Program Grid
as at 18/11/2015

NOTE - This is a preliminary program only and subject to change

WEDNESDAY 2 DECEMBER 2015: DAY 1				
0700-2000	**Registration and Information Desk Open**			
0830-0905	**Official Conference Opening**			
Room	**Le Grand Ballroom 3**			
Chair	Thomas Burne			
0830-0845	*Conference Opening Address* **Hon Cameron Dick**			
0845-0905	*SMHR Presidential Address* **Professor Patrick McGorry**			
0905-0935	**Consumer Plenary 1**			
Room	**Le Grand Ballroom 3**			
Chair	Thomas Burne			
	Mental illness, molecules and me: a real-world perspective **Ms Jan Kealton**			
0935-1020	**Keynote Speaker 1**			
Room	**Le Grand Ballroom 3**			
Chair	Dan Siskind			
	Cost-effectiveness research in mental health **Dr Robert Rosenheck**			
1020-1045	**Morning Tea (Level 2 Foyer)**			
1045-1230	**Concurrent Symposia**			
	Concurrent Symposia 1	**Concurrent Symposia 2**	**Concurrent Symposia 3**	**Concurrent Symposia 4**
	SMHR Early Career Research Collaboration	***E-Mental Health***	***Affect - Physical Illness***	***Epidemiology***
Room	**Le Grand Ballroom 3**	**Bastille**	**Concorde**	**St Germain**
Chair	Frances Kay-Lambkin	David Kavanagh	Sarah Cohen-Woods	Vaughan Carr
1045-1230	*SMHR 2015 early career award winners symposium: showcasing the future of mental health research* **Manreena Kaur, Christina Perry, Kiley Seymour, Simon Rosenbaum, Simon Rice, Bridianne O'Dea**	*Innovations in the development, testing and dissemination of e-mental health (eMH) programs* **Nina Pocuca, Stoyan Stoyanov, Megan Price, David Kavanagh**	*Unravelling mechanisms underlying comorbidity between physical illness and depression* **Sarah Cohen-Woods, Magdalene Jawahar, Divya Mehta, Jeffrey Craig, Gavin Lambert**	*Effects of parental characteristics on offspring psychosocial development and potential adult outcomes: record linkage and birth cohort methodologies examining transgenerational influences* **Vaughan Carr, James Scott, Kristin Laurens, Kimberlie Dean, Sandra Matheson, Ashleigh Lin**

1230-1315	**Lunch (Level 2 Foyer)**			
1315-1400	**Keynote Speaker 2**			
Room	**Le Grand Ballroom 3**			
Chair	Peter Schofield			
	Can we use genetics to change our understanding of mental illness? **John and Betty Lynch International Fellow: Dr Pamela Sklar**			
1400-1430	**Consumer Plenary 2**			
Room	**Le Grand Ballroom 3**			
Chair	James Scott			
	The accidental researcher **Ms Imani Gunasekara**			
1430-1500	**Plenary 1**			
Room	**Le Grand Ballroom 3**			
Chair	James Scott			
	Experiences of discrimination and positive treatment in people with mental health problems: findings from an Australian national survey **Dr Nicola Reavley**			
1500-1525	**Afternoon Tea (Level 2 Foyer)**			
1525-1700	**Concurrent Symposia**			
	Concurrent Symposia 5 ***Prevention***	**Concurrent Symposia 6** ***Imaging***	**Concurrent Symposia 7** ***Youth Mental Health***	**Concurrent Symposia 8** ***Substance Use - Alcohol***
Room	**Le Grand Ballroom 3**	**Bastille**	**Concorde**	**St Germain**
Chair	Cath Chapman	Ben Harrison	Sue Cotton	David Kavanagh
1525-1700	*Paying attention to prevention and early intervention: innovative approaches to tackle alcohol and other drug use and mental health problems in young people* **Nicola Newton, Lexine Stapinski, Katrina Champion, Catherine Quinn, Louise Birrell**	*Neuroimaging and computational approaches to depression* **Ben Harrison, Mayuresh Korgaonkar, Christopher Davey, Daniel Hermens, Sarah Whittle, Michael Breakspear**	*Mental health and wellbeing of young people in out of home care: results from the Ripple project* **Sue Cotton, Helen Herrman, Simon Malcolm, Kristen Moeller-Saxone**	*Innovations in the treatment of alcohol misuse* **David Kavanagh, Jason Connor, Leanne Hides, Frances Kay-Lambkin, Sally Hunt**
1700-1745	**SMHR Annual General Meeting (Le Grand Ballroom 3)**			
1745-1845	**ECR Function (Bastille Room)**			
1800-2000	**Welcome Reception (Soiree Deck, Level 3)**			

THURSDAY 3 DECEMBER 2015: DAY 2				
0800-1800	**Registration and Information Desk Open**			
0830-0900	**Plenary 2**			
Room	**Le Grand Ballroom 3**			
Chair	Dan Siskind			
	Healthy Active Lives (HeAL): building a healthier future for youth with psychosis **Dr Jackie Curtis**			
0900-0930	**Plenary 3**			
Room	**Le Grand Ballroom 3**			
Chair	Murray Cairns			
	Towards a molecular parsing of schizophrenia **Professor Suresh Sundram**			
0930-1000	**Plenary 4**			
Room	**Le Grand Ballroom 3**			
Chair	Divya Mehta			
	Using collaboration to advance the understanding of the impact of common genetic variants and psychiatric disease on the brain **Associate Professor Sarah Medland**			
1000-1030	**SMHR Founders Medal Award Presentation**			
1030-1100	**Morning Tea (Level 2 Foyer)**			
1100-1230	**Concurrent Symposia**			
	Concurrent Symposia 9	**Concurrent Symposia 10**	**Concurrent Symposia 11**	**Concurrent Symposia 12**
	Mental Health Reform	***Patterns of Substance Abuse***	***Population Mental Health***	***Cortical Development***
Room	**Le Grand Ballroom 3**	**Bastille**	**Concorde**	**St Germain**
Chair	Harvey Whiteford	Gary Chan	Peter Butterworth	Helen Cooper
1100-1230	*The NHMRC Centre of Research Excellence in Mental Health System Improvement: evidence for guiding mental health reform in Australia* **Harvey Whiteford, Emily Stockings, Yong Yi Lee, Long K D Le, Filipa Sampaio, Sandra Diminic**	*Trends and patterns of substance use among young people in Australia 1996 - 2013* **Gary Chung Kai Chan, Catherine Quinn, Megan Weier**	*Better assessment of mental health in the population* **Peter Butterworth, Maree Teesson, Matthew Sunderland Alison Calear, Philip Batterham**	*Cortical development and plasticity* **Helen Cooper, Julian Heng, Laura Fenlon, Anthony Hannan**

1230-1330	**Lunch (Level 2 Foyer)**			
1330-1400	**Plenary 5**			
Room	**Le Grand Ballroom 3**			
Chair	John McGrath			
	Bullying: a modifiable risk factor for mental illness **Associate Professor James Scott**			
1400-1430	**SMHR Oration Award Presentation**			
1430-1600	**Concurrent Sessions**			
	Concurrent 1	**Concurrent 2**	**Concurrent 3**	**Concurrent 4**
	Biological Psychiatry Genetics	***Work Mental Health***	***Psychosis***	***Epidemiology - Free***
Room	**Le Grand Ballroom 3**	**Bastille**	**Concorde**	**St Germain**
Chair	Murray Cairns	Peter Butterworth	Katherine Boydell	Lana Williams
1430-1445				*Hour-glass ceilings: work time thresholds, gender and health inequities* **Huong Dinh**
1445-1500				*No mental health without oral health - a meta-analysis of the prevalence of dental disease in a range of psychiatric disorders* **Steve Kisely**
1500-1515	*Big data in neuropsychiatry* **Jake Gratten, Murray J Cairns, Melissa J. Green, Andrew Zalesky**		*The contributions of qualitative inquiry in early psychosis* **Katherine Boydell, Terence McCan, Alan Rosen, Andrew Watkins, Adele De Jager**	*Bullying and academic performance in primary school children* **Lisa Mundy**
1515-1530		*Work and mental health: what have we learnt from recent studies?* **Samuel Harvey, Nick Glozier, Bridianne O'Dea, Peter Butterworth, Simon Øverland, Arnstein Mykletun**		*Suicide among emergency and protective service workers: a retrospective mortality study in Australia, 2001 to 2012* **Allison Milner**
1530-1545	*Maternal vitamin D deficiency is associated with autism spectrum symptoms in offspring* **Anna Vinkhuyzen**			*Depression as a risk factor for fracture: cross sectional and longitudinal evidence* **Lana Williams**
1545-1600	*Mapping of the kynurenine pathway metabolism in autism: implication for immune-induced glutamatergic activity* **Chai (Edwin) Lim**		*An antipsychotic treatment that provides a 3-month dosing interval to deliver paliperidone: a relapse-prevention trial assessment* **Srihari Gopal**	*Depression is a risk factor for incident coronary heart disease in women: an 18-year longitudinal study* **Adrienne O'Neil**
1600-1800	**Working Afternoon Tea (Level 2 Foyer)**			
	Poster Sessions			
Room	**Level 2 Foyer**			
1600-1700	Poster Presentations (Even)			
1700-1800	Poster Presentations (Odd)			
1900-2300	**Conference Dinner** **(Brisbane City Hall)**			

FRIDAY 4 DECEMBER 2015: DAY 3	
0800-1700	**Registration and Information Desk Open**
0830-0900	**Plenary 6**
Room	**Le Grand Ballroom 3**
Chair	Frances Kay-Lambkin
	What is the impact of amphetamine-type stimulants on the burden of psychosis in Australia? **Dr Grant Sara**
0900-0930	**Plenary 7**
Room	**Le Grand Ballroom 3**
Chair	Frances Kay-Lambkin
	The changing landscape of mental and substance use disorders among young people: epidemiological evidence and implications for prevention and early intervention **Associate Professor Tim Slade**
0930-1000	**Plenary 8**
Room	**Le Grand Ballroom 3**
Chair	Harvey Whiteford
	Mental health economics - what should matter? **Associate Professor Cathrine Mihalopoulos**
1000-1030	**Morning Tea (Level 2 Foyer)**

1030-1215	Concurrent Sessions			
	Concurrent 5	**Concurrent 6**	**Concurrent 7**	**Concurrent 8**
	Global Burden of Disease	***Biological Psychiatry - Free***	***Psychosis - Free***	***Substance I - Free***
Room	**Le Grand Ballroom 3**	**Bastille**	**Concorde**	**St Germain**
Chair	Harvey Whiteford	Anthony Hannan	Dan Siskind	Marie-Paule Austin
1030-1045	*Mental and substance use disorders in the Global Burden of Disease Study 2013: an in depth analysis of methods, results, and applications* **Harvey Whiteford, Louisa Degenhardt, Alize Ferrari, Holly Erskine, Fiona Charlson, Janni Leung**	*Developmental metabotropic glutamate 5 receptor expression in the prefrontal cortex and hippocampus in the perinatal PCP rodent model of schizophrenia* **Jeremy Lum**	*Factors that predict detection and awareness of pre-diabetes and diabetes in a national Australian sample of adults with psychosis* **Andrew Mackinnon**	*The Australian Perinatal Depression Initiative (NPDI): a policy evaluation* **Marie-Paule Austin, Cathy Mihalopoulos, Nicole Highet, Taryn Major, Natasha Donnolley, Mary Lou Chatterton** *please note: session runs from 10:30 - 12:30 hours*
1045-1100		*Vitamin D deficiency leaves the brain vulnerable to second hit exposures* **Thomas Burne**	*Differentiating early and very early onset psychosis: do we have the cut-off for age of psychosis onset correct?* **Ashleigh Lin**	
1100-1115		*Treatment of depersonalisation disorder with high frequency left-sided repetitive transcranial magnetic stimulation* **Marc Capobianco**	*The first episode psychosis outcome study: preliminary data on the long-term follow-up of first episode psychosis patients who were treated at the Early Psychosis Prevention and Intervention Centre between 1998-2000* **Sue Cotton**	
1115-1130		*Predictors and patterns of long-term mental health and heroin use: findings from the 11-year follow-up of the Australian Treatment Outcome Study* **Christina Marel**	*Oxytocin induced grey matter changes in an early psychosis population* **Marilena DeMayo**	
1130-1145		*An inflammatory dietary pattern is associated with increased psychological symptoms in Australian women* **Sarah Dash**	*Service use and illness profiles in FEP patients - why we should intervene early* **Julia Lappin**	
1145-1200		*Methamphetamine psychosis: studying the role of BDNF in animal models* **Maarten Van Den Buuse**	*Polygenic risk scores among cognitive subtypes of schizophrenia and bipolar disorder* **Melissa Green**	
1200-1215	*The CORE Study: trialing co-design for recovery* **Kali Godbee**	*Childhood trauma-related gray matter concentration alterations in psychotic disorders* **Yann Quide**	*The addition of depression to the Framingham Risk Equation model improves risk prediction for coronary heart disease in women* **Adrienne O'Neil**	
1215-1300	**Lunch (Level 2 Foyer)**			

1300-1400	Mini Concurrent Sessions			
	Mini Concurrent 1	**Mini Concurrent 2**	**Mini Concurrent 3**	**Mini Concurrent 4**
	Epidemiology - Free	***Psychosis - Free***	***Physical Health - Free***	***Youth Mental Health***
Room	**Le Grand Ballroom 3**	**Bastille**	**Concorde**	**St Germain**
Chair	Meredith Harris	Julia Lappin	Simon Rosenbaum	Katherine Thompson
1300-1315	*The degree of treatment resistant depression (TRD) in an Australia tertiary care setting* **Jenifer Murphy**	*How often do persons with major depression convert to bipolar disorder on prospective follow-up? A systematic review and meta-analysis* **Aswin Ratheesh**	*Feeding the elephant in the room: a systematic review and meta-analysis of nutrition interventions in severe mental illness* **Scott Teasdale**	*Borderline personality disorder in youth* **Andrew Chanen, Francesca Kuperman, Katherine Thompson, Laura Finlayson-Short, Claire Fowler**
1315-1330	*Is the mental health of older persons impacted differently after natural or human induced disasters. A systematic review and meta-analysis of epidemiological data* **Dan Siskind**	*Missed opportunities for early intervention in first episode psychosis in methamphetamine users* **Julia Lappin**	*Yes we can! weight gain prevention during the first two years after antipsychotic initiation in youth with first episode psychosis* **Philip B Ward**	
1330-1345	*Supporting mental health in mothers of children with a disability: informing a public health approach* **Kim-Michelle Gilson**	*Emotional unrest at rest: functional dysconnectivity of the inferior frontal gyrus in young people at genetic risk for bipolar disorder* **Gloria Roberts**	*The impact of childhood parental quality on mental health outcomes in older adults* **Richard Burns**	
1345-1400	*De novo mutations associated with advanced paternal age have a limited influence on autism risk* **Elise Robinson**	*Neural correlates of dynamic emotion perception in schizophrenia and the influence of prior expectations: an fMRI multivariate analysis* **Ilvana Dzafic**	*A randomised, controlled trial of a dietary intervention for adults with major depression (the "SMILES" trial)* **Felice Jacka**	

1400-1500	Mini Concurrent Sessions			
	Mini Concurrent 5	**Mini Concurrent 6**	**Mini Concurrent 7**	**Mini Concurrent 8**
	E-Mental Health - Free	***Epidemiology- Free***	***Sleep and Depression - Free***	***Depression - Free***
Room	**Le Grand Ballroom 3**	**Bastille**	**Concorde**	**St Germain**
Chair	Kathleen Griffiths	Michael Sawyer	Helen Christensen	Breanne Hobden
1400-1415	*The effectiveness of an online mental health induction program for the workplace: a randomised controlled trial* **Kathleen Griffiths**	*Examining DSM and ICD definitions of alcohol and cannabis dependence: a population-based study* **Luise Lago**	*Preventing depression through an insomnia intervention* **Helen Christensen**	*Identification of co-occurring depression and alcohol misuse by General Practitioners* **Breanne Hobden**
1415-1430	*Outcomes of internet-based CBT for depression and anxiety in 'real-world' clinical settings: how do transdiagnostic and disorder-specific programs compare?* **Jill Newby**	*Cost of illness for high prevalence mental disorders in Australia; comparison of 1997 to 2007* **Yu-Chen Lee**	*Looking for structural brain features associated with depression in young adults* **Baptiste Couvy-Duchesne**	*Effectiveness of systems-based suicide prevention programs for protective and emergency services employees: a systematic review and meta-analysis* **Katrina Witt**
1430-1445	*Should I recruit via Facebook? A systematic review of studies that have used Facebook to recruit participants* **Louise Thornton**	*Emergency department and ambulance contacts due to self-harm after release from prison in Queensland: a prospective data linkage study* **Rohan Borschmann**	*Can we identify which patients are most likely to have a nocebo response? Results from meta-analyses of the placebo arms of clinical trials* **Seetal Dodd**	*Disproportionate impulsive and repeated intentional self-poisoning associated with use of selective serotonin reuptake inhibitors in patients with comorbid depression and alcohol use disorders* **Kate Chitty**
1445-1500	*Experience sampling of thought using mobile technology* **Janie Busby Grant**	*The mental health of children and adolescents: report on the second Australian child and adolescent survey of mental health and wellbeing* **Michael Sawyer**	*Online insomnia treatment and the reduction of anxiety symptoms: the role of cognitive-behavioural factors* **John Gosling**	*Depressed, substance dependent individuals with and without social anxiety: occurrence and clinically important differences* **Katrina Prior**
1500-1515	**Afternoon Tea (Level 2 Foyer)**			
1515-1600	**Keynote 3**			
Room	**Le Grand Ballroom 3**			
Chair	Patrick McGorry			
	Revitalising translational psychiatry **Professor Steve Hyman**			
1600-1630	**Invited Presentation**			
Room	**Le Grand Ballroom 3**			
Chair	Naomi Wray			
	Schizophrenia, the MHC locus and complement: from human genetics to molecular mechanisms **Professor Steven McCarrol**			
1630-1700	**Conference Close and Awards Presentation (Le Grand Ballroom 3)**			

society for mental health research (smhr) 2015 conference

organising committee

local organising committee

- **Chair:** Thomas Burne
- Pauline Ko
- Duncan McLean
- Naomi Wray
- James Scott
- Helen Cooper
- Michael Breakspear
- Kathie Overeem
- Anthony Harris
- Natalie Groves
- Emma Barkus
- Natacha Carragher
- Dan Siskind
- Amanda Baxter
- Meredith Harris
- Natalie Mills

scientific sub-committee

- **Chair:** Thomas Burne
- Helen Cooper
- James Scott
- Naomi Wray
- Anthony Harris
- Amanda Baxter
- Dan Siskind
- Meredith Harris
- Michael Breakspear

early career researcher sub-committee

- **Chair:** Natacha Carragher
- Emma Barkus
- Kathie Overeem
- Natalie Mills
- Natalie Groves

social sub-committee

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2–4 december 2015

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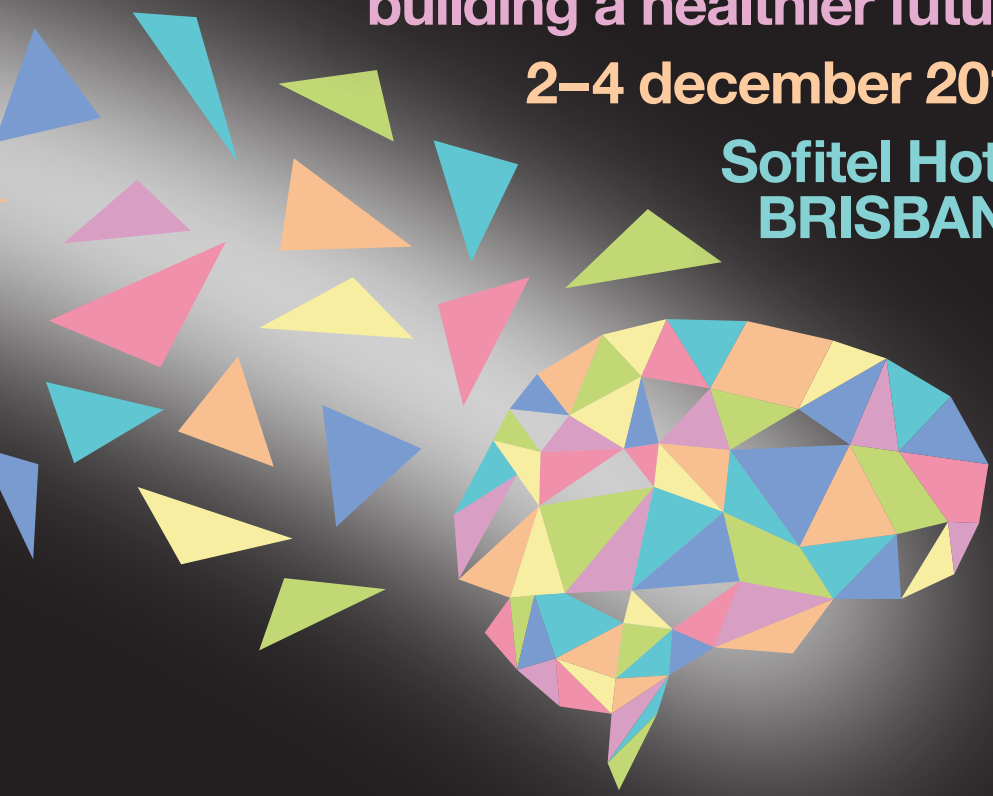

