

Happenings

Developing a Program of Research for an Applied Public Health Chair in Public Health Education and Population Intervention Research

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In 2008 the Canadian Institutes of Health Research (CIHR) Institute of Population and Public Health (IPPH), in partnership with the Public Health Agency of Canada and the Centre de Recherche en Prévention de l'Obésité, announced the funding of 15 Applied Public Health Research Chairs across Canada. This initiative has five objectives: to support nationally relevant and innovative public/population health intervention research and knowledge translation; to foster strong linkages between the research chairs and the public health system; to support the development of graduate public health programs; and to educate and mentor current and future public health researchers, practitioners, and policy-makers.

Among the Chairs, many disciplines are represented. I was fortunate enough to be one of two nurses in Canada to receive this award. Because public health (PH) work is inherently interdisciplinary, the work of the Chairs is also interdisciplinary; however, PH nurses represent the largest segment of the PH workforce, so it is critical that a nursing perspective be brought to CIHR's collective capacity-building effort in PH. I feel privileged to be able to contribute to this through my mentoring of nursing graduate students and by participating in the development of a graduate diploma in Public Health Nursing. This will be a stream in the Master of Public Health program at the University of Victoria's new School of Public Health and Social Policy, which will function in close collaboration with the School of Nursing.

Public Health Systems Renewal

The Chair award also provides an opportunity to help foster the renewal of the PH system in Canada. Several reports have raised concerns that the

PH infrastructure in Canada has been eroded and cannot respond effectively to PH emergencies or address changing PH issues in the population (e.g., Canadian Institutes of Health Research, 2003; Krever Commission, 1997; National Advisory Committee on SARS and Public Health, 2003). Recommendations include strengthening infrastructures, supporting effective PH service delivery, collaborating beyond PH with the health-care system at large and with other sectors, and defining essential functions of PH.

Framework for Core Functions in Public Health

The Framework for Core Functions in Public Health is a component of the plan to strengthen PH in British Columbia (Ministry of Health Services, Population Health and Wellness, 2005). This framework identifies the PH services and supports that health authorities are expected to provide. These are as follows. *Twenty-one core public health programs* in four broad areas: (a) health improvement (e.g., reproductive health, healthy development, healthy communities, healthy living, mental health promotion, food security); (b) disease, injury, and disability prevention (e.g., chronic disease; unintentional injury; violence, abuse, and neglect; problematic substance use and mental health problems; communicable diseases; dental disease; disability; adverse effects of the health system); (c) environmental health (e.g., water and air quality, food safety, community sanitation); and (d) health emergency management (e.g., prevention and mitigation, preparedness, response and recovery). *Public Health Strategies* that will be used to implement core programs and work with communities, including: health promotion, health protection, preventive interventions, and health assessment/disease surveillance. *Lenses* — a population lens and an equity lens are applied to all elements of the framework to address health inequities and ensure that the health needs of particular groups and the overall population are met. *System Capacity Requirements* comprise those supportive infrastructure elements that are needed to deliver core programs, including competent and well-trained staff, public health information systems, and research to support innovation and inform policy and practice improvement.

The Core Public Health Functions Research Initiative

The launch of this framework created an opportunity to develop a research program to study its implementation and impact in the province. Dr. Trevor Hancock, a well-known health promotion leader, practitioner, and advocate, was the chief architect of this framework in the BC Ministry of Health Services. We joined forces to establish and co-lead the Core Public Health Functions Research Initiative (CPHFRI — pro-

nounced see-free; <http://web.uvic.ca/~cphfri/>). This initiative makes up one of three streams of research in my Applied Public Health Chair. The other two streams, not discussed here, are adolescent health promotion (promotion of health literacy and sexual health and prevention of smoking and substance misuse) and conceptualizing advanced practice in public health nursing.

CPHFRI's Goals

To develop our research program, we received two infrastructure grants from the Michael Smith Foundation for Health Research, which allowed us to define a research agenda, develop cohesion as a team to collaborate on the research, and leverage significant national funding. CPHFRI brings together a multidisciplinary team of academics with strong nursing leadership and national, provincial, and local PH decision-makers and practitioners. Our specific goals, grounded in an overarching complex adaptive systems perspective, are to: (a) advance the field of PH services research in Canada by implementing a consensus-based research agenda and through the application and development of innovative research methodologies for studying complex systems; (b) broadly inform PH systems renewal in Canada, which in turn will contribute to improving population health and reducing health inequities; (c) contribute to better integration and linking of public/population health services and health services more broadly, particularly primary care; and (d) train expert public/population health researchers. The CPHFRI program incorporates a focus on knowledge translation, health equity, partnerships, and methodological innovation.

