



A Canadian Research Consultation  
on  
Co-morbidities Associated with Mental Illness, Addiction,  
Brain Disorders and the Senses:  
an INMHA Strategic Research Agenda 2005-2010

## **Consultation Report**

# **An INMHA Strategic Research Agenda 2005-2010**

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## Introduction

In September 2005, the Institute of Neurosciences, Mental Health and Addiction (INMHA) of the Canadian Institutes of Health Research (CIHR) brought together researchers, clinicians and representatives from non-government organizations and industry to develop a multi-disciplinary, integrated strategic research agenda for co-morbidities. The objectives were to:

- explore the multidisciplinary challenges and gaps in research in the area of co-morbidities associated with mental illness, addiction, brain disorders and the senses
- recommend research priorities for 2005-2010, with input from researchers in a variety of disciplines and from individuals representing other perspectives (e.g., not-for-profit sector, health care systems)
- provide an opportunity for researchers to build collaborative relationships and explore partnership opportunities
- develop concepts for an Request for Applications (RFA) to be led by INMHA/CIHR in 2006, including program goals (e.g., capacity building, creation of new knowledge, intervention research), scope of disorders to be considered, and strategic research priorities.

## Welcome and Opening Remarks

**Dr. Barbara Beckett**, Assistant Director INMHA, welcomed participants to the consultation. She noted that Dr. Rémi Quirion, Scientific Director, INMHA has a strong commitment to this strategic initiative as it presents a significant research challenge and was initiated and strongly supported by the consumer community. INMHA's goal is to have an RFA related to co-morbidity ready by the end of 2006. The recommendations from the workshop report will be taken to the Institute Advisory Board (IAB) for decision-making and the development of an RFA. The report on the consultation will be posted on the INMHA website.

**Dr. Roberta Palmour**, Department of Psychiatry, McGill University, Institute Advisory Board (IAB) member for INMHA, emphasized that while co-morbidities are prevalent and pervasive, they are rarely studied and although a strong Canadian presence exists in co-morbidity research, funding is minimal and difficult to obtain. There is an ingrained resistance to the challenges of doing this type of research and a lack of good research tools.

Co-morbidity denotes two or more illnesses affecting the same individual. At this workshop, discussion focused on co-morbidities relevant to the INMHA mandate - physical or mental conditions that co-occur with neurological, mental

health, addiction, language and communication, and sensory disorders. Studying co-morbidities requires a commitment to integration through cross-theme work and strong relationships among scientists, health professionals, policy makers and consumers. Integrated approaches require a process that is both sensitive and comprehensive and includes an understanding of different approaches and methods as well as the development of a common language.

## **Workshop Norms**

During the workshop participants were encouraged to:

- Be clear and concise
- Collaborate to reach agreement
- Explore perspectives and focus on integrated approaches
- Not overlook the simple or the obvious
- Think strategically – the outlook for this consultation is five years.

## **Introductions**

Participants were asked to introduce themselves and state one hope for the outcome of the consultation.

- Participants hoped for an emphasis on collaboration and a broad and integrative approach during the workshop
- They wanted to include a range of co-morbidities:
  - Addictions, e.g., substance abuse, gambling and tobacco use
  - Bipolar and metabolic disorders
  - Chronic and neurodegenerative disorders in Aboriginal populations
  - Mood disorders and cardiovascular disease
  - Neurological, psychological and mental health co-morbidities
  - Schizophrenia and metabolic disorders
  - Vision, sleep, and pain.
- Participants suggested research priorities that would:
  - Build on the strengths of Canadian health services databases, linking integrative research networks
  - Develop strategies to overcome systemic barriers
  - Explore the contributions of animal studies
  - Expand our knowledge base by considering real-world situations rather than just isolated study populations

- Give some insight into whether treatment of a co-morbid condition can improve other health outcomes
- Have an impact on the population through effective knowledge translation and exchange
- Influence the development of healthy public policy
- Integrate mental health and addictions
- Lead to a better understanding of research gaps and priorities in Canada.
- They hoped that an RFA would:
  - Be practical, feasible, well-defined, integrate prevention and education, and focus on patients and patient outcomes
  - Encourage community-based participatory action research
  - Encourage integrated approaches
  - Look at both curiosity-based and needs-based research
  - Produce useful knowledge that reaches the population
  - Support interventions with no exclusion criteria.
- Participants wanted a strategic research agenda that would lead to greater integration, e.g.:
  - Bring the addictions molecular and population bases together
  - Develop a strategy aimed at enhancing health services and population health through administration, epidemiology, database development and integration
  - Integrate quality of life and co-morbidity
  - Review the role of factors that facilitate or serve as barriers to co-morbidity studies.

Participants represented a broad range of expertise and expectations. They worked thoughtfully and energetically to develop strategic priorities for a national research agenda.

## Keynote Address

**Dr. Scott Patten, Department of Community Health Sciences, University of Calgary**

*The Co-morbidities Challenge in Mental Illness, Addiction, Brain Disorders and the Senses: Epidemiology of Medical-Psychiatric Co-morbidity in Canada*

Dr. Patten began by highlighting the importance of epidemiology in describing service needs in policy development and the generation of hypotheses regarding etiological associations and pathophysiological mechanisms. It is also important in screening and case-finding because information about base rates is critical to the interpretation of screening test results. Dr. Patten noted that not all of these tasks require general population sampling.

