Knowledge to Action – K2A

Building a Stronger System of Workforce Development, Applied Research and Knowledge Exchange for Public Health in Ontario

Final Report

June 2007

Sudbury & District Health Unit
Service de santé publique

BUREAU DE SANTÉ DE MIDDLESEX-LONDON
HEALTH UNIT

Disclaimer

The views expressed in this report are the views of the authors and do not necessarily reflect those of the Ministry of Health and Long-Term Care.

Recommended citation

Sutcliffe, P., Etches, V., Michel, I., Beynon, C., Moloughney, B., Snelling, S., & Beyers, J. (2007). *Knowledge to Action – K2A: Building a stronger system of workforce development, applied research and knowledge exchange for public health in Ontario: Final report*. Sudbury, ON: Sudbury & District Health Unit & Middlesex-London Health Unit.

For more information, contact:

Dr. Penny Sutcliffe
Medical Officer of Health and
Chief Executive Officer
Sudbury & District Health Unit
1300 Paris Street
Sudbury ON P3E 3A3
(705) 522-9200, ext. 291
Email: sutcliffep@sdhu.com

Dr. Vera Etches
Associate Medical Officer of Health and
Director, Clinical Services Division
Sudbury & District Health Unit
1300 Paris Street
Sudbury ON P3E 3A3
(705) 522-9200, ext. 400
Email: etchesv@sdhu.com

Authors

Penny Sutcliffe, Vera Etches, Isabelle Michel, Susan Snelling, Joanne Beyers
Sudbury & District Health Unit

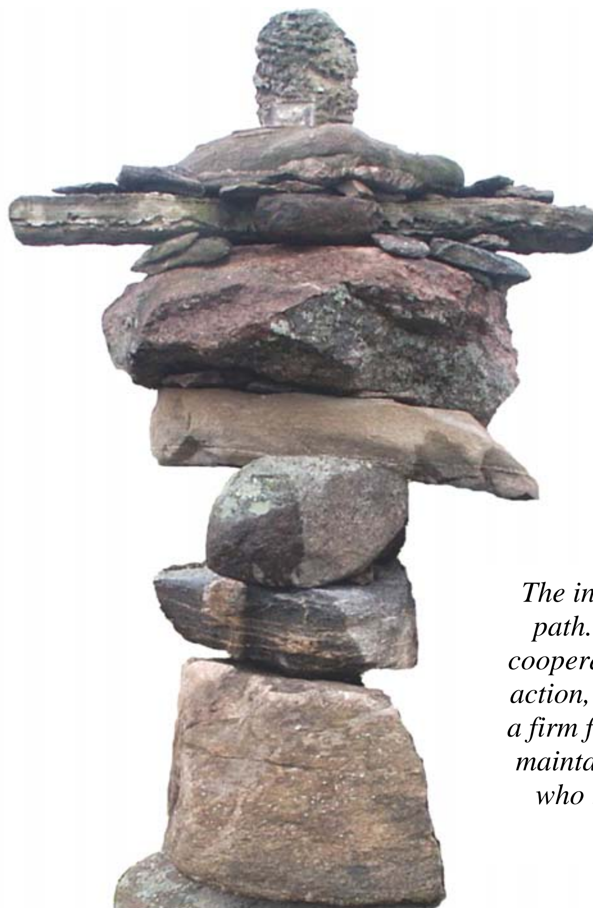
Charlene Beynon
Middlesex-London Health Unit

Brent Moloughney
Public Health Consultant

Acknowledgements

The authors of this report are grateful for the opportunity provided by the Ontario Ministry of Health and Long-Term Care, Public Health Division, to conduct this project.

We also wish to thank Sandy Siren from the Sudbury & District Health Unit for reviewing this report. The administrative support of Rachel Quesnel, Vicky Schwarz and Louise Willcock also from the Sudbury & District Health Unit is greatly appreciated.



The inuksuk marks the path. The product of cooperation and focused action, it must start with a firm foundation and be maintained by all those who travel the path.

Table of Contents

Highlights vii

Acronyms Used in This Report xi

Introduction 1

Purpose of This Report 2

Learning from Other Jurisdictions 2

Knowledge to Action – K2A Functions 3
- Workforce Development 3
- Applied Research 4
- Knowledge Exchange 4
- The Need for a System to Fulfill K2A Functions 5

Emergence of a Conceptual Model for a K2A System 7
- Key Themes from the Field Consultations and Workshop 11
  - Build on Existing Strengths and Experience 11
  - Recognize the Flexibility Built Into the Model 11
  - Develop the Combined K2A Model Details 11
  - Capacity Implications 12
  - Issues to be Resolved Regarding Regional Hubs and Dispersed Network Nodes 12
  - Learning from Other Models 13
  - A Phased Approach to System Development 13

Post-Workshop Analysis and Discussion 14
- Refining the Combined K2A Model 14
  - Defining the Role of the Ministries 14
  - Including Other Partners in the Model 15
  - Proposed K2A Model 16
  - The K2A Model: How Might It Operate? 17
- Additional Issues 18
  - Considerations in Establishing Regional Hubs 18
  - Mapping Out K2A-Related Tasks to Inform System Development 21
  - Transitioning the PHRED Program 24
  - Organizational and System Culture 24

Recommendations for Next Steps 25

References 27

Appendix 1: Summary of K2A Project Components and Timeline 29
Appendix 2: Relevant Recommendations from Capacity Review Committee and Agency Implementation Task Force 31
Appendix 3: Highly Centralized and Decentralized Models 43
Appendix 4: Contributors to the Knowledge to Action – K2A Project 45

HIGHLIGHTS

> *A robust public health system includes frontline workers who think critically and who generate and apply evidence to their practice. A comprehensive system of workforce development and knowledge exchange combined with applied research that asks practice-relevant questions is required to support effective public health practice in Ontario.*
>
> *Knowledge to Action Background Paper, 2007*

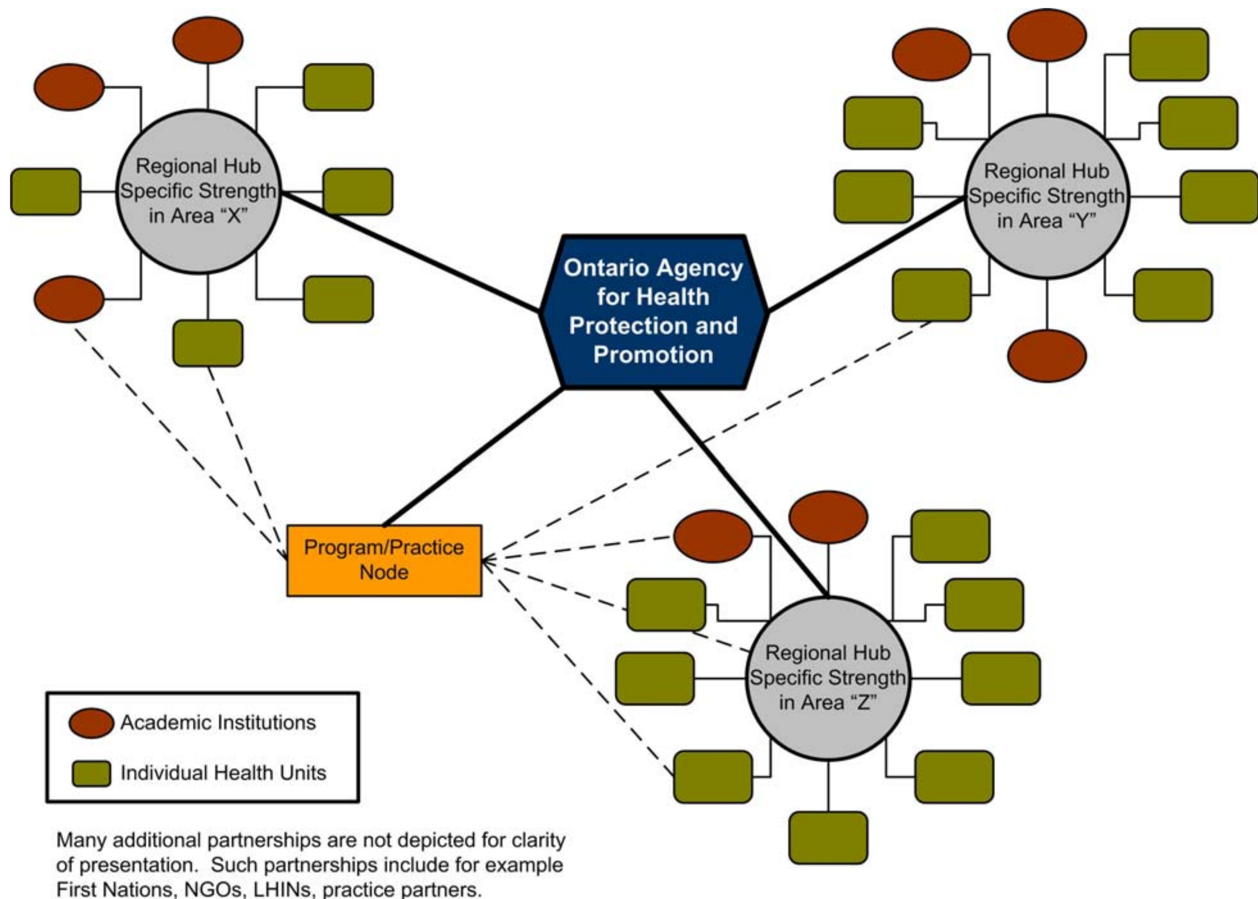
Over the past 25 years, Ontario has recognized the critical importance to the health of its citizens of moving public health knowledge into action. Ontario has established structures and processes to support the knowledge to action (K2A) critical functions of workforce development, applied research and knowledge exchange. The province is recognized nationally for its leadership in these areas.

Recent reports reviewing the Ontario public health system have reinforced the importance of K2A functions to a public health system that is evidence-based and continually improving. However, attention has also been drawn to the need for stronger central and local capacity to ensure that there is sufficient critical mass with the knowledge and skills required to translate knowledge into action.[1,2,3,4,5] The much-anticipated Ontario Agency for Health Protection and Promotion (Agency) is proposed to fulfill key roles in conducting and supporting K2A functions.[4,18]

With these developments, the Knowledge to Action – K2A Project was conceived with the premise that the time is right in Ontario to build a stronger workforce development, applied research and knowledge exchange system. Utilizing an iterative and consultative process, the K2A Project builds on the recommendations from the Capacity Review Committee and Agency Implementation Task Force reports to develop a model to better address the K2A functions of workforce development, applied research and knowledge exchange. The express focus of the Project is to develop a model that optimally supports K2A functions in local public health practice.

In discussions with system stakeholders, a remarkable level of consensus was achieved, resulting in a proposed model. As depicted below, the proposed model combines central Agency coordination with regional hub-and-spoke groupings that would exist across the province. This is complemented by a series of dispersed networks addressing specific issues that are coordinated through program/practice nodes. Sample illustrations of how this model might operate are provided in the main body of this paper to communicate a more operational understanding of the model (see pages 17 and 18).

Proposed K2A Model



Substantial progress was made during the K2A Project. The Project represents a significant step towards the development of an operational province-wide public health K2A system that optimally supports these functions in local public health practice. The proposed model builds on existing structures and capacities and is intended to illustrate an end point. Reaching this end-point will likely require phased-in implementation. Provincial leadership is now required to build upon the K2A Project's recommendations and established broad-based momentum. While the Agency will eventually have a strong and central role in the K2A system, it is anticipated that it will be some time before the Agency is established and fully functional.

In the interim, there is a clear leadership role for the Ministry of Health and Long-Term Care and the Ministry of Health Promotion (Ministries) to conduct more detailed planning for the establishment of a public health K2A system that supports and informs effective public health practice.

The following key recommendations are based on the K2A Project findings:

1) That the public health field, the Ontario Agency for Health Protection and Promotion (Agency), the Ministry of Health and Long-Term Care and the Ministry of Health Promotion (Ministries) adopt the Knowledge to Action model proposed in this report. This model is comprised of Ontario-wide regional hub-and-spoke groupings that are complemented by a series of dispersed networks led by program/practice nodes.

2) That the Ministries, in adopting the proposed model, take on a leadership role and commit to a timely process in which the conceptual model is further analysed and developed for implementation.

3) That the Ministries establish a K2A implementation advisory team comprised of representatives of key K2A system actors to conduct this more detailed analysis and development. Health units should be active participants in the implementation advisory team given their key vested interest. They should be joined by academic and practice partners. The K2A implementation advisory team should:

- **a.** Incorporate the experiences of others (e.g., HIU, HSIP, NCC, OTRU, PHRED, CHSRF, INSPQ, etc.) in conducting a more detailed analysis of how to establish the proposed model to identify barriers and facilitators to implementation.

- **b.** Develop a more detailed, operational system model by mapping out key tasks and responsibilities for system actors resulting in:

  - **i.** A structural design model with more detailed descriptions of regional hubs and dispersed network nodes including recommended number, desired functionality, structure, governance, selection process and capacity requirements.

