Recovery from Addiction:
A Science in Action Symposium

Summary Report

OCTOBER 18-22, 2010 – BANFF, ALBERTA, CANADA

Alberta family wellness initiative

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SUGGESTED CITATION FOR THIS REPORT:
Recovery from Addiction: A Science in Action Symposium. Summary Report. Volume 2. (2011). Calgary, AB, Canada: Norlien Foundation.

About the Rapporteur

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Purpose of Report

This is the second in a series of summary reports describing the Norlien Foundation's broad knowledge-mobilization efforts in early brain and biological development, and recovery from addiction. This report is designed for three primary audiences:

1. The participants of the Recovery from Addiction Symposium, to be used as a review of the experience; a summary of the key scientific content, clinical and policy implications; and a resource document to encourage further study and collaboration with colleagues.

2. The participants of the companion symposium on Early Brain and Biological Development, also sponsored by the Norlien Foundation, as a content primer.

3. The Norlien Foundation, as a record of the event to share with others.

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Executive Summary

Introduction – The Alberta Family Wellness Initiative (AFWI) was created in 2007 by the Norlien Foundation, a proactive private foundation with offices in Calgary and Edmonton, Alberta. The AFWI's mission is to connect with emerging research about experience-based brain and biological development as it relates to early childhood development and its lifelong impact on addiction and other negative health outcomes. Since its inception, the AFWI has funded and initiated a multitude of activities in early childhood development and addiction meant to ultimately bring about change in policy and practice for the benefit of Alberta and its families.

The Science to Practice/Policy Addiction Gap – Although scientists now know that addiction is a chronic, relapsing brain disease with an underlying neurobiological process, this knowledge is not always reflected in policy and practice. Through activities in networking, applied research, knowledge translation and dissemination, professional development and training, and evaluation, the AFWI is continually seeking to bridge the gap between "what we know" in science and "what we do" in policy and practice. The AFWI is committed to providing Alberta's science, policy, and practice communities with a common framework of scientific understanding concerning the etiology, prevention, and treatment of addiction.

Leading Initiatives – To advance this work, the AFWI, in partnership with the Government of Alberta and Alberta Health Services, has launched two, three-year interdisciplinary knowledge-mobilization strategies in early childhood and addiction. Together, these strategies serve as an innovation platform to provide knowledge competencies and engagement that will build integrated capacities among and between researchers, policy makers, and practitioners. The launch of these inter-related strategies is marked by two, five-day Symposia: the first on early brain and biological development and the second on recovery from addiction. This report serves as a summary of the 2010 Recovery from Addiction Symposium.

Connecting Early Development and Addiction – The 2010 Early Brain & Biological Development: A Science in Society Symposium (EBBD) oriented participants in both strategies to emerging research across a wide range of disciplines that provides compelling evidence that what happens during the first few years of life sets the course for health and well-being not only in early childhood, but throughout the lifespan. The EBBD Symposium created a place and a process to understand the factors that contribute to healthy development, the factors that can derail development, and the implications of this knowledge for programs and policies in Alberta. The EBBD Symposium serves as a companion to the Recovery from Addiction Symposium by providing a broad-based platform of prevention not only for addiction and mental illness, but

other negative health outcomes as well. The summary report of the 2010 EBBD Symposium is available for download from the AFWI website.

2010 Symposium on Recovery from Addiction (RFA) – The RFA Symposium was designed to facilitate a greater awareness and understanding of the current scientific research, and clinical practice and evaluation evidence in addiction, and to connect this knowledge back to the many different areas of policy, services, training, and research represented among the participants. Over 100 people from various organizations in Alberta were selected to attend this event at The Banff Centre in October 2010. The participants encompassed a diverse range of backgrounds, perspectives, and professions, including policy makers, program developers, health practitioners, clinicians, researchers, medical residents, and members of the judicial system, in addition to several professional bodies and organizations. Over half of the participants were employed directly by Alberta Health Services. The learning environment featured plenary presentations in the mornings followed by afternoon sessions that focused on understanding the practice and policy implications of effective treatment innovations and related research. More applied learning tasks, including considerations in applying the Symposium content in participants' workplaces, were accomplished in small groups. On the last day, these groups made presentations to senior-level guests from health care and academic and policy areas in Alberta on how they planned to continue working together after the Symposium.

Foundational Knowledge – The Faculty for the RFA Symposium was composed of 17 distinguished scientists, researchers, and clinicians from major research universities and leading addiction treatment programs across Canada and the United States. A different theme in recovery from addiction was explored each morning: Monday covered the neuroscience of addiction and the reward system; Tuesday examined the clinical implications of the science; Wednesday explored the applicability of the chronic disease management model to addiction treatment; and Thursday focused on quality improvement strategies, evaluation, and performance for treatment delivery. Two core anchoring principles were established: first, that early experiences lay the foundation for healthy brain development and all aspects of human development across the lifespan; and second, that addiction is a chronic disease of brain reward and motivational systems, with its roots in toxic stressful experiences (chronic, long-lasting stressors that occur without consistent supportive relationships). The implications of this were further explored on each of the subsequent days within the context of the specified theme.

Implications for Practice and Policy Development in Alberta – Each afternoon, the participants broke into smaller, interdisciplinary cohort groups to have more focused discussions around the content presented that day and the implications for policy and practice in Alberta. Each group was paired with an experienced clinician from a leading addiction treatment organization to help guide the discussion. Given the depth and breadth of experience represented among the participants, these group discussions proved to be a valuable forum for review and discussions of the conceptual and practical issues associated with each day's content as it applied to the development and delivery of clinical services for addiction in Alberta.

Resources for Collaboration and Learning – A major goal of the RFA Symposium was to develop a common framework of understanding about the development, prevention, and treatment of addiction; for participants to share this with others; and to begin using it to improve decision-making, policies, and clinical practice in Alberta. In support of this, an online web portal has been created so participants can review video recordings of the presenters, access supporting documents and web links, and stay connected with each other. Key resources include access to the presentations from the first EBBD Symposium, the EBBD Symposium's Summary Report, and its accompanying DVD. The summary reports of both the RFA and EBBD Symposia include lists of major organizations and researcher-recommended knowledge-translation reports to encourage further learning about the science of early brain development and quality addiction treatment.

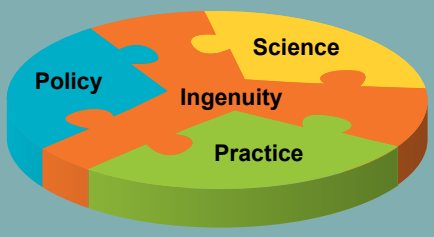
Further Engagement – Participants will reconvene in the fall of 2011 to report back on their personal and group progress and engage in further knowledge development at the second Symposium.

Welcome

"To appreciate the context for this Symposium, consider recovery from addiction as a puzzle with three main pieces: Science – Practice – Policy.

Even though each of these pieces has very specific qualities, they need to come together to create a comprehensive picture of what needs to happen to move each piece forward. But they have never really been drawn together. The purpose of these next three years is to discover how we might close the gaps and pull these three pieces together, thereby reducing the space that exists between science, practice, and policy. Since each participant comes from either the science, policy, or practice community, it is our belief that ingenuity will occur if we can create a space for participants to bring their experiences and perspectives together with new knowledge to create innovative practices and policies for the prevention, intervention, and treatment of addiction."

Nancy Mannix, Chair & Patron, Norlien Foundation



"The main message from this Symposium is that it is possible to recover from addiction and that we don't have to be hopeless about it."

Reid Finlayson, MD

The Recovery from Addiction (RFA) Symposium was designed to broaden our understanding of addiction and the elements that support recovery. The ideas summarized in this report offer an evidence-based model for improving addiction services in Alberta and other jurisdictions.

Emerging research across a wide range of disciplines provides compelling evidence that addiction is a surprisingly common and complex condition that affects millions of Canadians and their families. The scientific findings presented at the Symposium show that addiction is a chronic, relapsing disease of brain reward and motivational circuits that has its roots in toxic stressful experiences. Once these facts are fully appreciated, it opens up a variety of potential interventions that can become important opportunities for programmatic and policy innovations.

Knowledge Provides New Opportunities for Action

Today there is a large body of scientific knowledge to draw upon concerning what factors influence recovery from addiction. A research-based understanding of epigenetics, developmental neuroscience, and behavioural neuroscience will shift the way we approach how to support individuals and their families coping with an addiction. We can use these results to take action in many areas and apply what has been learned to better inform what can be done at the policy and practice levels. The intent of the RFA Symposium was to create a place and a process to begin to bridge the gap between the science of addiction and evidence-based practices, the practice-based evidence derived from renowned clinical experts and the most successful treatment programs, and those responsible for applied policy, research, and treatment programs and recovery services. Applying this knowledge base to policy and practice not only helps those with an addiction and their families, it also contributes to a healthier society for all of Alberta.

GUIDING PRINCIPLES OF THE NORLIEN FOUNDATION:

There is a connection between early brain development and addiction.

Addiction is more than drugs, alcohol, and gambling; it can also include food, sex, and other human behaviours.

Brains can change.

The Norlien Foundation

Created in 1997, the Norlien Foundation is a proactive private foundation with offices in Calgary and Edmonton, Alberta. The Foundation is active in knowledge translation and transfer, applied research, evaluation, and networking. It has established partnerships with numerous national and international organizations working in the areas of childhood development, addiction, and mental health. The Foundation initiates strategic projects to enhance the quality of life for all Canadians, particularly those living in Alberta.

"I was really impressed with the organization that went into this conference. I think it's organized very, very well. It has so much multi-disciplinary material for just one week."

Amelia Arria, PhD

Alberta Family Wellness Initiative

In 2007, the Norlien Foundation created the Alberta Family Wellness Initiative (AFWI). Based on a framework of epigenetics and developmental and behavioural neurosciences, the AFWI creates opportunities to better understand and apply scientific knowledge to factors influencing child development and its relationship to addiction and other negative health outcomes. It is hoped these efforts will encourage more informed decision-making to create, deliver, and fund a wide variety of appropriate services, programs, and policies that support healthy families in Alberta.

Recovery From Addiction Knowledge-Mobilization Strategy

The Alberta Family Wellness Initiative has formulated a three-year interdisciplinary knowledge-mobilization strategy in recovery from addiction to improve the lives of children and their families in Alberta. The Recovery from Addiction Symposium was launched as the first major part of this strategy. This strategy is meant to build on and be complementary to the three-year interdisciplinary knowledge-mobilization strategy in early brain and biological development.

Symposium Event and Future Engagement

The RFA Symposium was held October 18-22, 2010, at The Banff Centre in Banff, Alberta. The strategy also includes two future week-long Symposia in 2011 and 2012. The collective experience from these events will provide participants with the foundational knowledge, tools, and skills needed to apply this knowledge in real-world settings. In addition to attending all three Symposia, participants will have the opportunity to participate in mid-year activities designed to enhance their learning and skills.

Symposium Sponsors

The RFA Symposium was made possible by several regional and national organizations, from both the private and public sectors, which sponsored the event. The sponsors of the RFA Symposium included the following:

- Norlien Foundation
- Government of Alberta
- Alberta Health Services
- TransCanada Corporation.

Symposium Development and Management

The Symposium involved a number of dedicated people in its development, planning, and delivery. See Appendix 1 for a list of the members of the Senior Leadership Team, the Design Committee, and the Norlien Foundation staff who supported this event.

PART 1

Understanding Addiction

Scientists and leading clinicians now consider addiction to be a chronic, relapsing brain disease. This approach has produced new treatment models that have dramatically higher success rates in treating addiction and restoring health and hope to those who were controlled by years of harmful dependence on alcohol or drugs, or other problematic behaviours.

Overview of Addiction

What is Addiction? The American Society of Addiction Medicine (2001) defines addiction as "a primary, chronic, neurobiologic disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations." This disease has a relapsing and remitting course, meaning that symptoms can return even after many years of sustained recovery.

Addiction is a process based in altered functioning of the reward and motivation systems of the brain. It can manifest in many ways, but it has historically been categorized into substance-related addictions, which include the abuse of tobacco, alcohol, and street or prescription drugs; and behavioural or process addictions, which include problematic use of gambling, food, sex, the Internet, and work. Contemporary science shows that these two types of addictions can exist within the same individual and that multiple variants of substance or process addictions can manifest within an individual at the same time. Thus, people can have multiple addictions with each addiction being active to differing degrees of severity.

How Does Addiction Develop? Research has identified many developmental risk factors for addiction and mental health problems later in life – particularly from exposure to toxic stressors in the home and local community due to child maltreatment, family instability, and parental mental health and addiction problems. Becoming addicted is a complex developmental process and involves many different and interdependent causal factors.

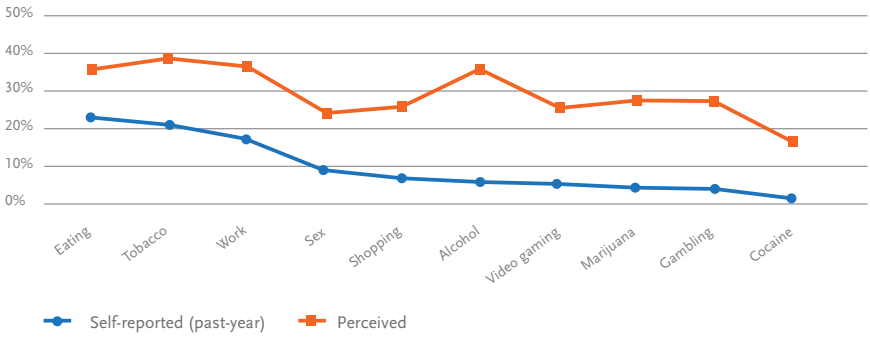
Adverse experiences that occur early in childhood, even as far back as the pre- and post-natal periods, can alter brain architecture in ways that may prime an individual to become vulnerable to addiction. For example, numerous research studies have shown that the quality of the infant-caregiver interaction and exposure to adverse events early in life have direct effects on the brain systems responsible for regulating emotions and coping with stress. In other words, children who are

exposed to adverse experiences including neglect may grow up to be adults who have difficulty coping with stress and anxiety, and regulating mood. This can lead individuals to attempt self-medication through alcohol and drugs and other addictive behaviours to reduce stress, lower anxiety, or improve mood. Furthermore, one of the most common child mental health problems, attention deficit hyperactivity disorder, is now considered a risk factor for the early onset of risky behaviours and addiction. From a prevention perspective, understanding the factors that contribute to developing an addiction is crucial so that we can monitor for and mitigate risk appropriately.

Most adults we see with addictions first developed these problems during adolescence or young adulthood. It is during the teenage years when adolescents begin to gain more independence from their parents that they also may have greater access to opportunities to experiment with alcohol, drugs, and potentially addictive experiences. From a biological perspective, adolescence is a time in which the part of the brain responsible for decision-making and executive function (i.e., the frontal lobe regions) is undergoing considerable change and is not yet fully mature. Some experiences are able to alter brain architecture in these areas and thus increase the likelihood of developing an addiction.

Self-Reported and Perceived Past-Year Addictive Behaviour Experiences Among Albertans

An online panel of 2,000 Albertans were asked to report on whether they had personally experienced a problem with each of the 10 addictive behaviours in the past year, and how many other people they believed had experienced problems in these domains. Wild, Schopflocher, Hodgins, el-Guebaly, Patten, & Colman (2010). Alberta Addiction Survey 2009: Summary Report.



Costs and Consequences. Addiction has devastating consequences not just for the user, but also for his or her family. Loss of health, loss of relationships, loss of livelihoods, and loss of life are just a few of the personal costs. The societal consequences are just as damaging, through loss of workplace productivity and higher costs for the health care, social welfare, and law enforcement systems. The Canadian Centre on Substance Abuse has estimated the overall social costs of substance abuse alone at $39.8 billion in 2002.

An Unrecognized Epidemic. Despite the magnitude of the problem, addiction remains profoundly under-diagnosed and under-treated. The first reason for this situation is that the complexity of addiction and its treatment is largely misunderstood. A greater obstacle, however, is that those battling an addiction must contend with social stigma, prejudice, discrimination, and their own inability to recognize the problem and seek appropriate help. Unlike other chronic diseases, such as heart disease, diabetes, or hypertension, our health care system is not well equipped to deal with addiction as a chronic, relapsing disease. Furthermore, the signs and symptoms of addiction are often missed when individuals seek care for other health problems.

The Current Model of Treatment. Most of the current addiction treatment available is delivered in brief episodes of care. Clients are admitted to acute care services, stabilized, released after a short episode of treatment, and then later re-admitted to the same programs and services when their condition predictably worsens. Treating addiction as an acute condition with care delivered only during the active phases of the disease is an outdated approach that does not use time and money effectively. Ultimately, this approach also fails society and the person trying to recover from his or her addiction. Given the high personal and societal costs involved, a new, more effective approach to support recovery from addiction is needed.

"The state of the science on neuroscience and developmental neuroscience has evolved to a point where we can start to make reasonable claims about the impact of early experiences on later addictive behaviours. That really is a crucial message for practitioners and policy makers alike."

Cameron Wild, PhD

A Science-Based Approach to Addiction. Contemporary neuroscience and clinical research indicates that:

- Addiction is a chronic brain disease, not a failure of will.
- Experiences in early childhood can have long-lasting effects on brain architecture, including the areas responsible for mood regulation and the stress response.
- People who experience adverse childhood experiences are more likely to develop addictions in adulthood.
- Stress and anxiety are proximate causes of self-medicating behaviours and addiction relapse.

Although the form of the addictive substance or behaviour may differ, the underlying causal mechanisms and neurochemical components are similar. Further evidence for a common underlying process is found in the high rates of cross-addiction (e.g., people having multiple addictions at the same time) and of comorbidity between addictions, mental health disorders, and other stress-related diseases. Based on this approach, addiction treatment can improve by incorporating some of the advances that were discussed at this Symposium, including the integration of mental health treatment with addiction treatment, therapy for multiple addictions, use of trauma-informed therapy, gender-sensitive therapy, family-centered care, adopting principles from chronic disease management programs, and greater attention to treatment program operational quality and effectiveness. Recognizing the early life impact on risks for addiction also focuses attention on prevention. This research has far-reaching implications on how to approach addiction prevention, intervention, and treatment, and yet this does not always translate into addiction-related policies and practices.

PART 2

Symposium Experience

The Symposium was designed to bring together a diverse group of participants and expert presenters in a professional setting that fostered learning and discussion in large group, small group, and personal contexts. The Symposium's objectives, themes, diversity of participants, faculty members, learning process, and host environment provided effective engagement for those who participated.

Objectives

This multi-disciplinary event was designed to fulfill a number of key objectives for the participants:

- Explore how early experiences are biologically embedded and how interaction with the environment can influence individuals to develop or not develop addiction.
- Recognize early childhood experiences as significant elements in addiction prevention, treatment, and recovery.
- Acknowledge addiction as a family disease that can present in multiple modalities.
- Understand the existence of multiple paths to recovery from addiction and how to facilitate options for treatment.
- Apply the chronic disease management model to addiction treatment and the requisite continuum of care.
- Understand principles of continuous quality improvement and how to "maintain the gain."
- Support the use of research and evaluation to promote quality in programs and services.
- Develop a shared understanding of the current and emerging evidence in addiction prevention, treatment, and recovery and the implications this has for research, education, policy, and clinical practice.
- Generate new ideas and opportunities to integrate and apply this knowledge within organizations and systems in order to positively impact awareness and support change.

DAILY CONTENT THEMES

Day 1
The Neuroscience of Addiction

Day 2
Clinical Implications

Day 3
Chronic Disease Management and the Continuum of Care

Day 4
Quality Improvement Strategies and Program Evaluation

Day 5
Putting Science into Action

"I'm impressed with the quality of people participating in the program. They're a really bright and hard-working group and it's a privilege to be part of it."

Reid Finlayson, MD

Daily Themes

Each day of the Symposium was organized around a unique theme corresponding to primary areas of research in science, practice, and policy.

SURVEY FACT: According to the pre-event survey, most of the Symposium participants considered their ability to influence change in their own organizations as being at a "high" or "moderate" level in the areas of:

- education and training (89%)
- service delivery (82%)
- policies/procedures (79%)
- research and evaluation (72%).

Participants

More than 100 Albertans participated in the 2010 Symposium (see Appendix 2). This group represented a diverse range of backgrounds, perspectives, and professions, including many from Government of Alberta Ministries, Alberta Health Services, and Alberta's research-intensive universities. Many held senior positions in their organizations. The participants included administrators or supervisors (42%), policy makers (14%), physicians (11%), educators or clinicial educators (9%), clinicians and therapists (7%), nurses (6%), researchers or evaluators (6%), law enforcement or justice (4%), and other healthcare professionals (1%).

The participants all agreed to remain engaged in the strategy over the course of the next three years. During this period, the participants will continue to communicate with their co-participants and take advantage of additional mid-year learning opportunities. The employers of the participants have agreed to support the strategy by incorporating these activities into the job responsibilities of the participants during this period.

Over three-quarters of the symposium participants were over 45 years of age. Over half had been working in their current profession for more than 15 years; one in four participants had been in the field for between six and 15 years, and only one in six participants had five years or less of job experience.

