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# In for the Long Haul: Knowledge Translation Between Academic and Nonprofit Organizations

**S. Mikael Jansson,[1] Cecilia Benoit,[2] Lauren Casey,[3]
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## Abstract

Although scientists are continually refining existing knowledge and producing new evidence to improve health care and health care delivery, far too little scientific output finds its way into the tool kits of practitioners. Likewise, the questions that clinicians would like to be answered all too rarely get taken up by researchers. In this article we focus on knowledge translation challenges accompanying a longitudinal research program with nonprofit organizations providing direct and indirect health and social services to disadvantaged groups in one region of Canada. Three essential factors influencing authentic and reciprocal knowledge transfer and utilization between nonprofit service providers and researchers are discussed: strong institutional partnerships, the use of skilled knowledge brokers, and the meaningful involvement of frontline personnel.

## Keywords

community partnerships; knowledge construction; knowledge transfer; knowledge, utilization; vulnerable populations

It is commonly acknowledged that there is a significant lag between the production of evidence-based knowledge and health care practice. Although scientists are continually refining existing knowledge and producing new evidence to improve health care and health care delivery, far too little scientific output finds its way into the tool kits of practitioners (Estabrooks, Thompson, Lovely, & Hofmeyer, 2006; Scott, Estabrooks, Allen, & Pollock, 2008). A similar problem occurs in the opposite direction: questions that clinicians would like to be answered all too rarely get translated into research.

Efforts are now underway to find more effective strategies for getting scientific results implemented in care practices, and clinicians' questions into research projects. The assortment of terms currently in vogue—including knowledge transfer, diffusion, dissemination, interaction, utilization, mobilization, and exchange—is an indication of the increased attention to these problems. The term *knowledge translation* (KT) has recently gained attention because it highlights the iterative, reciprocal exchange that takes place between researchers and research users when both are actively engaged in producing and applying knowledge (Choi, 2005). KT underscores the notion that different communities have different knowledge

cultures, and communication between them is neither assured nor automatic (Estabrooks et al., 2006).

Although widespread adoption of the concept of KT is an important development, there nevertheless remains a paucity of empirical evidence as to how to "bridge the gap between what is known and what gets done in practice" (Pablos-Mendez & Shademani, 2006, p. 81). Even health funding agencies are uncertain about the most effective KT strategies for evidence-based knowledge taken up by various stakeholders (Tetroe et al., 2008). This article offers some KT lessons learned from close partnerships with small, community-based, nonprofit organizations (NPOs) participating in a research program studying the

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health and well-being of vulnerable populations. The individuals in these populations are vulnerable because many have diminished access to societal resources—such as income, social support, education, and social prestige—and have fewer options from which to choose to achieve better health and well-being compared to other Canadians.

Collaboration between researchers and practitioners in the nonprofit sector is particularly illuminating because the challenges faced by NPOs—including limited resources and high demands on the frontline personnel—place them at a genuine disadvantage in comparison to large public sector organizations with dedicated personnel available to participate in discussions regarding how to implement research findings that pertain to policy and practice. Using NPOs as a case study is also informative because they (the NPOs) have the advantage of being able to implement change relatively quickly because of fewer formal bureaucratic rules and closer relationships between managers/administrators and frontline service providers.

Reflecting back on some core research partnerships—some of which have been in place for more than a decade, and with many lessons learned along the way—we have found three essential factors influencing authentic two-way knowledge transfer and utilization between NPOs and researchers: strong, institutional, multilevel partnerships; the use of skilled knowledge brokers; and the meaningful involvement of frontline personnel. A detailed examination of these factors in the context of our particular research program is provided below, but we first offer a brief review of the relevant KT literature.

## Relevant Literature

### The Snail's Pace of KT

It is now commonly accepted that findings from academic research need to be made more accessible to practitioners in the formal health care system. It is also commonly agreed that research quality and relevance is enhanced by having practitioners inform the research process by asking for further information and even posing new questions for investigation (Davis et al., 2003; Lavis, Posada, Haine, & Osei, 2004; Pablos-Mendez & Shademani, 2006). Despite this shared understanding in the research community, most researchers would agree with Ian Graham and colleagues (2006, p. 13) that the utilization of research evidence by different stakeholder groups remains "slow and haphazard." One estimation is that it takes approximately 17 years to turn 14% of funded research into benefits to patient care (Clancy, 2006). Although the link between smoking and lung cancer was identified in 1957, for example, it was not until the early

1990s that significant changes to policy at the legislative level were accomplished (Lomas, 1997).

Martens and Roos (2005, p. 73) compare the slow process of information sharing between academic researchers and health professionals to "tectonic plates . . . moving slowly past each other." This lack of synergy results from an assortment of problems, including broken communication, poor understanding about the generation of research results, and misconceptions about how organizational decisions are made. Other researchers have found that academic researchers and individuals in health service organizations work largely independently of each other, with few opportunities for communication between the two, and a discernible disconnection between how each sees the other's work (Norman & Huerta, 2006).

