



Department of Psychiatry  
Annual Research Conference 2018

Program and Abstracts

Wednesday, May 30, 2018  
8:15 a.m. to 4:30 p.m.

Donald Gordon Conference Centre  
421 Union Street  
Kingston, ON



# PROGRAM OF EVENTS

8:15 to 9:00 Registration and Continental Breakfast

## **Salon B - Upstairs**

9:00 – 9:05 Welcome and Opening Remarks – Dr. Claudio Soares

9:05 – 9:20 Awards Presentations

- Faculty Excellence in Research Award – Dr. Muhammad Ayub
- Resident Research Award – Dr. Jen Pikard and Dr. Anees Bahji
- Best Presentation by a Resident – Dr. Catherine Bobek
- Jim Owen Faculty Excellence in Teaching Award – Dr. Nishardi Wijeratne
- Excellence in a Mentorship Role – Dr. Tariq Munshi
- Excellence in Undergraduate Teaching – Dr. Simon O'Brien
- Outstanding Contribution to the Residency Training Program – Dr. Jamey Adirim and Dr. Emily St. Denis
- Resident Award for Undergrad Teaching – Dr. Peter Wang and Dr. Jen Pikard
- Excellence in Clinical Services – Dr. Pallavi Nadkarni
- Exemplary Service to the Department – Dr. Nadeem Mazhar

9:20 – 4:00 Oral Presentations in Salon B and C  
Poster Presentations in John Deutsch Room

## **Accreditation**

### **Credits for Specialists:**

This event is an Accredited Group Learning Activity (Section 1) as defined by the Maintenance of Certification Program of The Royal College of Physicians and Surgeons of Canada, and approved by Queen's University Office of CPD. You may claim a maximum of 5.25 hours (credits are automatically calculated).



# KEYNOTE SPEAKER

Dr. Gustavo Turecki, MD, PhD

Gustavo Turecki is an internationally renowned clinician-scientist whose work focuses on improving our understanding of the clinical and neurobiological factors that contribute to suicide risk. He is the current Chair and Professor in the Department of Psychiatry at McGill, an associate member of the Departments of Human Genetics and Neurology, and an accomplished psychiatrist and neurogeneticist.



Dr. Turecki's laboratory is a world-leader in behavioural epigenetics and has produced several scientific breakthroughs, including the first publication showing that negative early-life experiences could act on the brain to increase the risk of suicide (McGowan et al. *Nat Neurosci* 2009; 2,500 citations). This discovery earned him and his colleagues several national and international prizes. He has authored over 400 publications and over 30 book chapters that, together, have been cited over 26,000 times. Among these, 5 have been published in Lancet-family journals, 16 in Nature-family journals and 57 in the top 5 psychiatry journals. His scientific contributions have been recognized through 27 research prizes, 3 training awards and 7 salary awards, and he has been a principal investigator (PI) or co-PI on over 65 successful research grants.

In addition to his scientific work, Dr. Turecki has fulfilled important local, national and international leadership roles in research, intervention and knowledge transfer in the field of suicide. He is the founding director of the McGill Group for Suicide Studies (MGSS), a multidisciplinary program that unites researchers in anthropology, psychology, epidemiology, and anatomy, who are experts in complementary fields including community intervention strategies, and clinical and genomic approaches, among others. The MGSS also includes a clinical service, called the Depressive Disorders Program, which offers care to patients with refractory major depression, as well as a unique international resource, the Quebec Suicide Brain Bank (now a part of the Douglas-Bell Canada Brain Bank), which Dr. Turecki founded. Every year, the brain bank sends over 1,000 brain samples to the best laboratories in the world.

Dr. Turecki's leadership in suicide research was recognized by the FRQS, which mandated him to create the *Réseau québécois de recherche sur le suicide* [Quebec Network on Suicide Research] in 2009 (now the *Réseau québécois sur le suicide, les troubles de l'humeur et troubles associés* [Quebec Network on Suicide, Mood Disorders and Related Disorders]). This network supports the training of young researchers and encourages collaborative research among Québec researchers whose work focuses on the clinical, molecular, psychological, social, and ethical aspects of suicide and its associated factors, such as depression and substance misuse. These roles, as well as his participation in a variety of national and international committees, have made him a key figure in depression and suicide research.



# ORAL PRESENTATIONS

## Salon B - Upstairs

Abstracts for oral presentations begin on page 11

- 9:20 – 9:50 **Efficacy of electroconvulsive therapy for unipolar versus bipolar depression: a systematic review and meta-analysis**  
*Anees Bahji, Emily Hawken, Amir Sepheri, Casimiro Cabrera, Gustavo Vazquez*
- 9:55 – 10:25 **Indian Hemp and Insanity: cannabis and psychosis in the 19th century**  
*Dr. Oyedeji Ayonrinde*
- 10:25 – 10:40 **Nutrition Break and Poster Display**
- 10:40 – 11:10 **Are we making the most of Clozapine? A Cross-Canada Survey**  
*Reinhard Dolp, Martin Feakins, Gbolahan Odejayi, Dianne Groll*
- 11:10 – 12:00 **Facilitated Poster Session – John Deutsch Room**
- 12:00 – 1:00 **Lunch**
- 1:00 – 2:00 **Keynote Speaker – Dr. Gustavo Turecki**
- 2:05 – 2:20 **Nutrition Break**
- 2:20 – 2:50 **Physician Wellness in Canadian Medical Schools: Where do we go from here?**  
*Leslie Flynn, Amber Hastings-Truelove, Erica Dance, Caroline Gerin-Lojoie, Mithu Sen, Christopher Simon, Sarah Ann Smith*
- 2:55 – 3:25 **Risk of Dementia following Elective Surgery for Older Adults who Received General Anesthesia when compared to Regional Anesthesia**  
*Clive Velkers, Marlo Whitehead, Cara Reimer, Sudeep Gill, Maria Hussain, Peter Austin, Paula Rochon, Dallas Seitz*
- 3:30 – 4:00 **Mind the Gap – Identifying the lack of services for psychotic patients after the Early Psychosis Intervention**  
*M. McConnell, Reinhard Dolp, Jen Pikard, M. McGuire, M. Kamela, Mohammad Habib*
- 4:10 – 4:30 **Poster Award and Closing Remarks**

# ORAL PRESENTATIONS

## Salon C - Lower Level

Abstracts for oral presentations begin on page 15

- 9:00 – 9:50 **Effects of a Forensic Community Treatment “At Risk” Program on Re-Hospitalization and Re-Incarceration Rates**  
*Caroline Wallace, Kyal McCallum, Tariq Hassan*
- 9:55 – 10:25 **Probiotics as a Novel Therapeutic in Clinical Depression**  
*Caroline Wallace, Jane Foster, Roumen Milev*
- 10:25 – 10:40 **Nutrition Break and Poster Display**
- 10:40 – 11:10 **Characteristics and outcome of children who suffered sexual, physical, and emotional abuse: A single-center retrospective cohort study**  
*Reinhard Dolp, Nasreen Roberts*
- 11:10 – 12:00 **Facilitated Poster Session – John Deutsch Room**
- 12:00 – 1:00 **Lunch**
- 1:00 – 2:00 **Keynote Speaker – Dr. Gustavo Turecki**
- 2:05 – 2:20 **Nutrition Break**
- 2:20 – 2:50 **An audit to study antipsychotic prescriptions for insomnia in the mentally ill**  
*Pallavi Nadkarni, Ibrahim AlFurayh, Shailesh Nadkarni, Dianne Groll*
- 2:55 – 3:25 **Maintenance Pharmacological Treatment in Pediatric Bipolar Disorder: A Systematic Review**  
*Caitlin Yee, Gustavo Vazquez*
- 3:30 – 4:00 **Hype or Revolution? How Mobile Health Technologies are Transforming Research on Mood Disorders**  
*Dr. Claudio Soares*
- 4:10 – 4:30 **Poster Award and Closing Remarks**