  - **ii.** A responsibility matrix outlining roles for system actors for key functions/tasks.

  - **iii.** A system logic model that links activities and processes with expected outputs and outcomes.

  - **iv.** A recommended budget.

- **c.** Develop a phased implementation plan for the model as a whole, including timelines and a transition plan from the current PHRED model to the identified province-wide public health K2A system.

Acronyms Used in This Report

AITF	Agency Implementation Task Force
AR	Applied Research
CHSRF	Canadian Health Services Research Foundation
CRC	Capacity Review Committee
FN	First Nations
HIU	Health Intelligence Unit
HSIP	Health System Intelligence Project
K2A	Knowledge to Action
INSPQ	Institut national de santé publique du Québec
KE	Knowledge Exchange
LHIN	Local Health Integration Network
MHP	Ministry of Health Promotion
MOHLTC	Ministry of Health and Long-Term Care
NCC	National Collaborating Centre
NGO	Non-Governmental Organization
OHPRS	Ontario Health Promotion Resource System
OTRU	Ontario Tobacco Research Unit
PHRED	Public Health Research, Education and Development Program
RICN	Regional Infection Control Network
WD	Workforce Development

Knowledge to Action – K2A: Final Report

Building a Stronger System of Workforce Development, Applied Research and Knowledge Exchange for Public Health in Ontario

INTRODUCTION

In the past few years, a series of prominent reports have provided increasingly detailed analysis and recommendations for strengthening Ontario's public health system. The initial post-SARS reports from Justice Campbell[1,2] and the Ontario Expert Panel on SARS and Infectious Disease Control[3] were followed by those from the Agency Implementation Task Force (AITF)[4] and the Capacity Review Committee (CRC).[5] These latter groups focused specifically on the development of a provincial public health agency, as well as the strengthening of the structure and capacity of local public health units. They described a common vision of a robust public health system in which public health practitioners think critically and generate and apply evidence to their practice. They highlighted the need for a more systematic approach for strengthening the functions of public health workforce development[i], applied research, and knowledge exchange. However, how to best incorporate these functions into the renewal of public health in Ontario remained unaddressed.

Recognizing the vital contributions made to public health capacity through these functions, the Knowledge to Action (K2A) Project was initiated by the Sudbury & District Health Unit and the Middlesex-London Health Unit. The Project's overall goal was to develop a planned approach to support the K2A functions of workforce development, applied research, and knowledge exchange in local public health practice. Specifically, the Project's objectives were to:

- Review the required workforce development, applied research and knowledge exchange functions in local public health, in the context of a province-wide/Agency approach.
- Provide critical input on, and appraisal of, draft models to fulfill these functions.
- Build consensus on recommendations for action for the public health field, the proposed Ontario Health Protection and Promotion Agency (Agency), the Ministry of Health and Long-Term Care (MOHLTC), and the Ministry of Health Promotion (MHP).[ii]

[i] Previous Project documents have used the term "professional development". In this report, "workforce development" has been used instead to reflect a more widely recognized meaning that includes the training of future practitioners, as well as knowledge and skill development of existing practitioners. It is also the term used in several previous reports on public health infrastructure in this and other countries.
[ii] The roles of MOHLTC, MHP and the proposed Agency are still evolving. For simplicity, this report will refer to MOHLTC and MHP collectively as the "Ministries" recognizing that for any particular issue, the specific role of each Ministry may differ.

With the financial support of the MOHLTC, the sponsoring health units established a project Advisory Panel and utilized an iterative approach to seek greater understanding and consensus regarding how best to fulfill the K2A functions. Key project components included developing a comprehensive background paper, conducting a Think Tank meeting, engaging in field consultations, consulting with the Advisory Panel and other experts, and hosting a culminating, multi-stakeholder workshop in March 2007. Appendix 1 provides further details regarding these steps.

PURPOSE OF THIS REPORT

The purpose of this report is to describe a proposed model for a province-wide system for K2A functions that optimally supports these functions in local public health practice. In describing the model, the report summarizes key comments, concerns and advice heard over the course of the Project, and provides recommendations for next steps in the development of the public health K2A system. This report has been developed to assist senior public health officials within the Ministries, the inaugural board of the Agency, and the broader set of public health system stakeholders in building a stronger province-wide public health K2A system.

LEARNING FROM OTHER JURISDICTIONS

> *Systems-based thinking and coordination of activity in a carefully-planned infrastructure are not just essential in a crisis, they are integral to core functions in public health because of its population-wide and preventive focus…The case for a collaborative and coordinated approach to public health is arguably even more acute than in our still-fragmented personal health services systems.*
>
> *Naylor Report, 2003*[19]

Recent national and provincial public health reviews have stressed the importance of viewing the public health sector as a system with defined core functions.[6,8] A system is an organized collection of parts (or subsystems) that are highly integrated to accomplish an overall goal. Core functions of public health systems include: population health assessment, health surveillance, disease and injury prevention, health promotion and health protection.[9] However, their fulfillment is dependent on additional, critically important support functions including the K2A functions.

The interdependence of core and support functions has been increasingly explicit in recent public health system reviews and in the system renewal efforts of other jurisdictions. For example, the *Québec Public Health Program 2003-2012*, which is the companion initiative to Québec's comprehensive Public Health Act, identifies "research and innovation", as well as "skills development and maintenance" as system functions.[10]

British Columbia's *Framework for Core Functions in Public Health* includes knowledge development, staff training, and the development capacity needed to apply public health strategies and implement core programs.[11] Similarly, in the U.S., their list of ten essential public health services includes assuring a competent public health workforce, evaluating population-based health services, and research for new insights and innovative solutions to health problems.[12] This list of essential services has been incorporated into model state legislation,[13] is used as the organizing framework for system performance standards for state and local public health organizations,[14,15] as well as for reporting on public health system infrastructure in *Healthy People 2010*.[16] Consistent with this trend, the consultation draft of the *Ontario Public Health Standards* includes a foundational standard that addresses research, knowledge exchange and evaluation.

As with any system, the system for K2A functions supporting the public health sector needs to have a clearly identified purpose, structures, processes, and outputs. The proposed Agency is a critical, central component of a K2A system and its establishment in a manner consistent with the AITF recommendations is assumed by this report. While Ontario's public health units are a key Agency client group, it is recognized that the Agency is expected to serve the needs of multiple clients including health care practitioners and organizations, as well as multiple government departments. The focus of this Project has been to build on the CRC and AITF vision and recommendations to characterize the system structures and processes necessary to the K2A functions from the perspective of local public health units.

Knowledge to Action – K2A Functions

The CRC and AITF reports provide a vision, description, and recommendations for each of the K2A functions. This material was comprehensively summarized in the Project's background document. This section focuses on brief descriptions of the functions and examples of component tasks. Appendix 2 provides a list of the relevant CRC and AITF recommendations. Readers are invited to refer to the original reports for more detail.

Workforce Development

Workforce development (WD) incorporates the concepts of the education of future public health professionals (e.g., curriculum development, teaching, student placements), and of capacity building and ongoing education of existing public health professionals (e.g., post licensure or certification instruction) to ensure that practitioners have the appropriate mix of knowledge and skills to effectively develop and deliver programs and services.

Examples of tasks and processes associated with WD include:

- Public health staff supporting public health-related curricula.
- Health units supporting student placements, internships, student work opportunities and summer positions across all public health disciplines and levels of training.
- Assessing and prioritizing knowledge and skill development needs of staff.
- Delivering knowledge and skill development opportunities to staff.
- Supporting incorporation of learning into practice.

Applied Research

The emphasis on "applied" denotes research that is grounded in public health practice in which the research questions and findings have direct relevance to the public health system. While the proposed Agency is expected to fulfill a central leadership and organizing role for applied public health research, involvement of local public health unit staff is critical to ensure that questions, protocols and findings are relevant to practice.

Examples of tasks and processes associated with AR include:

- Contribution of health units to the identification of research priorities.
- Development of research partnerships among interested parties (health units, academic partners, others).
- Engagement of academic faculty in addressing public health applied research topics.
- Support for research proposal development.
- Opportunity for all health units to participate in research projects.

Knowledge Exchange

Knowledge exchange (KE) is closely linked to applied research (AR). According to the Canadian Health Services Research Foundation (CHSRF), "effective knowledge exchange involves interaction between decision makers/practitioners/research users and researchers and results in mutual learning through the process of planning, producing, disseminating, and applying existing or new research in decision-making."[17] The underlying challenge is that the uptake of new information by systems, organizations and practitioners is not automatic. Public health is not unique with regard to recognizing the importance of supporting knowledge exchange. The inter-dependency between researchers, practitioners, and decision makers needs to be fostered. The researcher needs to ensure that the research question and protocol are relevant to practice and the practitioner requires high quality research that provides answers to inform practice.

Examples of tasks and processes associated with KE include:

- Providing access to knowledge to inform decision making.
- Actively disseminating knowledge to management and staff.
- Actively supporting program teams to incorporate knowledge into existing business practices of health units, including fostering organizational cultures for knowledge exchange.

The Need for a System to Fulfill K2A Functions

Even with these brief descriptions of the K2A functions, there are a number of features that are apparent:

- Each function is comprised of a series of interdependent tasks and processes – for example, in WD, provision of skills training will be driven by an assessment and prioritization of training needs. Acquisition of new skills does not necessarily lead to their application. Therefore, attention to mechanisms to support incorporation of knowledge into practice is required and may involve a focus on team training and organizational development.
- Functions are interdependent – for example, WD has a role in ensuring that staff possess the core competencies to be able to think critically and apply new knowledge to practices that are required for participating in AR and KE.
- Multiple actors need to be involved in order for tasks to be completed – for example, for all of these functions, there are multiple interactions required between health units, the Agency, Ministries, academic institutions, and others.
- Feedback loops, which are inherent in systems, need to be in place – for example, practice-related questions need to inform the development of research questions, the research needs to generate findings that are relevant to practice, and the extent to which findings impact practice needs to be evaluated and processes modified accordingly.

These characteristics speak to the need for an integrated collection of structures, processes and outputs in order to fulfill the K2A functions – in other words, the need for a system with clearly defined expectations that optimize effectiveness, efficiency and system actors' accountability.

In building a stronger K2A system, it is recognized that there are existing strengths and networks already in place. However, as described in the CRC report and further explored in field consultations for this Project, there are also huge variations in structure and capacity across the system. For each of the example items listed in Table 1, public health units demonstrate a continuum of capacity from little to well-developed capacity. This variability has implications for equity and quality of practices across the system. These observations reinforce the need for development of a stronger K2A system.

Table 1: Examples of K2A System Needs as Identified During Public Health Field Consultations

Feature	Workforce Development	Applied Research	Knowledge Exchange
Organizational culture	Value student placements and their coordination Value staff training and development as benefit to organization and as retention strategy	Value evidence for public health programs Accommodate the application for and management of research grants	Value evidence-based practice Support uptake into practice
Partners	Agreements with universities and other academic institutions	University links Ways to find and manage relationships with research partners Involvement with existing networks (e.g., OTRU, PHRED)	Links to academic institutions
People	Education coordinator designated Capacity of staff to preceptor students In-house expertise/sharing Access to topic experts Train providers	Capacity: data/evaluation methods, interpretation Grant writing expertise Research design and project management	Dedicated KE staff time Librarian Practice leads on each team Topic experts
Processes	Coordination/system for students to find placement Regional research days and shared training Support for training of staff	Regional networks Engagement of units with less internal capacity Research ethics review Grant management and administration Conduct research and evaluation	Networks
Products	Regular preceptor training Training modules	Prioritized research agenda Data sources Access to library Grant funding	Evidence in form applicable to user and context Access on-line resources

EMERGENCE OF A CONCEPTUAL MODEL FOR A K2A SYSTEM

During the Project consultations, desirable features for a K2A system model were identified and are shown to the right. Realistically, it may not be possible for a particular model to achieve all of these features, but one system of structures and processes may deliver these better than another. At the time of the Think Tank meeting, specific options had not yet been identified, but the discussions of that day provided sufficient input for a small working group to identify five conceptual models for a K2A system. A preliminary analysis of their pros and cons occurred and these were subsequently discussed with the Project Advisory Panel, other individual key informants, and subsequently at the culminating workshop.

Highly centralized and highly decentralized models were identified (see Appendix 3), but contradicted the direction of the AITF and CRC reports. With these limitations and the provision of alternative models, the Advisory Panel and individual informants advised that they not be considered further. Nonetheless, all models were included in the background materials and presented at the culminating workshop.