Another barrier to research utilization by members of the nonacademic community involves the structural and symbolic constraints on the circulation, popularization, and subsequent enactment of new knowledge, even when there is adequate communication between researchers, policy makers, and practitioners. Although academic researchers occupy a privileged and influential social position as expert knowledge creators, their research findings might nevertheless be ignored if they are not circulated in a user-friendly and culturally sensitive manner, or if the target audience is not ready to accept the research findings. The same goes for retrieving questions that arise in the field/everyday practice and translating them into research questions for scientific investigation. Questions arising from the community that do not lend themselves to current research trends and funding opportunities are unlikely to make it into research proposals and methodologies, or to be funded even if they are proposed.

To enhance sharing and mutual learning among researchers, policy makers, and practitioners, funding and governance bodies in the health sector have begun to place greater emphasis on the complexity of community–academic linkages, and to develop tools to ensure that evidence-based decision making is more than happenstance (Denner, Cooper, Lopez, & Dunbar, 1999; Small, 1996). Two important factors providing impetus in this context are that funders now frequently require academic teams to include representatives from the nonacademic community, and that community-based service initiatives include a research or evaluation component. This has resulted in a renewed interest within the health research community in understanding when, how, and why research findings are used outside the academy. Written largely from the perspective of academic members of such teams, an expanding literature has begun to document the achievements and challenges of such partnerships.

Many have found that collaborative research with specific KT aims is often lengthier and more resource-intensive

than traditional research models (Le Gris et al., 2000). Given the sometimes snail's pace of research, collaborators might have difficulty sustaining involvement over the course of a research project as key contact persons leave or change positions and organizational priorities shift. An overall lack of resources and differing perspectives might mean that collaborations remain superficial, and therefore result in limited knowledge translation and uptake (Ebata, 1996). Institutional processes and priorities are additional barriers, as well as university ethical guidelines that are seldom designed with community engagement in mind. Similarly, new knowledge might not be utilized if it cannot be readily applied to policy and practice imperatives, or if it is released in the context of heated or incompatible political contexts (Boutiler, Badgley, Poland, & Tobin, 2001). Research findings produced by social scientists concerning the social determinants of health often address broad structural and cultural factors. Practitioners, understandably, have difficulty applying such general, upstream knowledge to the confines of their day-to-day service environments, and specialized mandates that tend to focus on interventions to control downstream risk behaviors. Given the above barriers, it is not surprising that researchers and policy and practice partners often become discouraged with the research partnership process and the meager evidence-based knowledge exchanged, realizing that the foreseeable rewards of such collaborations often do not match the effort expended.

## Strategies to Pick Up the KT Pace

Fortunately, the existing literature takes us a long way in preparing for the difficulties noted above by offering a parallel set of KT best practices and strategies. To begin, researchers recommend synthesizing existing high-quality research for policy and practice collaborators as an initial educational activity for the team as well as preparation for subsequent research activities (Davis et al., 2003). The KT literature additionally recommends that research teams engage in an exercise of critically appraising different kinds of available health data, including evidence emerging from research results, clinical experience, and information provided by patients (Rycroft-Malone et al., 2002). Other recommendations include involving collaborators throughout the research cycle to improve their investment in the research and help translate the research into language that will be understood, considered relevant, and regarded as a decision-making resource by policy makers and practitioners (Martens & Roos, 2005).

Researchers, policy makers, and practice collaborators have likewise come to recognize that knowledge translation is a two-way process, ideally between equal partners

(Pablos-Mendez & Shademani, 2006). The concept of equal and engaged partners is also invoked in recommendations to invest in team-building strategies aimed at learning about different organizational needs and barriers, developing a shared language and culture, and identifying common priorities (Bowen & Martens, 2005). Furthermore, as noted above, research knowledge and findings must be presented in ways that are useful, meaningful, and timely to the user within a context of trust and established rapport between participating parties who have had time to engage in long-term, in-person relationship building (Lavis et al., 2005). Providing adequate and regular opportunities for face-to-face conversations about the research will influence the openness and longevity of the relationship (Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004). One of the most important outcomes of such conversations is the development of a common language to communicate research objectives and findings, which is, alongside uncovering shared research interests, among the key preconditions of KT.

Yet, resources are typically unevenly distributed among research partners with respect to time, administrative support, and finances. Moreover, some research partners might be reluctant to state their opinions and only minimally participate in the process, particularly when other members of the team hold knowledge that is deemed to be "privileged" by the dominant culture, or are more familiar with the process of methodological and theoretical debate in research settings. Addressing these differing levels of power and variation in material and symbolic resources is especially important when working with the nonprofit sector serving vulnerable populations. This is because, among other things, these groups and their advocates often feel overresearched and unheard, and are wary of "tokenism" when collaborating with researchers and policy makers. As Bowen and Martens (2005, p. 207) noted following a 5-year research collaboration, community partners were often silenced in meetings led by academic researchers, in part because they lacked a common vocabulary for talking about shared interests; it took a long time—more than a year—for community members to "grow into" the project and "build trust, develop a shared culture, identify common priorities, and undertake collaborative research" (Bowen & Martens, 2005, p. 207). It can no doubt take a similar period of time for academic partners to become sufficiently acquainted with the interests, work culture, and organizational imperatives of their policy and practitioner collaborators. Such observations underscore the importance of relationship building as a precursor to and pivotal building block for eventual KT. Although academic partners might be inclined to develop research questions that respond to trends, gaps, and debates in the academic literature, if KT

is the end goal, they must remember that policy and practice personnel are unlikely to be interested in the answers to research questions that they do not have a part in developing.