# POSTER PRESENTATIONS

## John Deutsch and Board Room

Abstracts for poster presentations begin on page 19

- Board #1**     **Lithium and Cognition: Here Today, Gone Tomorrow**  
*Jamey Adirim, Zachary Adirim, Pallavi Nadkarni*
- Board #2**     **Effectiveness of observing family therapy sessions as a teaching tool for resident training in family therapy**  
*Amrita Pannu, Patricia Marchand, Sarosh Khalid-Khan*
- Board #3**     **Refining EPAs: Incorporating Resident Feedback on Entrustable Professional Activity (EPA) Content into CBME-Based Curricular Reform**  
*Melissa Andrew, Maria Hussain, Rylan Egan, Colin Zarzour, Jennifer B. Dare*
- Board #4**     **Urgent Psychiatric Consultation for Children 5-12 years of age: Comparison of Clinical Characteristics of Children Diagnosed with ADHS vs. Their Non-ADHD Peers**  
*Marcelo Crespín, Nasreen Roberts*
- Board #5**     **Short-Term Behavioural Change while Listening to Music in Individuals with Alzheimer's Disease**  
*A. Cui, J. Saslove, M. Crocker, L. L. Cuddy*
- Board #6**     **Birth Stress and Maternal Attachment: The Roles of Postpartum Depression and General Attachment**  
*B. Inness, A. Shamblaw, R. Cardy, N. Micanovic, K. Harkness, D. Groll, E. Prost*
- Board #7**     **Establishing a new out-patient program - First Data from the Intensive Transitional Treatment Program**  
*Reinhard Dolp, Neeraj Bajaj, Susan Finch, Dianne Groll*
- Board #8**     **Antidepressants and Bradycardia: A Nested Case-Control Study**  
*Maria Hussain, Adrian Baranchuk, Farzana Haq, Dallas Seitz*
- Board #9**     **The effects of D-serine on working memory in rhesus monkeys**  
*Mavis Kusi, Jaishri Manjunath, Catherine Crandell, Valerie Barrette, Martin Paré*

- Board #10**    **The Role of Anxiety on Jumping to Conclusions in First Episode Psychosis**  
*Vanessa Montemarano, Sidney Lichtenstein, Michael Grossman, Christopher Bowie*
- Board #11**    **Using eye-tracking to investigate cognition in adolescent female patients with Borderline Personality Disorder**  
*Olivia Calancie, Douglas Munoz, Linda Booij, Sarosh Khalid-Khan*
- Board #12**    **Providing Patients Access to Personalized Health Care Through Accessible Youth-and-Provider-Friendly Technology: A Qualitative Feasibility Study**  
*Sarosh Khalid-Khan, Pappu S. Reddy, Samantha Russell, Salinda Horgan*
- Board #13**    **Assessment of Metabolic Syndrome in patients experiencing first episode psychosis treated with antipsychotics**  
*A. Shah, L. Fernando, N. Wijeratne, T.D. Wijeratne*
- Board #14**    **Atrial Fibrillation and Injected Aripiprazole: A Case Report**  
*Anthi Stefatos, Julie N. Ha, Adrian Baranchuk, Ross Baldessarini, Gustavo Vazquez*
- Board #15**    **Feasibility of an Adapted CBT Intervention for People with Intellectual Disabilities: What do Services Leaders Think?**  
*Hannah Williams, Blair Marcellus, Ashleigh Blinkhorn, Meg McQueen, Jessica Jones, Lujain Althagafi, Amina Nasar, Muhammad Ayub*
- Board #16**    **Improving working memory and hippocampal volume in depressed patients using cognitive remediation: CANBIND9/RECORD Study**  
*Tegan Hargreaves, Roumen Milev, Chris Bowie*
- Board #17**    **Choosing Wisely: An Audit of Urine Drug Screen and Blood Alcohol Testing in Emergency Psychiatry Patients**  
*Anees Bahji, Tegan Hargreaves, Dane Mauer-Vakil, Susan Finch*
- Board #18**    **Prevalence of Substance Use Comorbidity in Individuals with Eating Disorders: A Systematic Review and Meta-Analysis**  
*Anees Bahji, Emily Hawken, Nadeem Mazhar, Chloe Hudson, Pallavi Nadkarni, Brad MacNeil*

# ABSTRACTS

## Oral Presentations

### Salon B

#### **Efficacy of electroconvulsive therapy for unipolar versus bipolar depression: a systematic review and meta-analysis**

Anees Bahji, Emily Hawken, Amir Sepheri, Casimiro Cabrera, Gustavo Vazquez

**Objective:** Pharmacological efficacy for bipolar major depression differs from unipolar major depression. In bipolar depression (BD), response to treatment with antidepressants is controversial. Whether response to electroconvulsive therapy (ECT) differs between unipolar depression (UP) and BD remains unclear; in any case, ECT remains a relatively underused treatment modality. Therefore, this systematic review investigates the relative efficacy of ECT in both types of depression.

**Methods:** Relevant cohort studies were identified from a systematic search of the PubMed, Medline, PsycInfo, Embase, CINAHL, and Cochrane electronic databases and applying the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) guidelines. Ultimately, seventeen studies were included in this meta-analysis.

**Results:** The overall response rate for depression was 59.6% (n = 1193/2001) and the overall remission rate was 44.2% (n = 570/1290). Among patients with unipolar depression, the response and remission rates were 58.9% (n = 889/1510) and 41.0% (n = 374/913), respectively. For patients with bipolar major depression, the response and remission rates were 61.9% (n = 304/491) and 52.0% (n = 196/377), respectively. Pooled odds ratios (OR) and confidence intervals (CI) were calculated using random-effects meta-analysis. Similar rates of response to ECT were found in patients with unipolar and bipolar depression (OR = 0.93, 95% CI: 0.73-1.2, p = 0.54), whereas remission rates with ECT were significantly higher in patients with bipolar vs. unipolar depression (OR = 0.73, 95% CI: 0.56-0.96, z = 3.61, p = 0.027).

**Conclusion:** Response rates to ECT appears to be equally effective for both bipolar and unipolar depression. However, remission rates are higher among patients with bipolar depression, which may be helpful in informing future clinical decision making for patients with refractory mood disorders.

**Learning Objectives:** To review the efficacy of ECT in the treatment of individuals with unipolar and bipolar depression. To discuss the impact of depression (global morbidity and mortality) and the importance of effective treatment.

**Key Words:** Depression, electroconvulsive therapy, bipolar disorder

## Indian Hemp and Insanity: cannabis and psychosis in the 19th century

Oyedeji Ayonrinde

**Background/ Objective:** In nineteenth century British India, large numbers of asylum patients were diagnosed with 'Indian Hemp Insanity'. Concern led to establishment of the Indian Hemp Drugs Commission in 1892. Tasked with determining the public health and mental health issues with cannabis use, the report foreshadowed some contemporary issues.

**Methods:** Detailed historiographic review of the Indian Hemp Drugs Commission Report (IHDCR, 1892) using primary source information. Comparison of 19th-century and current evidence for medical and recreational cannabis use.

**Results:** In 1892, heavy cannabis use was considered to have been associated with severe mental illness (7.3% of asylum patients; 12.6% of patients with established diagnoses). About two-thirds were children and young adults with higher relapse rates. Risk increased with early cannabis use and a family history of mental illness. "Indian hemp insanity" was thought to have a shorter trajectory and better prognosis than other mental illnesses in the asylums. Different cannabis potency and modes of consumption had different effects. Occasional cannabis use was felt to have medicinal benefits for some.

**Conclusion:** This nineteenth-century population study found a relationship between cannabis use and psychotic symptoms in young people. Cannabis-related psychopathology and pathophysiology was overall consistent with current knowledge. The IHDCR is possibly the most insightful, systematic and detailed historical population studies of cannabis to date.

**Keywords:** Cannabis, psychosis, history

**Learning objectives:** To develop awareness of the application of historical methods in medical research. To review the historical evidence-base for the association between cannabis and impaired mental health in youth.

## Are we making the most of Clozapine? A Cross-Canada Survey.

Reinhard Dolp, Dr. Martin Feakins, Gbolahan Odejayi, Dianne Groll

**Background:** Clozapine is the gold-standard for treatment-resistant schizophrenia worldwide. However, its usage varies greatly from 60% in China to 3% in certain areas in North America (1,2). This cross-Canada survey explores physician-identified barriers in prescribing Clozapine.

**Methods:** This is a cross-sectional, proportional random sample of 10% (n=454) psychiatrists registered as Fellows with the Canadian Royal College of Physicians and Surgeons (CRCPS), who were surveyed about their Clozapine prescribing practice. Clozapine "prescribers" were compared to "non-prescribers".