It has always been difficult to study mental health in the community because making a psychiatric diagnosis generally requires a professional interview. In the past, psychiatric diagnosis depended on clinical judgments about the cause of a disturbance. This situation changed in the mid-1980s with the development of DSM-III, a standardized system of psychiatric diagnostic classification that attempted to steer clear of theoretical judgments and instead based diagnoses on more reliably measured symptoms and signs. This approach allowed the development of detailed interview schedules which, in turn, enabled trained research assistants for the first time to be able to make valid and reliable diagnoses for community studies. However, one relevant aspect of DSM-IV, a group of diagnoses for disorders “due to a general medical condition”, contradicts this trend, introducing etiological or theoretical judgments into otherwise criterion-based diagnostic definitions. This can create problems since these particular categories partially reflect existing beliefs and judgments about the etiology of symptoms, which may compromise the ability of epidemiological data to challenge or expand knowledge about etiology in the area of medical-psychiatric co-morbidity.

Dr. Patten cited several US studies which showed that a number of chronic conditions and physical disorders were associated with lifetime prevalence of major depression and anxiety disorders as well as post-traumatic stress disorder (PTSD), panic disorder, agoraphobia, and specific phobias. He also noted that the Canadian “Roadmap Initiative Surveys”, including the National Population Health Survey (NPHS) and Canadian Community Health Survey (CCHS), had been instrumental in collecting data that show co-morbidities between mental and physical conditions.

Dr. Patten concluded that:

- All long-term medical conditions are likely associated with a major depressive episode (MDE), although the strength of association varies

- The public health impact is large (50-60%) report one or more chronic conditions
- The effect seems partially related to incidence (risk) but is also related to prognosis (episode duration)
- Mortality also theoretically plays a role. Increased mortality from a variety of medical conditions has been reported, for example in people with major depression. This would tend to weaken the strength of association as observed in cross-sectional data.

## **Current Research Perspectives**

Three speakers provided examples of current research into co-morbidities based on their respective areas of expertise.

### **1. Dr. Sam Wiebe, Department of Clinical Neuroscience, Faculty of Medicine, University of Calgary**

#### *Impact of Co-morbidity on Epilepsy*

Dr. Wiebe presented data on (i) the incidence and prevalence of epilepsy in Canada and around the world and on (ii) the burden of epilepsy on the quality of life of those living with the condition and related use of health service resources. He provided evidence of the co-morbidity of epilepsy with a number of other physical illnesses and mental disorders, including: attention deficit hyperactivity disorder, anxiety, social phobia, and major depression. He noted that a review of practice guidelines for fifteen of the most common chronic conditions showed an absence of modifications based on the presence of co-morbidity.

Dr. Wiebe concluded that epilepsy has a high level of somatic and psychiatric co-morbidity. He outlined the need for comprehensive paradigms for understanding common mechanisms and causality, delivering care, measuring consequences (health and social burden, mortality) and measuring outcomes.

### **2. Dr. Nancy Frasure-Smith, McGill University, Le Centre Hospitalier de l'Université de Montréal, Montreal Heart Institute Research Centre**

#### *Co-morbidity Between Depression and Cardiac Disease: Cause, Effect or Coincidence?*

Dr. Frasure-Smith outlined a research programme investigating the link between depression and cardiac disease. Her research, in conjunction with that of Dr. François Lespérance, has shown that depression is at least 3 times as common among those with Coronary Artery Disease (CAD) as in the general population, with either elevated depression symptoms or major depression occurring in about one in three patients hospitalized for CAD. Depression in these patients is associated with significantly increased rates of mortality and reduced long-term

survival, according to her own and other studies. Meta analyses of longitudinal cohort studies also indicate that depression may be a risk factor for development of CAD in initially healthy individuals. This conclusion was recently strengthened by Dr. Salim Yusuf and colleagues in their publication describing a large international case-control study of individuals with a first heart attack, the INTERHEART study. Dr. Frasure-Smith reviewed biologically plausible mechanisms linking depression with CAD. She also outlined the ESCAPE study (Epidemiological Study of Acute Coronary Syndromes and the Pathophysiology of Emotions) the goal of which is to confirm the prognostic impact of major depression and elevated depression symptoms in stable CAD patients, exploring inflammatory as well as genetic mechanisms.

It is important to know whether treatment of depression in CAD (with antidepressant drugs, psychotherapy, exercise, etc.) improves the prognosis, and to consider whether and how treatment of depression should be incorporated into cardiovascular care.

Dr. Frasure-Smith concluded that depression is strongly and consistently associated with an increased chance of developing or worsening CAD and that research needs to focus on:

- How to change depression in CAD patients
- What the mechanisms are
- Whether treating depression improves prognosis or prevents CAD, improves the quality of life for CAD patients and their families, and reduces healthcare utilization
- Whether depression is the only psychosocial risk factor
- Which patients to treat, when to treat them and for how long
- Who should do the treating (psychiatrists, nurses, cardiologists, general practitioners (GPs)).