Most participants indicated that their work influences broad population groups, including the general population (71%), families (70%), adult men and women (63%; 64%), and children/youth (62%). Almost half (46%) work in general health care/primary care settings.

Within the continuum of care for addiction services, most participants indicated that they work within prevention/early intervention (54%), treatment (59%), and follow up/aftercare (61%).

Regardless of their positions and backgrounds, all participants were selected for their strong desire to make a difference in the lives of Alberta's families, and their ability to champion knowledge and effect change within the system.

Faculty Members

The Faculty was composed of 17 distinguished professors and senior clinicians from major university research programs and renowned treatment programs in Canada and the United States (see profiles below and on the following pages). Fifteen faculty members gave plenary presentations on leading-edge basic, clinical, and evaluation research from the addiction field. Four were selected to be Clinician Leaders, and worked with smaller interdisciplinary groups of participants throughout the afternoons to help them deepen their understanding of the morning's content.

Amelia Arria, PhD
Faculty Presenter & Clinician Leader

Director, Center on Young Adult Health and Development, School of Public Health, University of Maryland (College Park, MD). Dr. Arria is also a Senior Scientist and Scientific Director of the Parents Translational Research Center at the Treatment Research Institute (Philadelphia, PA) and consults on prevention issues for the Betty Ford Institute (Rancho Mirage, CA). In 2003, she began following a large sample of college students in order to study factors influencing health-risk behaviours in young adults and continues to conduct research based on this project.

Susan Nall Bales, MA
Faculty Presenter

President, FrameWorks Institute (Washington, DC). Ms. Bales is a Visiting Scientist at the Harvard School of Public Health, a Visiting Scholar in Education at the Harvard Graduate School of Education, and a contributing member of the National Scientific Council at Harvard University's Center on the Developing Child. She has more than 30 years of experience researching, designing, and implementing campaigns on social issues and is the author of numerous articles on public opinion and media.

Peter Butt, MD, CCFP(EM), FCFP
Clinician Leader

Associate Professor, College of Medicine – Family Medicine, University of Saskatchewan (Saskatoon, SK). Dr. Butt is the Medical Director of the department's division of Northern Medical Services, which provides clinical services to the northern regional health authorities and First Nations. He is the College of Family Physicians of Canada's representative on the Canadian Centre on Substance Abuse's National Alcohol Strategy, National Treatment Strategy, SBIR Advisory Panel, and Low Risk Drinking Guidelines Advisory Panel. His clinical and research work focuses on substance use disorders.

Stephanie Covington, PhD, LCSW
Faculty Presenter

Co-founder, Center for Gender and Justice, Institute for Relational Development (La Jolla, CA). Dr. Covington is a nationally recognized clinician, author, lecturer, and organizational consultant who developed a gender-responsive and trauma-informed approach to the treatment needs of women and girls in multiple settings. She has served on the faculties of the University of Southern California, San Diego State University, and the California School of Professional Psychology. She is also a board-certified Diplomate of the National Association of Social Workers (US) and a Diplomate of the American Board of Sexology.

Reid Finlayson, MD
Clinician Leader

Medical Director, Vanderbilt Comprehensive Assessment Program, Vanderbilt University (Nashville, TN). Dr. Finlayson obtained his medical degree from the University of Western Ontario and specialized in addiction medicine at Homewood Health Centre (Guelph, ON). He has clinical and research expertise in dual disorders, physician health, and sexual behavior. He currently consults for several Nashville organizations, including Foundations Associates and the Center for Professional Excellence.

Mark S. Gold, MD
Faculty Presenter

Donald Dizney Eminent Scholar, Distinguished Professor and Chair of Psychiatry at the University of Florida (Gainesville, FL). Dr. Gold was the first faculty member and is now Chief of the University of Florida's Division of Addiction Medicine. He is also a member of the McKnight Brain Institute. He is a teacher of the year, researcher and inventor who has worked for 35 years to develop models for understanding the effects of drugs on the brain and behaviour. Dr. Gold has authored over 900 medical articles, book chapters, and abstracts and has written 12 professional books and 15 general-audience books.

David Gustafson, PhD
Faculty Presenter

Founder and Director, National Program Office, Network for the Improvement of Addiction Treatment (NIATx), Center for Health Enhancement System Studies, University of Wisconsin-Madison (Madison, WI). Dr. Gustafson is an industrial engineer who has used his interests in decision theory, behavioural change and organizational improvement to develop models and systems to improve health care delivery. He is a Fellow of the American Medical Informatics Association, the Association for Health Services Research, and the Institute for Healthcare Improvement.

Michael Kaufmann, MD, CCFP, FCFP
Faculty Presenter

Medical Director, Physician Health Program and Professionals Health Program, Ontario Medical Association (Toronto, ON). A former family physician, Dr. Kaufmann is the Chair of the Physician Health Committee of the Canadian Society of Addiction Medicine and Chair of the Canadian Physician Health Network. He is certified in addiction medicine from the American Society of Addiction Medicine and the Canadian Society of Addiction Medicine.

Nathaniel Kendall-Taylor, PhD
Faculty Presenter

Senior Associate and Project Director, FrameWorks Institute (Washington, DC). Dr. Kendall-Taylor employs social science theory and research methods from anthropology to improve the ability of public policy to positively influence health and social issues. As a medical anthropologist, his past research has focused on child and family health and on social and cultural factors that create health disparities and affect decision-making.

Bryan Kolb, PhD, FRSC
Faculty Presenter

Professor of Psychology and Neuroscience, Canadian Centre for Behavioural Neuroscience, University of Lethbridge (Lethbridge, AB). Dr. Kolb is the author of five books (including *Fundamentals of Human Neuropsychology* and *An Introduction to Brain and Behavior*) and over 300 academic research reports. He is a Fellow of the Royal Society of Canada and the Canadian Institute for Advanced Research's Experience-Based Brain and Biological Development Program.

Richard Lewanczuk, MD
Faculty Presenter

Chief of Chronic Disease Management and Senior Medical Director for Primary Care, Community and Rural Health, Alberta Health Services (Edmonton, AB). Dr. Lewanczuk helped establish the Regional Diabetes Program in the Edmonton area in 1999 before taking the position of Medical Director for Chronic Disease Management in the previous Capital Health Region. He is also a Clinical Professor at the University of Alberta Faculty of Medicine and Dentistry, where he obtained his medical degree in 1983.

Glenda MacQueen, MD, PhD, FRCPC
Faculty Presenter

Professor and Chair of the Psychiatry Department, University of Calgary and Regional Clinical Department Head of Psychiatry for Alberta Health Services, Calgary Zone (Calgary, AB). Dr. MacQueen received the 2008 Innovations in Research Award from the Canadian College of Neuropsychopharmacology. Her research focuses on factors that are associated with outcome in mood disorders, particularly following a first onset of illness.

Dianne Maier, MD, FRCPC, CCFP
Faculty Presenter

Program and Medical Director, Physicians and Family Health Support Program, Alberta Medical Association (Calgary, AB). This program serves practising physicians, residents, medical students, and their immediate families through a model built upon support and referral, prevention and early intervention, education, and health promotion. Dr. Maier also works as a psychiatrist and is an Assistant Professor of Psychiatry at the University of Calgary.

Thomas McLellan, PhD
Faculty Presenter

Director, Center on Substance Abuse Solutions, University of Pennsylvania (Philadelphia, PA). Dr. McLellan was the former Deputy Director of the White House Office of National Drug Control Policy, from 2009 to 2010. Prior to his appointment to ONDCP, he helped develop the Addiction Severity Index and co-founded and led the Treatment Research Institute (Philadelphia, PA). Dr. McLellan has published over 400 scholarly articles and chapters in the area of addiction treatment research, and is the recipient of Life Achievement Awards from the American and the British Societies of Addiction Medicine.

James C. Montgomery, MD
Faculty Presenter & Clinician Leader

Medical Director, Santé Treatment Center (Argyle, TX). Dr. Montgomery is certified in psychiatry by the American Board of Psychiatry and Neurology, certified in addiction medicine by the American Society of Addiction Medicine, and is a Diplomate of the American Board of Addiction Medicine. He also serves on the board of the Society for the Advancement of Sexual Health (SASH) and was awarded the Society's Carnes Award in 2009. Prior to entering psychiatry, he practised family medicine and addiction medicine in Louisiana.

Garrett O'Connor, MD
Faculty Presenter

President, Betty Ford Institute (Rancho Mirage, CA). Dr. O'Connor is an internationally recognized expert in the clinical assessment of fitness for duty in safety-sensitive personnel. After completing his residency in psychiatry, he founded and directed the Psychiatric Emergency Service at Johns Hopkins Hospital after which he served as Associate Professor of Psychiatry and Director of the Johns Hopkins Drug Abuse Center. He is certified in general and addiction psychiatry by the American Board of Psychiatry and Neurology and certified in addiction medicine by the American Society of Addiction Medicine.

Cameron Wild, PhD
Faculty Presenter

Professor, School of Public Health, University of Alberta (Edmonton, AB). Dr. Wild currently directs the Addiction and Mental Health Research Laboratory at the University of Alberta. He holds a Health Scholar Award from Alberta Innovates – Health Solutions and a New Investigator Award from the Canadian Institutes of Health Research. Formerly a Scientist at the Addiction Research Foundation of Ontario, his current research spans topics in the areas of etiology, prevention and treatment of addictions and mental disorders, treatment systems, and social policy.

Junior Faculty

The Junior Faculty included two scholars from research universities in the United States, Ronald Cowan and Andrew Quanbeck. Their role was to answer questions from individual participants, offer guidance during the cohort group sessions, and provide ad-hoc support for the Learning Teams.

Ronald Cowan, MD, PhD
Junior Faculty

Assistant Professor of Psychiatry and Radiology, Director of the Psychiatric Neuroimaging Program, and Scientific Director of the Vanderbilt Addiction Center, Vanderbilt University (Nashville, TN). His research focuses on the neurobiology of reward circuitry and associated clinical conditions including drug addiction and obesity.

Andrew Quanbeck, MSc
Junior Faculty

Scientific Manager, Network for the Improvement of Addiction Treatment (NIATx) National Program Office (Madison, WI). Mr. Quanbeck's prior work experience is in the manufacturing and construction industries with Harley-Davidson and York International. He earned a Master's degree in Industrial and Systems Engineering from the University of Wisconsin-Madison (Madison,WI).

Participant Cohort Groups

FOCUS CHALLENGES AND LEARNING TEAMS

Research Priorities (Team 1)

Co-ordination of Research, Policy, and Practice Areas (Teams 2 & 3)

Integration of Services across the Continuum of Care (Teams 4 & 5)

Integration of Evidence Across Service Settings (Team 6)

Primary Care Practice Settings (Teams 7 & 8)

Clinical and Professional Education and Training (Teams 9 & 10)

Prevention and Early Intervention (Team 11)

Enhancing Treatment or Developing Specialized Services (Teams 12 & 13)

Quality Improvement (Team 14)

Client Outcomes (Team 15)

Chronic Disease Management Model (Team 16)

Learning Process

The learning process was enacted through three distinct kinds of environments during each full day of the Symposium:

MORNING FACULTY PRESENTATIONS

Each day began with plenary presentations from the Faculty Presenters on topics related to the day's theme. Monday offered an additional faculty presentation in the afternoon and early evening.

AFTERNOON COHORT GROUP DISCUSSIONS

In the afternoons, interdisciplinary cohort groups of 25 to 30 participants worked with their assigned Clinican Leader to review key components of the material from the morning presentations and reflect on how this information might be applied in their own workplace settings. This was followed by interactive workshops with Faculty Presenters, that were designed to further explore the morning's topic areas. The afternoons ended with another session with the Clinician Leaders to help integrate participant learning across topics.

EVENING LEARNING TEAM SESSIONS

The Learning Teams were designed to help the participants use the new information learned each day at the Symposium to improve outcomes for individuals and families who are struggling with, or at risk for, addiction. Each participant was assigned to a Learning Team that was composed of six to eight people. A pre-event questionnaire identified participants' interest areas, and this data was used to assign participants to groups. The 16 groups represented 11 different areas of focus (see sidebar). The Learning Teams are meant to remain in place throughout the participants' engagement in the three-year strategy.

The Learning Teams met daily to explore the day's knowledge and discuss how it related to their Focus Challenges. These meetings allowed the participants to explore new information and research with other members of their group. The Learning Teams provided a supportive environment to explore the new knowledge that must be applied in order to do something differently in their workplaces and organizations. The purpose of these group interactions was to support the participants' engagement by allowing them to question, explore, learn, and create a plan for ongoing group interaction during the year.

The Learning Teams had a specific theme each day to guide their meetings:

Monday – Connect with members of the Learning Team.

Tuesday – Learn from the past, focus on the present, and create the future.

Wednesday – Asset mapping to identify resources to help the group succeed.

Thursday – Discuss current trends and innovations.

Guest Panel Representatives

R. Greer Black, Member, Alberta Health Act Advisory Committee

Dr. André Corriveau, Chief Medical Officer of Health, Alberta Health Services

Alana Delong, Member Legislative Assembly for Calgary Bow, Government of Alberta

Dr. Ron Dyck, Executive Director, Research, Alberta Innovation and Science, Government of Alberta

Dr. Richard Hawkes, Senior Associate and Dean (Research), Faculty of Medicine, University of Calgary

Ken Hughes, Board Chair, Alberta Health Services

Dr. Marek Michalak, Professor, Biochemistry, Faculty of Medicine and Dentistry, University of Alberta

The Honourable Alison Redford, Minister of Justice and Attorney General, Government of Alberta

Kurt Sandstrom, Assistant Deputy Minister, Safe Communities and Strategic Policy, Government of Alberta

Dr. Raj Sherman, Member Legislative Assembly for Edmonton-Meadowlark, Government of Alberta

Donovan Young, Assistant Deputy Minister, First Nations and Métis Relations, Government of Alberta

Pam Whitnack, Executive Vice President, Rural, Public and Community Health, Alberta Health Services

"As we continue to work within a system that is probably not exactly what we would like it to be, part of what you have talked about today, all of you, is being an agent for change in our own organization, and going back to challenge the system and challenge us as decision-makers. That is a really important thing. And it takes time and effort and courage. So I thank you for that."

The Honourable Alison Redford

FRIDAY MORNING PRESENTATIONS BY THE LEARNING TEAMS

Each Learning Team prepared a brief presentation – called the Fieldnotes Presentation – for the last day of the Symposium. The teams focused on how they planned to make headway on their Focus Challenges in the future and ways to move the knowledge they gained at the RFA Symposium into their own workplaces (see examples in Appendix 3). The presentations addressed several questions:

- What is your Learning Team's vision for your Focus Challenge?
- What goals will your team work on during the coming year?
- Will you be working individually or as a group?
- What assets, information, or processes will you access to help you achieve these goals?
- What are the top three perceived barriers that stand in the way of achieving these goals?
- What are the key relationships, connections, or ways that could help overcome these barriers?

Each of the 16 Learning Team presentations conveyed the great sense of energy and enthusiasm that had been building up over the course of the week. In addition to the participants and faculty, the audience included a panel of special guests: organizational and government leaders from Alberta who attended in order to hear the report out from the participants (see page 23).

PERSONAL PLANS

Each individual was asked to develop a Personal Strategic Plan to guide his or her continued learning and action following the Symposium (see samples in Appendix 3). Such plans were expected to be reasonable and manageable within Alberta's current landscape, within the participant's sphere of influence, and within a reasonable time-frame. Participants were instructed to consider plans that would seek to remove barriers to change and lay the foundation for moving forward.

In completing their Personal Strategic Plans, participants also commented on why it mattered to them to address the particular areas of focus they had selected as their challenges for change. Below is a sampling of these responses:

"I care deeply that every Albertan be able to access top-quality addiction services that are co-ordinated and responsive and that are based on what the research clearly illustrates – that addiction is a chronic disease of the brain."

"Addiction services can be integrated with mental health services to provide the client with a more effective and efficient continuum of care."

"Clients have limited resources when accessing services. It is our responsibility to ensure that they are welcome and connected with the services they need when they take the risk in asking for help."

"I work directly in primary care and this is the first point of contact for many people with addiction problems."

"These activities will assist with removing the stigma associated with addictions and create an efficient primary care network that is able to find, screen, and refer patients with addictions."

"People's health and recovery from chronic illness are important, especially for First Nations people to heal and move forward."

"I have a personal and professional commitment to service excellence, cross-disciplinary collaboration, and knowledge exchange."

"I see the link between addiction and mental health and crime and I think we could contribute to prevention."

"When current research informs policy and practice, the potential for improved outcomes is enhanced."

Symposium Host Environment

During the week, the participants stayed at the on-site hotel at The Banff Centre, located in beautiful Banff National Park, Alberta. All meetings were held at various venues at The Banff Centre.

The Banff Centre is a public, board-governed, specialized arts and culture institution. Founded in 1933, The Banff Centre provides non-parchment programs in the arts and creativity, and in leadership development, mountain culture, and the environment.

PART 3

Foundational Knowledge

Each day of the RFA Symposium was organized around a specific theme that represents a major area of research and innovation within the field of addictions. This part of the report highlights the major ideas from the Faculty presentations on the scientific foundations of addiction and recovery and the implications for policies and clinical practice. A brief overview of the week is provided below, followed by a more detailed summary of each presentation.

FOUNDATIONAL KNOWLEDGE, BY DAY OF THE SYMPOSIUM

A different theme in recovery from addiction was explored each day of the Symposium:

- *Monday covered some of the basics of the neuroscience of addiction (Science piece of the RFA Puzzle).*
- *Tuesday examined clinical and treatment implications concerning process addictions, gender-based treatment, and parenting (Practice piece of the RFA Puzzle).*
- *Wednesday addressed the chronic disease management model and the continuum of care (Practice piece of the RFA Puzzle).*
- *Thursday examined clinical program management tools for quality improvement and program evaluation (Policy piece of the RFA Puzzle).*

Preview of the Presentations: Major Themes

Day 1 – *The Neuroscience of Addiction*

Brain Development, Plasticity, and Biological Embedding of Early Experiences: Brain development starts before birth and continues into early adulthood. Plasticity refers to the brain's capacity to change in response to external influences and experiences, particularly during the first few years of life. Research in epigenetics suggests that early experiences (e.g., caregiver-child relationships) influence both gene expression and brain architecture, which then influence a wide range of behaviour in adulthood.

Long-Term Consequences of Stress: Stress hormones influence the function of the reward system in the brain. Addictions are considered "stress sensitive" diseases because early-life toxic stress plays a major role in making the brain more prone to the development of addictions, and contextual stress is a risk factor for relapse.

Common Neurobiology of Reward and Addictions: Neuroimaging studies show that habitual drug use activates the brain's reward system and produces alterations to brain structure and function that result in chronically low levels of the neurotransmitter dopamine in the absence of drug exposure. Evidence now indicates that process addictions – such as gambling, compulsive sex, and eating fatty or sugary foods – activate the brain's reward system in similar ways.

Day 2 – *Clinical Implications*

Process and Multiple Addictions: Process addictions include pathological gambling, compulsive sex, eating disorders, Internet use, compulsive shopping, workaholism, and others. Many people have more than one type of process addiction and these often co-exist with substance-based addictions and mental health disorders. Multiple addictions can make treatment more complicated and promote relapse after treatment.

Trauma-Informed, Gender-Sensitive Treatment: Gender influences how and why individuals develop and recover from addictions. Theory, research, and clinical experience all indicate that successful treatment must recognize the central role of gender differences and trauma experiences in the lives of people with addictions.

Parenting-Skills Education and Addiction: Seven key parenting practices are effective in reducing the risk of adolescent substance use and other addictions. Parents who themselves are addicted face special challenges while parenting and should receive targeted parenting-skills training while in treatment.

Day 3 – *Chronic Disease Management and Continuum of Care*

Chronic Disease Management: Principles from the management of chronic diseases can be used to improve the prevention, treatment, and support of individuals with addictions. Key tactics include screening and early detection, multi-disciplinary and holistic care teams, patient education and self-care, and case management over many years.

Physician Health Programs (PHPs): Chronic disease management concepts drive the PHP model, which includes addiction screening, case identification, intervention, multi-disciplinary treatment, long-term follow-up, regular abstinence monitoring, workplace return-to-work strategies, and ongoing peer support. PHPs have recognized the benefit of family-based care for addiction and also offer services for physicians' family members. Research studies of PHPs in Canada and the United States show excellent outcomes over five-year follow-up periods.

Shame in Addiction Treatment and Recovery: The emotion of shame is at the core of our understanding of addiction. There are positive (healthy) and negative (malignant) sides to shame. The issue of shame and how it influences self-identity must be addressed if addiction treatment and recovery are to be successful.

Day 4 – *Quality Improvement Strategies and Evaluation*

Improving Treatment through Business Process Improvement: Research projects in the United States illustrate how business process improvement principles can transform clinical processes and improve outcomes in the field of addiction.