Desired Features of a K2A System – Input from Consultations

- Builds critical mass; addresses and builds **capacity** in local public health units
- Promotes **equity** of access among health units (includes concepts of capacity and geography)
- Ensures system **responsiveness**, flexibility, adaptability
- Affordable, efficient, adequately **resourced** and sustainable
- Builds upon **established** networks and/or sites and/or relationships
- Based upon governance and operating principles that promote **simple** and **effective** cross-organizational interactions and relationships
- Promotes **collaboration** and transparency
- Enables priority, high quality applied public health **research**
- **Balances** academic with practice needs
- Facilitates a focus on “program/content” areas of **specialization**
- **Aligns** with Agency Implementation Task Force recommendations
- Based on a model that incorporates demonstrated **effectiveness** and **success** factors from experiences in other jurisdictions
- Promotes cross-sector ownership and **relationships**
- Ensures strong **linkages** with and relevance to the **field**

Alternative models included a hub-and-spoke model and a dispersed network model. The **hub-and-spoke** model, shown in Figure 1 on the far right, features the idea of a series of regional hubs that would establish links with a geographically defined grouping of health units and academic partners (the 'spokes') to fulfill K2A functions. The hub would be envisioned to:

- Provide input into curricula.
- Coordinate student placements.
- Assess training needs on a regional basis and coordinate region-based training.
- Establish and facilitate relationships between health units in the region and academic partners and the Agency.
- Support applied research and evaluation in health units in the region.
- Facilitate creation of a research consortium among regional partners.
- Identify regional public health research priorities.
- Support individual health units in creating a supportive environment to apply new knowledge.

For example, a hub with a large rural population would support regional planning related to meeting the needs of rural communities, and could develop and implement a needs assessment process in the surrounding rural communities, working with other health units and partners as needed.

In contrast, the **dispersed network**[iii] model envisions a series of topic-specific networks that are developed and supported through program/practice nodes[iv] (see the top left part of Figure 1). Each node would develop relationships with health units (all or a subset) and with academic partners as needed to fulfill its particular responsibility. A node may support student placements and staff training, engage in applied research, and support application of knowledge into practice. For example, following consultation with system stakeholders, the Ministries might decide that an applied research priority is to identify, pilot and evaluate options to better address the public health needs of rural communities. The Agency might then establish a node to lead a network of relevant health units and academic institutions to be involved in the project, as well as engage a number of key stakeholder groups, the Ministries and others. Networks would be established to address a specific purpose, perhaps time-limited, which would inform the selection of the node and network participants. Considering the very large number of potential topics, the creation and support of such networks would need to be driven by system priorities.

In examining the pros and cons of each of these models, it became apparent that the hub-and-spoke and the dispersed network models offered some opposite benefits and challenges. For example, one of the advantages of the hub-and-spoke model is that it favours the development of ongoing relationships between the hub, health units and academic partners, whereas dispersed networks may have a constant shifting of arrangements. At the same time, there are likely issues that cross regions that could be addressed through a dispersed network. For example, a focus on practice issues in rural communities will affect a scattered set of health units across the province

---

[iii] Dispersed network: a widely spread arrangement of individuals and organizations having a common interest

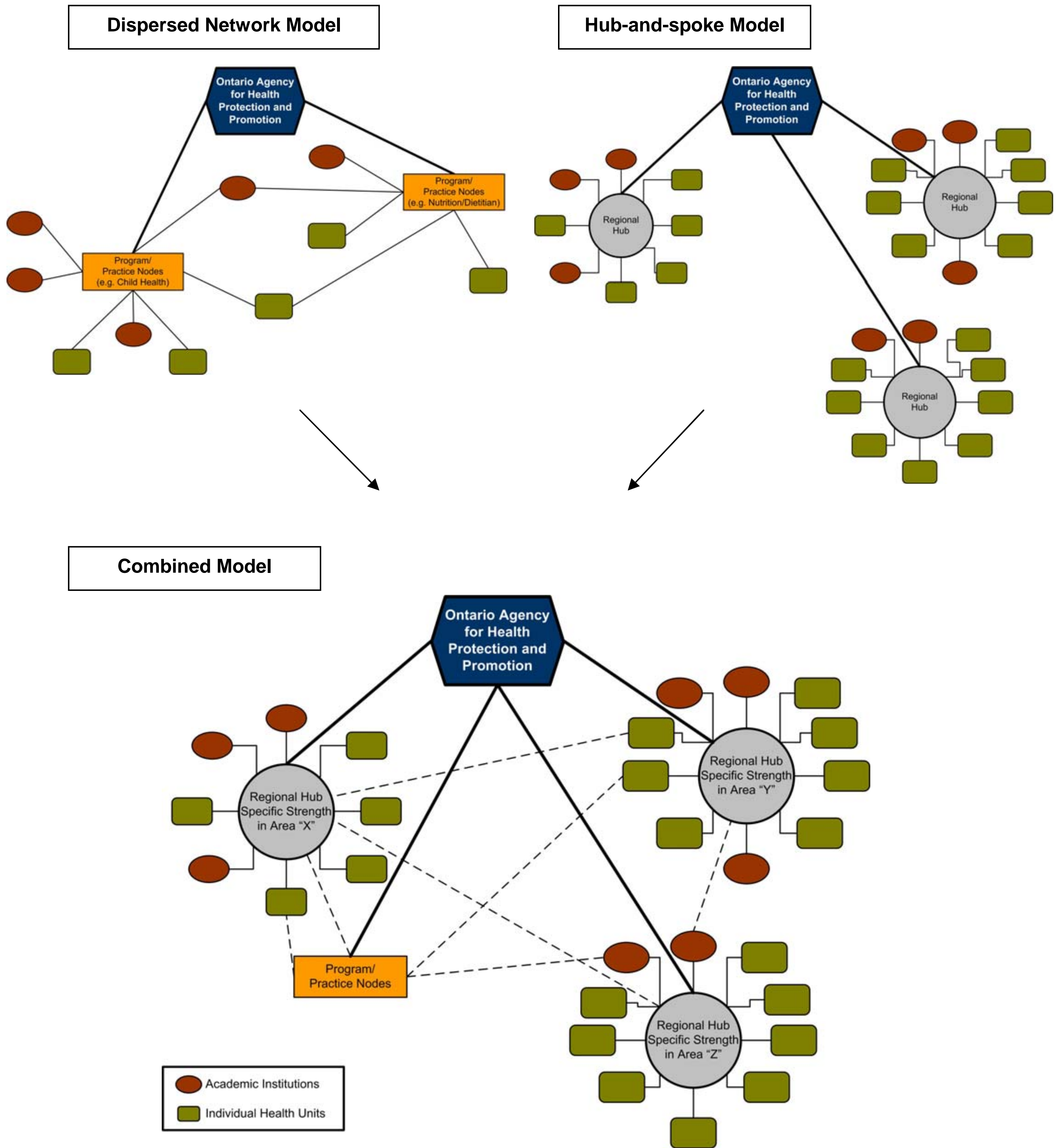
[iv] Node: a centering point of component parts

and could be more favourably addressed with a dispersed network model. It became evident that a model that combined the main features of both the hub-and-spoke and dispersed network models, i.e., a combined model, may provide the best fit with the desired functionality of the system. The merging of the two models is illustrated at the bottom of Figure 1. A regional presence is established through regional hubs, with topic-specific networks also established and supported through program/practice nodes. It is possible for a regional hub to also function as a program/practice node in addition to their more generic responsibilities to the region (in other words, blend generalist and specialist roles).

The hub-and-spoke, dispersed network, and combined models were discussed with the Project Advisory Panel, additional key informants, and at the culminating workshop. Overall, the combined model received considerable support from these groups.

The remainder of this section will describe in more detail key themes heard during the consultations and workshop, which will then be followed by some additional post-workshop analysis and formulation of next steps for moving forward.

Figure 1: Development of a Combined K2A Model



Key Themes from the Field Consultations and Workshop

There were several key themes to the comments and feedback heard during the consultations and culminating workshop. This section provides a summary of these themes that will need to be considered in the next steps of system development.

Build on Existing Strengths and Experience

Several participants stressed that in building a stronger K2A system, Ontario is not starting from scratch. There needs to be a better understanding of existing structures and capacity to build on established networks. For example, there is a need to recognize the contribution that the Public Health Research, Education and Development (PHRED) Program makes to strengthening public health in Ontario. This program is addressed in further detail later in this report. There are also many other organizations that are involved in contributing to these functions. For simplicity, the model diagrams prepared for the culminating workshop did not include all of the potential partners in a K2A system. Several participants commented that there was a need for other organizations to be more explicitly linked to the models. Examples included Local Health Integrated Networks (LHINs), First Nations, Non-Governmental Organizations (NGOs), and practice partners. Some participants also noted the absence of the Ministries from the models.

Recognize the Flexibility Built Into the Model

Different functions and their component tasks require different processes and structures. For example, it was observed that WD seems to align best with the regional focus of the hub-and-spoke component to support proximal relationships to flourish and engage partners in the process of assessing training needs, providing training, and supporting incorporation of evidence into practice. Similarly, for well developed programs such as tobacco control and communicable disease control, a regional approach has advantages. However, other issues that are setting or population focussed or applied research topics requiring particular expertise would be facilitated by the flexibility of a dispersed network approach. The value of the combined model is that it provides the flexibility to choose the best approach for a particular issue.

Develop the Combined K2A Model Details

Stakeholders suggested that the Agency should be shown as a central hub to the overall K2A system as opposed to a top-down hierarchical relationship. In addition, there was some concern regarding the meaning of various lines that appear on the models given that the relationships they depict have different implications (e.g., Agency-regional hub versus regional hub-local health unit versus regional hub-university).

The existing model and associated discussions have been conceptual to this point, although more highly focussed than what was possible for the CRC or AITF. A number of workshop participants commented that while the combined model was preferred at this time, there were inter-individual differences in its interpretation. There is a need to become more detailed and operational in designing the model to achieve specified tasks including the expected roles of system actors. Development work should be driven by having a set of clearly identified impacts and outcomes expected from the system. For example, an expected system output is an AR

agenda. How exactly would the model perform to achieve this and other expected outputs? There are similar pragmatic questions regarding the other K2A functions and associated tasks. Questions remain for other related issues such as how to support communities of practice in a K2A system.

Capacity Implications

Consistent with the CRC report, participants highlighted the need for sufficient health unit capacity to fulfill expected roles and that additional duties should not just be assigned to existing staff. It was suggested that fulfilling K2A functions will require either new resources or the elimination of some current activities. Further thinking is needed about what is realistic and beneficial. In addition, workshop participants emphasized the importance of not just individual level competencies, but also organizational capacities that support the uptake of knowledge into practice.

Issues to be Resolved Regarding Regional Hubs and Dispersed Network Nodes

Since a key structural piece of the combined model is the inclusion of regional hubs as part of regional hub-and-spoke groupings, as well as program/practice nodes to coordinate the dispersed networks (see Figure 1), many comments and suggestions were made regarding these entities. These included:

- Multiple possibilities for establishing program/practice nodes:
    - Nodes based on peer groups (e.g., rural health units)
    - Nodes as individual K2A functions (e.g., WD, AR, KE)
    - Nodes by setting (e.g., schools, workplaces, etc.)
    - Nodes related to public health program standards
    - Nodes focussed on aspects of organizational capacity (e.g., change management).

- Issues in creating regional hubs:
    - Broad criteria already established in CRC and AITF reports
    - Their number (i.e., balance between proximity to field and critical mass; consider current PHRED program sites and other existing boundaries)
    - There needs to be a physical presence of regional hub staff, but also a virtual presence
    - Need to be consistent in the establishment process
    - Competitive process would allow groups to be creative and identify how they would be inclusive, but may reinforce inequities. Conversely, if done frequently, a competitive process could raise concerns regarding consistency of staffing
    - Whether to house in existing organisations such as health units - opportunity for synergies with organization but also need to be clear about regional and provincial expectations.

Learning from Other Models

A number of models have been utilized in Ontario; they contribute valuable lessons for the development of a K2A system. For example, the Health Intelligence Units (HIUs) were a hub-and-spoke model that appeared to be effective in engaging health units and other partners. One of the limitations was that each of the five HIUs evolved in a different direction, detracting from a true system-wide perspective. The current Health System Intelligence Project (HSIP) model has much stronger central direction and blends regional generic responsibilities with specific areas of responsibility for provincial work.

The Ontario Tobacco Research Unit (OTRU) strategy was based on a perspective that a provincial level strategy was not sufficient and required an additional regional component, particularly because people relate to each other on a regional level. The overall structure has a central steering committee with several task groups, as well as a series of resource centres to assist with planning and training. The model has been popular with the field, and a success for provincial implementation.

At the national level, the National Collaborating Centres (NCCs) which have centrally mandated areas of focus, were established regionally, and are expected to have a national perspective to their work. The process to establish each NCC including where they are based has been variable. Since the NCCs are expected to be actively involved in knowledge synthesis and exchange, their interface with Ontario's K2A system should be addressed to maximize synergy and avoid duplication. This is an issue common to other jurisdictions, particularly the larger provinces that have more highly developed approaches for the K2A functions.

Also at the national level is the Canadian Health Services Research Foundation (CHSRF) that promotes and funds management and policy research in health services and nursing to increase the quality, relevance and usefulness of this research for health-system policy makers and managers. In addition, the Foundation works with these health-system decision makers to support and enhance their use of research evidence when addressing health management and policy challenges. Reflecting the participatory nature of KE, any Foundation project, process or activity involves researchers, managers, and policy makers from academia and the health system.

