Up to 133 million non-elderly Americans (51% of this population have a pre-existing condition)
- Conditions include hypertension (46 million); behavioral health disorders (45 million); high cholesterol (44 million); asthma/chronic lung condition (34 million); heart conditions (16 million); diabetes (13 million); cancer (11 million)
- Nearly one-third (44 million) went uninsured for a least one month from 2013 to 2015.

U.S. Dept. of Health and Human Services, Jan. 2017 (http://aspe.hhs.gov)

Views of Canadians and Americans on primary care

	Selected Measures	% of Adults Reporting…	🇨🇦	🇺🇸	CMWF Avg
Access	Same- or Next-day Appts.	.. getting same/next day appt. last time sick or need medical attn.	43%	51%	75%
	After-Hours Care	...getting after hours care very or somewhat easily	34%	42%	43%
	Avoidable ER Use	… an ER visit that could have been avoided if reg MD was avail	41%	47%	34%
	Email Access	…emailing practice with a medical question in last 2 years	4%	12%	8%
	MD Visit Cost Barriers	… not visiting an MD because of cost	6%	22%	9%
	Rx Cost Barriers	… not filling an Rx or skipping medication because of cost	10%	18%	6%

Results From The Commonwealth Fund's 2016 Survey of Adults in 11 Countries

Courtesy of Dr. Robert Reid, 2017

Views of Canadians and Americans on primary care

	Selected Measures	% of Adults Reporting…	🇨🇦	🇺🇸	CMWF Avg
Continuity	**Regular Source of Care**	…having usual doctor	85%	77%	85%
--	Knowledge of Med Hist	…regular doctor did not "always" or often" know important info	14%	16%	--

Results From The Commonwealth Fund's 2016 Survey of Adults in 11 Countries

Source: CIHI. How Canada Compares: Results From The Commonwealth Fund's 2016 International Health Policy Survey of Adults in 11 Countries. Ottawa, ON: 2017.

Courtesy of Dr. Robert Reid, 2017

Views of Canadians and Americans on primary care

	Selected Measures	% of Adults Reporting..	🇨🇦	🇺🇸	CMWF Avg
Coordination	Specialist Waiting Time	…waiting 4+ weeks to see a specialist in past 2 years	56%	24%	36%
	Information Availability	…specialists not having basic information from regular MD	13%	17%	15%
		…regular MD was not up to date on care received from specialist	21%	23%	19%

Results From The Commonwealth Fund's 2016 Survey of Adults in 11 Countries

Source: CIHI. How Canada Compares: Results From The Commonwealth Fund's 2016 International Health Policy Survey of Adults in 11 Countries. Ottawa, ON: 2017.

Courtesy of Dr. Robert Reid, 2017

Mirror, Mirror: Rankings of Health System Performance

COUNTRY RANKINGS
- Top 2*
- Middle
- Bottom 2*

	AUS	CAN	FRA	GER	NETH	NZ	NOR	SWE	SWIZ	UK	US
OVERALL RANKING (2013)	4	10	9	5	5	7	7	3	2	1	11
Quality Care	2	9	8	7	5	4	11	10	3	1	5
Effective Care	4	7	9	6	5	2	11	10	8	1	3
Safe Care	3	10	2	6	7	9	11	5	4	1	7
Coordinated Care	4	8	9	10	5	2	7	11	3	1	6
Patient-Centered Care	5	8	10	7	3	6	11	9	2	1	4
Access	8	9	11	2	4	7	6	4	2	1	9
Cost-Related Problem	9	5	10	4	8	6	3	1	7	1	11
Timeliness of Care	6	11	10	4	2	7	8	9	1	3	5
Efficiency	4	10	8	9	7	3	4	2	6	1	11
Equity	5	9	7	4	8	10	6	1	2	2	11
Healthy Lives	4	8	1	7	5	9	6	2	3	10	11
Health Expenditures/Capita, 2011**	$3,800	$4,522	$4,118	$4,495	$5,099	$3,182	$5,669	$3,925	$5,643	$3,405	$8,508

Notes: * Includes ties. ** Expenditures shown in $US PPP (purchasing power parity); Australian $ data are from 2010.

Source: Calculated by The Commonwealth Fund based on 2011 International Health Policy Survey of Sicker Adults; 2012 International Health Policy Survey of Primary Care Physicians; 2013 International Health Policy Survey; Commonwealth Fund National Scorecard 2011; World Health Organization; and Organization for Economic Cooperation and Development, OECD Health Data, 2013 (Paris: OECD, Nov. 2013).