### **3. Dr. Louise Nadeau, Département de Psychologie, Université de Montréal**

#### ***Concurrent Substance Abuse and Other Mental Health Disorders: The Chicken or the Egg?***

Dr. Nadeau outlined the inter-activity among mood and anxiety disorders and substance abuse disorders. Research in clinical settings has revealed that among those with substance abuse disorders, there is a high prevalence of concurrent mental illness, resulting in a reduction of treatment effectiveness. Integrative treatment is needed.

Challenges include:

- The implementation of best practices. Although there is a wealth of information on principles for best practices and numerous attempts at integrative treatments for clients with concurrent disorders, adequate

- training and supervision have not been put into place in most regions of Canada to ensure effective implementation
- Insularity of knowledge. There is insufficient awareness of findings from other addiction disciplines and incomplete understanding of the neurological, psychological and social dimensions of addictions
  - Treatment of addictive disorders. This is complex because co-morbid mental illness is associated with other conditions such as poverty, communication difficulties, lack of trust, violence, and an unhealthy social milieu
  - Co-morbidities and associated conditions are perpetuated by the misery of the patient's condition.

Research needs include:

- Animal models on which to base changes in clinical practice
- Knowledge translation to ensure that information in the right form is exchanged among basic researchers, clinicians, policy makers and social scientists
- Lifespan studies
- Multidisciplinary teams, including collaborations with government organizations, prevention workers and treatment staff.

Dr. Nadeau concluded that the "Fetal Alcohol Spectrum Disorders (FASD) Lesson" demonstrates that, given an individual's biological limitations, psychological and social factors can make a positive difference.

## **Current Situation**

- Participants discussed co-morbidity research in the context of accomplishments, gaps and common mechanisms. Key accomplishments in Canadian research related to co-occurrence and co-morbidity include:
  - Availability of some population-based statistics on co-morbidity
  - CIHR accomplishments in eliminating silos
  - Development of new models
  - General acceptance of relationships between physical and mental health co-morbidity
  - Good information on schizophrenia and co-occurrence with other conditions, especially addictions

- Recognition of the need for a multi-disciplinary, comprehensive holistic perspective
- Nature and outcomes of research on mental health and addictions
- Recognition of the need for collaborative research, by CIHR generally and by participants at this workshop
- Research successes in specific areas, such as anger and addiction, stress and prenatal exposure to tobacco
- Successful work done on animal models of co-morbidity
- The link established between CAD and mood disorders.
- Challenges include:
  - A lack of tools, measurement instruments and methodological innovations that would assist research in the future (e.g., validation studies).
  - Barriers to treatment of co-morbidities e.g., gender, culture, stigma, professional attitudes, systemic barriers.
  - Gaps between new knowledge and practice.
  - Lack of an over-arching framework for understanding factors influencing co-morbidity.
  - Lack of longitudinal studies to produce a better understanding of the direction of causal and co-occurring relationships.
  - Lack of understanding of fundamental and shared mechanisms of co-morbidity.
  - Lack of understanding of the longitudinal pathways of disease (natural history).
  - Respecting privacy while gaining needed access to databases.
    - Sheila Chapman, Privacy Coordinator at CIHR described ongoing initiatives to develop voluntary privacy standards among custodians of data in health services. This initiative has been driven by the desire from external researchers for access to data. Ms. Chapman noted that a workshop has been planned for January, 2006, to develop voluntary standards for inclusion in the next CIHR privacy best practices document, which is scheduled for revision in 2007. Some concern was expressed that even with the adoption of voluntary standards, individual researchers may continue to face difficulties in getting information.
- Common mechanisms, factors or biological systems involved in causing or perpetuating co-morbidities were mentioned including:
 

Biological:

  - Autonomic nervous system/neuro-endocrine pathways/stress

- Gene-environment interactions
- Inflammation and inflammatory mediators such as social milieu, stress, nutrition and diet factors
- Pharmacological interactions.

Social:

- Behavioural pathways, e.g., consequences of depression on chronic disease; approach and avoidance behaviour pathways, e.g., pain, pathways to making healthy lifestyle choices
- Environmental factors
- Factors involved in resiliency and the placebo effect (broad and inclusive)
- Healthcare provider behaviours and the current health care delivery system
- Spiritual factors
- Stigma (role and reduction).

## **Strategic Research Priorities: 2005 – 2010**

For the purposes of this consultation, strategic research priorities were considered to be research areas or applications that are central to collaborative, cross-disciplinary research on co-morbidities associated with mental illness, addiction, brain disorders and the senses. Priorities tend to cross disciplines, determinants of health and CIHR research themes. They may vary in scope but should be focused enough to enable the identification of appropriate approaches or methodologies.

Other considerations in recommending priorities during this consultation were:

- Does it have strong potential for impact, especially with regard to identified gaps?
- Does it provide the opportunity for an integrated approach, linking various research disciplines?
- Does it take into account Canada's special strengths?
- Is it of significance for population or public health (burden of disease)?
- Is it work that is unlikely to be done elsewhere?

