SPOR PIHCI SUMMIT

Dr Tom Noseworthy

May 9, 2019

BC AHSN
British Columbia
Academic Health Science Network

FACULTY OF MEDICINE | UNIVERSITY OF CALGARY

CONFLICT OF INTEREST DECLARATION

I, Thomas William Noseworthy, declare that in the past 5 years:

- I have not been a member of an Advisory Board or equivalent for any companies*
- I have not been a member of a speakers' bureau
- I have not done speaking engagements for any companies*
- I have not received payment or funding from any companies * (includes gifts, grants, honoraria, and 'in kind' compensation)
- I have not done consulting work for any companies*
- I have not held a patent for a product referred to in any program or that is marketed by a commercial organization
- I or my family do hold individual shares in the following companies*
- I have not participated in a clinical trial for any of the following companies for over 25 years*

**pharmaceutical, medical device, or communications companies*

Disclaimer on … *integration*

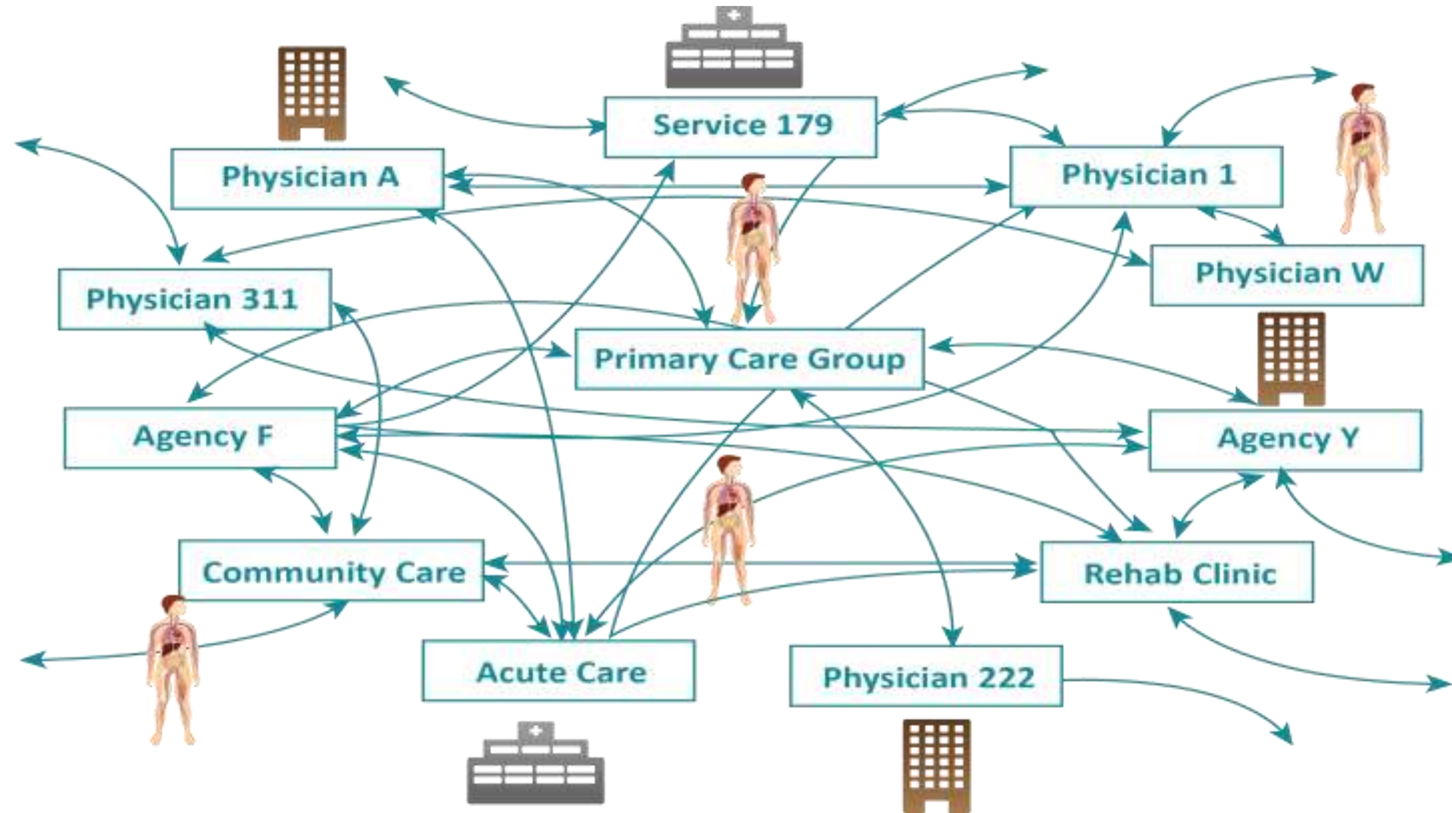
- Integration is a means, not an end in itself
- Balance between decentralization and centralization
- Inextricably linked patient engagement/involvement
- Single delivery service is a major step towards integration
- Horizontal and vertical integration - making it happen
- Shared program goals at provincial level
- The difficult piece is the primary and community care integration
- Governance, medical home, remuneration, data, team-based care, cultural safety, political interference
- Integration for me is about Learning Health Systems & networks of organizations - Academic Health Science Networks at Provincial level