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0905-0935		**Consumer Plenary 1, Chair: Thomas Burne**			
		Mental illness, molecules and me: a real-world perspective **Ms Jan Kealton**			
0935-1020		**Keynote Speaker 1, Chair: Dan Siskind**			
		Cost-effectiveness research in mental health **Dr Robert Rosenheck**			
1020-1045	**Morning Tea (Level 2 Foyer)**				
1045-1230	**Concurrent Symposia**				
	Concurrent Symposia 1 **SMHR Early Career Research Collaboration** **Le Grand Ballroom 3**	*Concurrent Symposia 2* **E-Mental Health** **Bastille**	*Concurrent Symposia 3* **Affect - Physical Illness** **Concorde**	*Concurrent Symposia 4* **Epidemiology** **St Germain**	
1230-1315	**Lunch (Level 2 Foyer)**				
1315-1400	Le Grand Ballroom 3	**Keynote Speaker 2, Chair: Peter Schofield**			
		Can we use genetics to change our understanding of mental illness? **John and Betty Lynch International Fellow: Dr Pamela Sklar**			
1400-1430		**Consumer Plenary 2, Chair James Scott**			
		The accidental researcher **Ms Imani Gunasekara**			
1430-1500		**Plenary 1, Chair: James Scott**			
		Experiences of discrimination and positive treatment in people with mental health problems: findings from an Australian national survey **Dr Nicola Reavley**			
1500-1525	**Afternoon Tea (Level 2 Foyer)**				
1525-1700	**Concurrent Symposia**				
	Concurrent Symposia 5 **Prevention** **Le Grand Ballroom 3**	*Concurrent Symposia 6* **Imaging** **Bastille**	*Concurrent Symposia 7* **Youth Mental Health** **Concorde**	*Concurrent Symposia 8* **Substance Use - Alcohol** **St Germain**	
1700-1745	**Le Grand Ballroom 3**	**SMHR Annual General Meeting**			
1745-1845	**Bastille Room**	**ECR Function**			
1800-2000	**Soiree Deck, Level 3**	**Welcome Reception**			

THURSDAY 3 DECEMBER 2015: DAY 2

0800-1800	Registration and Information Desk Open				
0830-0900	Le Grand Ballroom 3	**Plenary 2, Chair: Dan Siskind**			
		Healthy Active Lives (HeAL): building a healthier future for youth with psychosis **Dr Jackie Curtis**			
0900-0930		**Plenary 3, Chair: Murray Cairns**			
		Towards a molecular parsing of schizophrenia **Professor Suresh Sundram**			
0930-1000		**Plenary 4, Chair: Divya Mehta**			
		Using collaboration to advance the understanding of the impact of common genetic variants and psychiatric disease on the brain **Associate Professor Sarah Medland**			
1000-1030		**SMHR Founders Medal Award Presentation**			
1030-1100	**Morning Tea (Level 2 Foyer)**				
1100-1230	**Concurrent Symposia**				
	Concurrent Symposia 9 **Mental Health Reform** **Le Grand Ballroom 3**	*Concurrent Symposia 10* **Patterns of Substance Abuse** **Bastille**	*Concurrent Symposia 11* **Population Mental Health** **Concorde**	*Concurrent Symposia 12* **Cortical Development** **St Germain**	
1230-1330	**Lunch (Level 2 Foyer)**				
1330-1400	Le Grand Ballroom 3	**Plenary 5, Chair: John McGrath**			
		Bullying: a modifiable risk factor for mental illness **Associate Professor James Scott**			
1400-1430		**SMHR Oration Award Presentation**			
1430-1600	**Concurrent Sessions**				
	Concurrent 1 **Biological Psychiatry Genetics** **Le Grand Ballroom 3**	*Concurrent 2* **Work Mental Health** **Bastille**	*Concurrent 3* **Psychosis** **Concorde**	*Concurrent 4* **Epidemiology - Free** **St Germain**	
1600-1800	**Working Afternoon Tea (Level 2 Foyer)**				
1600-1800	Level 2 Foyer	**Poster Sessions**			
1600-1700		Poster Presentations (Even)			
1700-1800		Poster Presentations (Odd)			
1900-2300	**Brisbane City Hall**	**Conference Dinner**			

smhr2015 program at a glance

building a healthier future

2–4 december 2015

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FRIDAY 4 DECEMBER 2015: DAY 3

0800-1700	Registration and Information Desk Open				
0830-0900	Le Grand Ballroom 3	**Plenary 6, Chair: Frances Kay-Lambkin** *What is the impact of amphetamine-type stimulants on the burden of psychosis in Australia?* **Dr Grant Sara**			
0900-0930		**Plenary 7, Chair: Frances Kay-Lambkin** *The changing landscape of mental and substance use disorders among young people: epidemiological evidence and implications for prevention and early intervention* **Associate Professor Tim Slade**			
0930-1000		**Plenary 8, Chair: Harvey Whiteford** *Mental health economics - what should matter?* **Associate Professor Cathrine Mihalopoulos**			
1000-1030	Morning Tea (Level 2 Foyer)				
1030-1215	Concurrent Sessions				
	Concurrent 5 Global Burden of Disease - Free Le Grand Ballroom 3	*Concurrent 6* Biological Psychiatry - Free Bastille	*Concurrent 7* Psychosis - Free Concorde	*Concurrent 8* Substance I - Free St Germain	
1215-1300	Lunch (Level 2 Foyer)				
1300-1400	Mini Concurrent Sessions				
	Mini Concurrent 1 Epidemiology - Free Le Grand Ballroom 3	*Mini Concurrent 2* Psychosis - Free Bastille	*Mini Concurrent 3* Physical Health Concorde	*Mini Concurrent 4* Youth Mental Health St Germain	
1400-1500	Mini Concurrent Sessions				
	Mini Concurrent 5 E-Mental Health - Free Le Grand Ballroom 3	*Mini Concurrent 6* Epidemiology-Free Bastille	*Mini Concurrent 7* Sleep and Depression - Free Concorde	*Mini Concurrent 8* Depression - Free St Germain	
1500-1515	Afternoon Tea (Level 2 Foyer)				
1515-1600	Le Grand Ballroom 3	**Keynote 3, Chair: Patrick McGorry** *Revitalising translational psychiatry* **Professor Steve Hyman**			
1600-1630		**Invited Presentation, Chair: Naomi Wray** *Schizophrenia, the MHC locus and complement: from human genetics to molecular mechanisms* **Professor Steven McCarrol**			
1630-1700		Conference Close and Awards Presentation			

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Associate Professor Sue Cotton

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VIC: Associate Professor Cathy Mihalopoulos
WA: no current representative
NZ: Dr Christopher Gale

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Kathie Overeem
Natalie Mills
Natalie Groves

Social Sub-committee

Duncan McLean
Pauline Ko

Welcome from the Conference Convenor Associate Professor Thomas Burne

Dear Colleagues,

On behalf of the local organising committee, I would like to welcome you to the 2015 Society for Mental Health (SMHR) Conference. This year's conference is in Brisbane, the most liveable city in Australia.

The theme of this year's conference is Building a Healthier future, and it will focus on mental health research that underpins our policies on keeping Australians healthy. The Mental As… campaign is in its second year and this year we present, for the first time, a number of the successful SMHR early career researcher awardees. We have a wonderful selection of international and national speakers who cover the broad church that is mental health research. I am particularly delighted to welcome all the very talented early and mid-career researchers to what looks to be a vibrant and exciting meeting.

Brisbane has had a long standing tradition in mental health research, with the MUSP study at the Mater hospital, and the Brisbane longitudinal twin study at QIMR, to name but a few. Brisbane is an active research community with involvement of The University of Queensland, Griffith University, QUT and the Queensland Centre for Mental Health Research.

The conference scientific program features a wide range of symposia including sessions on affective disorders, e-Mental health, epidemiology, policy, biological psychiatry and translational research. This year we are running up to 4 concurrent sessions, which will provide a breadth of interest for all. We have included a dedicated poster session combined with a working afternoon tea to help facilitate discussions and interactions on the floor, which promises to be both engaging and informative.

I would like to take this opportunity to thank the local organising committee, Naomi Wray, Michael Breakspear, Anthony Harris, Helen Cooper, Dan Siskind, Meredith Harris, Amanda Baxter, Duncan McLean, James Scott, Pauline Ko, Natalie Groves, Natalie Mills, Kathie Overeem, Natacha Carragher and Emma Barkus. We are most grateful to our keynote and plenary speakers, Steven Hyman, Robert Rosenheck, Pamela Sklar, Jan Kealton, Imani Gunasekara, Nicola Reavley, Jackie Curtis, Suresh Sundram, Sarah Medland, James Scott, Grant Sara, Tim Slade and Cathy Mihalopoulos. We also gratefully acknowledge the generous support of our sponsors the Mental Health Council of Australia. I particularly want to express my thanks to Jo Fitzsimmons and Frances Kay-Lambkin from the SMHR executive, and Kirsty Whitehead and Kelsey Shi from WALDRONSMITH Management. Finally, I would like to thank Nick Valmas and the support of QBI for their invaluable help with design and production.

The social events this year feature the welcome reception on the Soiree Deck at the Sofitel, and the conference dinner at the newly refurbished Brisbane City Hall; I hope to see you there!

We look forward to meeting you in Brisbane over the coming days,

Associate Professor Thomas Burne, PhD

Principal Research Fellow, Queensland Brain Institute, The University of Queensland
Queensland Centre for Mental Health Research

Conference Convenor

Welcome from the SMHR President Professor Patrick McGorry

Dear Colleagues,

On behalf of SMHR I extend the warmest of welcomes to Brisbane for our annual conference. This year's meeting is one of the highest quality and we are indebted to Tom Burne, the Local Organising Committee and the Scientific Program Committee for putting together such a fabulous array of speakers and to the SMHR community for submitting such top quality Australasian research.

SMHR is changing and expanding its horizons and reach. The inaugural "Mental As" campaign hosted by the ABC in 2014 raised $1.5m to support 13 early career researchers and we have followed this up again in 2015 with another successful partnership with the ABC. The yield this time was substantially less for reasons that we are examining but have to do with marketing mainly. In any event in addition to the traditional role as a peak body for mental health research in Australasia, SMHR has now become a funder of mental health research and has joined both Research Australia and the International Alliance for Mental Health Research Funders. Mental Health has not only suffered from being the poor cousin in relation to levels of government funding for medical research, but it has been much more seriously overlooked by corporate, philanthropic and by the general public as a destination for donations. To transform this situation the charity MQ was established in the UK with a seed grant from the Wellcome Foundation. SMHR has decided to position itself alongside MQ to take on this challenge in Australia to transform the landscape of funding for mental health research and increase capacity and quality. Australasian mental health researchers are already performing at a very high level in relation to international benchmarks, even better than many higher profile and better funded areas of Australian medical research. It is high time they received a fair deal and overdue support for their work and for injections of new talent and resources. SMHR will evolve its governance and structure to enable it to assume these catalytic roles and we seek the support and engagement of the membership for this transformation.

On behalf of the SMHR Executive I would like to welcome you all and hope you have a very stimulating and enjoyable conference.

Kindest regards,

Professor Patrick McGorry
President, SMHR

Sponsors

The Conference gratefully acknowledges the following for their support:

Major partner

pat.
Psychosis Australia Trust

Mental health conference funding program sponsors

Australian Government
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Welcome reception and conference dinner sponsor

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The University Of Queensland AUSTRALIA | QBI
Queensland Brain Institute

Name badge and lanyard sponsor

Black Dog Institute

Conference supporter

Lundbeck

Industry Display

The industry display will be held in the foyer of Level 2, Sofitel Brisbane Hotel.
All catering will also be served in this area.

The Conference gratefully acknowledges the following for their support:

	TBooth/s
NHMRC CENTRE OF RESEARCH EXCELLENCE in MENTAL HEALTH and SUBSTANCE USE	T01
ESSA EXERCISE & SPORTS SCIENCE AUSTRALIA	T02
SERVIER	T03
pat Psychosis Australia Trust	T04

The industry display area will open as follows:

Wednesday 2 December 2015	0830–1700 hours
Thursday 3 December 2015	0830–1800 hours
Friday 4 December 2015	0900–1600 hours

Conference Venue

Sofitel Brisbane

249 Turbot Street
Brisbane QLD 4000

T +61 7 3835 3535
F +61 7 3835 4960

www.sofitelbrisbane.com.au

The Conference takes place at the Sofitel Brisbane Hotel and will be held in the following rooms on Level 2:

Registration and Information Desk

Level 2 Foyer

Plenary Sessions

Le Grand Ballroom 3

Industry Display

Level 2 Foyer

Concurrent Sessions

Bastille Room
Concorde Room
St Germain Room
Le Grand Ballroom 3

Registration and Information Desk

The Registration and Information desk will be located in the Level 2 Foyer, Sofitel Brisbane Hotel.

The desk will be open as follows:

Wednesday 2 December 2015	0700–1930 hours
Thursday 3 December 2015	0800–1800 hours
Friday 4 December 2015	0800–1700 hours

Speakers Preparation Room

The Speakers Preparation room will be located in the Montmarte Room, Level 2, Sofitel Brisbane Hotel and will be open as follows:

Wednesday 2 December 2015	0730–1730 hours
Thursday 3 December 2015	0800–1600 hours
Friday 4 December 2015	0830–1530 hours

Pre-conference Workshop Venue

Pre-conference workshops will be held at either:

The University of Queensland,
St Lucia, Brisbane

Translational Research Institute (TRI),
37 Kent Street, Woolloongabba, Brisbane

Conference Venue

Sofitel Brisbane Level 2

General Information

Catering

All lunches, morning and afternoon teas will be served in the Level 2 Foyer of the Sofitel Brisbane Hotel.

Car Parking

The Sofitel Brisbane Hotel has onsite parking at a cost of $60AUD for 4+ Hours and $47AUD for hotel guests. The closest public car park is the Wickham Terrace multi-level car park, located between Wickham Terrace and Turbot Street, opposite the Sofitel Hotel and above Central Station.

Certificate of Attendance

A certificate of attendance will be sent via email following the Conference.

Delegate List

A delegate list was distributed electronically prior to the Conference.

Disclaimer

Society for Mental Health Research (SMHR), the Conference Organising Committee and **WALDRONSMITH Management** will not accept liability for the damages of any nature sustained by participants or their accompanying persons for loss or damage to their personal property as a result of SMHR2015 and exhibition or related events.

Dress Code

The Conference dress code is smart casual.

Insurance

Registration fees do not include insurance of any kind. The Conference organisers, Organising Committee and The Society for Mental Health Research will take no responsibility for any participant failing to insure.

Mobile Phones

As courtesy to fellow delegates, mobile phones should be switched off or on silent during Conference sessions.

Name Badges and Security

Your official Conference name badge must be worn at all times, as it is your entry to all sessions and functions. Entry to anyone not wearing their name badge will be refused.

People with Special Needs

Every effort will be made to ensure that delegates with special needs are catered for. However, any special requirements advised onsite at the Conference, without prior notice, cannot be guaranteed.

Special Dietary Requirements

Every effort is made to ensure people with special dietary requirements are catered for.

Smoking Policy

The Sofitel Brisbane is a non smoking venue.

Useful Telephone Numbers

ACCOMMODATION	
Sofitel Brisbane	+61 7 3835 3535
Novotel Brisbane	+61 7 3309 3309
Oaks Lexicon Apartments	+61 7 3222 4999
TRANSPORT	
Taxis	13 22 27
CAR HIRE	
Avis	13 63 33
Budget	13 27 27
Europcar	13 13 90
Hertz	13 30 39
Thrifty	1300 367 227
AIRLIINES	
Qantas	13 13 13
Jetstar	13 15 38
Virgin Blue	13 67 89
Tiger Airways	+61 2 8073 3421

Further Enquiries

Please contact the SMHR 2015 Conference Office
+61 3 9645 6311

WALDRONSMITH Management
119 Buckhurst Street
South Melbourne
VIC 3205 Australia

T +61 3 9645 6311
F +61 3 9645 6322
E smhr2015@wsm.com.au

www.smhr2015.com.au

Accommodation

1. Sofitel Brisbane Hotel

249 Turbot Street
Brisbane QLD 4000

Located onsite at Conference Venue

2. Novotel Hotel

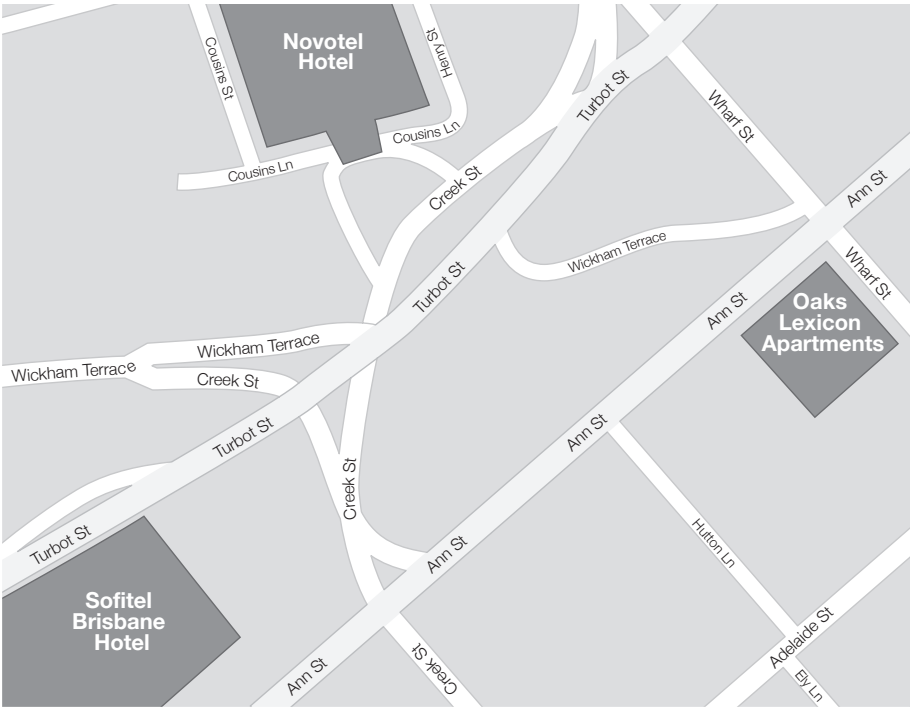
200 Creek Street
Brisbane QLD 4000

Walking distance to the Sofitel Hotel 270 m, approximately a 4 minute walk

3. Oaks Lexicon Apartments

347 Ann Street
Brisbane QLD 4000

Walking distance to the Sofitel Hotel 350 m, approximately a 5 minute walk



Keynote Speakers

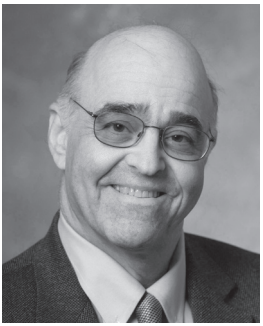
INTERNATIONAL KEYNOTE SPEAKERS

Steven E Hyman MD Broad Institute of Harvard and MIT, USA

Steven E Hyman, MD is Director of the Stanley Centre for Psychiatric Research at the Broad Institute of Harvard and MIT, a Core Faculty Member of the Broad Institute, and Harvard University Distinguished Service Professor of Stem Cell and Regenerative Biology. From 2001 to 2011, he served as Provost of Harvard University, the University's chief academic officer. As Provost he had a special focus on development of collaborative initiatives in the sciences and engineering spanning multiple disciplines and institutions. From 1996 to 2001, he served as director of the US National Institute of Mental Health (NIMH), where he emphasised investment in neuroscience and emerging genetic technologies. He also initiated a series of large practical clinical trials, including an emphasis on children, a population about which little was known.