Participants agreed on the following five research priorities, listed in alphabetical order:

- A. Etiology and Developmental Pathways
- B. Improving Delivery of Integrated Services and Treatment
- C. Knowledge Exchange
- D. Longitudinal Population-based Studies of Cause, Course and Outcome
- E. Measurement Tools for Screening and Diagnosis of Co-morbidity.

Participants then formed working groups to describe these priorities in more detail and develop research questions for an RFA.

## **Strategic Research Priority A: Etiology and Developmental Pathways**

The following types of studies were suggested to address this strategic priority:

- Animal Studies and Biological Mechanisms
  - Effects of physical environment
  - Factors involved in resilience and vulnerability
  - Gene-environment interactions
  - Genetic predispositions
  - Interrelationships and interactions of factors and variables – systems approach
  - Social context in which co-morbidities may occur: are there higher-level determinants?
- Developmental trajectories:<sup>1</sup>
  - Biomarkers
  - Options and timings for interventions
  - Progression from a single disorder to multiple disorders
  - Risk and protective factors over the lifespan
- Directionality:
  - Environmental influences that “allow” these to emerge
  - Evidence for common etiology or shared underlying predispositions
  - Mechanisms through which one factor or condition leads to another
  - Whether A always precede B or whether temporal relationships can be reciprocal
- Interventions:
  - Ability to access care in timely fashion
  - Effectiveness at different developmental stages
  - Influence of cultural, gender and racial factors
- Triggers:

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<sup>1</sup> Note: It is unclear when and how some disorders start, e.g., schizophrenia. It is therefore important to take a developmental, lifespan approach.

- Allostatic load – cumulative load of mental and physical stresses – and thresholds
- Trauma, infections.

The following CIHR research themes are most relevant to this research priority:

Basic biomedical, e.g., genetic, molecular, cellular, tissue physiology	Applied clinical, e.g., drugs, devices, social intervention <i>Add: psychological and individual interventions</i>	Health systems and services, e.g., epidemiology, health care quality, cost-effectiveness	Societal, cultural and environmental influences on health and the health of populations
✓	✓	✓	✓

The following determinants of health are the most closely linked to this research priority:

Determinants	Check (✓)	Determinants	Check (✓)
Income and Social Status	✓	Personal Health Practices and Coping Skills	✓
Social Support Networks	✓	Healthy Child and Adolescent Development	✓
Education	✓	Biology and Genetic Endowment	✓
Employment/Working Conditions	✓	Health Services	✓
Social Environments	✓	Gender	✓
Physical Environments	✓	Culture	✓

**Potential Research Questions:**

- Do the relationships between co-morbidities and contributing factors change over the life span?
- How do interventions/preventions alter the course of co-morbidities?
- Is there a directionality of co-morbid disorders?
- What are the basic biological mechanisms that contribute to the development of co-morbid conditions in both animal and human studies?
- What are the contributing factors associated with the development and trajectory of co-morbid disorders, e.g., biological, social and physical environment, behavioural factors and their interactions?

**Discussion points:**

- Longitudinal studies and randomized trials are required to help distinguish causal vs. coincidental relationships. Determining causality is further complicated by the fact that it is often not known exactly when a disease begins.

### **Implementation and Future Research Partnerships:**

The following capacities, competencies, experience, legislation, situation or trends currently exist in Canada and internationally and would facilitate the implementation of this research agenda:

- A good base of scientific knowledge and expertise among Canadian researchers
- Consultation-Liaison Psychiatry in which psychiatrists work with medically ill patients and (called Psychosomatic Medicine in the US)
- Existence of a community health services survey
- Increased awareness of co-morbidities
- The concept of integrated care vs. comprehensive care
- Well-educated consumers demanding broad-based and holistic treatment from their healthcare-providers.

The following capacities, competencies, experience, legislation, situation or trends are required in Canada and internationally to facilitate implementation of this research agenda:

- Increased funding for research
- More active involvement of consumer groups
- More translation of existing knowledge.

Future partnerships required to implement this agenda include:

- Consumer groups (e.g., Alzheimer's Society, Heart & Stroke, Mood Disorders Society)
- International research funding organizations such as the National Institutes of Health (NIH) or the UK Medical Research Council
- National Co-morbidity Project in USA
- Other CIHR Institutes
- Other organizations that have large databases – e.g., stroke registries, Statistics Canada, Genome Canada
- Pharmaceutical companies

- Provincial/territorial health authorities in order to gain access to provincial/territorial medical record databases
- Social Sciences and Humanities Research Council (SSHRC).

**Strategic Research Priority B:  
Improving Delivery of Integrated Services and Treatment**

The following studies were suggested to address this strategic priority.

- Capacity building and acquisition of the infrastructure required for capacity building
- Caregiver/patient/client/person focus
- Continuum of service and care (from pre-clinical to services)
- Cost effectiveness
- Integrated treatment planning
- Intervention research
- Need for infrastructure and training.

Addressing this priority will require innovative, comprehensive, sustained research by integrated teams to generate knowledge at all levels. Support will be required for networking and acquisition of pilot data.