Source: The Commonwealth Fund, Mirror, Mirror on the Wall, 2014 Update

Taxes and Finances

- 36 % of revenues from personal income tax

- Highest tax rate—46%

- Maximum corporate tax rate-36%

- Social security tax rate-17%

- Gross pay to disposable income-76%

- 36 % of revenues from personal income tax

- Highest tax rate—44%

- Maximum corporate tax rate-39%

- Social security tax rate-21%

- Gross pay to disposable income-89%
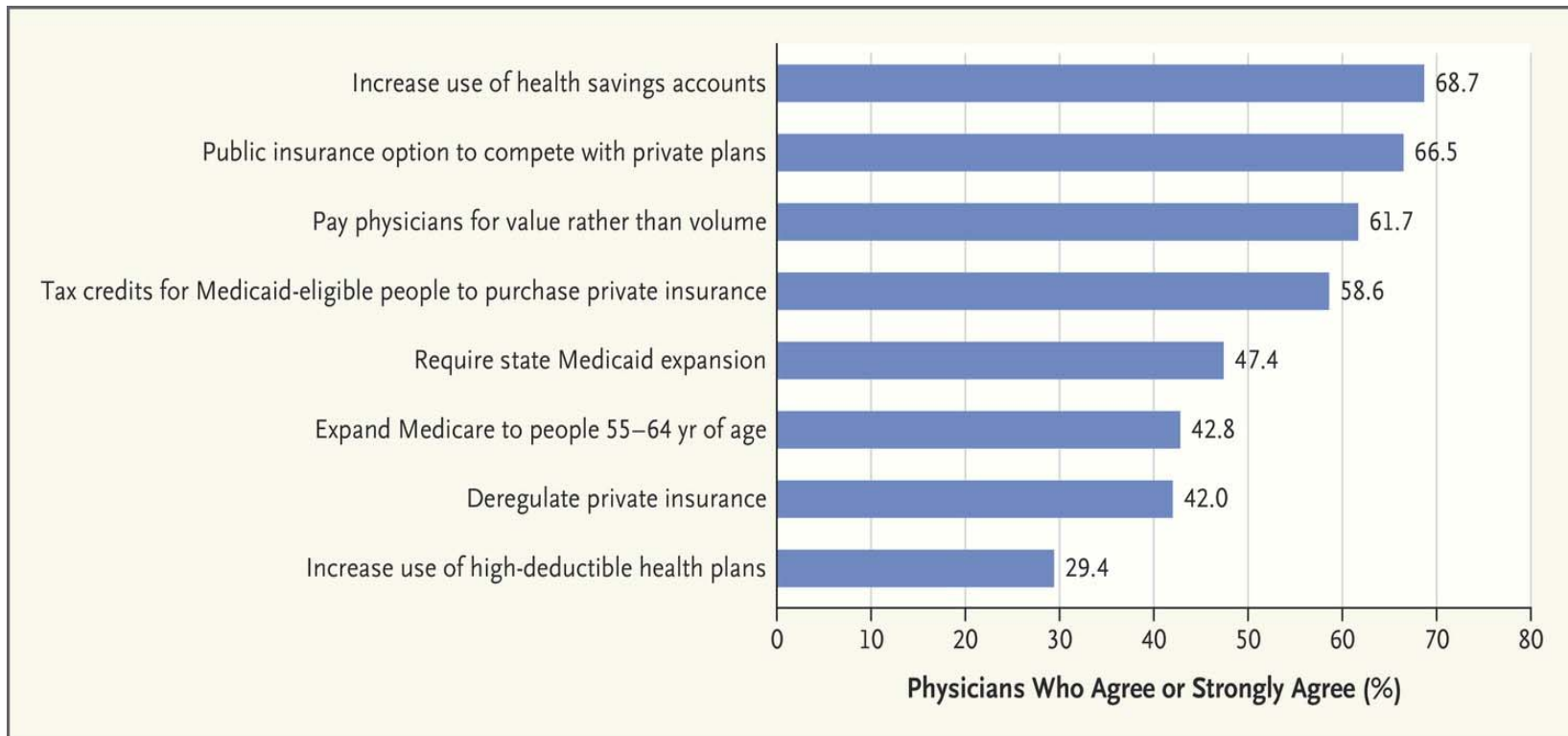
Spending on health care

- $4,569 per capita
- $623 Out of pocket
- $3,074 Public
- $654 Private insurance

- $9,086 per capita
- $1,074 Out of pocket
- $4,197 Public
- $3,442 Private Insurance

OECD Health Data 2015

PCP Perspectives on Potential Health Reform

	Physicians Who Agree or Strongly Agree (%)
Increase use of health savings accounts	68.7
Public insurance option to compete with private plans	66.5
Pay physicians for value rather than volume	61.7
Tax credits for Medicaid-eligible people to purchase private insurance	58.6
Require state Medicaid expansion	47.4
Expand Medicare to people 55–64 yr of age	42.8
Deregulate private insurance	42.0
Increase use of high-deductible health plans	29.4

Health Systems/Education

- 2.2 physicians/1,000
- 99 general physicians and 94 specialists per 100,000
- 85% of primary care visits are to family physicians (CFPC, 2016)
- ?? % primary care provided by non-physician clinicians
- 38.5% of medical school graduates went into family medicine (CFPC goal of 40% by 2017)