BC AHSN
British Columbia
Academic Health Science Network

FACULTY OF MEDICINE | UNIVERSITY OF CALGARY

Draw it for yourself …

Current System has More Silos Than Systems' Integration
Islands of Excellence With Too Few Bridges



BC AHSN
British Columbia
Academic Health Science Network

FACULTY OF MEDICINE | UNIVERSITY OF CALGARY

Reflections on Canada's Health System

- Universal (we are all included) system of fourteen systems
- By no means comprehensive or easily accessible
- High cost and expensive for what we get
- Cost & affordability having a public expenditure squeeze effect
- Quality for most things is average, mediocre or poor
- Primary and community care is not well integrated
- Islands of innovation everywhere & very few bridges
- We have insufficient intraprovincial & interprovincial knowledge sharing on clinical innovation
- We do poorly at spreading and scaling clinical innovations
- A path to improving Canada's Health System is through the Learning Health System Model

International Ranking of Healthcare Systems

COUNTRY RANKINGS

- Top 2*
- Middle
- Bottom 2*

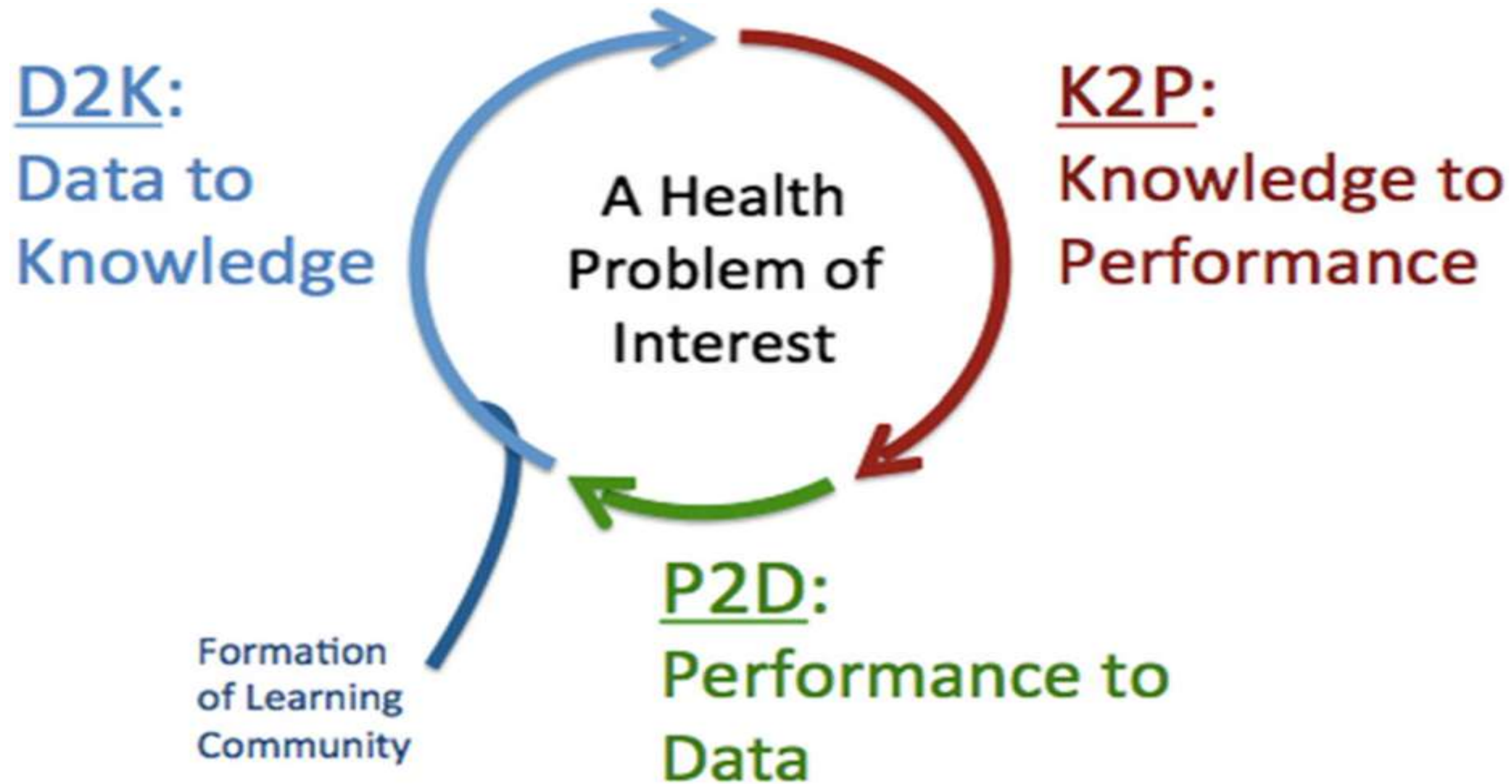
	AUS	CAN	FRA	GER	NETH	NZ	NOR	SWE	SWIZ	UK	US
OVERALL RANKING (2013)	4	10	9	5	5	7	7	3	2	1	11
Quality Care	2	9	8	7	5	4	11	10	3	1	5
Effective Care	4	7	9	6	5	2	11	10	8	1	3
Safe Care	3	10	2	6	7	9	11	5	4	1	7
Coordinated Care	4	8	9	10	5	2	7	11	3	1	6
Patient-Centered Care	5	8	10	7	3	6	11	9	2	1	4
Access	8	9	11	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).