**Results:** Overall, 244 psychiatrists responded to our survey (response rate 53.7%). Even though 94% are aware of the current Clozapine prescribing recommendations, only 65% follow them. 22% of respondents said they have never prescribed Clozapine themselves. The most common reasons for not prescribing this drug was the Patient's concern about adverse effects in 21%, complexity of the follow-up process (18%), and access to adequate follow up (16%). Lack of familiarity and/or confidence was the least important reason for not prescribing clozapine (45%). Agranulocytosis was the most concerning side effect for patients and psychiatrists (35% and 38% respectively). When asked what would change their current clozapine prescribing practice, 36% named the ability to refer to a subspecialist expert in Clozapine, followed by better prioritization of Clozapine training in residency (33%).

**Conclusion:** Clozapine use in Canada is below the recommendations for various reasons. Providing more education for young psychiatrist as well as supervisors about managing the potential adverse effects, and easier access to initiating and maintaining clozapine treatment will be helpful in promoting its use.

1. Tan C-H, Shinfuku N, Sim K. Psychotropic prescription practices in east Asia: looking back and peering ahead. *Curr Opin Psychiatry*. 2008 Nov;21(6):645-50.

2. Sernyak MJ, Rosenheck RA. Antipsychotic use in the treatment of outpatients with schizophrenia in the VA from fiscal years 1999 to 2006. *Psychiatr Serv*. American Psychiatric Association; 2008 May;59(5):567-9.

## Physician Wellness in Canadian Medical Schools: Where do we go from here?

Leslie Flynn, Amber Hastings-Truelove, Erica Dance, Caroline Gerin-Lajoie, Mithu Sen, Christopher Simon, Sarah Ann Smith

**Objective:** In the CanMEDs Framework, the role of the professional advises physicians to be committed not only to their patients, but to their own personal health. While medical schools increase their wellness programming for students and faculty, there has yet to be any consensus about the most effective ways it can be promoted. The purpose of this study was to determine what Canadian Medical schools currently provide and to compare that with the literature.

**Methods:** We conducted an environmental scan of the wellness programming offered at all Canadian medical schools through publicly available information on their websites. From there, we conducted a systematic review of the literature related to physician wellness to provide evidence informed recommendations for wellness in medical training. Based on these findings, we have identified key offerings for inclusion in wellness programming.

**Results:** The intent of this project will be to provide recommendations to the Royal College of Physicians and Surgeons to inform educational offerings and accreditation criteria for physician wellness.

**Conclusion:** This presentation highlights the importance of undertaking an evidence-based approach to designing and implementing wellness programming.

**Learning Objectives:** Develop an understanding of physician wellness. Recognize effective wellness programming

**Key Words:** Physician wellness; wellness programs; Professional role

## Risk of Dementia following Elective Surgery for Older Adults who Received General Anesthesia when compared to Regional Anesthesia

Clive Velkers, Marlo Whitehead, Cara Reimer, Sudeep Gill, Maria Hussain, Peter Austin, Paula Rochon, Dallas Seitz

**Background:** Surgical procedures and anesthetic agents used during general anesthesia (GA) may be risk factors for dementia. There are few studies comparing the risk of dementia in association with GA compared to regional anesthesia (RA).

**Methods:** Individuals age 66 or older without a history of dementia who received GA or RA were matched 1:1 on age, gender, type of surgery, year and propensity score. Cox proportional hazards models were used to determine the association between anesthesia and dementia.

**Results:** In the 7,499 matched pairs there was no difference in the risk of dementia for individuals who received GA when compared to RA (hazard ratio:0.99, 95%CI: 0.83-1.18, P=0.89). There were no differences in dementia occurrence between anesthesia groups in subgroup and sensitivity analyses.

**Conclusions:** Among older adults undergoing elective surgical procedures, there is no difference in the risk of developing dementia for individuals who receive GA when compared to RA.

**Keywords:** dementia, surgery, anesthesia, risk factors, epidemiology

**Objectives:** Review the potential associations between surgery and anesthesia and the development of dementia. Understand the differences in the risk of dementia following surgery among older adults in Ontario comparing individuals who received general anesthesia or regional anesthesia for surgery.

## Mind the Gap - Identifying the lack of services for psychotic patients after the Early Psychosis Intervention

M. McConnell, Reinhard Dolp, Jennifer Pikard, M. McGuire, M. Kamela, M. Habib

**Objectives:** 1) Present the current literature on Early Intervention Psychosis programs; 2) describe the gap in care for this population

**Background:** Many Canadians across the country are being treated by a formal Early Psychosis Intervention program. After acute treatment, there is much to be desired with regards to follow up and services within the country. This systematic literature review was completed to quantify availability and outcomes of offered programs after treatment by an Early Psychosis Intervention regimen is complete

**Methods:** We used Medline, PsycInfo, CINAHL databases and the search terms "psychosis", "psychotic", "self-management", "program development", "program evaluation", "psychiatric rehabilitation", and "mental health recovery". A second informal Google search was carried using the same keywords to find programs in Canada since no data was available in the medical databases. English language papers only were retrieved.

**Results:** Fifty-five papers were retrieved in the formal search, of which 9 addressed specific programs after the Early Psychosis Intervention. The 9 included articles originated in USA, UK, Singapore and Netherlands. Offered programs had a great heterogeneity in structure and time-frame. Each program focused on different outcomes to evaluate treatment success. All programs reported significant efficacy. None had a long-term follow up proceeding treatment. The informal search found 4 providers of support programs for psychotic patients in Canada offering services in only 5 out of the 10 Canadian provinces. No study data in regard to outcome was available.

**Conclusion:** There is a great lack of availability and research of programs supporting psychotic patients after Early Psychosis Intervention programs. More programs need to be implicated to cover the high needs in all provinces of this patient population.

**Key Words:** psychosis, interventions, mental health

# ABSTRACTS

## Oral Presentations

### Salon C

#### Effects of a Forensic Community Treatment “At Risk” Program on Re-Hospitalization and Re-Incarceration Rates

Caroline Wallace, Kyal McCallum, Tariq Hassan

**Background:** A subgroup of mentally ill people who are neither incarcerated nor under a review board but who have frequent contact with the law are at an increased risk of not obtaining services necessary to help them integrate into the community. This led to the development of a multidisciplinary and individualized At-Risk Program that addresses the complex needs of this population in Kingston, Ontario, Canada. The objective of this study was to measure the effectiveness of the Program in reducing rates of re-hospitalization and reoffending, and, by extension, to determine whether it is cost-effective.

**Methods:** A cohort of clients (n=69) was identified from referrals to the service between January 1<sup>st</sup> 2014 and December 31<sup>st</sup> 2015. Number of hospital visits and number of contacts with probation and parole services that resulted in remand or sentencing in the 12 months prior to referral and 12 months post-referral were collected from electronic patient records at Providence Care Hospital and Kingston General Hospital and Ontario Probation and Parole Offices. Pre- and post- involvement indicators were analyzed using paired-samples t-tests.

**Results:** Results showed a significant reduction in hospitalizations following enrolment (M=5.14, SD=6.85) compared with 12 months pre-enrolment (M=8.23, SD=9.65), and a significant reduction in contacts with probation and parole following enrolment (M=0.49, SE=0.11) compared with 12 months pre-enrolment (M=0.74, SE=0.11).

**Conclusions:** The findings suggest that participation in the At-Risk Program is effective in reducing rates of re-hospitalization and reoffending. These findings demonstrate the cost effectiveness of the program by reducing healthcare and re-incarceration costs.

**Key Words:** Forensic Psychiatry, At-Risk Program, Re-hospitalization, Reoffending

**Learning Objectives:** To understand what the At-Risk Program is, who it serves, and why it is important. To understand the effect of the At-Risk Program on the number of hospitalizations and number of contacts with probation and parole

## Probiotics as a Novel Therapeutic in Clinical Depression

Caroline Wallace, Jane Foster, Roumen Milev

**Background:** Preclinical and clinical studies have shown that consuming a probiotic supplement can improve mood, anxiety, and cognition in rodents and healthy humans. Evidence shows that these outcomes may be driven by probiotics reducing neuroinflammation and increasing monoamine availability in the brain. However, the effects of probiotics have yet to be tested in depressed patients. The aim of this 8-week, open-label pilot study was to examine clinical changes in depressive symptoms before and after the introduction of a probiotic supplement in 10 treatment-naïve participants diagnosed with major depressive disorder (MDD).