- 2.4 physicians/1,000
- 100 general physicians and 207 specialists per 100,000
- 45% of primary care visits are to family physicians (2008 AHRQ)
- 15% primary care provided by non-physician clinicians (NPs and PAs)
- 10.2% of medical school graduates (2016)went into family medicine

Workforce

- Physicians: 228/100,000
- Family Physicians: 115/100,000
- Nurse Practitioners: 10/100,000 (Province variation: 2 to 23)
- Physician assistants: 1/100,000 (Province variation: <1 to 3)

- Physicians: 265.5/100,000
- Primary Care Physicians: 80/100,000
- Nurse Practitioners: 58/100,000 (State variation: 26-116)
- Physician assistants: 27/100,000 (State variation: 8 to 62)

Primary Care Practice Context

- Size→15% of FPs are in solo

- Ownership→ 40% of physicians are employed

- Non-physician clinicians (PAs & NPs) in FP practices--??%

- EHRs—64% of FPs use it

- Size→50% of FPs are in solo and small practices (2-5 providers)

- Ownership-->50% of physicians are employed

- Non-physician clinicians (PAs & NPs)—60% of FPs (2011 survey)

- EHRs—80% of practices

Office-based Physician EHR
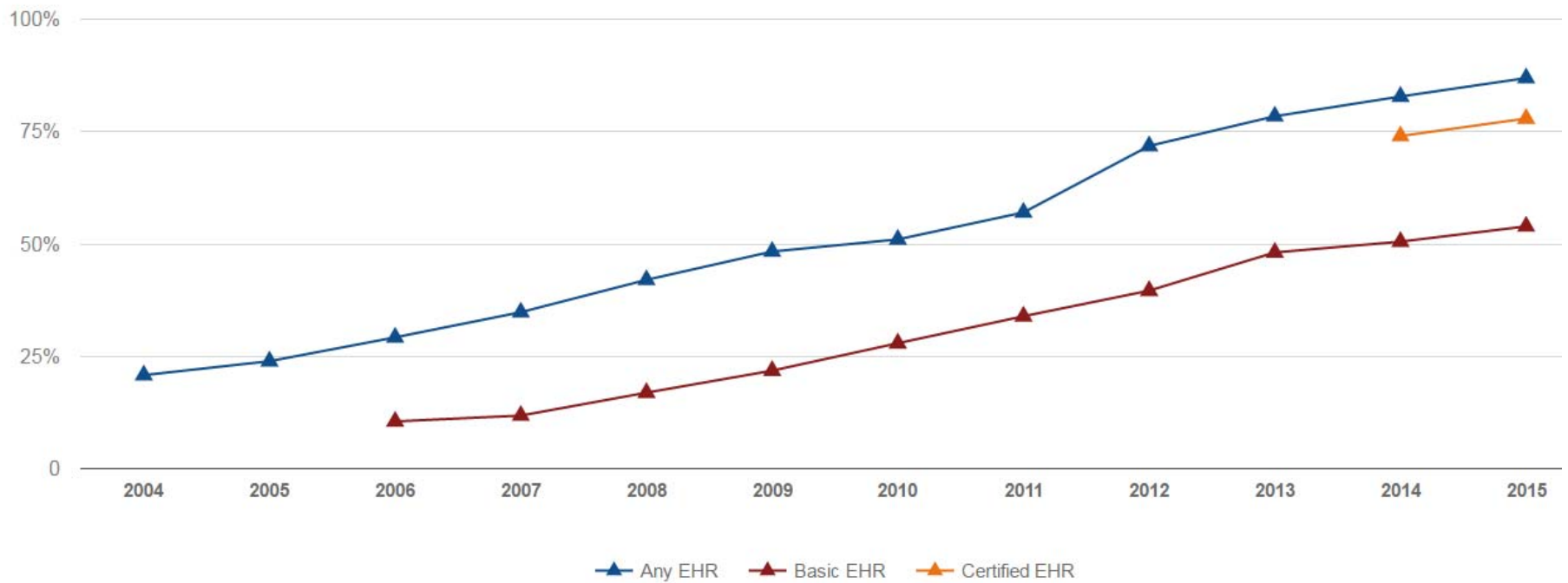
ONC Health IT Dashboard, 1/12/2017