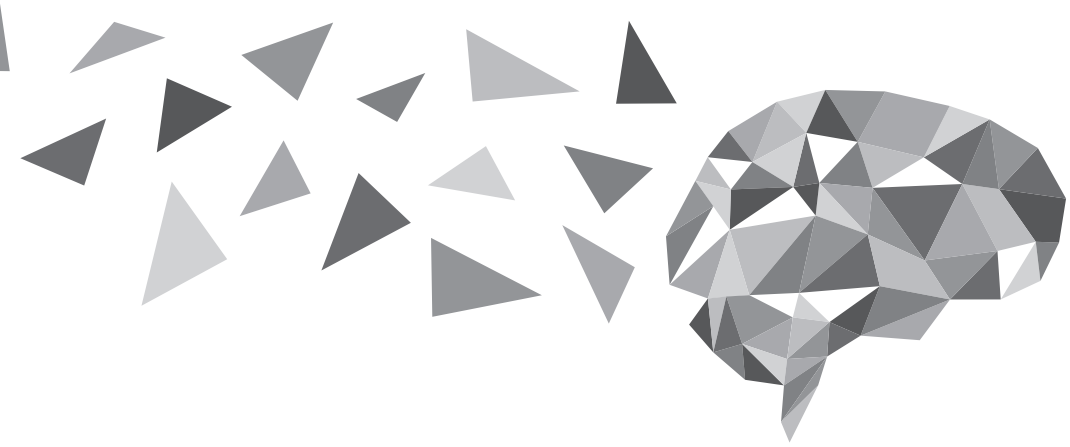
Hyman is the editor of the Annual Review of Neuroscience, founding President of the International Neuroethics Society (2008-2014), and President (2015) of the Society for Neuroscience, the leading professional organisation for neuroscientists with approximately 40,000 members. He is a member of the Institute of Medicine of the U.S. National Academies where he serves on the governing Council, the Board of Health Science Policy, and chairs the Forum on Neuroscience and Nervous System Disorders, which brings together industry, government, academia, patient groups, and foundations. He is a fellow of the American Academy of Arts and Sciences, a fellow of the American Association for the Advancement of Science, a fellow of the American College of Neuropsychopharmacology, and a Distinguished Life Fellow of the American Psychiatric Association. Hyman received his B.A. summa cum laude from Yale College, a B.A. and M.A. from the University of Cambridge, which he attended as a Mellon fellow, and an M.D. cum laude from Harvard Medical School.

Dr Robert A Rosenheck MD Yale Medical School, USA



Dr Robert Rosenheck is Professor of Psychiatry and Public Health at the Child Study Center at Yale Medical School where he is also Director of the Division of Mental Health Services and Outcomes Research in the Department of Psychiatry, and Senior Investigator at the VA New England Mental Illness Research and Education Center. He is an internationally known mental health service researcher who is a leader in cost-effectiveness studies of behavioural health interventions, especially those for homeless people with mental illness, and in monitoring quality of care and other aspects of the performance of large health care system. As founding Director of the Department of Veterans Affairs Northeast Program Evaluation Center he spent 22 years evaluating, disseminating and monitoring innovative programs for homeless veterans. He has been a prime architect of national VA collaborative programs with both the Department of Housing and Urban Development and the Social Security Administration.

He also directed the client-level evaluation of the ACCESS program for homeless mentally ill Americans, for the Substance Abuse and Mental Health Services Administration of the Department of Health and Human Services, which examined the effect of service systems integration on outcomes for homeless persons with severe mental illness in 18 sites and led the evaluation of the joint HUD-HHS-VA multi-site initiative to end chronic homelessness. He conducted the cost-effectiveness analysis for the CATIE schizophrenia and Alzheimer's disease trials and has led 5 VA cooperative studies. He has published more than 700 scientific papers on topics such as performance evaluation of large homeless services systems, the causes of homelessness, the cost-effectiveness of programs for homeless persons with mental illness and antipsychotic medications and has received awards for his research from the American Psychiatric Association and the American Public Health Association among others.



Keynote Speakers INTERNATIONAL KEYNOTE SPEAKERS

Dr Pamela Sklar MD Icahn School of Medicine Mount Sinai, USA

Dr Pamela Sklar MD, PhD is a world-renowned neuroscientist, human geneticist, and clinical psychiatrist. She has significantly advanced the medical community's understanding of the role of genetic variants in mental illness. Her groundbreaking research, which focuses on rare and common DNA and RNA variation and utilises the newest high-throughput genomic technology, has made integral contributions to the understanding of gene and structural variants that increase the risk of bipolar disorder and schizophrenia. Much of the current focus of her work is on defining the functional role of genetic risk variation through multiple genomic strategies.

In addition to her breakthrough discovery that schizophrenia is caused by genetic risk factors that overlap with bipolar disorder, Dr Sklar's lab identified the first replicated genetic finding in bipolar disorder, identified two novel deletions strongly associated with schizophrenia, and identified the complex polygenic molecular nature of schizophrenia and bipolar disorder. These findings have shed critical new light on these illnesses and have the potential to drive new approaches to therapeutic intervention. In recognition of her exceptional contributions, Dr. Sklar was elected to the Institute of Medicine of the National Academies, among the highest honors in medicine in the United States.

As Founding Chief of the Division of Psychiatric Genomics at the Icahn School of Medicine Mount Sinai in New York City, Dr Sklar is drawing upon her experience in developing programs in genetics and translational research in the areas of next-generation sequencing, stem cell biology, proof-of-concept drug trials, and large-scale sample collections. Her team–comprised of experts in statistical genetics, stem cell biology, neurocognition, and imaging–is pioneering ways to translate genetic insights into the clinical practice of psychiatry.

Dr Sklar, who is also Professor of Psychiatry, Neuroscience, and Genetics and Genomic Sciences, has long been at the forefront of collaborative genetic studies of bipolar disorder and schizophrenia through her leadership positions in the International Schizophrenia Consortium; the International Cohort Collection for Bipolar Disorder, the Psychiatric Genome Consortium, and more recently the CommonMind Consortium and the PsychENCODE project. Before joining Mount Sinai in 2011, Dr. Sklar was a founding member of the Stanley Center for Psychiatric Research at the Broad Institute of the Massachusetts Institute of Technology and Harvard Medical School. She served as the Center's Director of Genetics from 2007 to 2011.

Invited Speakers

NATIONAL KEYNOTE SPEAKERS

Dr Jackie Curtis
South Eastern Sydney Local Health District (SESLHD)

Imani Gunasekara
Metro North Mental Health, Royal Brisbane and Women's Hospital

Jan Kealton
Queensland Mental Health Drug and Alcohol Advisory Council

Associate Professor Sarah Medland
Queensland Institute of Medical Research

Associate Professor Cathy Mihalopoulos
Deakin University

Dr Nicola Reavley
University of Melbourne

Dr Grant Sara
University of Sydney

Associate Professor James Scott
University of Queensland School of Medicine and the Royal Brisbane and Women's Hospital

Associate Professor Tim Slade
National Drug and Alcohol Research Centre, The University of New South Wales (UNSW)

Professor Suresh Sundram
University of Melbourne

Pre-conference Workshops

Pre-conference workshops for SMHR 2015 will be held on Tuesday 1 December 2015 at The University of Queensland and the Translational Research Institute (TRI).

Full Day Workshops

Workshop 1:
An introduction to analysing longitudinal data using mixed modelling

Full day workshop: 0900–1700 hours

Location: Queensland Brain Institute (79), Seminar Room, Level 7, The University of Queensland, St Lucia

Presenter: Andrew MacKinnon

Workshop 2:
Australian Rotary Health: Media and Presentation Training Workshop for Early Career Researchers

Full day workshop: Session One: 1030–1400 hours; Session Two 1400–1630 hours

Location: Skerman Building (65), Room 305, The University of Queensland, St Lucia

Presenters:

Professor Rob Morrison OAM, Flinders University of South Australia

Professor Michael Sawyer OAM, University of Adelaide, South Australia

Workshop 3:
Clinical Trials in Mental Health

Full day workshop: 0900–1700 hours

Location: Physiology Lecture Theatre (63), Room 360, The University of Queensland, St Lucia

Presenters:

Prof Sue Cotton, University of Melbourne

Dr Jacqui Waterkeyn, University of Melbourne

Half Day Workshops

Workshop 4:
Managing metabolic adverse drug reactions associated with clozapine treatment for people with treatment refractory schizophrenia

Half day workshop: 1.00pm–5.00pm

Venue: Seminar Room 2003, Translational Research Institute (TRI) Australia, 37 Kent Street, Woolloongabba

Chair: Associate Professor Dan Siskind

Presenters:

Dr Scott Clark, University of Adelaide, Discipline of Psychiatry; Central Adelaide Local Health Network, Adelaide

Associate Professor Dan Siskind, Metro South Addiction; Mental Health Service; University of Queensland, School of Medicine, Brisbane

Professor Steve Kisely, Metro South Addiction; Mental Health Service; University of Queensland, School of Medicine, Brisbane

Professor Robert Rosenheck, Yale University, New Haven, CT, USA

Dr Greg Smith, UNSW, Sydney

Associate Professor Jon Whitehead, University of Queensland, School of Medicine, Brisbane

Workshop 5:
Neurobiology of Mental Health

Half day workshop: 1.00pm–5.00pm

Venue: Queensland Brain Institute (79), Auditorium, Level 7, The University of Queensland, St Lucia

Chair: Associate Professor Tom Burne

Presenters:

Associate Professor Ben Harrison, The University of Melbourne

Associate Professor Melissa Green, University of New South Wales

Professor Maarten van Den Buuse, La Trobe University

Associate Professor Murray Cairns, The University of Newcastle

Professor Pamela Sklar, Icahn School of Medicine at Mount Sinai, USA

SMHR 2015 Conference Awards

SMHR Founders Medal

This award was named in honour of the four founders of SMHR: Professors Scott Henderson, Issy Pilowsky, Graham Burrows and Peter Beaumont. The medal is awarded to persons who, over their entire careers, have made a contribution of significance to psychiatric research. The award winner will deliver an oration at the 2015 Conference.

Current award holder: Professor Ian Hickie

SMHR Oration Award

This Oration is given at each conference by a member of SMHR who is prominent or rising to prominence in the Australian and New Zealand psychiatric research community. The award includes a certificate, $8000 towards the awardee's research and all conference expenses paid. The award winner will deliver an oration at the 2015 Conference.

Current award holder: Professor George Patton

SMHR Rising Star Award

(previously Lundbeck, Merck Sharpe and Dohme / SMHR Schering-Plough Award)

The SMHR Rising Star Award is intended for SMHR researchers whose work is beginning to make a significant impact on the national and international scene, reflecting either scientific excellence or public impact (or both)—the "rising stars" in mental health research.

Current award holder: Professor Mario Alvarez-Jimenez

Australian Rotary Health (ARH) Knowledge Dissemination Award

SMHR has a number of awards acknowledging excellence in research. However, there is often a gap between knowledge gained through research and the dissemination of that knowledge to clinicians, consumers and carers, and its implementation into policy and practice. ARH has therefore established an annual award to recognise excellence in knowledge dissemination and research translation. The award consists of a framed certificate and the expenses of attending the SMHR conference. The winner will be expected to present and to be available to Rotary for no less than three speaking engagements over the ensuing 12 months.

Current award holder: Dr Lexine Stapinski

SMHR Early Career Scholar Award

(previously AFFIRM Early Career Research Scholar Award)

This award is for a researcher early in their career to enable attendance at the SMHR 2015 Conference. The award includes a certificate and SMHR 2015 Conference registration fees.

Current award holder: Simon Rice

SMHR Consumer-Researcher Award

The SMHR Consumer-Researcher Award has been set up to encourage the involvement of consumers as investigators in psychiatric research as well as encourage consumer-oriented research. In 2015, SMHR will award the Consumer-Researcher Award on the basis of research posters submitted to the SMHR 2015 Conference. SMHR will invite representatives from a consumer organisation to take a prominent role in judging the posters. A certificate and award of $1000 will be presented at the 2015 Conference.

Current award holder: Dr Dennis Liu

Best Presentation and Best Poster Awards

These awards are made at each SMHR conference for a variety of categories of oral and poster presentations. The following awards will be available at the SMHR 2015 Conference. If there are joint winners for one award, the amount will be split evenly between the winners.

- Best SMHR debut presentation – certificate and $500
- Best SMHR debut poster – certificate and $500
- Best overall oral presentation – certificate and $500
- Best overall poster – certificate and $500

Current award holders: Ronny Redlich, Dr Joanne Ryan, Shae Quirk, Kathina Ali, Dr Kathleen O'Moore, Dr Manreena Kaur, Emily Stockings and Bill Reda.

Grants-in-Aid

SMHR funds grants-in-aid for students, early career researchers and consumers to facilitate attendance at the SMHR 2015 Conference. Up to 13 Grants-in-Aid (valued at up to $500 each) are available across all categories for students, early career researchers and consumers to facilitate attendance at the SMHR conference, covering travel and accommodation.

Current award holders: Ronny Redlich, Keshani Jaayaree, Louise Birrell, Katrina Prior, Emma Morton, Rothanthi Daglas, Shae Quirk and Robert Maier.

Social Program

Delegates are invited to enjoy a range of social events as part of the SMHR 2015 Conference.

Welcome Reception sponsored by Servier

Date: Wednesday 2 December 2015

Time: 1800–2000 hours

Venue: Soiree Deck, Level 3, Sofitel Brisbane Hotel

Cost: Included in full conference registrations

Tickets: Additional tickets are available at $85.00 per person

Dress Code: Smart Casual

As the first official social event of the SMHR 2015 conference, the Welcome Reception provides you with the opportunity to relax and enjoy the company of colleagues and friends. The Welcome Reception will be held on the Soiree Deck, Level 3 of the Sofitel Brisbane Hotel which has stunning views of Brisbane City.

Conference Gala Dinner sponsored by Servier

Date: Thursday 3 December 2015

Time: 1900–2300 hours

Location: Brisbane Room, Brisbane City Hall, 64 Adelaide Street, Brisbane QLD 4000

Ticket Cost: Tickets are not included in the delegate registration fee. Tickets can be purchased from the registration desk for $130.00 per person

Dress Code: Smart Casual

Enjoy an evening with colleagues and friends at the iconic Brisbane City Hall. Situated in the heart of Brisbane the heritage-listed City Hall provides the perfect back drop to this year's SMHR 2015 Conference Gala Dinner.

WEDNESDAY 2 DECEMBER 2015: DAY 1

0700-2000	Registration and Information Desk Open	
0830-0905	**Le Grand Ballroom 3**	**Official Conference Opening, Chair: Thomas Burne**
0830-0845		Conference Opening Address, **The Hon Cameron Dick MP**
0845-0905		SMHR Presidential Address, **Professor Patrick McGorry**
0905-0935		**Consumer Plenary 1, Chair: Thomas Burne**
		Mental illness, molecules and me: a real-world perspective **Ms Jan Kealton**
0935-1020		**Keynote Speaker 1, Chair: Dan Siskind**
		Cost-effectiveness research in mental health **Dr Robert Rosenheck**
1020-1045	Morning Tea (Level 2 Foyer)	
1045-1230	**Concurrent Symposia**	

	Concurrent Symposia 1 **SMHR Early Career Research Collaboration**	*Concurrent Symposia 2* **E-Mental Health**	*Concurrent Symposia 3* **Affect - Physical Illness**	*Concurrent Symposia 4* **Epidemiology**
	Le Grand Ballroom 3	**Bastille**	**Concorde**	**St Germain**
	Chair: Frances Kay-Lambkin	**Chair: David Kavanagh**	**Chair: Sarah Cohen-Woods**	**Chair: Vaughan Carr**
	SMHR 2015 early career award winners symposium: showcasing the future of mental health research **Manreena Kaur, Christina Perry, Kiley Seymour, Simon Rosenbaum, Simon Rice, Bridianne O'Dea**	*Innovations in the development, testing and dissemination of e-mental health (eMH) programs* **Nina Pocuca, Stoyan Stoyanov, Megan Price, David Kavanagh**	*Unravelling mechanisms underlying comorbidity between physical illness and depression* **Sarah Cohen-Woods, Magdalene Jawahar, Divya Mehta, Jeffrey Craig, Gavin Lambert**	*Effects of parental characteristics on offspring psychosocial development and potential adult outcomes: record linkage and birth cohort methodologies examining transgenerational influences* **Vaughan Carr, James Scott, Kristin Laurens, Kimberlie Dean, Sandra Matheson, Ashleigh Lin**

1230-1315	Lunch (Level 2 Foyer)

WEDNESDAY 2 DECEMBER 2015: DAY 1 continued

1315-1400	Le Grand Ballroom 3	**Keynote Speaker 2, Chair: Peter Schofield**
		Can we use genetics to change our understanding of mental illness? **John and Betty Lynch International Fellow: Dr Pamela Sklar**
1400-1430		**Consumer Plenary 2, Chair James Scott**
		The accidental researcher **Ms Imani Gunasekara**
1430-1500		**Plenary 1, Chair: James Scott**
		Experiences of discrimination and positive treatment in people with mental health problems: findings from an Australian national survey **Dr Nicola Reavley**
1500-1525	Afternoon Tea (Level 2 Foyer)	
1525-1700	**Concurrent Symposia**	

