



Canadian Institutes of Health Research



Institute of Neurosciences, Mental Health and Addiction (INMHA)

# **Substance Abuse Prevention and Treatment Initiative**

*Workshop Report*

**Ottawa ON  
October 12-13, 2010**

# Table of Contents

<b>Introduction</b> .....	1
<b>Part I: Setting the Stage</b> .....	1
Opening Remarks .....	1
Presentations.....	2
<i>CIHR Team in Transdisciplinary Studies in DWI Onset, Persistence, Prevention, and Treatment</i> .....	2
<i>Neurological Basis of the Effects of Methamphetamine: A Behavioural and Electrophysiological Study</i> .....	4
<i>Understanding Simultaneous Polysubstance Use: Patterns and Consequences of Mixing Substances in Illicity Drug Users</i> .....	5
<i>CIHR Team in Substance Abuse Treatment</i> .....	7
<i>Non-Medical Use of Prescription Opioid Analgesics in Canada: Epidemiology, Consequences, and Interventions</i> .....	8
Group Sessions .....	10
<b>Part II: Looking Ahead</b> .....	12
Presentations.....	12
<i>Ottawa Hospital Research Institute Clinical Epidemiology Program</i> .....	13
<i>Health Canada Office of Drugs and Alcohol Research and Surveillance</i> .....	14
<i>Correctional Service Canada, Addictions Research Centre</i> .....	16
Group Sessions .....	18
Closing Remarks .....	20
<b>Appendices</b> .....	21
Appendix 1: Agenda.....	21
Appendix 2: List of Participants .....	23

## Introduction

Approximately 25 academic researchers, government representatives, and others with interest or expertise in the field of addiction met in Ottawa on October 12 and 13, 2010, for the first Substance Abuse Prevention and Treatment Initiative Workshop. The event was hosted by the Institute of Neurosciences, Mental Health and Addiction (INMHA), one of 13 Institutes of the Canadian Institutes of Health Research (CIHR).

The CIHR is—through funding received from the National Anti-Drug Strategy (NADS) for fiscal years 2007-12 and grant money from CIHR central and INMHA—supporting a number of studies around substance abuse prevention and treatment. This workshop was an opportunity for researchers heading three team grants and two catalyst grants in this area to provide an update on their work and for all participants to brainstorm on priority research topics for consideration by INMHA over the next five years. This report is a summary of the highlights of the workshop discussions and presentations.

## Part I: Setting the Stage

### Opening Remarks

Dr. Anthony Phillips, Scientific Director of INMHA welcomed participants to the meeting, acknowledging the presence of a number of colleagues from other CIHR Institutes and partners from the Public Health Agency of Canada (PHAC). He noted that addiction research has always been a major focus of the INMHA and that he was pleased to see the genesis of NADS and the partnerships emerging to address this important issue, which has linkages to mental health. He explained that INMHA was proud to have been involved in NADS since the strategy's inception in 2007. In the intervening years, INMHA has helped to support three team grants, nine catalyst grants, a knowledge synthesis grant, and bridge funding for research in this field and leveraged additional contributions through private-sector partnerships.

This was an important day, he said, because it would give INMHA and its partners an inside look at the work the funded teams have been doing and would get people thinking about vital translational issues and how to apply this knowledge to policy and practice at the next stage, if NADS is renewed in 2012. A second important component of this meeting was to solicit input from participants on potential research priorities for consideration by INMHA in forging its strategic plan for the next five years. Dr. Phillips

noted that although this was a small event, it was a vital first step in what he envisioned as an ongoing national consultation.

## Presentations

Five primary investigators who are involved in research efforts funded through the CIHR/NADS initiative provided an update of their work to participants. Brief summaries of their presentations are provided, along with key discussion points that were raised in plenary.

### *CIHR Team in Transdisciplinary Studies in Driving while under the Influence (DWI) Onset, Persistence, Prevention, and Treatment*

- **Dr. Thomas Brown, Director, Addiction Research Program (Douglas Hospital Research Center and Pavilion Foster Addictions Treatment Centre)**

Each year, around the world, 1.2 million people die and another 20-50 million are injured in road traffic accidents. This represents the ninth leading burden on health globally and is expected to be the third by 2020. In North America, over a third of all traffic-related fatalities are associated with driving while under the influence (DWI), with repeat offenders a major contributor. The need for effective strategies for reducing DWI in Canada and capacity for knowledge translation is paramount, as this country is lagging behind other developed countries in these areas. The DWI problem is pressing in developing countries as well, where access to private vehicles is increasingly common. Recognizing this as a complex issue involving interactions between multiple systems and disciplines, a transdisciplinary research initiative was launched. Its goal is to examine various aspects of DWI, including causal factors behind DWI and recidivism, with an eye to providing evidence-informed, pragmatic solutions.

For example, using neurobiological and neuropsychological testing the research team has found that hardcore offenders exhibit lower hormonal responses to stress and poorer decision-making performance than healthy controls. Both characteristics are linked to risky behavior in general. These findings also have practical implications: first, they may lead to development of more accurate detection methods to identify first time offenders who are likely to re-offend and intervene earlier and more effectively; second, current DWI policies and programs that emphasize punishment and delayed rewards for safe driving may actually work against the neurobiological and neuropsychological distinctiveness of this high-risk group, possibly making them less effective.

Several pilot projects using driving simulation are now being carried out to look more closely at interactions between factors such as impulsivity, arousal, reward sensitivity, alcohol intake, gender/sex, and passenger presence on risky driving in young adults and DWI offenders.