The following research themes are most relevant to this strategic research direction:

Basic biomedical, e.g., genetic, molecular, cellular, tissue physiology	Applied clinical, e.g., drugs, devices, social intervention <i>Add: psychological and individual interventions</i>	Health systems and services, e.g., epidemiology, health care quality, cost-effectiveness	Societal, cultural and environmental influences on health and the health of populations
√	√	√√	√

It was noted that there is a need for 2-way translation/mobilization of knowledge among these pillars in order to foster innovation within the elements of the health care continuum.

The following determinants of health are most closely linked to this research direction:

<b>Determinants</b>	<b>Check (√)</b>	<b>Determinants</b>	<b>Check (√)</b>
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Income and Social Status		Personal Health Practices and Coping Skills	√
Social Support Networks		Healthy Child and Adolescent Development	
Education		Biology and Genetic Endowment	√
Employment/Working Conditions		Health Services	√
Social Environments		Gender	
Physical Environments		Culture	

Although the key determinants are checked above, the others are also important because they provide a context for the three key determinants and must be considered for effective patient outcomes.

### Potential Research Questions:

- How is healthcare delivered to individuals with co-morbidity?
- What would be optimal management for persons with co-morbidity?
- What are the interventions needed to optimize delivery and management of healthcare for persons with co-morbidity?
- What are the needs and strengths of people with co-morbidities, caregivers, organizations and families?

### Current Research:

- Early Psychosis Intervention Study in Vancouver, funded by the Michael Smith Foundation for Health Research
- Population needs-based initiatives that engage academic researchers with communities, practitioners and decision makers and reflect community/provincial/territorial needs – for example:
  - Alberta Heritage Infrastructure Fund
  - Community University Research Alliance (CURA) program of SSHRC
  - Chronic pain initiative of Fonds de recherche en santé du Québec (FRSQ)
  - Heart Health Study
- UNC (University of North Carolina) Injury Prevention Research Centre (IPRC) – focuses on demonstrations and evaluation of innovations in practice settings. They are one model for bringing evidence to practice. UNC-IPRC has a collaboration with the Ontario Neurotrauma Foundation (ONF).

### **Implementation and Future Research Partnerships:**

The following capacities, competencies, experience, legislation, situation or trends currently exist in Canada and internationally and would facilitate the implementation of this research agenda:

- Canadian health service funding is integrated through provincial/territorial governments (although this could be considered problematic because both standards and accountability are diffused responsibilities)
- CIHR has experience with multidisciplinary peer review committees of the type that would be required to review co-morbidity research
- In Canada the public health paradigm is well accepted, and the health system is publicly funded
- There is Canadian experience in getting the input from stakeholders that would be necessary to ensure that community values are incorporated into research and healthcare programs
- In Canada there is acceptance of diversity and its needs in the health system
- There is previous Canadian experience in multi-disciplinary initiatives (e.g., Canadian Stroke Strategy, Canadian Cancer Control Strategy).

The following capacities, competencies, experience, legislation, situation or trends are required in Canada and internationally to facilitate implementation of this research agenda:

- A research funding culture that rewards integrated approaches is required
- Although Canada has publicly funded healthcare integrated at the level of provincial/territorial governments, standards and accountability are provincial/territorial responsibilities that have been given low priority – unlike the US for-profit system that is undergoing a pay-driven shift toward cost effectiveness
- Researchers with experience in multi-disciplinary initiatives are needed. Input from researchers/health providers/consumers into information technology initiatives is required from the outset – otherwise this infrastructure will not be used.

Future partnerships required to implement this agenda:

- Collaboration among professional associations, health care providers, voluntary organizations, consumer groups, policy makers, social scientists and management scientists and their sponsoring research funding bodies

- Collaboration with other national co-morbidity projects (e.g., Australia, USA)
- Collaboration with other research support organizations (e.g., Ontario Public Gambling Research Centre, health research foundations).

## Strategic Research Priority C: Knowledge Transfer and Exchange

Key elements of research in Knowledge Transfer and Exchange:

- Client education
- Non-linear iterative processes to achieve change
- Two way flow of information from clinicians and consumers to researchers and vice-versa
- Full engagement of partners.

The following research themes are the most relevant to this strategic research priority:

Basic biomedical, e.g., genetic, molecular, cellular, tissue physiology	Applied clinical, e.g., drugs, devices, social intervention <i>Add: psychosocial and individual interventions</i>	Health systems, health services, e.g., epidemiology, addiction services quality, cost-effectiveness	Societal, cultural and environmental influences on addictive behaviors
✓	✓	✓	✓

The following determinants of health are most closely linked to this research priority:

Determinants	Check (✓)	Determinants	Check (✓)
Income and Social Status	✓	Personal Health Practices and Coping Skills	✓
Social Support Networks	✓	Healthy Child and Adolescent Development	✓
Education	✓	Biology and Genetic Endowment	✓
Employment/Working Conditions	✓	Health Services	✓
Social Environments	✓	Gender	✓
Physical Environments	✓	Culture	✓

### **Research Questions:**

- Consumers and families have a lot of information. Does this information make a positive difference in the course of their illness and/or recovery?
- What are effective vehicles for knowledge exchange – e.g., amount of information, how it is delivered, in what format and medium?
- What characteristics of recipients and environments support sustained behavioural change?

