"The Magic Is in the Mix": Lessons From Research Capacity Building in the Canadian Tobacco Control Community, 2000-2010

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ABSTRACT

Global public health issues, including tobacco use, will be addressed most effectively if informed by relevant evidence. Additional capacity is needed to undertake and sustain relevant and rigorous research that will inform and enable learning from interventions. Despite the undisputed importance of research capacity building (RCB), there is little evidence about how to create relevant capacities. RCB for tobacco control in Canada from 2000-2010 offers a rich experience from which to learn. Lessons were derived using structured data collection from seven capacity-building initiatives and an invitational workshop, at which reflections on major contributions and lessons learned were discussed by initiative leads. Ten years of RCB for tobacco control in Canada revealed the importance of a) taking an organic approach to RCB, b) targeting and sustaining investments in a mix of RCB activities, c) vision and collaborative leadership at organizational and initiative levels, d) a focus on building community, and e) studying capacity building. The experience also provided tangible examples of RCB initiatives and how independent investments can be linked to create a coherent approach. Looking ahead, promising directions may include positioning RCB within a broader context of "field building", focusing on practical approaches to sustainability, and enhancing research on RCB.

KEY WORDS: Tobacco; capacity building; research personnel; interdisciplinary communication; training support

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Tobacco use persists as a global public health issue. While smoking prevalence has reduced substantially in many developed countries, global tobacco use is increasing.¹ Tobacco control initiatives, including the international Framework Convention on Tobacco Control (FCTC), need to be informed by best available evidence and evaluated using rigorous research approaches. To that end, an important input is sufficient capacity for research in tobacco control. The same needs and logic apply to other issues in population-based chronic disease prevention such as obesity prevention and alcohol use. Illustrative examples of research capacity-building (RCB) approaches include the Prevention Research Centers in the US,² and the Population Health Intervention Research Initiative for Canada.³

The general goals of RCB are to increase the ability to undertake and sustain relevant and high-quality research. Cooke⁴ puts forward six principles for RCB: to develop skills and confidence, to support linkages and partnerships, to ensure the research is "close to practice", to develop appropriate dissemination, to invest in infrastructure, and to build elements of sustainability and continuity. Similar principles are apparent in a RCB pyramid described by Riley and colleagues (ref. 5, adapted from ref. 6), whose focus was specific to solution-oriented research and to population-based chronic disease prevention. Despite the importance of RCB, evidence for how to create relevant capacities is limited.

RCB for tobacco control in Canada offers a relevant and informative experience from which to learn. Canada is a recognized leader in the early implementation of innovative and comprehensive

tobacco control policies, conducting meaningful tobacco control research⁷ and developing a research training agenda.⁸ Over the past 10 years in Canada, tobacco control RCB received substantial investment, especially with impetus from and through the former Canadian Tobacco Control Research Initiative (CTCRI).⁹ Disbanded in March 2009, the CTCRI was a partnership of research, government and not-for-profit organizations with a mandate to provide strategic leadership in Canada and internationally to catalyze, coordinate and sustain research that has a direct impact on programs and policies aimed at reducing tobacco abuse and nicotine addiction.

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Table 1. Description of Seven Major Tobacco Control RCB Investments in Canada, 2000-2010