### **Key Discussion Points:**

- The interaction between the driver and illicit and licit drug use on impairment is highly individual. This makes it difficult to understand the role of different drugs on driving and DWI offending or establish norms for impairment as has been done for alcohol.
- When drivers fail a breathalyzer or road side test they are immediately sent for toxicological assessment, where blood tests can detect alcohol and multiple drugs. Nevertheless, detection of and prosecution for alcohol is always the default mode when both alcohol and drugs are involved.
- There is evidence that zero tolerance for young and/or probationary drivers is appropriate and tolerated; it is not feasible to maintain zero tolerance beyond a certain limited time (e.g., 6-12 months after obtaining a novice driver's license). One difficulty is knowing when it is safe to raise the legal limit of alcohol in the bloodstream: young people are likely more impaired at a much lower level of alcohol than adults, and alcohol will likely interact with their inexperience, tendency for risk taking, and vulnerability to distraction (e.g., teen passengers, texting).
- There are many methods that work to reduce accidents and DWI (e.g., depowering vehicles, installing devices that detect alcohol levels), but they are not always easy to implement because of important technical, economic, marketing and/or enforcement issues.
- So far, policies concerning DWI have revolved around deterrence; yet, the team's evidence points to the benefits of early positive rewards in the drivers who are the most likely to DWI. The challenge is to combine these two approaches to achieve meaningful progress.
- The team, as well as other investigators, is increasingly interested in how different levels of alcohol interact with different personal characteristics to produce potentially high-risk behavior.
- One main focus of this team is with the decision making that occurs well before the DWI event. Although people know they should not be doing it, a key issue is understanding the steps involved that got them into the situation despite this knowledge.
- The team has used cortisol in saliva as a neurobiological marker of risk. But cortisol is a non-specific marker of several mental health and behavioural

problems. One major challenge is to figure out what cortisol is telling us about the pathways to DWI. One possibility the team is pursuing is that a lack of emotional arousal to stressful events in some individuals may affect their memory and capacity to learn from past experience. For example, in such individuals a DWI arrest and conviction may not be experienced as sufficiently stressful to discourage them from engaging in future DWI behaviour or to learn to avoid DWI in future. Another possibility is that DWI recidivists are under-aroused compared to normal drivers and may be engaging in risky behavior as a way to reach an optimal level of arousal.

- DWI recidivists tend to have experienced trauma and deprivation early in life or were exposed to alcohol early in their neural development. The role of the convergence of these multiple factors in later DWI behaviour is the subject of a longitudinal study that is currently underway.
- China recently implemented a total ban on alcohol when driving which may prove to be a useful test case.
- The team's preliminary results on gender differences in DWI that support the hypothesis that DWI re-offending in males involves deficits in executive functioning (self regulation) and in females to mental health and alcohol abuse.

### ***Neurobiological Basis of the Effects of Methamphetamine (Crystal Meth): a Behavioural and Electrophysiological Study***

- Dr. Éric Dumont, Assistant Professor, Center for Neuroscience Studies, Queens University

This study focuses on understanding the neural substrate (molecular, cellular, circuits) underlying the aggravating effects of stress on addiction—in particular, comparing the effects of methamphetamine and cocaine on the brain. These monoaminergic psychostimulants work by increasing levels of dopamine and noradrenaline. When levels of the drugs drop, the brain reward pathways structure detects a challenge to homeostasis (stress) and triggers a physiological and behavioural response aimed at re-establishing them. Rats that are trained to self-administer drugs by pressing a lever will press it as often as necessary to re-establish those levels.

Methamphetamine is much more powerful than cocaine because of the way it acts as a mechanism to release dopamine—so less is required to achieve the same level of pleasure. Compounding the problem is the fact that methamphetamine is also much cheaper. In analyzing brain slices and neuron activity in the brain reward pathways of rats, researchers have found that the self-administration of psychostimulants changes the way dopamine modulates inhibitory synaptic transmission in the brain. Putting c-Src Tyrosine kinase inhibitors into the brain reduced the behavior (i.e., the rats stopped pressing the lever sooner)—proving them a potential therapeutic target for this form of

addiction. In conclusion, dissociating brain mechanisms of natural motivation from those targeted by drugs of abuse is critical, as is the study of neural mechanisms uniquely associated with addiction rather than counter-adaptations triggered by experimenter-administered doses of drugs. The team's goal over the next five years is to expose rats to risk factors (e.g., stress in early life) and see if their behavior is affected. This will help determine the time-course/resilience of psychostimulant-associated neural changes and their role in predisposition or susceptibility to relapse. Knowing whether these changes can be altered will be helpful in developing preventive interventions.

### **Key Discussion Points:**

- This region of the brain is very important in animal models in terms of relapse. If there is a lesion in this region of the brain, even if rats are exposed to stressors that would normally get them back into their habit, they do not relapse. So these mechanisms may have some benefit in that regard.
- Right now, there are four c-Src kinase inhibitors involved in various clinical trials for cancer therapy, so there may be a safety trial for those drugs in a short period of time.
- These particular rats are very good at learning instrumental tasks and will all eventually press for drugs. If we separate populations into high- and low-takers in terms of addictive profile, we may be able to tease out more—but we are not at that stage yet.
- It is premature, at this point, to try and understand things at the neural network level, because that is not possible using brain slices. Efforts are being made to develop *in vivo* recording because it may enable us to see the neural network shut down or increase.