	Concurrent Symposia 5	*Concurrent Symposia 6*	*Concurrent Symposia 7*	*Concurrent Symposia 8*
	Prevention	**Imaging**	**Youth Mental Health**	**Substance Use - Alcohol**
	Le Grand Ballroom 3	**Bastille**	**Concorde**	**St Germain**
	Chair: Cath Chapman	Chair: Ben Harrison	Chair: Sue Cotton	Chair: David Kavanagh
	Paying attention to prevention and early intervention: innovative approaches to tackle alcohol and other drug use and mental health problems in young people Nicola Newton, Lexine Stapinski, Katrina Champion, Catherine Quinn, Louise Birrell	*Neuroimaging and computational approaches to depression* Ben Harrison, Mayuresh Korgaonkar, Christopher Davey, Daniel Hermens, Sarah Whittle, Michael Breakspear	*Mental health and wellbeing of young people in out of home care: results from the Ripple project* Sue Cotton, Helen Herrman, Simon Malcolm, Kristen Moeller-Saxone	*Innovations in the treatment of alcohol misuse* David Kavanagh, Jason Connor, Leanne Hides, Frances Kay-Lambkin, Sally Hunt

1700-1745	Le Grand Ballroom 3	SMHR Annual General Meeting
1745-1845	Bastille Room	ECR Function
1800-2000	Soiree Deck, Level 3	Welcome Reception

THURSDAY 3 DECEMBER 2015: DAY 2

0800-1800 Registration and Information Desk Open

0830-0900	**Le Grand Ballroom 3**	**Plenary 2, Chair: Dan Siskind**
		Healthy Active Lives (HeAL): building a healthier future for youth with psychosis **Dr Jackie Curtis**
0900-0930		**Plenary 3, Chair: Murray Cairns**
		Towards a molecular parsing of schizophrenia **Professor Suresh Sundram**
0930-1000		**Plenary 4, Chair: Divya Mehta**
		Using collaboration to advance the understanding of the impact of common genetic variants and psychiatric disease on the brain **Associate Professor Sarah Medland**
1000-1030		**SMHR Founders Medal Award Presentation**
1030-1100	Morning Tea (Level 2 Foyer)	

1100-1230	**Concurrent Symposia**			
	Concurrent Symposia 9 **Mental Health Reform**	*Concurrent Symposia 10* **Patterns of Substance Abuse**	*Concurrent Symposia 11* **Population Mental Health**	*Concurrent Symposia 12* **Cortical Development**
	Le Grand Ballroom 3	**Bastille**	**Concorde**	**St Germain**
	Chair: Harvey Whiteford	**Chair: Gary Chan**	**Chair: Peter Butterworth**	**Chair: Helen Cooper**
	The NHMRC Centre of Research Excellence in Mental Health System Improvement: evidence for guiding mental health reform in Australia **Harvey Whiteford, Emily Stockings, Yong Yi Lee, Long K D Le, Filipa Sampaio, Sandra Diminic**	*Trends and patterns of substance use among young people in Australia 1996–2013* **Gary Chung Kai Chan, Catherine Quinn, Megan Weier**	*Better assessment of mental health in the population* **Peter Butterworth, Maree Teesson, Matthew Sunderland, Alison Calear, Philip Batterham**	*Cortical development and plasticity* **Helen Cooper, Julian Heng, Laura Fenlon, Anthony Hannan**
1230-1330	Lunch (Level 2 Foyer)			

1330-1400	**Le Grand Ballroom 3**	**Plenary 5, Chair: John McGrath**
		Bullying: a modifiable risk factor for mental illness **Associate Professor James Scott**
1400-1430		**SMHR Oration Award Presentation**

THURSDAY 3 DECEMBER 2015: DAY 2 continued

1430-1600	Concurrent Sessions			
	Concurrent 1 **Biological Psychiatry Genetics**	*Concurrent 2* **Work Mental Health**	*Concurrent 3* **Psychosis**	*Concurrent 4* **Epidemiology - Free**
	Le Grand Ballroom 3	**Bastille**	**Concorde**	**St Germain**
	Chair: Murray Cairns	**Chair: Peter Butterworth**	**Chair: Katherine Boydell**	**Chair: Lana Williams**
1430-1445				*Hour-glass ceilings: work time thresholds, gender and health inequities* **Huong Dinh**
1445-1500				*No mental health without oral health - a meta-analysis of the prevalence of dental disease in a range of psychiatric disorders* **Steve Kisely**
1500-1515	*Big data in neuropsychiatry* **Jake Gratten, Murray J Cairns, Melissa J Green, Andrew Zalesky**	*Work and mental health: what have we learnt from recent studies?* **Samuel Harvey, Nick Glozier, Bridianne O'Dea, Peter Butterworth, Simon Øverland, Arnstein Mykletun**	*The contributions of qualitative inquiry in early psychosis* **Katherine Boydell, Terence McCan, Alan Rosen, Andrew Watkins, Adele De Jager**	*Bullying and academic performance in primary school children* **Lisa Mundy**
1515-1530				*Suicide among emergency and protective service workers: a retrospective mortality study in Australia, 2001–2012* **Allison Milner**
1530-1545	*Maternal vitamin D deficiency is associated with autism spectrum symptoms in offspring* **Anna Vinkhuyzen**			*Depression as a risk factor for fracture: cross sectional and longitudinal evidence* **Lana Williams**
1545-1600	*Mapping of the kynurenine pathway metabolism in autism: implication for immune-induced glutamatergic activity* **Chai (Edwin) Lim**		*An antipsychotic treatment that provides a 3-month dosing interval to deliver paliperidone: a relapse-prevention trial assessment* **Srihari Gopal**	*Depression is a risk factor for incident coronary heart disease in women: an 18-year longitudinal study* **Adrienne O'Neil**

THURSDAY 3 DECEMBER 2015: DAY 2 continued

1600-1800		Working Afternoon Tea (Level 2 Foyer)
1600-1800	**Level 2 Foyer**	**Poster Sessions**
1600-1700		Poster Presentations (Even)
1700-1800		Poster Presentations (Odd)
1900-2300	**Brisbane City Hall**	**Conference Dinner**

FRIDAY 4 DECEMBER 2015: DAY 3

0800-1700 Registration and Information Desk Open

0830-0900	**Le Grand Ballroom 3**	**Plenary 6, Chair: Frances Kay-Lambkin**
		What is the impact of amphetamine-type stimulants on the burden of psychosis in Australia? **Dr Grant Sara**
0900-0930		**Plenary 7, Chair: Frances Kay-Lambkin**
		The changing landscape of mental and substance use disorders among young people: epidemiological evidence and implications for prevention and early intervention **Associate Professor Tim Slade**
0930-1000		**Plenary 8, Chair: Harvey Whiteford**
		Mental health economics - what should matter? **Associate Professor Cathrine Mihalopoulos**
1000-1030		Morning Tea (Level 2 Foyer)

1030-1215	Concurrent Sessions			
	Concurrent 5 **Global Burden of Disease**	*Concurrent 6* **Biological Psychiatry - Free**	*Concurrent 7* **Psychosis - Free**	*Concurrent 8* **Substance I - Free**
	Le Grand Ballroom 3	**Bastille**	**Concorde**	**St Germain**
	Chair: Harvey Whiteford	**Chair: Anthony Hannan**	**Chair: Dan Siskind**	**Chair: Marie-Paule Austin**
1030-1045		*Developmental metabotropic glutamate 5 receptor expression in the prefrontal cortex and hippocampus in the perinatal PCP rodent model of schizophrenia* **Jeremy Lum**	*Factors that predict detection and awareness of pre-diabetes and diabetes in a national Australian sample of adults with psychosis* **Andrew Mackinnon**	
1045-1100		*Vitamin D deficiency leaves the brain vulnerable to second hit exposures* **Thomas Burne**	*Differentiating early and very early onset psychosis: do we have the cut-off for age of psychosis onset correct?* **Ashleigh Lin**	
1100-1115		*Treatment of depersonalisation disorder with high frequency left-sided repetitive transcranial magnetic stimulation* **Marc Capobianco**	*The first episode psychosis outcome study: preliminary data on the long-term follow-up of first episode psychosis patients who were treated at the Early Psychosis Prevention and Intervention Centre between 1998–2000* **Sue Cotton**	
1115-1130	*Mental and substance use disorders in the Global Burden of Disease Study 2013: an in depth analysis of methods, results, and applications* **Harvey Whiteford, Louisa Degenhardt, Alize Ferrari, Holly Erskine, Fiona Charlson, Janni Leung**	*Predictors and patterns of long-term mental health and heroin use: findings from the 11-year follow-up of the Australian Treatment Outcome Study* **Christina Marel**	*Oxytocin induced grey matter changes in an early psychosis population* **Marilena DeMayo**	*The Australian Perinatal Depression Initiative (NPDI): a policy evaluation* **Marie-Paule Austin, Cathy Mihalopoulos, Nicole Highet, Taryn Major, Natasha Donnolley, Mary Lou Chatterton** **please note: session runs from 10:30-12:30 hours**
1130-1145		*An inflammatory dietary pattern is associated with increased psychological symptoms in Australian women* **Sarah Dash**	*Service use and illness profiles in FEP patients–why we should intervene early* **Julia Lappin**	
1145-1200		*Methamphetamine psychosis: studying the role of BDNF in animal models* **Maarten Van Den Buuse**	*Polygenic risk scores among cognitive subtypes of schizophrenia and bipolar disorder* **Melissa Green**	
1200-1215	*The CORE Study: trialing co-design for recovery* **Kali Godbee**	*Childhood trauma-related gray matter concentration alterations in psychotic disorders* **Yann Quide**	*The addition of depression to the Framingham Risk Equation model improves risk prediction for coronary heart disease in women* **Adrienne O'Neil**	

FRIDAY 4 DECEMBER 2015: DAY 3 continued

1215-1300	Lunch (Level 2 Foyer)			
1300-1400	**Mini Concurrent Sessions**			
	Mini Concurrent 1 **Epidemiology - Free**	*Mini Concurrent 2* **Psychosis - Free**	*Mini Concurrent 3* **Physical Health**	*Mini Concurrent 4* **Youth Mental Health**
	Le Grand Ballroom 3	**Bastille**	**Concorde**	**St Germain**
	Chair: Meredith Harris	**Chair: Julia Lappin**	**Chair: Simon Rosenbaum**	**Chair: Katherine Thompson**
1300-1315	*The degree of treatment resistant depression (TRD) in an Australia tertiary care setting* **Jenifer Murphy**	*How often do persons with major depression convert to bipolar disorder on prospective follow-up? A systematic review and meta-analysis* **Aswin Ratheesh**	*Feeding the elephant in the room: a systematic review and meta-analysis of nutrition interventions in severe mental illness* **Scott Teasdale**	*Borderline personality disorder in youth* **Andrew Chanen, Francesca Kuperman, Katherine Thompson, Laura Finlayson-Short, Claire Fowler**
1315-1330	*Is the mental health of older persons impacted differently after natural or human induced disasters. A systematic review and meta-analysis of epidemiological data* **Dan Siskind**	*Missed opportunities for early intervention in first episode psychosis in methamphetamine users* **Julia Lappin**	*Yes we can! weight gain prevention during the first two years after antipsychotic initiation in youth with first episode psychosis* **Philip B Ward**	
1330-1345	*Supporting mental health in mothers of children with a disability: informing a public health approach* **Kim-Michelle Gilson**	*Emotional unrest at rest: functional dysconnectivity of the inferior frontal gyrus in young people at genetic risk for bipolar disorder* **Gloria Roberts**	*The impact of childhood parental quality on mental health outcomes in older adults* **Richard Burns**	
1345-1400	*De novo mutations associated with advanced paternal age have a limited influence on autism risk* **Elise Robinson**	*Neural correlates of dynamic emotion perception in schizophrenia and the influence of prior expectations: an fMRI multivariate analysis* **Ilvana Dzafic**	*A randomised, controlled trial of a dietary intervention for adults with major depression (the "SMILES" trial)* **Felice Jacka**	

FRIDAY 4 DECEMBER 2015: DAY 3 continued

1400-1500	Mini Concurrent Sessions			
	Mini Concurrent 5 **E-Mental Health - Free**	*Mini Concurrent 6* **Epidemiology- Free**	*Mini Concurrent 7* **Sleep and Depression - Free**	*Mini Concurrent 8* **Depression - Free**
	Le Grand Ballroom 3	**Bastille**	**Concorde**	**St Germain**
	Chair: Kathleen Griffiths	**Chair: Michael Sawyer**	**Chair: Helen Christensen**	**Chair: Breanne Hobden**
1400-1415	*The effectiveness of an online mental health induction program for the workplace: a randomised controlled trial* **Kathleen Griffiths**	*Examining DSM and ICD definitions of alcohol and cannabis dependence: a population-based study* **Luise Lago**	*Preventing depression through an insomnia intervention* **Helen Christensen**	*Identification of co-occurring depression and alcohol misuse by General Practitioners* **Breanne Hobden**
1415-1430	*Outcomes of internet-based CBT for depression and anxiety in 'real-world' clinical settings: how do transdiagnostic and disorder-specific programs compare?* **Jill Newby**	*Cost of illness for high prevalence mental disorders in Australia; comparison of 1997 to 2007* **Yu-Chen Lee**	*Looking for structural brain features associated with depression in young adults* **Baptiste Couvy-Duchesne**	*Effectiveness of systems-based suicide prevention programs for protective and emergency services employees: a systematic review and meta-analysis* **Katrina Witt**
1430-1445	*Should I recruit via Facebook? A systematic review of studies that have used Facebook to recruit participants* **Louise Thornton**	*Emergency department and ambulance contacts due to self-harm after release from prison in Queensland: a prospective data linkage study* **Rohan Borschmann**	*Can we identify which patients are most likely to have a nocebo response? Results from meta-analyses of the placebo arms of clinical trials* **Seetal Dodd**	*Disproportionate impulsive and repeated intentional self-poisoning associated with use of selective serotonin reuptake inhibitors in patients with comorbid depression and alcohol use disorders* **Kate Chitty**
1445-1500	*Experience sampling of thought using mobile technology* **Janie Busby Grant**	*The mental health of children and adolescents: report on the second Australian child and adolescent survey of mental health and wellbeing* **Michael Sawyer**	*Online insomnia treatment and the reduction of anxiety symptoms: the role of cognitive-behavioural factors* **John Gosling**	*Depressed, substance dependent individuals with and without social anxiety: occurrence and clinically important differences* **Katrina Prior**

FRIDAY 4 DECEMBER 2015: DAY 3 continued

1500-1515		Afternoon Tea (Level 2 Foyer)
1515-1600	**Le Grand Ballroom 3**	**Keynote 3, Chair: Patrick McGorry**
		Revitalising translational psychiatry **Professor Steve Hyman**
1600-1630		**Invited Presentation, Chair: Naomi Wray**
		Schizophrenia, the MHC locus and complement: from human genetics to molecular mechanisms **Professor Steven McCarrol**
1630-1700		Conference Close and Awards Presentation

Poster Presentations

Poster Board Number	Presenting Author	Poster Title	Theme
1	**Oliver Chen**	Smoking behaviours and motivators and a pilot feasibility smoking cessation intervention for young people with first episode psychosis (FEP) or at high risk of psychosis	Youth Mental Health
2	**Oscar Lederman**	Modifiable cardiometabolic risk factors in youth with at-risk mental states: a cross-sectional study	Youth Mental Health
3	**Erin Kelly**	Personality risk factors for adolescent bullies, victims and bully-victims	Youth Mental Health
4	**Frank Iorfino**	The development of a personalised assessment and feedback system for young people with emerging mood disorders	Youth Mental Health
5	**Amelia Gulliver**	University student expectations and experiences of stigma when disclosing mental health problems in the university context	Youth Mental Health
6	**Peta Eggins**	Tracking subcortical volume changes in young people with affective and psychotic disorders	Youth Mental Health
7	**Eleni Demetriou**	An investigation of the relationship between state and trait anxiety and executive functioning in youth and young adults with autism spectrum disorders and social anxiety disorder	Youth Mental Health
8	**Simon Rosenbaum**	The Keeping Our Staff In Mind initiative: empowering mental health staff to address poor physical health through an individualised lifestyle intervention	Translational Psychiatry
9	**Simon Rosenbaum**	Assessing physical activity among people experiencing mental illness: development and validation of the Simple Physical Activity Questionnaire (SIMPAQ)	Translational Psychiatry
10	**Michael Musker**	The effects of a 2 year diet & exercise programme on mental health	Translational Psychiatry
11	**Ides Wong**	Systematic meta-review of the effectiveness of treatments for comorbid mental and substance use disorders	Substance Abuse
12	**Edmund Silins**	A prospective study of the substance use and mental health outcomes of young adult cannabis users and past users	Substance Abuse
13	**Kirrily Gould**	The feasibility and efficacy of exercise as an adjunctive treatment for reducing craving levels among inpatients with alcohol use disorders	Substance Abuse
14	**Kristen Moeller-Saxone**	The role of planning in naturalistic quitting success among people with severe mental illness	Substance Abuse

Poster Board Number	Presenting Author	Poster Title	Theme
15	**Katherine Mills**	The long-term impact of PTSD on recovery from heroin dependence	Substance Abuse
16	**Penelope Lind**	Genetic variation in the 15q25 nicotinic acetylcholine receptor gene cluster is not associated with snus use in Sweden, Norway and Finland	Substance Abuse
17	**Charmaine Jensen**	Pharmaceutical cognitive enhancement among Australian university students	Substance Abuse
18	**Janni Leung**	Alcohol misuse in rural Australia: an investigation of rural-urban differences in adolescent alcohol use, alcohol supply and parental drinking	Substance Abuse
19	**Katrina Champion**	Patterns and correlates of new psychoactive substance use in a sample of Australian high school students	Substance Abuse
20	**Joanne Cassar**	The Needs Focused Parenting (NFP) program: a pilot study protocol	Substance Abuse
21	**Courtney Breen**	Paternal hospital admissions for alcohol use disorders before, during and after the birth of their child: findings from a population based cohort using linked data	Substance Abuse
22	**Philip Ward**	Surfing as an intervention for people with serious mental illness: a pilot study	Psychosis
23	**Seung-Jun Kim**	The effect of bilateral saccadic eye movements on the performance of recognition memory task in patients with schizophrenia	Psychosis
24	**Ga Jin Kim**	Multiple mechanisms of clozapine toxicity related to infection	Psychosis
25	**Sarah Herniman**	Comorbid depressive pathology, neurocognition and emotion recognition in first-episode schizophrenia spectrum	Psychosis
26	**Anthony Harris**	Facial emotion identification deficits are stable and predict longitudinal real-world functioning	Psychosis
27	**Agatha Conrad**	Patterns and predictors of service use following presentation to an early psychosis service	Psychosis
29	**Dominique Kazan**	Identifying evidence gaps in interventions to prevent suicide and mental health problems following relationship separation	Prevention Trials
30	**Jacqueline Brewer**	The sources of strength Australia project: study protocol for a randomised controlled trial	Prevention Trials
31	**Rachel Tindall**	Essential ingredients of engagement in mental health care: a meta-synthesis	Mental Health Nursing