Utilizing knowledge brokers, with the primary task of linking researchers and community agencies with individual policy and practice experts, has also been noted as a core KT strategy (Lomas, 2007). Knowledge brokers occupy a unique, in-between location: they are trusted by all parties and are familiar with the disparate sectors and priorities that might be brought together within a research team. These assets make it possible for knowledge brokers to better understand the goals of various collaborating groups and their respective professional cultures, and to use this information to forge new partnerships and promote the use of research-based evidence in decision making.

Based on our experience conducting research in partnership with a select number of NPOs, the remainder of this article focuses on knowledge translation strategies in the context of research on vulnerable populations that are both hidden and highly stigmatized. Our reflections are based on the decade-long process of conducting three separate research projects on vulnerable populations residing in the Victoria Census Metropolitan Area (CMA). In the absence of objective measures of knowledge utilization resulting from knowledge translation, we acknowledge that our strongest indicators of success are the length of time of our partnerships, and the relative success of the NPOs and academic partners as measured by changing organizational size and scholarly publications. Nevertheless, collectively we firmly believe that we have developed successful knowledge translation strategies even in the absence of carefully constructed outcome measures of knowledge utilization. We are also confident that engagement in these partnerships has changed all partners' previously held views of the target populations, the research endeavor, and the policy and practice implementation process. This change in mindset has established a foundation for further knowledge translation in the years to come. Below, we highlight what we believe to be the three most crucial elements of KT success in our experience: (a) strong interorganizational partnerships; (b) use of knowledge brokers; and (c) authentic involvement of frontline personnel. We explore each in turn below, but first describe the three interrelated projects to provide needed background.

## The Studies

The Dispelling Myths Project involved close collaboration with an NPO—the Prostitutes Empowerment, Education and Resource Society (PEERS). This frontline service organization is largely staffed by persons who formerly worked in the sex industry, and prides itself on its strong grassroots, peer-empowerment ethos. PEERS offers outreach services, public education, counseling, and job-skills training to support adult women and men currently working in, and also those wishing to leave, the sex industry, and has maintained a leadership role in educating the community about the sexual exploitation of youth.

PEERS opened its doors in 1995 and that year provided services to 98 individuals; by 1999, the number had risen five-fold, to 500, and the caseload has continued to grow at the same rate in subsequent years. With an expanding service need, and because of the paucity of reliable information on the working conditions and health status of persons working in the sex industry, especially those in off-street locations, members of PEERS' advisory board concluded that research should assume a more central role in the organization's activities. This led to the initiation of the Dispelling Myths Project. PEERS' chief aim in applying for research money was to collect data on adult persons working in the sex industry that would be useful to their outreach services and educational programs. It was also hoped that the research would draw recognition to the valuable knowledge held by sex workers, and at the same time make available modest research assistant employment opportunities to a small number of persons who had left the sex industry and were hoping to develop their mainstream job skills and have some formal work experience to record on their resumes.

After passing the letter-of-intent stage of a provincial health funding agency, PEERS sought the expertise of a nonprofit management consultant and the second author of this article to help reshape the grant application into a collaborative research project focused on the working conditions, health status, and exiting experiences of adult persons working in various venues (outdoor and indoor locations) of the sex industry in the metropolitan region. The grant application was successful, and PEERS was awarded research funds for the 2-year project. An ad hoc advisory board was organized to include representatives from a number of government agencies focused on health and legal issues of persons working in the sex industry, as well as members of outreach organizations helping marginalized individuals.

The Dispelling Myths Project began in earnest in May 1999. A number of persons who had formerly worked in the sex industry applied for the advertised interviewing, data entry, and transcribing positions. Eventually, 10 "experiential" research assistants were trained in various aspects of the research process. All spent time working as full-fledged research assistants, and six stayed with the research team from beginning to end. In a situation in which there is no formal list of workers—and thus random sampling is not possible—the unique nature of the research

team greatly aided the compilation of a diverse list of potential respondents, especially hard-to-reach indoor sex workers in the metropolitan area. The project has produced a number of peer-reviewed publications (Benoit, Jansson, Millar, & Phillips, 2005; Benoit & Shaver, 2006; Hallgrimsdottir, Phillips, & Benoit, 2006; Hallgrimsdottir, Phillips, Benoit, & Walby, 2008).

In an attempt to better understand how sex workers compare to other frontline service workers, we launched the Stigma Study. This project is a longitudinal study funded by the Canadian Institutes for Health Research (CIHR) examining the social and health costs of providing emotional labor in work environments that are nonunionized, gender-scripted, in varying degrees sexualized (hairstyling and food and beverage service work) and, in the case of the sex industry, also highly stigmatized. A number of health care agencies and work groups gave input into the study during its startup stage, and two NPOs have remained active participants over the 3-year research cycle: PEERS (already described above) and the Child and Family Counselling Association (CAFCA).