### ***Understanding Simultaneous Polysubstance Use: Patterns and Consequences of Mixing Substances in Illicit Drug Users***

- Dr. Sean Barrett, Associate Professor, Department of Psychology, Dalhousie University

One of most complex issues in addiction is to develop models that reflect the way drug users actually take drugs. While illicit drug users often use multiple substances, most existing assessment tools focus on details of individual substances and little is known

about the extent to which multiple substance use contributes to various drug-related problems and harms. Some of the issues with past research include reliance on relatively high functioning samples, a focus on the co-administration of just a few substances, a failure to distinguish between concurrent and simultaneous multiple substance use, as well a failure to consider the order and routes of administration of co-used substances, which can impact on the nature of drug interactions (e.g., alcohol and cocaine in that order reach the brain more quickly than they do in reverse). In order to begin to address such issues, in the present research data are being collected from different substance-dependent populations using interviews (over 250 completed to date), which focus on details of occurrences that people can recall and that are clinically meaningful (e.g., first or last use of a substance, instances of overdose). Other key components are a history of lifetime substance use and modules specific to the type of drug and how it was used.

Early findings suggest that severely addicted individuals can provide reliable data about drug-mixing patterns drug but that the particular patterns of co-administration for certain drugs tended to vary with level of drug exposure and/or routes of administration. For example, in the case of injection opioids, virtually all participants reported co-administering tobacco during both their very first and most recent uses but alcohol and cannabis were more likely to be co-administered during the first use and crack cocaine co-administered at the time of most recent use. In addition, different patterns of drug co-administration were observed for powder and crack cocaine with the former most frequently being used with alcohol and cannabis and the latter with prescription opioids and benzodiazepines.

Lessons learned include the need to limit the length of interviews, provide training for interviewers, and consider more efficient means (e.g., computer-assisted) of recording responses. Plans going forward include expanding the study beyond local samples, developing a users' manual, and providing workshops for treatment providers.

### **Key Discussion Points:**

- If the majority of cocaine users also co-administer alcohol that should be incorporated into animal models to ensure that they are modeling reality.
- Most drug users are smokers to begin with, and rates of tobacco use increase during drug-using sessions. There is some evidence that nicotine strengthens drug reinforcement in the brain. Certainly tobacco-use behavior is affected by other drug use, and it is possible that other drug use is also affected by tobacco.



- The term “polysubstance user” is a broad one. It would be helpful to identify some sub-categories.
- Drug landscapes and availability have changed enormously over the years, so there have likely been some major shifts since some of these people had their first drug-use episode. For example, a teenager 20 years ago might have gone from using cannabis to a hallucinogen such as LSD; whereas 10 years ago, it would more likely have meant graduating to MDMA.
- There is evidence of a gender effect on drug trajectories, with women initiating harder drug use at a younger age than men. This may have to do with who is with them and the fact that young women tend to date older men, so they may be drawn into engaging in those kinds of drugs at an earlier age.
- The purity of the substances taken and what is actually in them adds complexities, as there is a large amount of variability in some drugs, such as MDMA.
- There is a tendency, with treatment protocols, to focus on the primary substance of abuse; however, people might be addicted to multiple substances at once (e.g., also alcohol and tobacco). In order to integrate multiple substance use into interventions, we need to know how they interact, because there may be a need to target one of the other substances first (e.g., if tobacco is making other drugs more reinforcing or more potentially addictive, it should be looked at first).

## *CIHR Team in Substance Abuse Treatment*

- Dr. Kathryn Gill, Director of Research, Addictions Unit, McGill University Health Centre

Misuse of alcohol, tobacco, and other substances is prevalent in primary care settings, and substance use is often linked to presenting symptoms. Intervening in primary care may, therefore, reduce the long-term consequences of substance abuse, resulting in cost savings and enhanced quality of life. Although many research studies show the efficacy of multiple interventions (and brief interventions in primary care settings), there has been little success getting frontline practitioners to use them. Research-based interventions are often perceived as being incompatible with clinical practice because they fail to take the unique culture and context of community services into consideration.

This knowledge translation initiative is aimed at studying the process of implementing an evidence-based program of treatment for substance dependence (including brief interventions) into three primary care clinics in inner-city Montréal and measuring its effectiveness as determined by changes in health care service delivery, sustainability, and patient outcomes. During the implementation stage, the team is utilizing an integrated knowledge translation (iKT) strategy to build collaborative mechanisms for knowledge exchange between researchers, addiction specialists, and frontline practitioners. The research component directly examines the process of knowledge uptake and barriers to transfer using both qualitative and quantitative methodologies.

The study has several treatment-specific aims: to study the effectiveness of the iKT program and implementation process at the three sites; to understand the process of knowledge uptake and barriers to it; to measure the effectiveness of the treatment program; and to disseminate information gained throughout the network. Possible hypotheses for the slow adoption of interventions—such as implementation difficulties, organizational challenges, financing issues, and incompatibility with clinician beliefs—are also being tested.

The iKT process has already resulted in the formation of a 12-person team of clinicians made up of members from the three clinics who meet regularly for case discussions, program development, and training related to substance dependence and mental health. An external website is being developed to house research-related products, and the development of research-based training material is ongoing. Future plans include a conference and workshops, as well as the development of a novel intervention program specifically for home-care providers.

### ***Non-medical Use of Prescription Opioid Analgesics in Canada: Epidemiology, Harms, and Interventions***

- **Dr. Benedikt Fischer, Simon Fraser University, CIHR/PHAC Research Chair in Applied Public Health, Centre for Applied Research in Addictions and Mental Health**

Although the non-medical use of prescription opioid analgesics has only emerged as a problem over the last 10 years or so, it has serious repercussions and has taken over much of the substance-use agenda. In North America, the general population consumes more of these drugs on a medical basis than anywhere else in the world. The saturated context of opioids in Canada and the United States means that they are easily available for misuse, abuse, and diversion. Making the problem even more complex and difficult to address is the fact that the pain-care field has fought to make opioids more easily available—so tightening accessibility could have other negative repercussions.