A Phased Approach to System Development

Discussions at the culminating workshop pointed to a need to phase in the required changes. For example, it was suggested that building regional capacity may be an initial step to support individual health units and achieve greater equity, with the gradual addition of dispersed networks.

POST-WORKSHOP ANALYSIS AND DISCUSSION

The work to date has moved towards a model for a K2A system that combines regional hub-and-spoke groupings with a series of dispersed networks coordinated by program/practice nodes. Based on the Project's consultations, some changes to the originally drafted model are required.

Refining the Combined K2A Model

Defining the Role of the Ministries

The suggestion that the Ministries should be shown on the diagram was received from many individuals. Obviously there is accountability of both the Agency and health units to the Ministries. The final AITF report provides some guidance for delineating roles between the Ministries and the Agency for the K2A functions (Table 2). The Ministries provide the policy context that defines the mandate of the Agency and the expected structure and functioning of the K2A system. The Ministries may make the final decision on priorities for WD or AR, but it is the Agency and the K2A system that will be the operational organizations involved in the day-to-day processes of these functions. The Ministries serve as "stewards" of public resources, and the Agency and health units are "service providers" for K2A functions.

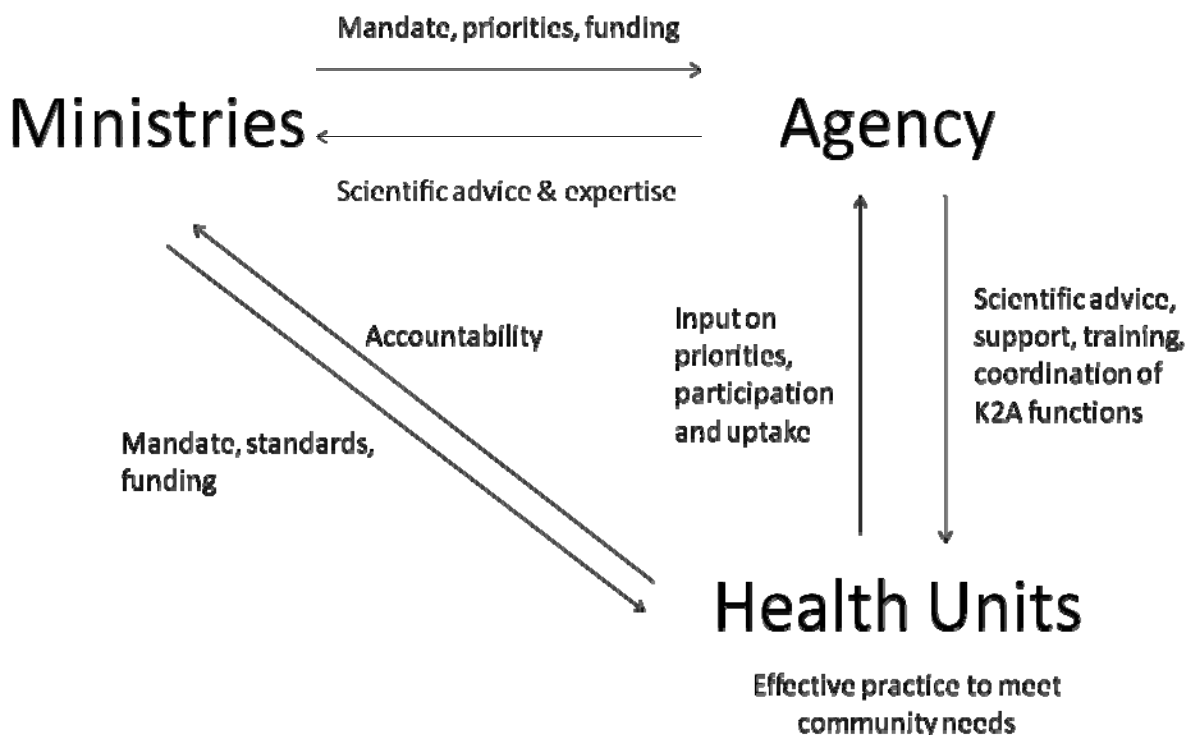
Since the specific focus of this Project is on the K2A system, the Ministries have not been shown on the existing system diagram. Figure 2 provides a simplified illustration of the inter-relationships between the Ministries, the Agency and health units for K2A functions.

Table 2: Roles of the Ministries and the Agency as Described in AITF Report

Function/Task	Ministries	Agency
Public health human resource planning, assessment and training (i.e., workforce development)	Hold overall responsibility for formal public health human resource strategies	Survey and report on training gaps Identify and deliver issue specific training and specialized support tools Act as a provider of knowledge and skill development for public health practitioners, scientists and researchers
Relationship to public health units **(includes applied research and knowledge exchange functions)**	Lead for funding Retain role in standard setting for program delivery Enforce compliance with MHPSG	Support Ministries with provision of research and evidence relevant to maintaining the standards and developing best practices, templates, tools, and support to assist with field delivery of the MHPSG* Provide specialized scientific and technical support including field and training support Synthesize best practices, guidelines and practical tools

* MHPSG: Mandatory Health Programs and Services Guidelines are undergoing transition to the "Ontario Public Health Standards" and are currently in draft form.

Figure 2: Relationships Between Ministries, Health Units and Agency for K2A Functions



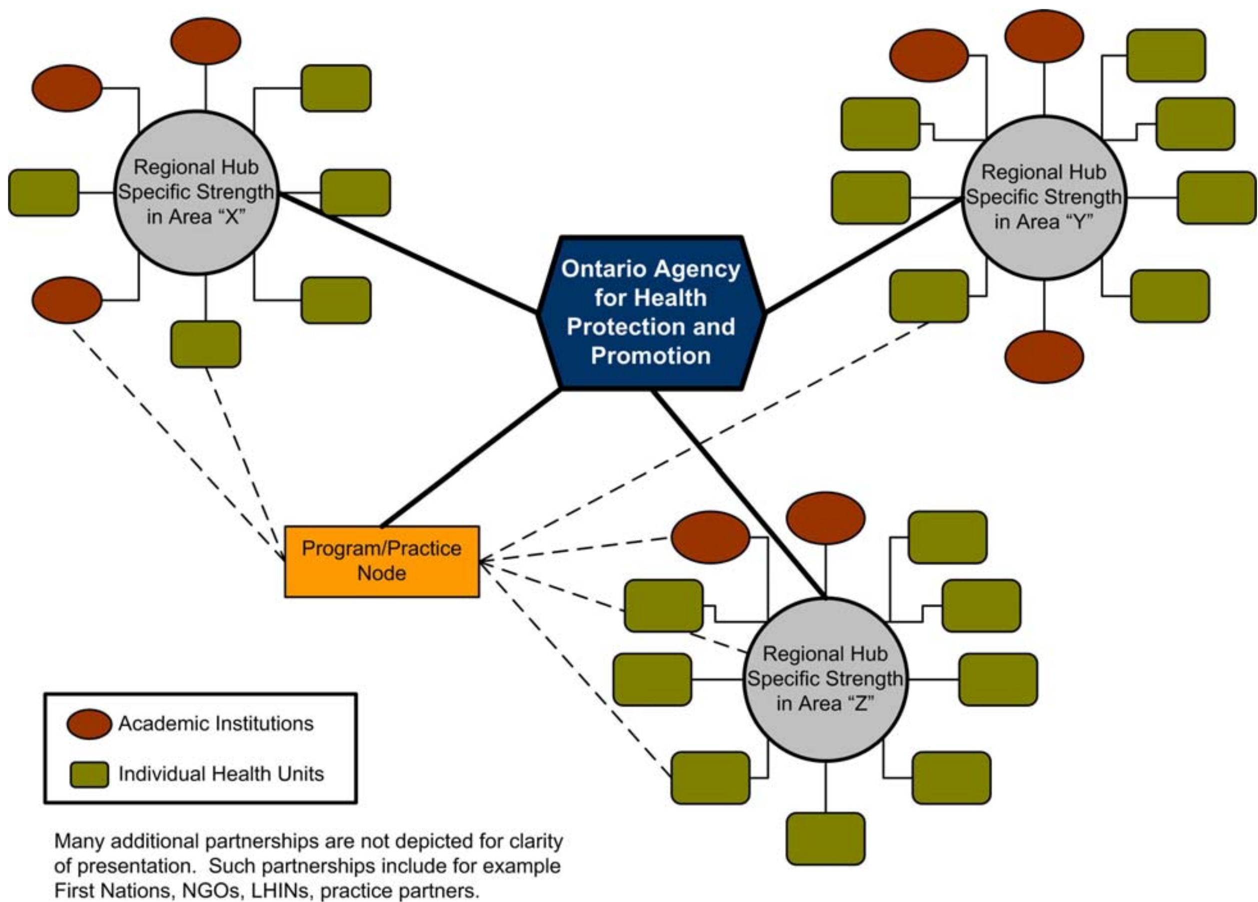
Including Other Partners in the Model

Several suggestions were made by workshop participants to be more inclusive of other organizations in the K2A system model. A notation has been added to the model to acknowledge these additional partners. However, this notation does not fully address the issue of what is the nature of the desired relationship between the hubs and partners such as LHINs, Regional Infection Control Networks (RICNs), Ontario Health Promotion Resource Centres (OHPRCs), First Nations communities, and others. "One size/role" will not necessarily fit all of these system partners. There is a difference between engaging a partner on a specific issue versus a more formal relationship such as membership on a regional steering group. Further work is needed to determine what needs to be accomplished, with whom, and how best to support the required processes.

Proposed K2A Model

Considering the preceding discussion, the main change to the model is to move the Agency to the centre of the diagram to illustrate its central organizing responsibilities for the K2A system (see Figure 3) recognizing that dispersed program/practice networks and hub-and-spoke groupings may include additional partners. As per previous diagrams, Figure 3 is intended for illustrative purposes and the actual number of regional hubs and coordinating nodes for dispersed program/practice networks will be greater than what is shown. Sample illustrations of how the K2A system might operate are also provided in the next section.

Figure 3: Proposed K2A Model



The K2A Model: How Might It Operate?

Sample illustration 1: Knowledge Exchange on Community Obesity Prevention Strategies

A local health unit identifies the need for improved practice regarding community obesity prevention. The program manager contacts the regional hub to enlist support for their work. The regional hub staff facilitate connections with other health units in the region to draw on their experience and to ensure that campaigns are coordinated across the region that shares the same media sources. Other partners who can share knowledge might include relevant resource centers within the Ontario Health Promotion Resource System. Access to effectiveness reviews and literature on community obesity prevention is provided through the regional library service. Regional hub staff with expertise in program planning and evaluation advise on the development of local health unit action plans that are implemented locally but have some coordinated regional elements (e.g., engagement with LHIN partners). Regional hub staff also play a knowledge broker role in translating the literature to the local context and working with local public health staff to identify strategies to enhance practice. The action plans and campaigns are shared with the Agency and other hubs to enable knowledge exchange with other health units. Links to university-based researchers working in this area are made through the regional hub in order to access their expertise and build related applied research possibilities. As part of a future needs assessment process, the regional hub also advises the Agency and other hubs that community obesity prevention is emerging as an area of need.

Sample illustration 2: Applied Research on an Emergent Issue

The Agency's research agenda identifies the implications of active disclosure (e.g., web-based access to inspection reports) on compliance with safe food practices as an area requiring further study with a view to guiding implementation of active disclosure programs in all local public health units. The Agency contacts a regional hub with links to an academic centre with expertise in this topic to undertake the work. A research proposal is developed jointly by the regional hub, academic partners, and existing practice partners with a view to receiving grant funding for the research. The research is conducted by identified university and hub researchers, with guidance from the regional hub, local public health and other practice partners. Data may be collected through local public health units as appropriate. The findings are shared with the Agency to inform their decisions, and with regional hubs for sharing with local health units. Local public health units may make changes to practice based on Agency recommendations, and/or based on their consideration of the implications of the findings at the regional and local levels.

Sample illustration 3: Workforce Development through Student Placements

In alignment with the Ministry's workforce development priorities, the Agency issues a call for proposals to develop a set of guidelines for health unit student placements, which would include sample policies and procedures and 'better practices' or 'promising strategies'. A *Student Development Network* (an example of a dispersed network) is formed to develop the guidelines, led and coordinated by a node (located anywhere in the province), with the network including membership from interested local public health units and academic centres. The Network is sunsetted once the guidelines are complete. Regional hubs then play a knowledge broker role with their academic centre links and the health units in the region, to implement the finalized guidelines or to adapt them to local context.

Additional Issues

There are additional unresolved issues as outlined in this section. These issues are described for the benefit of those who will be working at further developing the K2A system. Further analysis and discussion with system stakeholders will need to be built into future processes for system development.

The issues described below include:

- Considerations in establishing regional hubs
- Mapping out K2A-related tasks to inform system development
- Transitioning the PHRED Program
- Organizational and system culture.

