

**CBRPE**

Centre for Behavioural Research and  
Program Evaluation

# **Beyond Dissemination and Implementation Research: Integrating Evidence and Action**

**Roy Cameron  
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**2<sup>nd</sup> Annual NIH Conference on the Science of Dissemination and Implementation:  
Building Research Capacity to Bridge the Gap from Science to Service, Bethesda, MD.**



**Canadian Cancer Society** **Société canadienne du cancer**



The Centre for Behavioural Research and Program Evaluation is funded by the Canadian Cancer Society and located at the University of Waterloo.

# Giving due credit

When I use first person it is to take responsibility for what I say today  
Many great day-to-day scientific colleagues, chronologically:

- Allan Best
- Steve Brown
- Steve Manske
- Paul McDonald
- Sharon Campbell
- Chris Lovato
- Geoff Fong
- Barb Riley
- Dave Hammond
- Scott Leatherdale

# Goal for this session

1. Stir reflection
2. Convey an emerging vision of the future

*Not prescriptive: Reflections of someone trying to find his way, as he seeks to help make a difference in a complicated world*

# An embarrassing epiphany

## *Fundamental shift:*

- I realized that I was paying more attention to the literature than to the real world
- It dawned on me that the world was providing data I was ignoring, and I should pay more attention to the environment I was trying to influence, not just so I could better influence it, but so it could influence me and my work.

# Reflecting on the past

Observation: My intervention research findings were not being used

- I asked myself why
- I had assumed that I/we needed to figure out how to disseminate better
- **Alternative hypothesis**: the world did not need, or could not use, what I was producing

Consider the following study...

# A study I thought would make a difference

## Phase 1 - Elementary School Study

### Purpose:

Study the effect of alternative providers (school nurse vs. teacher) and training methods (workshop vs. self-preparation) for a social-influences curriculum-based intervention to prevent smoking.

*Ref: Cameron R, et al. Effectiveness of a Social Influences Smoking Prevention Program as a Function of Provider Type, Training Method, and School Risk. Am J Public Health. 1999;89:1827-1831.*

# Smoking prevention trial: design and methods

- All Grade 6 students in 100 elementary schools in 7 school districts participated
- Schools were classified according to risk (based on grade 8 smoking rates when study participants were in grade 6)
- Schools were randomly assigned to one of 5 conditions. (All 4 combinations of provider by training method, and a 5th “usual” care control condition)
- Collection of annual data on smoking behaviour, knowledge, beliefs, attitudes, disposition, school policies

# Smoking prevention trial: results to end of Gr. 8

- No differences between treatment and control schools for low- or medium-risk schools
- A significant difference between intervention and control conditions in high-risk schools
- No differences between provider types or training methods

# Learnings from my prevention research

- Confirmed social influences programs could work
- Provider type and training did not matter
- Context matters: focus on high risk schools within the total of 15,205 elementary/secondary schools in Canada

# Learnings from the world

1. My findings/programs were not being used (despite significant evidence and effort to move evidence to action)
2. **Social actors** (leaders in policy, programs, advocacy, social mobilization) were developing interventions that worked:
  - Tax policies linked to drops in youth tobacco use
  - Florida Truth Campaign (youth-driven social marketing)
  - School policies/smoking bans
  - Grass roots initiatives: Hampton High in New Brunswick

# Further reflections

- Relevance of “hierarchy of evidence” Cochrane-type reviews to our field of population intervention: interventions driving progress not based on RCT evidence; RCT evidence wasn’t contributing much
- Youth culture evolves fast: can we generalize RCT findings over time?
- Social actors, not researchers, were doing the important “experiments”: “upstream” environmental vs. educational interventions were driving change, not amenable to RCT

# Social actors are critically important

- They have policy levers, resources, and influence required to effect novel, sustainable population level interventions
- It would be smart to work with them in an ongoing, deliberate way to link evidence and action

# Comments from a social actor

Lesson from tobacco control: Social actors often assume you can act without evidence, and that they have a responsibility to do so in some situations:

“Bal laughs when asked about the role of science in guiding policy decisions...where there is no science you have to go and be venturesome—you can’t use the paucity of science as an excuse to do nothing...all the scientists came in behind us and analyzed what we did.”

## Comments from a Social Actor *cont'd*

“Bal is frustrated by colleagues who wait for high-level evidence before acting....Most scientists will say you need a randomized controlled trial level of proof to do a community intervention. That’s horse feathers. We tried twenty-five things—twelve worked and we renewed those. Empirical trial and error is the oldest scientific device and we used it to distinction.”