CAFCA is a frontline, community-based counseling and support organization largely funded by the provincial government. Support counselors from this NPO work in close contact with public sector social workers and probation officers to assist families, youth in government care and/or deemed "at-risk" (street-involved or involved in criminal justice programs), and persons with disabilities. CAFCA provides assistance with employment, housing, income resource issues, family mediation, parental skill development, and access to recreational and other support resources. CAFCA counselors work in the homes and community settings of their clients, with the aim of helping them navigate and make the best use of public sector and other allied support services. CAFCA has adopted a philosophy of continuous quality improvement, and as a result has embraced the idea of partnering with researchers to ensure that organizational practice remains in step with current evidence regarding the services they deliver and the needs of their target client populations. Their involvement with both lower-income families and youth living on the street made them a suitable partner for the Stigma Study, as well as our third study on vulnerable populations.

To date, the Stigma Study has interviewed 306 adults living in the Victoria CMA, British Columbia, Canada, who are working in one of three service occupations that are socially and economically marginalized to greater and lesser degrees: hairstylists and barbers (henceforth referred to as hairstylists), food and beverage servers, and people working in the sex industry. Papers drawing on the data from this study have been presented at academic conferences and are being prepared for submission to peer-reviewed journals.

Our third research project, Risky Business: Experiences of Street-Involved Youth (referred to henceforth as Risky Business), examines the impact of street life on the health and well-being of a purposive sample of female and male youth. This longitudinal panel study emerged from an earlier evaluation conducted by the first and second authors of this article. Risky Business had five original community partner organizations, all of which have remained more or less active throughout the life of the project. PEERS and CAFCA were also invited to partner in this project. Other partners included three additional NPOs: Victoria Native Friendship Centre, Victoria Youth Empowerment Society, and the Victoria Youth Clinic. Each of these organizations offers frontline services to street-involved youth that include crisis counselling, educational support, mentorship, and basic needs such as nutritional and housing services.

A relatively large number of research assistants have worked on this project, including former street-involved youth who were in their mid- to late 20s and willing to be trained in interviewing techniques. These individuals were identified by our community partners as promising researchers. Health and social service professionals and graduate students who showed an interest in working part time on the study were also recruited as interviewers. To date, approximately 150 street youth are enrolled in the project. This third project has produced a number of peer-reviewed publications (Benoit, Jansson, & Anderson, 2007; Benoit, Jansson, Hallgrimsdottir, & Roth, 2008; Jansson & Benoit, 2006; Leadbeater et al., 2006).

As these three studies have unfolded, we have made a concerted effort to document barriers to participation for our intersectoral team members, as well as to cooperatively develop strategies to help address these barriers. Our long-range goal is to bring us closer to a democratic and consensual collaborative partnership, a goal that has been identified in the literature as central to the development of successful collaboration among interdisciplinary and multidisciplinary professional teams (Henriksson, Wrede, & Bureau, 2006; Wrede, Benoit, & Einarsdòttir, 2008). Some of the barriers we have identified are related to variation in the amount of time and resources that the participating organizations are able to devote to the research program. These challenges are relatively easy to overcome, provided additional funds or personnel can be made available. However, more subtle barriers, such as those based in tensions regarding which kind of knowledge, academic or experiential, should be privileged, have involved much more negotiation from all sides.

Not surprisingly, the intensity of collaboration among research program team members has peaked at different

times, followed by periods of less contact. As noted earlier, this has been especially true of the longitudinal projects because of their multiyear duration. The end result is that we have also had the opportunity to engage in various forms of knowledge translation and have enjoyed many successes with regard to informing each other's work, but also more difficult patches during which collaboration did not reach its full potential. We now explore these experiences in more detail, focusing on three strategies that we believe have generated the most success.

## Results

Below we elaborate on three elements which have been particularly useful in the KT between these two groups: interorganizational partnership, knowledge brokers, and involvement of frontline personnel.

### Interorganizational Partnerships

The majority of our long-term research partnerships have been with NPOs that serve vulnerable populations—persons working in the sex industry, street-involved youth and youth in government care, low-income workers, young families, and Aboriginal women. Representatives of provincial government service and policy teams have typically been involved at strategic points in the research cycle—usually during proposal writing, research design, and dissemination phases—and often sit on advisory boards that govern the activities of affiliated interdisciplinary research networks, the closest ongoing research relationships have largely been between academics and NPOs. These NPOs have emerged in the region over the last 2 decades to provide services to vulnerable individuals who, for various reasons, fall through the social safety net. They share in common a precarious funding base (i.e., their organizations struggle to balance their annual budgets with a mix of national and provincial government agency program funding, private donations, and local fund raising). Concurrently, funders are increasingly requiring the NPOs to have a research component to their program, which helps to explain why NPOs have either involved academic researchers to lead a line of research (Dispelling Myths Project) or have been open to joining academic research teams (Stigma Study and Risky Business).