Name of Initiative and Lead	Time Period of Investment	Total Investment and Funding Source(s)	Brief Description of RCB Activities
CTCRI Lead: Ms. Cheryl Moyer / Dr. Marie Chia	1997-2009	\$7M (from 2003-08) Canadian Cancer Society, Canadian Institutes of Health Research, and Health Canada	Innovative research grant-funding programs, including grants for policy research, innovative ideas, knowledge synthesis, student research, travel and workshops.
Ontario Tobacco Research Unit (OTRU) Lead: Dr. Roberta Ferrence	1993-present	\$1.4M (2004-10) Funded primarily by the Ontario Ministry of Health Promotion and Sport/Ontario Ministry of Health and Long-Term Care	Studentships for graduate students conducting research in tobacco control, small project grants for new investigators, a graduate course (<i>Tobacco and Health: From Cells to Society</i>) offered across Canada through video-conferencing and webcasting, a web-based course on tobacco control for public health professionals, student mentoring and supervision opportunities, student poster awards given for outstanding poster presentations at relevant conferences, and collaboration with other training programs to identify the needs of trainees and sponsor training and networking events.
CIHR-Strategic Training Program in Tobacco Research (STPTR) Lead: Dr. Roy Cameron	2002-2009	\$2.4M CIHR	The STPTR and TUSP programs shared the goal of funding graduate students and fellows through stipends and transdisciplinary training opportunities with a strong emphasis on linking research, policy, and practice. STPTR initiated an annual meeting in 2002 and this evolved into a large annual event for trainees, mentors, and decision-makers that was co-sponsored by the capacity-building initiatives described in this section. The purpose of the annual meeting was to build a tobacco control community spanning research, policy and practice.
CIHR-Strategic Training Program in Tobacco Use in Special Populations (TUSP) Lead: Dr. Peter Selby	2003-2008	\$1.4M CIHR	
Interdisciplinary Capacity Enhancement (ICE) program – Pan-Canadian Resource Network for Tobacco Control Research, Policy, and Practice Lead: Dr. Paul McDonald	2004-2010	\$1.5M CIHR	Focused on building research capacity to produce relevant, rigorous and timely evidence to inform tobacco control policies and programs. Activities were primarily targeted to geographic areas with limited research capacity, and included: seed grants, summer learning forums, a population health data repository to enable access to research data, a skills enhancement learning opportunities program, a newsletter and special project grants.
ICE program – Strengthening the Links Between Research, Practice, and Public Policy to Reduce the Burden of Tobacco Lead: Dr. Jennifer O’Loughlin	2004-2010	\$1.5M CIHR	Facilitated two-way knowledge exchange to foster the development of research that reflects practitioner needs, and translation of research results into relevant preventive and clinical practice and policy. The project activities focused on team building, mentoring and knowledge translation to increase research capacity and involved researchers and practitioners, students and trainers, and the Institut national de santé publique du Québec (INSPQ).
ICE program – Nicotine Addiction: Behavioural and Brain Mechanisms from Rodents to Humans Lead: Dr. Paul Clarke	2004-2009	\$1.5M CIHR	Focused on training graduate students and postdoctoral fellows to undertake lab-based research with an aim to advance the basic science underlying nicotine/tobacco addiction. The project activities included five interconnected research initiatives, with a primary focus on the development of novel methods for studying the reinforcing effects of nicotine.

On January 22-23, 2009, CTCRI facilitated an invitational workshop as a systematic process to discern lessons from RCB initiatives in tobacco control, with a goal of informing future RCB efforts. The process involved advance data collection and on-site discussion/analysis from 25 leaders and partners of key RCB initiatives, representatives from the Canadian Institutes of Health Research, the Lung Association, and the (former) National Cancer Institute of Canada (now the Canadian Cancer Society Research Institute), the Canadian Council for Tobacco Control, and the Principal Investigators and related staff leads from each of the seven tobacco control RCB initiatives described in Table 1.

The description of initiatives and lessons that follow are informed by workshop proceedings,⁹ and further synthesis and specification by the authors, with a focus on linking the experience with relevant literature and the Canadian context for tobacco control and RCB.

Tobacco control research capacity-building initiatives in Canada: 2000-2010

Table 1 describes seven major tobacco control RCB initiatives in Canada from 2000 to 2010. All were intended to build capacity for policy-/practice-relevant tobacco control research (from biomedical to population studies) and six were national in scope.