**Methods:** Participants recruited from the Kingston area via paper and online advertisements orally consumed a probiotic supplement once daily containing *Lactobacillus helveticus* R0052 and *Bifidobacterium longum* R0175 (Probio'Stick; Lallemand Health Solutions). Mood, anhedonia, anxiety, and sleep quality were assessed using validated clinical scales; sleep was also assessed objectively using a polysomnogram. Blood and fecal samples were also collected to examine changes in plasma levels of inflammatory markers and composition of the microbiome, respectively

**Results:** The study found significant improvements in overall mood, anhedonia, and anxiety after just 4 weeks of probiotic intervention, and significant improvements in subjective sleep quality after 8 weeks. Objective sleep quality was not affected. Results for biological measures are not yet available.

**Conclusions:** These findings suggest a role for probiotics in alleviating depressive symptoms in humans. However, additional evidence is required to substantiate these claims. The data from this pilot study has been used to plan a double-blind randomized placebo-controlled trial to further assess these effects

**Learning Objectives:** To review findings from an open-label pilot study assessing the effects of probiotics on depressive symptoms and understand the clinical relevance of their implications. To understand how these findings compare to the current body of existing research and how they are being expanded into future research

**Key Words:** Depression, Probiotics, Gut-Brain Axis

## Characteristics and outcome of children who suffered sexual, physical and emotional abuse: A single-center retrospective cohort study.

Reinhard Dolp, Nasreen Roberts

**Background:** Abused children have clinical characteristics and mental health needs that are yet to be fully elucidated in order to improve care and prevent adverse outcomes.

**Methods:** We conducted a retrospective cohort study of all patients <18years assessed by the Child and Adolescent Urgent Consult Clinic from 2014 to 2016. Abused patients were compared to the non-abused cohort, then stratified into ones that suffered one type of abuse vs. all three types - sexual, physical, and emotional, followed by an intergroup comparison.

**Results:** Out of 1465 patients, 451 reported abuse (mean age=15, SD=2.0, 51% male). The Abused group had higher suicidality ( $p<0.05$ ), was more often assessed by physicians before being referred ( $p<0.01$ ) and had double the admission rate following our assessment ( $p<0.01$ ). The most frequent diagnosis in the abused group was PTSD (7% vs 1%,  $p<0.001$ ). Children exposed to all three types of abuse had more self-harming (34% vs. 16%,  $p<0.01$ ), higher rates of past contact with physicians (23% vs. 10%,  $p<0.05$ ), and more PTSD (15% vs 5%,  $p<0.05$ ) compared to ones that suffered from only one type of abuse. There was no significant difference between the three different forms of abuse - emotional vs. physical vs. sexual abuse.

**Conclusion:** Abuse in general causes more suicidality and leads to an increased use of the health care system. Co-occurrence of sexual, physical, and emotional abuse showed a cumulative effect in terms of self-harming and PTSD, whereas only minor differences could be found between the different types of abuses itself.

## An audit to study antipsychotic prescriptions for insomnia in the mentally ill

Pallavi Nadkarni, Ibrahim AlFurayh, Shailesh Nadkarni & Dianne Groll

**Background:** Insomnia is a common symptom of mental illness. Second-generation antipsychotics are increasingly used to treat insomnia at lower doses despite the risk of metabolic adverse effects. Literature search revealed six relevant guidelines. Most do not recommend antipsychotics as first choice for insomnia.

**Standard used:** Quetiapine and olanzapine are recommended for patients with comorbid insomnia who may benefit from the primary action of these drugs

**Objective:** This audit was conducted to compare our practice with this standard as a quality improvement project.

**Methodology:** After seeking ethics approval, charts of 178 patients consecutively admitted in 2012 to a mental health inpatient unit were scrutinised to identify antipsychotic prescriptions and indications. Those prescribed for insomnia were matched against the identified standard.

**Results:** There were 151 prescriptions for 130 patients (73%). 11% (n=19) of the total sample was prescribed quetiapine for insomnia. 100% were prescribed to address insomnia as a symptom and not the primary condition; major depressive disorder being the commonest (42%) followed by borderline personality disorder (37%). 7 of these prescriptions had an additional antipsychotic to treat the primary symptoms. 21% had features of metabolic syndrome and substance use disorder.

**Discussion:** In Australia 9.5% inpatients were prescribed antipsychotics for insomnia. Our practice showed similarity at 13%. Significant proportion had borderline personality disorder in keeping with literature which states likelihood of overmedication in these people **Conclusion:** Current practice did not meet the recommended standard. Use of antipsychotics for insomnia should be avoided. Optimising treatment for the primary psychiatric disorder is advocated.

**Learning objectives:** At the end of this session, participants will be able to enlist clinical indications for antipsychotic prescriptions. Enumerate risks of prescribing antipsychotics for insomnia in the mentally ill.

**Keywords:** insomnia, antipsychotic prescription, mentally ill

## Maintenance Pharmacological Treatment in Pediatric Bipolar Disorder: A Systematic Review

Caitlin Yee, Gustavo Vazquez

**Introduction:** Current guidelines on the maintenance treatment of pediatric bipolar disorder (PBD) were mainly developed based on evidence from adult studies. However, existing evidence regarding the relative effectiveness of various pharmacological interventions is predominantly based on short-term studies, without adequately addressing the long-term effectiveness.

**Objective:** Present a systematic review and pooled analysis on the effectiveness of monotherapy and combination maintenance pharmacological treatments for PBD, focusing on randomized control trials (RCTs) and open-label studies  $\geq 24$  weeks.

**Methods:** A systematic literature search was conducted in PubMed, OVID Medline, Embase and PsycInfo databases from inception up until December 2017 to identify RCTs and open-label studies assessing the use of maintenance pharmacological strategies ( $\geq 24$  week treatment duration) for the long term treatment of PBD. This review complied with the PRISMA statement guidelines.

**Results:** Systematic computer-searching yielded 18 studies suitable for analysis of recurrence rates and their association with treatments (N= 2131, BD-I 97.2%, mean age: 13.2  $\pm$  2.2 years, mean duration of studies: 42.72 weeks, 83.4% were open label studies and 16.6% were RCTs). The mean relapse rate was 44.4  $\pm$  22.7%. The overall pooled drop-out rate was 45.9  $\pm$  24.2% and the discontinuation rate due to side effects was 11.5%  $\pm$  7.4%.

**Conclusion:** All active pharmacological treatments, including lithium, valproate, lamotrigine and several second generation antipsychotics, showed evidence versus placebo to prevent relapses of bipolar disorder. However, control of relapses among young patients with BD remains particularly unsatisfactory.

**Learning Objectives:** Critically analyze the value of open-label trials versus RCTs along with the limitations of each. Identify and compare the response rates of various pharmacological agents for the long term treatment of pediatric bipolar disorder. Identify the prevalence of side effects and main reasons for discontinuation of various pharmacological treatment options for pediatric bipolar disorder.

**Key Words:** Pediatric bipolar disorder, Maintenance pharmacological treatment, Systematic review

## Hype or Revolution? How Mobile Health Technologies are Transforming Research on Mood Disorders

Dr. Claudio Soares

**Objective:** Mobile health (m-health) technologies are rapidly transforming the quality, efficiency, and availability of care across many health disciplines, including mental health. M-health technologies are currently being used for patient engagement, symptom management, treatment adherence, and real-time monitoring of wellness, resilience and relapse prevention. This presentation will summarize existing data on M-health use in Depression (clinical, research) and outline preliminary findings of an ongoing longitudinal study.

**Innovations:** Existing data suggest that clinically validated apps might play a role in improving patient communications with healthcare providers, peer groups, and even virtual therapists. They are also enabling unprecedented patient characterization beyond traditional clinical measures, including digital phenotyping and context-sensing parameters. Digital-based outcome measures are facilitating measurement-based care and improving clinical practice. Yet, some of these new concepts and technologies face scepticism by mainstream research and clinical environments. There are relevant points to be addressed including validity and applicability of novel endpoints/outcomes, data privacy and complexity of data analysis.

**Outcomes:** Preliminary information derived from 15,000 hours of real-time, context-sensing data will support the establishment of novel outcome measures, including location entropy. Ultimately, innovation and research on m-health will help reduce the burden (personal, societal) associated with depression, including its treatment and monitoring.

**Conclusion:** Digital phenotyping might have an important role in conjunction with traditional research approaches to advance research outputs, including the identification of predictive biomarkers for depression treatment response, wellness monitoring and relapse prevention. Apps can also boost research awareness and recruitment, which are crucial to the success of research studies.

**Learning objectives:** To understand the current landscape and emerging opportunities for digital health/m-health in mental health research. To share early findings of m-health technologies embedded into 'traditional' biomarker discovery in depression research.