Development of strong ties to government, academic institutions, and the private sector is thus one of the ways that NPOs ensure success in the current times of scarce funding. Having few resources to conduct the extent of research, evaluation, and knowledge gathering activities that they would like, NPOs have become increasingly open to collaboration with allies in academic settings.

Partnerships are considered valuable, particularly when they have the potential to answer some of the important questions NPOs are asking. Such questions include defining the service population and current clients, their needs and concerns, the efficacy of service methods, direction for program proposals, and content development for staff training.

This change in the nature of NGO funding and openness to research activity coincides with, as noted in the opening of this article, governmental and other research agencies' increasing pressure on scholars to develop closer ties to the communities they are researching, with the end goal of speeding up the KT process and improving the quality of the knowledge utilized. The result is a growing number of academic researchers who have come to favor active community involvement when attempting to answer questions about health care and health care provision. The advantages of durable interorganizational partnerships for researchers located in university settings are numerous, including the unique and informed perspective nonprofit organizations bring to research design and translation. Strong ties to these organizations are also fundamental in the context of conducting longitudinal research on vulnerable populations, and key to the recruitment and retention of research participants.

For a number of other reasons, having long-term relationships with nonprofit frontline organizations has been beneficial to academic researchers. The opportunity to attempt various knowledge translation strategies, ranging from face-to-face meetings, proposal collaboration, preparing research briefs, conducting research presentations at staff meetings, engaging in research roundtables and knowledge translation workshops, and even cowriting publications, are key examples. This has allowed all involved to gain insight into which collaborative strategies work best under which circumstances, and to reflect on difficulties encountered. The strategies that we have had success with include engaging nonprofit sector partners in setting research objectives, posing research questions, collaboratively designing studies, and communicating results through diverse channels. In engaging in these activities, we have learned that NPOs typically do not have time to consult with researchers because of the short timeframes of most proposals. Because we had developed rapport and trust beforehand, we have in most instances been able to find a willing volunteer from our research team to offer assistance. The level of rapport and trust established between all research team members has also made it easy to share research data on an ongoing basis. Another achievement has been the opportunity to work out ethical protocols.

The Human Ethics Research Board (HREB) is at times seen as paternalistic and overly stringent by service

providers who deal with multiple and competing ethical issues on a daily basis. Negotiations around recruitment and informed consent, anonymity, and data management required the most work. The university research ethics requirements address the possibility that participants might feel coerced to participate if recruited by frontline personnel. Service providers said they sometimes felt that this was belittling to their clients. This is understandable in light of service providers' occasional inability to coerce their clients to engage in behavior that appeared much less onerous, such as accepting a hot meal or a dry bed, than participating in the research project. The three longitudinal projects also required negotiations around how to maintain the anonymity of participants (a core requirement of the university ethics committee) while attempting to contact them for their next interview. A successful strategy was to ask our NPO partners to help us out with recruitment because there was a high probability that participants' whereabouts were known to these service provider organizations. At the same time, we had to ensure that the participants would not be coerced into agreeing to a follow-up interview, or be made to feel they would be cut off from services if they did not participate.

Two data management issues fundamental to guaranteeing anonymity of our data—the separation of administrative and research data and access to the research data—also required extensive negotiation among all collaborating partners. There was a temptation by research team members to mix data collected by the research team with data collected through the regular administration of service programs when the latter are readily available. But this temptation was tempered by the ethical problem of including administrative data on individuals without their explicit consent. Finally, early in the research projects there were some discussions about who would have access to the collected research data when it was envisioned that the data would be useful for administrative or grant-writing purposes. Over time we have realized that there typically is little or no interest in accessing the data by anyone but the immediate research team members. Even so, research team members have produced reports on specialized topics as needed by other interested parties.

Because of frequent staff turnover in research caused by the institutionalized movement of students and the frequent turnover among frontline service workers, we have also learned that it is best to focus on developing enduring institutional partnerships that reach beyond specific individuals in either setting. Personal relationships, especially in the nonprofit sector, are by nature unstable because of the lack of ongoing funds to support full-time administrators and other staff (Eccles, 1996). In addition, NPOs serving vulnerable populations typically report high turnover rates and mobility of staff within the sector.

Over time, key point persons from community partner organizations, typically their executive directors/CEOs, have played pivotal roles on our interdisciplinary research advisory boards and working groups, and at the same time have attached themselves to broader research programs and networks that include other university researchers as well as politicians and policy experts. Establishing institution-level partnerships allows collaboration to exist over the long haul, and assures participating parties that institutional relationships will continue through periods of peak and slower research activity (Le Gris et al., 2000).

To ensure such stability, we have learned that considerable time and resources need to be set aside for engaging in face-to-face meetings to build and maintain mutual trust, continue negotiations of the parameters of the partnership, and keep participating parties engaged in each other's changing work environments and ever-challenging political landscapes. Undoubtedly, some of our partnerships that have not been consistent across the decade might have been better maintained with greater personal contact and more regular communication. We have also learned that establishing objectives, goals, and expectations around time investment at the outset of collaboration is extremely important. We recommend developing an informal document or memorandum of understanding regarding collaboration resources, processes, and outcomes for each party to serve as a reference guide throughout the duration of the partnership.