M. Sweet, R Moynahan, Improving Population Health: The Uses of Systematic Reviews. *Millbank Memorial Fund* (2007)

# What I was hearing from social actors (tobacco)

They operate on different assumptions than scientists:

- Value RCT evidence when relevant, *but*
- Do not expect silver bullet solutions (no one policy or program would result in reduced smoking rates)
- Expect **combined effects** of policies and programs to collectively reduce smoking rates by creating an environment in which people were predisposed, enabled, and reinforced for nonsmoking (e.g. nonsmoking would be fashionable, easy, and save substantial money)
- Want to know about **optimal mixes** of interventions

# What I was hearing from social actors (tobacco)

Many things working together would create an environmental policy, social, saw more potential in policy intervention than in educational intervention, and saw little possibility of “scaling up” educational interventions:

- Educational approaches too resource intensive
- Educational, health systems were at capacity
- Wanted to know about “optimal mix” of interventions (interactions, synergy)

# Integrating evidence and action

New (Jan. 2009) mission of our Centre as a national asset:

- *“A Canadian collaborative enterprise that integrates research and evaluation with policies and practice to accelerate improvements in the health of the population”*
- This positioning/mission was established using a rigorous, evidence informed planning approach, which engaged social actors: “What does the country need?”

# What social actors need from our Centre

- They indicated CBRPE could add most value to the country by helping to “accelerate the generation and use of evidence in developing and implementing effective population health interventions.”
- They recommended “specializing in evaluation science to generate contextually sensitive practice-based evidence and related research methods (given the dearth and critical importance of such evidence).”

A new way of working...

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# Impact goal: Improve the health of the population

The way we plan to work:

- Development of capacity to link research community and social actors to jointly plan, conduct and act on studies
- Development of data systems to enable study of natural experiments in support of relevant studies
- Create “a methodology for an experimenting society”: D. T. Campbell, or metaphorically, the equivalent of a clinical trials network to support the work of social actors

# The opportunity

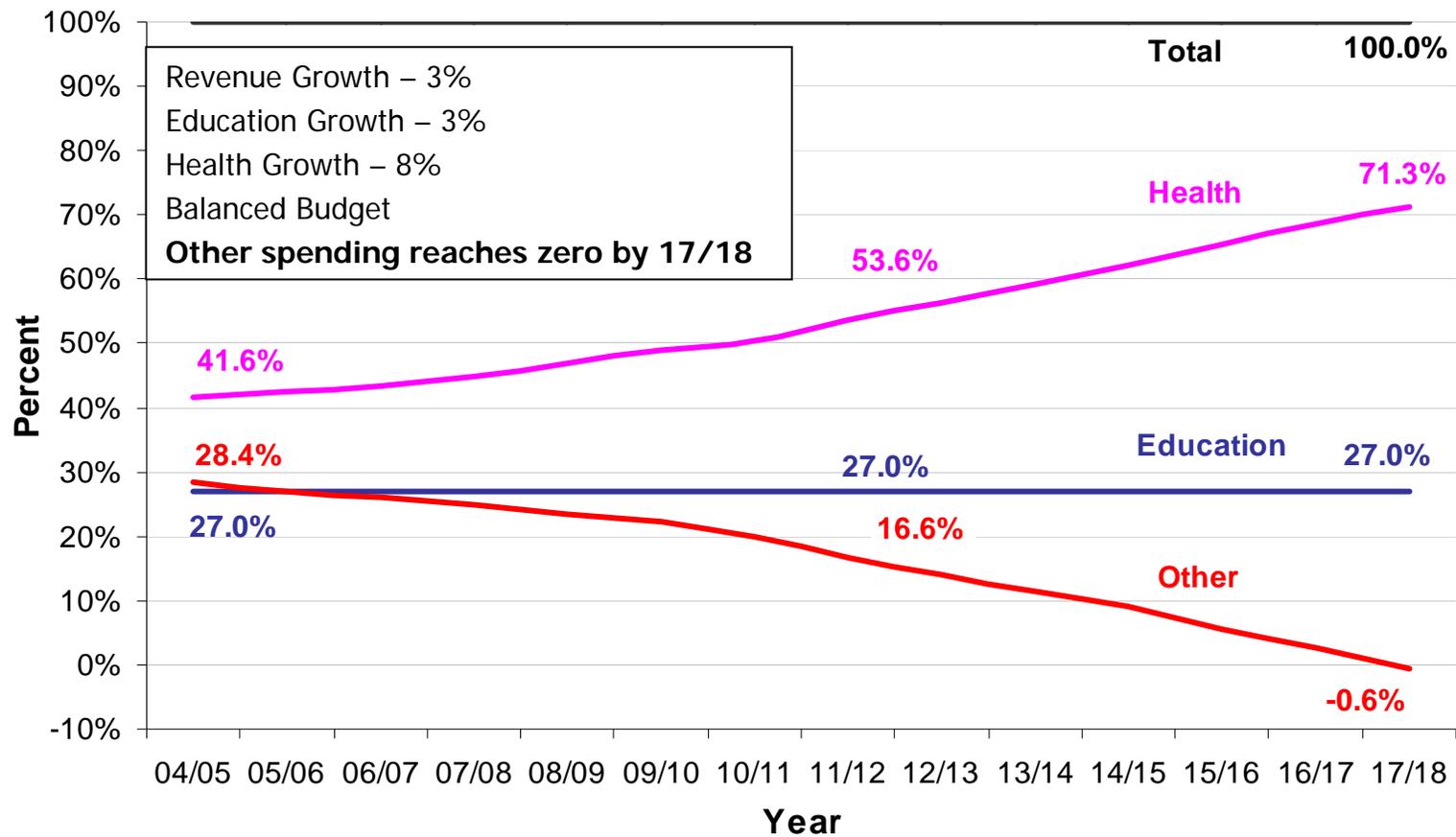
Canada has a health (and health care) crisis: aging population, prevalent chronic disease