**Key words:** Depression; m-health; digital phenotyping

# ABSTRACTS

## Poster Presentations

### John Deutsch Room

#### Board #1

#### Lithium and Cognition: Here Today, Gone Tomorrow

Jamey Adirim, Zachary Adirim, Pallavi Nadkarni

**Introduction:** Lithium, an effective treatment for mood disorder, is associated with cognitive side-effects that reduce patient compliance and satisfaction (Young et al, 2007; Pachet et al, 2003). Across previous studies, lithium has been found to slow down processing speed/reaction time and has been found to have a deleterious effect on short-term memory (López-Jaramillo et al, 2010; Pachet et al, 2003). Conversely, recent studies have also suggested that lithium may have important neuroprotective effects (Forlenza et al, 2011).

**Case Report:** A 57-year-old female with a 30-year history of lithium treatment was referred to a Consultation-Liaison Psychiatry Outpatient Clinic for medication review after recent acute kidney injury. Previous records were not available, and it was unclear whether lithium had been prescribed for treatment of Bipolar I Disorder, or as an adjunct alongside imipramine for a depressive disorder. In depth history-taking revealed that lithium had most likely been prescribed as an adjunct, and as well, revealed a 3-year history of increased sleep and cognitive problems, including memory, concentration, and processing speed issues, that required retirement from work and reduction of daily activities. Over the course of two further consultations across 8 months, lithium was slowly tapered down and discontinued (from a dose of 1050mg per day in divided dosing). At the time of the final consultation, improvements in sleep, memory, concentration, spontaneity, and alertness was reported by the patient and her husband, as well as the treating psychiatrist. Furthermore, there were no mood changes, either in the form of depression or mania.

**Discussion and conclusion:** While studies do suggest that lithium can have neuro-protective effects, this case demonstrates lithium's ability to impair concentration, memory, and processing speed. Given that lithium has been found to be both protective and deleterious to cognitive performance, this case highlights both the importance of reviewing lithium prescriptions frequently, and collaborative practice between primary care and psychiatry.

**References:** Forlenza, O. V., Diniz, B. S., Radanovic, M., Santos, F. S., Talib, L. L., Gattaz, W. F. (2011). Disease-modifying properties of long-term lithium treatment for amnesic mild cognitive impairment: randomized controlled trial. *The British Journal of Psychiatry*, 198, 351-6.

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Pachet, A., Wisniewski, A. (2003). The effects of lithium on cognition: an updated review. *Psychopharmacology*, 170, 225-34.

Young, A. H., Hammond, J. M. (2007). Lithium in mood disorders: increasing evidence base, declining use? *The British Journal of Psychiatry*, 191, 474-6.

**Learning objectives:** To demonstrate long term cognitive side effects of lithium. To recognize the importance of collaborative care in prescribing lithium

## Board #2

### Effectiveness of observing family therapy sessions as a teaching tool for resident training in family therapy.

Amrita Pannu, Patricia Marchand, Sarosh Khalid-Khan

**Objective:** Family therapy is an important treatment modality in Child and Adolescent Psychiatry. As such, this is the only rotation where residents will receive this training. The goal of this study was to investigate if observation of family therapy sessions by trainees forming a reflective team can be a vital teaching method to enhance understanding of family therapy.

**Methods:** Residents and fellows formed a reflective team and observed weekly family therapy sessions conducted by a child and adolescent psychiatrist and social worker through a one way mirror and speaker system. At the end of session, trainees were in front of the mirror with the clinicians and the family behind the mirror listening to the reflective team discuss the session. Trainees completed a questionnaire at the end of their child psychiatry rotation which investigated their level of satisfaction with sessions and the reflective team.

**Results:** Trainees expressed a high level of satisfaction with this method of family therapy training.

**Conclusions:** Family therapy observation should be an integral component of residency training program curriculum to introduce and demonstrate the key principles of family therapy.

**Learning objectives:** Demonstrate usefulness of observing family therapy sessions in enhancing the residents' understanding of family therapy. Appreciate the significance of involving family members as part of the reflective process in family therapy.

**Key words:** Family Dynamics, Family therapy, Residency training.

## Board #3

### Refining EPAs: Incorporating Resident Feedback on Entrustable Professional Activity (EPA) Content into CBME-Based Curricular Reform

Melissa H. Andrew, Maria Hussain, Rylan Egan, Colin Zarzour, Jennifer B. Dare

**Objective:** To illustrate progress to date with the project funded through the Department of Psychiatry's 2017 Internal Grant Competition, which seeks to clarify the content of EPAs that is essential for Geriatric Psychiatry.

**Activities / Methods / Innovation:** The Geriatric Psychiatry subspecialty presents particular challenges for Competency-based Medical Education (CBME) due to its size, concurrent training with Psychiatry PGY-5, and relatively recent Royal College recognition. Queen's University's conversion to fully CBME postgraduate education, at least 2-3 years ahead of the national group, affords an opportunity to identify particular challenges for curriculum development and implementation, and to explore potential solutions.

**Outcomes / Results / Lessons Learned:** This poster outlines the strategies used thus far to address the unique challenges presented, including flexible milestone mapping, strategic distribution of EPAs concentrated in the Core stage of training, and careful mapping of EPAs to available training experiences in order to allow for flexible training pathways. To allow simultaneous development of niche skills related to career plans, a mechanism of mapping elective rotations to EPA requirements is included. An iterative, Quality Improvement approach to curricular modifications is proposed, using direct feedback from graduates to identify perceived gaps in the curriculum. Interviews with traditional-cohort graduates have been completed, from which data will be analyzed to inform future EPA development, and compared to future interviews completed with CBME-cohort graduates.

**Conclusion:** CBME development for Geriatric Psychiatry subspecialty programs requires a variety of approaches to ensure optimal competency acquisition during a very concentrated subspecialty training period.

**Learning Objectives:** To outline challenges inherent in designing a CBME-based curriculum for geriatric psychiatry subspecialty training. To present strategies developed to date to address these challenges, including recently-completed interviews with subspecialty graduates

**Key Words:** CBME , EPA Development, Curricular Alignment

## Board #4

### Urgent Psychiatric Consultation for Children 5-12 years of age: Comparison of Clinical Characteristics of Children Diagnosed with ADHD vs. Their Non-ADHD Peers

Marcelo Crespín, Nasreen Roberts

**Objectives:** To examine the clinical characteristics of children, 5-12 years of age, referred to a hospital based pediatric psychiatric urgent consult clinic and diagnosed with ADHD (study group).

**Methods:** This was a 12-month retrospective study that compared the ADHD group with non-ADHD peers from the same clinic. Variables under study included age, gender, reason for referral, diagnosis, Individualized Educational Plan (IEP), Community Mental Health Agency (CMHA) involvement and outcome. Data analysis included descriptive statistics as well as Pearson's Chi-squared Test, and Fisher's Exact Test for associations between dichotomous variables of interest.

**Results:** In 2016-2017, 140 assessments were completed. 61.4% of referrals were from the pediatric ER, 22.1% from primary care and 16.5% from schools and CMHA. Of those assessed, 57% (N=80) were diagnosed with ADHD. The ADHD group was associated with being male ( $\chi^2(1) = 12.37, p < 0.001$ ), having no suicidal ideation ( $\chi^2(1) = 6.75, p = 0.009$ ), having an IEP ( $p < 0.001$ , Fisher's Exact Test), having CMHA involvement ( $\chi^2(1) = 4.41, p = 0.036$ ) and brief follow-up in the urgent clinic ( $\chi^2(1) = 9.55, p = 0.002$ ).

**Conclusion:** More than half of the referrals for a pediatric psychiatric urgent consultation met criteria for ADHD but were unlikely to present with acute safety concerns. Education for primary care physicians, pediatricians, schools and community agencies may improve community based services to address the needs of these children. This would reduce crisis visits to the pediatric ER and psychiatric urgent consult clinic.

**Key words:** ADHD, children 5-12 years of age, urgent psychiatric consult, community mental health services.

**Literature References:** Roberts N, Nesdole R, Hu T. Emergency Department Referrals for Adolescent Urgent Psychiatric Consultation: Comparison of Clinical Characteristics of Repeat-Presentations and Single-Presentation. *J Can Acad Child Adolesc Psychiatry* 27(1): 33-38, 2018.

Alavi N, Roberts N, DeGrace E. Comparison of Parental Socio-Demographic factors in children and adolescents presenting with internalizing and externalizing disorders. *Int J Adolescent Med Health* 29(2), 2017.