There was little known about the extent of the opioids problem until an explosion of scientific literature on the subject in the US showed a dramatic increase in the number of new abusers of psychotherapeutics. Annual new cases of prescription opioid abusers in the US now outnumber the existing heroin-using population. Death from prescription opioid-related overdose has also increased significantly and is now the second-highest cause of accidental death in healthy middle-aged adults in the US. Similarly, treatment admissions and accidental deaths related to prescription opioids have sharply risen in Ontario in recent years. While the magnitude of the problem in the US is staggering, however, it is still very much off the radar in Canada. Vast data gaps exist in Ontario, with data collected differently from province to province, existing databases incompatible, and definitions (e.g., of overdose-related deaths) inconsistent.

The five projects involved in this grant are addressing the critical need to describe the nature of the problem in Canada and develop effective interventions to address it. The OPICAN study focusing on opioid using street drug users conducted from 2001 to 2005 has shown that in several large cities (e.g., Edmonton), opioid use has virtually flooded heroin out of the market. In Canada, as in the US, the amount of prescription opioid use

more than doubled over this period. Provincial data have also revealed an extremely diversified landscape of opioid use, with major differences in both the quantity of prescription opioids taken (e.g., use is several times more prevalent in Newfoundland than in Quebec) and the kinds of products involved.

While studies of opioid use have often focused on the motivation of users, a bigger issue is the supply side—as studies have shown that the main source of opioids for most users is personal contacts (e.g., friends and family members) and Internet shopping sites. Another factor that makes this a difficult problem to address is that prescription opioid use implicates the medical system in direct and indirect ways, so it requires involvement in complex policy-related areas, such as medical practice guidelines and regulations. The challenges of defining the non-medical use of opioids are significant, as are the implications of the problem for treatment systems. Going forward, the research teams funded under the grant will examine the possible association between opioid use and dispensing differences across the provinces, establish a cohort to assess and typologize users in the general population, explore the utility of interventions, make links with the pain community, and synthesize findings into interventions and recommendations that actively engage stakeholders.

### **Key Discussion Points:**

- There is a new synthesis grant focusing on pain and mental health, because those two factors stood out in the initial review. In a lot of cases of non-medical use, when you go into people's history they had a pain problem at some point. We do not do well at managing people who were on prescriptions for a while.
- Things are changing: heroin-sellers are moving into other illicit drugs; there are systematic supply routes in place with people engaging in things like double-doctoring, prescription forgery, and obituary robberies; more seniors are selling drugs. So we are starting at zero here in terms of devising good interventions.
- Many opioid users see Oxycontin and other potent prescription opioids as on par with heroin and are injecting it or taking it orally.
- If there is a demand, there is a need. Prescription opioids are very effective drugs at treating pain, so the people who use it probably need it. We need to find other ways to help them. A lot of people who get involved with cocaine or methamphetamine also use those drugs therapeutically, so they may be a reflection of a similar problem.
- The medical system is an active factor in this issue, so it has to be part of the solution. If we go back in history, things were not dealt with properly—and that

is why these problems exist. These were originally used by prescription, so the problem may be in the transition from medical to non-medical use.

- There are many hoops to jump through to get hold of opioids for laboratory use, but large quantities are made available for post-surgery that are not necessarily used.
- The majority of people who have been prescribed these drugs still have some in their medicine cabinet. No one is ever asked if they have used what they have or told to bring it back if they do not. These trivial issues alone play an enormous role in the way this problem is expanding and spreading.

## Group Sessions

Participants divided into three table groups to identify potential research topics and types of research that they felt the INMHA should pursue over the next five years. Their discussions included consideration of strengths, weaknesses, and gaps in addiction research in Canada and mechanisms to address the topics identified. Summaries of their discussions, which were presented in plenary, are provided below.

- **Translate addiction research into medical practice.** Many clinicians do a lot of work on addictive substances but do not see addiction research as part of their mandate. Mechanisms that could encourage them to do so might be able to include salary support for physicians conducting research in residency. Team grants that provide salary support for clinicians would also help bring together researchers and clinicians together to collaborate and share findings.
- **Combine pharmacotherapies and regular therapies in the development of addiction-based therapies.** This area is little advanced in Canada. One mechanism could be for CIHR to partner with pharmaceuticals that have a vested interest in this kind of research (e.g., ones whose prescription drugs are potentially addictive). The CIHR could develop the research and the pharmas could contribute funding for fellowships, grants, salary support, trials, etc.
- **Increase funding for longitudinal studies.** Addictions are often chronic or recurring, so they require longitudinal study from an early-life perspective. There is also a lot of cross-over among fields of addiction, yet they tend to be studied individually. Mechanisms are needed to bring them together to discuss commonalities and share information. This could be accomplished through longer grants as well as team grants.