The “big diseases” are largely preventable:

- 50% of cancer
- 90% of heart disease
- 91% of Type 2 Diabetes Mellitus

The way we live contributes to the burden of illness. Major opportunity to improve the health of the population

# The threat: British Columbia analysis



# The social actors' response



Conceptual Framework



ActNow BC provides a unifying brand for the strategic cross governmental and cross-sectoral initiative for creating a healthy BC population.  
Facilitates "improved alignment of cross-ministry policy"



# Our impact goal: assumptions

- We have an urgent social problem and a social responsibility to respond as scientists
- We may need to abandon good work and reallocate resources to work with greater potential impact
- We will have to **expand** our research paradigm beyond RCT, pipeline model, as we move to tighter integration of evidence and action

Integrating evidence and action...

# How may this new way of working look?

Step 1: Find a big problem, with an active policy agenda

- You can't influence people who don't exist
- Our Centre's national research network built substantial research capacity: lots of grants and publications, but little impact. Much of the work was in areas where no social actors were working, and there was not discernable impact in these areas

*Note: Social actors define the domain*

# How may this new way of working look?

Step 2a: Work with social actors to identify how science can inform work in progress, with **existing evidence**:

- Principles of behaviour/attitude change incorporated in Canadian tobacco labels, Fong, McDonald via CCS
- Review of evidence linking tobacco promotion to youth initiation influenced judicial decision (Best, Lovato)
- Existing evidence informed CCS print cessation program and software to guide CCS quit line (both by McDonald)

# How may this new way of working look?

Step 2b: Work with social actors to identify what new evidence is required to inform work within five years?