Measuring Treatment Effectiveness, Performance, and Quality: Effectiveness, performance, and quality are not the same. All three of these measures are needed to improve addiction treatment. Revising how we think about evaluation of addiction treatment – from "addiction as curable" to "addiction as chronic disease" – would also benefit the field as a whole.

Improving Addiction Treatment Through Financial Incentives: The addiction field can benefit from new business contracting methodologies that connect treatment-provider reimbursement with treatment outcomes. Pilot programs in the United States with publicly funded addiction service providers offer lessons on how these kinds of strategies can be implemented.

PRESENTATION 1

BRAIN DEVELOPMENT, PLASTICITY, AND BIOLOGICAL EMBEDDING OF EARLY EXPERIENCES

By Bryan Kolb, PhD

ABSTRACT: Brain development starts soon after conception and continues well into early adulthood. Many factors influence how the brain develops, including our genes, hormones, drug and alcohol exposure, caregiver-child relationships, peer relationships, and physical touch. New research in epigenetics suggests that early experiences like caregiver-child relationships interact with our genes in a way that influences gene expression and, consequently, brain architecture. In other words, early experiences leave a biological footprint in our brains that can influence our behaviour over the course of the lifespan.

Brain Development is Necessary for Behavioural Development. The brain is the source of all of our thoughts and behaviours. It generates these using billions of neurons connected through complex neural networks. Although the formation of the brain begins within weeks of conception, it is not mature at birth. In other words, babies cannot produce the same behaviours that adults can, such as walking, talking, or being able to calm themselves when they are upset, because their brains are not yet mature enough to do so. These behaviours emerge as the child grows and interacts with his or her physical and social environment. It is these interactions, particularly during the first few years, that help shape brain development and lay a foundation for learning more complex skills and behaviours later in life.

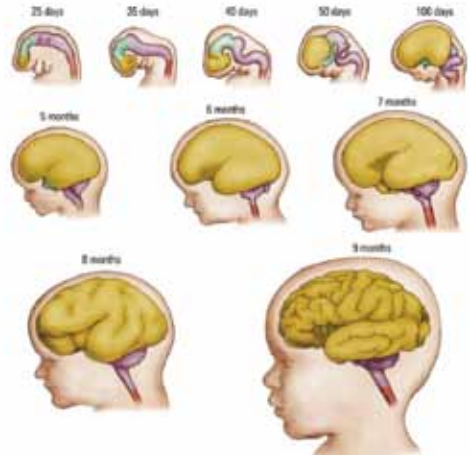
Many Factors Influence Brain Development. A wide range of factors influence brain development during the pre- and post-natal periods. Some well-researched factors include our genes, gonadal hormones, stress hormones, psychoactive compounds (such as alcohol, nicotine, prescription and illicit drugs), sensory and motor stimulation (such as touch, sound, movement), and caregiver-child relationships. During the post-natal period, brain development is driven primarily by the interaction between the child and his or her physical and social environment. The effects of these factors are cumulative and their influence on behaviour can be compounded – in either a beneficial or detrimental way – as children age.

Experiences Interact with Genes in Ways that Alter Their Expression. Everyone is born with a certain set of genes, but not all genes are actively expressed, or turned on, at the same time. These differential patterns of gene expression produce variations in cellular activity, brain activity, and, ultimately, behaviour. New research from the field of epigenetics shows that early experiences stimulate structural changes to areas surrounding our genes that alter how our genes are expressed. Once they occur, these changes are stable over long periods of time and can be passed down from parent to child. In this way, experiences that were once thought to be purely environmental and hence less deterministic (such as caregiver-child relationships) are actually biologically embedded in our brains and our bodies in a way that influences our behaviour, and the behaviour of our children, across the lifespan.

Plasticity and the Changing Brain. Plasticity refers to the brain's capacity to change in response to external influences and experiences. Learning a new hobby or sport and making new memories involve changes to brain architecture and are thus examples of brain plasticity. Generally speaking, the brain is most plastic during the early developmental period, when experiences have widespread and long-lasting effects on gene expression. This means that the early years are the most critical time in which to ensure children have experiences that will set them on healthy developmental trajectories and help them reach their full potential.

The Developing Brain

Reproduced with permission from B. Kolb & I. Q. Whishaw, Fundamentals of Human Neuropsychology, Sixth Edition. New York: Worth, 2009.



"Early brain development represents more than a simple unfolding of a genetic blueprint – it represents a complex dance of genetic and environmental events that interact to adapt the brain to fit a particular environmental context. Your brain is sculpted by a lifetime of experiences, especially in the first few years of life." **Bryan Kolb, PhD**

PRESENTATION 2

LONG-TERM CONSEQUENCES OF STRESS

By Glenda MacQueen, MD, PhD

ABSTRACT: Stress is a normal occurrence that can have adaptive consequences for individuals if experienced in small doses or in the presence of a caring parent or supportive social environment. However, chronic and severe stress (toxic stress) is associated with many common health problems. A key mechanism is how stress hormones influence the function of the reward system in the brain. Addictions and related mental illnesses are considered "stress sensitive" diseases. It is important to understand the role of stress in the development and treatment of addictions and co-occurring disorders.

Types of Stress. Not all types of stress are the same. Positive stress can help motivate individuals to accomplish tasks and achieve goals. It is moderate and short-lived, and is an important and necessary contributor to healthy brain development. Tolerable stress is more severe but occurs in the context of supportive relationships that facilitate adaptive coping. When stress becomes too intense, long-lasting or uncontrollable, and when it occurs in the absence of supportive relationships that help buffer its effects, it becomes toxic to the brain and body and has a negative rather than positive impact on our behaviour. In children, toxic stress can occur as a result of unpredictable home environments, abuse, or being cared for by a parent who is addicted or mentally ill. In adults, toxic stress can occur as a result of the workplace, being in an abusive relationship, an illness or addiction, and many other circumstances.

Effects of Stress. Toxic stress takes a heavy toll on both the brain and the body. It is estimated that 80% of all doctor office visits are related to stress and 70-80% of all health-related problems are precipitated or exacerbated by stress. In fact, research shows that high levels of life stress are a better predictor of cardiovascular events than either blood pressure or smoking status. Stress also increases anxiety and depresses mood. Not surprisingly then, stressed individuals are more likely to experience anxiety disorders and depression. Toxic stress that occurs early in life – such as abuse, neglect, or being raised by a parent with depression or an addiction – can damage the physical architecture of the brain as it is forming. The brain's stress-response system is also vulnerable to disruption by toxic stress during the developmental period. This means that exposure to toxic stress in early childhood can change the way the brain interprets and responds to stress, making individuals more sensitive to stress in general.

Mechanism of Action. When under stress, a set of biological systems are activated in order to protect the body and provide it with the necessary biochemical energy for a "fight or flight" response. These systems include the autonomic nervous system; the hypothalamic-pituitary-adrenal axis; and the cardiovascular, metabolic, and immune systems. Stress hormones such as adrenaline and cortisol are key drivers of these systems and can modulate how the brain processes information. Activation of these systems allows us to respond appropriately to stress and is thus protective in the short term. However, these same systems can produce a tremendous amount of wear and tear on biological tissues if they remain at stress-induced activation levels for long periods of time. This wear and tear is called allostatic load. It is the price the body pays for being forced to endure and adapt to toxic stress.

Stress, Addiction, and Mental Illness. Toxic stress can be a precipitating factor in the onset of addiction and mental illness. The stress hormone cortisol increases anxiety and depresses mood. Thus individuals experiencing toxic stress are at greater risk of developing anxiety disorders and depression. Individuals who experience these symptoms are also more likely to seek out substances or behaviours that reduce anxiety and improve mood as a way of coping with stress. As individuals become addicted to their drug or behaviour of choice, it replaces other healthier coping mechanisms.

Withdrawal and Relapse. Once an addiction takes hold, the unpleasant withdrawal symptoms that occur upon cessation of use become a source of intense stress themselves and can trigger yet another episode of use. This can make it extremely difficult for individuals to disengage from addictive patterns of behaviour. Individuals need to learn how to cope with stress in healthy ways in order to achieve and maintain recovery from addiction.

"When we're thinking about changing behaviour, we're also thinking about changing the brain, and we recognize that those neural changes that occur probably occur over a very long time. For people who have had problems with addictions, get treatment, and then are moving beyond those problems, one of the main challenges is actually to shift some of those automatic neural networks that have been laid down in terms of behaviour patterns and development and to replace the maladaptive patterns with some helpful and appropriate ones. In this way we begin to understand why the process of recovery might be considered to be a very long process." **Glenda MacQueen, MD, PhD**

PRESENTATION 3

COMMON NEUROBIOLOGY OF REWARD AND ADDICTIONS

By Mark S. Gold, MD

ABSTRACT: Neuroimaging studies have shown that drugs of abuse produce their rewarding effects by increasing levels of the neurotransmitter dopamine in the reward system of the brain. New evidence indicates that natural reinforcers like food and sex share many similarities with drugs of abuse. For example, sugar accesses the same core neuroanatomy of the brain and produces smaller but similar elevations in dopamine levels as drugs of abuse, indicating it has addictive potential. It is therefore important to ensure that, as with alcohol, tobacco, and other illicit drugs, the implications of exposure to sugary, salty, fatty, and energy-dense foods are understood within the context of addiction.

Common Neurobiology Across Drug Addictions. There are millions of different chemical compounds in the world, but only about 20 of them fall into the category of drugs of abuse. These drugs differ in structure and function but, ultimately, their core neurochemistry is the same: all produce elevations of the neurotransmitter dopamine in the reward system of the brain. Behaviourally, addiction to any drug of abuse is characterized by bingeing, escalating use, withdrawal, and cross-sensitization to different drugs of abuse. The transition from experimental drug use to addiction involves stable and possibly permanent structural changes in the reward system of the brain.

Dopamine, Reward, and Addiction. Basic and neuroimaging research shows that all drugs of abuse increase the release of dopamine in a key structure of the reward system, the nucleus accumbens. Over time, the large quantities of dopamine produce neuroadaptations within the reward circuitry that result in a dampening of dopamine activity in this area. This means that in the absence of dopamine-releasing drugs, the reward system of drug abusers is chronically under-stimulated. This helps drive many of the drug-seeking behaviours that are characteristic of addiction.

Food as a Drug of Abuse. Release of dopamine (in the nucleus accumbens) in anticipation of reward also underlies the rewarding properties of natural reinforcers like food and sex. In animal models of addiction, self-administration of glucose and fructose results in the same behaviours produced by cocaine, namely bingeing, escalating use, withdrawal, and cross-sensitization with other drugs such as alcohol and amphetamines. In other words, natural reinforcers like food exhibit the same core neurobiology as drugs of abuse.

Environmental Influences on Addiction. Today, the foods we eat are better looking, better tasting, and more easily accessible than ever before. Obesity is now a growing problem in North America and around the world, and may be better understood through the lens of addiction. Many of the factors that contribute to obesity are the same as those for addiction: genes, the prenatal environment, child rearing and culture, what we eat and how we eat. For example, there is a greater risk of developing a drug addiction if the first exposure to the drug occurs early in life, while the brain is still developing, and if the exposure occurs through a rapid route of administration such as smoking or injection. In a similar way, obesity occurs more frequently in adults who ate sugary, fatty, and high-calorie foods as children, and who eat their food quickly. This suggests that it is just as important to limit our exposure to sugary, fatty foods as it is to limit exposure to tobacco and alcohol.

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"Food and drugs compete in the brain for the same reinforcement sites. Once a person's addicted, if they stop using drugs successfully, they will gain weight because they switch to food and overeat to continue the same level of neurochemical reinforcement. That's why great treatment programs work to prevent the rebound use of food during recovery, or the rebound use of hypersexual feelings and behaviour, or other kinds of replacement addictive behaviours." **Mark S. Gold, MD**

PRESENTATION 4

DRUGLESS ADDICTIONS

By James C. Montgomery, MD

ABSTRACT: Process, or behavioural, addictions include pathological gambling, sex addiction, eating disorders, compulsive shopping, and compulsive working, among others. Process addictions often exist in combination with each other and with chemical addictions. The co-existence and interaction of these conditions is known as addiction interaction disorder. Multiple addictions make treatment more complicated and can promote relapse. Despite their high prevalence, process and multiple addictions are under-recognized and under-treated.

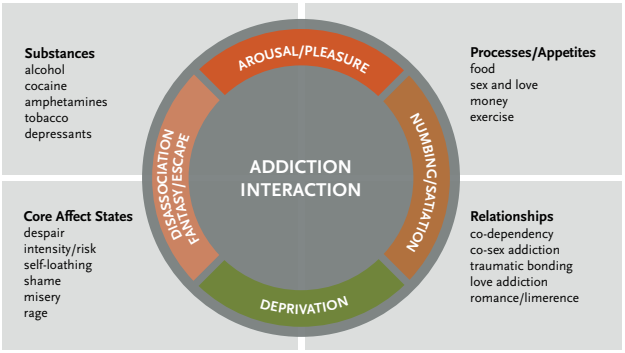
Process Addictions. Process addictions share many similarities with chemical addictions and result in an alteration of the basic level of arousal that is needed in order to feel sufficiently rewarded by an experience. These experiences can include gambling, eating, sexual activity, shopping, exercising, and working, among other things. Neuroimaging research shows that, as with chemical addictions, people with process addictions exhibit elevated dopamine levels in the reward areas of the brain when thinking about their behaviour of choice. Although most process addictions are not formally recognized in the Diagnostic and Statistical Manual (DSM) of Mental Disorders, they have symptomology that matches the formal diagnostic criteria for pathological gambling. Process addictions often occur in combination with other process and chemical addictions.

Multiple Addictions and Addiction Interaction Disorder. When multiple addictions are present there is a possibility that they may interact with each other. Known as addiction interaction disorder, this produces certain patterns of behaviour. For example, co-existing addictions can exhibit cross-tolerance (simultaneous increases in each addiction); withdrawal mediation (one addiction is used to blunt negative withdrawal symptoms of another); replacement (one addiction replaces another); cycling (alternating patterns of use among two or more addictions); masking (one addiction covers up use of another); ritualizing (patterns of use in one addiction lead to another); intensification (one addiction intensifies the effect of another); numbing (one addiction reduces the effect of another); and combining (achieving effects only possible with simultaneous use). These behaviours can complicate the treatment process and can also lead to relapse if they are not addressed.

Process Addictions and Trauma. Most individuals diagnosed with process addictions have a past that includes traumatic experiences. They exhibit responses that are common in other trauma survivors, such as finding pleasure in the face of extreme danger or violence; dissociating from painful experiences and blocking out feelings related to the trauma; seeking situations that recreate the traumatic experience; dysfunctional attachments in the presence of danger and exploitation; and a deep sense of shame rooted in the traumatic experience. These responses may make it more difficult to identify and treat individuals with process addictions.

Moving Treatment Forward. The current treatment model for process addictions is based on the success of the approach featured in the Physician Health Plan [see page 36 for summary]. It is task-centered, neuroscience- and evidence-based, and involves long-term care and monitoring (3-5 years) by experienced staff. Clients are also encouraged to participate in ongoing therapeutic mutual-support groups. In addition, the presence of prior trauma in the majority of clients indicates the use of a trauma-informed treatment model.

The Black Hole of Addiction Interaction



"Part of the difficulty with process addictions is that we're talking about things that are true about everyday life. Everybody eats. Everybody takes risks. Everybody has sexual thoughts and feelings. ... the goal of recovery and the term 'abstinence' is very different with process addictions. ... living with that process, understanding what it means and how to respond to it, is part of recovery."
James C. Montgomery, MD

PRESENTATION 5

WOMEN AND ADDICTION: A TRAUMA-INFORMED APPROACH

By Stephanie Covington, PhD

ABSTRACT: An effective integrated approach to the treatment of addiction for women is needed because of how gender influences core aspects of how and why women develop and recover from addictions differently from men. Based on theory, research, and clinical experience, this approach recognizes the central role of trauma in the lives of women with addictions. These principles can be applied in various settings and to delivery. Research examples of substance abuse treatment with women in prison and drug-court settings document the success of this approach.

Gender-Responsive Addiction Treatment. In the last three decades, addiction treatment services have evolved from generic single-focus interventions based on a male perspective to gender-responsive interventions that reflect an understanding of the needs of both genders and address and respond to their specific strengths and challenges. Some of the guiding principles of gender-responsive treatment include: acknowledging that gender makes a difference; creating an environment of safety and respect; and promoting healthy relationships with children, partners, and others in the community.

Women's Issues. Many of the issues addicted women face cut across geographical and cultural boundaries. These include the shame and stigma of addiction; histories of physical and sexual abuse; relationship issues such as fear of losing a child or a partner or needing a partner's permission to obtain treatment; and treatment issues such as lack of services for women, not understanding treatment, and lack of childcare services. Research indicates that when addiction services address women's specific treatment needs and provide comprehensive clinical and community supports to deal with the complexity of women's lives, they are more effective than traditional services designed for men.

Trauma and Addiction. Interpersonal violence is a common traumatic experience for girls and women and its effects can be long-lasting. The Adverse Childhood Experiences Study showed that exposure to traumatic events before the age of 18 increased the likelihood of physical and mental health problems, including addiction, decades later. Trauma is now recognized as a significant contributing factor to addiction in women. Women who relapsed and were considered treatment failures may now be better understood as trauma survivors who returned to their addiction to medicate the pain of past trauma.

Trauma-Informed Services. Trauma-informed services are services that are provided for problems other than trauma but require knowledge about the impact of trauma, thereby increasing their effectiveness. This service model takes the trauma into account and avoids triggering trauma reactions and/or traumatizing the individual. The behaviour of staff and the organization is adjusted to support the individual's coping capacity so that he or she is able to access, retain, and benefit from the services. Any kind of organization can become trauma-informed, from dentists' offices to addiction treatment agencies.

Women-Centred Addiction Treatment. By the time she leaves treatment, each woman needs to have an opportunity to: acknowledge that she has an addiction; create a connection with other women; obtain an accurate diagnosis and treatment for any co-occurring disorders; understand the connection between trauma and addiction; have a wide selection of clean-and-sober coping skills; have a recovery plan; and have her basic needs for shelter, food, medical, literacy, employment, childcare, and so on, addressed. Furthermore, women's treatment facilities should be designed to feel like sanctuaries – sacred places that offer safety, refuge, and protection for women. The ultimate purpose of women-centred treatment is to move women with addictions from the downward spiral of abuse and trauma to the upward spiral of recovery, healing, and personal transformation.

Spiral of Trauma and Healing

"Trauma is a powerful life experience that stays with us all of our lives. If you go to a doctor, for example, and get an x-ray and you've broken your arm 30 years earlier, they'll be able to read the x-ray and say, 'Oh, you broke your arm.' That's because there still is a trace of what happened to your arm. And in some ways, that's the same with all traumatic experiences. It's never gone – it's always there. But the doctor will also tell you that the bone in your arm is now strongest at the broken place. That's the capacity for healing that can happen for women. They can become strongest at that broken place and that's what I wish for them." **Stephanie Covington, PhD**

PRESENTATION 6

INTEGRATION OF PARENTING-SKILLS EDUCATION INTO THE CONTINUUM OF ADDICTION SERVICES

By Amelia Arria, PhD

ABSTRACT: Scientific evidence demonstrates that addiction is a multi-generational disorder that can be passed from parent to child. Research shows that certain kinds of parenting practices can reduce the risk for adolescent substance use and addiction. Parents who themselves have substance use disorders might face unique parenting challenges when raising their children and should receive special training and support while in treatment.

An Intergenerational Disorder. Research indicates that addiction is an intergenerational disorder. The risk of transmission from one generation to the next is influenced by both genetic and environmental factors, with the family environment and parenting behaviours possibly playing a major role. Awareness of the familial nature of alcohol and other drug problems should encourage parents to improve their own parenting skills as a way of mitigating the intergenerational transmission of addiction.

Influence of Parenting on Adolescent Drug Use. A child's risk for developing an addiction is related to the combination of many factors, primarily the different characteristics of the individual child, the nature of the stressors in the physical and social environment, and his or her parents' behaviour. The quality of the parent-child relationship, parental monitoring and supervision, and parental expression of disapproval toward underage drinking and drug use are critical. Parenting can influence the child's understanding of addiction, child conduct, the attitudes and expectations of the child toward substance use, and the peer affiliations of the child. These experiences are linked to adolescents engaging in risky behaviours such as early alcohol and drug use, sexual activity, and truancy.

When Parents Are Addicted. Trying to parent effectively while having an addiction can present major challenges. Addiction takes a heavy toll on relationships and in some cases might be particularly damaging to the parent-child dynamic. The shame and guilt of addiction might lead parents to overindulge their children or provide ineffective discipline. Once in treatment, parents can become very preoccupied with their own recovery, which might have a serious impact on parenting behaviour. Parental absence, lack of supervision, and poor parent-child communication are all risk factors for the development of drug-use problems in children.