- **Combine the study of addictions and comorbidities** (e.g., mental problems, HIV infection). Mechanisms such as team grants or team proposals could bring experts in these areas together and improve understanding of each other's fields.
- **Explore the efficacy of secondary and non-medical interventions.** Basically, focus on the need for research on interventions that take place between prevention and traditional treatment (e.g., brief interventions, secondary targeted prevention for risk activities, high-risk young users).
- **Focus on the most pressing comorbidities in the field of substance abuse.** There is relatively little knowledge about many comorbidities, their impact on burden of disease and health outcomes, and what interventions work to address them. There needs to be more focus on drug-use realities that avoids false compartmentalization (e.g., empirical, epidemiological drug-use realities rather than political selections).
- **Conduct better surveillance on morbidity and mortality.** There is a need for better surveillance, national cohorts, morbidity/mortality systems date—particularly for high-risk groups (e.g., injection drug users, homeless people, and correctional populations). This could be done through grants or other programs implemented by other players and agencies in the field—not through CIHR funding.
- **Focus on social and cultural determinants.** Canada has unique social and cultural environments (e.g., a diversity of ethnic populations, native and indigenous populations, urban and non-urban environments) that impact on drug-use and risk behaviours and outcomes. Studying these impacts and how to implement effective interventions within these settings would be a unique opportunity for Canadian research.
- **Promote the uptake of treatment options among users.** More information is needed on why certain forms of treatment/intervention (e.g., opioid substitution, methadone) are not well utilized by current populations. Information on barriers to their uptake and other options that might be more appealing to certain key populations at risk would also be valuable.
- **Support and build on existing research and knowledge about the neurobiology of addiction** (e.g., brain imaging).

- **Conduct more research on the early determinants of addiction** (e.g., social, familial).
- **Create an integrated network for researching and testing treatments and interventions in addiction.** In the US, the National Institute on Drug Abuse (NIDA) has headed the creation of a multidisciplinary network that has specific nodes in specific cities and different areas of expertise, and they work as an integrated network for doing research and testing interventions and treatments.
- **Harmonize addiction data across Canada.** A true picture is needed of the issues, so that funding decisions are based on real situations and not just perceptions.

## Part II: Looking Ahead

### Presentations

Representatives from the Ottawa Hospital Research Institute, Health Canada's Office of Drugs and Alcohol Research and Surveillance, and Correctional Service Canada's Addictions Research Centre provided participants with an overview of ongoing and recent addiction-related research taking place in their institutions. Highlights of their presentations and the Q&A sessions that followed are provided below.

#### *Ottawa Hospital Research Institute Clinical Epidemiology Program*

- Chantelle Garritty, Senior Research Program Manager, Ottawa Hospital Research Institute

The Clinical Epidemiology Program is one of six research programs in the Ottawa Hospital Research Institute. The Systematic Reviews (SRs) Group, an arm of the program engaged exclusively in knowledge synthesis and related methods research, is a leader in international reporting standards, offers SR education and training courses, and was instrumental in the development of web-based SR software.

INMHA recently commissioned the group, as part of Cochrane Canada, to prepare a preliminary evidence map of SRs related to prevention, treatment, and harm-reduction approaches associated with illicit drug use. This effort has already yielded some good information as well as some major gaps in the literature base and some methodological issues related to synthesizing evidence from this field. Results showed that, of the five prevention initiatives mentioned, three were school based – with SRs related to groups other than children and adolescents largely lacking. SRs of treatment interventions showed opioids and morphine derivatives as the most commonly reported substances, and opioid agonist maintenance therapies and acupuncture as the most common somatic pharmacological and non-pharmacological interventions, respectively. They also revealed a real lack of SRs related to the relapse/prevention phase of treatment. HIV/HCV treatment or prevention measures and substitution programs were the most common harm-reduction therapies identified; however, most SRs did not specify the substances, settings, or populations involved in these cases.

An update of the searches has revealed nearly 600 new citations, which are currently under review for inclusion in the study, along with relevant French language studies. The group's intention is to provide more detailed data abstraction and analysis over the coming months and to publish a paper on the subject in a peer reviewed journal in early



2011. Future extensions may include further analyses of the SRs to weight them by quality of evidence and use them to set priorities for new SRs based on identified gaps, and the possible development of a new section on the INMHA website to highlight and link to Cochrane SRs related to illicit drug use.

### **Key Discussion Points**

- Some SRs have a conservative bias because they look at interventions that have been studied for a long time (e.g., school-based prevention, needle exchange programs) versus more novel interventions. It was suggested that in tandem to SRs, it is important to continue to push for innovative, experimental work and primary research efforts.
- Many studies did not specify the type of drug involved in drug use because authors of the SRs tended not to report this fact.

### ***Health Canada, Office of Drugs and Alcohol Research and Surveillance***

- **Judy Snider, Manager of Surveillance, Office of Drugs and Alcohol Research and Surveillance, Health Canada**

The Canadian Alcohol and Drug Use Monitoring Survey (CADUMS) is an ongoing general population survey sponsored by Health Canada that was launched in 2008 to monitor alcohol and illicit drug use among Canadians aged 15 and older. Other surveys currently used for this purpose also include youth and student surveys on smoking and health behavior.

These data (and those from the Canadian Addiction Survey in 2004) show that the average age of initiating cannabis use changed little between 2004 and 2009, remaining at about 15.6 years of age; however, the percentage of people who had used cannabis over their lifetime decreased slightly from 44.5 to 42.4. Approximately 1 percent of the Canadian population age 15 years and older report having used cocaine/crack in their lifetime. A similar prevalence of lifetime use was reported for ecstasy. Of the 25 percent of Canadians 15+ who reported using at least one pharmaceutical (pain relievers, stimulants, sedatives) within the past year, 2.3 percent reported having done so to get high. A lower percentage of youth (age 15-24 years) reported psychoactive pharmaceutical usage (18.2% for youth vs. 26.2% for adults age 25+ years), but among users, youth had much higher rates of use to get high than adults did (9.5% vs. 1.3%). A higher percent of youth reported heavy frequent drinking (four times more youth than adults) or heavy infrequent drinking (three times more youth than adults).