The seven RCB initiatives were funded independently, however, many individuals and organizations made the decision to collaborate to reduce duplication and maximize reach and impact. For example, an Annual Symposium brought together trainees and mentors from all of the initiatives, and a graduate course *Tobacco and Health: From Cells to Society* was a common foundational training resource to which trainees were referred. Further, many common approaches were used to build RCB across the initiatives, such as seed grants to researchers and awards/stipends for trainees and/or junior researchers.

Evaluations varied across the initiatives and captured outputs and short-term data collections based primarily on requirements from the respective funding agencies. Outcome evaluations were limited.

Lessons learned

Based on the Canadian experience described in this paper, we cannot offer definitive guidelines for RCB. Evaluation data were extremely limited, and few of the RCB activities have been sustained in their original form, although cuts, shifts in responsibility in tobacco control spending, and a reduced focus on tobacco as a single issue may explain limited continuation of RCB initiatives following initial funding periods. Five main lessons are described.

1. Take an Organic Approach to RCB

What emerged from the documentation and especially the workshop⁹ was a narrative that more closely resembles social change; an organic process fueled by a dynamic interplay of people, events and circumstance.¹⁰

Consistent with this organic process, the initiatives described in this paper were not started as a deliberately complementary set of RCB investments for tobacco control. There was an evolution over time to be more intentional in creating synergy and minimizing duplication across initiatives. This evolution was facilitated by a history of working relationships among the initiative leads; shared overarching goals for initiatives; and a commitment to investing in joint RCB activities to minimize duplication.

A social change process may optimize commitment from individuals and organizations, and implementation. Sustainability, however, may require applying a social change process within an intentional, long-term plan for RCB with goals that are aligned with major policy and practice needs.¹¹

2. Target and Sustain Investments in a Mix of RCB Activities

CTCRI and CIHR provided complementary funding specific to RCB in tobacco control. Notably unique at the time was multi-year funding opportunities that were large enough to attract leading researchers in tobacco control, and had sufficient flexibility to stimulate creative approaches to RCB (e.g., Interdisciplinary Capacity Enhancement or “ICE” grants, and Strategic Training Initiative in Health Research or “STIHR” grants). Across all RCB investments, a continuum of funding opportunities supported relevant and collaborative projects by researchers through the “life course” of their careers from students to principal investigators. This continuum of support was accomplished by a mix of RCB activities, including incentives for trainees and established researchers, small project and seed grants, a graduate course, and an annual symposium.

Although the initiatives as a whole were not evaluated systematically, they contributed to enhancements in prevention research in tobacco control, as documented by the Canadian Cancer Research Alliance.¹² The RCB initiatives also closely resemble what the Robert Wood Johnson Foundation refers to as “field building”, with encouraging results in the area of active living research.¹³ Field building generally refers to the development of a critical mass of effort, energy and capacity to achieve desired outcomes (e.g., to offset forces that promote tobacco use, physical inactivity, excess weight). Moreover, a similar mix of RCB activities has been applied in a next generation of RCB initiatives, such as those offered by

The Institute for Global Tobacco Control in the US,¹⁴ and a pan-Canadian strategic training initiative in population intervention for chronic disease prevention (see <http://www.propel.uwaterloo.ca/index.cfm?section=29&page=417>).

3. Support a Vision and Collaborative Leadership at Organizational and Initiative Levels

Vision and collaborative leadership were essential to advance RCB and they came in different forms. For example, early and visionary leadership was provided by the Canadian Cancer Society and partner organizations (Health Canada, CIHR, The Lung Association) through their joint funding partnership in the CTCRI and also through direct involvement in many of the initiatives.