Considerations in Establishing Regional Hubs

The general consensus from this Project's field consultations, key informant work and culminating workshop was that having regional hubs in the model is valuable. The AITF spoke directly to this issue in noting the experience with HIUs and PHREDs and recommended:

> "promoting the establishment of coordinated regional approaches to increasing both the availability and relevance of research on a more equitable basis...[by]... supporting regional research and knowledge exchange network specific to public health."[4]

In addition, the AITF argued for the:

> "need for a more cohesive and equitable approach to the knowledge exchange, training and research supports at a regional level."[4]

The main considerations that argue for a regional approach include:

- The size and diversity of the province
- Addressing existing inequities, given the large number of health units with markedly different capacities for K2A functions
- The distribution of academic training and research centres across the province
- The importance of critical mass to support K2A functions
- The importance of local relationships between K2A partners that are sustained over time.

Nevertheless, there remains some uncertainty regarding specific roles of regional entities as compared to other system actors. Part of the difficulty has been the conceptual level of the analysis to date. What needs to occur is an assessment of system actor roles while mapping out key tasks. As noted during the consultations and culminating workshop, regional hub-and-spoke groupings and dispersed networks have different strengths when applied to particular functions and tasks. One of the strengths of the combined model is providing the option to use either approach depending on the issue at hand. Examples of mapping particular tasks are provided later in this report to make this point more concretely.

In developing a regional approach, lead organizations should be selected against clear criteria that might include:

- Regional representation, involvement and access
- Multi-disciplinary steering committee
- Strategic plan which aligns in key areas with that of the Agency
- Established academic affiliation agreements
- Demonstrated track record in the fields of knowledge exchange, training and research.

There are some quite specific issues that need to be addressed and participants at the culminating workshop provided preliminary advice for future system development:

- How many regions?
  - Avoid too many which will be more expensive, difficult to recruit to, and more difficult to coordinate
  - Avoid too few because of need to be responsive to local health units

- Placed within health units?
  - Opportunities for synergies
    - foot in practice and academic world
    - efficiencies for support service costs
    - grounding in public health context
    - staff synergies – local staff exposure to more specialized practitioners, avoid isolation of specialized staff
  - Risks of diversion of regional capacity to host unit
  - Potential benefit of identity outside local health unit

- Funding?
  - Needs to be 100% provincially contributed. Cannot continue the misalignment of function/responsibility and funding that currently exists with PHREDs

- Generalist versus specialist responsibilities?
    - Centres often combine the two (e.g., UK Public Health Observatories, HSIP)
    - Financial and intellectual synergies of combining a generalist hub and a specialized area of focus
    - Risk that specialist role will overwhelm generalist role within a regional hub

- Type of staffing?
    - Contract/project staff versus secondment versus core staff – issues of job security, development of relationships with clients/partners, flexibility.

Other than the funding item, obvious "right" answers for many of these characteristics were not finalized and may not exist, though decisions will have to be made to move forward. All of the remaining items involve tradeoffs between options. Determining the preferred option should be informed by some detailed mapping of tasks and consultation with stakeholders. The AITF noted that:

> "Making this sort of transition from the existing approach is not going to be easy or quick. However, change from the status quo is required in order both to harness the available expertise and experience while ensuring that this is made available across the province in a coordinated and equitable manner."[4]

Mapping Out K2A-Related Tasks to Inform System Development

To move beyond the conceptual level of the proposed model, there is a need to work through specific tasks to identify how the processes are to occur including who does what. Involving system actors in the mapping of tasks is an important way to build a system-wide perspective. The following possible task sequences are therefore illustrative versus prescriptive in nature. The listed tasks are similarly illustrative and not intended to be exhaustive in scope.

Possible Task Sequence: Knowledge and Skill Development

1) Ministries inform Agency of program priorities for workforce development (Example: assume hypothetical priority of assessing communities' needs and developing comprehensive local action plans for obesity prevention).

↓

2) Agency develops, possibly with assistance of a program/practice node and its network with the relevant focus and expertise, training needs assessment tool for local obesity prevention planning.

↓

3) Agency works with regional hubs for consistent implementation of the tool in health units.

↓

4) Regional hubs support partnering health units to apply assessment tool.

↓

5) Regional hubs analyze results from client health units.

↓

6) Regional hubs meet with Agency to set priorities for training – possibly a combination of province-wide and region-specific.

↓

7) Agency takes lead to establish training program – this may involve regional hub and/or program/practice node with relevant experience and expertise, academic centre(s), etc.

↓

8) Regional hubs take lead to coordinate provision of training with client health units.

↓

9) Regional hubs, with expert assistance from program/practice node and/or Agency staff, provide support for uptake of new skills into relevant teams.

↓

10) Agency designs impact assessment process. Regional hubs implement and meet with Agency to discuss findings for future action (i.e., feedback loop).

Possible Task Sequence: Applied Research and Knowledge Exchange

1) Agency seeks input on establishing multi-year research agenda (likely refreshed on periodic basis such as every 2-5 years). Regional hubs, existing network nodes, and other partners work with clients (i.e., health units and others) to identify short lists of priorities.

↓

2) Agency oversees process involving key stakeholder representatives to finalize list of priorities.

↓

3) Depending on topic, Agency has options as to how to address a particular research question:

- **a.** Request/task existing network if it has the established expertise, relationships, capacity, etc. to address the question. Note: this might be a program/practice node or a regional hub
- **b.** Establish a network to address the question.
- **c.** Issue a request for proposals – this might include specific criteria of characteristics of lead organization (node/hub), participants, process, etc.

↓

4) Development of research protocol, ethics review and conduct of the research involves different system actors including local health unit staff.

↓

5) Research findings are actively shared with system actors to identify implications for policy and practice (e.g., change/clarification of standards; need for program changes; training needs, etc.)

↓

6) If program/practice change required, then development of KE plan to achieve this. Active support from regional hubs and/or program/practice node to individual health unit teams and management.

↓

7) Agency works with system actors to evaluate impact of KE efforts to change policy and program/practice.

As individual tasks are mapped out, the information can be used to populate a responsibility matrix for the K2A system that will outline the roles of individual system actors (see Table 3).

Table 3: Responsibility Matrix for K2A Functions and Tasks Among Public Health System Actors – Examples of Skills Training (WD) and Identifying Research Priorities (for AR and KE)

Function/ Task	MOHLTC/ MHP	Agency	Regional Hub	Health Unit	Program/ Practice Node	Partners
Knowledge and skills development	Identify program priorities for skills training Set program standards	Develop needs assessment tool Working with regional hubs, establish province-wide training priorities Coordinate development of training program Assess impact of training program	Support application of assessment tool and analyze results Coordinate/ provide delivery of training with client health units Provide support to health units for application of new skills	Assess training needs of staff Support staff training Support application of new skills in programming	Support Agency with development of tools, training program Expert resource to regional hubs to support training program and support application to practice	OHPRS: potential partner NGOs: potential client, potential delivery partner LHIN: potential client
Identifying research priorities	Establish mandate for Agency to develop research agenda Funding	Lead responsibility to establish research agenda Establish mechanism	Work with partners to identify province-wide and region-specific research priorities Contribute to overall priority setting	Provide input to identify research priorities	Identify priorities in context of network's mandate. For example, if focussed on practice issues in rural health units, then would identify topics of specific relevance to this group	Would be asked to contribute to identification of priorities

While the rows of the matrix should provide an overview of how the system will fulfill individual tasks, the individual columns will provide a profile of what is expected of individual system actors. Once this exercise has been conducted for multiple tasks, a much clearer picture of what is expected of regional hubs, program/practice nodes and other system actors should emerge, which can then inform decisions regarding what structural characteristics and capacity to build and implement.

As the mapping of multiple K2A tasks across system structures and actors occurs, a K2A system logic model should be built since it will form another important representation of the system that will explicitly link system activities with impacts and measurable outcomes. As with any logic model, there can be different levels of detail. One might envision an overall K2A model – one for each function; and additional more detailed logic models for specific tasks.

Transitioning the PHRED Program

The development of a K2A system represents the next step in the evolution of structures and processes to fulfill public health system WD, AR and KE functions. The Teaching Health Unit program was implemented in 1984 and subsequently transitioned into the PHRED Program in 1997. While the PHRED Program was envisioned as a regional model, it never was implemented as intended. The lack of 100% provincial program funding required individual municipalities to fund half of the budget, preventing a province-wide system of true regional entities from developing. Not surprisingly, each site implemented in a distinct fashion. Nevertheless, the PHRED Program has made significant contributions to fulfilling K2A functions over the past decade.

The CRC and AITF reports do not provide complete guidance on the future of the PHRED Program. The focus of this Project has been on how best to fulfill K2A functions versus directly addressing the specific future of the PHREDs. Once a more detailed operational K2A model is developed including defining the required structures, their roles and processes, then the question of how best to transition the PHRED Program to the new system can be identified. Since the current five PHRED sites represent important system capacity and established relationships, the transition plan should ensure that these system assets are not lost.

Organizational and System Culture

The CRC stressed the importance of continuous quality improvement and the need for a culture to support quality. The April 30, 2007 draft Ontario Public Health Standards will also require organizations that foster workplace development, applied research and knowledge exchange to meet the standards. The K2A system is critically important to provide training to improve staff competencies and provide mechanisms to influence new research that is conducted, and assist their incorporation into practice. However, as outlined earlier in Table 1, interest in participating and supporting uptake of new knowledge, practices and skills is dependent on the culture of individual organizations. Supporting the development of organizational competencies and supportive organizational attitudes by the leadership and management at all organizational levels are critical prerequisites. Similarly, the Ministries need to foster an overall culture that supports evidence-based practice and performance.

Recommendations for Next Steps

Over the past 25 years, Ontario has recognized the critical importance to the health of its citizens of moving public health knowledge into action. Ontario has established structures and processes to support the knowledge to action (K2A) critical functions of workforce development, applied research and knowledge exchange. The province is recognized nationally for its leadership in these areas.

Recent reports reviewing the Ontario public health system have reinforced the importance of K2A functions to a public health system that is evidence-based and continually improving. However, attention has also been drawn to the need for stronger central and local capacity to ensure that there is sufficient critical mass with the knowledge and skills required to translate knowledge into action.[1,2,3,4,5] The much-anticipated Ontario Agency for Health Protection and Promotion (Agency) is proposed to fulfill key roles in conducting and supporting K2A functions.[4,18]

With these developments, the Knowledge to Action – K2A Project was conceived with the premise that the time is right in Ontario to build a stronger workforce development, applied research and knowledge exchange system. Utilizing an iterative and consultative process, the K2A Project builds on the recommendations from the Capacity Review Committee and Agency Implementation Task Force reports to develop a model to better address the K2A functions of workforce development, applied research and knowledge exchange. The express focus of the Project is to develop a model that optimally supports K2A functions in local public health practice.

Substantial progress was made during the K2A Project. The Project represents a significant step towards the development of an operational province-wide public health K2A system that optimally supports these functions in local public health practice. The proposed model builds on existing structures and capacities and is intended to illustrate an end point. Reaching this end-point will likely require phased-in implementation. Provincial leadership is now required to build upon the K2A Project's recommendations and established broad-based momentum. While the Agency will eventually have a strong and central role in the K2A system, it is anticipated that it will be some time before the Agency is established and fully functional. In the interim, there is a clear leadership role for the Ministry of Health and Long-Term Care and the Ministry of Health Promotion (Ministries) to conduct more detailed planning for the establishment of a public health K2A system that supports and informs effective public health practice.

The following key recommendations are based on the K2A Project findings:

1) That the public health field, the Ontario Agency for Health Protection and Promotion (Agency), the Ministry of Health and Long-Term Care and the Ministry of Health Promotion (Ministries) adopt the Knowledge to Action model proposed in this report. This model is comprised of Ontario-wide regional hub-and-spoke groupings that are complemented by a series of dispersed networks led by program/practice nodes.

2) That the Ministries, in adopting the proposed model, take on a leadership role and commit to a timely process in which the conceptual model is further analysed and developed for implementation.

3) That the Ministries establish a K2A implementation advisory team comprised of representatives of key K2A system actors to conduct this more detailed analysis and development. Health units should be active participants in the implementation advisory team given their key vested interest. They should be joined by academic and practice partners. The K2A implementation advisory team should:

- **a.** Incorporate the experiences of others (e.g., HIU, HSIP, NCC, OTRU, PHRED, OHPRS, CHSRF, INSPQ, etc.) in conducting a more detailed analysis of how to establish the proposed model to identify barriers and facilitators to implementation.

- **b.** Develop a more detailed, operational system model by mapping out key tasks and responsibilities for system actors resulting in:

  - **i.** A structural design model with more detailed descriptions of regional hubs and dispersed network nodes including recommended number, desired functionality, structure, governance, selection process and capacity requirements.

  - **ii.** A responsibility matrix outlining roles for system actors for key functions/tasks.

  - **iii.** A system logic model that links activities and processes with expected outputs and outcomes.

  - **iv.** A recommended budget.