Poster Board Number	Presenting Author	Poster Title	Theme
32	**Michael Nolan**	Family psychoeducation at the acute inpatient service: the role for senior mental health practice nursing	Mental Health Nursing
33	**Bridget Hamilton**	Safewards: re-imagining a healthy future for acute inpatient settings	Mental Health Nursing
34	**Philip Ward**	Hippocampal volume change following exercise: a systematic review and meta-analysis	Imaging
35	**Yann Quide**	Effects of childhood trauma exposure on brain function during emotion processing in psychosis	Imaging
36	**Casey Paquola**	Cortical thickness alterations following childhood abuse	Imaging
37	**Jesse Young**	Rising out-of-pocket costs disrupt utilisation of atypical antipsychotics for schizophrenia and bipolar disorder: a whole-population cohort study	Epidemiology and Public Health
38	**Shuichi Suetani**	Physical activity in people living with psychosis: data from the survey of high impact psychosis	Epidemiology and Public Health
39	**Amanda Stuart**	Utilisation of mental health-related services in females with mood and anxiety disorders: data from a population-based study	Epidemiology and Public Health
40	**Timothy Schofield**	The contribution of mental health and mental health histories to receiving the disability pension	Epidemiology and Public Health
41	**Simon Rosenbaum**	The prevalence and risk of metabolic syndrome and its components among people with posttraumatic stress disorder: a systematic review and meta-analysis	Epidemiology and Public Health
42	**Shae Quirk**	Utilisation of health services by women with personality disorder: a population-based study	Epidemiology and Public Health
43	**Ashleigh Lin**	Humility, inquisitiveness and openness: translating research with Aboriginal peoples and service providers in the delivery of mental health and drug and alcohol services	Epidemiology and Public Health
44	**Yu-Chen Lee**	Cost of illness for high prevalence mental disorders in Australia	Epidemiology and Public Health
45	**Liana Leach**	Comparing postnatal psychological distress in two samples: one recruited online and the other part of a national longitudinal study	Epidemiology and Public Health

Poster Board Number	Presenting Author	Poster Title	Theme
46	**Bethany Jones**	Mental health consumer and carer perspectives on ethical research	Epidemiology and Public Health
47	**Dimity Crisp**	Help seeking behaviour of mental health professionals during times of psychological distress	Epidemiology and Public Health
48	**Sarah Cohen-Woods**	Epigenetic and gene-expression changes in immune candidates following two months of yoga practice: a pilot study	Epidemiology and Public Health
50	**Amanda Baxter**	Evaluating the quality of prevalence data on mental and substance use disorders among Indigenous adults: a systematic review of four countries	Epidemiology and Public Health
53	**Amy Morgan**	Preventing anxiety problems in children with Cool Little Kids Online: randomised controlled trial	E-Mental Health
54	**Janni Leung**	Implementing e-mental health services for depression and anxiety within the Australian mental health system	E-Mental Health
56	**Emma Gliddon**	Discussion board engagement in the MoodSwings 2.0 online intervention for bipolar disorder	E-Mental Health
57	**Isabella Breukelaar**	Structural changes in the cognitive control network are associated with improvements in cognitive performance during development	Cortical Development
58	**Alisha Crawford**	Effect of Lurasidone on cognition: from the lab to the clinic	Cognition
59	**Alisha Crawford**	Efficacy and safety of Lurasidone in patients with schizophrenia: a review of clinical studies	Clinical Trials
60	**Olivia Dean**	Antibiotics in psychiatry	Biological Psychiatry
61	**Lucia Colodro Conde**	Genetic risk for psychiatric disorders predicting Eysenck's personality traits	Biological Psychiatry
62	**Maarten Van Den Buuse**	BDNF Val66Met genotype in mice recapitulates PTSD-related endophenotypes in adulthood via sensitivity to stress in adolescence	Animal Models of Mental Illness
63	**Kathryn Woodcock**	The role of trauma in treatment attendance and study retention when treating comorbid depression and alcohol misuse	Affective Disorders

Poster Board Number	Presenting Author	Poster Title	Theme
64	**Kathryn Woodcock**	A meta-analysis of treatments for trauma: is exposure necessary?	Affective Disorders
66	**Ross Tynan**	Mental health help seeking in the mining industry	Affective Disorders
67	**Ross Tynan**	Factors associated with psychological distress and alcohol use in the Australian coal mining industry	Affective Disorders
68	**K. Oliver Schubert**	Peripheral blood gene expression and proteomic analysis implicates B-cell development and ribosomal proteins in cognitive dysfunction in people with remitted major depression	Affective Disorders
69	**Karen Savage**	Kava for the treatment of Generalised Anxiety Disorder (K-GAD): neurophysiological and pharmacogenomic anxiolytic biomarkers	Affective Disorders
71	**Simon Rice**	Men's perceived barriers to help seeking for depression: longitudinal findings relative to symptom onset	Affective Disorders
72	**Trung Ngo**	Investigating optimal stimuli for large-scale endophenotype studies of binocular rivalry rate in bipolar disorder	Affective Disorders
73	**Breanne Hobden**	Prevalence and predictors of co-occurring depression and alcohol misuse in Australian general practice	Affective Disorders
74	**Joanna Dipnall**	Can data mining and machine learning help us find biomarkers associated with depression?	Affective Disorders
75	**Rothanthi Daglas**	The cognitive trajectory of people following first episode mania	Affective Disorders
76	**Mary Lou Chatterton**	Systematic review and meta-analysis of psychological therapies used for the treatment of bipolar disorder	Affective Disorders
77	**Anna Cavanagh**	Symptom endorsement in men versus women with a diagnosis of depression: a differential item functioning approach	Affective Disorders
78	**Marc Capobianco**	Repetitive transcranial magnetic stimulation in anxiety and depression	Affective Disorders
79	**Lisa Burke**	The Kubler-Ross legacy: progressing the field of death, dying, grief, and loss	Affective Disorders

Wednesday 2 December 2015: Day 1

Consumer Plenary 1, Le Grand Ballroom 3, 0905–0935

Mental illness, molecules and me: a real-world perspective

Jan Kealton[1]

[1]Queensland Mental Health Commission, Queensland Government, QLD, Australia

How and where do families fit in the healthier futures we are building? What role do they play in supporting the people for whom they care on their journeys to recovery and is there any evidence that this might be useful? This presentation provides some insights into mental illness and the people on the sidelines who are most likely to be drawn into the vortex when someone they love becomes unwell and, using real-life examples, considers the ways in which world's best practice might be enhanced or undermined by those who are closest to the consumers receiving treatment.

Keynote Speaker 1, Le Grand Ballroom 3, 0935–1020

Cost-effectiveness research in mental health

Robert Rosenheck[1]

[1]Yale Medical School, New Haven, CT, USA

Background: Cost-Effectiveness combines interest in the effectiveness and risk of treatments with concern about their consumption of scarce resources and can be applied to both psychosocial and psycho-pharmacologic interventions. However, it role must be understood in the context of both available policy instruments and political priorities and processes. **Methods:** Three examples of cost-effectiveness/cost-benefit analyses will be reviewed: the ACLAIMS and CATIE trials comparing first and second generation anti-psychotics; a VA trial of supported housing for homeless veterans; and the recent RASIE-ETC cluster randomized trial of a multi-component intervention for first episode psychosis. Methodological challenges will be reviewed in evaluating whether interventions that are more effective but more costly are "worth" the extra costs. Policy and political contexts that shape the reception of these trials will also be discussed. **Results:** In all of these trials the intervention being evaluated was both more effective and more costly than the comparison treatment. Such findings lead one inevitably to the challenge of monetizing health benefits, i.e. placing a dollar value on health gains – a formidable scientific challenge. The Net-Health Benefits approach will be described as an approach to estimating pivotal "known unknowns." The subsequent policy and political process that unfolded in response to these trials, anecdotal as it must be, will also be reviewed. **Conclusion:** Cost-effectiveness/cost-benefit analysis is a central if not the penultimate step in the comparative evaluation of mental health interventions. It faces, however, hitherto un-surmounted, and perhaps un-surmountable methodological challenges, and, faces even greater hurdles to being useful from the policy and political contexts into which it emerges. It thus exemplifies one of the humbling truisms of health care evaluation: it is virtually impossible to accomplish with the desired precision, but is so important that it must be done anyway.

Concurrent Symposia 1, SMHR Early Career Research Collaboration, Le Grand Ballroom 3, 1045–1230

SMHR 2015 early career award winners symposium: showcasing the future of mental health research

Frances Kay-Lambkin[1,2]

[1]NHMRC Centre for Research Excellence in Mental Health and Substance Use, National Drug and Alcohol Research Centre, University of New South Wales, Australia

[2]Priority Research Centre for Translational Neuroscience and Mental Health, The University of Newcastle, Australia

Background: In 2014, the Society for Mental Health Research partnered with the ABC to deliver the first national mental health fundraising campaign, Mental As…, held during mental health week in 2014. **Methods:** After extensive deliberation by leaders in mental health research in Australia, $1.3 million dollars was allocated to 13 outstanding early career researchers to carry out one-year projects focussed on a range of mental health research projects. This symposium proposes a showcase of 6 of the inaugural SMHR early career award recipients, who will each outline their research vision and plan, and present pilot data where available on their progress to date.

PRESENTER 1

Stimulating young minds: investigating a next generation treatment for depression in youth

Manreena Kaur[1,2], Jim Lagopoulos[1], Daniel Hermens[1], Sharon Naismith[1,3], Paul B Fitzgerald[4], Elizabeth M Scott[1,2]*, Ian B Hickie[1]*

[1]Clinical Research Unit, Brain and Mind Centre, University of Sydney, Australia
[2]Young Adult Mental Health Service, St Vincent's Private Hospital, Sydney, Australia
[3]Charles Perkins Centre, University of Sydney, Australia
[4]Monash Alfred Psychiatry research centre, Australia
*Joint last authors

Background: One third of patients at earlier stages of a depressive illness do not respond to antidepressants, a potential indication for chronic treatment resistance. Investigating newer treatments for depression is urgently needed, particularly those targeted at earlier stages of illness when providing optimal treatments result in better response outcomes. Repetitive transcranial magnetic stimulation (rTMS) has shown to be efficacious in treating depression, however, a subset of patients show inadequate response. Identifying features of patients that have utility in predicting response to rTMS treatment for depression is imperative to advance the use of this treatment and inform personalised treatment approaches. Furthermore, little is known about the relationship between improvements in depression with rTMS treatment and other prominent features of depression (such as, sleep disturbance, reduced cognitive functioning and underlying neurobiological changes). Critically, many of the aforesaid features of depression have been shown to correspond with and predict clinical and functional outcomes. **Methods:** The proposed research utilises a novel suite of measures (i.e. EEG, magnetic resonance spectroscopy, actigraphy and neuropsychological tests) to explore rTMS as an early intervention strategy for young people who are prone to developing chronic and untreatable depression. **Results:** By using this novel range of neuropsychological and neurobiological measures, this research is likely to identify features of depression that have utility in predicting response to rTMS treatment and thus, offer an empirical basis for selecting patients who are likely to benefit from this treatment. **Conclusion:** This research holds tremendous potential in contributing to personalising and optimising treatment selection.

PRESENTER 2

In search of an active solution to alcohol-related dementia

Christina Perry[1], Andrew Lawrence[1,2]

[1]Florey Institute of Neuroscience and Mental Health, Parkville, Australia
[2]University of Melbourne, Parkville, Australia

Background: Alcohol-related dementia is one of the leading causes of preventable dementia in Australia, and the only treatment currently available is alcohol rehabilitation. Emerging evidence from animal models, however, shows that exercise may protect against the neurotoxic effects of alcohol[1]. We plan to investigate whether neurotoxic and cognitive deficits arising from alcohol abuse may be recovered with abstinence combined with voluntary exercise. **Methods:** We will use rodent models to provide the first comprehensive analysis of how chronic alcohol exposure precipitates behavioural and neuropathological symptoms of dementia. Rats will be allowed to consume alcohol for 6 months, and then subjected to a period of enforced abstinence. Throughout abstinence, rats will be allowed free access to a running wheel, or housed under standard conditions. Extensive analysis of neural injury and cognitive ability will be carried out at various points across the experimental timeline. Cognitive ability will be measured using a battery of complex cognitive tests available on a novel touchscreen platform. These provide discrete measures across a range of cognitive domains, are analogous to tests used on humans[2] and therefore translationally relevant. They will provide a systematic analysis regarding the specific cognitive impairment that follows alcohol abuse, and further which domains are recoverable and which undergo irretrievable damage. **Results:** In this presentation I will explain the validity of the behavioural models, and the clinical implications of this research. **Conclusion:** This research will provide important evidence regarding the potential for a readily translatable intervention (voluntary exercise) to be employed in the treatment of alcohol-related dementia.

References:

[1]Leasure, J.L. and K. Nixon (2010), Exercise neuroprotection in a rat model of binge alcohol consumption. *Alcohol Clin Exp Res*, 2010. 34: 404-14.

[2]Horner, A.E., et al.(2013), The touchscreen operant platform for testing learning and memory in rats and mice. *Nat Protoc*. 8: 1961-84.

PRESENTER 3

Are you looking at me? Investigating the perceptual basis of distorted eye-gaze processing in Schizophrenia

Kiley Seymour[1,2], Colin Clifford[3], Philipp Sterzer[4], Gillian Rhodes[1,5], Timo Stein[6], Robyn Langdon[1,2]

[1]ARC Centre of Excellence in Cognition and Its Disorders
[2]Department of Cognitive Science, Macquarie University, Sydney, Australia
[3]School of Psychology, University of New South Wales, Sydney, Australia
[4]Department of Psychiatry and Psychotherapy, Charité Universitätsmedizin Berlin, Germany
[5]School of Psychology, The University of Western Australia, Perth, Australia
[6]Center for Mind/Brain Sciences, CIMeC, University of Trento, Rovereto, Italy

Background: Research on poor interpersonal functioning in Schizophrenia focuses on impairments of emotion recognition and mental-state reasoning; but little is known of more fundamental perceptual abilities such as those needed to process eye gaze. Healthy perception of gaze is critical for social interaction, providing vital information about another person's focus of attention and state of mind. People with Schizophrenia misjudge averted gaze as directed towards them. Whether this bias is caused by fear of "being watched" or lower-level perceptual deficits is unknown. **Methods:** We use new and sophisticated approaches from basic vision science to examine at which level of gaze processing the direct gaze bias in Schizophrenia is generated. **Results:** Our current data indicate that the early preconscious encoding of gaze is intact in Schizophrenia, suggesting that disturbances in gaze perception must manifest at a higher conscious level of processing. **Conclusion:** Future planned research will investigate the effects of social context and belief-driven factors on gaze perception in Schizophrenia, and establish how aberrant gaze processing relates to symptoms associated with the illness.

PRESENTER 4

Muscling up on Mental illness (MuMi): investigating the role of strength training in the treatment of early psychosis

Simon Rosenbaum[1,2], Oscar Lederman[2], Andrew Watkins[2], Jackie Curtis[1,2], Zachary Steel[1,3], Philip B Ward[1,4]

[1]University of New South Wales, Sydney, Australia
[2]Early Psychosis Programme, The Bondi Centre, South Eastern Sydney Local Health District, Sydney, Australia
[3]St John of God Healthcare Richmond Hospital
[4]Schizophrenia Research Unit, South Western Sydney Local Health District & Ingham Institute of Applied Medical Research, Liverpool, Australia

Background: People with severe mental illness (SMI) experience a scandal of premature mortality, primarily due to preventable cardiovascular disease (CVD). Exercise is the cornerstone of CVD prevention and treatment in the general population, yet people with SMI are less physically active and have reduced cardiorespiratory fitness compared to the general population. The efficacy of exercise in mental illness is established, although effectiveness and implementation research is lacking. There is a dearth of research regarding the role of strength training (muscle building) as opposed to aerobic based exercise. Strength training has pragmatic appeal given the short minimum duration of sessions required to illicit a physiological impact (i.e. 15 minutes). Given that people with mental illness experience significant barriers to being physically active the utility of strength training as a strategy for engaging particularly those with high levels of amotivation, in regular physical activity is of high clinical relevance. The aims of this study are to determine if muscular strength is a significant predictor of cardiometabolic health and psychosocial functioning in a cross-sectional study of youth experiencing first episode psychosis (FEP), and whether High intensity Strength Training (HIST) is feasible and effective at improving metabolic, functional and clinical outcomes for youth with FEP. **Methods:** A cross-sectional and 8-week intervention study among 50 participants with FEP will be conducted. Outcomes to be assessed include strength, physical activity participation, dual Energy X-ray Absorbitometry, psychosocial functioning, cardiometabolic outcomes and psychiatric symptomatology. Following completion of baseline assessments, participants will be randomly allocated to either the HIST group or Exercise Treatment As Usual (ETAU). **Conclusion:** It is hypothesized that muscular strength will be a significant predictor of cardiometabolic health and psychosocial functioning among youth experiencing FEP and that HIST will be as effective as ETAU, adding to the increasing evidence-based modalities of exercise treatment for mental illness.

PRESENTER 5

Moderated online social therapy for depression relapse prevention in young people: a 12-week pilot demonstrating acceptability, feasibility, usability and safety

Simon Rice[1], Mario Alvarez-Jimenez[1], John Gleeson[2], Reeva Lederman[3], Greg Wadley[3], Sarah Bendall[1], Sarah Hetrick[1], Alexandra Parker[1], Patrick McGorry[1]

[1]Orygen, The National Centre of Excellence in Youth Mental Health, Melbourne, Australia
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Background: Depression often first manifests during adolescence or young adulthood and tends to become increasingly severe over the course of repeated episodes. Implementation of social networking-based interventions offer a promising means of providing relapse prevention for young people. **Methods:** A single-group pilot study was undertaken with 42 participants (50% male; mean age = 18.52 years) in partial or full remission from major depressive disorder. Participants were recruited from three specialist youth mental health services in Melbourne. All participants had access to the platform for at least 12-weeks. **Results:** 12-week follow-up data were available for 39 participants (92.86%). There was high system usage, with a total of 3,034 user logins (mean=70.56 per user), and 2,146 posts (mean=51.10) during the pilot. Almost 70% of users had ≥10 logins over the 12-weeks, with 78.5% logging in over at least 2-months of the pilot. The intervention was considered by all participants to be safe. A total of 32 (84%) participants rated the intervention as helpful, while 35 (94.59%) and 26 (70.27%) participants rated it as improving social connectedness and empowerment respectively. All but one participant indicated they would recommend Latitudes to another young person experiencing depression. There was significant improvement in the number of participants in full remission at baseline (n=5; none of whom relapsed) relative to 12-week follow-up (n=19, p<.001). Six (14.29%) participants relapsed to full threshold symptoms. There was a significant improvement to interviewer rated depression scores (MADRS; p=0.14, d=0.45) and a trend for improved strengths use (p =.088, d =0.29). Independent analysis indicated that the site performed better than most commercially developed website for attractiveness, controllability, efficiency, helpfulness, and learnability. **Conclusion:** Clinical findings need to be confirmed in a longer-term controlled evaluation. However, the Latitudes intervention was shown to be acceptable, feasible, usable, and safe for the depression relapse prevention.

PRESENTER 6

Status update: examining suicide-related posts on Twitter

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Background: Suicide is a leading cause of death worldwide. The social media site Twitter is used by individuals to express their suicidality; however classification of this risk remains in its infancy. Psychological linguistic theory suggests that language is a reliable way of measuring internal thoughts and emotions which can be used to characterize mental states. Using linguistic analyses, this paper aims to characterise the suicide risk and related linguistic styles of suicide-related posts on Twitter. **Methods:** Using Twitter data previously coded for suicide risk by humans, the linguistic features of "strongly concerning", "possibly concerning", "safe to ignore" risk categories were compared with a data set of matched control tweets that were not related to suicide. The Linguistic Inquiry and Word Count (LIWC) analyses and forward stepwise conditional logistic regression were then conducted. **Results:** Overall, the suicide-related tweets had significantly different linguistic profiles to the control tweets. "Strongly concerning" suicide tweets were found to have significantly fewer words than all other tweets and not surprisingly, 'death' was significantly higher in the "strongly concerning" tweets when compared to the control tweets. A number of other results were found. The model had excellent predictive properties, 97.7% sensitivity and 99.8% specificity for distinguishing strongly suicidal from control tweets. **Conclusion:** This study confirms that the linguistic features of suicide-related Twitter posts are different from general Twitter posts. These results indicate that these linguistic profiles may be a marker of individual suicidality and can be used to model the risk of suicide among social media users.