New data from CADUMS, the Youth Smoking Survey, and the Healthy Behaviour School Aged Children survey will be released in 2011 and 2012. Similar to most surveys, these sources have limitations—including potential respondent biases. Recognizing that telephone surveys such as CADUMS may not reach high-risk groups, a pilot project was undertaken to collect information from high-risk populations in urban areas within British Columbia and Newfoundland and Labrador. It is anticipated that a project to collect comparable information from selected urban areas across Canada will be launched shortly. Other projects currently being conducted among vulnerable populations include studies of youth who have been maltreated and those who have been involved in child welfare, both groups being at greater risk of drug use. Other new studies aimed at examining the impact of various social factors on drug use in street youth, drug abuse among federal offenders, and pathways to prescription opioid addiction will add to the understanding of drug use and addiction in Canada.

### **Key Discussion Points:**

- Challenges regarding the collection of data on the abuse of psychotropic pharmaceuticals, specifically opioid pain relievers, were raised. Issues discussed included the formulation of questions and the potential for underestimating the size of the problem in Canada. Input is currently being sought for the 2011 CADUMS questionnaire, and consideration will be given to adjusting survey questions for these substances.
- Since the CADUMS questionnaire currently requires 25 minutes to complete, it is not possible to expand the survey and, if required, some parts will need to be dropped to accommodate additional new content. Feedback and suggestions are welcome.
- There was no evidence of a bias in responses depending on whether the survey was self-administered or administered by an interviewer, as it was fairly anonymous. It was noted that a shortcoming of administering surveys on line is that it is not possible to determine who is responding.
- Due to poor telephone coverage in the territories, the survey was not extended to this region as the results would not have been representative of the population. People on reserves may have been included in the CADUMS survey if they had phone lines and were selected through random digit dial.
- The sample size was too small to allow for a finer breakdown of youth into smaller age ranges; however, this should be possible now that an additional 3,000 young people are being included in the survey.
- There remain significant surveillance gaps in Canada, including the lack of a national treatment surveillance database and a national mortality database. No mention was made of agencies that have the lead on these potential data sources;

however, after some discussion it was proposed that the Canadian Centre on Substance Abuse and the Public Health Agency of Canada be engaged to help address these gaps.

### ***Correctional Service Canada (CSC), Addictions Research Centre***

- **Andrea Moser, A/Senior Director, Addictions Research Centre, Correctional Service of Canada**

The federal correctional population is becoming increasingly complex, with a significant proportion of offenders presenting at intake with substance abuse and mental health issues. For example, since 1997, there has been a notable increase in the number of offenders with mental health issues, from approximately 7% to 13%. Research has also suggested that offenders have higher rates of traumatic brain injury than the general population. All of these factors may play a role in the behavior that led to their incarceration.

Recognizing these and other emerging issues, the Correctional Service Canada's (CSC's) Addictions Research Centre is involved in a number of research activities related to Canada's NADS, including the following:

- The analysis of data obtained from the Computerized Assessment of Substance Abuse (CASA), which is administered at intake to federal offenders to assess the nature and severity of alcohol and drug problems.
  - The development of substance-abuse programs, including the National Substance Abuse Programs (NSAP) for male offenders (high, moderate, and low intensity) as well as specialized substance-abuse programs targeted toward Aboriginal and female offenders.
  - Outcome research on substance-abuse programs for offenders.
  - Research on CSC's methadone-maintenance treatment program.
  - Research in the area of drug interdiction (i.e., techniques and tools aimed at keeping drugs out of prisons), including a multi-site pilot to examine the effectiveness of tools such as ion scanners, drug dogs, and urinalyses.
  - An examination of recent trends in urinalysis data among federal offenders.
- 
- Special topics including prescription drug use and diversion for non-medical use in prison; promising interventions for adults with fetal alcohol spectrum disorder and other neurological disorders; the relationship between traumatic brain injury, substance use, incarceration, and post-release outcomes; and concurrent disorders.

## Key Discussion Points:

- Randomized administration of urinalysis tests in prison can be challenging due to operational constraints. The extent to which the collection of urine samples can be truly randomized should increase the accuracy of the results due to the varying length of time that different drug groups metabolize (i.e., drugs that metabolize quickly, such as opiates, may be more difficult to identify through urine testing if the administration process is not truly random).
- Search and seizure data provide some information about what is coming into prisons, but there is no guarantee that all contraband is being detected.
- Approximately 12 years ago, when CSC introduced the first phase of its methadone-maintenance treatment program (currently referred to as the Opiate Substitution Program (OSP) due to the recent introduction of suboxone as a treatment option), only offenders who came into system already initiated on methadone or those who demonstrated “exceptional circumstances” (e.g., all other treatment options had been exhausted) were eligible for the program. Approximately eight years ago, the program intake criteria were modified so that offenders who demonstrated a need for opiate substitution therapy would be initiated on methadone or suboxone while incarcerated in a federal institution.
- The increase in people coming into the system with mental health problems reflects the kind of trends other correctional jurisdictions in Canada and the United States are seeing.
- There has been dedicated federal funding provided to CSC over the last six years to enhance mental health services for offenders. Some challenges remain, however, including the recruitment of mental health professionals (e.g. psychologists) to work in the correctional system.
- Approximately 70% of the federal offender population has a substance abuse problem, and substance abuse is cited in correctional research literature as one of the top criminogenic risk areas. Of these 70%, approximately 30% have a “lower severity” problem, 15-30% a “moderate” problem, and 20% a “substantial or severe” problem.
- The CSC’s substance abuse intervention programs are based on best practices from the broader world of addictions as well as the forensic research literature.
- Research has demonstrated that rates of HIV and Hepatitis C infection are higher in the prison population than the general one: approximately 10 times higher for HIV and even higher for Hepatitis C. The CSC recently published emerging results from a national inmate infectious diseases and risk-behaviours survey, which is available on its website.