Further Realities about Canada's Health System

- We have insufficient intraprovincial and interprovincial knowledge sharing on clinical innovation
- Islands of innovation everywhere & very few bridges
- We do poorly at spreading and scaling clinical innovations
- Knowledge to practice needs substantially more attention (K2P)
- Every act of care/practice produces data to inform improvement (P2D)
- A path to improving Canada's (Saskatchewan's) Health System is through the Learning Health System Model

The Learning Health System



Framework for a learning health system. Adapted from Friedman et al. Year Med Inform. 2017;26:16–23 [57]

A Learning Health System is a dynamic healthcare ecosystem in which scientific, social, technological, political and ethical dimensions are aligned, and enable cycles of continuous learning and action to be routinized and embedded across the system, enhancing value in health care, through impacts in patients' experience, population health and healthcare costs

(Denis Roy 2017)

Building Blocks for Implementing Learning Health Systems

- Structures & processes to support clinical innovation at provincial scale
- Robust, comprehensive, accessible & comparable data
- Standardized measurement & bench-marking
- Advanced analytics, tools for sharing results, key outcomes, performance measurement, audit & feedback
- Incentives and supports for practice behaviour change
- Clinical structures to drive change, such as provincial clinical networks

BC AHSN
British Columbia
Academic Health Science Network

FACULTY OF MEDICINE | UNIVERSITY OF CALGARY

Key Learning from Others

- England, Scotland, Australia, Canada …
- Early days – emergent models e.g. Strategic Clinical Networks
- Population-level collective impact requires a backbone with measurement, and a shared vision to focus & finish initiatives
- Aligned centres & networks create synergies & unique value
- Require investment in data & informatics as well as development of new research methodologies & competencies
- Address a vexing problem with solutions tailored to fit local population priorities and scalable to health systems
- Need combination of top-down policy direction and support and bottom-up clinical and patient involvement
- Recognize Life Science industry as valuable partners with clear 'rules of engagement'

Achieving Collective Impact at the Population Level

Among others, two critical success factors consistently stand out:

1. A backbone of supports, with a shared measurement system
2. A common agenda, with a shared Vision

Learning Co-operatives/Strategic Clinical Networks

- Collaborative Clinical networks of patients & clinicians with a provincial strategic mandate are engines of innovation
- Evidence, data and measurement are the gasoline
- Focused on outcomes of a population – from determinants to EOL
- Led by clinicians, driven by clinical needs, based on best evidence
- Top-down / Bottom-up decision-making is the key
- Comprised of an all-inclusive membership, with core members & clinical/research leadership
- Built on a backbone of supports and services
- Clinical innovation at a provincial scale
- Focused initiatives with measurable deliverables
- Goal is the Quadruple Aim

Implementing Change with Clinical Networks?