Parenting-Skills Training for Addicted Parents. Research and clinical experience have identified seven parenting practices that are effective in the prevention of adolescent substance use. These practices include: (1) providing basic needs for safety, shelter, and food; (2) appropriate role modeling; (3) building a warm and supportive relationship between the parent and child; (4) parental monitoring and supervision; (5) maintaining awareness of the child's peer relationships; (6) understanding the child's individual risk level; and (7) establishing appropriate parent-child communication. While in treatment, addicted parents represent a captive audience for parenting-skills training, yet many addiction treatment programs might not incorporate this as part of their programming. Although there are certain financial and administrative barriers to the integration of parenting-skills education into clinical treatment and intervention services, such initiatives merit consideration.

The Intergenerational Cycle of Addiction

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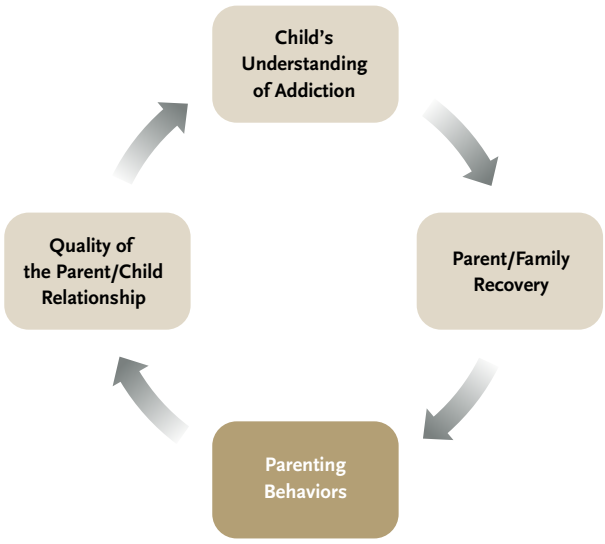


"Parents tend to rely on what their family did or else do completely the opposite and so often there's no room for scientific evidence on parenting. But the science should have some value to them. No matter what their history is, no matter what kind of background they came from, parenting skills are learnable; they're accessible; they're evidence-based and professionals can teach them." **Amelia Arria, PhD**

PRESENTATION 7

PRINCIPLES OF CHRONIC DISEASE MANAGEMENT

By Richard Lewanczuk, MD

ABSTRACT: Recent advances in the management of chronic diseases have been used to help reduce wait times for services, reduce health care resource utilization, and improve overall patient health. Key concepts of this approach emphasize screening and early detection in the entire population, use of inter-professional health care teams, supporting patient education and self-care practices, and establishing long-term case management practices. Some of these practices may also help improve the prevention, treatment, and long-term support of individuals with addictions.

High Prevalence and Cost of Chronic Diseases. Chronic diseases are the biggest drivers of health care costs in Alberta and across North America. Most adults have more than one chronic disease. When these diseases interact with each other, health care utilization can increase dramatically. For example, in Alberta in 2010, the annual cost of a healthy person was approximately $400, compared to $1,400 for a person with one major chronic disease, and $10,000 for a person with three chronic diseases. Implementation of the chronic disease management model for conditions like diabetes, hypertension, and chronic obstructive pulmonary disease has helped reduce wait times for services, reduce health care resource utilization, and improve overall patient health.

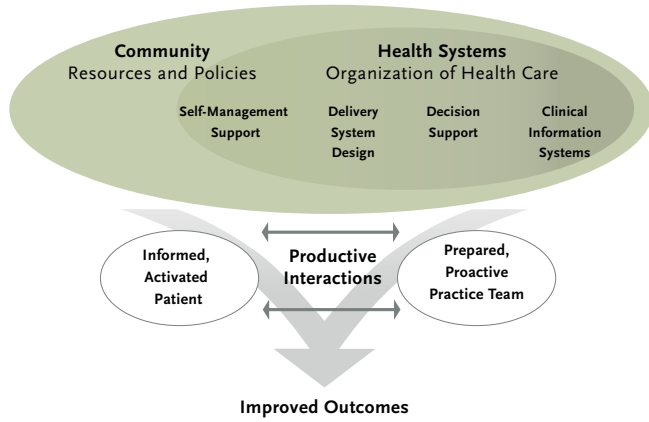
Principles of Chronic Disease Management. The primary goal of chronic disease management is to keep people healthier longer. This model considers the entire patient population, not just those at risk or seeking care. Patients are screened proactively using case-finding tools to identify those at risk or already with the condition. They are then stratified by risk level and appropriate care is provided in the least resource-intensive setting. Treatment is performed in the community before it has an impact on more complex acute care services. Inter-professional teams provide services and long-term monitoring, with specialists acting as advisors, mentors, and resources for the primary care provider and patient. Integration of care occurs across organizational boundaries and is supported by information systems that allow access to and transfer of key patient data in a timely manner. Performance measurement tools track outcomes in functional, clinical, and population health areas. It should be noted that in this model, primary care physicians provide and co-ordinate patient care and are ultimately responsible for patient health. The system supports the primary care physician-patient relationship, and supports specialists who in turn support primary care.

Patient Empowerment. In chronic disease management, patients are expected to take an active role in their own health care. They are given education, monitoring, and support to adhere to treatment plans and adopt lifestyle changes and self-care behaviours that help maintain health. They are also monitored for barriers to self-management, such as other health conditions, depression, stress, and physical functioning, among other things. Patient outcomes, including self-reported assessments of function, are routinely measured to determine whether the intervention is having the desired effect or whether treatment plans need to be adjusted.

Addiction as a Chronic Disease. Addiction has been recognized as a chronic disease by the 12-step movement for decades, and this view is now becoming mainstream. Despite this, addiction treatment remains reactive and episodic. Applying lessons learned from the chronic disease management model to addiction prevention, intervention, treatment, and follow up services may help improve the overall health of the Alberta population.

The Chronic Care Model

Reproduced with permission from E. H. Wagner, Chronic Disease Management: What Will It Take To Improve Care for Chronic Illness? Effective Clinical Practice, Aug/Sept 1998, Vol 1.



"It's mostly been in the area of the traditional addictions where they have used these chronic disease management principles, such as alcohol or a drug addiction, where people are considered to have an addiction and always be at risk of recidivism. In the 12-step programs, for example, they don't say, 'I was an alcoholic,' they say, 'I am an alcoholic.'" **Richard Lewanczuk, MD**

PRESENTATION 8

PHYSICIAN HEALTH PROGRAMS: APPLYING THE CHRONIC DISEASE MODEL WITH CARE, CONTINUITY, AND CONTINGENCY

By Michael Kaufmann, MD, and Dianne Maier, MD

ABSTRACT: Physician Health Programs (PHPs) are based on a collegial and professional responsibility to physicians whose safety in practising medicine may be adversely impacted by any psychological, physical, or social problems, including addiction. These programs apply screening, case identification, intervention, interdisciplinary treatment, and follow-up through case management and monitoring strategies to the care of addicted physicians, and integrate occupational health principles and practices in their programs. Program outcomes include five-year maintenance of remission of addiction, enhanced personal and professional function, and improved overall life satisfaction.

Physician Health Programs. PHPs began in the 1970s and 1980s and are now formalized across Canada. Program goals are to: encourage physicians to seek and receive assistance before health issues impact or impair practice; provide accountability to the profession and to regulators; preserve healthy professional and personal lives for physicians and their families; and positively impact patient care by keeping physicians healthy. PHPs also endorse general occupational health principles due to the safety-sensitive nature of the work of practising doctors. The conceptual model guiding the PHP is a holistic approach that emphasizes being healthy in the biological, psychological, social, and spiritual spheres of life.

The Addicted Physician. Close to 1 in 10 physicians will have an addiction problem in the course of their lifetime (8%, with 0.5% to 1% having an addiction problem each year). Data from Ontario's PHP show the most commonly abused substances are alcohol (60% of cases) and prescription opioid drugs (35%).

Treating Addicted Physicians. Addiction treatment within PHPs shares conceptual and operational practices with the chronic disease management model. Both have a long-term approach and focus on case management, assessment, monitoring, and multi-disciplinary care. Although not all PHPs provide direct treatment services, these programs drive the treatment process with multiple service partners. PHP-led addiction treatment involves many components, including comprehensive assessments, detoxification, residential treatment, psychotherapy, pharmacotherapy, mutual-support programs, treatment of co-morbid disorders and other addictions, and family supports. Aftercare services continue for one to two years. Sustained recovery is actively managed through education, counselling, relapse prevention skills, healthy lifestyle and self-care practices, monitoring of abstinence, and periodic re-assessment. Long-term monitoring of substance use in the workplace and formal return-to-work assistance are also provided. PHPs adopt a total-abstinence approach to treatment and recovery from addiction and typically have a five-year period of participation.

Superior Results. Several published research studies have documented the outstanding success of these programs. A five-year follow-up study of participants in the Ontario PHP found that 71% maintained complete abstinence with no relapse; 14% had long-term recovery with some relapse; and only 15% were lost or quit the program. A study of 16 similar programs in the United States found that 78% of participants were still licensed and working after five years. Program evaluation data show significant improvements in overall life satisfaction and other key areas such as wellness, job effectiveness, and social relationships among participating physicians.

The Therapeutic Approach to Treatment in PHPs

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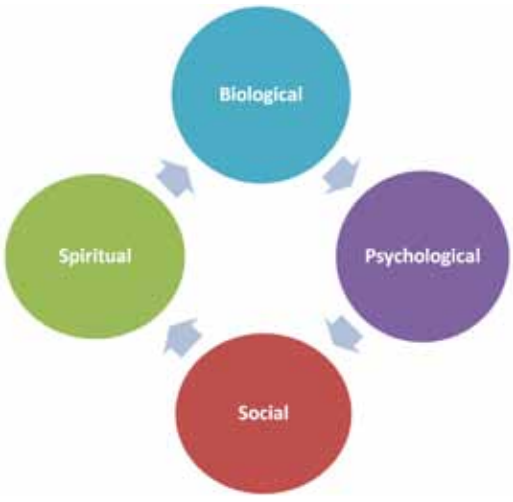

"Anybody suffering a pervasive chronic illness, such as addiction, is going to have many issues in their lives that need support. If we can be centrally located in the recovery life of such an individual, stay in touch with them, stay in contact with all the others who are helping them, then we become the single one stop where information about the quality of their recovery can be obtained and where all of the different elements can be co-ordinated in a case management kind of model. That's what we do. We go on the journey with them."
Michael Kaufmann, MD

RESEARCH ON PHYSICIAN HEALTH PROGRAMS IN CANADA AND THE UNITED STATES

CANADIAN STUDY. The Ontario Physician Health Program for substance dependence was evaluated using a longitudinal five-year follow-up study design. The study participants were 100 doctors, all of whom had been admitted to a substance dependence treatment and monitoring program, mostly for abuse of alcohol (51%) or opioid medications (37%), and followed until completion of monitoring or leaving the program. Results were accumulated over 10 years, the time needed to track the first 100 doctors and complete at least five years of monitoring. Key elements of the program included case management, visits to an addiction medicine doctor, visits to a family doctor for routine health needs, attendance at facilitated support groups within the PHP and in the community, monitoring in the workplace, and random screening for drug misuse. Monitoring was done for five years during the recovery process. Part of the monitoring agreement involved reporting to the College of Physicians and Surgeons of Ontario, the regulatory body, when aspects of the program-participation contract were breached. The sample was composed of 90% men. Sixty-six % of the subjects were married or living with a partner, 44% had received previous treatment for substance dependence, 38% were current smokers, and 36% had received previous psychiatric treatment. The outcomes of this treatment regimen were overwhelmingly positive: 71% of participants completed the five-year monitoring period without a single relapse. An additional 14% of the total sample went on to complete the program after experiencing some form of relapse. Relapse was defined as a single episode of substance use to full resumption of substance dependence. In total, 85% of the participants successfully completed the program.

UNITED STATES STUDY. A study of 49 Physician Health Programs in 16 different states examined program effectiveness over a five-year participation period. The sample included 802 doctors who had been continuously enrolled for four years or more in the PHPs. The vast majority (92%) of all participants eligible for the program had fully participated over five years and had completed the program. The components of the program were similar to that of the Ontario PHP. The formal treatment for addiction typically lasted for about one year and usually began with residential detox and inpatient care for a month or two and then up to six months of outpatient therapy. Aftercare was provided for at least six months after outpatient therapy ended. Most doctors in the PHP returned to practising medicine within three months after the inpatient care step. A key part of the PHP was monitoring of substance use and providing peer support. Psychotherapy was encouraged for the individual physician and family therapy was also offered. Urine screenings for drug use were conducted over the full four-year period on a weekly basis on random days of the week. The results were very positive. Of those who completed the program, 64% had stopped abusing substances, 16% were still being monitored for substance use, 17% had dropped out, and 3% had died. After five years of program participation, 78% of the PHP participants had no positive urine tests for substance use and among those who did have a positive test, only 26% had a second positive test. Positive results were also obtained concerning professional licensure and patient safety. Successful participation in the PHP program was associated with a much lower chance of losing one's licence to practice medicine. Of the small number of doctors who had their licences revoked over the five years of the study, the majority (55%) had no history of participation in the PHP compared to only 2% of this group who had completed the PHP, 11% who were still active in PHP, and 32% who had been in the program but later dropped out. In addition, for the roughly 500 physicians in the PHPs and over six million patients represented in these medical practices over the five years, there were only 55 recorded adverse safety incidents and only five of these incidents resulted in patient harm.

SUMMARY. The success rates of PHP-administered addiction treatment programs are outstanding compared to other evaluated programs and services that are much shorter in duration and less comprehensive. These studies show that using a chronic care management approach to addiction treatment can yield excellent outcomes for substance abuse problems over a five-year period.

SOURCES. Canadian Study: Brewster et al., 2008, British Medical Journal. United States Study: McLellan et al., 2008, British Medical Journal. See Appendix 6 of this report for the full citations.

PRESENTATION 9

THE IMPORTANCE OF SHAME IN ADDICTION TREATMENT AND RECOVERY

By Garrett O'Connor, MD

ABSTRACT: Shame is at the core of understanding addictions. It is a powerful, elusive, and tricky emotion that can protect or destroy, depending on the circumstances. Shame has two faces: malignant (negative) shame and healthy (positive) shame. Because of its central role in the psychology of addiction processes, the issue of shame and how it influences self-identity must be addressed in order for addiction treatment and recovery to be successful. Twelve-step and other psychosocial support therapies can be effective for healing the shame experienced by people with addiction.

Shame Versus Guilt. In the human psyche, the purpose of shame is to keep one within the bounds of normalcy by regulating one's feelings and behaviour concerning the methods used to satisfy basic instincts and desires that are inherently rewarding or punishing. Although similar to shame, guilt is about actions taken that violate external rules or standards, whereas shame is about identity and self. Guilt is when you have done something wrong. Shame is when you have been exposed for something that you would rather keep hidden.

Healthy Shame. Shame is primarily construed in a negative light. It is often referred to as the pathological effect of abandonment, indignity, alienation, and failure. The healthy and positive function of shame goes largely unrecognized. Healthy shame protects and motivates the self to move in a positive direction by deeply disturbing how one feels about one's self and not wanting to include the behaviour as a part of the self (e.g., "I do not want to be a drinker anymore"). Paradoxically, healthy shame – which motivates the addict not to drink or use drugs – often kicks in at the moment when the addict hits emotional "bottom." It then continues to function as the healing force that energizes the hard work of authentic suffering, surrender, forgiveness, and service to others that is essential to stable recovery and sustained sobriety.

Malignant Shame. Malignant shame is fear and terror of being judged negatively or to be found wanting by a person or institution with real or imagined power and authority. Malignant shame leads to isolation, guilt, denial, secrets, silence, hiding, and cover-ups. For the addict, the effects of alcohol or drugs hijack the parts of the brain that control values and morality. The brutality of the severe addict's lifestyle compels him or her to abandon normal social conventions and moral constraints and to adopt radical new codes of behaviour in order to simply survive. This can lead to seemingly inhuman acts, spiritual bankruptcy, degradation, and malignant shame.

Early Childhood Trauma and Shame. The trauma from adverse childhood experiences is encoded and embedded in the developing brain. Research has clearly documented how a wide range of abusive events can permanently alter the brain and psychological functioning of children and young adults who involuntarily experience or witness physical abuse, emotional abuse, sexual abuse, neglect, violence, criminal activities, drug use, and psychiatric problems in their families. Traumatic experiences disconnect the child from his or her emotions and render the adolescent or adult version of the child more likely to become addicted or to form attachments with others who are addicted. The familial context of shame and addiction are closely intertwined, as addicts are ashamed of themselves and their families are ashamed of them. Without proper treatment, the family cycle of abuse, addiction, and shame can be passed on from one generation to the next.

Addiction Treatment and Shame. As addiction is a complex disease with a chronic, relapsing course, the healing approach for addiction should be based on caring rather than curing. Shame-based, traumatized addicts need care, while at the same time they must be held accountable for whatever physical, emotional, or spiritual damage they may have caused. The components of effective treatment include detoxification, re-humanization therapy, 12-step recovery groups, and monitoring of recovery and relapse over a five-year period. Although treatment of shame-based disorders can be considered from a number of different perspectives, the 12-step approach (such as Alcoholics Anonymous) is a highly effective shame-reduction modality for alcoholics and other addicts.

"Shame is the conductor of the orchestra of human emotions. Shame patrols the boundary between our private and public lives. Addiction is a chronic, de-humanizing and traumatic experience. To understand shame is to understand addiction."
Garrett O'Connor, MD

PRESENTATION 10

IMPROVING EFFICIENCY AND EFFECTIVENESS OF ADDICTION TREATMENT THROUGH BUSINESS PROCESS IMPROVEMENT

By David Gustafson, PhD

ABSTRACT: Business process improvement is a systematic approach to help optimize an organization's underlying operational processes in order to achieve greater efficiency and improve results. This approach has been used successfully in many industries and is now being applied to health care. Research projects in the Unites States illustrate the power of these principles to transform processes and improve outcomes in specific areas of addiction treatment.

Process Improvement for Addiction Treatment. Health care systems are often characterized by a variety of burdensome bureaucratic and clinical processes that keep patients and staff apart, and waste time and money. Recently, the health care industry has started looking to business process improvement principles in order to improve access and retention to care. The Network for the Improvement of Addiction Treatment (NIATx) was created specifically to help improve business processes for addiction treatment services.

Principles of Process Improvement. Two decades of research at NIATx has identified five key principles underlying successful process improvement efforts. The first is that change needs to be closely linked to the leadership's agenda. In other words, do what helps the CEO sleep better at night. The change leader should be an influential and respected member of the organization rather than a new employee or any employee who has the time to do the job. Organizations should seek and use ideas from external sources. For example, look to lessons learned from other industries that currently excel at what you are trying to accomplish and work with other organizations that want to make similar kinds of improvements. Those involved with the change movement should personally experience what the customers of the organization's services and/or products experience. Finally, use rapid-cycle testing of the proposed change in order to improve the process over a short period of time.

Rapid-Cycle Testing. When implementing change, the most important element is to keep the change effort simple and short-term. Adopt very few and very specific aims for what needs to be accomplished. Use only one or two simple outcome measures to assess whether the change is working. These measures should be driven by the change effort rather than using existing outcome measures that are perhaps not appropriate. Finally, be prepared to fail, particularly at the start. Rapid-cycle testing is a learning process and each failure of the change represents valuable information that can be used in the next cycle of testing. The entire change effort should take no more than three weeks from start to finish.

Case Studies from NIATx. NIATx has identified four key areas in which addiction treatment agencies could greatly improve their business processes: (1) reduce the delay between first contact and obtaining treatment; (2) reduce no-shows; (3) increase admissions; and (4) increase continuity rates. Their research shows that changing from scheduled appointments to walk-in appointments is a highly effective change an organization can make to reduce no-shows, increase admissions, and reduce the delay in obtaining treatment. Organizations have also successfully increased their continuity rates by enrolling patients in outpatient programs while they are still in residential treatment, and scheduling joint sessions between residential and outpatient programs. NIATx has hundreds of other examples from partner addiction treatment agencies that convincingly show that operational processes can be improved.

"It's very important that the leaders of the organization understand what the customers are facing in trying to access and use the services. For example, if the customers have to fill out a 75-question survey, the leaders should fill it out, too. Do it. Feel it. Understand what they're going through and then you'll get much better ideas of what is important for making improvements." **David Gustafson, PhD**

PRESENTATION 11

EFFECTIVENESS, PERFORMANCE, QUALITY: WHAT'S THE DIFFERENCE?

By Thomas McLellan, PhD

ABSTRACT: There is increasing demand from patients and purchasers of addiction treatment services for effectiveness, performance, and quality. Effectiveness indicates good patient function following treatment. Performance is measured in part by patient symptoms and function during outpatient treatment. Quality is when both effectiveness and performance measures are in line. The addiction field could achieve realistic improvements by moving toward a system that follows, monitors, and evaluates patients regularly during outpatient treatment in a chronic care management approach. This conceptual shift brings important and beneficial changes in how effectiveness, performance, and quality are defined and measured.