- Trends of drug use in the prison population often mirror those of the general population. The CSC is very open to collaboration and dialogue and is starting to look into sharing data and entering into data-sharing agreements with other organizations. Linking CSC data with provincial correctional and health data would potentially yield a lot of good trajectory information.

## Group Sessions

Small groups were asked to offer input on future planning considerations for INMHA and how its strategic plan should be framed within the context of a possible renewal of the NADS. They offered the following suggestions, which were followed by a more fulsome plenary discussion—the key points of which are also provided.

- **Make the CIHR a clearinghouse for other information sources.** This could include lists of funding mechanisms available in various provinces, existing networks and databases, etc.
- **Build on the networking opportunities forged at this workshop.** Bring together stakeholders from different sectors to share information and discuss ways they can work together. Include researchers who do not necessarily have funding yet but who are interested in getting ideas for studies. Share the findings/results of studies beyond the research and academic communities.
- **Have CIHR play a coordinating role in bringing together funders and researchers.** A lot of government programs and resources support research aimed at improving health services or reducing health disparities; however, they do not necessarily offer the same benefits as CIHR funding. CIHR could provide support through assistance for training or resource management and allocation. It could also play a brokering role in bringing together researchers and funders. CCSA should be engaged as well, given that KT is in their mandate.
- **Explore opportunities for joint initiatives with pharmaceuticals.** This is an untapped source of funding (e.g., salary support).
- **Take a coordinated approach to sharing information on research.** There is a lot of research being done that other researchers are unaware of. If information on what is being done, findings, etc. was coordinated and more readily available (e.g., disseminated by a central body), it would be helpful in forging partnerships, establishing priorities, and translating knowledge.

- **Consider adapting the gambling model to addiction-research funding.** In the gambling world, a percentage of profits go toward funding research in the area of gambling addiction. This approach should also be considered for drug addiction, including alcohol and tobacco, as effective models already exist.

### Key Discussion Points:

- The field of addiction research is relatively small, but there is a great deal of institutional fragmentation. More coordinated efforts are needed; perhaps a standing coordination committee made up of different players who would sit down at the same table and define needs and create synergies, with a long-term perspective.
- There is a portion of NADS earmarked for this kind of activity. We have to work out Health Canada's purview right now, but if we can reach an understanding to share our mutual benefits and assets we might be able to make a better case the next time that funding comes up (2012) and put forth a coordinated game plan.
- Concerns around institutional turf have to be overcome, so people can see the incentive for coming together and making decisions as a group.
- There are many credible national academic organizations and other university resources (e.g., Centre for Addiction and Mental Health (CAMH))—many affiliated with hospitals—but no structure to link them into a national entity. That may be something we should be looking at.
- CIHR has a leadership role to play in establishing a sustainable infrastructure to support this. It has a very unifying potential and could serve as a catalyzing force to summon interest and encourage us to be part of something like this. Today's meeting as a prototype of sorts, and a great exercise for all involved. It has shown us that there are many areas we can build on together.
- It is important going forward to engage all of the necessary organizations. We need everyone's vision and knowledge.
- During the course of this review, the suggestion was made that CIHR try to formulate a more longitudinal and more national strategy. If people are in agreement on that point, INMHA can start to prepare something on behalf of the group for presentation to Health Canada/NADS. New money will be needed, but if we can make a compelling case for funding that is already being allocated, it will speak for itself. CIHR sees it as our responsibility to make use of the resources that have been created.
- Dr. Phillips attended a NIDA meeting on basic research and how it is affecting practice because he wanted to see how Canada could be involved. He noted that if Canada created a clinical trial network similar to NIDA's and the two were

linked, it would create a powerful North America-wide mechanism for assessing impact and sharing information (and possibly patients for trials). This would require the creation of approximately five “nodes” across Canada, which would serve as resources for their geographic areas. While any candidate could apply to be a node, the peer review process would be an effective way to identify the most promising. If NADS supports this proposal, it would likely mean five years of funding, with the possibility of renewal. CIHR is willing to take a leadership role in the research side of this agenda.

- There are some drugs that are unique in Canada that could have potential benefits for dealing with addiction. If a clinical trial network existed, we could conceivably do a trial and on the basis of that could inform the US about whether they should try to replicate it or vice-versa. The US is doing lot of work that could have relevance to our system, and this would be way to exchange ideas and information.
- NADS is as much a political venture as scientific one. As such, there is a buffer function CIHR needs to maintain in order to retain control over those things that need to be done, whether they fit the political agenda or not. It has to protect the openness and freedom to do things that are research driven rather than fitting political caveats.
- Everyone agreed with the concept of INMHA taking the lead in creating a Canadian equivalent to the NIDA Clinical Trials Network.

## Closing Remarks

Dr. Phillips thanked the organizers, participants, and presenters for their contributions and everyone for being so engaged throughout the day-and-a-half long session. He called the science discussed “wonderful and varied” and solid proof of the value of the team grant approach to supporting multi-disciplinary work. The addiction field, he said, benefits significantly from team and catalyst grants because it is so multi-faceted. Dr. Phillips explained that this meeting was deliberately referred to as a “first annual” because it is INMHA’s intention to do it repeatedly, with an even wider group of participants. He said that he would approach the CCSA as a point of contact to help build connections with other agencies for this purpose. Given the quality of the science being undertaken, he expressed confidence that when CIHR starts to develop a larger plan to present to the NADS directorate for consideration, it will be doing so from a position of strength. In the meantime, he said, INMHA will begin formulating the concept of a Canadian clinical trials network that could work collaboratively with its NIDA counterpart in the US.