Trends in Individuals Use of HIT, 2012-2014
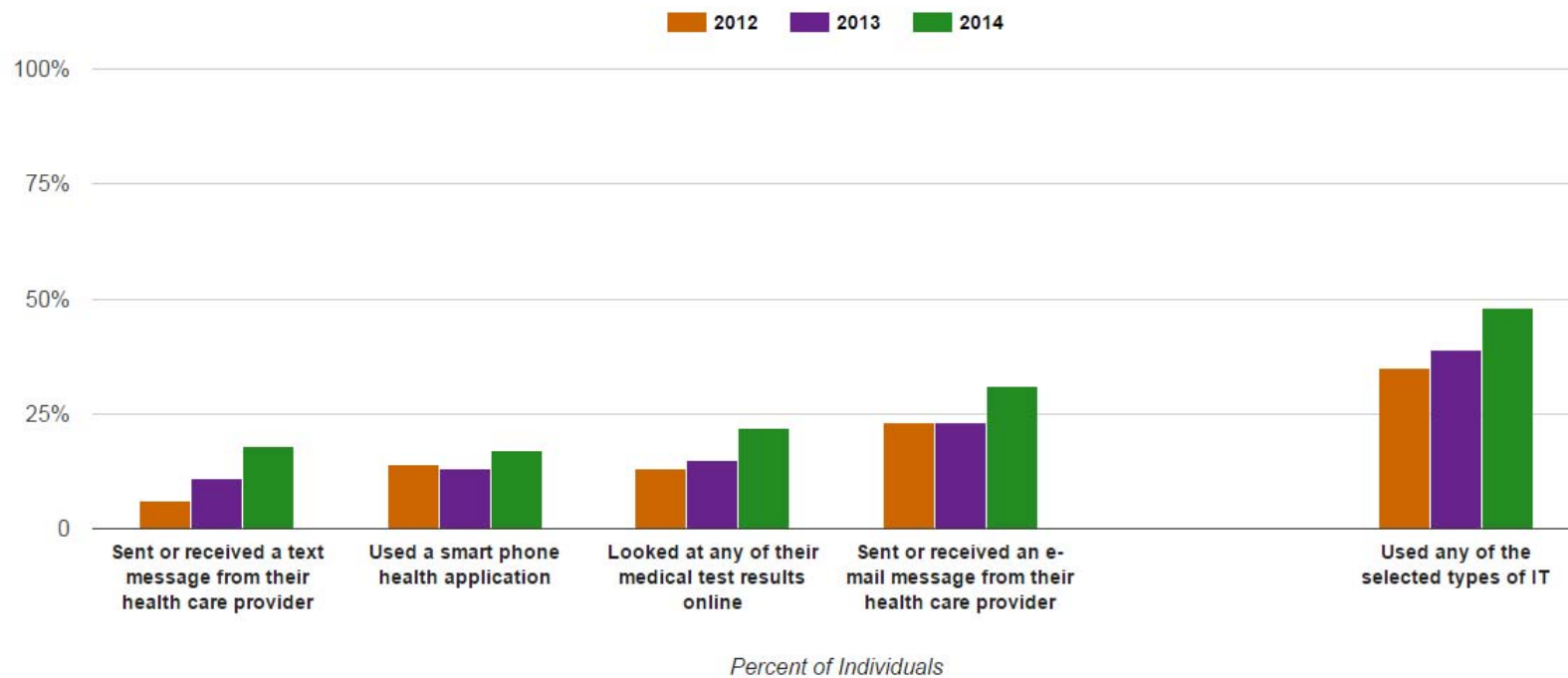
ONC Health IT Dashboard, 1/12/2017

Current Initiatives/Themes

- Strategy for patient oriented research (SPOR)
  - SPOR network in Chronic Diseases, in youth and adolescent mental health and in primary and integrated health care innovations
- Home care plan
- Shared decision making

- Patient Centered Medical Home
- Team-based care
- Patient and Family Advisory Councils (PFACs)
- Triple/Quadruple Aim
- Volume to Value Payment

The Patient-Centered Medical Home

- 2007 Joint Principles of the PCMH: Personal physician, physician directed medical practice, whole person orientation, care is coordinated and/or integrated, quality and safety, enhanced access, and payment reform
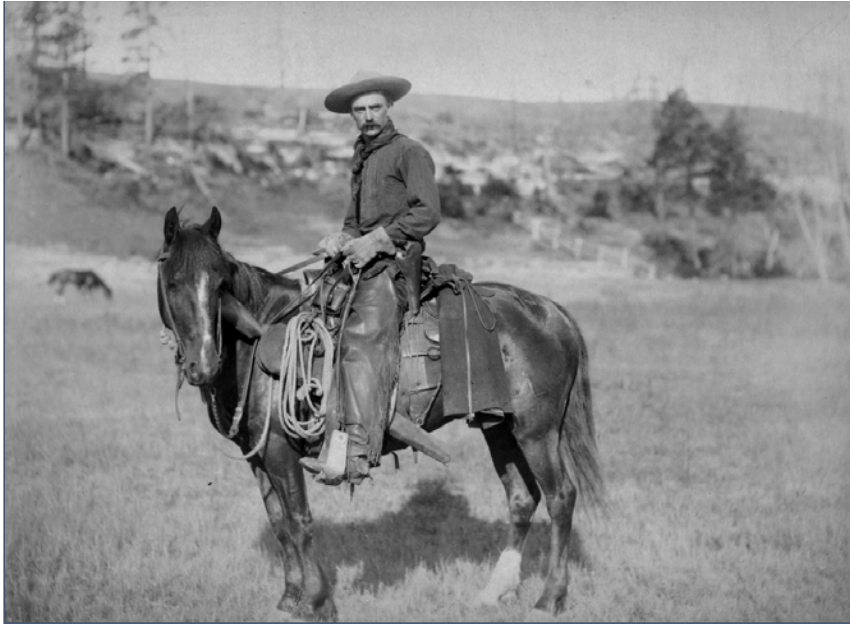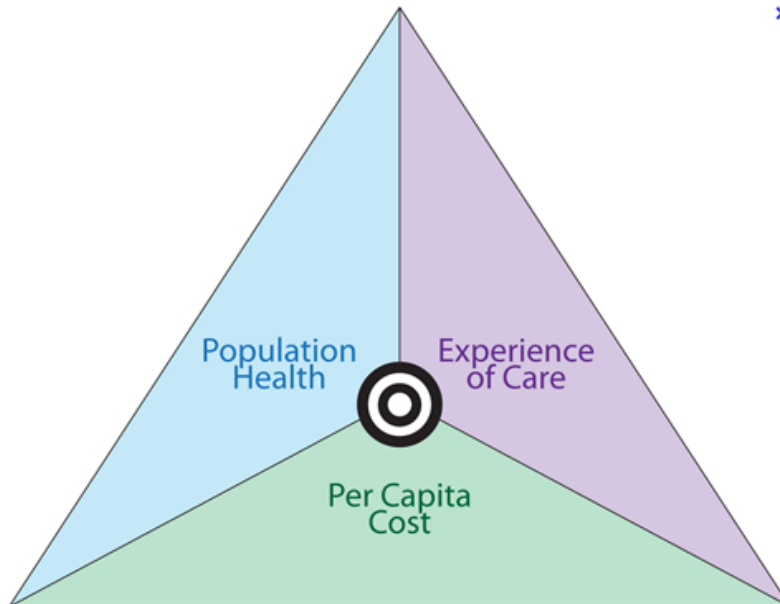
Moving from **this** approach….