## Board #5

### Short-Term Behavioral Change while Listening to Music in Individuals with Alzheimer's Disease

A.X. Cui, J. Saslove, M. Crocker, L.L. Cuddy

Can music serve as a tool to engage participants with memory loss? Previous research reported preservation of musical memory in an Alzheimer's Disease (AD) patient (Cuddy & Duffin, 2005). Recently, Belyea et al. (2017) explored short-term behavioral engagement of older adults who listened to 12 excerpts of familiar music and reported memories elicited by the music. Comparing AD to healthy controls, Belyea et al. noted that AD participants showed a significantly greater variety and probability of musical reactions, i.e., reactions to rhythmic or melodic elements of the music. However, there was no significant difference between the two groups for social reactions, i.e., communicative reactions about the valence or presence of memories. The purpose of the present study is to validate and extend the exploratory findings of Belyea et al. with two naïve raters blind to the previous findings and hypotheses. To this end, we developed a new standardized protocol for recording observable reactions using inqScribe. Next, raters examined the video records and coded any occurring behavioral responses and their latency during the music. Inter-rater reliability was high, e.g., raters disagreed about the category of reaction (musical vs. social) in only 7.1% of 521 coded reactions. Analyses of variety and probability of reactions, as well as analyses of latency of these reactions will be presented. We will then relate music-evoked autobiographical memories to music-evoked behavior. This will in turn further our understanding of the relationship between music and memory in AD, helping us address concerns surrounding AD patient care.

**Key Words:** Alzheimer's Disease, music-evoked autobiographical memories, music-evoked behavior

**Learning Objectives:** Validate previously found differences in visible social and musical responses to music in AD and healthy controls. Further investigate the relationship between music and memory.

**References:** Cuddy, L. L., & Duffin, J. (2005). Music, memory, and Alzheimer's disease: Is music recognition spared in dementia, and how can it be assessed? *Medical Hypotheses*, 64(2), 229.

Belyea, A. Bai, S., Chan, J., Cui, A. X., Sikka, R., Vanstone, A. D., & Cuddy, L. L., (2017). Behavioural responses to music-evoked autobiographical memories (MEAMs) in Alzheimer's disease. *Presentation at the Department of Psychiatry Research Day*, May 31 2017.

## Board #6

### Birth Stress and Maternal Attachment: The Role of Postpartum Depression

B. E. Inness, A. L. Shamblaw, R. Cardy, N. Micanovic, K. Harkness, D. Groll, E. Prost

**Abstract:** Maternal attachment is defined as the emotional connection a mother feels towards her infant. This bond sets the stage for the infant's later emotional and cognitive development. As such, it is important to understand factors that could impede the bonding process. Perceived childbirth stress has been shown to predict lower levels of maternal attachment; however, there is a paucity of research on the underlying mechanisms that account for this relation. A potential underlying factor is maternal depressive symptoms. We hypothesize a mediation model in which the relation between birth stress and maternal attachment will be mediated by maternal postpartum depressive symptoms. Specifically, we predict that higher levels of stress during childbirth will relate to higher postpartum depressive symptoms, which in turn, will relate to lower maternal attachment toward the infant. To evaluate this model, data was collected from 50 women who recently gave birth as part of an ongoing study through the Women's Reproductive Clinic at Hotel Dieu Hospital, Kingston. Participants completed the Maternal Postnatal Attachment Scale, a measure of attachment towards the infant, the Edinburgh Postnatal Depression Scale, a measure of postpartum depressive symptoms, and the Birth Experience Interview, a contextual interview that measures the degree of stressfulness of childbirth.

**Learning Objectives:** Birth stress and its measurement, the relation between birth stress and maternal attachment, and how depressive symptoms predict maternal attachment under varying degrees of birth stress.

**Key Words:** Birth Stress, Attachment, Postpartum Depression

## Board #7

### Establishing a new out-patient program - First Data from the Intensive Transitional Treatment Program (ITTP)

Reinhard Dolp, Neeraj Bajaj, Susan Finch, Dianne Groll

**Background:** Imbalance between increasing mental health care needs and available hospital beds create the need for innovative treatment strategies. We created a new multi-disciplinary outpatient program (Intensive Transitional Treatment Program, ITTP) to re-integrate hospitalized patients >18yrs faster into society or to prevent admission all together.

**Methods:** In this prospective cohort study, all patients referred to ITTP from 2015 to 2017 were evaluated via the BASIS-24 score at four different time points: before, during and 3 months after finishing the treatment. We then stratified the patients in the different specific ITTP treatment groups and compared their outcomes.

**Results:** Out of all assessed patients (n=297; mean age=35, SD=13; 67% male), the majority received CORE (Communication and Relationships; n=126, 42%), MPE (Managing Powerful Emotions; n= 87, 29%), and CBT (Cognitive-Behavioral-Therapy, n=73, 25%). The overall BASIS-24 score across all groups improved significantly under therapy (1st vs. 4th assessment:  $2.1 \pm 0.5$  vs.  $1.4 \pm 0.7$ ,  $p \leq 0.001$ ) as well as the individual scores for depression ( $p \leq 0.001$ ), relationship ( $p \leq 0.05$ ), self-harm ( $p \leq 0.05$ ), emotional lability ( $p \leq 0.001$ ), and substance abuse ( $p \leq 0.001$ ). Looking at each treatment group individually, all showed a significant reduction in their BASIS-24 score 3 months after completion of the program (AM:  $1.4 \pm 0.7$ ,  $p \leq 0.001$ ; CBT:  $1.4 \pm 0.7$ ,  $p \leq 0.001$ ; CORE:  $1.4 \pm 0.4$ ,  $p \leq 0.05$ ; MPE:  $1.6 \pm 0.7$ ,  $p \leq 0.05$ ).

**Conclusion:** ITTP is a valuable and effective treatment option enabling the management of patients as out-patients that needed to be hospitalized prior to that program. Further studies need to evaluate the long-term success.

## Board #8

### Antidepressants and Bradycardia: A Nested Case-Control Study

Maria Hussain, Adrian Baranchuk, Farzana Haq, Dallas P. Seitz

**Background:** Antidepressant are being increasingly prescribed for older adults for both psychiatric and non-psychiatric diagnoses. Antidepressants have been associated with cardiovascular adverse effects, including orthostatic hypotension, QTc prolongation, heart blocks, and arrhythmias. Bradycardia has been documented in case reports, but has not been investigated on a larger scale.

**Methods:** Utilizing linked administrative databases at the Institute for Clinical Evaluative Sciences (ICES), we conducted a case control study in adults over the age of 65. Cases were defined as individuals with symptomatic bradycardia leading to an ER visit, hospital admission or pacemaker insertion. Each case was matched to 5 controls for age, sex, general comorbidity, calendar year, and history of bradycardia. Antidepressants were categorized as SSRIs, SNRIs, TCAs, Bupropion, Mirtazapine and Trazodone. Using univariate logistic analyses, we calculated unadjusted and adjusted odds ratios for bradycardia occurrence for each antidepressant category at 7, 30, 90 and 180 days.

**Results:** There were a total of 8,852 cases and 32,234 controls. Adjusted odds ratios indicated a slightly increased likelihood for developing bradycardia with SSRIs (OR=1.078), the effect being most pronounced at 7 days. Adjusted odds ratios were <1 for SNRIs, TCAs and Bupropion (OR=0.821, 0.943, 0.773) indicating these might be slightly protective. Subgroup analyses revealed men being at slightly higher risk.

**Conclusions:** These results indicate that antidepressants may be variably associated with bradycardia, SSRIs carrying a slightly higher risk; others may be slightly protective. It may be pertinent to consider antidepressants other than SSRIs in patients, especially males, with risk factors for bradycardia.