Concurrent Symposia 2, E-Mental Health, Bastille, 1045–1230

Innovations in the development, testing and dissemination of e-mental health (eMH) programs

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Background: e-mental health (eMH) programs can rapidly increase access to evidence based mental health care. Yet, the level of uptake and completion rates of these programs among the general community is relatively low. Health practitioners also rarely refer patients to eMH programs in routine practice. Further research is required to determine how to best leverage the interactive, intuitive, entertaining and socially connected nature of eMH programs to enhance their engagement potential and level of acceptability and uptake in the Australian community. **Methods:** This symposium presents three papers describing how participatory design workshops (PDWs) with young people were used to conceptualise, design and develop evidence based and engaging mobile apps targeting alcohol use, affect regulation and relationship breakups in young people. The fourth paper describes the results of **Results:** The initial paper describes how PDWs and consensus qualitative research methods were used to develop the initial prototype of a mobile app targeting alcohol use in young people. The results of the initial prototype testing of the app are also reported. The second paper describes how an app review and PDW process were used to design and develop a new app using music to assisting young people to identify, express, enhance and regulate emotions. The results of an RCT testing the app will also be reported. The third paper reports on how the results of a national online study of young people who had recently experience a breakup, a contextual review of existing apps, five PDWs and two prototype testing workshops with young people were used to inform the design of an app targeting relationship breakups in young people. The final paper describes the positive impact of a national eMH promotion campaign on the level of uptake and referrals to eMH programs among consumers and practitioners. **Conclusion:** End user consultations using PDWs and national promotion campaigns can increase the acceptability and level of uptake of eMH programs in Australia.

PRESENTER 1

The development of Ray's Night Out: an iPhone app for alcohol misuse in young people

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Background: Risky single occasion drinking (RSOD; > 4 drinks in < 6 hours) more than doubles the risk of injury in young people aged 15 to 25 years. Smartphone use by young people is close to saturation, providing an unprecedented opportunity to provide a real-time intervention for RSOD. The aim is to describe the development of 'Ray's Night Out', an iPhone app informed by end users, to address RSOD in young people. **Methods:** App development followed a participatory design method, with five young people aged between 18 to 25 years (three female, two male). App development was guided by the end users' goals, tasks and needs with end-users involved throughout. Qualitative data was analysed using the Consensual Qualitative Research (CQR) method. **Results:** Unanimously, alcohol consumption was attributed to a sense of belonging and a significant factor in a good night out. Abstinence was associated with boredom and a bad night out, thus rendering an abstinence framework as likely ineffective and necessitating the need of a harm minimisation framework. Language and personalisation were highlighted as important factors in an app. Setting personalised money and time limits were also desired elements. Physical representations of drunkenness and testing drunkenness through games were also highlighted effective ways of portraying individuals' level of intoxication and desirable features of an app. **Conclusion:** As a result of the information gathered from end-users utilising a participatory design method, Ray's Night Out, an app addressing RSOD in young people was developed. The app aims to help young people identify their stupid line for drinking, which when crossed, results in negative consequences. The app adopted a harm-minimisation framework as development rendered the use of an abstinence framework inappropriate.

PRESENTER 2

Music eScape: a new iPhone app assisting young people to identify, express and regulate affect

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Introduction: Adolescents' emotion dysregulation is linked to a range of mental health problems. Music is the most popular leisure activity evoking a range of emotions. Over 90% of young Australians own smartphones and regularly use mobile apps. Hence a music app targeting emotion regulation may provide the ideal medium for intervention. This paper describes the design, development and evaluation of 'music eScape' a new iPhone app assisting young people to identify, express, enhance and regulate emotions. **Methods:** A contextual review of existing apps and websites, and three participatory design workshops (PDWs) with adolescents (15-25 years) were conducted to inform the design of the app. Its efficacy was then explored with a randomised controlled trial (RCT). **Results:** A total of 67 apps and websites linking music to affect were explored and categorised. No apps were aimed at modifying emotions. Qualitative analysis of the PDW transcripts indicated young people use music for relationship building, modifying cognitions, modifying emotions and immersing in emotions. 164 young people with psychological distress were randomized to immediate or 1-month delayed access to 'music eScape' and followed up after 1, 2, 3 and 6 months. The app's impact on affect regulation, wellbeing, and mental health will be reported. **Conclusion:** 'Music eScape' was based on PDWs with young people and a systematic review of existing music apps. It is the first app assisting users to identify, express, enhance and regulate emotions. It has the potential to provide young people with access to a low cost brief intervention for managing emotions and enhancing wellbeing.

PRESENTER 3

BreakupShakeup: a new iPhone app to assist young people adjust post breakup

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Background: Adolescent romantic relationships can have significant impact on emotional and psychosocial state and development, particularly the experience of breaking up. Despite the normalcy and significance of this event, targeted research and interventions are scarce. Smartphones represent an unprecedented opportunity to provide young people with a real-time intervention due to the prolific usage among this age group. This presentation describes the design, development and evaluation of a new iPhone app - 'BreakupShakeup' - which focuses on behavioural activation to assist young people post-breakup. **Methods:** A national online study of 679 young people (14-18 years) who had recently experience a breakup, a contextual review of existing apps, five participatory design workshops (PDWs) with young people (16-18 years), consultation with design and psychology experts, and two prototype testing workshops with young people (14-23 years) were used to inform the design of the app. **Results:** Sense of belonging, social support and disengaging behaviour were all strongly correlated with a young persons' adjustment post-breakup. Relevance, personalisation, self-empowerment and activation, interactivity, design and links to professional support were highlighted as important factors in a breakup-related app. Normalisation and self-insight were also desired elements. A total of 32 apps relating to breakups among young people were explored and categorised. Results showed a lack of evidence-based, age-appropriate and engaging apps to address this issue. Prototype testing of BreakupShakeup highlighted high levels of relevance, engagement and intended use among the target audience. **Conclusion:** Through a youth consultation and participatory design approach, the BreakupShakeup was developed. It uses a behavioural activation approach to assist young people positively adjust post-breakup in order to minimise risk of negative emotional and psychosocial effects. Prototype testing suggests the app will successfully engage young people following a breakup and other distressing life events. The apps efficacy is currently being explored with a randomised controlled trial (RCT).

PRESENTER 4

Fostering practitioner's use of e-mental health in routine practice: description and preliminary results from the first nationwide project

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Background: While e-mental health (eMH) resources and programs are gathering empirical support, they need to gain wider community acceptance and greater integration into routine services to have an optimal impact on community wellbeing. As part of the Australian Government's E-Mental Health Strategy, the e-Mental Health in Practice (eMHPrac) Project is undertaking nationwide training and support to GPs and allied health practitioners in their use of eMH, and offers similar support to workers from Indigenous communities in three states or territories. **Methods:** Extensive promotional campaigns online and via publications, social media, showcases, and presentations and booths at conferences raise awareness of eMH. Training and support in use of eMH are delivered by face-to-face workshops, webinars and online blogs. Impact of the interventions is assessed by cross-sectional practitioner surveys, and data on the uptake of eMH and rates of practitioner referrals to eMH. **Results:** Current data on eMH program usage covers 20 programs, and show substantial increases in usage and small increases in referral rates since July 2013. Since training and support are continuing, further increases are expected in the final year of the project. **Conclusion:** This is the first attempt worldwide to attempt a promotion of e-mental health in routine practice across a whole nation. While its initial results are encouraging, optimal uptake is likely to require additional components to promote the adoption of eMH to routine practice, in combination with community-wide marketing campaigns to increase service user acceptance and demand.

Concurrent Symposia 3, Affect – Physical Illness, Concorde, 1045–1230

Unravelling mechanisms underlying comorbidity between physical illness and depression

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Depression is a leading cause of disability in adults, however the pathogenesis and underlying aetiology remains unclear[1]. Depression is often comorbid with physical conditions such as obesity and diabetes, with significant repercussions on diagnosis, management, and prognosis of both depression and the physical condition(s)[2]. Stress is a robust predictor of depression and related physical conditions[3]. The aim of this symposium is to explore molecular mechanisms through which stress predisposes to depression and how this relates to co-morbid physical conditions observed. An animal study exploring the impact and role of a two-hit model of stress on animal behavior and gene-expression opens the sympsosium (CJ). The following talk evaluates impact of cumulative stress on the epigenome in context of chronological and accelerated ageing, and depression (DM). The impact of stress on gestational diabetes, the IGF2 locus, and the epigenome is then described in the first large-scale epigenomic study investigating the impact of stress (JC). The fourth presentation examines FTO genetic risk and trajectory of methylation in a childhood-adolescent cohort in context of depressive symptoms, stress, and body composition (SCW). Our final presentation investigates NET function in depression metabolic syndrome, and hypertension investigating genetic risk loci and sympathetic activation, identifying an important microRNA target (GL). Understanding the role of these comorbidities, and non-specific risk factors such as stress is important and can be used as a vehicle to identify sub-groups within a more heterogeneous depressive population. This will improve current treatments and approaches, both pharmacological and psychological.

References:

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PRESENTER 1

The two-hit stress model: effect of early stress and later life stressors on adult psychiatric disorders

Magdalene C Jawahar[1], Catherine Toben[1], Jason Izzo[1], Natalie Heriot[1], Emma Harrison[2], Chris Murgatroyd[3], Bernhard T Baune[1]

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Background: Early life stress (ELS) such as childhood maltreatment lead to persistent alterations in stress responsivity and increased inflammation. This 'early-life programming' has long-lasting effects on the developing brain increasing the risk to develop adult psychiatric disorders when exposed to later-life stresses. In this presentation we look at neuro-immune-endocrine mechanisms that are altered post ELS and potentially underlie increased susceptibility to later-life stresses using a 2-hit stress animal model. **Methods:** Maternal separation (MS) was conducted for 3 hours between postnatal days (PND) 1-17 followed by adolescent chronic mild stress (adol-CMS) for 21 days from PND 30 – 51. Behavioural and biological assessments were then conducting from 8-10 weeks. **Results:** Our two hit-stress mice show significantly higher depression-like (p=0.0120) and anxiety-like behaviours (p=0.0009) compared to controls. Analyses of hippocampus after 1st (4 weeks) and 2nd (10 weeks) hits revealed increased expression of the glucocorticoid receptor gene (Nr3c1, p=0.017 and p= 0.0058) and decreased Bdnf gene expression (p=0.0016 and p=0.0167) compared to controls. Methylation analysis of the promoter region of Nr3c1 (4 weeks) showed significant hypomethylation in the MS mice compared to controls which correlate with increased expression of Nr3c1. Serum levels of corticosterone was lower in the MS mice compared to controls (4 weeks, p=0.031). Further T-cell subpopulations such as CD4+ CD25+ cells were significantly reduced post MS at 10 weeks. **Conclusion:** Our behavioural and neurobiological results suggest that MS induces susceptibility early on which is exaggerated with a 2nd stress hit leading to changes in underlying neuro-immune-endocrine markers and changes in brain and behaviour.

PRESENTER 2

Lifetime stress accelerates epigenetic aging

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Background: Psychological stress has been associated with accelerated cellular aging and increased risk for aging-related diseases, but the underlying mechanisms are unclear. One plausible mechanism underlying this association is epigenetic regulation, a process that is influenced by stressors and is implicated in aging. **Methods:** We examined the effect of stressors on a DNA methylation-based age predictor shown to correlate strongly with chronological age across multiple tissues in humans (Horvath 2013). Genome-wide DNA methylation was measured in peripheral blood using the HumanMethylation450 array in two independent cohorts derived from the Grady Trauma Project and Max Planck Institute of Psychiatry. Age acceleration was calculated by subtracting chronological age from age predicted by DNA methylation. Psychiatric phenotypes, childhood maltreatment and stressful life events were assessed using standard questionnaires. **Results:** DNA methylation age strongly correlated with chronological age in all samples (r=0.9, p=2.5x10-133). Cumulative lifetime stress, but neither childhood maltreatment nor current stress alone, predicted age acceleration (p<0.05). Moreover, epigenetic age acceleration predicted depressive symptomatology (p=0.00179). Intriguingly, genes located near epigenetic clock CpGs were dynamically regulated by dexamethasone and epigenetic clock CpG sites were significantly overrepresented within glucocorticoid response elements. **Conclusions:** Cumulative lifetime stress and psychiatric phenotypes are associated with accelerated epigenetic aging in peripheral blood, an effect that may be mediated by the effects of glucocorticoids in the periphery. These findings may explain the accelerated cellular aging and increased risk for aging-related diseases previously associated with chronic stress and stress-related psychiatric disorders.

PRESENTER 3

Relationship between maternal stress and gestational diabetes and DNA methylation at birth: results from the peri/postnatal Epigenetic Twin Study

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Background: The Peri/postnatal Epigenetic Twins Study (PETS) is a unique cohort of 250 mothers and their twins. Women were recruited from three Melbourne hospitals midway through their second trimester, enabling measurement of maternal and fetal factors at multiple time points. We collected multiple biospecimens at birth (cord blood, cords, placenta and buccal tissue). We aimed to study plasticity of epigenetic marks and the genes they control during the intrauterine period and early childhood, with a focus on factors such as stress, gestational diabetes and other factors influencing the risk for chronic disease. **Methods:** We performed gene-specific and genome-wide analysis of the epigenetic mark of DNA methylation in multiple cell types using Sequenom MassArray EpiTyper and Illumina Infinium arrays. Our gene-specific approach focused on the imprinted IGF2/H19 locus associated with intrauterine growth. Data were regressed against stress, gestational diabetes and other multiple shared maternal factors and twin-specific factors such as placenta weights. **Results:** Using gene-specific analysis of we found a general association between gestational diabetes and DNA methylation at birth. However, such effects differed by tissue and locus analysed. No consistent associations were found between maternal stress and DNA at IGF2/H19. However, a genome-wide approach identified associations between gestational diabetes, stress and genes involved in metabolic pathways. **Conclusion:** Our data support the idea that genetic, shared (maternal) and nonshared (placental) environmental factors impact on the developing epigenome. They also suggest that multiple early environments may be epigenetically reprogramming genes involved in metabolism, which provide a potential mechanism for the early origins of a variety of chronic diseases.

PRESENTER 4

The association of FTO genetic and epigenetic variation with body composition through childhood and adolescence in context of depressive symptoms and stress exposure: a pilot study

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Background: Obesity, depression, and childhood stress have been consistently associated. Variation in the FTO gene has been robustly associated with obesity, however we found this association is moderated by depression in adults. Temporality and if the moderating effect of depression is present in childhood is not yet known, nor the potential role of stressors. FTO DNA methylation has potential to impact downstream targets, including those regulating metabolism and neural functioning. We evaluate association of genetic and epigenetic variants in FTO with obesity through childhood (7–16 years) and test modulation by depressive symptoms and stress. **Methods:** The Lifestyle Of Our Kids study is a longitudinal cohort with assessments at 7-8, 10,12, and 16years. Each stage included DEXA analysis establishing body composition (% body fat), depressive symptoms (Children's Depression Inventory), and stress (Children's Stress Questionnaire). Genetic variation in FTO was assayed using iPlex chemistry for a sub-cohort (n=120). FTO DNA methylation was analysed in 60 children matched for gender and SES at 7-8yrs and 16yrs using Sequenom MassArray platform. **Results:** Association of FTO genotype and methylation will be described cross-sectionally and longitudinally assessing childhood and adolescent associations and trajectories. We will establish if depressive symptoms moderate reported associations in childhood and/or adolescence already, and if stress contributes. **Conclusion:** This is the first study to investigate the FTO locus in context of depressive symptoms, stress, and body composition in childhood and adolescence. It is also the first to evaluate the association in context of methylation of the FTO locus with ability to ascertain causality.

PRESENTER 5

Examination of the role of the sympathetic nervous system and the noradrenaline transporter in stress-related disease development

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Background: Our recent examinations of sympathetic regulation in patients with depression (diagnosed according to DSMIV, n=46), hypertension (n=27 essential, 98 resistant) and the metabolic syndrome (n=103) have given insight into the physiological correlates and brain pathways associated with stress-related illnesses. The pattern of nerve firing and the end-organ effect associated with the sympathetic activation in each condition differs, implying that a range of brain pathways and peripheral factors influencing neurotransmitter disposition may be at play. **Methods:** By combining isotope dilution methods to determine rates of neurotransmitter spillover to plasma with biochemical, molecular, genetic and direct nerve recording techniques we have examined the role of the sympathetic nervous system and the noradrenaline transporter (NET) in the development and consequences of stress-related illnesses. **Results:** NET function is reduced in patients with depression, the metabolic syndrome and hypertension. SNPs in the NET gene may generate a microRNA binding site resulting in reduced NET function. In the metabolic syndrome the sympathetic nerve firing pattern and NET function is linked to the underlying level of anxiety and insulin resistance respectively. In depression around 30% of patients experience marked sympathetic activation, in particular to the heart. In hypertension the sympathetic outflows to the heart, kidney and skeletal muscle are activated. Renal denervation in hypertensive patients results in reduction in sympathetic activity and improvement in mental health-related quality of life. SSRIs reduce sympathetic tone in patients with depression. **Conclusion:** Examination of sympathetic regulation in differing patient groups provides insight into the causes and consequences of stress-related conditions.

Concurrent Symposia 4, Epidemiology, St Germain, 1045–1230

Effects of parental characteristics on offspring psychosocial development and potential adult outcomes: record linkage and birth cohort methodologies examining transgenerational influences

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Background: Large-scale population studies are important for identifying factors that contribute to or reflect suboptimal child development trajectories, and lead to adverse mental health or other outcomes in adolescence and adulthood. Notwithstanding the small magnitude of the effect of such factors, appropriate population-based interventions based on knowledge about them could have meaningful effects on the incidence, onset time and consequences of adverse outcomes at a population level. Transgenerational influences may be especially critical in this regard. **Methods:** The presentations listed here involve record linkage methodologies used to study (1) a cohort of 3,169 children in Western Australia, offspring of mothers with severe mental illness, whose childhood literacy and numeracy were assessed and subsequent mental health outcomes measured, and (2) a cohort of 87,026 children in the New South Wales Child Development Study whose teachers completed the Australian Early Development Census on school entry in 2009, data from which were linked with parental records. A further inclusion is (3) a Queensland birth cohort of 2,303 individuals whose mothers were assessed at their first antenatal visit and the offspring examined for psychosis at age 21 in the Mater University Study of Pregnancy and its Outcomes. **Results:** Findings from these studies comprise parental physical and mental health, parental criminality, indices of psychosocial development, adverse events in childhood, and subsequent mental health outcomes. **Conclusion:** This series of presentations highlights the utility of epidemiological research in elucidating the developmental trajectories involved in the genesis of adult mental illness and other adverse outcomes.