An additional complication is that different nonprofit organizations bring varied values and philosophical orientations to the research process, which need to be openly communicated, negotiated, and duly honored (Norman & Huerta, 2006). Failing to do so can result in limited investment on the part of NPOs, as representatives might conclude that the bulk of collaboration rewards are to be had by the academic partners. It is important, for example, to establish the degree of involvement that various partners wish to have in different aspects of the research process. At times, CAFCA, because of its limited administrative resources, has preferred to play a consultancy role in research design and translation, and has enjoyed having research products prepared for them to meet specific organizational needs. Yet at other times, CAFCA staff and management have played a much closer role in guiding research design and implementation that concerned them or their client base, and have found that a more intense level of involvement in research reaps more diverse KT outcomes.

Another of our collaborating organizations, PEERS, has always aimed for a very active role in research development, writing, and translation. This expectation rests on a philosophy of having experiential persons as the authors and developers of research that concerns them:

"nothing about us, without us" (Boynton, 2002; Jürgens, 2005). Over time, expectations for research engagement with PEERS have thus moved beyond simply participating in basic research design, helping recruit respondents, administering questionnaires, and obtaining honorariums for their participants, to a desire to engage more deeply in establishing research methodology and analyzing and disseminating data, including equal involvement in presenting publications and research findings at academic conferences and cowriting in scholarly journals. Indeed, this article is one such collaborative effort. However, the activity of coauthorship raises important ownership questions and data sharing protocols, as well as research training and mentorship considerations. We found little guidance in the existing KT literature to deal with this suite of issues, leaving us to develop guidelines on an as-needed basis. Instead, we have had to codevelop procedures for cleaning and sharing data with community partners who would like to analyze data for themselves, but at the same time are not bound by the policies of the HREB, and for negotiating both participation in authorship as well as authorship acknowledgements that reflect the collaborative process that enabled data collection.

A related recommendation emerging from these developments would be to establish annual research design and ethics workshops involving members of interested NPOs, researchers and graduate students, and research ethics board members. Such workshops could serve as fora for fruitful dialogue about sticky research issues arising from the field, and provide for colearning about ethical procedures and protocols as they relate to hard-to-reach, vulnerable populations. We have had the opportunity to organize or participate in two such workshops related to our Risky Business project, both of which involved active involvement of two of our community partners, CAFCA and the Victoria Youth Clinic. Results of one of the workshops have been written up into a chapter and included in an edited book examining ethical challenges when researching vulnerable youth populations (Leadbeater et al., 2006). The other workshop has resulted in the development of targeted health interventions for street-involved youth that are currently being implemented in the local area.

In summary, the academics and service providers involved in our research program have come to independently realize that partnerships with each other are not only advantageous to achieve their respective goals, but increasingly necessary in the current research and service funding climate. Yet the material and human resources required to actively maintain truly collaborative partnerships and to traverse the institutional, cultural, resource, and expectation differences between academic and NPO partners are considerable. We have found over time that

skilled knowledge brokers play a valuable role in maintaining partnerships.

## Knowledge Brokers

Knowledge brokers are often paid research staff whose focus is linking community agencies with researchers, facilitating their interaction so that they are able to better understand each other's goals and professional cultures, influence each other's work, forge new partnerships, and promote the use of research-based evidence in decision making (Lomas, 2007). Knowledge-brokering activities include finding the right "players" to influence research use in decision making, bringing these players together, creating and helping to sustain relationships among them, and assisting them to engage in collaborative problem solving. The skills of effective knowledge brokers include the capacity for networking, problem solving, and innovation; being perceived by others as trustworthy and credible; clear communication skills; and proficiency in both operating within and communicating about the cultures of both research and, in our case, nonprofit community organizations (Greenhalgh et al., 2004). Knowledge brokers are also ideally able to find, assess, and synthesize relevant research from a variety of sources, do the same for related service need priorities, and apply the information acquired to the complexities of policy and practice environments. The vital duties of knowledge brokers involve locating research stakeholders, helping to negotiate partnerships, and establishing communication channels and formats. These include organizing face-to-face meetings, workshops, and other collaboration opportunities. Knowledge brokers also participate in establishing research methodologies, in particular by helping the various partners understand each other's standards of rigor and negotiate shared research objectives, deliverables, and outcomes, including helping NPOs to conceptualize key research questions emerging from their practices that can be operationalized in research instruments. Knowledge brokers additionally assist partners to identify knowledge utilization and translation opportunities throughout the research process, and identify and assure that research opportunities prioritized by the community are included as the research project develops and matures (Lomas, 2007).