Vision and leadership also came from the initiative leads. It was critical to have senior researchers and tobacco control champions as leads for the RCB initiatives, all of whom shared a strong commitment to the field, understood the interdependence of their efforts, and had some history of collaboration and trust. These are well-known ingredients for strong working relationships and effective collective action.¹⁵

Importantly, it was not necessary for all to share a common vision. It was necessary, however, to have a small core of people who could co-create a vision and work within their mandates and networks to build commitment to, and work towards realizing it. The idea of a small strategic team providing leadership is consistent with experiences elsewhere, including the Robert Wood Johnson Foundation.¹³

4. Build Community

Community building emerged as one of the essential ingredients (as a process and an outcome) of tobacco control RCB in Canada. Consistent with trends internationally,¹¹ the community was multidisciplinary, including the full spectrum from basic to population health scientists, and included leaders in tobacco control policy and practice. The graduate course “*Tobacco and Health: From Cells to Society*”, offered by the Ontario Tobacco Research Unit, supported community building by providing foundational training in the full scope of tobacco control. The main contributor to community building was an annual symposium, which grew to be a magnet event for bringing together leading tobacco control investigators, their trainees and relevant decision-makers. The face-to-face interactions, which were enabled through invitation and travel funds, were considered critical success factors to facilitate linkages among researchers, trainees, policy-makers, tobacco control advocates, and research funders.

5. Build in Initiative and Cross-initiative Evaluations

Evaluation data are limited from the RCB initiatives, especially to evaluate contributions from the mix of investments over the 10-year time period. This is not surprising given limited resources for this purpose, and the early stage of development of research on RCB. While some conceptual frameworks and indicators of RCB exist,^{4,5} RCB is not a robust focus of research and little evidence exists for effective approaches.

The shared experiences in RCB in Canadian tobacco control raise many questions that can form the basis of a RCB research agenda. For example: How do you know when sufficient capacity has been built? Does existing capacity dissipate without sustained funding or

can initial catalytic investments be leveraged to successfully access other funding sources? Do shared research agendas need to be set and then revitalized on a regular basis? How can well-positioned champions be identified who can legitimize, advance and sustain RCB for tobacco control and other issue areas?

CONCLUSION

Ten years of RCB for tobacco control in Canada reinforces RCB principles and experiences reported by others.⁴ It also provides examples of how to translate concepts into practical strategies and how independent investments can be linked to create a coherent approach. Looking ahead, promising directions may include positioning RCB within a broader context of “field building”, focusing on practical approaches to sustainability, and enhancing research on RCB.

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RÉSUMÉ

Les interventions les plus efficaces contre les problèmes de santé publique mondiaux, dont le tabagisme, s’appuient sur des preuves pertinentes. Or, il faut des capacités supplémentaires pour entreprendre et soutenir des études rigoureuses qui éclairent les interventions et qui permettent d’en tirer des leçons. Personne ne doute de l’importance du renforcement de la capacité de recherche (RCR), mais il existe peu de données sur la manière de créer les capacités appropriées. Le RCR sur la lutte antitabac au Canada de 2000 à 2010 est une expérience riche d’enseignements à cet égard. Nous en avons tiré des leçons en recueillant des données structurées à partir de sept initiatives de renforcement des capacités et en donnant un atelier sur invitation, durant lequel les dirigeants des initiatives ont discuté des apports clés et des leçons apprises. Dix ans de RCR sur la lutte antitabac au Canada ont révélé l’importance :

- a) d’adopter une approche organique à l’égard du RCR, b) d’investir de façon ciblée et soutenue dans un mélange d’activités de RCR, c) d’avoir une vision et d’exercer un leadership concertés à l’échelle organisationnelle et à l’échelle des initiatives, d) de mettre l’accent sur le renforcement des communautés et e) d’étudier le renforcement des capacités. L’expérience a aussi fourni des exemples concrets d’initiatives de RCR et des moyens de relier des investissements indépendants pour créer une démarche cohérente. Pour l’avenir, les orientations prometteuses incluent le positionnement du RCR dans le contexte plus large de la « constitution de champs de recherche », l’accent sur les démarches pratiques de durabilité, et l’amélioration de la recherche sur le RCR.

MOTS CLÉS : tabac; renforcement des capacités; personnel de recherche; communication interdisciplinaire; soutien à la formation