# Appendices

## Appendix 1: Agenda

### Tuesday, October 12th

Time	Min	Activity	Speaker
<b>SETTING THE STAGE – Indigo Room</b>			
09:00 – 09:15		Opening remarks	Tony Phillips
09:15 – 10:00		CIHR Team in Transdisciplinary studies in DWI onset, persistence, prevention and treatment	Thomas Brown
10:00 – 10:30		Networking Break	
10:30 – 11:15		Neurobiological basis of the effects of methamphetamine (Crystal Meth): a behavioural and electrophysiological study	Eric Dumont
11:15 – 12:00		Understanding simultaneous polysubstance use: Patterns and consequences of mixing substances in illicit drug users	Sean Barrett
12:00 – 12:45		Lunch	
12:45 – 13:30		CIHR Team In Substance Abuse Treatment	Kathryn Gill
13:30 – 14:15		Non-Medical Use of Prescription Opioid Analgesics in Canada: Epidemiology, Consequences and Interventions	Benedikt Fischer
14:15 – 14:30		Networking Break	
14:30 – 14:45		Intro to Breakout Sessions	Nathalie Gendron
14:45 – 15:30		<b>Breakout Session Number 1</b> Informing INMHA for Strategic Plan Proposed Topics	All
15:30 – 15:45		Report Back From Session Number 1	Group Elected Rapporteur
15:45 – 16:00		Networking Break	
16:00 – 16:45		<b>Breakout Session Number 2</b> Strategy Plan Tools for Implementation	All
16:45 – 17:00		Report Back From Session Number 2	Group Elected Rapporteur

## Wednesday, October 13

Time		Activity	Speaker
<b>LOOKING AHEAD – Indigo Room</b>			
09:00 – 09:30		Ottawa Hospital Research Institute Clinical Epidemiology Program	Chantelle Marie Garritty, Senior Program Manager
09:30 – 10:00		Health Canada Office of Drugs and Alcohol Research and Surveillance	Judy Snider, Manager of Surveillance
10:00 – 10:15		Networking Break	
10:15 – 10:45		Correctional Service Canada Addictions Research Centre	Andrea Moser, A/Senior Director
10:45 – 11:30		<b>Forward Planning Session Number 1</b> - Resources available in Canadian system	All
11:30– 12:30		Lunch – Indigo Room	
12:30 – 13:15		Reporting Back	Group Elected Rapporteur
13:15 – 13:30		Networking Break	
13:30 – 14:15		<b>Future Direction</b> - linkages with NADS	All
14:15 – 14:45		Reporting Back	Group Elected Rapporteur
14:45 – 15:00		Concluding Remarks	Tony Philips

#

## Appendix 2: List of Participants

NOM/NAME	SURNAME	Affiliation	E-mail
1 Kathryn	Gill	McGill University	Kathryn.gill@mcgill.ca
2 Thomas	Brown	Douglas Hospital Research Centre	thomas.brown@mcgill.ca
3 Eric	Dumont	Queen's University	eric.dumont@queensu.ca
4 Sean	Barrett	Dalhousie University	sean.barrett@dal.ca
5 Benedikt	Fischer	Simon Fraser University	bfischer@sfu.ca
6 Flora	Matheson	University of Toronto	MathesonF@smh.ca
7 Anthony	Phillips	CIHR-INMHA	aphillips@psych.ubc.ca
8 Samir	Khan	First Nations Inuit Health	samir.khan@hc-sc.gc.ca
9 Andrea	Moser	Correctional Service Canada	Andrea.Moser@csc-scc.gc.ca
10 Heather	Gillis	Health Canada	heather_gillis@hc-sc.gc.ca
11 Allison	Villeneuve	Health Canada	allison.villeneuve@hc-sc.gc.ca
12 Judy	Snider	Health Canada	judy.snider@hc-sc.gc.ca
13 Jocelyne	Guay	Public Health Agency	jocelyne.guay@hc-sc.gc.ca
14 Chantelle	Garritty	Ottawa Hospital Research In	cgarritty@ohri.ca
15 Elisabeth	Fowler	CIHR-IHDCYH	elisabeth.fowler@cihr-irsc.gc.ca
16 Ghisline	Bourque	CIHR-IPPH	ghisline.bourque@cihr-irsc.gc.ca
17 Anne-Cecile	Desfaits	CIHR-IDHYCH	anne-cecile.desfaits@cihr-irsc.gc.ca
18 Laura	McAuley	CIHR Impact Assessments	laura.mcauley@cihr-irsc.gc.ca
19 Jennifer	Gunning	CIHR HIV/AIDS Research Initiative	jennifer.gunning@cihr-irsc.gc.ca
20 David	Peckham	CIHR – Evaluations, Internal Audit and Risk Management	david.peckham@cihr-irsc.gc.ca
21 Rob	McLean	CIHR - Evaluations, Internal Audit and Risk Management	rob.mclean@cihr-irsc.gc.ca
22 Danielle	Halloran	CIHR - Evaluations, Internal Audit	

23	Leslie	Jones	and Risk Management Leslie Jones Communications	danielle.halloran@cihr-irsc.gc.ca lesliejonescommunications@hotmail.com
24	Nathalie	Gendron	CIHR-INMHA	nathalie.gendron@cihr-irsc.gc.ca
25	Susan	Lalumiere	CIHR - Regenerative Medicine and Nanomedicine Initiative	susan.lalumiere@cihr-irsc.gc.ca
26	Asimina	Saikaley	CIHR-INMHA	asimina.saikaley@cihr-irsc.gc.ca