### **Discussion Points:**

- Explore “knowledge mobilization” – putting knowledge into action - instead- instead of just “knowledge exchange”
- Providing accurate and accessible information to consumers is an ongoing challenge
- Training is a key to effective knowledge translation, and must include not only providers but also consumers and care givers. Throughout Canada we have untrained people working with our most severe cases; however, we also have trained people doing poor work with the same people
- The values of a specific population should be considered when adapting evidence-based practices to match client needs
- Target groups for knowledge exchange and mobilization are broad - e.g., decision makers, family members, primary care physicians, general public, research funders. What kind of targeting works? How should special populations be reached?
- Training and educating physicians about co-morbidity is necessary in order for new knowledge to have an impact on health. Training is also required on how to work in a multidisciplinary context in partnership with nurses, social workers, psychologists, etc.
- Academic institutions should be encouraged to increase capacity in knowledge translation, by increasing the number of researchers who can translate information to various communities.

### **Implementation and Future Research Partnerships:**

The following capacities, competencies, experience, legislation, situation or trends currently exist in Canada and internationally and would facilitate the implementation of this research agenda:

- Nechi Training, Research and Health Promotions Institute, in Edmonton ([www.nechi.com](http://www.nechi.com)) is a model to explore

The following capacities, competencies, experience, legislation, situation or trends are required in Canada and internationally to facilitate the implementation of this research agenda:

- Participatory action research is needed for effective knowledge exchange and mobilization. Such research should involve multidisciplinary teams of partners (consumers, clinicians, researchers) from the earliest stages (generation of hypotheses), so that more relevant research work can take place
- INMHA needs to engage in discussions with potential partners to find ways to work together combine funding, while meeting everyone's agendas.

Future partnerships required to implement this agenda:

- Government organizations such as the Canadian Institute for Health Information, other CIHR Institutes, Health Canada – First Nations and Inuit Health Branch, other branches of Health Canada, Public Health Agency of Canada and its Canadian Health Network, SSHRC
- Non-governmental agencies: Association of Universities and Colleges of Canada (AUCC - training), Lawson Foundation (source of funding for participatory action research), consumer groups and NGOs (source of experience and knowledge).

## Strategic Priority D: Longitudinal Population-Based Studies of Cause, Course and Outcome

The following types of studies were suggested:

- Database validation and data enhancement
- Population-based cohort studies, including application of administrative data sources to carry out longitudinal research
- Record linkage and administrative datasets
- Special exposure cohort studies, such as longitudinal research conducted in specific clinical groups.

Studies focused on the following areas:

- Community focus
- Disease burden and impact
- Early exposures
- Health services
- Risk and protective factors
- Symptom intensities: thresholds

The following research themes are most closely linked to this strategic research priority:

Basic biomedical, e.g., genetic, molecular, cellular, tissue physiology	Applied clinical, e.g., drugs, devices, social intervention  <i>Add: psychosocial and individual interventions</i>	Health systems, health services, e.g., epidemiology, health care quality, cost-effectiveness	Societal, cultural and environmental influences on health and the health of populations
✓	✓	✓	✓

The following determinants of health are most closely linked to this research priority:

Determinants	Check (✓)	Determinants	Check (✓)
Income and Social Status	✓	Personal Health Practices and Coping Skills	✓
Social Support Networks	✓	Healthy Child and Adolescent	✓

		Development	
Education	✓	Biology and Genetic Endowment	✓
Employment/Working Conditions	✓	Health Services	✓
Social Environments	↘	Gender	↘
Physical Environments	↘	Culture	↘

✓ = More; ↘ = Less

### Research Questions:

- How do symptom patterns relate to outcomes?
- Is there an appropriate match of needs and services for people with co-morbidities?
- What are the determinants and natural history of co-morbidity?
- What is the burden of co-morbidity (i.e., quality of life, productivity)?
- What strategic investments in the development of research methods and data enhancement procedures can optimize co-morbidity research in the future? Examples could include exploring feasibility of promising record-linking strategies; development of modeling procedures and sampling procedures.

### Current Research:

- Cross-validation of survey and administrative data
- Ongoing mining of data from the Canadian Study of Health and Aging, National Longitudinal Survey of Children and Youth, the Canadian Longitudinal Study on Aging, and the National Population Health Survey
- Various specific clinical cohorts.