- Clinical Networks are engines of clinical innovation
- Gasoline is data and measurement
- Focused on outcomes of a population – from determinants to EOL
- Collaborative clinical & patient teams with provincial strategic mandate
- Led by clinicians, driven by clinical needs, based on best evidence
- Comprised of an all-inclusive membership, with core members, patient & family care givers & clinical leadership

Supports and Resources for Clinical Networks

- Each SCN
  - Scientific Director, project management, clinical analytics, case costing, quality improvement, pathway development, knowledge management, health technology assessment
- Embedded research capability and expertise
- Education & skills development for leaders
- Funding including:
  - Seed money for innovation, initiatives, and research; PRIHS; HIIF
  - Remuneration of core members
  - Developing opportunities to retain savings that are realized

BC AHSN
British Columbia
Academic Health Science Network

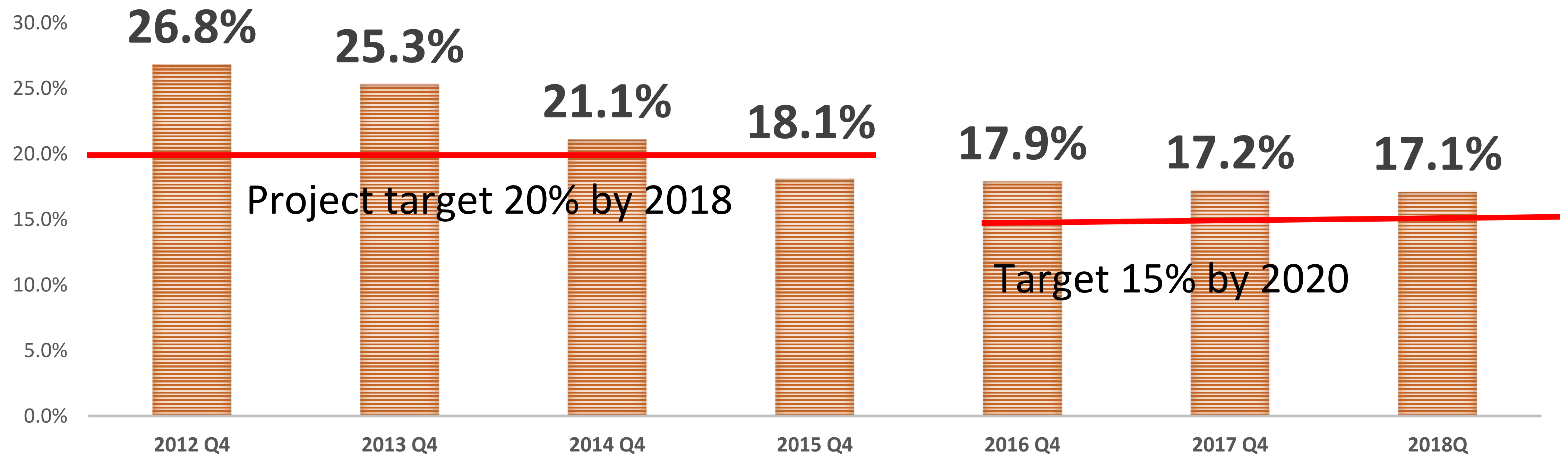
FACULTY OF MEDICINE | UNIVERSITY OF CALGARY

Alberta SCNs Selected Signature Initiatives

- Anti-psychotic reduction in long-term care facilities
- Enhanced Recovery After Surgery – ERAS
- Arthroplasty Pathway

Courtesy of Tracy Wasylak – Senior Provincial Director

Anti-psychotics - QI provincial LTC average
(CIHI data)



Key Early Recovery After Surgery (ERAS) Outcomes: 5-year Summary

(approx.)