…to **this** approach.

Triple & Quadruple Aims

Payment Reform, From Volume to Value

Research Infrastructure

- Who funds primary care research?

- Who are the primary care researchers?

- Where are does primary care research take place?

- What primary care research is happening?

- What is the role of PBRNs in research?

- How does research influence policy?

- What is the role of the College of Family Physicians of Canada? The American Board of Family Medicine?
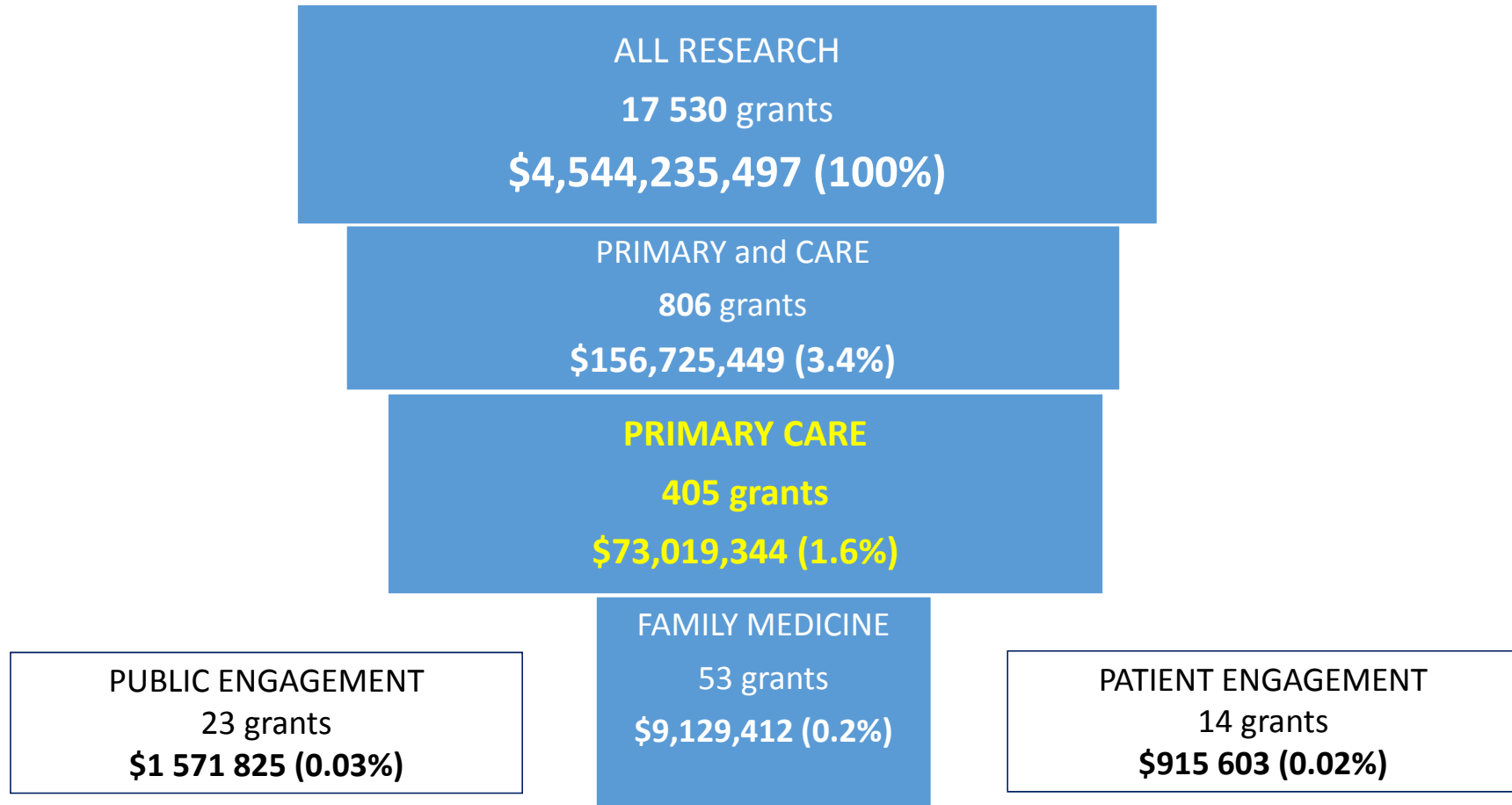
Why invest in primary care research?