PRESENTER 1

Increased maternal pre-pregnancy body mass index is associated with offspring psychosis–related outcomes: a birth cohort study

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Background: Maternal obesity has been identified as a risk factor for offspring neurodevelopmental disorders. Previous studies showing an association between pre-pregnancy obesity and offspring psychosis-related outcomes have been limited by an inability to adjust for potential confounders. **Methods:** Using a large population-based birth cohort (the Mater University Study of Pregnancy and it Outcomes), maternal pre-pregnancy Body Mass Index (BMI was recorded at the First Confinement Visit (FCV). At age 21, the cohort offspring (n=2303) were assessed for the presence of any delusion; the presence of any hallucination; and total count of delusional-like experiences with the Composite International Diagnostic Instrument Interview and the Peters Delusional Inventory (PDI). Associations between maternal pre-pregnancy BMI and psychosis-related outcomes were examined adjusting for maternal age, education and income at FCV, child sex, age and birth complications. **Results:** Pre-pregnancy BMI was higher in the mothers of offspring who experienced any hallucination or any delusion at 21 years. After adjusting for confounding variables, there were significant associations between pre-pregnancy obesity and offspring at 21 years reporting any delusion (adjusted OR and 95% CI 1.54; 1.09- 2.17), highest quartile PDI compared to lowest quartile PDI (adjusted OR and 95% CI 1.40; 1.00-1.97) and a trend for offspring to report any hallucination (adjusted OR and 95% CI 1.42; 0.98-2.07). **Conclusion:** There was an association between maternal obesity and psychosis-related outcomes even after adjusting for potential confounders. This may be explained biological mechanisms including maternal oxidative stress, dysregulation of maternal immune or endocrine systems and changes in foetal micronutrient status.

PRESENTER 2

Dose-response associations between paternal and maternal criminal history and early childhood functioning at age 5 years

Kristin R Laurens[1,2], Mayy Hamde[1,2], Stacy Tzoumakis[1,2], Alessandra Raudino[1,2], Maina Kariuki[1,2], Vaughan J Carr[1,2,3], Melissa J Green[1,2], Felicity Harris[1,2], Kimberlie Dean[1,2,4]

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Background: History of parental offending is an established risk factor for adverse outcomes in offspring (e.g., offending, socio-emotional problems). However, little evidence is available from early childhood (0-5 years) using prospective population data. Using the NSW Child Development Study cohort of 87,026 children and their parents, this study examined the association between exposure to parental offending and early childhood development outcomes (at age 5). **Methods:** Population data were combined using record linkage. Logistic and multinomial regression tested the association between any and violent offending histories of fathers, mothers, and both parents and 'vulnerability' (~top 10%) on the Australian Early Development Index [AEDI] domains: Physical Health and Wellbeing (PHW), Social Competence (SC), Emotional Maturity (EM), Language and Cognitive Development (LCD) and Communication and General knowledge (CGK). **Results:** Significantly increased risk of vulnerability on all AEDI domains, of medium magnitude, was apparent for children with parental history of offending (risk increased as follows: fathers < mothers < both parents, and CGK < PHW < EM < SC < LCD). Violent offending history conferred risk of greater magnitude than any offending. Dose response relationships were found as the number of AEDI domain 'vulnerability' ratings increased. Relationships remained significant and of comparable magnitude following adjustment for demographic and socio-economic covariates. **Conclusion:** The effect of parental offending on early childhood outcomes is pervasive, with greatest effects apparent when both parents engage in violent offending. Supporting affected families in early childhood may mitigate the many adverse sequelae that arise in adolescence and adulthood for these offspring.

PRESENTER 3

Parental mental ill health and offspring emotional and behavioural vulnerability in early life

Kimberlie Dean[1,2], Maina Kariuki[1], Alessandra Raudino[1,3], Melissa J Green[1,3], Stacy Tzoumakis[1,3], Titia Sprauge[9], Rhoshel Lenroot[1], Kristin R Laurens[1,3], Vaughan J Carr[1,3,5]

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Background: Offspring of parents with mental illness are well known to be at increased risk of developing the same or concordant disorders in adulthood. Earlier in life, such at-risk offspring are also known to demonstrate a range of potential antecedents of later mental ill health including problems with emotional and behavioural development. Findings to date have focused on the children of parents with severe mental illnesses such as schizophrenia or mothers with depression specifically occurring in the perinatal period. **Method:** Data from the New South Wales Child Development Study population cohort (NSW-CDS) were used to investigate the pattern of associations between exposure to parental mental ill health (considered in broad diagnostic categories from administrative inpatient and outpatient data collections) and vulnerable emotional and behavioural developmental outcomes in children (from the Australian Early Development Census, 2009). **Results:** Positive associations between parental history of mental illness and vulnerability in childhood aggressive, hyperactive/inattentive and anxious/fearful domains were seen across the full spectrum of parental mental health diagnostic categories. The strength of association was found to be greater for the aggressive and hyperactive/inattentive domains and for offspring born to parents with childhood-onset disorders. **Conclusions:** Emerging emotional and behavioural difficulties apparent early in development are associated with parental mental ill health, with patterns of intergenerational transmission of risk not confined to particular mental illness diagnoses. Further analysis of the data will explore the role of potential confounding factors, sex of the affected parents, sex of offspring and frequency of parental contact with mental health services.

PRESENTER 4

Maltreatment and social and emotional functioning in early childhood: population record-linkage study of antecedents of schizophrenia

Sandra L Matheson[1,2], Maina Kariuki[1,2], Felicity Harris[1,2], Alessandra Raudino[1,2], Melissa J Green[1,2], Kimberlie Dean[1,2,3], Stacy Tzoumakis[1,2], Sally Brinkman[4,5], Michael Tarren-Sweeny[6], Marilyn Chilvers[7], Caitlin McDowell[7], Titia Sprague[8], Vaughan J Carr[1,2,9], Kristin R Laurens[1,2]

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Background: Identifying childhood antecedents of the schizophrenia spectrum disorders (SSDs) may offer new prospects for preventive interventions. As childhood maltreatment and childhood socio-emotional dysfunction confer an increased risk of SSDs in adulthood, we sought to determine the association between these factors within the early childhood (0-5 years) period, taking into consideration familial risk for schizophrenia. **Method:** The New South Wales Child Development Study of a population cohort (n=87,026) utilises data collections combined by record-linkage. Australian Early Development Census measures of socio-emotional functioning and demographic variables at age 5 years were linked to child maltreatment reports from Family and Community Services, and to parental SSD data from Mental Health Ambulatory and Admitted Patients Data collections. Multiple logistic regression analyses tested the effects of exposure to maltreatment on socio-emotional functioning while controlling for parental SSDs, age, gender and SES. **Results:** Significant, medium-sized associations were found between maltreatment and poor social competency, aggressive behaviour, and hyperactive/inattentive behaviour (ORs: 2.8-3.1), and significant, small associations were found with poor prosocial/helping and anxious/fearful behaviour (ORs: 1.7-1.8). A dose-dependent response was found between abuse diversity (exposure to one, or two or more types of abuse) and socio-emotional dysfunction. There were significant, small associations between parental SSDs and socio-emotional dysfunction after adjusting for abuse, age, gender and SES (ORs: 1.3-1.6). **Conclusions:** These results suggest greater impact of maltreatment than parental SSDs on early childhood socio-emotional functioning. Follow-up of these children will enable determination of specific trajectories to psychopathology, and stages at which interventions may be most effective.

PRESENTER 5

Academic performance in children of mothers with schizophrenia and other severe mental illness, and risk for subsequent development of psychosis: a population-based study

Ashleigh Lin[1], Patsy DiPrinzio[2], Deidre Young[2], Peter Jacoby[1], Andrew Whitehouse[1], Flavie Waters[3,4], Assen Jablensky[3,5], Vera Morgan[2,5]

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Background: We examined academic performance at age 12 of children of mothers with schizophrenia or other severe mental illness in a whole-population cohort born in Western Australia. The association between academic performance, familial risk and the subsequent development of psychotic illness was also investigated. **Methods:** The sample comprised 3,169 children of mothers with severe mental illness (schizophrenia, bipolar disorder, unipolar major depression, delusional disorder or other psychoses; ICD-9 codes 295-298), and 88,353 children of comparison mothers without known psychiatric morbidity (reference group). Academic performance was indexed on a mandatory State-wide test of reading, spelling, writing and numeracy. We adjusted for socioeconomic, obstetric and parent-related variables. **Results:** Children of mothers with severe mental illness were more likely than the reference group to be exposed to risk factors associated with schizophrenia. However, even after adjustment, children of mothers with serious mental illness were more likely to perform below the acceptable standard than the reference group. Children of mothers with schizophrenia performed most poorly. After adjusting for covariates, children of mothers with schizophrenia remained more likely than the reference group to show sub-standard spelling. Poor spelling was associated with the later development of psychosis in children with familial risk. **Conclusions:** Children of mothers with severe mental illness are at increased risk to perform below the acceptable standard on academic achievement tests at age 12, placing them at disadvantage for transition to secondary school. Poor spelling skills in particular were associated with familial risk for schizophrenia and the later development of psychotic illness.

Keynote Speaker 2, Le Grand Ballroom 3, 1315–1400

Can we use genetics to change our understanding of mental illness?

Pamela Sklar[1]

[1]Icahn School of Medicine at Mount Sinai, NY, USA

Advances in human genetics are reshaping the way we understand many mental illnesses including schizophrenia. We know infinitely more about the DNA changes that are part of the risk of becoming ill, with a key finding being their overall number, type and pleiotropy. Layering on top of genetic observations more functional data from gene expression and protein interactions, a basic outline of genes and pathway enriched for importance can be identified, but none of this information has led to the identification of specific targets for drug development of biomarkers for diagnosis. Family history is the current method for making individual risk predictions, but because of the large number of contributing genetic risk factors, this lacks precision. However, newer analyses of heritability and risk prediction are beginning to yield insights that in time may improve diagnosis and prognosis and change our nosological distinctions. Clinical situations and methods for integrating many kinds of genetic data that can be used in real life clinical situations are on the horizon.

Consumer Plenary 2, Le Grand Ballroom 3, 1400–1430

The accidental researcher

Imani Gunasekara[1], Tracey Rodgers[1], Tina Pentland[1], Susan Patterson[1]

[1]Metro North Mental Health Royal Brisbane and Women's Hospital, Herston, Australia

Background: Active engagement of people who use mental health services in development of those services is recognised as fundamental to quality service provision. Despite widespread policy and legislative support, there remains a substantial gulf between rhetoric and reality. It has been argued that tokenistic involvement is widespread and service users have little opportunity to shape the knowledge that is needed to ensure services meet their needs and provide optimal experiences. This study was about consumer perspectives on the care provided by mental health nurses. Publication of this study marked the beginning of an ongoing collaborative relationship with the Principal Research Fellow at Metro North Mental Health, Royal Brisbane and Women's Hospital. In this presentation Imani will share with you her experiences as a consumer collaborating with an academic researcher to produce work which has been published in a peer review journal and informed quality improvement work internationally. **Methods:** This research undertook a pragmatic inquiry examining consumers' views about what makes an excellent mental health nurse. Collaboration on this study enabled Imani's development from being a passive consumer to a qualitative researcher. She was supported to articulate research questions based on her lived experience as a consumer about topics that are deeply relevant to other consumers. Collaboration was the coming-together of academic expertise and the authenticity of the lived experience. **Results:** The findings of this study highlighted a need for renewed attention to the basics of relationships and the importance for nurses of self awareness. It seems likely that attention to the simple things such as listening and showing respect has the potential to improve levels of satisfaction among service users, decrease distress and support the development of an environment which can nurture recovery. **Conclusion:** Imani draws from her personal experience to explore consumer collaboration in research, looking at benefits and challenges. It is her firm belief that consumer collaboration in research is the key to building a healthier future. Imani's aim is that this story will inspire others to consider including consumer collaborators in future research endeavours.

Plenary 1, Le Grand Ballroom 3, 1430–1500

Experiences of discrimination and positive treatment in people with mental health problems: Findings from an Australian national survey

Nicola J Reavley[1], Anthony F Jorm[1]

[1]Melbourne School of Population and Global Health, University of Melbourne, Melbourne, Australia

Background: Until relatively recently, the focus of much stigma research has been on the assessment of attitudes towards people with mental health problems, rather than on actual experiences of discrimination. No studies have assessed discrimination in the general population and even fewer have focused on positive treatment. The aim of the study was therefore to carry out a national survey of experiences of discrimination and positive treatment associated with mental health problems. **Methods:** In September to November 2014, telephone interviews were carried out with 5220 Australians aged 18 or over. Participants were taken through a mental health symptom screening questionnaire (the Kessler 6 (K6) scale) and also asked if they had experienced a mental health problem in the last 12 months. Those respondents that scored above a cut off score on the K6 scale or who respond positively to questions about mental health problems were asked questions about any discrimination they had experienced in the previous 12 months as well as any supportive experiences. All respondents were also asked if they knew someone with a mental health problem. Those that responded positively to this question were asked questions about what they knew about any discrimination and support that the person had experienced in the last 12 months. All respondents were asked questions about their views about and experiences of dangerousness of people with mental health problems and exposure to media reports about violence. **Results:** In most domains, respondents reported more positive treatment experiences than avoidance or discrimination. Friends and family were more likely to avoid the person than to discriminate. **Conclusion:** The results can provide input into the design of anti-discrimination interventions and further empower people with mental health problems as they advocate for change in the area of discrimination.

Concurrent Symposia 5, Prevention, Le Grand Ballroom 3, 1525–1700

Paying attention to prevention and early intervention: innovative approaches to tackle alcohol and other drug use and mental health problems in young people

Nicola Newton[1], **Lexine Stapinski**[1], **Katrina Champion**[1], **Louise Birrell**[1], **Catherine Quinn**[2], Catherine Chapman[1], Maree Teesson[1]

[1]NHMRC Centre of Research Excellence in Mental Health and Substance Use, National Drug and Alcohol Research Centre, University of New South Wales, Sydney, Australia

[2]Centre for Youth Substance Abuse Research, School of Psychology and Counselling, Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, Australia

Background: Alcohol and mental disorders cause significant burden of disease and social costs. Both typically have their onset in adolescence to young adulthood and are most disabling in those aged 15–24 years old. The current symposium presents an integrative approach to preventing alcohol and other drug use and mental health in young people and presents cutting edge results of evidence-based prevention and early intervention programs. **Methods:** This symposium utilises data collected from five large substance use and mental health studies among young Australians across New South Wales, Western Australia and Queensland: the Climate Schools and Preventure (CAP) Study, the Climate Schools Interactive Study (CSI) Study, the Climate Schools Combined (CSC) Study, the Quikfix Study and the E Check-up Study. **Results:** Our findings provide important information about alcohol and other drug use and mental health symptoms in young Australians and an understanding of the relationship between motives for drinking, self-efficacy to resist alcohol or drug use, readiness to change and mental health. This symposium also highlights the range of innovative approaches to preventing substance use and mental health problems and demonstrates the efficacy and feasibility of Preventure, a selective personality-targeted prevention program and the Internet-based, universal Climate Schools: Ecstasy & Emerging Drugs Module. **Conclusion:** The symposium brings together leading experts and young researchers in the prevention field. It will be of particular interest to researchers, clinicians and educators working with adolescent and young adult populations and those interested in an integrative approach to alcohol and mental health problems.

PRESENTER 1

The effectiveness of a selective, personality-targeted prevention program in reducing alcohol use and related harms over three years: a cluster randomised controlled trial

Nicola Newton[1], Patricia Conrod[2], Tim Slade[1], Natacha Carragher[1], Katrina Champion[1], Emma Barrett[1], Erin Kelly[1], Natasha Nair[1], Lexine Stapinski[1], Maree Teesson[1]

[1]NHMRC Centre of Research Excellence in Mental Health and Substance Use, National Drug and Alcohol Research Centre, University of New South Wales, Australia

[2]Department of Psychiatry, Université de Montréal, Montreal, Canada

Background: This study investigated the effectiveness of Preventure, a selective personality-targeted prevention program, in reducing alcohol use and related harms among adolescents over a three year period. **Methods:** A total of 438 high-risk adolescents (mean age: 13.4 years, SD=0.47) from 14 Australian schools were assessed at five time points over a three-year period; at baseline, immediately post-intervention, and at 12, 24 and 36 months post baseline. Schools were randomized to either the intervention condition, where students screening as high-risk on one of four personality profiles (anxiety sensitivity, hopelessness, impulsivity and sensation seeking) were invited to participate in the brief personality-targeted Preventure interventions, or to treatment as usual (mandatory health and drug education). All students were measured on drinking outcomes and related harms. Two-part latent growth models were used to analyze intervention effects. **Results:** Relative to high-risk Control students, high-risk Preventure students displayed significantly lower growth in their likelihood to consume alcohol over time ($b = -0.225$ [0.061], $p < 0.01$), significantly lower growth in their likelihood to binge drink over time ($b = -0.305$ [0.096], $p < 0.01$), and had significantly lower growth in their likelihood to experience alcohol-related harms over time ($b = -0.255$ [0.096], $p < 0.05$). **Conclusion:** Findings from this study support the use of selective personality-targeted preventive interventions in reducing alcohol use, misuse and related harms among Australian adolescents. This trial is the first to demonstrate effects of a selective alcohol prevention program over a three year period.

PRESENTER 2

Adolescent motives for drinking: relationship to mental health and prospective associations with harmful alcohol use

Lexine Stapinski[1], Nicola Newton[1], Tim Slade[1], Katrina Champion[1], Erin Kelly[1], Emma Barrett[1], Natasha Nair[1], Patricia Conrod[2], Maree Teesson[1]

[1]NHMRC Centre of Research Excellence in Mental Health and Substance Use, National Drug and Alcohol Research Centre, University of New South Wales, Australia.

[2]Department of Psychiatry, Université de Montréal, Montreal, Canada.

Background: Alcohol consumption during adolescence is common, although there is considerable heterogeneity in patterns of use. It is hypothesised that the cognitive motivations underlying alcohol use contribute to the escalation of use and development of alcohol-related problems (Cooper, 1994). Adolescents with mental health problems may be especially susceptible to drinking alcohol for conformity or enhancement reasons, or to cope with emotional symptoms. This study examines the relationship between adolescent mental health and self-reported motives for drinking, and prospective associations between drinking motives at age 13 and harmful alcohol consumption at age 15. **Method:** Motives for alcohol use were assessed in a in a longitudinal cohort of secondary school (Year 8) students (n = 527; 67% female) in Sydney. Motives were assessed across five domains (social, coping with anxiety or depression, enhancement, and conformity motives) using the Drinking Motives Questionnaire-Revised. Psychological symptoms were also assessed. Incidence of binge-drinking and alcohol-related harms was assessed 6- and 18-months later. **Results:** Strong concurrent associations were found between psychological symptoms and drinking motives across all five domains. Use of alcohol for conformity or enhancement motives was uniquely associated with binge-drinking and alcohol-related harms 6 months later. Only enhancement motives were associated with increased risk at 18 months. A one standard deviation increase in enhancement motives at age 13 was associated with a four-fold increased risk of alcohol-related harms at age 15. **Conclusions:** This study suggests that cognitive motivations formed as early as age 13 have predictive utility for identifying adolescents at risk of alcohol-related harms.

PRESENTER 3

Online prevention program for new psychoactive substance and ecstasy use: 12-month outcomes of the CSI Study

Katrina Champion[1], Maree Teesson[1], Lexine Stapinski[1], Nicola Newton[1]

[1]NHMRC Centre of Research Excellence in Mental Health and Substance Use, National Drug and Alcohol Research Centre, University of New South Wales, Australia.