**Learning Objectives:** Understand the mechanisms by which some antidepressants may cause bradycardia. Review the associations between exposure to different classes of antidepressants and bradycardia. Discuss the clinical implications of these findings

**Key words:** Antidepressants, SSRIs, Bradycardia

## Board #9

### The effects of D-serine on working memory in rhesus monkeys

Mavis Kusi, Jaishri Manjunath, Catherine Crandell, Valerie Barrette, Martin Paré

The pathophysiology of schizophrenia has been hypothesized to rest on NMDA receptor (NMDAR) hypofunction. In support of this, studies have shown that inhibiting NMDAR activity with antagonists such as ketamine induces schizophrenia-like symptoms including cognitive symptoms such as working memory (WM) deficits. Studies also indicate that the cognitive symptoms of schizophrenia can potentially be alleviated with NMDAR co-agonists. Based on this, we tested the effect of the NMDAR co-agonist D-serine (sub-chronic and acute treatments) on the WM ability of female rhesus monkeys. We also tested the effect of D-serine on rescuing ketamine induced WM impairment. We predicted that the sub-chronic and acute treatments of D-serine would improve WM task performance (i.e. increase response accuracy and decrease response latency). However, we found results contrary to this prediction as neither the sub-chronic nor the acute treatment of D-serine had a significant effect on WM task performance. D-serine also did not reverse ketamine induced increases in response latency and omission errors on the task. However, D-serine had a significant effect on reversing ketamine induced impairment on response accuracy. As the monkeys were healthy with no signs of NMDAR impairment in the sub-chronic and acute D-serine experiments while ketamine was used to impair their NMDAR function in the D-serine plus ketamine experiment, these findings suggest that targeting the co-agonist site under normal NMDAR function has limited benefit for WM. However, targeting the co-agonist site under conditions of NMDAR hypofunction, as in people with schizophrenia, may have some benefit for WM.

**Learning objectives:** Discuss the link between NMDA-receptor hypofunction and symptoms of schizophrenia. Identify that NMDA-receptor co-agonists such as D-serine may help to alleviate the cognitive symptoms of schizophrenia.

**Key words:** schizophrenia; D-serine; working memory

## Board #10

### The Role of Anxiety on Jumping to Conclusions in First Episode Psychosis

Vanessa Montemarano, Sidney Lichtenstein, Michael Grossman, Christopher Bowie

**Introduction:** 'Jumping-to-Conclusions' (JTC) is a cognitive bias characterized by a tendency for individuals to gather limited information before making a decision. JTC is more frequently observed in psychotic disorders relative to other mental illnesses<sup>1</sup>, and is believed to contribute to delusion formation<sup>2-4</sup>. Previous research has shown that healthy individuals who are highly anxious demonstrate more conservative decision-making<sup>5</sup>, yet it is unknown whether anxiety is associated with the decision-making patterns of individuals with psychosis.

**Purpose:** To explore the relationship between anxiety and JTC in first-episode psychosis (FEP).

**Methods:** 35 FEP individuals were recruited from a community-based early psychosis program in Kingston, Ontario. The Beads Task and Brief Psychiatric Rating Scale<sup>6</sup> were administered to assess JTC and anxiety, respectively. The Beads Task requires participants to observe consecutively drawn beads from one of two randomly selected jars, and decide which of the jars the beads are being drawn from. A JTC bias has been defined as a decision made after viewing fewer than 3 beads<sup>7</sup>.

**Results:** Approximately one-third of participants (11/35) exhibited a JTC bias. There was a significant positive correlation between anxiety and number of draws on the Beads Task,  $r=0.50$ ,  $p=.002$ . A median split was performed, and participants with lower anxiety ( $M=2.53$ ,  $SD=1.46$ ) requested significantly fewer beads than those with higher anxiety ( $M=7.78$ ,  $SD=6.58$ ),  $t=3.30$ ,  $p=.004$ .

**Conclusions:** FEP patients endorsing lower anxiety requested less information, and were more likely to exhibit the JTC bias than those who endorsed higher anxiety, suggesting that anxiety plays a relevant role in JTC in FEP.

**Learning Objectives:** To explore the relationship between anxiety and JTC in the context of psychotic disorders. To add to the literature on potential pathways of JTC to delusion formation by highlighting the moderating role that anxiety may play in this relationship.

**References:** Dudley, R., Taylor, P., Wickham, S., & Hutton, P. (2016). Psychosis, delusions and the "jumping to conclusions" reasoning bias: A systematic review and meta-analysis. *Schizophrenia Bulletin*, 42, 652-655.

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**Key Words:** First-episode psychosis, jumping-to-conclusions, anxiety

## Board #11

### Using eye-tracking to investigate cognition in adolescent female patients with Borderline Personality Disorder

Olivia Calancie, Douglas Munoz, Linda Booij, Sarosh Khalid-Khan

**Objectives:** Borderline Personality Disorder (BPD) affects 1-2% of the population and is the second highest cause of mental health related death. Previous research has shown that adults with BPD have a unique eye-movement pattern compared to clinical populations and healthy controls in tasks that measure decision making and response inhibition. Here we tested whether this pattern of unusual saccades exists in adolescents showing early signs of BPD.

**Methods:** Participants' eye movements and saccade metrics were recorded using a video-based eye-tracker (Eyelink 1000, SR Research) at Queen's Eye Movement Laboratory. Female youth with BPD (N = 33, age 13-18) were recruited from the Division of Child and Youth Mental Health at Hotel Dieu Hospital and age- matched female controls (N = 66) were recruited from the community. Participants performed an interleaved pro- and anti-saccade task (looking toward vs. looking away from a visual target, respectively) and a predictive bilateral horizontal saccade task (known to recruit the default mode network).

**Results:** Adolescents with BPD generated more anticipatory (saccade reaction time (SRT) <90 ms) and express saccades (91-139 ms) in both computer-based tasks compared to age- and gender-matched controls,  $p < .05$ .

**Conclusion:** These data suggest dysfunction of saccadic preparatory suppression signals within the oculomotor network of young BPD patients. Furthermore, these results mirror those in the adult BPD literature, suggesting that cognitive abnormalities exist early in disease prognosis. Ultimately this distinct oculomotor trait may contribute towards the larger effort to identify valid and reliable biomarkers to characterize this severe, and often misdiagnosed, illness.

**Key Words:** Cognitive control, eye-tracking, personality disorders

**Learning Objectives:** To catalogue, quantify, and characterize saccade metrics in female youth with BPD. To compare response inhibition and oculomotor control in female youth with BPD to age-matched healthy controls.

## Board #12

### Providing Patients Access to Personalized Health Care Through Accessible Youth- and-Provider-Friendly Technology: A Qualitative Feasibility Study

Sarosh Khalid-Khan, Pappu Srinivasa Reddy, Samantha Russell, Salinda Horgan

**Abstract:** Communication between patients and specialized care providers outside of scheduled appointments can often be arduous. Increased use and access to the internet on mobile and web-based devices have great clinical potential to facilitate exchange between patients, and providers. However, the vast majority of these technological platforms have not been rigorously tested. The purpose of this study is to assess the feasibility of a novel mobile application (ImTEEN), and web-based portal suitable for use in clinical care provision, that seeks to increase patient engagement, enhance communication, and reduce barriers affiliated with face-to-face care. 61 youth (14 - 25 years) with a primary diagnosis of ADHD, anxiety or depression, and 12 providers at community, primary and tertiary care facilities in Kingston, Ontario interacted with the mobile-app or web-portal regularly. Focus groups and individual interviews were conducted with youth (n=20) and providers (n=10) to discuss interface navigation, convenience, and assistance in management of mental health. Key themes emerged that highlight the importance of innovative technology as a potential facilitator to improve quality, access, safety, and efficiency of healthcare delivery.

**Learning Objectives:** To assess the feasibility of a self-care technology experience for youth and providers. To validate newly developed easily accessible online diagnostic tools to support providers for common mental disorders in youth. To assess the impact of the electronic experience on youth's motivation to manage their mental health care.

**Key Words:** eHealth, Mental Health, Youth

## Board #13

### Assessment of Metabolic Syndrome in patients experiencing first episode psychosis treated with antipsychotics

A. Shah, L. Fernando, N. Wijeratne, T. D. Wijeratne

Canadian data on the metabolic side effects of antipsychotics in young patients in the early phase is scarce. The aim of this study was to quantify the development of metabolic syndrome in the initial 1-2 years of antipsychotic treatment in patients experiencing a first episode of psychosis and to examine adherence to metabolic screening in a real-world EPI program. We conducted a retrospective chart review of 52 patients, 14-35 years old, followed for at least one year in the Early Psychosis Intervention Program at Hotel Dieu Hospital, in Kingston, ON, Canada, from 2009-2016. Data was collected on age, sex, antipsychotic medication, Body Mass Index (BMI), waist circumference (WC), blood pressure (BP), high density lipoprotein (HDL), triglycerides (TG), fasting blood sugar (FBS)/ random glucose (RG), and HbA1C. Metabolic Syndrome was defined using the International Diabetes Federation criteria. The percent of patients with metabolic syndrome, high BMI, BP, WC, TG, FBS, and low HDL, all increased over time. WC showed the biggest increase, from 17.5% to 50% of patients at 24 months having a high WC. HbA1C was within target in all patients and RG was high in only two patients at baseline with no change over time. In patients with early psychosis treated with antipsychotics, BMI and WC become abnormal before blood parameters, and, therefore, appear to be cost effective measures to predict the development of metabolic syndrome. Despite their young age, these patients are at high risk of developing metabolic syndrome and subsequent cardiovascular disease, warranting close and early follow-up.