The value of having knowledge brokers as team members is something we came to appreciate several years into the research program described above, emerging largely from our acknowledgment that academics and representatives of NPOs often have neither the time nor the expertise to carry out all the activities associated with a KT program. Although the academic partners could readily identify the value of research findings and resources contained within compiled datasets, our NPO

partner executive directors and their advisory board members were either unconvinced or had too little time to explore the research from a KT perspective, and academic partners had little policy and program practice expertise to guide them in effective translation. Thus, it was clear that our ongoing partnerships and KT goals required the hiring of "bridge" individuals with specific skill sets to be dedicated to the task of KT. In addition, it eventually became apparent to us that such knowledge brokers could play a pivotal role in helping us keep the research attuned to the needs of our hidden, marginalized, and highly transient research populations over the protracted course of panel research.

Persons employed as knowledge brokers on the research projects described above, two of whom are co-authors of this article (the third and fourth authors), have found that successful KT depends on a number of principles and practices, including establishing clear objectives and roles up front, based on the perspectives of the participating organizations. As noted earlier, it is often beneficial to articulate these roles, expectations, and objectives in an informal KT contract or statement of goals, which the knowledge brokers can then use as a tool to guide their work. This document can be revisited over the course of long-term research partnerships to assess progress and barriers and use as a basis for reorienting or increasing KT and collaboration activities, if required.

Given the institutional and cultural differences noted earlier between and within academic organizations and NPOs, and the role of knowledge brokers in mediating these differences, it is essential that all partners are treated as equals and are able to conduct their work within an atmosphere of open communication and commitment to negotiation. Having a strong footing in both worlds is fundamental for knowledge brokers as they facilitate the bridging of differing cultural environments. In our case, having knowledge brokers who are familiar with the imperatives of both academic and NPO environments has been essential because vulnerable, stigmatized populations such as persons working in the sex industry, street youth, and the frontline service staff who serve them, are often cynical about research and have little time to devote to research concerns. NPO staff serving these vulnerable populations state that academic research is often too abstract to apply to their practice, and that scholars have little appreciation of the constraints service providers face in carrying out their day-to-day activities. Knowledge brokers thus face the task of helping academic partners align their research to the interests and current practices of NPOs so that the results are more relevant and practical, increasing uptake from frontline staff. At the same time, knowledge brokers must be comfortable with the imperatives that govern academic settings,

including methodological rigor and ethical protocols, and must be able to translate key research ideas to NPO partners in a way that will increase the likelihood of knowledge assimilation. Our knowledge brokers thus have had to rely on their insider knowledge to negotiate and ameliorate these and other concerns.

Although our knowledge brokers acknowledge numerous rewards of such collaborative engagement, not least of which that it afforded them the opportunity to draw on varied skill sets and exercise autonomy and innovation in facilitating partnerships and KT, they note that their roles are both demanding and often difficult to execute. It is thus important to have formal supports and sufficient resources available for knowledge brokers so that they can carry out their demanding jobs. Knowledge brokers also need to have the time to become familiar with the operations of the academic and nonprofit worlds, and must regularly have face-to-face meetings with representatives of the research collaboration to identify and assess progress on KT goals and activities. Knowledge brokers should, in addition, be given the opportunity to coauthor conference and workshop presentations, as well as research articles—particularly those on the topic of knowledge translation. They would furthermore likely benefit from opportunities to engage in ongoing education opportunities that enhance their complex combination of networking, research, policy, and practice skills.

## Involvement of Frontline Personnel

A final element of successful KT, in our experience, has been the involvement of frontline personnel and graduate students in the research process. When we speak about frontline personnel, we mean those who are in immediate contact with target groups, either in the case of NPOs as direct service providers, or in the case of graduate student research assistants as interviewers and data analysts. Involvement of such personnel in setting the parameters and context of the research collaboration and research process has been essential to our longitudinal research program for several reasons.

First, frontline service providers in NPOs and graduate students bring valuable insight to the research process because of their structural position in the research process; i.e., they are the ones who are most often in direct contact with research participants/target populations and, in the case of graduate students, tend to be the ones who are collecting and initially working with resultant data as they are prepared for final analyses. In comparison to faculty researchers and NPO management personnel, who are less attuned to the imperatives of research participants and practice, frontline personnel and graduate

students often experience less social distance, both in relation to each other and to research participants. Graduate students are, in addition, able to offer important insights regarding how research instruments are being received by respondents. Likewise, frontline service personnel are likely to be acutely aware of gaps in knowledge emerging from their practice, and have specialized acumen about their service populations and practice environments when compared to managers and administrators who have less contact with clientele. Frontline service personnel, furthermore, are the persons who will put evidence into practice if it is timely, convincing, and practical. At the same time, they are likely to resist such evidence if they disagree with it or do not see its practical implications.

Involving frontline service providers and graduate students in research collaboration and KT is not only necessary because of their special insights and access to target populations, but also because it offers a potentially exemplary training opportunity with numerous professional benefits. By participating in research collaborations, service providers gain access to a welcome break from the demands of their regular work duties. They also find practical inspiration and renewal in participating in relevant research, especially if it contributes to clinical knowledge and expands the capacity to situate service provision in evidence and outcome frameworks. By participating in research collaborations as data analysts and interviewers, among other roles, graduate students similarly gain access to training that rarely exists in the classroom and yet is essential for conducting relevant applied health research. Students, in addition, develop networks with community-based personnel that can facilitate their theses and dissertations, and afford them an opportunity to learn about administering research budgets and the practice of executing methodological and ethical plans in the context of larger, and in our case longitudinal, projects. Students likewise learn valuable negotiation skills and practices in research collaborations and participate in multiple forms of data dissemination to various audiences.