In each of our projects, we have built in training opportunities for graduate students, including three doctoral fellowships and one postdoctoral fellowship, as well as several research assistantships to build capacity for PH researchers in nursing and other disciplines. The Chair funding supports two additional doctoral fellowships. Inherent in CPHFRI's goals is the intent to increase the capacity of decision-makers to use evidence (broadly defined) to improve PH policy and practice.

Progress to Date

CPHFRI has now completed three studies: (1) an exploration of the evidence-to-practice processes and the application of the equity lens in two core PH programs (food safety and prevention of unintentional injuries) across three health authorities (CIHR Knowledge to Action grant); (2) a study, led by Dr. Joan Wharf Higgins at the University of Victoria, to examine the influence of research evidence on decision-making in the development and implementation of the Healthy Living Core Program in two BC health authorities (CIHR Intervention

Research grant); and (3) a meta-narrative review led by Drs. Craig Mitton and Allan Best at the University of British Columbia to identify and synthesize existing knowledge-to-action conceptual models in a range of contexts to guide knowledge translation that will influence policy and practice (CIHR Knowledge Synthesis grant).

In addition to these three studies, we received a CIHR Meeting, Planning and Dissemination grant to hold a research symposium, *Methods for Studying Complex Public/Population Health Interventions*, in 2009 for team members, students, and others. Drawing on the premise put forward by the Population Health Intervention Research Initiative for Canada (PHIRIC — see <http://www.cihr-irsc.gc.ca/e/38731.html>) that public/population health interventions are, or operate within, complex adaptive systems, we explored the methodological implications of a complexity perspective in our symposium and presented a variety of research methods and techniques that we believe are congruent with a complexity perspective.

Renewal of Public Health Systems

Our current flagship project, the 5-year research program (CIHR Emerging Team Grant) *The Renewal of Public Health Systems (RePHS* — pronounced refs) has allowed us to expand our network of researchers and practitioners to Ontario. In British Columbia the leads are Marjorie MacDonald and Bernadette Pauly (University of Victoria) and Trevor Hancock (BC Ministry of Health Services), while in Ontario the leads are Ruta Valaitis (McMaster University) and Heather Manson (Ontario Agency for Health Promotion and Protection). The purpose of RePHS is to explore the implementation and impact of the Core Public Health Functions framework in British Columbia and the Public Health Standards in Ontario, and the significant contextual influences on the delivery of prevention programs for chronic diseases and sexually transmitted infections.

The near simultaneous roll-out of these policy-level PH interventions in two provinces provides an unparalleled opportunity to engage in a natural experiment of sorts to compare the process and outcomes in two jurisdictions with very different structures and governance mechanisms. Using a multi-site case-study design, we will be able to conduct within-province (among six health authorities in British Columbia and six health units in Ontario) and between-province comparisons. Within the overarching research questions related to implementation and impact, we are also exploring three cross-cutting themes: (1) the implications for PH human resources planning around workforce competency, skill development, and basic and continuing education; (2) the extent and impact of relationships between PH and primary care sectors; and (3) the extent to

which an equity lens is integrated into the core programs/standards and the impact of this. We are currently completing the second year of this initiative.

A Public Health Services Research Agenda

The final project, currently underway within CPHFRI, is an initiative to develop a pan-Canadian PH services research (PHSR) agenda (CIHR Meeting, Planning and Dissemination grant). PHSR is an emerging subset of health services research. Funding for health services research is directed primarily at the health-care system at large, often not at PH services per se. Thus there is a knowledge gap with respect to public health services. At the 2009 Canadian Public Health Association Conference, we held a workshop to present the idea of developing a PHSR agenda for Canada. The session was very well attended and participants from across the country confirmed this need and expressed interest in participating in the process. To that end, we are holding an invitational Think Tank in Montreal in May 2011 to develop a PHSR agenda for Canada and to launch a pan-Canadian network of PHSR researchers.

Conclusions

Public health nursing has an important contribution to make to the development of knowledge about and the improvement of practice in public health services. Nursing leadership, within a strong interdisciplinary context, is evident in a program of research on public health systems renewal and core public health services under the CPHFRI umbrella. Embedded in multiple studies under my Applied Public Health Chair are research questions of great importance to explicating the day-to-day practice of PH nurses (and other practitioners) and their contributions to improving the health of the population.

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