### Implementation and Future Research Partnerships:

The following capacities, competencies, experience, legislation, situations or trends currently exist in Canada and internationally and would facilitate the implementation of this research agenda:

- A set of prospective studies on capacity
- Canadian Institute of Health Information (CIHI) gathers data and undertakes research in this and other areas of health.
- Models for data linkage exist in other countries
- The Standing Senate Committee on Social Affairs, Science and Technology chaired by Senator Michael Kirby has produced an interim report on Mental Health, Mental Illness and Addiction

- (<http://www.parl.gc.ca/38/1/parlbus/commbus/senate/Com-e/SOCI-E/rep-e/repintnov04-e.htm>) and a final report is expected in early 2006. This may lead to opportunities for partnership and financial support.
- Canadian Longitudinal Study on Aging (CLSA)
  - The required expertise for research in this area is available in Canada
  - The Public Health Agency of Canada (PHAC) is developing a national system for surveillance.
  - Primary Health Care Transition Fund – the Government of Canada has recently spent \$800 million through this program to support primary health care reform ([http://www.hc-sc.gc.ca/hcs-sss/prim/phctf-fassp/index\\_e.html](http://www.hc-sc.gc.ca/hcs-sss/prim/phctf-fassp/index_e.html))
  - Social Development Canada ([http://www.hrdc-drhc.gc.ca/redirect\\_hr.html](http://www.hrdc-drhc.gc.ca/redirect_hr.html)) is a possible source of financial support
  - Some administrative datasets already exist; more are likely to be created and access to these is likely to improve
  - Statistics Canada provides opportunities for partnership and a source of expertise and data such as the mental health component of the recent Canadian Community Health Survey (CCHS)
  - Variety of provincial/territorial initiatives.

The following capacities, competencies, experience, legislation, situation or trends are required in Canada and internationally to facilitate the implementation of this research agenda:

- Better accessibility of data to outside researchers
- Improved capacity to link inter-provincial/territorial data is lacking
- Stable infrastructure funding for healthcare systems is required
- Ways to accommodate privacy legislation while enabling access to important data sources.

Future partnerships required to implement this agenda:

- Canada Health Infoway (currently developing the Electronic Health Record, which will be an important new data source)
- CIHI
- Health research foundations/funders
- MHECCU (Mental Health Evaluation and Community Consultation Unit (<http://www.mheccu.ubc.ca/>) and ICES (Institute for Clinical Evaluative Sciences; <http://www.ices.on.ca/webpage.cfm>)
- Other CIHR Institutes/CIHR central

- PHAC (Public Health Agency of Canada) (national surveillance system)
- Professional associations such as licensing bodies, Canadian Medical Association
- Provincial/territorial governments
- Provincial/territorial health insurance databanks
- Statistics Canada and its Regional Data Center (RDC) network.

## Strategic Priority E: Measurement Tools for Screening and Diagnosis

New or improved (more specific) measurement tools for co-morbidity research are required for:

- Diagnosis and screening
- Identification and validation of biological markers and inclusion in assessments (e.g., measures of inflammation as a measure of depression) and measures of therapeutic responsiveness
- Measurement of impact (impairment, quality of life, burden of illness, physical and psychosocial function)
- Opportunity for secondary prevention through screening
- Validation of screening thresholds/cut-offs for both mental and physical disorders.

Considerations for research on measurement tools:

- New as well as existing tools must be validated for use with co-morbid populations.

The following research themes are most relevant to this strategic research priority:

Basic biomedical, e.g., genetic, molecular, cellular, tissue physiology	Applied clinical, e.g., drugs, devices, social intervention  <i>Add: psychosocial and individual interventions</i>	Health systems, health services, e.g., epidemiology, health care quality, cost-effectiveness	Societal, cultural and environmental influences on health and the health of populations
	✓ (1)	✓ (2)	✓ (3)

The following determinants of health are most closely linked to this research priority:

Determinants	Check (✓)	Determinants	Check (✓)
Income and Social Status		Personal Health Practices and Coping Skills	✓
Social Support Networks		Healthy Child and Adolescent Development	
Education	✓	Biology and Genetic Endowment	

Employment/Working Conditions		Health Services	✓
Social Environments		Gender	
Physical Environments		Culture	

### Research Questions:

- Are current screening and diagnostic tools valid in multilingual populations? Is routine screening appropriate in multicultural populations?
- Are they applicable across disciplines?
- Development/refinement and validation of screening tools for psychiatric co-morbidity in medically ill populations and addictive populations
- Fit and adequacy of current diagnostic criteria for co-morbidity
- Utilization and implementation of tools in real-life settings:
  - Are these tools actually used outside research in regular clinical settings?
  - Are there alternative ways of integrating tools into clinical practice?
  - What are the barriers to routine use?
- What are optimal ways to assess strengths and resources that protect against the development of co-morbidity?
- What are the domains of quality of life and functioning/ disability that are most impacted by co-morbidities?
- What is an optimal way to measure quality of life, function and disability in co-morbid populations?

### Current Research:

- A better diagnostic tool (Alcohol Use Disorder and Associated Disabilities Interview Schedule-DSM-IV version [AUDADIS-IV]), has been developed by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) for assessing co-morbid psychiatric and addictive disorders in population research
- Centre for Addiction and Mental Health – screening tool for depression/anxiety in addicted people
- Depression in diabetes – identification of tools
- Primary Care Evaluation of Mental Disorder tool (PrimeMD) – but it is not well implemented
- World Health Organization (WHO) – screening tools for alcohol and drug use in primary care in populations at risk for these as co-morbid

conditions (Alcohol, Smoking, and Substance Involvement Screening Test or ASSIST, Alcohol Use Disorders Identification Test or AUDIT).