Distinguishing Between Effectiveness, Performance, and Quality. Effectiveness, performance, and quality in addiction treatment are not the same. Effectiveness is a measure of patient outcomes following treatment. It is often assessed using patient follow-up at six and 12 months post-discharge. Popular measures of effectiveness include level of substance use, employment status, criminal activity, and overall health. Effectiveness yields definitive outcomes, but the process of data collection is slow and expensive and the results are not management-relevant. Performance measures examine how the care system functions during the course of treatment. Data are usually extracted from administrative records and operational practice databases, but several performance indicators are also direct patient measures of symptom severity and function. Performance measures are useful for monitoring short-term (e.g., weekly or monthly) changes in clinical activities and thus represent interim results that can be used by management to make adjustments to operations. Quality reflects the convergence of effectiveness and performance. It is represented by a variety of measures, most often including agency licensing, program accreditation, staff credentials, client satisfaction, and use of evidence-based best practices.

Improving Quality Care. High-quality addiction services are defined by the use of evidence-based clinical practices, delivered by credentialed staff, working in licensed and accredited programs, applying evidence-based services, and which result in positive outcomes. Improving the quality of addiction treatment requires the active and ongoing collection of information about patient characteristics, clinical performance activities, and outcomes. Thus, establishing a robust clinical information data management system is needed for serious quality improvement efforts.

Effectiveness in a Chronic Care Management Model. Currently, addiction treatment is evaluated under an acute-care model as though there were a cure for the disease: patient outcomes are assessed at various points after discharge from a discrete episode of treatment. However, clinical neuroscience research indicates that addiction is a chronic, relapsing brain disease. By definition, a chronic disease is never cured and does not simply "go away" after treatment. Rather, it requires continuous management over the lifetime of the individual and appropriate treatment during active phases. When defined in this way, measurements at various points during ongoing outpatient treatment should be used to determine treatment effectiveness. This is quite different from the current approach, which compares the pre-treatment and post-treatment outcomes of episodic care.

How Outcomes Are Measured in Two Different Chronic Diseases

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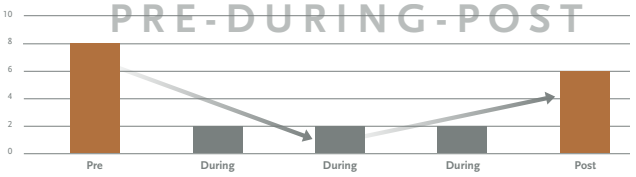
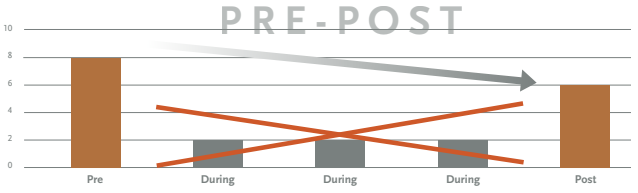
Outcome in Hypertension



Outcome in Addiction



"The substance abuse field has been evaluating its value and its effectiveness as one would in the case of a broken leg or flu or an infection. Chronic illnesses, such as diabetes, hypertension, asthma, and chronic pain, don't have cures. The clinical goal is symptom remission and good patient function through assisted patient self-management. Care is evaluated in those terms in a performance management model by measuring care processes, patient symptoms, and function at regular intervals during the course of treatment."

Thomas McLellan, PhD

PRESENTATION 12

RETHINKING ADDICTION TREATMENT: ADDING VALUE TO TREATMENT

By Thomas McLellan, PhD

ABSTRACT: There is a growing movement to develop new payment methodologies that connect service reimbursement with the results achieved. As addiction treatment becomes more integrated with health care services in general, it becomes increasingly important for addiction professionals to be aware of the emerging trends in delivery and funding strategies that are now being piloted to improve the quality, efficiency, effectiveness, and cost of care. Some of the most promising models for adding value have potential applicability to addiction treatment.

Addiction Treatment Works, But Is Not Provided in an Effective Way. Currently, the majority of patients who get professional care are severely addicted individuals, many of whom use only short-term residential services. Although many addiction treatment programs use evidence-based practices, the treatment is rarely provided for long enough periods of time in an outpatient setting to be truly effective. Causes of truncated treatment include the nature of addiction, restrictive insurance and unattractive treatment.

Why Quality Improvement Is Difficult to Achieve. Addiction has the lowest level of treatment penetration of any disease. Most of the 13,200 providers of specialty care addiction services in the United States are at near or full capacity, but this represents only about 10% of the addicted population. The high demand for services, complex and severe patients, and low service capacity create significant problems for quality-improvement efforts. It's a vicious circle, with poor-prognosis patients getting inadequate care and having poor outcomes; payers thus reduce payments, leaving providers fewer opportunities to improve quality and expand services. The segregated nature of these programs and their concentration of chronic complex patients make it difficult to attract a broader range of patients and more qualified clinical staff – again reducing positive outcomes and the associated additional revenue – which are both needed to expand and improve quality of services.

Using Purchasing to Incent Treatment Quality. One recent state-wide experiment broke this vicious cycle. In 2002, the State of Delaware had 11 publicly funded outpatient addiction treatment providers with poor patient outcomes, operating well below full capacity, and not consistently using evidence-based practices. Rather than purchasing services in the traditional way, the State implemented a performance-based contract with all 11 providers. Within this contract, the providers were given only 90% of their 2001 budget, but were offered the chance to earn 106% of their 2001 budget if they met two performance criteria: 90% occupation of outpatient slots (essentially engagement); and 80% active participation in outpatient treatment (essentially attractiveness). The State implemented an auditing process to monitor progress and results, and the providers received a portion of their bonus every month to help implement improvements and innovations to meet their targets. The State guaranteed funds for every provider that met the performance criteria, thereby incenting collaboration and sharing of new ideas. Over the next year, one provider lost its contract, two new providers stepped in, five programs learned new evidence-based therapies, and providers worked together to implement common sense business practices to improve patient engagement and attendance. Within three years, utilization rates in Delaware averaged 95%, significantly more patients were completing the full length of treatment programs, and the remaining providers were earning more money. This case study shows that financial incentives from a purchaser can affect clinical care patterns and improve quality if they are closely aligned with the activities and outcomes that directly represent high-quality care. It also reminds us of the veracity of the adage: "You get what you pay for."

Scope of Substance Use in the US

Includes alcohol, illicit and non-prescribed drugs.
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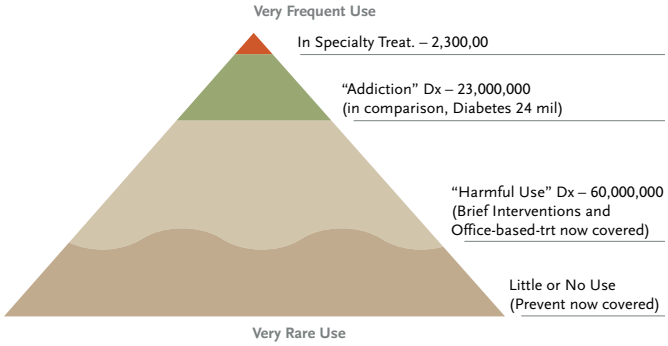


"Currently, less than 3% of all the referrals to specialty addiction care come from any part of medicine. This will change as health care reforms approach; primary care doctors will be incentivised and trained to screen for 'harmful substance use,' to provide brief interventions, and in some cases offer basic care for moderately addicted people. When that primary care is not enough, these physicians will seek specialty care partners who they can work with. This has happened in many other previously segregated illnesses such as depression, AIDS, and even breast cancer." **Thomas McLellan, PhD**

PART 4

Alberta Research

Each piece of the RFA puzzle - Science, Practice and Policy - is dependent on the public to provide support and drive greater awareness and action. To this end, the Norlien Foundation has funded two major, ongoing research projects in Alberta to determine public perceptions about addiction; capacities within our province's addiction treatment systems; and accurate, province-wide prevalence data on both substance and process addictions.

The research on public perceptions about addiction is being spearheaded by the FrameWorks Institute, a non-profit communications research organization that specializes in translating scientific information for the general public. Communicating the science in a way the public can understand will help improve public understanding of what addiction is, how it can be prevented, and how it should be treated, thereby reducing stigma and increasing support for effective addiction services and policies. The data on treatment capacities and province-wide prevalence are being collected by a consortium of researchers at the Universities of Alberta and Calgary. This research will not only help identify gaps in our addiction service delivery systems, but will also be instrumental in determining the true need for services within the province of Alberta.

"It's a challenge to have people begin to adopt the same language. I think there is a dawning recognition that we are going to have to reduce this down and figure out how to talk to each other – and talk to other people – in more circumscribed ways."
Susan Nall Bales, MA

PRESENTATION 13

COMMUNICATING ADDICTION TO ALBERTANS: CHALLENGES IN EXPERT AND LAY UNDERSTANDINGS

By Susan Nall Bales, MA and Nathaniel Kendall-Taylor, PhD

ABSTRACT: The plurality and ambiguity of Albertans' thinking about the fundamental questions of addiction, such as what it is and what causes it, illustrate the challenge of communicating on this issue. Moreover, the specific assumptions used to reason about these questions shape and even restrict the way that citizens and policy makers alike are able to think about other critical questions concerning addiction, such as who is responsible and what can and should be done to address these problems. These data represent some of the early results of an ongoing research project conducted by the FrameWorks Institute on how Albertans think about addiction, and what communications frames can be promoted that will build public support for effective addiction policy.

The Challenge of Cultural Models. To effect change in public policies around addiction, we have to know how the public thinks about it. This involves discovering the cultural models (the implicit assumptions) that most people use to understand the issue. FrameWorks calls this trying to understand the "swamp of cultural models." To do this, the constituent elements in the swamp are identified and studied to determine how these points are inter-related and formed into mental scripts and explanatory talking points. The next step is to figure out how to use this information to communicate strategically about the issue of addiction.

Researching the Experts. To "map the gaps" between expert and lay understandings of addiction, the researchers began by conducting in-depth interviews with 11 experts in the field of addiction. Special attention was given to the recent advances in early brain development and its contribution to understanding the nature of addiction prevention and treatment. Using thematic analysis, the major concepts from the interviews were synthesized to yield a "core story" of addiction. A core story is a finite set of principles, messages, and themes that characterize the essence of a particular topic area. Finally, these central ideas generated from the expert interviews were compared against the themes identified from a review of the broader scientific literature.

The Core Story of Addiction. Addiction is a brain-based neurobiological phenomenon that can be defined functionally as a neurological impairment of rational decision-making. Addiction develops as a result of a complex interaction between genetic and environmental factors (i.e., epigenetic processes). In order for interventions to produce maximal benefits, they need to be evidence-based, should occur early in the course of the disease and be sustained over time, and incorporate multiple modalities of treatment. The chances of maintaining long-term recovery are significantly greater when using chronic care treatment models that have been shown to yield better outcomes.

Researching the Public. A series of cultural model interviews were also conducted with a sample of 20 Albertans to begin to understand how members of the general public think about addiction. These interview findings were bolstered with additional qualitative and quantitative methods to test better ways to close these gaps in understanding and improve Albertans' understanding of key concepts from the science of addiction.

The Public's Definition of Addiction. Results from the interviews with Albertans revealed some dominant assumptions in thinking about addiction. The first finding concerns definitional models of addiction. Addiction was defined by the public as a dependence on a foreign chemical, most often limited narrowly to illicit drugs or alcohol. Addiction was also thought of as a process driven by an irrational need that takes place within the individual. This definition largely ignores the role of other social and interpersonal factors in the development of addiction (such as early toxic stress experiences or maltreatment by caregivers and others) and instead blames the individual for his or her problem. Albertans also held the belief that addiction is incurable, and therefore untreatable.

The Public's Theories of Causation. Other more specific components of these cultural models illustrate how the public thinks about the causes of addiction. Among these causal factors were:

- Addiction results from derailed development.
- Addiction has proximate triggers, such as easy access to alcohol and the desire for escapism.
- There is a perceived continuum of self-control, with addiction being the tipping point for losing control.
- Addiction happens because some things are just too addictive and will quickly result in chemical dependencies that are difficult if not impossible to break.

Because people think about addiction using these different definitional and causational models, it sets them up to have corresponding opinions and expectations about what kinds of treatments, if any, are going to be effective.

Gaps Between the Experts and the Public. This research project identified large gaps between what is supported by science – the core story of addiction – and what the general public in Alberta believes. There is a misperception by the public that addiction is untreatable – that it never really gets any better – which is clearly at odds with the real potential for recovery and the high level of success of programs using a chronic disease approach to treatment.

The extent of these gaps is troubling and should ignite interest in changing public perceptions, as these views can limit the support for addiction policies and services in the province. Public awareness efforts and knowledge-transfer activities are needed to better inform the public about the true nature of addiction and what constitutes effective treatment and recovery.

Future Phases of the Research. The first phase of the research was designed to determine what happens when the scientific understanding of addiction meets the public understanding. The next phase will develop different ways of reframing the science such that it is interpreted more accurately and increases support for effective policies and programs. The last phase will provide hands-on training of Albertans who routinely communicate about addiction or work in the addiction field, so they can communicate the science using a common framework and language and improve public understanding of the most important issues in addiction.

"All that we can do is make people aware of what they're up against and what's out there waiting to eat their messages. What comes next is figuring out how to communicate it more effectively: how to get people through that swamp in such a way that the message they intend for the public to receive is the actual message that the public receives." **Nathaniel Kendall-Taylor, PhD**

PRESENTATION 14 – PART A

ALBERTA PREVALENCE PROGRAM: ALBERTA ADDICTIONS SURVEY (2009)

By Cameron Wild, PhD

ABSTRACT: The 2009 Alberta Addiction Survey was designed to provide empirical estimates of the prevalence of self-attributed addictions among the general population of adult Albertans. The study methodology used an online sample of 4,000 adults and a telephone sample of 2,000 adults. Results reveal that four out of every five people in the province are personally impacted by addictions.

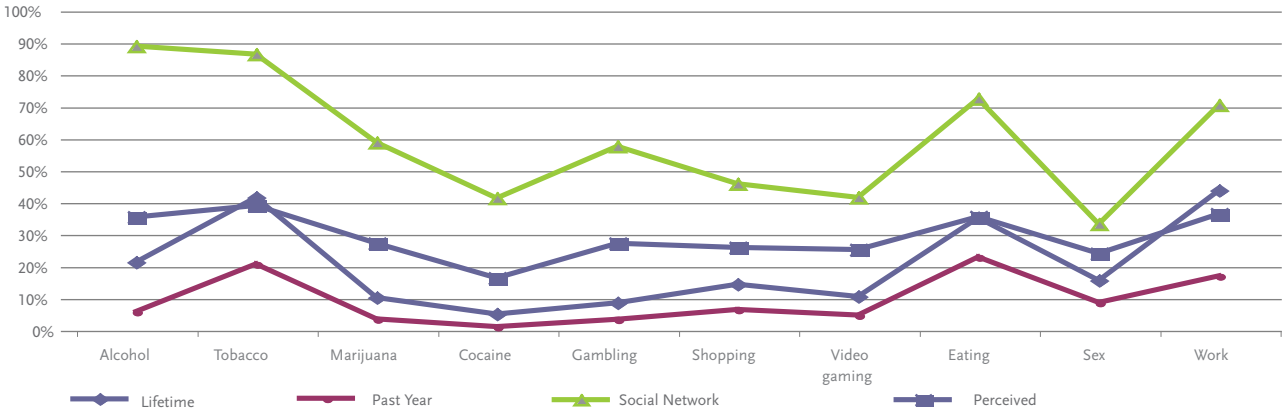
Prevalence of Self-Reported Addictions. Ten different addictions, including substances and behaviours, were examined. The primary finding from the online survey was that 80% of people in the province reported personally experiencing a problem with one or more of 10 addictive behaviours at some point in their lifetimes. This means that overall, only one in five Albertans are not affected by addiction. In addition, about half of the respondents reported that they experienced problems with two or more addictions. The number of respondents who experienced a problem in the past year with each of the specific addictions ranged from 20% for food and eating to less than 1% for cocaine. Note that these data represent self-perceived problems rather than clinical assessments made by treatment professionals. Respondents were also asked to estimate the percentage of Albertan adults who have experienced each of these addictions within the past year. For every kind of addiction, the respondents' estimates for other people were 10 to 30% higher than the self-reported rates. These results indicate the pervasive impact of addiction in Albertan society.

Perceived Adequacy of Formal Treatment. Respondents were asked whether they believed adequate services were in place to treat addictions of all types in Alberta. Only one area, tobacco addiction, was perceived as having adequate treatment services by a majority of Albertans (51%). In contrast, the majority of respondents indicated that each of the other nine addiction problems needed either "some more services" or "a lot more services": sex (78%), cocaine (74%), work (71%), eating (71%), shopping (70%), video gaming (67%), alcohol (63%), gambling (63%), and marijuana (58%). These results reflect significant gaps in the perceived availability of treatment services from the perspective of prospective clients.

Self-Care Preferred Over Treatment. Among those who reported having a problem with one or more types of addiction, the overwhelming majority said that they chose to deal with it on their own. This preference for self-care indicates there may be value in adding self-management opportunities to some of the formal treatments available from treatment agencies and private therapists. It might also suggest that there is stigma associated with seeking treatment for addiction, or that there is a general lack of knowledge about where to go and how to access addiction treatment in Alberta.

Self-Reported Addiction Problems in Online Sample of 4,000 Albertans

Respondents were asked whether they had ever experienced a problem with addiction (Lifetime), whether they personally had experienced a problem in the past 12 months (Past Year), how many people they believed had an addictive problem (Perceived), and how many people they knew had experienced an addictive problem (Social Network) across 10 different addictive disorders. Adapted from Alberta Addiction Survey 2009: Summary Report. © Wild, Schopflocher, Hodgins, el-Guebaly, Patten and Colman. Reproduced with permission.



"One of the truisms in how people handle addictive behaviours is that they overwhelmingly prefer to handle them on their own. The conditions are highly stigmatized and our society does not look fondly on people that admit that they have addiction problems. So, most people try to self-manage their behaviour." **Cameron Wild, PhD**

PRESENTATION 14 – PART B

ALBERTA PREVALENCE PROGRAM: ALBERTA STUDY OF MENTAL HEALTH, ADDICTIONS, AND RELATED TREATMENT SERVICES (A-SMARTS)

By Cameron Wild, PhD

ABSTRACT: To date, there has been little research on characteristics of addiction treatment services across Alberta. To meet this need, the Alberta Study of Mental Health, Addictions, and Related Treatment Services (A-SMARTS) collected data from addiction treatment providers across the province to profile the nature of existing programs and services and their capacities, and identify gaps in services and areas of unmet need. A-SMARTS is an important first step in describing the current treatment system for people with addictions and concurrent disorders. The data will also be used as a baseline for documenting changes to this system over time. Future components of this research program will continue to explore these areas of service delivery.

Purpose. This study was not meant to provide a quality assessment of Alberta addiction treatment services. Instead, the study had four main objectives: (1) to describe the availability of treatment services for persons with specific addiction-related behaviours; (2) to identify unmet needs and service delivery issues; (3) to gauge the gap between supply and demand for services and the adequacy of staffing levels; and (4) to assess the work climate for staff and identify specific training needs.

Sample and Method. Three sub-groups of treatment providers were targeted for study within Alberta: program directors who manage mental health and addictions programs and services (53); front-line practitioners employed by such programs or services (517); and solo practitioners who provide independent services to persons with addictions or concurrent mental health disorders (55). The sampling frame was obtained from several sources, including programs and services identified via Internet searches and relevant programs and services funded or managed by Alberta Health Services. Data were collected via questionnaires between December 2009 and May 2010.

Range of Treatment Approaches. Of the 18 different approaches to clinical treatment that were assessed, 10 were used at least sometimes or more often by staff at over 70% of all programs in Alberta. The top 10 most commonly provided approaches include: substance abuse counselling (94%), relapse prevention (90%), brief intervention (84%), motivational interviewing (82%), anger management (82%), cognitive-behavioural therapy (CBT) (82%), solution-focused therapy (80%), 12-step facilitation (77%), harm reduction (74%), and trauma-related counselling (73%).

Proportion of Alberta Providers Who Report Treating Various Types of Addiction

Adapted from Alberta Survey of Mental Health, Addictions, and Related Treatment Services 2009: Summary Report.
© Wild, Schopflocher, Hodgins, el-Guebaly, Patten, & Colman.

Type of Addiction Problem	% of Directors of Treatment Programs	% of Solo Practitioners
Illicit drugs	94%	85%
Alcohol	94%	87%
Prescription drugs	90%	77%
Gambling	72%	67%
Tobacco	55%	59%
Eating disorders	26%	62%
Sex	26%	66%
Video gaming	22%	36%
Work	16%	47%

Services for Process Addictions. Respondents were asked whether they or their program or service provided treatment for a variety of addictive behaviour problems. The majority of respondents (85%) in all three groups provided services for alcohol and illicit drug addictions. In contrast, less than 25% of program directors and front-line practitioners provided services for addictions related to work, sex, video gaming, and eating disorders. Up to two-thirds of solo practitioners offered services for at least one type of process addiction.

Services for Special Populations. On average, only 29% of respondents provided targeted services for persons with HIV/AIDS; seniors; gay, lesbian or transgendered people; or people with severe and persistent mental illness. In addition, 80% of service providers offered treatment only in English. Services in French or Cree languages were offered by a small number of providers.