11,300 ERAS PATIENTS between 2013 and 2018
9 sites, 4 Zones
8 surgery care pathways
22 ERAS site teams

11,250 Bed Day SAVINGS post ERAS since 2013
~1.2 days Total Length of Stay, n=8000 colorectal
~1.6 days Total Length of Stay, n=1245 gyne/onc
~$10M in net savings over 5 years
~$2.35 per every $1 invested

65% compliance to ERAS CARE PATHWAYS in 2018
~50% increase in ERAS care pathway compliance from pre ERAS

BONE AND JOINT HEALTH
STRATEGIC CLINICAL NETWORK
Keeping Alberta Moving

HIP AND KNEE PROGRAM
year-over-year improvements

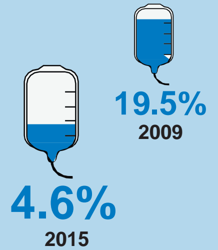
90% Mobilization Day of Surgery in 2015

avg. 4.7 days in hospital 2009

3.8 days in hospital 2015

return home sooner

over **50,000** extra days of hospital bed space since 2009



19.5% 2009

4.6% 2015

cost savings of $5 million

fewer transfusions

Wait times: more work ahead of us

average time from decision to surgery

Wait time	Year
21.3	2009
22	2010
20.9	2011
19.3	2012
21.1	2013
22.3	2014
24.1	2015

wait times are in weeks and reflect system constraints

35% more surgeries performed

9% increase in bed capacity

2010 – 2015

increased hospital capacity

14,000 extra days 2015

11,600 extra days 2014

9,000 extra days 2013

6,500 extra days 2012

5,000 extra days 2011

$52 MILLION value

lower readmission rate

4.7% 2009

3.9% 2015

86% 2010

97% 2014

improved patient education and satisfaction

Contributing factors to success include detailed education for patients and their families; helping them get ready to leave the hospital sooner and reducing post-operative complications.

- 90% getting out of bed the same day as surgery in 2015/16
- prearranged help at home after surgery

Note: All years are referring to fiscal year timeframes. For example, 2009 refers to fiscal year 2009/10.

DOCUMENT DATE – May 2017

Strategic Clinical Networks (SCNs) are creating improvements within focused areas of health care.

To get the most out of our health care system, AHS has developed networks of people who are passionate and knowledgeable about specific areas of health, challenging them to find new and innovative ways of delivering care that will provide better quality, better outcomes and better value for every Albertan.

The Hip and Knee program is a key initiative of the AHS Bone and Joint Health Strategic Clinical Network.

It is a huge success in firstly improving care for patients and also ensuring we get the best value for our health care dollars.

About 10,000 elective hip and knee replacements are performed annually in Alberta.

Alberta Health Services

Implementing Learning Health Systems: Macro-level Realities

- Healthcare systems are complex: ministries, service delivery configurations, professional groups, unions …
- The transformation of primary healthcare has been slow in coming
- The system is tightly linked to economic conditions because of magnitude of expenditure coming from public funding
- Disruption ahead coming from economic conditions in Canada worsening & intensifying value for money questions in healthcare
- E-health has not advanced as it has elsewhere
- Timely access to data remains a problem in many places

Implementing Learning Health Systems: Meso-level Realities

- Competing priorities
- Large expenditures for operations are subject to less attention to value than are the marginal expenses of innovation and K2P
- Harmony and integration is required with quality improvement infrastructure – research, quality improvement & evaluation
- Seamless linkage with clinical operations
- Unrealistic expectations

BC AHSN
British Columbia
Academic Health Science Network

FACULTY OF MEDICINE | UNIVERSITY OF CALGARY

Implementing Learning Health Systems: Micro-level Realities

- Engagement
- Bandwidth
- Incentives
- Identifying and retaining the ‘champions’
- Maintaining broad clinical interests and input while driving towards priority considerations
- Focus and finish – under-promise & over-deliver
- Whose job is it anyway?

A Path Towards Learning Health Systems

1. Innovation & measurement are the foundations of learning health systems: innovation points the way; measurement tells us if we are getting there;
2. The nucleus of the health care system is the patient and public surrounded by responsive primary health care;
3. To achieve high-performance as a health care system, structures and processes must be in place to use best evidence and performance measurement as a means of achieving specified outcomes – innovation engines in the form of clinical networks are well-suited to drive change;
4. The patient voice must be heard and included;

A Path Towards Learning Health Systems

5. Optimal care based on best evidence must be codified into comprehensive clinical care pathways. While these represent the standard of practice on average, care will always need to be individually customized or applied;
6. High performance can not be achieved without comprehensive, longitudinal, person-specific, health micro-data, securely linked to efficient, interoperable electronic record systems - ‘one person, one record’;
7. Strategies and processes for spreading and scaling innovations must be conceptualized and incorporated before the pilots begin;