**Learning Objectives:** Quantify the risk of metabolic syndrome in a North American population with first episode psychosis. Describe the trends in various parameters of metabolic syndrome in patients with first episode psychosis. Identify individual and systemic barriers to recommended metabolic monitoring in patients with first episode psychosis

**Key Words:** Metabolic Syndrome, First Episode Psychosis, Antipsychotics

## Board #14

### Atrial Fibrillation and Injected Aripiprazole: A Case Report

Anthi Stefatos, Julie N. Ha, Adrian Baranchuk, Ross J Baldessarini, Gustavo H. Vázquez

**Objective:** To present the case of a 45 year-old man with schizoaffective disorder who presented with rapid atrial fibrillation six days after the injection of aripiprazole.

**Background:** Aripiprazole is a widely clinically employed antipsychotic drug for a range of indications. It has unusual pharmacodynamics as a dopamine D2 receptor partial-agonist with complex interactions with serotonin receptors, and an unusually long elimination half-life. Although other atypical antipsychotics have been associated with an increased risk of atrial fibrillation, aripiprazole is considered to be relatively safe in regards to cardiac risks.

**Case presentation:** We report a 45 year-old Caucasian patient with schizoaffective disorder who developed acute atrial fibrillation several days after an intramuscular injection of a large long-acting dose of the drug after low oral doses had been well-tolerated. The patient responded aptly to intravenous metoprolol and amiodarone and converted back to normal sinus rhythm within 24 hours, after having lowered the oral dose of aripiprazole he was receiving.

**Lessons learned:** The timing and dose-dependent effect of aripiprazole administration suggests association between aripiprazole and the new onset of AF in this case.

**Conclusion:** Physicians should proceed with added clinical vigilance when prescribing aripiprazole in patients with risk factors for stroke and in younger patients who may have predisposing factors for arrhythmias.

**Learning objectives:** To identify potential cardiac adverse events associated with long acting injectable compound. To appreciate the relevance of working in a collaborative multidisciplinary team.

**Key Words:** Aripiprazole, atrial fibrillation, adverse effects

## Board #15

### Feasibility Of An Adapted CBT Intervention For People With Intellectual Disabilities: What Do Service Leaders Think?

Hannah Williams, Blair Marcellus, Ashleigh Blinkhorn, Meg McQueen, Jessica Jones, Lujain Althagafi, Amina Nasar, Muhammad Ayub

**Objectives:** Evidence for Cognitive Behavioural Therapy's (CBT) effectiveness in addressing anxiety and depression in the general population is robust and self-help resources are widely available to the general public. Yet despite the increasing evidence towards CBT for individuals with intellectual disabilities (ID), they are predominantly reliant on mainstream mental health professionals (predominantly psychologists and psychiatrists) to access this type of intervention. The current study is part of a larger initiative aimed to increase access to evidence-based mental health resources for individuals with ID by developing and testing self-directed interventions using a community development approach. The objective of this project is to study the feasibility and acceptability of an adapted CBT-based guided self-help intervention for individuals with ID and common mental health challenges within Ontario-based Developmental Services organizations.

**Method:** N=23 interviews have been conducted with allied health professionals and directors/leaders within developmental service agencies and organizations using a semi-structured format examining four dimensions of feasibility. Up to n=30 interviews will be conducted to assess the demand, acceptability, practicality and resources for implementation required for integration of the intervention in mainstream care.

**Results:** Preliminary results will be presented, with a focus on emerging themes pertaining to the feasibility of a CBT-based guided self-help intervention as well as key considerations on community capacity building.

**Discussion/Conclusions:** Developmental Services organizations often express the need for more psychological-based support for individuals with ID but have limited resources. This study will report on the views towards a guided self-help intervention designed to address this need, from individuals who are key stakeholders and have the power to influence access to and delivery of, such resources.

## Board #16

### Improving working memory and hippocampal volume in depressed patients using cognitive remediation: CANBIND9/RECORD Study

Tegan Hargreaves, Dr. Roumen Milev, Dr. Chris Bowie

Cognitive remediation has been found to be efficacious in improving community functioning in patients with schizophrenia and other psychotic disorders. There is minimal evidence on its efficacy in patients with depression, yet this has become a novel therapeutic intervention in this population. The aim of the RECORD study is to administer cognitive remediation through online intervention to depressed outpatient participants for either 12 weeks (short arm) or 24 weeks (long arm) and compare with a control group who engages in a sham cognitive remediation-like intervention. At weeks 1, 12, and 24, participants will receive an MRI scan, which includes anatomical scans, as well as a functional working memory task, the n-back test. It is expected that participants who received the cognitive remediation interventions (either 12 or 24 weeks) will demonstrate a significant improvement in working memory compared to the sham group, demonstrated by significantly higher n-back scores. Further, we also hypothesize that this improvement in working memory will be associated with modest hippocampal volume changes. Here we present the study design, methods, plan for analysis, and expected results.

**Learning objectives:** Gather evidence and rationale for thesis work on working memory, and how cognitive remediation could improve this area of memory. Research whether it is possible to see differences in hippocampal volume after 12 weeks of intervention.

**Keywords:** cognitive remediation, depression, working memory, hippocampus

## Board #17

### Choosing Wisely: An Audit of Urine Drug Screen and Blood Alcohol Testing in Emergency Psychiatry Patients

Anees Bahji, Tegan Hargreaves, Dane Mauer-Vakil, Susan Finch

**Background:** Exposure to illicit drugs and alcohol is a major cause for visits to the emergency department (ED). Urine drug screens (UDS) and blood alcohol levels (BAL) are frequently ordered, however, the utility of these tests in diagnosis and management remain unclear.

**Methods:** ED patients with a mental health or addictions (MHA) chief complaint were retrospectively reviewed over a 3-month period. UDS and BAL ordering and results, patient demographics, medical and psychiatric history, presenting diagnosis, treatment plan, and disposition were extracted and analyzed.

**Results:** our sample included a total of 323 patients. 60 received BAL and 92 received UDS. The main indications for these tests were "history of substance use" and "rule out substance-induced psychosis". BAL and UDS testing did not impact the management of all but two (1%) patients. 35% of patients who received these tests did not receive addictions-specific treatment.

**Conclusion:** roughly one third of the sample received UDS or BAL testing, and for the majority of tests, the documented rationale was inappropriate. Our results suggest that these tests have limited utility in this setting. Increased education on the ordering of these tests could reduce unnecessary testing.

## Board #18

### Prevalence of Substance Use Comorbidity in Individuals with Eating Disorders: A Systematic Review and Meta-Analysis

Anees Bahji, Emily Hawken, Nadeem Mazhar, Chloe Hudson, Pallavi Nadkarni, Brad MacNeil

**Objective:** The comorbidity of substance use disorders (SUDs) and eating disorders (EDs) has frequently been reported over the past four decades, however, there has been no recent synthesis of the literature. The objective of this study was to systematically review the literature on the prevalence of comorbid SUD in individuals with ED, and to report rates of lifetime prevalence.

**Method:** A search of 6 databases (EMBASE, CINHALL, Medline, PubMed, Cochrane, and PsycINFO) was conducted targeting articles on the epidemiology of comorbid SUDs in individuals with EDs, in particular, reported rates of prevalence. The review was performed in accordance with PRISMA guidelines and was limited to studies using standardized or validated criteria to assign ED and SUD diagnoses, published between 1980 and 2017.

**Results:** A total of 43 studies fulfilled inclusion criteria and were included in the study. This review indicates that the prevalence of SUD is higher in individuals with bulimia nervosa (BN) than in anorexia nervosa (AN), and highest amongst those with both disorders (ANBN).

**Discussion:** A limitation to the study was that none of the included studies investigated the new DSM-5 feeding and eating disorders, which warrants attention in future studies investigating the epidemiology of feeding and eating disorders. Several mechanisms explaining the eating disorder-substance use/abuse link are considered, and suggestions for future research are made.

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