1. The majority (>50%) of clinical meetings in Canada are held in front-line services (CIHR IHSPR Strategic plan 2015-2019)

2. Observational evidence is clear that healthcare systems that underscore primary care (access, continuity, comprehensiveness, care coordination) achieve:

- **Better Health Outcomes**

  - Areas with stronger primary care associated with improved population health (YPLL, LE, birth weight, hospitalizations for ACS conditions)
  - Attributes of primary care associated with better outcomes

- **Lower Costs**

  - Stronger primary care systems yield fewer hospitalizations, and ED visits
  - Areas with higher primary care supply have lower costs

- **Better Equity**

  - Primary care mitigates the adverse health effects that come with social disadvantage

Starfield B et al. Milbank Q 2005; Shi L. Scientifica 2012

Courtesy of Dr. Robert Reid, 2017

CIHR's funding decisions >2009

ALL RESEARCH
17 530 grants
$4,544,235,497 (100%)

PRIMARY and CARE
806 grants
$156,725,449 (3.4%)

PRIMARY CARE
405 grants
$73,019,344 (1.6%)

FAMILY MEDICINE
53 grants
$9,129,412 (0.2%)

PUBLIC ENGAGEMENT
23 grants
$1 571 825 (0.03%)

PATIENT ENGAGEMENT
14 grants
$915 603 (0.02%)

NIH Grants Award to FM Departments, 2002-2014

	2002-2006	2007-2010	2011-2014
Total grant $$ received by FM	$57 million	$76 million	$71 million
Total grant dollars awarded by NIH	$28, 451 million	$38,002 million	$32,985 million
Total NIH grant dollars awarded to FM (%)	0.20	0.20	0.20
Total grants received by FM (n)	170	224	192
Total grants awarded by NIH (n)	60,227	71,777	65,603
Total NIH grants awarded to FM (%)	0.28	0.31	0.29

Comparison of Awards Reviewed versus Awarded for all Departments and FM Only

	Applications					
	All Departments			Family Medicine		
Fiscal Year	Reviewed (n)	Awarded (n)	Success Rate (%)	Reviewed (n)	Awarded (n)	Success Rate (%)
2006	22,339	4,670	20.9	187	25	13.4
2007	22,981	5,162	22.5	168	27	16.1
2008	21,113	4,919	23.3	145	26	17.9
2009	20,846	4,585	22.0	173	30	17.3
2010	21,954	4,840	22.0	161	23	14.3
2011	23,230	4,409	19.0	159	25	15.7
2012	24,389	4,646	19.0	161	19	11.8
2013	23,738	4,376	18.4	171	28	16.4
2014	24,153	4,722	19.6	158	23	14.6
2015	24,466	4,876	19.9	150	25	16.7
Total	229,209	47,205	20.6	1,633	251	15.4

Cameron, Bazemore, Morley. *J Am Board Fam Med* 2016;29:528-530

NIH Grants to DFM by Activity Code and Institute/Center

	2002-2006	2007-2010	2011-2014
Activity Code			
R (research projects)	67	59	59
K (research career programs)	22	21	15
U (cooperative agreements)	7	12	16
Other	4	8	10
Institute/Center			
NCI	24	27	28
AHRQ	14	8	11
NHLBI	8	9	8
Other	53	56	54