Clinical Follow-Up. Half of the program directors indicated that their program attempts to contact clients after they are discharged for clinical follow-up. However, only a quarter of solo practitioners reported doing so. This suggests that a large proportion of clients in Alberta do not receive any sort of follow-up after they complete an episode of treatment.

Concurrent Disorders. About two-thirds of providers offered services for concurrent disorders (i.e., for clients presenting for treatment with an addiction and a mental illness). A consensus among respondents was that while clients with concurrent disorders tend to require more time and effort to treat, they are able to effectively participate in peer-support recovery programs available in the community. Many felt a need for further training in concurrent disorders, particularly in evidence-based treatment practices, diagnostic assessment interviews, and medication issues.

Service Demand Exceeds Supply. Respondents perceived that the number of clients using mental health and addiction service providers is increasing in Alberta. More than half of all respondents reported that their caseloads were increasing and they no longer have as much time to spend with clients. Two-thirds of program directors and half of solo practitioners indicated that more people came to their programs than they had resources for, indicating that demand is exceeding the current supply of services. Furthermore, about half of program directors indicated a shortage of counsellors to meet their needs, even though in the previous year, the average number of employees hired was 50% greater than the average number of employees terminated.

Staffing Issues. Despite a heavy workload, addiction treatment providers typically had positive attitudes regarding their work and were satisfied with their job climate, especially solo practitioners. Solo practitioners also had less interest in leaving their jobs compared to front-line practitioners (6% vs. 12%, respectively). Although job satisfaction was high, almost half of program directors and front-line practitioners indicated that staff members often exhibit signs of stress that negatively affects work performance. In contrast, only about one in six solo practitioners indicated high levels of work-related stress.

PART 5

Implications for Practice and Policy

The foundational knowledge shared by the research and clinical experts at the RFA Symposium represents decades of careful study and pragmatic insights that have major implications for our understanding of and approach to treating people with addictions. This part of the report highlights the implications for clinical practices and policy development in Alberta.

Implications for Practice

Clinical Treatment

Experts now realize that addiction is a chronic, relapsing brain disease with a complex etiology and clinical course that demand a more sophisticated approach to treatment than is currently provided. PHPs that use a chronic disease management approach have more than doubled the success rates of the best episodic services, and report success rates as high as 85% over five years. These programs use a holistic model that includes qualified service providers, a progression from more intensive to less intensive care settings, case management, family-centered care, and long-term monitoring to manage relapse. The success of the PHP model indicates that it is possible to improve outcomes in addiction treatment by adopting elements of the chronic care approach and strengthening linkages across the continuum of care. This model can be used as a gold standard that clinical programs in other contexts can emulate.

With the acknowledgement that the seeds of addiction can be sown early in development, while the brain is developing and long before the disease manifests, experts now agree that addiction can occur in many forms, including behaviours. With this in mind, standards for clinical care should include the ability to assess and treat both substance and process addictions and their simultaneous occurrence and interaction within a single patient. The frequent overlap of mental health disorders (particularly depression) and medical conditions with addiction also indicates the need to more functionally integrate addiction treatment services with the provision of mental and other health services.

"One lesson we have learned about the neurology of addiction is that detoxification isn't treatment, it's detoxification. The brain is organized in a way that withdrawal is in a different part of the brain than the attachment to drugs. So, even in the brain, you can chemically change the withdrawal centre with detox, but it doesn't change the addiction."
Mark S. Gold, MD

Recognizing the impact of early childhood experiences, including growing up in a home with an addicted parent, on the development of addiction opens up a variety of programmatic enhancements that could be put in place to help break the intergenerational cycle of addiction. Specialized educational and parenting-skills training programs for mothers and fathers with an addiction could be added to existing treatment programs to help foster closer and more positive relationships with their children, and stronger family relationships overall. More generally, since addiction affects every member of the family, it is important to include family members in the treatment process and ensure that each family member has access to services that support his or her own healing and recovery.

Treatment Settings

The environment in which addiction services are delivered is an important aspect of treatment that can affect access to services and treatment outcomes. A combination of stand-alone specialty clinics, residential facilities, and individual practitioners form the points of contact most commonly accessed today in Alberta. One innovative staffing model to consider in addition to these resources is locating the addiction professionals and treatment programs onsite within medical centres and primary care clinics, as has already been done successfully with some mental health services. This co-location model breaks down some of the practical barriers to accessing care locally and also helps to normalize the addiction patient, which in turn reduces the stigma toward addictions.

Treatment providers should also assess their physical facilities and operational procedures and policies as to whether they meet the needs of their specific clientele. Research shows that men and women have different needs when undergoing addiction treatment, as do patients with a history of trauma and some specific cultural groups. Just as the population of people with addiction problems is diverse, so should be the options for treatment.

Starting Early with Prevention and Intervention

In addition to treating those who are already affected, it is critical to understand the risk factors leading to the development of addiction so they can be monitored and mitigated wherever possible. A fundamental part of taking a public health approach to disease prevention includes widespread screening to identify those most at risk so that appropriate steps can be taken early on to prevent the development of disease. This approach is now being used for other common and costly chronic health conditions such as hypertension and diabetes. Scientifically validated screening and assessment tools for addictions already exist and could be adopted for use in many settings, such as schools, workplaces, and various points of entry to the health care system to help identify individuals in need of services.

"The integration of mental health and addictions within the province is challenging because they've tended to work in silos and exist quite separate and apart from each other. So bringing them together in that regard is going to require more creativity at a management level."

Participant

The significant impact early adversity can have on the development of addiction indicates that children who experience toxic stress also represent an at-risk population that may need additional services to help mitigate the chance of developing an addiction or other mental health problem later in life. Providing general supports for parents and families is also important in developing a broad-based addiction prevention platform. Strong and healthy family relationships can help mitigate the impact of childhood toxic stress, and provide children with the best possible support network for their growth and development through adolescence and into adulthood.

Implications for Policy

Policy and Funding Priorities

Understanding the biological and developmental nature of addiction has significant implications for developing policies and directing public and private resources to more effectively support addiction prevention, treatment, and long-term recovery. Recognizing that addiction is a chronic disease rather than a failure of personal will can help spur no less than a transformation of the current system of addiction services in Alberta from an acute to a chronic care model. This will not only improve outcomes for people already in treatment, it can help prevent the development of addiction through early identification and prevention efforts. The epidemiologic evidence shows startlingly high levels of addiction in its many forms in Alberta's general population, but a recent survey of provincial treatment providers indicated that there are relatively few services available for people with process addictions other than gambling. These data show a significant gap in addiction services for many Albertans, and that services for process addictions are needed in this province. Providing an opportunity for all Albertans to achieve healthy recovery regardless of the type of addiction is a wise investment that will help foster a healthier and more prosperous society.

Although there are many ways in which policies and resources can help support a more comprehensive and high-quality addiction treatment system, the fact remains that prevention efforts generally cost less and are more effective in supporting a healthy and prosperous society. Research shows that adverse experiences and toxic stress, even when experienced very early in childhood, can have a significant impact on the development of addiction later on in life. Yet many addiction prevention efforts focus on preventing risky alcohol or drug use in adolescents and young adults, long after the events that help shape life trajectories have occurred. We now know that there are other earlier opportunities to intervene. Mitigating the effects of early childhood adversity can significantly enhance the impact of addiction prevention and intervention efforts and should be part of a comprehensive addiction prevention platform for Alberta.

"The adult who is in an addiction treatment program got there for many reasons. And some of the reasons are because of early developmental processes."
Bryan Kolb, PhD

"So we have begun to ask the question: why not take what works and what's proven to work – at least in some populations, like with physicians – and see where the connections are and how to apply it to other populations?"
Michael Kaufmann, MD

"One of the things that we've discovered is the need for a skill set. We have the knowledge piece, but what is my skill as a practitioner to use this knowledge to help a family? So, we've started to deal with improving the professional development and training of nurses."
Participant

Evaluation and Quality Improvement

A fundamental change is needed in terms of how addiction treatment is evaluated for its success or failure. The expectation that a brief episode of treatment will produce long-lasting remission of symptoms after the treatment is stopped suggests that the goal of treatment is to "cure" addiction. This is an outdated concept that is not supported by clinical or scientific evidence. Furthermore, this expectation leads to the widespread and erroneous perception that addiction treatment does not work. Patients with other chronic conditions such as diabetes or hypertension are expected to worsen when their condition is not actively and consistently managed; it is the same with addictions. Addiction treatment is effective if it is provided in a chronic care model, and this should be reflected in evaluation frameworks that assess patient outcomes.

Given that the current demand for addiction services in Alberta generally outstrips the supply, our resources will need to be spent wisely in order to achieve better treatment outcomes from existing services. Proven methods of process improvement can be used to make small changes in key areas of clinical service delivery that lead to large gains in overall program effectiveness. Data collection and management systems are needed to support decision-making at the client, program, and system levels. These innovations will greatly enhance our ability to design and implement services that meet the needs of all Albertans.

Training of Professionals

Despite the magnitude of the problem, addiction remains profoundly under-diagnosed and under-treated. One reason for this situation is that the complexity of addiction and its treatment is largely misunderstood. The signs and symptoms of addiction are often missed when individuals seek care for other health problems. In order to provide the best care possible, health care professionals need to be equipped to screen for and identify possible addiction, and facilitate treatment options including assessments and referrals for their patients. Other professional groups that represent points of entry to clinical care, and who could thus benefit from a better understanding of addiction prevention, intervention, and treatment, include social workers, teachers, family courts, child protection services, and criminal justice and corrections.

Public Attitudes Toward Addiction

The preliminary results of the FrameWorks Institute's cultural models research indicates that Albertans hold many different and conflicting views on what addiction is, what causes it, and how it should be treated. By improving the public's understanding of the science of addiction, Albertans will have a more robust way of thinking about the problem that will lead to more support for appropriate interventions. This will also provide a common framework of understanding for people working in the field, and help a disjointed system move forward together.

PART 6

Resources

A goal of the Symposium was to create greater access to scientific research and related knowledge-transfer materials. This part of the report identifies additional resources available to support addiction treatment and recovery.

Resources at the RFA Symposium Website

The website for the Symposium has a variety of useful documents and other resources that can be accessed by the participants. The web portal can be found at http://rfa.banffcentre.ca. Information will also be available through the Alberta Family Wellness Initiative's new website, www.albertafamilywellness.org.

A partial list of RFA Symposium resources includes:

- PDF versions of the full slide decks for all of the Faculty presentations.
- Video recordings of the Faculty delivering their live presentations.
- Online Community Forums – News, community, chat, photos, and more for the Symposium participants.
- Learning Teams – A part of the site dedicated to each of the participant groups.

Other Resources for Symposium Participants and the Public

- Organizations and their websites (see Appendix 5).
- Knowledge-Transfer Reports of scientific research written for professional audiences and books (see Appendix 6).

Closing Comments

Addiction is one of the most prevalent and costly health conditions affecting our province and all of Canada. The Recovery from Addiction Symposium opened the door to new and more effective strategies to better support individuals with addiction and to recognize its true influence on families and society. Science now shows us that addiction can be prevented, it can be treated, and people can and do recover – but it can't be fully cured.

Care for addiction requires both intensive holistic treatment and long-term support. As we have learned, recovery from addiction is a complex and dynamic process that takes many years and requires healing of the brain, body, and behaviour. It also takes a change of mindset to release its sufferers from social stigma and discrimination – sometimes even from the people who care for them – to risk asking for help to get on a path of recovery.

The Symposium succeeded in bringing together a distinguished panel of experts in the scientific study, research, and clinical practice of addiction pathogenesis, treatment, and recovery. These researchers and clinicians shared their knowledge and insights with a diverse and caring group of more than 100 professionals from the research, policy, and clinical practice sectors of addiction and mental health. This foundational knowledge will be further enhanced through later use of the many educational resources generated from the Symposium materials (identified in this summary report and available on the RFA Symposium website). Resources from the EBBD Symposium will also be of great foundational assistance. And while knowledge is needed to understand, it is the will to act on the knowledge that makes a difference.

Evaluation Highlights

Ninety of the participants provided evaluative feedback about their Symposium experience in an exit survey. Below are some of the key findings from these data.

Plenary Presentations. Over 90% of participants responded that they "agreed" or "strongly agreed" that the morning plenary presentations were well organized, evidence-based, relevant to their work, met the stated objectives, and were free of commercial bias. What was even more impressive was that almost three-fourths of these ratings were in the highest-possible positive category.

Clinical Workshops. The afternoon interdisciplinary workshops with Clinician Leaders for the four cohort groups were also evaluated very positively. On average, between 89 and 97% of the participants considered the workshops well organized, evidence-based, relevant, meeting objectives, free of commercial bias, and helpful as a tool to connect with members of the cohort group.

Learning Teams. Participants were also extremely pleased with their small group Learning Team experiences. Across six evaluation questions, 98% of the participants provided positive ratings. Thus, virtually all of the participants felt the Learning Team sessions were valuable, helped them understand the symposium content in terms of application in multiple contexts, and helped them build relationships.

The many workshops and small group meetings during the week in Banff created opportunities for meeting new colleagues and collectively developing new ideas to help advance addiction research, policy, and practice across the province. This is perhaps the most significant outcome of the 2010 RFA Symposium as it provides a firm foundation for driving future action in Alberta.

Participant Comments

Comments by the participants were generally favourable. For example, "fantastic event," "couldn't have been better," "thanks so much," and "I can't wait until next year," were found throughout the evaluations. Several individuals also felt that the Learning Team sessions were the best part of the Symposium. Acknowledging the full schedule, many of the participants wished for more free time during the week to allow for rest, rejuvenation, and private reflection on all that they were learning.

Other specific comments from individual participants are provided below:

"We've all been doing what we've been doing for a lot of years. But the exposure to the science and the variety of different opinions and providers has challenged us to take a fresh look at what we're doing and what can we do to provide services that are more current, relevant, and evidence-based."

"I have the little booklet for the Symposium that has bios and pictures of everybody and there's like 120 people in it. I've looked through it and I thought, Oh yeah, I met that person, I met that person, and so on. I met 46. I didn't know anybody before I came here. So now I have 46 people that I feel totally comfortable calling so that we can link up. I think that's the beauty of this kind of a Symposium."

"It was hard initially just to get to know everybody and discover what they were doing, where they were functioning and how we can connect. However, as soon as we found the time to sit down and discuss things with each other, we found there are enormous connections. But it takes a while to do this. You can't do it over the Internet or e-mail. You really have to be face-to-face and you have to have these discussions."

"A benefit of the integration of Alberta Health Services is that now when we want to spread something, we can spread it across the whole system and beyond because we are one system. So rather than working in all kinds of isolated pockets, we can do this together. We really are one and I think we're beginning to feel like we are one."

"I was impressed with watching different people talk to each other over time and in very short order be able to come up with working plans. That's an extraordinary accomplishment for a group that is as diverse as this."

"What an opportunity for all of us. I have not heard anyone say this was a waste of time. It's a gift. It really was a gift to be here."

"Absolutely phenomenal. You can see how far people have come from when they arrived Sunday to where they are now on Friday. It's been very intensive, too. They've been totally focused all week and yet they have had to take it to a pragmatic level and to commit to change. I think it has been a huge catalyst and there is enough of a critical mass that this will make a difference."

"It is a three-year process. So people will have to come back and tell each other what worked and also what happened when it got derailed and did not work. Those are important things to learn as well."

"It's been an investment made by everyone - first by the organizers and now by the participants with their effort. Where else in your career have you ever been sent away for a week, all expenses paid, to a lovely location, just to immerse yourself in learning and connecting? It's a pretty amazing opportunity."

"You know what? We're all champions. It's not they who do this work; it's us who do this work. Every time I talked to somebody this week, it was about how can we work together to get this done. And that's why we built our networks during this week to help make it happen."

"After coming from years of working where there seems no solution, it is helpful to come to something like this and be able to now say, 'Yes, I can make a difference.' It's been inspiring being here and that is so important. I am going back to work feeling much more hopeful."

"I appreciated the relational piece – the opportunity to actually listen to each other and form new relationships and create that space to move forward in more collective ways. It was very validating."

"I found it really stimulating being here this week. I made so many contacts that I would not have made at other conferences because at this Symposium everyone is aligned with the same goal. It's just wonderful."

Faculty Comments

"This Symposium is trying to bridge the gap between the research scientists who have the knowledge and the people who work on the front lines who are providing addiction care." **Glenda MacQueen, MD, PhD**

"This Symposium is just fantastic because by bringing people together we can translate what's known in science and there's a lot. Most people don't understand that we have a really good understanding of addiction neurobiology."
Mark S. Gold, MD

"I think there's a tendency for people to be simple minded and say, 'Just cure the alcohol addiction and everything's good.' But it's not that way. There is no simple solution. There's a lot of people with all kinds of addictions and it's all related to the same neurological mechanisms."
Bryan Kolb, PhD

"I think it's probably one of the most innovative strategies I've seen. Because our biggest struggle is to get people on every level together, which then allows for dialogue."
James C. Montgomery, MD

"This meeting's been wonderful for a variety of reasons. Not only for the presentations, but also for the conversations among the participants. As we start hearing what other people are thinking and feeling and we begin to understand a bit more about what others do, we begin to see that we can learn so much from each other." **David Gustafson, PhD**

"The best way I could describe the week is: wow! It is really something to be able to bring together over 100 people in the field of addictions and involve some of us in chronic disease and primary care as well, to address the issue of addictions for Albertans and their families. We've had tremendous learning this week and tremendous networking."
Richard Lewanczuk, MD

"I think the Norlien Foundation is really quite unique in bringing people together like this to raise awareness and implement the beginnings of change in delivery."
Reid Finlayson, MD

"I see the event here as a catalyst. It performs a facilitative role to create change and it's something that is very hard to do within the different sides of government, academia, and service delivery. But it doesn't have to be a destruction of the system. It can be a reconstruction of the system."
Peter Butt, MD

"This is the exact way to encourage change in the system. Getting the policy makers and front-line practitioners and the research community in the same room is the only kind of communication and conversation that will move agendas forward." **Cameron Wild, PhD**

"I think something very interesting has happened here. The introduction of a chronic care model and efforts to integrate not just addiction, not just mental health, but all elements of healthy living into a better quality of life for people in Alberta has focused the group towards a common goal of creating a true continuum of care. I've been very excited about it." **Thomas McLellan, PhD**

"There seems to be a real understanding that to change a system it is a three- to five-year process. It's not a short-term thing. It's not one conference. It's working on multiple levels, multiple time-frames, and with multiple groups of people. You've got to get everybody together so they're all rowing in the same direction. That's how you change. I think this approach has the potential to really change the system here in Alberta." **Stephanie Covington, PhD**

Appendix I

SYMPOSIUM PEOPLE: *Development & Management*

The People Who Developed the Symposium

In addition to the sponsors, the Symposium involved a great number of people in its development, planning, and delivery. Major groups involved these activities were the Senior Leadership Team and the Design Committee.

Senior Leadership Team

A small group of key individuals representing the scientific and policy areas of early child development and family health directed the development of the Symposium's overall structure and format. The Senior Leadership Team included:

- Barry Andres, MSc, Executive Director, Rehabilitation and Recovery, Alberta Health Services, Edmonton, AB
- Elaine Broe, MA, Director, Learning Solutions, Leadership Development, Banff Centre, Banff, AB
- Joe Frascella, PhD, Director, Division of Clinical Neuroscience and Behavioral Research, National Institute on Drug Abuse, Washington, DC
- Glenda MacQueen, MD, PhD, FRCPC, Professor and Chair, Department of Psychiatry, University of Calgary
- Garrett O'Connor, MD, President, Betty Ford Institute, Rancho Mirage, CA
- Connie Pechura, PhD, Executive Director, Treatment Research Institute, Philadelphia, PA
- Cathy Pryce, RN, MN, Vice President, Addiction and Mental Health, Alberta Health Services, Calgary, AB
- John Sproule, Senior Policy Director, Institute of Health Economics, Edmonton, AB
- Franco Vaccarino, PhD, Principal, University of Toronto Scarborough, Scarborough, ON
- Paula Tyler, Executive Director, Alberta Family Wellness Initiative, Norlien Foundation, Calgary, AB
- Nicole Sherren, PhD, Scientific Director and Program Officer, Symposium Lead, Norlien Foundation, Calgary, AB

Design Committee

The development of the Symposium format and events was led by members of the Design Committee:

- Laurie Beverley, RN, BN, Executive Director, Community Treatment and Support, Addiction and Mental Health, Alberta Health Services, Calgary, AB
- Elaine Broe, MA, Director, Learning Solutions, Leadership Development, Banff Centre, Banff, AB
- Garrett O'Connor, MD, President, Betty Ford Institute, Rancho Mirage, CA
- Ron Lim, MD, CCFP, CCSAM, ABAM (Diplomat), Clinical Assistant Professor, Department of Psychiatry, University of Calgary
- Glenda MacQueen, MD, PhD, FRCPC, Professor and Chair, Department of Psychiatry, University of Calgary
- Tuxephoni Winsor, RN, BN, Education Consultant II, Addiction Program Education Initiative, Alberta Health Services, Calgary, AB

The Norlien Foundation People

- Nancy Mannix, JD, Chair and Patron

The Norlien Staff

- David Elton, PhD, President
- Paula Tyler, Executive Director
- Nicole Sherren, PhD, Scientific Director and Program Officer, Symposium Lead
- Kate Pedlow, LLB, General Counsel and Program Officer
- Kim Ah-Sue, MA, Program Officer
- Marisa Etmanski, Director of Edmonton Office
- Heidi Dunstan, Executive Assistant and Special Projects
- Arlene Weidner, RN, Consultant
- Ralph Strother, MD, Consultant
- Kate Stenson, Research Assistant
- Laura Jones, Consultant

Appendix 2

SYMPOSIUM PEOPLE: *Participants by Learning Teams*

AREA 1: Research Priorities

FOCUS AREA: Develop priority needs for an addiction research and evaluation agenda(s) that incorporates the influence of epigenetics, neurodevelopment, and behavioural experiences on the development of subsequent disease, and also supports the needs of policy and practice.