**Discussion points:**

- The ethics of using biomarkers as diagnostic tools should be addressed in the context of possible labeling of individuals with co-morbid disorders.

**Implementation and Future Research Partnerships:**

The following capacities, competencies, experience, legislation, situations or trends currently exist in Canada and internationally and would facilitate the implementation of this research agenda:

- CIHI has expertise in databases and how to run registries, but the classification system may be an impediment
- Concurrent disorder treatment programs exist in Canada (Centre for Addiction and Mental Health, programs in BC, Calgary, Saskatchewan, Quebec, etc.) that have:
  - Experience in diagnosis and assessment and screening
  - Data on treatment outcomes for co-morbid patients
- Electronic health records will be a potentially rich source of research data
- National Health Information (NHI - USA) is a potential partner, with information on patient reported outcomes, and a large-scale study to research a uniform set of outcome measures
- Statistics Canada has expertise in population health measurement could be an effective partner on how to best assess co-morbidity in population studies
- The Personal Information Protection and Electronic Documents Act (PIPEDA) is due to be reviewed next year, giving researchers an opportunity for input
- The universal health care system in Canada represents a huge opportunity for systems-wide research.

The following capacities, competencies, experience, legislation, situation or trends are required in Canada and internationally to facilitate the implementation of this research agenda:

- Ability to create and link administrative databases (organizational inertia and privacy fears are potential barriers)
- Consultations with front-line staff are required to determine what tools they are currently using. Canada Health Infoway and CIHI recognize the

need for quick and easy tools, e.g., web-based forms that patients can fill in themselves

- Databases must be accessible to the research community. For example, access to Statistics Canada databases through its Research Data Centre network should be improved.
- Information on existing concurrent disorder programs and their practices and findings needs to be better disseminated
- It is important that the Electronic Health Record (EHR, under the leadership of Canada Health Infoway) be developed and implemented in a way that makes it useful for researchers
- Stakeholder input is required to determine their needs and get their involvement in research studies
- Tools must be applicable to specific cultural groups – see for example the CIHR-Institute of Population and Public Health (IPPH) RFA to analyze world health survey cross-cultural comparability.

Future partnerships required to implement this agenda include:

- Canadian Psychiatric Research Foundation
- Data custodians
- Non-governmental Organizations – for example, Heart & Stroke Foundation of Canada, Canadian Cancer Society, Schizophrenia Society of Canada, Canadian Mental Health Association. Support is needed from such organizations
- Other CIHR Institutes should be approached as possible funding partners
- Partnerships with the Canadian Medical Association, provincial/territorial medical associations, and professional organizations representing other health disciplines (e.g., Nursing, Psychology) are needed to support and endorse the research findings
- Regional Health Authorities
- Royal College of Physicians
- SSHRC (to improve access to Research Data Centres)
- Standing Senate Committee on Social Affairs, Science and Technology chaired by Sen. Michael (final report on Mental Health, Mental Illness and Addiction is due out in early 2006)
- Statistics Canada (use of existing data such as the Canadian Community Health Surveys, methodological assistance).

## **Building an RFA**

In closing, consultation participants were asked:

*“If you were going to prepare an RFA on co-morbidity, what would you keep in mind?”*

Participants strongly recommended that the RFA be very specific to support the quality of applications and to ensure that the peer review process reflects the spirit and heart of this consultation’s discussion. It was also recommended that the RFA demonstrate serious and meaningful outreach to the communities under study, and that these communities be involved in a meaningful way in the development of the RFA and the dissemination of results.

Participants emphasized that applicants will need to adopt a multidisciplinary team approach to this type of research, with involvement of groups with specific expertise as appropriate (e.g., management science, government policy).

Participants strongly recommended that the peer review panel constituted for this RFA should include those with cross-disciplinary (biological and psychosocial) expertise and understanding. Lay members (i.e., patients) should also be part of this peer review panel.

It was recommended that a 2-tiered RFA be considered, because some partnerships may be ready to apply now while others may need more time to develop. For the latter, the RFA could include a development grant or seed money to hold a “partners forum” or develop an inter-sectoral team.

Participants also recommended that the Letter of Intent process be developed to satisfy CIHR needs without requiring a large investment of time and effort by applicants. There was also some discussion about whether the RFA would need to include a commitment to training.

## **Concluding Remarks**

On behalf of the INMHA Advisory Board, Dr. Roberta Palmour expressed her appreciation for the progress made by participants in this consultation. She thanked them for their intensity, openness and collaboration throughout the two-day process. The Advisory Board has been given a great deal to think about as it goes to work on preparing the RFA.

Dr. Barbara Beckett, Assistant Director (Ottawa) of INMHA also expressed her thanks and committed to sharing a draft report with participants for their comments. She will be reporting to the INMHA Institute Advisory Board later in mid-October on the conclusions of this workshop.



A Canadian Research Consultation  
on  
Co-morbidities Associated with Mental Illness, Addiction,  
Brain Disorders and the Senses:  
an INMHA Strategic Research Agenda 2005-2010

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