A Path Towards Learning Health Systems

8. Resource-hungry healthcare systems must find ways to underwrite innovation and change – this can not continue to come from new and additional resources;
9. The incentive and the fuel for innovation must derive from rigorous measurement, capture of waste reduction, and a pay-back model;
10. Learning health systems will need to use a meaningful proportion of their eligible revenues to underwrite targeted investments in research and innovation;
11. The impact of research investments must be explicitly measured and shown to be of sufficient value to justify sustained investment;

The Secret Sauce of Learning Health Systems

12. For innovation and measurement to change policy and practice, top-down must meet bottom-up decision-making and there must be respectful and trusted relationships

BC AHSN
British Columbia
Academic Health Science Network

FACULTY OF MEDICINE | UNIVERSITY OF CALGARY

Returning to Canadian Realities – Critical Pieces in LHSs Which Need Reassembly

- Strategy for Patient-Oriented Research:
  - Support Units, PIHCINs & CD SPORs
- Pan-Canadian Health Organizations – New Agency?
- Canadian Foundation for Health Care Improvement
- Canadian Association for Health Services & Policy Research
- Canadian Health Services & Policy Research Alliance

Critical Pieces in LHSs - New Kids on the Block

- National Data Platform – and provincial components
- Artificial Intelligence – hype, hope and reality
- Patient involvement, engagement and co-design
- Provincial realities in LHSs – clinical networks, & LHS-focused work in AB, BC, NB & Quebec
- British Columbia Academic Health Science Network
- SPOR & PIHCIN 2.0
- McMaster Forum report on assets and gaps
- Learning Health Systems Working Group of CHSPRA

Take-homes from Montreal PIHCIN Meeting – December 2018

- North Star – when all is said and done – patient outcomes and value for money is what we work for – the ends; the NorthStar
- Research and knowledge management are the means that get us there
- We are unlike discovery research. There must be a clear line of sight to improving practices, outcomes & value; not research for research sake
- The difference for us is that it is all about the patients and the system

BC AHSN
British Columbia
Academic Health Science Network

FACULTY OF MEDICINE | UNIVERSITY OF CALGARY

Coming Out of Montreal (2)

- Patient partnership is not scientific knowledge - kitchen table knowledge
- Find ways to tap into it, in layers and according to what patients want to see and can understand
- Patients offer unique knowledge that science can not
- Patients must co-design their care with providers
- They oversee their own health and healthcare – not us! The Strategy for Patient-Oriented Research is <u>With</u> and <u>By</u> patients; not <u>For</u> them and <u>On</u> them

BC AHSN
British Columbia
Academic Health Science Network

FACULTY OF MEDICINE | UNIVERSITY OF CALGARY

An Outsider's view of Saskatchewan's Assets in Health Systems

- Socially cohesive population
- Stable Government & Ministry
- One medical school – distributed
- One service delivery model for the Province - SHA
- Ambitious ideas around Academic Health Science Network
- SPOR support Unit (SCPOR), PIHCI, …
- Primary Care transformation
- Saskatchewan Health Research Foundation

Outsider’s Thoughts on Saskatchewan’s Health System Course of Action

- Assets are many and are aligning
- Huge opportunity to learn from (and teach) others
- Advance research, quality and clinical innovation under the SAHSN recreated
- Build a strong backbone jointly serving quality improvement, performance management and research
- Remember that data is the fuel for the clinical innovation engine – get it right
- Patients must be centrally involved with decision-making and research
- Without clinicians and particularly physicians leading and engaged there will not be sustainable practice change, which on not an argument for doctor-centric structure or process; it’s an argument for team-based care
- Conditions are favourable for province-wide clinical networks to drive clinical innovation at scale
- After long periods of dormancy, there is a danger of over-reacting to PCC needs with too many structures driven by political imperative

BC AHSN
British Columbia
Academic Health Science Network

FACULTY OF MEDICINE | UNIVERSITY OF CALGARY

The British Columbia
Academic Health Science Network

How do we see ourselves?

Enablers & champions of Learning Health Systems in British Columbia that embed & enable education, research & measurement across the continuum of health service delivery to achieve the Quadruple Aim (better health; improved healthcare outcomes; maximum value for money & supported, satisfied providers)

BC SUPPORT Unit | Clinical Trials BC | Research Ethics BC

Contact Us

Tom Noseworthy
tnoseworthy@bcahsn.ca
Tel: 1 236 521 2079

www.bcahsn.ca
info@bcahsn.ca
Facebook.com/bcahsn