As noted earlier, service personnel in our various projects have sometimes been in a position to ask relevant and important research questions that emerge from the field and are vital for the delivery of services. NPO boards, executive directors, and lead researchers tend to be less aware of these questions than graduate students who serve as the initial point of contact for frontline personnel. It is thus imperative that graduate students have opportunities to communicate concerns arising from the research field or service providers to senior research partners. Frontline service personnel have likewise found their relationships with graduate students and knowledge brokers helpful when sorting out ethical concerns that arise on a day-to-day basis in the course of research. For example, service personnel are frequently asked by research participants to conduct interviews because of their familiarity with these individuals; it is helpful in these situations for frontline personnel to be able to efficiently and sensitively refer potential respondents to graduate students or other research staff with whom they have established rapport, as these persons can conduct the interviews with greater anonymity and freedom from the conflicts of interest that surround frontline service work.

Involving both junior and senior members of academic organizations and NPOs furthermore helps to bridge communication channels that are essential to decision making in these environments. Although the full cycle of KT cannot occur without the cooperation of direct service providers, it is not sufficient to engage frontline personnel in research environments if they experience barriers when attempting to enact policy or program change within their organizations. Program and policy decisions in NPO environments are often the joint responsibility of executive directors and boards of directors, and are carried out in practice by frontline personnel, so involvement of both aspects of an organization is fundamental to KT.

Finally, as noted earlier with respect to institutional partnerships, we have also found that it is important that individual members of our academic team, including graduate students and service personnel, engage in partnerships that extend beyond the scope and duration of specific research projects. This means being volunteers and consultants on an assortment of research investigations to help institutionalize relationships and knowledge sharing between community and academic settings.

## Discussion and Conclusions

Our experience working with an assortment of nonprofit organizations across three projects investigating factors linked to heath and health care access of vulnerable populations has shown that to carry out KT in a meaningful way involves ongoing, resource-intensive, and strategic activities. These are best accomplished in the context of long-term institutional relationships, regular face-to-face exchange, and a clearly negotiated, practical plan. Although the KT literature is largely focused on research uptake by public sector policy and program experts in formal health care institutions and government bodies (Davis et al., 2003; Lavis, Robertson, Woodside, McLeod, & Abelson, 2003; Pablos-Mendez & Shademani, 2006), we argue that less-well resourced organizations located within the nonprofit sector should also be included in the discussion. Their daily access to and hands-on knowledge of vulnerable populations, in addition to their unique

capacity to translate findings directly into practice and program innovations, are important reasons why.

Successes in research collaborations such as those described include establishing an open and safe forum to share research activities and mutual support in drafting evidence-based funding proposals, assisting with policy development and staff education, and participation in educational and networking activities. They also include opportunities to copresent at academic conferences, coorganize workshops, collaborate on scholarly publications, and codevelop ethical protocols that deal with the potentially conflicting situation faced by frontline personnel. Yet such collaborations are not seamless. We have encountered formidable challenges in carrying out KT work because of inadequate resources, having to find ways to traverse institutions with different values and cultures, and ensuring that rewards and sparse resources are equally distributed across all research partners. Employing knowledge brokers has taken us a long way in addressing these challenges, and this is a strategy that we will continue to build on in the future. It has also been imperative for us to bring together representatives from academic organizations and NPOs that span the scope of senior management and researchers as well as frontline providers and graduate students. To cement partnerships over the long haul, we have found it beneficial to have collaborators occupy different types of roles, ranging from advisory board member, paid research assistant or knowledge broker, to consultant or volunteer.

A few areas stand out for future development. The first concerns the benefits and challenges of health research funding that involves a first phase of primary research and a second phase of evaluating policy implications and program innovations. To date, research and program funding proposals between academic organizations and NPOs have remained largely separate undertakings. Yet one can envision the KT opportunities encompassed within a combined research and policy/program application enterprise. Although it would no doubt raise new and complex challenges, combining research, policy/program, and evaluation activities would bring added focus to the KT agenda and compel partners to learn even more about each others' work and how it does and does not intersect. In addition, it would also likely result in greater joint investment in the collaboration process from the beginning.

A second area requiring further development concerns how knowledge brokers develop their competence and how to best facilitate their important work. How do knowledge brokers amass their specialized and diverse skill sets, and can this education be incorporated into academic and community-based settings to further enhance the capacity of those interested in applied research, health policy, and KT more generally? Lomas (2007) and others have begun this work but much more needs to be done, especially for collaborative partnerships involving the nonprofit sector.

Finally, there is an ongoing need for further documentation of KT between academic researchers and NPOs, including careful study of the efficacy of specific knowledge exchange and mobilization activities (Martens & Roos, 2005). Involvement of all parties in this process will likely result in the greatest mutual support for applied health research and effectiveness of health care delivery uptake over the long haul.

## Declaration of Conflicting Interests

## Funding

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