We have a footing problem

85% waste in research

Ecology of FP research engagement in Canada

Figure 1. Ecology of family physician research engagement

- Read research articles
- Critical appraisal
- Guideline participation
- Case reports
- Quality improvement
- Clinical discovery
- Practice-based research network
- Professional research
- National and international leadership
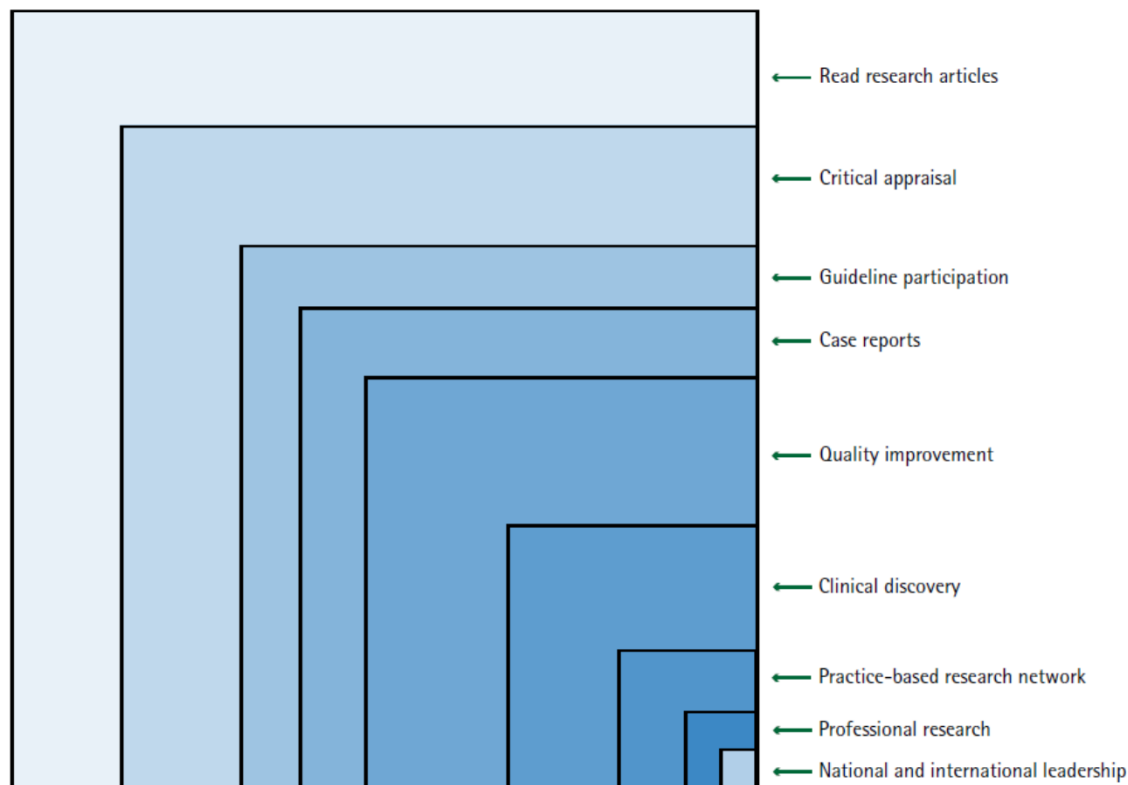
Pimlott N and Katz A. Canadian Family Physician 2016

Are research decisions based on questions relevant to users of research?	Appropriate research design, methods, and analysis?	Efficient research regulation and management?	Fully accessible research information?	Unbiased and usable research reports?
• Low priority questions addressed • Important outcomes not assessed • More than 50% studies designed without reference to systematic reviews of existing evidence	• Adequate steps to reduce bias not taken in more than 50% of studies • Inadequate statistical power • Inadequate replication of initial findings	• Complicit with other sources of waste and inefficiency • Disproportionate to the risks of research • Regulatory and management processes are burdensome and inconsistent	• More than 50% of studies never fully reported • Biased under-reporting of studies with disappointing results • Biased reporting of data within studies	• More than 30% of trial interventions not sufficiently described • More than 50% of planned study outcomes not reported • Most new research not interpreted in the context of systematic assessment of other relevant evidence

Research waste

Chalmers I, et al. Lancet. 2014

Identifying research questions and priorities

Overarching research aspiration: An effective cure for type 1 diabetes

1. Is it possible to constantly and accurately monitor blood sugar levels with a discrete device?
2. Is insulin pump therapy effective?
3. Is an artificial pancreas for type 1 diabetes effective?
4. What are the characteristics of the best type 1 diabetes patient education programs and do they improve outcomes?
5. What are the cognitive and psychological effects of living with type 1 diabetes?
6. How can awareness of and prevention of hypoglycemia in type 1 diabetes be improved?
8. Does treatment of type 1 diabetics by specialists (e.g. doctors, nurses, dieticians, podiatrists, ophthalmologists and psychologists) **trained in person-centered skills** provide better blood glucose control, patient satisfaction and self-confidence in management?

SPOR

- Canada's Strategy for Patient-Oriented Research (SPOR) is an initiative of the Canadian Institutes for Health Research (CIHR)

- SPOR brings together patients, researchers, clinicians, healthcare providers and funders to conduct research on patients-identified priorities in order to improve patients outcomes, and ultimately improve healthcare systems and practices.

Where does primary care research happen?