LEARNING TEAM 1 – Research Priorities

Laurie Beverley, RN, MN, Executive Director, Community Treatment and Support, Addiction and Mental Health, Alberta Health Services (Calgary)

Lorraine Breault, PhD, Professor, Psychiatry and Associate Dean, Division of Community Engagement and Social Responsiveness (CESR), University of Alberta (Edmonton)

Carol Connolly, RN, MN, Director, Knowledge Facilitation and Exchange, Quality Practice and Partnerships – Knowledge Management, Alberta Health Services (Whitecourt)

Carol Ewashen, PhD, RN, Associate Professor and Associate Dean, Graduate Programs, Faculty of Nursing, University of Calgary (Calgary)

The Honourable Sheila Greckol, LLB, Judge, Court of Queen's Bench (Edmonton)

Gerri Lasiuk, PhD, MN, Assistant Professor, Nursing, University of Alberta (Edmonton)

Mel Slomp, MA, Director, Knowledge and Strategy Community Treatment and Support, Addiction and Mental Health, Alberta Health Services (Edmonton)

Angus Thompson, PhD, Research Affiliate, Institute of Health Economics (Edmonton)

AREA 2: Co-ordination of Research, Policy, and Practice Areas

FOCUS AREA: Ensure effective collaboration among the research, policy, and practice areas in order to support addiction prevention, treatment and, recovery for all Albertans.

LEARNING TEAM 2 – Collaboration of Research, Policy, and Practice Areas

Shiela Bradley, BA, Manager, Addiction Prevention, Addiction and Mental Health, Alberta Health Services (Calgary)

Doug Brady, Executive Director, Edmonton Drug Treatment and Community Restoration Court (Edmonton)

Alana Cissell, Program Manager, Community Addiction and Mental Health, Addiction and Mental Health – Central Zone, Alberta Health Services (Ponoka)

Lorelei Higgins, BA, Issue Strategist, City of Calgary (Calgary)

David Hodgins, PhD, Professor, Clinical Psychology, University of Calgary (Calgary)

Annette Lemire, MSW, RSW, Manager, Community Health, Alberta Health and Wellness (Edmonton)

Sandi Roberts, MEd, Educational Leader, Safe Communities Secretariat, Justice and Attorney General, Government of Alberta (Edmonton)

LEARNING TEAM 3 – Collaboration of Research, Policy, and Practice Areas

David Cawthorpe, PhD, Coordinator, Research and Evaluation, Child and Adolescent Mental Health and Psychiatry, Alberta Health Services and Adjunct Assistant Professor, Community Health Sciences and Psychiatry, University of Calgary (Calgary)

Brent Doney, BA, Executive Director, Community Corrections and Release Programs Branch, Alberta Solicitor General and Public Security (Edmonton)

Nancy Fraser, MSc, Executive Director, Acute and Tertiary Care, Addiction and Mental Health, Alberta Health Services (Edmonton)

Daniel Scott, RN, MN, Education Manager, Information and Evaluation Services - Edmonton Zone, Addiction and Mental Health, Alberta Health Services (Edmonton)

Margaret Shim, PhD, SafeCom Leader, Alberta Health and Wellness, Alberta Justice and Attorney General (Edmonton)

Edith Zuidhof-Knoop, MA, Manager, Hinton and Area Addiction and Mental Health, Alberta Health Services (Edson)

AREA 3: Integration of Services in Care Continuum

FOCUS AREA: Identify strategies to ensure integration between and among services across the continuum of care to ensure smooth movement of patients and families throughout their care.

LEARNING TEAM 4 – Integration of Services in Care Continuum

Barry Andres, MSc, Executive Director, Rehabilitation and Recovery, Addiction and Mental Health, Alberta Health Services (Edmonton)

Jennifer Bishop, RN, BScN, Unit Manager, Concurrent Disorders Enhanced Services, Adult Inpatient Program, Addiction and Mental Health – Central Zone, Alberta Health Services (Ponoka)

Amanda Hlushak, BSc, EMT, Research Coordinator and Paramedic, Emergency Medical Services-Edmonton Metro, Alberta Health Services (Edmonton)

Thomas Mountain, BA, Manager, Addictions, Addiction and Mental Health – South Zone, Alberta Health Services (Lethbridge)

Rod Olfert, Knowledge Broker, Canadian Centre on Substance Abuse (Ottawa)

John Scholten, MA, RPsych, Program Consultant, Concurrent Disorders, Addiction and Mental Health, Alberta Health Services (Calgary)

Silvia Vajushi, MSW, RSW, Executive Director, Community Health, Alberta Health and Wellness (Edmonton)

LEARNING TEAM 5 – Integration of Services in Care Continuum

Allan Aubry, Director, Addiction and Mental Health, Edmonton Zone, Alberta Health Services (Edmonton)

Blayne Blackburn, MSW, RSW, Manager, Addiction Recovery Centre and Opiod Dependency Program, Edmonton Zone, Addiction and Mental Health, Alberta Health Services (Edmonton)

Trevor Inaba, RSW, MEd, Director, Addiction and Mental Health, South Zone-West, Alberta Health Services (Lethbridge)

Fay Orr, BA, BAA, Mental Health Patient Advocate, Alberta Mental Health Patient Advocate Office (Edmonton)

Cathy Pryce, RN, MN, Vice President, Addiction and Mental Health, Alberta Health Services (Calgary)

Beverley Thompson, BRE, RN, CPMHN(C), Director, Addiction Services, Claresholm and Southern Alberta Forensic Psychiatry Centres, Alberta Health Services (Calgary)

Doug Urness, MD, FRCPC, Clinical Assistant Professor, Community Health Sciences, University of Calgary (Calgary)

AREA 4: Integration of Evidence Across Service Settings

FOCUS AREA: Identify ways to ensure evidence is integrated across service settings.

LEARNING TEAM 6 - Collaboration Between Academia and Policy and Practice Areas

Susan Connelly, MA, RSW, RPsych, Director, Justice Services, Acute and Tertiary Care, Addiction and Mental Health, Alberta Health Services (Edmonton)

Susan Gloster, MHSM, Executive Director, Addiction and Mental Health-South Zone, Alberta Health Services (Lethbridge)

Richard Hibbard, MD, Clinical Department Head, Addiction and Mental Health-Edmonton Zone, Alberta Health Services and Head of Psychiatry, Royal Alexandra Hospital (Edmonton)

Tracy MacDonald, MA, Manager, Addiction and Mental Health-Edmonton Zone, Alberta Health Services (Edmonton)

Susan Rawlings, BN, MBA, Manager, Standards and Clinical Pathways, Addiction and Mental Health, Alberta Health Services (Calgary)

Shawn Steggles, PhD, Director, Psychosocial and Spiritual Resources, Cross Cancer Institute (Edmonton)

Michael Trew, MD, Senior Medical Director, Addiction and Mental Health, Alberta Health Services (Calgary)

The Honourable Darlene Wong, BA, LLB, Judge, Edmonton Drug Treatment and Community Restoration Court, Criminal Division, Provincial Court of Alberta (Edmonton)

AREA 5: Primary Care Practice Settings

FOCUS AREA: Incorporate Symposium content into primary care settings.

LEARNING TEAM 7 – Primary Care Practice Settings

Pauline Baker, RN, Community Care Coordinator, Pediatric Home Care, South Team, Alberta Health Services (Calgary)

Terrie Brandon, MD, Physician Lead, Mental Health, Calgary West Central Primary Care Network, Alberta Health Services (Calgary)

Nariman Marzouk, MD, Resident, Family Medicine, University of Calgary (Calgary)

Dennis Pusch, PhD, RPsych, Co-Leader, Behavioural Health Program, Calgary West Central Primary Care Network, Alberta Health Services (Calgary)

Iris Rudnisky, RN, MEd, Faculty Lecturer, Nursing, University of Alberta (Edmonton)

Jason Shenher, BComm, MBA, Executive Director, Mosaic Primary Care Network, Alberta Health Services (Calgary)

LEARNING TEAM 8 - Primary Care Practice Settings

Charles Cook, PhD, Quality Analyst, Chinook Primary Care Network, Alberta Health Services (Lethbridge)

Irene Gladue, BA, BSW, Site Manager, Northern Addictions Centre, Alberta Health Services (Grande Prairie)

Stacy Hodgson, MSW, RSW, RPN, Director, Community Addiction and Mental Health, Addiction and Mental Health-Central Zone, Alberta Health Services (Red Deer)

Sandra Hutchings, MSW, Mental Health Counselor, Red Deer Primary Care Network, Alberta Health Services (Red Deer)

James McAndrew, Project Coordinator, Chinook Primary Care Network, Alberta Health Services (Lethbridge)

Peggy Riches, BScN, MBA, Executive Director, Chronic Disease – Primary, Community and Rural, Primary Care and Chronic Disease Management, Alberta Health Services (Calgary)

AREA 6: Clinical and Professional Education and Training

FOCUS AREA: Incorporate Symposium content into clinical and professional education and training.

LEARNING TEAM 9 – Clinical and Professional Education and Training

Jacqueline Abbott, BMus, LLB, Crown Prosecutor, Calgary Drug Treatment Court (Calgary)

Pierre Berube, MEd, RPsych, Executive Director, Psychologists' Association of Alberta (Edmonton)

Nancy Brager, MD, FRCPC, Associate Professor, Psychiatry, University of Calgary and Chair, Psychiatry Test Committee, Medical Council of Canada (Calgary)

Ann Crabtree, MD, Consulting Physician, Calgary Health Region Chronic Pain Centre (Calgary)

Yvonne Hayne, PhD, MEd, Senior Instructor, Nursing, University of Calgary (Calgary)

Todd Hill, PhD, Director, Behavioural Medicine, Department of Family Medicine, University of Calgary (Calgary)

Ruth Kalischuk, RN, MEd, PhD, Professor and Associate Dean, Nursing, Faculty of Health Sciences, University of Lethbridge (Lethbridge)

LEARNING TEAM 10 – Clinical and Professional Education and Training

Susan Canning, BSc, Manager, Tobacco Reduction, Addiction and Mental Health, Alberta Health Services/ Health Promotion, Disease and Injury Prevention (Edmonton)

Catherine Peirce, MA, Project Manager, e-Learning, Association of Faculties of Medicine of Canada (Ottawa)

Wanda Polzin, RSW, MA, EdD, Program Manager, CASA Child, Adolescent, and Family Mental Health (Edmonton)

Linda Roflik, Manager, Inpatient Psychiatry Unit, Medicine Hat Regional Hospital, Alberta Health Services (Medicine Hat)

Shirley Schipper, MD, Family Physician and Director, Residency Program, Department of Family Medicine, University of Alberta (Edmonton)

Louise Simard, QC, LLB, Member, Objectives Committee, Medical Council of Canada (Regina) and Senior Counsel, MacPherson Leslie & Tyerman (Regina)

Reynold Sookhoo, RN, BN, Director, Residential Services, CASA Child, Adolescent and Family Mental Health (Edmonton)

Signe Swanson, RSW, MSW, Director, Integrated Case Management, Seniors Health, Alberta Health Services (Camrose)

AREA 7: Prevention and Early Intervention

FOCUS AREA: Apply Symposium content, specifically epigenetics, neurodevelopment, and the biological embedding of behavioural experiences, to addiction prevention and early intervention services.

LEARNING TEAM 11 – Prevention and Early Intervention Services

Ron Beach, BSc, RPN, Prevention Consultant, Addiction and Mental Health, Alberta Health Services/Health Promotion, Disease and Injury Prevention (Coaldale)

Karen Bozocea, BA, MEd, Manager, Community Initiatives, Access and Early Intervention, Addiction and Mental Health, Alberta Health Services (Edmonton)

Cheryl Gardner, RSW, MSW, Manger, Clinical Operations Manager, Alberta Health Services (Calgary)

Florence Obianyor, MD, Resident (R2), Family Medicine Program, University of Calgary (Calgary)

Glen Raine, Addiction Counselor, Stoney Trail Wellness Centre (Black Diamond)

Jackie Smith, RN, BN, Family Counselor, Alberta Adolescent Recovery Centre (Calgary)

Wendy Tink, MD, CCFP, FCFP, Clinical Assistant Professor, Family Medicine, University of Calgary (Calgary)

Donna Vermillion, RN, BScN, FASD Program Coordinator, Tsuu T'ina Health Centre, (Tsuu T'ina)

AREA 8: Enhancing Treatment or Developing Specialized Services

FOCUS AREA: Enhance existing addiction treatment services or develop specialized services.

LEARNING TEAM 12 – Enhancing Treatment or Developing Specialized Services

Hazel Bergen, RSW, BSW, Associate Director, Enviros Wilderness School Association (Calgary)

Janet Chafe, MSW, RSW, Director, Child and Adolescent Addiction and Mental Health, Alberta Health Services (Calgary)

Suzie LeBrocq, BA, MPhil, Clinical Director, Aventa Addiction Treatment for Women (Calgary)

Bonnie Lee, RMFT, PhD, Assistant Professor, Addictions Counseling Program, Faculty of Health Sciences, University of Lethbridge, (Lethbridge)

Jim Marteniuk, MSA, RSW, Operation Manager, Addiction Centre/Network Program, Foothills Medical Centre, Alberta Health Services (Calgary)

Tony Temprile, Senior Manager, Youth Addiction Services, Alberta Health Services (Calgary)

LEARNING TEAM 13 – Enhancing Treatment or Developing Specialized Services

Rita Dahlke, MD, Health Director, CUPS Health and Education Centre/Calgary West Central Primary Care Network (Calgary)

Craig Featherstone, Executive Director, Thorpe Recovery Centre (Lloydminster)

Patricia Hanson, Program Manager, Rehab/Specialized Clinics, Child and Adolescent Mental Health Services – Edmonton Zone, Alberta Health Services (Edmonton)

Marilyn LaBrecque, RSW, Community Addictions Services Administrator, Addiction and Mental Health, Alberta Health Services (St. Paul)

Arya Sharma, MD, PhD, FRCPC, Professor of Medicine and Chair, Obesity Research and Management, University of Alberta and Medical Director, Edmonton Capital Health Regional Weight Wise Program (Edmonton)

Sharon Steinhauer, RSW, MSW, Coordinator, Diploma of Social Work, Blue Quills First Nations College (St. Paul)

AREA 9: Quality Improvement

FOCUS AREA: Support quality improvement in addiction programs and services through evaluation activities and performance measures.

LEARNING TEAM 14 – Quality Improvement

Tamara Austin, MA, Clinical Supervisor, Mental Health, Northern Lights Health Centre, Alberta Health Services (Fort McMurray)

Cindy King, MA, Manager, Adult Counseling and Prevention Services, Addiction and Mental Health - Edmonton Zone, Alberta Health Services (Edmonton)

Patrick McNulty, MA, Addiction Counseling Supervisor, Addiction and Mental Health - Central Zone, Alberta Health Services (Red Deer)

Anette Mikkelsen, BSc, MBA, Quality and Safety Initiatives Lead, Health Quality Council of Alberta (Calgary)

Korie-Lyn Northey, BA, RSW, Community Addiction Services Administrator, Addiction and Mental Health, Alberta Health Services (Grand Prairie)

Wayne Spychka, Senior Manager, Community Health, Alberta Health and Wellness (Edmonton)

Craig Staniforth, BA, Clinical Manager, Addiction Clinic Red Deer, Addiction and Mental Health - Central Zone, Alberta Health Services (Red Deer)

Liana Urichuk, PhD, Director, Information and Evaluation Services, Addiction & Mental Health - Edmonton Zone, Alberta Health Services, and Adjunct Associate Professor, Psychiatry, University of Alberta (Edmonton)

AREA 10: Client Outcomes

FOCUS AREA: Improve client outcomes through partnerships and strengthening linkages along the continuum of care.

LEARNING TEAM 15 – Client Outcomes

Lisa Barrett, RN, MN, Manager, Primary Care Support, Access and Early Intervention, Addiction and Mental Health, Alberta Health Services (Ponoka)

Cindy Fischer, MSW, Director, Health Promotion and Disease Prevention, First Nations and Inuit Health, Health Canada (Edmonton)

Kath Hoffman, Executive Director, Safe Harbour Society (Red Deer)

June McCrone-Jenkins, BEd, Aboriginal Programs & Policy Advisor, Aboriginal Community Initiatives, Government of Alberta (Edmonton)

Sue Newton, MN, Vice President and Operations Director, Health Upwardly Mobile, Inc. (Calgary)

Debbie O'Neil-Nugent, RN, Clinical Director, Edmonton Drug Treatment and Community Restoration Court (Edmonton)

Erin Partridge, BA, Acting Sergeant, Vulnerable Persons Unit, Calgary Police Service (Calgary)

Marnie Robb, PhD, Senior Policy Advisor, Aboriginal Relations, Government of Alberta (Edmonton)

AREA 11: Chronic Disease Management Model

FOCUS AREA: Implement activities that support a chronic disease management model for addiction treatment in Alberta.

LEARNING TEAM 16 – Chronic Disease Management Model

Donna Dupuis, MSW, RSW, Treatment Specialist, Calgary Drug Treatment Court (Calgary)

Linda Edney, MSW, RSW, Executive Director, Calgary Drug Treatment Court (Calgary)

George Harris, RPN, Director, Addiction and Mental Health, South Zone East, Alberta Health Services (Medicine Hat)

Debbie Hyman, MEd, Director, Clinical Services, Mosaic Primary Care Network (Calgary)

George McBride, MSW, Supervisor and Manager, Addiction Services, Adult Outpatient, Alberta Health Services (Calgary)

Stacey Petersen, MSW, RSW, Executive Director, Fresh Start Recovery Centre (Calgary)

Appendix 3

LEARNING TOOLS: *Learning Team Plans*

This Appendix presents sample summaries of the Fieldnotes Presentations from two of the Learning Teams.

"Each of the Learning Teams had the job during the week of trying to figure out how we might implement some of what we've heard and determine what may be useful in the field of addictions, to identify priorities, to identify ways in which they may work together in the coming year to advance the whole area, and to commit personally as well spreading the gospel so to speak, in the area of addictions."
Richard Lewanczuk, MD

LEARNING TEAM 1 (Research Priorities):

VISION

We have a vision that we want effective, evidence-informed, responsive addictions services for all Albertans. Our mission is to have a framework of research and evaluation that will incorporate the influences of epigenetics, neurodevelopment, and behavioural experiences on addiction across the continuum of services.

GOALS

Our goals are that want to create a framework for research that incorporates performance and outcome measures. We want to engage in an examination of existing research and evaluation frameworks to determine the essential components that exist already.

ASSETS

We have a number of assets. From the US we have the National Quality Forum, we have the Health Quality Council of Alberta, Alberta Addiction and Mental Health Research Partnership Program, Alberta's Health Research and Innovation Strategy, the Norlien Foundation, and the Institute for Health Economics. We feel that we have outstanding services throughout Alberta, not only that we have really competent and dedicated service providers, and we have really paid attention to that this week. We feel that we've got huge resources to draw upon already and we plan to use them.

BARRIERS

(1) The people who really are champions in this field could be a barrier if they are too busy. (2) A second barrier is our lack of a comprehensive organization for all of these services so that we all know about each other and it's easy to determine who's doing what and who's in the network of service providers. (3) We felt that a concise description of addiction and mental health services in Alberta would be extremely useful, which we don't have. (4) And not enough time and resources.

ACTION

We want to engage key partnerships and also create an expert consultation network and we don't care where the experts are located, we'll consult with them anywhere in the world. We also talked about setting up a modest research centre that would collect data for outcome evaluations through each agency that could be used in a systems approach for planning and evaluation and to influence policy decisions.