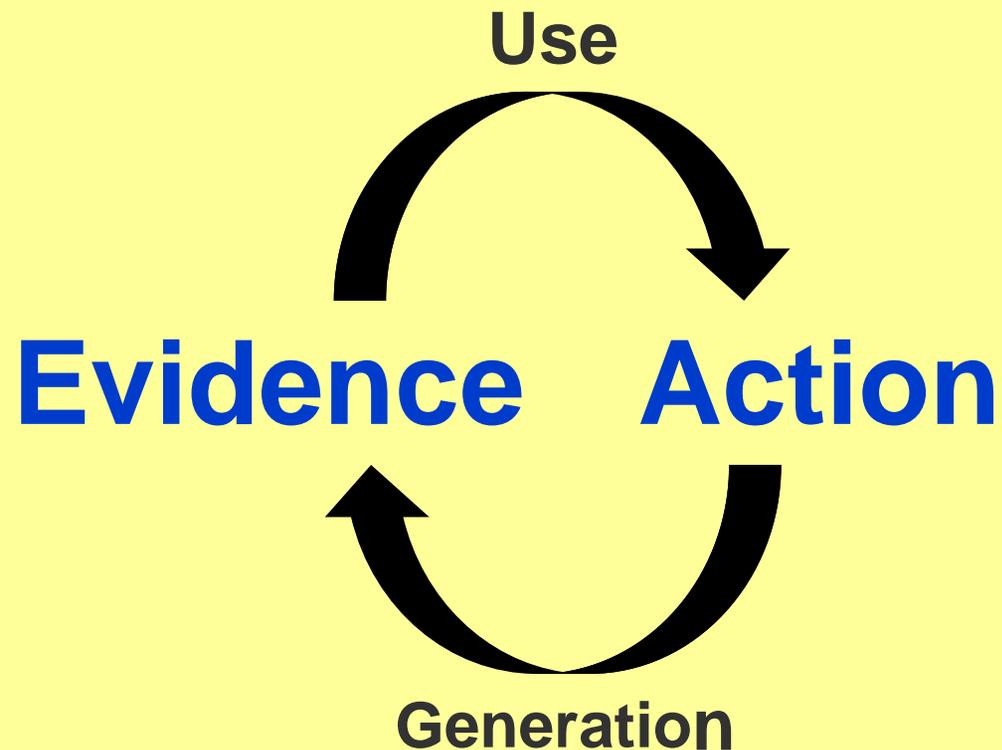
- Set relevant research agenda with social actors to guide and support policy, programs, advocacy
- Co-creation of cycle in which research supports action and action is studied (natural experiment) to generate evidence

# How may this new way of working look?

Sometimes simple evidence leads to legislative action by provoking social concern or social outrage, for instance:

- Exposure of children to ETS in cars
- Use of flavoured tobacco products by youth

# Integrating evidence and action



Generating evidence from action...

# International Tobacco Control Policy Evaluation project

*G. Fong, M. Cummings, R. Borland, G. Hastings et al.*

- To inform the WHO Framework Convention on Tobacco Control, to avert some of the 500 M deaths projected from tobacco use among people now alive worldwide
- Examines impact of national interventions on smokers, using (non black box) quasi-experimental design
- Relevant evidence in real time

[www.ITC@uwaterloo.ca](http://www.ITC@uwaterloo.ca)

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# Quitline Consortium, Minimum Data Set

- North American Consortium of (state/provincial) Quitlines
- Different service models
- Use of evaluation protocols with some standardization enables comparative studies across Quitlines
- Relevant evidence in real time

# School Health Action Planning and Evaluation System (SHAPES)

- IT-based system developed and used by a ‘community of practice’ consisting of researchers, funders, social actors
- Enables collection of data from all students in a school, research/surveillance grade data, reports that go back to the school / community that gives a “health profile” school by school, to support planning, evaluation, surveillance, field research with one stream of data.
- Building toward national database to enable study of impact of all national, provincial, community, and school level interventions (and their interactions) on youth, in “real time”.

[www.shapes.uwaterloo.ca](http://www.shapes.uwaterloo.ca)

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# Implications of commitment to goal of health impact

- Grants and publications are not ends, but means (among others)
- Contracts, technical reports, intervention products, briefing notes, etc. are also valued vehicles for bridging the gap between evidence and action
- Contracts may be quite a direct route to influencing policy and practice: work to inform emerging decisions
- We are questioning traditional scientific metrics: the old metrics may be (perverse) barriers to impact

# Growing momentum: recent development

## Population Health Intervention Research Initiative for Canada:

- Involvement of major policy and research organizations (e.g., Canadian Institutes for Health Research) is a promising sign, though still early days

## Population Intervention:

- Includes programs and policies that operate within or outside of the health sector and have the potential to impact health at the population level (*Population Health Intervention Research Initiative for Canada*)

# Integrating Evidence and Action

- How will we roll up evidence for decision makers?
- Promise table may be a way of the future

# Promise table for population interventions

→ Impact ↓ Effectiveness	Low	Medium	High
Low	Least promising	Less promising	Promising
Medium	Less promising	Promising	Very promising
High	Promising	Very promising	Most promising

*(Swinburn, Gill, Kumanyika, Obesity prevention: a proposed framework for translating evidence into action. Obesity reviews, 2005, 6, 23-33.)*

# Summary

When we are concerned with science to guide **upstream** interventions, mounted by social actors:

- RCT designs are not usually feasible
- The linear pipeline model does not fit: **paradigm shift**
- Might **tyrannical adherence** to RCT evidence, pipeline models, investigator driven research, and publication as the key metric of impact, be an impediment to improving public health?
- **Are we as a research community creating barriers to doing work that is used?**

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