In Practice-Based Research Networks (PBRNs):

"A group of ambulatory practices devoted principally to the primary care of patients, and affiliated in their mission to **investigate questions** related to community-based practice and **to improve the quality of primary care.**"
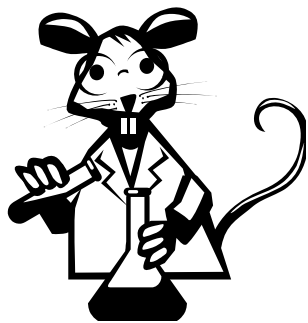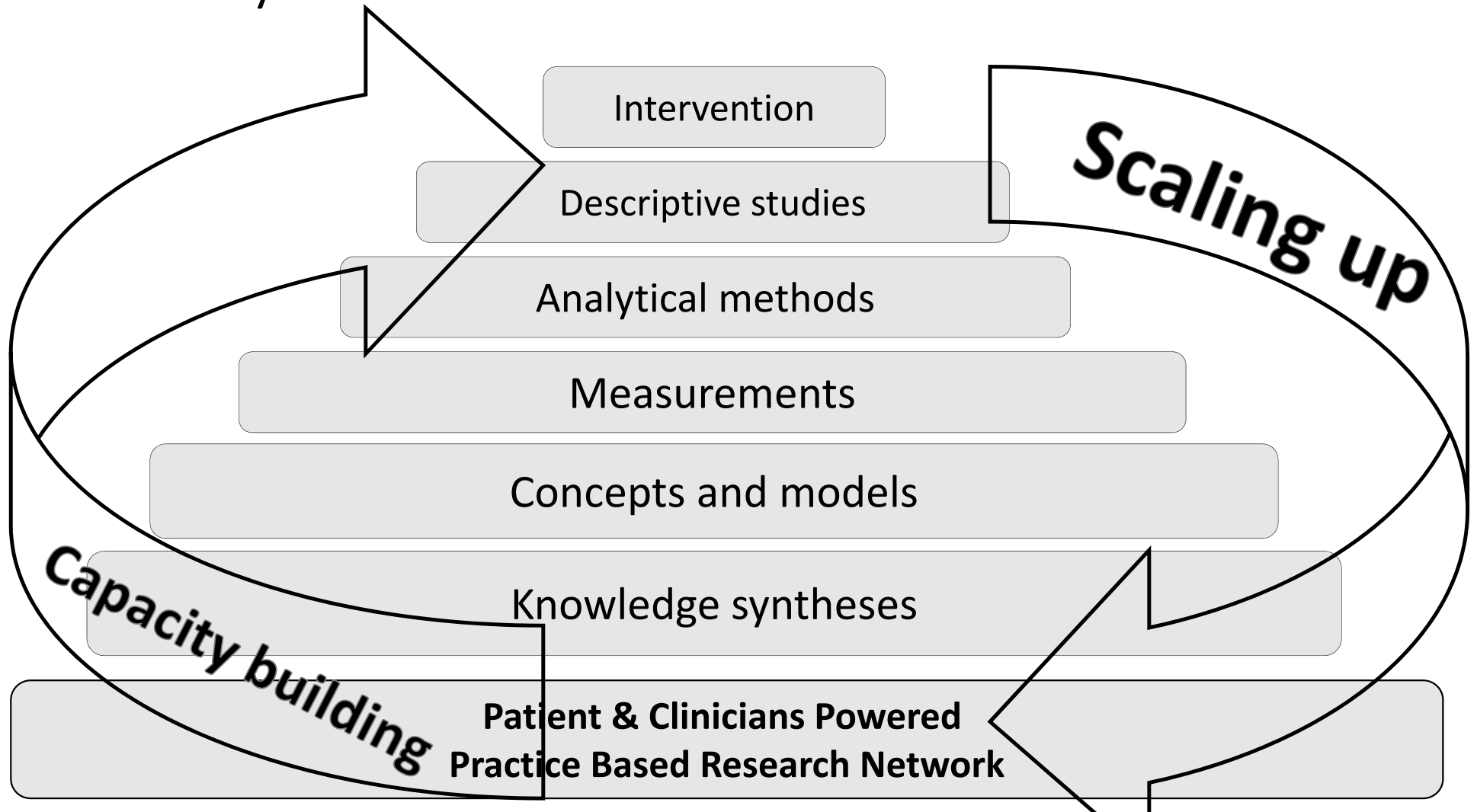
Changing clinical behavior

PBRNs across U.S. and Canada

1. **PBRN U Sherbrooke**
2. **PBRN McGill**
3. **PBRN U Montreal**
4. **PBRN U Laval**

Primary care research functions

Intervention

Descriptive studies

Analytical methods

Measurements

Concepts and models

Knowledge syntheses

Patient & Clinicians Powered
Practice Based Research Network

Scaling up

Capacity building

Resources for family physicians interested in research

- Departments of family medicine
- PBRNs
- SPOR networks and SPOR support units
- North American Primary Care Research Group (NAPCRG)
- College of family physicians of Canada (CFPC)
- American Board of Family Medicine (ABFM)

Cross Border Integrated Primary Care Symposium— 2017: Perspectives from Canadians and Americans!

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Thank you!

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