LEARNING TEAM 10 (Clinical And Professional Education And Training):

Our team challenge for the week was to integrate Symposium content into clinical and professional training. Our goal is to work collaboratively to promote and create awareness of a common language within and between disciplines in the area of educational competencies related to early brain development and addiction. Our goals and objectives: To create an on-line community to facilitate and share the existing information about the existing competencies in this area. To identify and catalogue the existing core competencies across a number of the disciplines – everything from medicine, social work, nursing, occupational therapy – and we would also like to identify gaps, intersections, linkages in the educational competencies within and between the disciplines. And finally what we're going to do is use our online community to share progress on our own personal strategies from this Symposium. I'm just going to take a quick second and show you our online community. This is the Canadian Health Care Education Commons. It's an environment that has collaborative working tools for communities like ourselves. This is a private group. Our members are listed down the side and what we can do is use the collaborative tools such as wikis, discussion forums, to stay in contact. I have agreed to act as the moderator for the group over the year so that we stay in contact and you can see that we created a couple of wikis already. Here's our assets, trends and barriers that have been identified, and you'll find them within here and you'll see that we represent a fairly diverse group. One of our key assets was the diversity of the group itself.

Appendix 4

LEARNING TOOLS: *Personal Strategies*

This appendix includes excerpts from individual participants' Personal Strategies to begin implementing or advancing the Symposium knowledge in their own workplaces. Below you will find selected responses to the statement, "My personal goals are:"

Alberta Government Participants

"Challenge my own views and learn from others about addictions and suitable responses."

"Conduct a survey of Symposium members, addictions services, and research applicable to Aboriginal people in Alberta."

"Initiate policies for an integrated and connected continuum of services that is relevant and supported within the larger community."

Alberta Health Services Participants

"Be an advocate for early intervention and prevention of the risks related to addiction within primary care services and mental health services."

"Become a person of influence in my work area and to share my resources with my team to further influence other systems in the province."

"Create addiction and mental health champions throughout the services delivery system."

"Create enhanced addiction and mental health services within Alberta's correctional facilities."

"Develop a plan to identify increased competency in trauma-informed counselling among addiction counselling."

"Develop relationships that will structure future discussions between primary care networks, chronic disease management, public health, children's ministry, and other partners."

"Examine current evidence-informed best practices in addiction care and to implement these practices into my work."

"Increase addiction client access to relevant medical care – physicians, psychiatrists, and pharmacotherapy."

"Improve client access through same-day drop-in scheduling option and institute a hand-off transition strategy."

"Measure access (wait time); measure info screening (identification of addiction/mental health/chronic disease); measure retention/engagement (no-shows); measure number of addiction-targeted AHS services."

"Utilize 'walk-through' quality improvement methods to identify opportunities to improve hand-offs and transition points."

"Work with already established mental health and addictions programs to link to Emergency Medical Services (EMS) and then refer our EMS patients to these services and case-manage our most frequent users provincially."

Alberta Justice Participants

"Educate drug court about chronic disease and trauma."

"Share the highlights from the richness provided by the experts at this Symposium with members of my drug court team."

"Share with women's addiction treatment staff the information on chronic disease and trauma."

Non-Profit Organization Participants

"Develop educational material that will be included as part of the orientation for all new staff."

"Identify embedded perceptions and assumptions that are not allowing the integration of mental health and addiction services on a full continuum of care."

"My goal is to use the PHP model to develop a long-term treatment model for our clients."

Primary Care Network (PCN) and Physician Participants

"Increase trauma awareness with all staff at our primary care networks."

"Investigate what gaps need to be closed throughout the system in order to move towards greater use of addiction screening in primary care."

"Prepare an educational event for our Behavioural Health Consulting team so they can take that knowledge back to the 400 family doctors they work with every week."

Provincial and National Professional and Policy Organizations

"Advise on research policy to AHS through the AHS advisory body on workplace mental health and through the addictions and mental health research partnership program on an ongoing basis."

"Bring the framed 'core story' of early adverse childhood experience and how it has negative impacts in mental health, addictions, and many physical illnesses and disorders."

University Clinical Education and Research Participants

"Co-ordinate and co-operate with family medicine residency training programs within Alberta to develop addictions curriculum incorporating Symposium content."

"Increase knowledge, skills, and readiness in our clinicians to respond to 'over-eating' from a prevention/early intervention approach."

"Involve medical students and residents in an addiction research activity."

"Review our curriculum and plan for changes to training in family medicine residency."

Appendix 5

ADDITIONAL RESOURCES: *Organizations & Websites*

Province Of Alberta

Alberta Health Services – Addiction & Substance Abuse. Website featuring a large collection of resources and other information about addiction and substance abuse including services provided by AHS.

http://www.albertahealthservices.ca/addiction.asp

Alberta Medical Association – Physician & Family Support Program. Association-sponsored program that serves Alberta physicians, residents, medical students, and their immediate families experiencing difficulties with substance abuse and addiction, psychiatric and mental health concerns, and a variety of other heath and work/life issues.

http://www.albertadoctors.org

Calgary and Area Addiction Services Guide. Online inventory of major addiction-related services in the Calgary area.

http://www.calgaryaddiction.com

KnowMo. A new knowledge-mobilization website, affiliated with the University of Alberta, that is designed as a hub for addictions and mental health information in Alberta.

http://www.knowmo.ca

Canada

Canadian Centre on Substance Abuse. Organization with a legislated mandate to provide national leadership and evidence-informed analysis and advice to mobilize collaborative efforts to reduce alcohol- and other drug-related harms.

http://www.ccsa.ca

Canadian Institutes of Health Research (CIHR) – Institute of Neurosciences, Mental Health and Addiction. A unique institute designed to address all aspects of research dealing with brain-mind relationships. It is a government organization that supports research on the functioning and disorders of the brain, the spinal cord, the sensory and motor systems, and the mind through prevention strategies, screening, diagnosis, treatment, support systems, and palliation.

http://www.cihr-irsc.gc.ca/e/8602.html

Connections Canada. An online knowledge exchange for professionals and agencies serving women with substance abuse issues. It is funded by the Canadian Institutes of Health Research (CIHR) and administered by McMaster University.

http://www.connectionscanada.ca

Ontario Medical Association – Physician Health Program and Professionals Health Program. Association-sponsored programs supporting Ontario physicians, veterinarians, and pharmacists. These programs work with individuals, families and workplaces experiencing difficulties with substance abuse and addiction, psychiatric and mental health concerns, stress, burnout, work-related conflict, and a variety of family issues.

http://www.phpoma.org

United States

A Parent's Guide to the Teen Brain. A new multi-media website for parents that presents research-based information on neurodevelopmental aspects of addiction risk for adolescents. This site was created by the Partnership at Drugfree.org, the Treatment Research Institute, and the WGBH Educational Foundation.

http://teenbrain.drugfree.org

Betty Ford Institute. A non-profit institute in California that focuses on best practices in clinical treatment and related research on alcohol and drug addiction. See the Sci-Mat part of the website for updates from the scientific research literature and other reports from their own conferences.

http://www.bettyfordinstitute.org

International Institute for Trauma and Addiction Professionals. Organization that provides clinical training for professionals in trauma and addiction and manages the Certified Sex Addiction Therapist (CSAT) Program. Also has a directory of CSAT-trained therapists.

http://www.iitap.com

National Institute of Drug Abuse. NIDA's mission is to apply science to drug abuse and addiction problems by supporting research across a broad range of disciplines and encouraging the dissemination and use of research to improve prevention, treatment, and policy.

http://www.nida.nih.gov

Network for the Improvement of Addiction Treatment (NIATx). A learning collaborative at the University of Wisconsin-Madison's Center for Health Enhancement Systems Studies. The centre supports payers and providers of addiction services by the application of process improvement techniques to improve the cost and effectiveness of the care delivery system.

http://www.niatx.net

Society for the Advancement of Sexual Health. Professional organization for the field of sexual addiction treatment. This website offers information and resources to those seeking support for sexual addiction.

http://www.sash.net

Substance Abuse and Mental Health Services Administration. Large federally sponsored organization focusing on prevention, treatment, and recovery issues for substance abuse and mental health problems. SAMHSA has eight major initiatives and a wealth of information and resources online.

http://www.samhsa.gov

Treatment Research Institute. A non-profit research and development organization located in Philadelphia, PA, dedicated to science-driven reform of treatment and policy in substance abuse.

http://www.tresearch.org

Appendix 6

ADDITIONAL RESOURCES: *Knowledge-Transfer Reports*

Reports of Scientific Research Translated for Professional Audiences

Each of the reports featured below is available online at no cost. See the website address under each report.

A National Survey of Services for Women with Substance Use Issues and Their Children in Canada in 2007: Challenges for Knowledge Translation. (2010). Niccols, A., Dobbins, M., Sword, W., Smith, A., Henderson, J., & Milligan, K. International Journal of Mental Health and Addiction, 8(2), 310-319. doi: 10.1007/s11469-009-9267-4

Available from: http://www.springerlink.com/content/u0350285qg9x2rr4/

Adolescent Brain Development and Drug Abuse. (2004). Winters, K. Treatment Research Institute.

Available from: http://www.tresearch.org/resources/specials/2004Nov_AdolescentBrain.pdf

Concurrent Substance Use and Mental Health Disorders: An Information Guide. (2004). Skinner, W., et al., Centre for Addiction and Mental Health.

Available from: http://www.camh.net/About_Addiction_Mental_Health/Concurrent_Disorders/Concurrent_Disorders_Information_Guide/concurrent_disorders_info_guide.pdf

Drug Addiction as a Chronic Medical Illness: Implications for Treatment, Insurance and Evaluation. (2000). McLellan A.T., O'Brien C.P., Lewis D.L., & Kleber H.D. Journal of the American Medical Association, 284, 1689–1695.

Available from: http://www.tresearch.org/resources/pubs/09_McLellan_JAMA.pdf

Integrating Appropriate Services for Substance Use Conditions in Health Care Settings: An Issue Brief on Lessons Learned and Challenges Ahead. (2010). Treatment Research Institute. [White Paper Summary of a Conference]

Available from: http://www.tresearch.org/centers/LessonsLearned.pdf

Maternal Substance Use and Integrated Treatment Programs for Women with Substance Use Issues and Their Children: A Meta-Analysis. (2010). Milligan, K., Niccols, A., Sword, W., Thabane, L., Henderson, J., Smith, A., & Liu, J. Substance Abuse Treatment, Prevention, and Policy, 5(21). doi:10.1186/1747-597X-5-21

Available from: http://www.substanceabusepolicy.com/content/5/1/21

Preventing Sexual Violence: An Educational Toolkit for Health Care Professionals. (2010). American Academy of Pediatrics. [An online resource]

Available from: http://www.aap.org/pubserv/PSVpreview/start.html

Substance Abuse Treatment: Addressing the Specific Needs of Women. (2009). A Treatment Improvement Protocol (TIP). Series 51 HHS Publication No. (SMA) 09-4426. Rockville: Substance Abuse and Mental Health Services Administration.

Available from: http://www.kap.samhsa.gov/products/manuals/tips/pdf/TIP51.pdf

Primary References For All Early Brain & Biological Development Symposium Presentations:
The "Working Papers" Series by the National Scientific Council on the Developing Child and the Harvard University Center on the Developing Child

Working Paper 1. Young Children Develop in an Environment of Relationships. (2004).

Working Paper 2. Children's Emotional Development Is Built into the Architecture of Their Brains. (2004).

Working Paper 3. Excessive Stress Disrupts the Architecture of the Developing Brain. (2005).

Working Paper 4. Early Exposure to Toxic Substances Damages Brain Architecture. (2006).

Working Paper 5. The Timing and Quality of Early Experiences Combine to Shape Brain Architecture. (2007).

Working Paper 6. Mental Health Problems in Early Childhood Can Impair Learning and Behavior for Life. (2008).

Working Paper 7. Workforce Development, Welfare Reform, and Child Well-Being. (2008).

Working Paper 8. Maternal Depression Can Undermine the Development of Young Children. (2009).

Working Paper 9. Persistent Fear and Anxiety Can Affect Young Children's Learning and Development. (2010).

Working Paper 10. Early Experiences Can Alter Gene Expression and Affect Long-Term Development. (2010).

A detailed 82-page summary report of the Early Brain & Biological Development Symposium is also available from the Norlien Foundation website in the section on Resources.

GLOSSARY

Addiction – A primary, chronic, neurobiologic disease with genetic, psychosocial, and environmental factors influencing its development and manifestations. It has a relapsing and remitting course, meaning that symptoms can return even after many years of sustained recovery. Addiction has historically been categorized into substance-related addictions, which include the abuse of tobacco, alcohol, and street or prescription drugs; and behavioural or process addictions, which include problematic use of gambling, food, sex, the Internet, and work.

Addiction Interaction Disorder – When more than one type of addiction exists in the same individual, these addictions can interact with each other and produce stereotypical patterns of behaviour. For example, co-existing addictions can exhibit cross-tolerance (simultaneous increases in each addiction) or withdrawal mediation (one addiction is used to blunt negative withdrawal symptoms of another).

Allostatic Load – The physiological consequences of chronic exposure to fluctuating or heightened neural or neuroendocrine response that results from repeated or chronic stress. Stressful situations and stimuli activate neural, neuroendocrine, and neuroendocrine-immune mechanisms that help the body prepare an appropriate response to threats. Over time, these mechanisms produce damage to biological tissues. This damage is called allostatic load; it is the cost of repeated stress on the body.

Autonomic Nervous System – A part of the peripheral nervous system that acts as a control system for visceral body functions. It affects heart rate, digestion, respiration rate, salivation, perspiration, diameter of the pupils, micturition (urination), and sexual arousal. Whereas most of its actions are involuntary, some, such as breathing, work in tandem with the conscious mind.

Brain Plasticity – A change in the structure, function, or organization of neurons in the brain in response to experiences.

Chronic Disease Management Model – A health care service delivery model that is currently used to manage chronic diseases such as diabetes and hypertension. The goal is to keep all patients in a given population healthier and disease-free for as long as possible. Key tactics of chronic disease management include screening and early detection, multi-disciplinary and holistic care teams, patient education and self-care, and ongoing case management.

Combining – A behaviour pattern that is a common feature of addiction interaction disorder in which simultaneous use of an addictive substance or behaviour leads to greater effects than use of either one alone.

Cross-Tolerance – A behaviour pattern that is a common feature of addiction interaction disorder in which there is a simultaneous increase in symptoms in two or more addictions. Cross-tolerance also refers to a resistance to the effects of one drug due to prior exposure to a similar drug. For example, someone who has developed a tolerance to the rewarding effects of cocaine will require a larger dose of amphetamine in order to experience the rewarding effects of this drug, even if he or she has never been exposed to amphetamine before.

Cycling – A common feature of addiction interaction disorder characterized by alternating patterns of use among two or more addictions.

Depression – A psychiatric condition involving a primary disturbance of mood that affects a person's thoughts, feelings, behaviours, and physical functioning. Symptoms include feelings of sadness, hopelessness, worthlessness, anxiety, guilt, irritability, fatigue, pain, and anhedonia that persist for a significant period of time.

Dopamine – A neurotransmitter in the brain that is involved in movement, motivation, and reward and also the neurotransmitter most closely associated with addiction. Neuroimaging studies show that habitual drug use alters the reward system in the brain such that dopamine levels are lower than normal.

Epigenetics – A gene is basically like any other molecule in the cell and thus is subject to physical modifications. These modifications alter the expression of the gene but not the underlying DNA sequence. Collectively, these modifications represent an additional layer of information that is contained within the genome, and are referred to as the epigenome (from the Greek epi meaning "over" and genome). Epigenetics is the study of heritable changes in gene expression that occur as a result of these modifications.

Executive Functions – A set of cognitive abilities that control and regulate other abilities and behaviours. Executive functions include planning and decision-making, abstract thinking, rule acquisition, and cognitive flexibility.

Gender-Responsive Addiction Treatment – An addiction treatment model that reflects an understanding of the needs of both genders and addresses and responds to their specific strengths and challenges. Principles of this approach include acknowledging that gender makes a difference in the development of addiction and its treatment; creating a therapeutic environment of safety and respect; and promoting healthy relationships with children, partners, and others in the community.

Hypothalamic-Pituitary-Adrenal (HPA) Axis – A major part of the neuroendocrine system that controls reactions to stress and regulates many body processes, including digestion, the immune system, mood and emotions, libido, and energy storage and expenditure. The HPA axis consists of a complex set of direct hormonal influences and feedback interactions between the hypothalamus (part of the brain, located near the brain stem), the pituitary gland (a pea-shaped structure located below the hypothalamus), and the adrenal glands (small conical organs on top of the kidneys). The HPA axis activates and terminates the release of stress hormones in response to stress.

Intensification – A feature of addiction interaction disorder in which one addiction intensifies the effect of another when performed simultaneously.

Masking – A feature of addiction interaction disorder in which one addiction covers up the presence of another.

Multiple Addictions – Two or more addictions that co-exist within an individual. Multiple addictions can make treatment more complicated and can also promote relapse after treatment.

Neuroimaging – Methods for creating visual images of the structure or function of the brain. Common neuroimaging techniques include structural and functional magnetic resonance imaging (MRI), positron emission tomography (PET), single photon emission computed tomography (SPECT), and computed axial tomography (CAT).

Nucleus Accumbens – Part of the brain that plays an important role in reward, reinforcement, and addiction. Drugs of abuse and other rewarding behaviours cause the neurotransmitter dopamine to be released into the nucleus accumbens.

Numbing – A feature of addiction interaction disorder in which one addiction is used to reduce, soothe, or calm the effects of another.

Physician Health Programs – Occupational health benefit programs administered by medical professional member associations that support physicians whose safety to practise medicine may be adversely impacted by psychological, physical, or social problems, including addiction.

Positive Stress – Positive stress is moderate and short-lived, and is an important and necessary contributor to healthy brain development. It can help motivate individuals to accomplish tasks and achieve goals.

Process Addiction – An addiction to a particular behaviour rather than a foreign chemical. Process addictions can occur in behaviours such as gambling, sexual activity, pornography, eating, shopping, work, and the Internet.

Process Improvement – Ongoing activities designed to simplify processes and reduce or eliminate process waste. Process improvement is an integral part of many manufacturing industries and is now being used to streamline processes in health care service delivery.

Program Evaluation – A systematic method for collecting, analyzing, and using information to answer questions about projects, policies, and programs, particularly about their effectiveness and efficiency.

Rapid-Cycle Testing – A technique used in process improvement in which one specific aspect of a process is identified for improvement, and small changes are quickly implemented and measured for their effectiveness.

Recovery – A voluntarily maintained lifestyle characterized by sobriety, cessation of addictive behaviours, personal health, and citizenship (adapted from the Betty Ford Institute definition).

Relapse – Reinstatement of substance use or addictive behaviours after a period of abstinence.

Replacement – A feature of addiction interaction disorder in which one addiction replaces another with the majority of the same emotional and compulsive factors. Thus, a new addiction can emerge after another one has been successfully addressed in treatment.

Ritualizing – A feature of addiction interaction disorder in which patterns of use in one addiction lead to patterns of use in another addiction. The psychological context of a repeated, sequenced set of routinely performed behaviours (a ritual) can cause cues and triggers to be associated with more than one addiction. Pairing smoking with the consumption of alcoholic drinks would be one example.

Shame: Healthy – A form of shame that protects and motivates the self to move in a positive direction by deeply disturbing how one feels about one's self and not wanting to include a particular behaviour as a part of the self. It is a healing force that energizes the addicted person's ability to suffer, surrender, forgive, and provide service to others in order to achieve stable recovery and sustained sobriety.

Shame: Malignant – A form of shame that is focused on fear and the terror of being judged negatively or to be found wanting by a person or institution with real or imagined power and authority. It leads to isolation, guilt, denial, secrets, silence, hiding, and cover-ups. Malignant shame often keeps the addicted person from moving into recovery and sobriety.

Tolerable Stress – Tolerable stress is a severe form of stress, but it occurs in the context of supportive relationships that help buffer its effects and facilitate adaptive coping. Tolerable stress does not produce long-lasting damage to the body.

Toxic Stress – When stress becomes too intense, long-lasting or uncontrollable, and when it occurs in the absence of supportive relationships that help buffer its effects, it becomes toxic to the brain and body and has a negative rather than positive impact on our behaviour. In children, toxic stress can occur as a result of unpredictable home environments, abuse, or being cared for by a parent who is addicted or mentally ill. In adults, toxic stress can occur as a result of the workplace, being in an abusive relationship, an illness or addiction, and many other circumstances.

Trauma-Informed Addiction Treatment – A clinical approach to addiction treatment that recognizes the experience of violence and trauma as an underlying causal factor in addiction. This approach incorporates resolution of the underlying trauma as part of the treatment process.

Trauma-Informed Services – A model for services that are provided for problems other than trauma but require knowledge about the impact of trauma, thereby increasing their effectiveness. This service model takes the experience of trauma into account and avoids triggering trauma reactions and/or traumatizing the individual. The behaviour of staff and organizations is adjusted to support the individual's coping capacity so that he or she is able to access, retain, and benefit from the services.

Withdrawal – The set of symptoms that occur following abrupt cessation of any addictive drug or behaviour. These symptoms are both emotional and physical, and are generally highly aversive.

Withdrawal Mediation – A feature of addiction interaction disorder when one addiction serves to moderate, relieve, or blunt the negative withdrawal symptoms of another addiction.

Women-Centred Addiction Treatment – An approach to addiction treatment that addresses women's specific treatment needs and provides comprehensive clinical and community supports to deal with additional issues specific to women.

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