- **c.** Develop a phased implementation plan for the model as a whole, including timelines and a transition plan from the current PHRED model to the identified province-wide public health K2A system.

REFERENCES

1) Campbell, A. (2004). The SARS Commission interim report: SARS and public health in Ontario. Toronto: Ontario Ministry of Health and Long-Term Care.

2) Campbell, A. (2005). The SARS Commission second interim report: SARS and public health legislation. Toronto: SARS Commission.

3) Walker, D., Keon, W., Laupacis A., Low, D., Moore, K., Kitts, J. et al. (2004). For the public's health: A plan of action: Final report of the Ontario Expert Panel on SARS and Infectious Disease Control. Toronto: Queen's Printer for Ontario.

4) Agency Implementation Task Force. (2006). From vision to action: A plan for the Ontario Agency for Health Protection and Promotion. Toronto: Ministry of Health and Long-Term Care.

5) Ontario Capacity Review Committee. (2006). Final report of the Capacity Review Committee: Revitalizing Ontario's public health capacity. Toronto: Ministry of Health and Long-Term Care.

6) Frank, J., DiRuggiero, E., & Moloughney, B. (2003). The future of public health in Canada: Developing a public health system for the 21st century. Toronto: Canadian Institutes for Health Research.

7) National Advisory Committee on SARS and Public Health. (2003). Learning from SARS: Renewal of public health in Canada. Ottawa: Health Canada.

8) Moloughney, B.W. (2006). The renewal of public health in Nova Scotia: Building a public health system to meet the needs of Nova Scotians. Halifax: Nova Scotia Health and Nova Scotia Health Promotion and Protection.

9) Federal Provincial and Territorial Advisory Committee on Population Health (Can). (2001). Survey of public health capacity in Canada: Highlights. Ottawa: The Advisory Committee.

10) Québec Public Health Program 2003-2012. (2003). Québec: Ministère de la Santé et des Services sociaux.

11) Population Health and Wellness (Ministry of Health Services, British Columbia). (2005). A framework for core functions in public health: Resource document. Victoria: Province of British Columbia.

12) Public Health Functions Steering Committee. Public health in America. 1994. Available from: www.health.gov/phfunctions/public.htm. Accessed: 25-5-2007.

13) Turning Point Public Health Statute Modernization Collaborative. (2003). The Turning Point model state public health act: A tool for assessing public health laws. Available from: www.hss.state.ak.us/dph/improving/turningpoint/PDFs/MSPHAweb.pdf. Accessed: 4-10-2004.

14) Centers for Disease Control and Prevention. (2003). National public health performance standards program: State public health system performance assessment. Atlanta: Author.

15) Centers for Disease Control and Prevention. (2003). National public health performance standards: Local public health system performance assessment instrument. Atlanta: Author.

16) U.S. Department of Health and Human Services. (2000). Healthy people 2010: Understanding and improving health. 2nd ed. Washington: U.S. Government Printing Office.

17) Canadian Health Services Research Foundation. (2007). Glossary of knowledge exchange terms used by the Foundation. Available from: www.chsrf.ca/keys/glossary_e.php. Accessed: 23-1-2007.

18) An Act to Improve health Systems by Amending or Repealing Various Enactments and Enacting Certain Acts, Bill 171, 2nd Session, 38th Legislature, Ontario 56 Elizabeth II, (2007).

19) Naylor, D., National Advisory Committee on SARS and Public Health. (2003). Learning from SARS: Renewal of public health in Canada. Ottawa: Health Canada.

APPENDIX 1:
SUMMARY OF K2A PROJECT COMPONENTS AND TIMELINE

Project Inception, Approval and Initial Steps – December 2006 to January 2007

Under the leadership of staff from the Sudbury & District Health Unit and Middlesex-London Health Unit, a project proposal was developed and submitted to MOHLTC in December 2006. The Public Health Division, MOHLTC, approved the project and provided financing. A project multi-stakeholder Advisory Panel was established to provide strategic advice to the project. A Planning Group was established to carry out the planning of a Think Tank meeting and the culminating workshop. The Advisory Panel and Planning Group were consulted at multiple points over the course of the project.

Development of a Background Document – January 2007

In preparation for an invited Think Tank meeting, project staff developed a background paper that described the project's objectives, importance of K2A functions, current best practices knowledge, and a gap analysis. The document also provided a detailed summary of relevant recommendations from the CRC and AITF reports.

Think Tank Meeting – February 6, 2007

Utilizing an external facilitator, this meeting with invited key informants developed a challenge map outlining key K2A function challenges. Small groups tackled specific questions regarding how best to: a) harness existing expertise in the province; and b) ensure that the K2A functions are embraced by local health units and become part of normal work. Findings from this Think Tank were used to inform subsequent development of a series of draft system models and revise planning for the culminating workshop.

Model Development – February to March 2007

The project team discussed the findings to date and brainstormed a series of draft models. The project Advisory Panel and additional domain experts were consulted on the draft models, which resulted in the five draft models presented at the culminating workshop.

Field Consultations – February to March 2007

A series of 60 minute telephone interviews were conducted with staff from 20 health units to gather information on the local public health needs for K2A functions. Of particular interest were concrete examples of existing capacities across health units. Eight key messages were identified that apply across these functions: variety in current capacities across health units; need to ensure efficiencies across the system and avoid duplication; access to supports; need for information that has local relevance; importance of building and maintaining relationships; role clarification among system actors; need for enhanced public health core competencies among staff; and that K2A functions not be done in isolation but should inform one another.

Culminating Workshop – March 26, 2007

An invited workshop of representatives from multiple stakeholder groups was hosted by the K2A project group. Presenters from MOHLTC, the Canadian Institutes of Health Research and the Agency Implementation Task Force provided background and context for the project. The process and findings of earlier project steps were described and the models presented. In small group work, participants examined the models and their main feedback was discussed in plenary. There was also an opportunity to discuss advice for future steps in system development.

Final Advisory Panel Review – June 8, 2007

Project documents related to all of the above are available at:

www.sdhu.com
(from the main page, choose "Resources", "Reports", then "Knowledge to Action")

Appendix 2:

Relevant Recommendations from Capacity Review Committee and Agency Implementation Task Force

The Project background paper provided a summary of relevant recommendations from the Capacity Review Committee (CRC) and Agency Implementation Task Force (AITF) reports and is reproduced below.

WORKFORCE DEVELOPMENT	
AITF	**CRC**
AITF #8 The Agency should provide the following functions: ▪ surveillance and epidemiology; ▪ research; ▪ knowledge exchange; ▪ laboratory services; ▪ professional development; and ▪ communication. (p. 10)	**CRC #1** The Public Health Division should collaborate with the Ministry of Health and Long-Term Care's health human resources strategy to develop a comprehensive Public Health Human Resources Strategy that is based on best practices, ensures that the public health work force is adequate and well-equipped, and addresses both systemic and working life issues. The Strategy should consist of the following elements: ▪ A marketing initiative; ▪ Professional and leadership development initiatives; ▪ A centralized workforce database; ▪ Support for local health human resource initiatives including recruitment, retention and professional development; and ▪ Adoption or adaptation of the pan-Canadian public health core competencies. (p. 17)
Training Placements and Professional Development The Agency should, as we have recommended, act as a training ground for new public health professionals by providing placements for students and others entering the field through an organised placement program. (p. 21)	**CRC #3** The province should work with the Ontario Agency for Health Protection and Promotion to improve public health professional development and leadership training. (p. 18)

Appendix 2:

Relevant Recommendations from Capacity Review Committee and Agency Implementation Task Force

WORKFORCE DEVELOPMENT (continued)	
AITF	**CRC**
Training and Education To develop and carry out its professional development mandate, the Agency should consider early partnerships with various organisations and academia. For example, a partnership with the Public Health Units for placement of its public health professionals in the Agency or with medical and public health schools for students interested in the field of public health. Early partnerships to support capacity building in Ontario could include PHAC's Canadian Field Epidemiology Program and the initiatives underway through the PHRED program. (p. 25)	**CRC #6** Each health unit should establish a local human resource strategy that complements the provincial public health human resources strategy, to address initiatives for: recruitment, retention, professional development and leadership development. (p. 20)
Professional Development The AITF sees professional development as a function of the Agency. Training support potentially could be made available to providers and practitioners from various disciplines on a range of topics. (p. 46-47)	**CRC #35** Every health unit should have: ▪ Adequate administrative support for the health unit's business functions; and ▪ Adequate programmatic support including epidemiologists, data analysts, communications specialists, volunteer coordinators, research officers, and access to libraries and professional development opportunities. (p. 41)
Professional Development The Agency would also be well positioned to support and enhance ongoing professional development in infectious diseases, including infection prevention and control, is provided. It should play a coordinating role in ensuring that this is disseminated through colleges, universities, regulated health professionals' organizations and the community. (p. 49)	**CRC #49** Health units should pursue academic partnership agreements with universities, colleges and other related institutions to: ▪ Formalize educational student placements; ▪ Support applied public health research and program evaluation; ▪ Support faculty and curriculum development; ▪ Encourage cross appointment of staff; and ▪ Support ongoing professional development of public health workers. (p. 50-51)

Appendix 2:

Relevant Recommendations from Capacity Review Committee and Agency Implementation Task Force

<table>
<tr><th colspan="2">WORKFORCE DEVELOPMENT (continued)</th></tr>
<tr><th>AITF</th><th>CRC</th></tr>
<tr><td>Agency Activities
The AITF recommends that the Agency undertake the following activities at the end of Years 1-2 to support its research mandate: Undertaking a process to establish field presence to support research, knowledge exchange and professional development; (p. 69)</td><td>Elements of the Public Health Human Resources Strategy:
▪ a marketing initiative;
▪ professional and leadership development initiatives;
▪ a centralized work force database;
▪ a support for local health human resource initiatives including recruitment, retention and professional development; and
▪ adoption or adaptation of the pan-Canadian public health core competencies (p. 3)</td></tr>
<tr><td>Professional Development
In terms of professional development, the Agency should consider prioritising for Year 1, the development and subsequent implementation in Years 2-3 of workshops, summer institutes, web-based training and support, and other continuing professional education initiatives in partnership with colleges, universities, academic centres, Public Health Units and the Ontario NCC on both general and area specific topics (e.g., sessions on health promotion) and other key themes, such as:
▪ Research methods and data limitations;
▪ Core competencies;
▪ Systematic literature reviews;
▪ Social marketing; and
▪ Emerging issues updates. (p. 71)</td><td>Steps in revitalizing the public health workforce:
STEP 3:
▪ The province should work with the Ontario Agency for Health Protection and Promotions to improve public health professional development and leadership training.
STEP 6:
▪ Each health unit should establish a local human resource strategy that complements the provincial public health human resources strategy, to address initiatives for: recruitment, retention, professional development and leadership development.(p. 3)</td></tr>
<tr><td></td><td>Our Vision 2010
Public health has become a preferred career path for many disciplines and professions. Student placements and new training opportunities have made it possible for public health to attract many of the “best and brightest”. Strong, effective leadership, competitive salaries and a variety of professional development opportunities make it possible to recruit and retain highly qualified staff. Staff turnover is significantly down, productivity up, and health units have the mix of skills they need to effectively deliver programs and services. (p. 16)</td></tr>
</table>

Appendix 2:

Relevant Recommendations from Capacity Review Committee and Agency Implementation Task Force

<table>
<tr><th colspan="2">WORKFORCE DEVELOPMENT (continued)</th></tr>
<tr><th>AITF</th><th>CRC</th></tr>
<tr><td rowspan="2"></td><td>Preparing the Next Generation
Ensuring a future work force is essential. Currently, public health has a low profile among secondary and post-secondary students, even among those in the health sciences. This contributes to recruitment challenges for health units, particularly in northern and rural areas. We looked at a number of ways in which the profile and quality of training in public health could be improved. New initiatives should be developed to enhance the relationship between public health and colleges and universities, thereby opening new opportunities for training, professional development and strategic partnerships. (p. 22)</td></tr>
<tr><td>Sufficient Resources
To implement professional development strategies, health units must have sufficient resources of two types. First, there must be dedicated human resources, such as an education coordinator to organize professional development within health units. Second, boards of health need to integrate professional development into their budgets. It is recommended that all boards of health dedicate a proportion of their budget (e.g., a minimum of one to two percent) for professional development. Funds are also required to support training activities, for example by temporarily filing positions of staff on education leave. (p. 21)</td></tr>
</table>

<table>
<tr><th colspan="2">APPLIED RESEARCH</th></tr>
<tr><th>AITF</th><th>CRC</th></tr>
<tr><td rowspan="2">AITF #8
The Agency should provide the following functions:
▪ surveillance and epidemiology;
▪ research;
▪ knowledge exchange;
▪ laboratory services;
▪ professional development; and
▪ communication. (p. 10)</td><td>CRC #9
The Public Health Education and Development (PHRED) program should be funded 100 percent by the province in order to strengthen public health knowledge development and translation into practice. (p. 45)</td></tr>
<tr><td>CRC #35
Every health unit should have:
▪ Adequate administrative support for the health unit’s business functions; and
Adequate programmatic support including epidemiologists, data analysts, communications specialists, volunteer co-coordinators, research officers, and access to libraries and professional development opportunities. (p. 41)</td></tr>
</table>

Appendix 2:

Relevant Recommendations from Capacity Review Committee and Agency Implementation Task Force

<table>
<tr><th colspan="2">APPLIED RESEARCH (continued)</th></tr>
<tr><th>AITF</th><th>CRC</th></tr>
<tr><td>AITF #24
The Agency with the MOHLTC should support the development of a province-wide network for public health research, training and knowledge exchange. (p. 11-12)</td><td>CRC #38
The Ontario Agency for Health Protection and Promotion should take a lead role in supporting the development of a province-wide public health research and knowledge exchange agenda with identified strategic directions, priorities and an implementation timeline. (p. 45)</td></tr>
<tr><td>AITF #25
The Agency should take a lead role in developing a three-year rolling province-wide agenda for public health research and knowledge exchange relevant to Ontario public health practice and policy, including an implementation plan and timeline for activities. (p. 12)</td><td>CRC #40
The Ontario Agency for Health Protection and Promotion should act as an organizing hub to support a province-wide network for research and knowledge exchange. (p. 46)</td></tr>
<tr><td>Core Functions of the Agency:
▪ Enhanced and specialised public health laboratory services;
▪ Infectious diseases (including infection control and communicable disease capacity);
▪ Emergency preparedness assistance and support;
▪ Health promotion, chronic disease and injury prevention;
▪ Risk communications; and
▪ Research and knowledge exchange. (p. 14)</td><td>CRC#41
Dedicated, stable and sufficient funding for public health research should be earmarked from existing government granting sources or through the creation of a dedicated public health research fund. (p. 46)</td></tr>
<tr><td>Need for Credible Information
The feedback and input we have received throughout this process has underscored the need for the Agency as recommended in the Walker Report. At the core of the comments received has been the consistently identified need for a trusted source of scientific and technical guidance that is relevant and focussed on translating research and evidence into tools, training and supports, geared to health care providers and public health practitioners.
(p. 15-16)</td><td>CRC #42
The province should expand, in scope and funding, the Health Services Research Personnel Development Fund to include strategic public health research. (p. 46)</td></tr>
</table>

Appendix 2:

Relevant Recommendations from Capacity Review Committee and Agency Implementation Task Force

<table>
<tr><th colspan="2">APPLIED RESEARCH (continued)</th></tr>
<tr><th>AITF</th><th>CRC</th></tr>
<tr><td>Responsiveness
The Agency will meet the needs of its clients across the continuum of the health system by providing timely analysis and practical support by developing and translating applied research, training and advice. (p. 18)</td><td>CRC #44
Health units should develop, enhance and strengthen in-house capacity and resources for research and knowledge exchange in order to support evidence-informed practice and decision-making.

To support health units in strengthening their in-house research and knowledge exchange capacity, the following elements are required:
▪ Linkages with PHRED sites;
▪ Orientation of board of health members on the health unit's research and knowledge exchange mandate, scope of activities and requirements;
▪ Establishment and nurturing of linkages, through formal agreements with colleges and universities as well as other research/knowledge generation bodies (including the Ontario Agency for Health Protection and Promotion);
▪ Participation in specific networks and communities of practice;
▪ Establishment of formal and flexible staffing arrangement with other organizations such as colleges and universities (e.g., via cross-appointments or secondments) to support and complement in-house capacity;
▪ Designation of an education coordinator in each health unit; and
▪ Developing, supporting and enhancing opportunities for staff to train and enhance their knowledge and research exchange skills. This should include research and education mentorship and internships for students, field staff and returning professionals. Such endeavours should be integral components of health units' human resources development plans. (p. 47)</td></tr>
<tr><td>Relevance
The Agency will translate research into action-oriented advice and tools for evidence-based public health programs, policies and practices. (p. 18)</td><td>CRC #49
▪ Health units should pursue academic partnership agreements with universities, colleges and other related institutions to:
▪ Formalize educational student placements;
▪ Support applied public health research and program evaluation;
▪ Support faculty and curriculum development;
▪ Encourage cross appointment of staff; and
▪ Support ongoing professional development of public health workers. (p. 50-51)</td></tr>
</table>

Appendix 2:

Relevant Recommendations from Capacity Review Committee and Agency Implementation Task Force

<table>
<tr><th colspan="2">APPLIED RESEARCH (continued)</th></tr>
<tr><th>AITF</th><th>CRC</th></tr>
<tr><td>Availability and Relevance
Promoting the establishment of coordinated regional approaches to increasing both the availability and relevance of research on a more equitable basis should be an early area of focus for the Agency working in concert with partners Ministries to achieve this objective. (p. 23)</td><td>Forces shaping the vision for the future of public health

The need to ensure practice-relevant research and knowledge exchange in a rapidly changing environment

The effectiveness of public health service delivery is linked directly to the ability of front-line providers to acquire and apply knowledge in a rapidly changing environment. We offer a vision for a strengthened research capacity that addresses the important issues facing public health. We propose a more effective knowledge exchange network within the context of the creation of the Ontario Agency for Health Protection and Promotion. We also want to establish more effective relationships with universities and colleges. These changes will make it possible to align academic research to applied public health issues, and to more effectively prepare students for careers in public health. (p. 15)</td></tr>
<tr><td>Research
Ontario has a history of research strength and expertise in public health. However, the AITF believes that the Agency could, over time, act as a vehicle for better aligning research undertaken in various centres, and augmenting and fostering research excellence in a number of ways:
▪ By playing a facilitative role in providing coordinated access centrally to relevant research underway both at the Agency and beyond;
▪ By playing a primary role in defining and promoting an agreed upon research agenda for public health in the Province;
▪ By adopting an effective review and assessment process with the goal of greater consistency in the quality of research that is disseminated; and
▪ By drawing upon its knowledge translation and exchange functions to make research products more relevant to users. This would mean consciously focussing on providing research findings that are accessible, understandable and practical for the field and policy makers. (p. 45)</td><td>Our Vision 2010
Public health performance is now measured at all levels through an integrated performance management system that is grounded in research and best practices. Continuous quality improvement is the driving force. All public health units are now accredited and annual public reporting provides boards of health and citizens with clear information on the health of their communities, what public health is doing and how they do it. (p. 24)</td></tr>
</table>

Appendix 2:

Relevant Recommendations from Capacity Review Committee and Agency Implementation Task Force

<table>
<tr><th colspan="2">APPLIED RESEARCH (continued)</th></tr>
<tr><th>AITF</th><th>CRC</th></tr>
<tr><td>Partnerships with Academia
Through partnerships with academia, Public Health Units, academic health sciences centres, veterinary medicine centres and others, the Agency should serve as the organisational hub for a provincial public health research infrastructure and bring greater leadership, coherence, consistency and relevance to the research agenda. (p. 45)</td><td>Our Vision 2010
Research and knowledge exchange has blossomed throughout the public health system in Ontario. At both the local and provincial level, there is generation of new research evidence and effective dissemination and use of that information for decision-making. As a result, public health practices in Ontario are not only evidence-based but continuously improving. (p. 43)</td></tr>
<tr><td>PHRED
Given the mandate of the five current PHREDs with respect to public health research, knowledge synthesis, education, dissemination and diffusion, the Agency should partner with the PHREDs as currently structured and subsequently work with MOHLTC to enhance province-wide access to knowledge exchange, training and public health research through the network model outlined earlier in this Report. (p. 45)</td><td>Functions for the new research and knowledge exchange system:
▪ Generation of research evidence;
▪ Collection and annotation of existing and emerging research evidence;
▪ Identification of gaps in knowledge;
▪ Prioritization and coordination of the dissemination of new research evidence;
▪ Dissemination of existing and new research findings customized for difference audiences;
▪ Evaluation and redesign of knowledge exchange and dissemination strategies;
▪ Capacity-building and training of research users (e.g., policy-makers, public health practitioners and community organizations) to facilitate uptake and use of research evidence;
▪ Strategies to facilitate uptake and utilization of research evidence; and
▪ Strategies to support continuous quality improvement based on the evidence, such as evaluating the impact of research evidence on service delivery and policy development as well as public accountability (p. 44)</td></tr>
<tr><td>Outcome-directed Public Health Research
The Agency should also conduct and facilitate outcome-directed public health research by:
▪ Focussing on applied research that will inform health policy and front-line practice including:
    - High quality evaluations of public health interventions;
    - Research on effective strategies to support knowledge exchange; and
Building capacity and strengthening links with health care providers, public health practitioners and policy-makers by providing research mentorship and learning opportunities for both graduate students and field staff. (p. 45-46)</td><td>Provincial Leadership
In this time of public health revitalization, we believe it is essential for the Ontario government to make a visible commitment to applied public health research and knowledge exchange and to support evidence-informed public health policies, programs and practice. This commitment must include supports at both the provincial (centralized) and local levels. We fully support the proposed direction to establish the Ontario Agency for Health Protection and Promotion, and believe the Agency can play an important role in supporting the development of new public health knowledge and its translation into action. (p. 45)</td></tr>
</table>

Appendix 2:

Relevant Recommendations from Capacity Review Committee and Agency Implementation Task Force

<table>
<tr><th colspan="2">APPLIED RESEARCH (continued)</th></tr>
<tr><th>AITF</th><th>CRC</th></tr>
<tr><td>Generating Knowledge
The Agency should also have a role both in generating new action-oriented knowledge, stemming from applied research and surveillance activities, and in synthesizing and translating existing knowledge through processes such as systematic literature reviews, advisory expert panels, and the development of best practices, guidelines and consensus statements. (p. 46)</td><td>Next Steps
▪ Ensure practice-relevant research and knowledge exchange in a rapidly changing environment; (p. 53)</td></tr>
<tr><td>Early Contributions of the Agency
From the perspective of the AITF, however, the following are important early contributions that the Agency could make:
▪ Increase awareness and access to the best of the research evidence already developed through a coordinated scan of resources available;
▪ Promoting research emphasis on shared risk factors which cut across a range of chronic diseases and conditions;
▪ Develop mechanisms for grading or ranking available evidence based on a level of evidence framework, where appropriate, and peer assessment, where not applicable;
▪ Facilitate greater coordination and priority setting in core areas of future research;
▪ Develop a specialised capacity in behavioural analysis, research and social marketing. This would enhance access at the Provincial and local levels to expert supports in campaign and intervention design and increase capacity to employ effective strategies to change behaviour;
▪ Undertake evaluations of health promotion initiatives and disseminate findings pertaining to them, including an emphasis on longitudinal impact research;
▪ Improve the centralised availability of key population health indicators drawn from key national and provincial surveys and data holdings and break this information out to allow for trend, geographic, and population-based analysis by Public Health Units; and
▪ Undertaking by Year 3 a comprehensive health status report. (p. 50)</td><td>Priorities for Action
Development of a province-wide research and knowledge exchange agenda for Ontario; 100 percent funding for the Public Health Research, Education and Development program and its alignment with the Ontario Agency for Health Protection and Promotion. The imminent creation of the Agency for Health Protection and Promotion offers unique opportunities for developing a more comprehensive and coordinated research and knowledge exchange system in Ontario. (p. 54)</td></tr>
</table>

Appendix 2:

Relevant Recommendations from Capacity Review Committee and Agency Implementation Task Force

<table>
<tr><th colspan="2">KNOWLEDGE EXCHANGE</th></tr>
<tr><th>AITF</th><th>CRC</th></tr>
<tr><td>AITF #8
The Agency should provide the following functions:
surveillance and epidemiology;
research;
knowledge exchange;
laboratory services;
professional development; and
communication. (p. 10)</td><td>CRC #38
The Ontario Agency for Health Protection and Promotion should take a lead role in supporting the development of a province-wide public health research and knowledge exchange agenda with identified strategic directions, priorities and an implementation timeline. (p. 45)</td></tr>
<tr><td>AITF #24
The Agency with the MOHLTC should support the development of a province-wide network for public health research, training and knowledge exchange. The network should build upon existing capacity and be structured to support access to training and knowledge exchange resources on an equitable basis. Where appropriate, the network should begin by linking with other networks (e.g., RICNs, Tobacco Control Area Networks and Public Health Research, Education and Development (PHRED) programs). The network will evolve over time, but should be established by early 2007. (p. 11-12)</td><td>CRC #40
The Ontario Agency for Health Protection and Promotion should act as an organizing hub to support a province-wide network for research and knowledge exchange. (p. 46)</td></tr>
<tr><td>AITF #25
The Agency should take a lead role in developing a three-year rolling province-wide agenda for public health research and knowledge exchange relevant to Ontario public health practice and policy, including an implementation plan and timeline for activities. (p. 12)</td><td>CRC#41
Dedicated, stable and sufficient funding for public health research should be earmarked from existing government granting sources or through the creation of a dedicated public health research fund. (p. 46)</td></tr>
<tr><td>Core Functions
Recommended core functions of the new Ontario Agency for Health Protection and Promotion or ‘the Agency’:
Enhanced and specialised public health laboratory services;
Infectious diseases (including infection control and communicable disease capacity);
Emergency preparedness assistance and support;
Health promotion, chronic disease and injury prevention;
Risk communications; and
Research and knowledge exchange. (p. 14)</td><td>CRC #43
The province, along with the Ontario Agency for Health Protection and Promotion, should ensure that knowledge management activities and services, including access to the electronic public health library, are equitably accessible at the local level. (p. 46)</td></tr>
</table>

Appendix 2:

Relevant Recommendations from Capacity Review Committee and Agency Implementation Task Force

KNOWLEDGE EXCHANGE (continued)	
AITF	**CRC**
Innovation The Agency will be at the forefront of knowledge generation and knowledge exchange in Ontario and beyond. The Agency will provide leadership by being anticipatory and proactive to threats to, and opportunities for, the health of Ontarians. (p. 18-19)	**CRC #44** Health units should develop, enhance and strengthen in-house capacity and resources for research and knowledge exchange in order to support evidence-informed practice and decision-making. (p. 47)
Agency Activities The AITF recommends that the Agency undertake the following activities at the end of Years 1-2 to support its research mandate: ▪ Establishing initial partnership and affiliation agreements between the Agency and academic sector (e.g., colleges, universities, academic health sciences centres) and others; ▪ Developing in collaboration with the MOHLTC and supporting regional research and knowledge exchange network specific to public health; ▪ Initiating a three- to five-year province-wide public health research and knowledge exchange agenda of relevance to Ontario public health practice and policy. Using a collaborative and consultative process, this agenda should include strategic directions and priorities for action; ▪ Undertaking a process to establish field presence to support research, knowledge exchange and professional development; (p. 69)	*Forces shaping the vision for the future of public health:* **The need to ensure practice-relevant research and knowledge exchange in a rapidly changing environment** The effectiveness of public health service delivery is linked directly to the ability of front-line providers to acquire and apply knowledge in a rapidly changing environment. We offer a vision for a strengthened research capacity that addresses the important issues facing public health. We propose a more effective knowledge exchange network within the context of the creation of the Ontario Agency for Health Protection and Promotion. We also want to establish more effective relationships with universities and colleges. These changes will make it possible to align academic research to applied public health issues, and to more effectively prepare students for careers in public health. (p. 15)
PHRED Given the mandate of the five current PHREDs with respect to public health research, knowledge synthesis, education, dissemination and diffusion, the Agency should partner with the PHREDs as currently structured and subsequently work with MOHLTC to enhance province-wide access to knowledge exchange, training and public health research through the network model outlined earlier in this Report. (p. 45)	**Our Vision 2010** Research and knowledge exchange has blossomed throughout the public health system in Ontario. At both the local and provincial level, there is generation of new research evidence and effective dissemination and use of that information for decision-making. As a result, public health practices in Ontario are not only evidence-based but continuously improving. (p. 43)

Appendix 2:

Relevant Recommendations from Capacity Review Committee and Agency Implementation Task Force

KNOWLEDGE EXCHANGE (continued)	
AITF	**CRC**
Communication To quickly build its communication capacity, the Agency should examine the opportunities with The Health Communication Unit at the University of Toronto. This partnership could also potentially enhance the Agency's ability to provide knowledge exchange in its start-up phases. (p. 25)	**Provincial Leadership** In this time of public health revitalization, we believe it is essential for the Ontario government to make a visible commitment to applied public health research and knowledge exchange and to support evidence-informed public health policies, programs and practice. This commitment must include supports at both the provincial (centralized) and local levels. We fully support the proposed direction to establish the Ontario Agency for Health Protection and Promotion, and believe the Agency can play an important role in supporting the development of new public health knowledge and its translation into action. (p. 45)
	Local Level Capacity There is substantial variability across health units in the supports available to staff for translating research knowledge into practice. Currently, only about one-third of health units have direct access to knowledge management specialists. Information access is key to a research and knowledge exchange system for public health. Changing organizational culture with respect to evidence-informed practice entails concerted support to, and commitment by, health units. The MOHLTC should continue to provide and support further capacity enhancements through the Public Health information and IT Strategy, as well as the Ontario Agency for Health Protection and Promotion. (p. 46)
	Priorities for Action Development of a province-wide research and knowledge exchange agenda for Ontario; 100 percent funding for the Public Health Research, Education and Development program and its alignment with the Ontario Agency for Health Protection and Promotion. The imminent creation of the Agency for Health Protection and Promotion offers unique opportunities for developing a more comprehensive and coordinated research and knowledge exchange system in Ontario. (p. 54)

APPENDIX 3:
HIGHLY CENTRALIZED AND DECENTRALIZED MODELS

The following Figures provide the highly centralized and decentralized models that were considered before developing the subsequent hub-and-spoke, dispersed network and combined models.

Figure 4: Highly Centralized Model

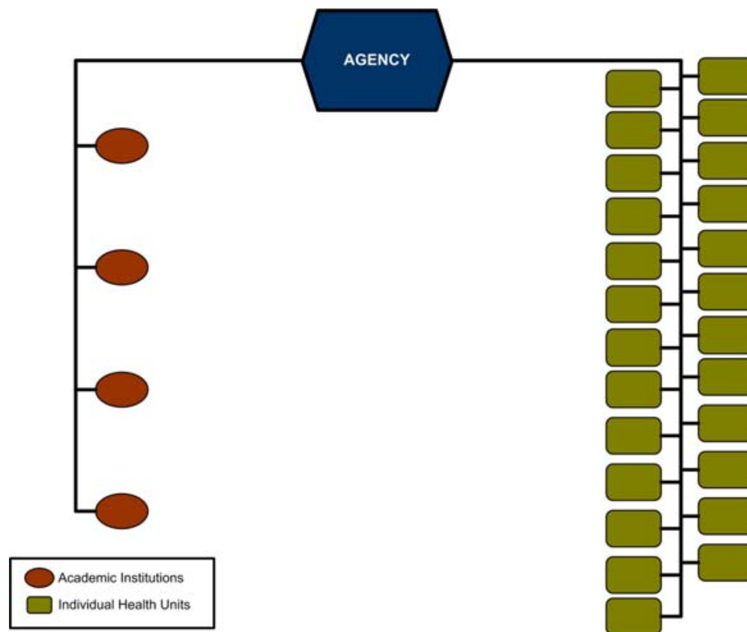
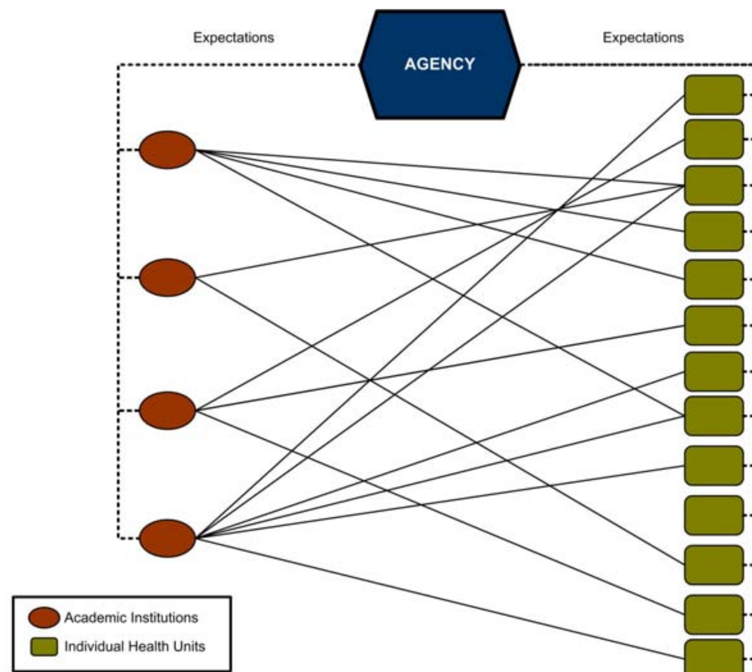


Figure 5: Highly Decentralized Model



Appendix 4: Contributors to the Knowledge to Action – K2A Project

The following participants are thanked for their contributions to one or more aspects of the K2A project.

Participant	Affiliation
Robert Barnett	Ministry of Health and Long-Term Care
Min Basadur	Facilitator, Basadur Applied Creativity
Teresa Bendo	City of Hamilton, Public Health Services
Joanne Beyers	Sudbury & District Health Unit
Charlene Beynon	Middlesex-London Health Unit
Catherine Bingle	Simcoe Muskoka District Health Unit
Karen Boughner	Haldimand-Norfolk Health Unit
Nancy Cameron	Thunder Bay District Health Unit
Roy Cameron	University of Waterloo
Wendy Carew	North Bay Parry Sound District Health Unit
Maureen Cava	Toronto Public Health
Jas Chana	Ministry of Health Promotion
Connie Clement	Ontario Prevention Clearinghouse
Donald Cole	University of Toronto
Larry Crase	Basadur Applied Creativity
Erica Di Ruggiero	Institute of Population and Public Health
Maureen Dobbins	McMaster University
Nancy Edwards	Community Health Research Unit
Vera Etches	Sudbury and District Health Unit
Andrea Feller	Niagara Region Public Health Department
John Garcia	Ontario Tobacco Research Unit, Cancer Care Ontario, University of Toronto
Charles Gardner	Simcoe Muskoka District Health Unit
Shani Gates	Leeds, Grenville & Lanark District Health Unit
Ian Gemmill	Kingston, Frontenac and Lennox & Addington Health Unit
Geoffrey Gurd	Public Health Agency of Canada

Appendix 4: Contributors to the Knowledge to Action – K2A Project

Participant	Affiliation
Elizabeth Gyorfi-Dyke	Canadian Population Health Initiative
Trevor Hancock	British Columbia Ministry of Health Services
Maureen Handley	Grey Bruce Public Health
Liz Haugh	Windsor-Essex County Health Unit
Larry Hershfield	The Health Communication Unit
Jamie Hockin	Public Health Agency of Canada
Matthew Hodge	City of Hamilton
Tom Hudson	Ontario Institute for Cancer Research
Phil Jackson	Ministry of Health and Long-Term Care
Ian Johnson	University of Toronto
Maria Judd	Canadian Health Services Research Foundation
Robert Kyle	Durham Regional Health Department
Susan Lee	Association of Local Public Health Agencies
Anne Lessio	Ontario Public Health Association
Shanna Lochhead	York Region Health Unit
Cassandra LoFranco	Ministry of Health and Long-Term Care
Gene Long	Toronto Public Health
Jane Loppe	Peel Public Health
Ken Macdonald	Queen’s University
Mary-Jo Makarchuk	Toronto Public Health
Verna Mai	Cancer Care Ontario
Valerie Mann	Northwestern Health Unit
Doug Manuel	Institute for Clinical Evaluative Sciences
Richard Massé	Institut national de santé publique du Québec
Isabelle Michel	Sudbury & District Health Unit
Brent Moloughney	Public Health Consultant
Kathy Moran	Durham Region Health Department
David Mowat	Peel Public Health
Penny Nelligan	Huron County Health Unit
Kate O'Connor	Kingston, Frontenac and Lennox & Addington Public Health
George Pasut	Ministry of Health and Long-Term Care

Appendix 4: Contributors to the Knowledge to Action – K2A Project

Participant	Affiliation
Rosana Pellizzari	Perth District Health Unit
Dave Pollard	Ministry of Health and Long-Term Care
Karen Quigley-Hobbs	Region of Waterloo Public Health
Katharine Robertson-Palmer	Ottawa Public Health
Suzanne Ross	Eastern Ontario Health Unit
Pete Sarsfield	Northwestern Health Unit
Fran Scott	Toronto Public Health
Sylvia Shedden	Ministry of Health and Long-Term Care
Debbie Sheehan	City of Hamilton Public Health Services
Anne Simard	Ministry of Health and Long-Term Care
Susan Snelling	Sudbury & District Health Unit
Linda Stewart	Association of Local Public Health Agencies
Penny Sutcliffe	Sudbury & District Health Unit
Monir Taha	Halton Region Health Department
Helen Thomas	National Collaborating Centre, Methods and Tools
Connie Tinney	Eventives Conference and Event Management
Mariflor Toneatto	Ministry of Health Promotion
Michael Trottier	The Alder Group Inc.
Monika Turner	Ministry of Health & Long-Term Care
Connie Uetrecht	Ontario Public Health Association
Julie Vaillancourt	Sudbury & District Health Unit
Karen Wade	Toronto Public Health
Claire Warren	Sudbury & District Health Unit
Lisa Watson	Ministry of Health Promotion
Erica Weir	York Region Health Services Department
Tricia Willis	Ministry of Health and Long-Term Care
Lynda Zimmerman	Ottawa Public Health
Jennifer Zelmer	Canadian Institute for Health Information

And, informants from 20 health units in the field consultations.