Background: In recent years there has been considerable concern about New Psychoactive Substances (NPS) designed to mimic the effects of established illicit drugs. Overlaps in the age of onset, risk factors and potential harms associated with ecstasy and NPS use provides a compelling argument to implement prevention for these substances simultaneously. This study aims to evaluate the efficacy of the first online program to address and prevent ecstasy and NPS use. **Methods:** A cluster randomised controlled trial was conducted in 11 schools in Sydney. Schools were randomised to the Climate Schools intervention (n=5) or a control group (n=6, health education as usual). Students completed a self-report survey at baseline (n=1126), post-test (64%), and six- (77%) and 12-months later (64%). Knowledge about ecstasy and NPS, intentions and lifetime use were assessed. **Results:** At post-test, there were significant group differences for both ecstasy (p=.01) and NPS knowledge (p<.001) with students in the control group reporting significantly less knowledge than the intervention group. At the 6-month follow-up, controls were significantly more likely to intend on using synthetic cannabis in the next 6 months (p=.01) and anytime in the future (p=.02) and at 12-months they were more likely to intend on using synthetic cannabis (p=.02) and any NPS (p=.03). There was no evidence of any group differences for lifetime use of NPS or ecstasy. **Conclusion:** The present findings suggest it is feasible to deliver online prevention for ecstasy and NPS however longer-term follow-up is needed to monitor changes in uptake as exposure increases.

PRESENTER 4

Comparison of two treatment groups of young alcohol and ecstasy users

Catherine Quinn[1], Leanne Hides[1], David Kavanagh[1], Jan Copeland[2], Melissa Norberg[2,3]

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[2]National Cannabis Prevention and Information Centre, University of New South Wales, Australia

[3]Centre for Emotional Health, Department of Psychology, Macquarie University

Background: Alcohol and ecstasy use is prevalent among young people. Yet, little is known about these traditionally non-treatment seeking youth. Baseline data from two randomized control trials (Quikfix: Hides et al. 2014; E Check-up: Norberg et al. 2014) were used to (i) compare non-treatment seeking alcohol and ecstasy users and (ii) examine how treatment factors, including readiness to change, depression, and self-efficacy to resist use, relate to alcohol and ecstasy outcomes. **Method:** Participants were 331 (52% female) young alcohol users (Mage = 20.3 years), who had come into contact with an emergency department (17.2%) or crisis support care (82.8%) and 154 (34% females) young ecstasy users. Comparisons of the two groups are provided and regression analyses were conducted to determine key predictors of alcohol and ecstasy use. **Results:** A high proportion of alcohol users had not used illicit drugs (78.2%), while the majority of the ecstasy sample had used other illicit drugs (94%) and two-thirds engaged in binge drinking. Both groups were precontemplators (alcohol = 91%; ecstasy = 78%), had low levels of moderate to severe depression symptoms (alcohol = 23%; ecstasy = 29%) and low confidence in their ability to stop themselves from drinking/using ecstasy in social situations. Regression analyses revealed that confidence not to use was inversely related to alcohol problems, alcohol use and ecstasy use, while readiness to change and depression symptoms were only positively related to alcohol-related problems. **Conclusions:** Current results highlight the need to increase young people's self-efficacy to resist substance use in social situations.

PRESENTER 5

Mental health and substance use prevention in schools: the climate schools combined study

Louise Birrell[1], Nicola Newton[1], Tim Slade[1], Cath Chapman[1], Gavin Andrews[2], Louise Mewton[1], Steve Allsop[3], Nyanda McBride[3], Leanne Hides[4], Nina Te Pas[3], Nina Pocuca[4], Simone Firmin-Sarra[4], Zoe Tonks[1], Brad Shaw[1], Maree Teesson[1]

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[3]National Drug Research Institute, Curtin University, Perth, Australia

[4]Centre for Youth Substance Abuse Research, Queensland University of Technology, Brisbane, Australia

Background: Substance use and mental health problems account for the highest burden of disease in young Australians and both are preventable. The Climate Schools Combined (CSC) study evaluates an innovative online prevention program targeting alcohol use, cannabis use, anxiety and depression. The intervention is delivered as part of the high-school curriculum. **Method:** A cluster randomised controlled trial is being conducted in 71 Australian schools across NSW, QLD and WA to determine the efficacy of the CSC intervention. Participating schools were randomised to one of the following conditions; 1) 'Control' condition, 2) 'Climate Schools– Substance Use' condition, 3) 'Climate Schools– Mental Health' condition, or 3) 'Climate Schools Combined' condition. Students are assessed via self-report questionnaires at baseline, 6-months, 12-months, 16-months, 18-months, 24-months and 30-months post-baseline. The primary outcomes of the study include; i) the uptake and harmful use of alcohol and drugs, ii) mental health symptomatology, and iii) knowledge about alcohol, cannabis and mental health. **Results:** 6,409 participants (55% female, mean age: 13.5 years) completed the baseline survey. Of these students 62% reported ever having had a sip of alcohol, while 14% had ever had a full serve. Comparisons based on gender will be reported along with comparisons to nationally representative studies. **Conclusion:** The study design and baseline data will be informative to researchers, educators and clinicians. The large sample, spread across three Australian States, also gives us a snapshot of drug use and mental health symptoms in 13–14 year old high-school students in Australia in 2014.

Concurrent Symposia 6, Imaging, Bastille, 1525–1700

Neuroimaging and computational approaches to depression

Ben J Harrison[1]

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Neuroimaging and computational approaches to the study of depression have become increasingly sophisticated and widespread, with the promise of yielding both deeper insights into the pathophysiology of the disorder and clinically useful biomarkers to improve its diagnosis and treatment. This symposium will provide a "national snapshot" of current applications of neuroimaging and computational science in depression from leading research teams. Central themes will relate to the characterization of i) brain structural and functional changes in depressed populations; ii) cognitive, social and affective disturbances, and iii) neurodevelopmental influences. The clinical translational potential of these findings will be directly addressed with respect to diagnostic and therapeutic biomarker identification.

PRESENTER 1

Can neuroimaging be of clinical use in treatment of major depressive disorders?

Mayuresh Korgaonkar[1,2], John Rush[3], Evian Gordon[1,4], Leanne Williams[1,5], Stuart Grieve[1]

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[2]Discipline of Psychiatry, Sydney Medical School, The University of Sydney, Westmead Hospital, Sydney, NSW, Australia
[3]Duke-National University of Singapore. Singapore
[4]Brain Resource Ltd, Sydney, NSW, Australia and San Francisco, CA
[5]Department of Psychiatry and Behavioral Sciences, Stanford University, 401 Quarry Road, Stanford, CA, USA

Background: Less than 50% of patients with Major Depressive Disorder (MDD) reach symptomatic remission with their initial antidepressant medication (ADM). There are currently no objective measures with which to reliably predict which individuals will achieve remission to ADMs. Brain imaging has been widely used to understand pathophysiology of MDD and offers a means to identify treatment predictors that are grounded in the neurobiology of the treatment. This talk will examine whether MRI measures of brain structure could have use in clinical treatment of MDD. **Methods:** 204 MDD participants underwent baseline MRIs and 8 weeks of treatment with escitalopram, sertraline or venlafaxine-ER as part of the International Study to Predict Optimized Treatment in Depression (iSPOT-D). A score at week 8 of 7 or less on the 17 item Hamilton Rating Scale for Depression defined remission. The first half of the sample was used to identify MRI measures of grey matter structure and white matter connectivity that predicted remission and these measures were then tested for replication using the second cohort. **Results:** We identified 2 biomarkers: 1. A biomarker based on connectivity measures of the limbic white matter tracts; and 2. A biomarker based on volume of the frontal cortex and angular gyrus. Both biomarkers identified non-remitters with accuracy greater than 85% and proved to be replicated. **Conclusion:** Pretreatment MRI measures of brain structure and connectivity could provide clinically actionable information about which patients were unlikely to achieve remission, versus those likely to remit, following acute treatment with three commonly used ADMs.

PRESENTER 2

Mapping brain network correlates of self disturbance in depression

Christopher G Davey[1,2,3], Ben J Harrison[3]

[1]Orygen, The National Centre of Excellence in Youth Mental Health
[2]Centre for Youth Mental Health, The University of Melbourne
[3]Melbourne Neuropsychiatry Centre, Department of Psychiatry, The University of Melbourne

Background: Depression is associated with an altered sense of self, an aspect of the illness that is addressed as a core objective of effective psychotherapies. Our aim in this study was to examine a neural-network model of the self, with emphasis on the "default mode network" (DMN), to determine the nature of the disturbance in depressed youth. **Methods:** Sixty depressed youth (33 females, mean age 20 y) and 88 healthy control participants (46 females, mean age 20 y) completed the full functional brain imaging protocol and were included in the analyses. For each group, we examined self-referential and resting-state processes to clarify the extent to which DMN activity was common and distinct between the conditions. Within areas that were commonly activated in each group, we sought to identify regions that showed functional specialisation for self-referential processes: these being regions that were not only activated by self-reference and rest, but also showed increased activity in self-reference versus rest. We examined the network properties of the identified "core-self" DMN regions using dynamic causal modelling, using Bayesian model selection to identify the optimal model in each group, and comparing between groups the connectivity parameters of the optimal model. **Results:** The depressed and control participants showed similar patterns of activation in the self-referential and rest-fixation conditions. In both groups, core-self regions were identified in medial prefrontal cortex (MPFC), posterior cingulate cortex (PCC), and inferior parietal lobule. The same optimal model was identified in each group: one in which self-related processes were driven via PCC activity, and moderated by the regulatory influences of MPFC. In depressed compared to control participants, the self-reference condition was shown to have a significantly greater modulatory influence on connectivity between MPFC and PCC. The strength of this effect was correlated with factors related to neurovegetative symptoms and pessimism. **Conclusion:** We confirm that the brain network that supports self-related processes is disturbed in depression, and specifically, that this is related to the increased regulatory influences of the medial prefrontal cortex.

PRESENTER 3

Limbic functional anisotropy is decreased and associated lower levels of glutathione in young adults with major depression: a combined diffusion tensor and magnetic resonance spectroscopy study

Daniel Hermens[1], Sean Hatton[1], Elizabeth Scott[1], Ian Hickie[1], Jim Lagopoulos[1]

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Background: Fronto-limbic structural connectivity has been found to be compromised in major depressive disorder (MDD), as indicated by impairments in white matter (WM) integrity and measured by diffusion tensor imaging (DTI). The processes underlying this breakdown in connectivity remain unknown however disruption to normal myelination has been posited. In this regard changes in oxidative stress is thought to play a key role. Recent advances in proton magnetic resonance spectroscopy (1H-MRS) have enabled the quantification of glutathione (GSH), the brain's primary antioxidant. Targeting the cingulate and limbic regions, we hypothesised that for young adults with MDD, reduced diffusivity would be associated with depleted GSH levels. **Methods:** 72 young adults (18-30 years) with MDD underwent DTI and 1H-MRS scans. Using an established voxel-wise atlas-based region of interest approach, the cingulum bundle (cingulate, hippocampus), fornix, stria terminalis (ST) and uncinate fasciculus WM tracts were reconstructed to determine differences in fractional anisotropy (FA). These diffusivity metrics were subsequently correlated with absolute GSH concentration measured from the anterior cingulate cortex and hippocampus (HIPP). **Results:** Compared to controls, MDD showed significantly reduced FA in the ST, with no significant differences in the remaining WM tracts. Furthermore, the MDD group showed a significant positive correlation between ST-FA values and HIPP-GSH concentration. **Conclusion:** The findings may reflect a structural 'dysconnectivity' specific to the limbic region of young adults with MDD. Furthermore, the decrease in WM integrity is associated with depleted levels of hippocampal GSH, suggesting that at the early stages of illness disruption in limbic WM may be associated with oxidative stress.

PRESENTER 4

Pubertal timing and depression: effects of early exposure to adrenarcheal hormones on hippocampal structure and depression in children

Sarah Whittle[1,2], Anna Fernandes[2], Julian G Simmons[1,2], Michelle L Byrne[5], George C Patton[2,3,4], Nicholas B Allen[2,5]

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[6]Department of Psychology, University of Oregon, Eugene OR, USA

Background: Early timing of puberty (i.e., advanced pubertal maturation relative to peers) has been associated with depressive symptoms during adolescence. Research on this relationship to date has focused on gonadarche, the second phase of puberty, while less is known about the first phase of puberty, adrenarche. Increasing evidence suggests that adrenarcheal hormones, most notably dehyrdoepiandrosterone (DHEA) and testosterone, may be involved both in the development of the hippocampus, and risk for depression. **Methods:** The current study investigated whether hippocampal volumes mediated the relationship between adrenarcheal timing (i.e., relatively levels of DHEA and testosterone) and depressive symptoms in children. Data were collected from a cross-sectional sample of 88 children (46 female, M age 9.5 years, SD 0.3 years) selected as having either relatively early or late timing of adrenarche for their age. **Results:** Larger right hippocampus volume significantly partially mediated the positive relationship between testosterone and depressive symptoms in girls. No other evidence of significant mediation effects was obtained, however DHEA and testosterone showed unique effects on hippocampal volume in males and females, and larger hippocampal volumes predicted higher depressive symptoms in the entire sample. **Conclusion:** These results suggest that relatively early exposure to adrenarcheal hormones may affect hippocampal development and depressive symptoms, extending current knowledge about the mechanisms underlying pubertal vulnerability processes for depression.

PRESENTER 5

Face, Voice, Body, Eyes: detecting depression using affective sensing technology

Michael Breakspear[1,2], Roland Goecke[3,4], Matthew Hyett[1,5,6], Jyoti Joshi[3], Sharifa Alghowinem[3], Julian Epps[7], Nicholas Cummins[7], Gordon Parker[5,6]

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Background: Clinical diagnosis of major depressive disorder (MDD) currently rests upon assessment by individual clinicians. Yet much of the assessment depends upon observable and reliable changes in the expression of affect through facial, postural and eye movements as well as changes in the prosody of the voice. We sought to quantify these changes the use of affective sensing - that is, the application of machine learning algorithms to video- and audio footage acquired from those with depressive disorders. **Methods:** Audio and video data were acquired from 123 participants (72 patients with MDD, 71 healthy controls) viewing emotionally salient films and engaging in brief semi-structured autobiographical interviews. Computer vision and machine learning algorithms were trained to identify a range of quantitative features of the data, including basic facial emotion (happy, sad, neutral), peri-ocular and eye movement, movement of the head and shoulders, the texture of the face and vocal prosody. **Results:** In sum, patients showed a diminished range of emotional expression, less intonations in voice, and a restricted range of eye movements and changes in facial tone. These changes were emphasized in those patients meeting clinical criteria for melancholia. The accuracy of automated diagnostic classification based upon these data features was between 60 and 90%, increasing when data from different modalities were fused. **Conclusion:** Automated analysis of affect in those with MDD corresponds to those used in routine clinical assessment and can be used to predict diagnostic classification with high accuracy. These show promise in assisting clinical diagnosis, particularly in primary care, and assisting consumers in assessing their own response to treatment.

Concurrent Symposia 7, Youth Mental Health, Concorde, 1525–1700

Mental health and wellbeing of young people in out of home care: results from the Ripple project

Helen Herrman[1], Sue Cotton[2], Kristen Moeller-Saxone[2]

[1]Orygen The National Centre for Excellence in Youth Mental Health, Melbourne, Australia
[2]The University of Melbourne, Melbourne, Australia

Background: Out of home care' (OoHC) refers to the care of a child or young person up to the age of 18 who is removed from home by the State due to significant risk of harm from abuse, neglect or other adversity. Many have multiple and complex needs, with poor mental health and poor social function before they enter care, while living in care and after they leave care. These outcomes could evidently be improved with a mental health intervention that supports carers in providing: consistent and high quality psychosocial care for all young people living in OoHC (in foster care, kinship care and residential care); and clear access to early treatment for mental ill-health. **Methods:** A controlled trial of the mental health and social and economic outcomes of the intervention over three years is being conducted with partners in the government and non-government child protection system. A needs assessment and introduction of a systematic mental health intervention preceded this. It is accompanied by a process evaluation. **Results:** A baseline census and subsequent interviews reported high to very high levels of distress and mental ill-health in young people and experiences of carers and case managers. **Conclusion:** Young people in out of home care have unmet mental health needs. We predict that this service model will result in better quality of care environments in OoHC, better access to early intervention to prevent and treat mental illness, and consequent on both these changes, better mental health among young people living in OoHC.

PRESENTER 1

Mental health and wellbeing of young people in out of home care: reporting on the census and baseline findings of the Ripple project

Sue Cotton[1,2]

[1]Orygen The National Centre for Excellence in Youth Mental Health, Melbourne, Australia
[2]The University of Melbourne, Melbourne, Australia

Background: There has been very little investigation in Australia to determine the mental health and wellbeing of young people aged 12-17 years in out of home care. The Ripple intervention is being conducted in northern and western metropolitan Melbourne and compared to standard care in the southern and eastern regions. Due to a lack of information on this cohort, the project first sought to establish the number of young people in care with participating agencies. Interviews were conducted with young people incorporating measures of mental health and wellbeing (K10 and Strengths and Difficulties Questionnaire), drug and alcohol use (ASSIST-Y) and questions about education and placement changes. **Methods:** A census was conducted in August 2014 using a file audit of records for young people aged 12-17 years in care with participating CSOs. Basic demographic characteristics, including cultural and linguistic diversity, were collected. Baseline interview data were collated for young people in intervention and comparison regions. **Results:** Records for 324 young people were assessed. Nineteen percent of the cohort were Aboriginal or Torres Strait Islanders and 9% were born in countries other than Australia. Ten percent had a registered disability. High to very high levels of psychological distress were reported by 40% of the baseline cohort. **Conclusion:** Young people in OoHC have unmet mental health needs, are more likely to have a registered disability and be of Aboriginal or Torres Strait Islander background than the general population.

PRESENTER 2

A tailored mental health intervention for young people in out of home care: the Ripple project

Helen Herrman[1,2]

[1]Orygen The National Centre for Excellence in Youth Mental Health, Melbourne, Australia
[2]The University of Melbourne, Melbourne, Australia

Background: The Ripple intervention incorporates trauma-informed mental health education, training and support to carers and case managers and access to early intervention for mental ill-health as required through mental health services. The OoHC system needs to be based on therapeutic care principles that take into account the young person's experiences of severe adversity. Current cross-service approaches to therapeutic care in OoHC reach around 10% of the young people in care. Very few of these young people are referred to health or mental health services. **Methods:** A needs assessment was conducted with carers, case managers and senior management of CSOs and child protection representatives. An intervention was developed that included reflective practice groups, a menu of options and access to therapeutic content. The intervention is delivered by a team of experienced drug and alcohol and mental health clinicians (Ripple practitioners), in conjunction with youth peer leaders. **Results:** Initial feedback from CSO staff is that the intervention is acceptable and enhances their work with young people. **Conclusion:** The importance of establishing relationships between Ripple practitioners and CSOs is key to ongoing collaboration. Developing a shared language, and tailoring the intervention to individual CSO needs are vital for success of cross-sectoral mental health intervention.

PRESENTER 3

Youth peer leadership and mental health in out of home care: the Bounce project

Simon Malcolm[1,2], Bounce Peer Leader[1]

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[2]The University of Melbourne, Melbourne, Australia

Background: Peer leadership models are well-known in mental health and youth services, however there is less known about the feasibility of peer leadership models in out of home care. The Bounce project aimed to develop a peer leadership training package and trial it with young people aged 18- 25 years who have lived experience of out of home care and interest in mental health support. **Methods:** Participatory action research methods were used to develop training materials. A pilot of the training program was conducted with 20 young people, ten of whom were randomized to receive advocacy training as a comparison. **Results:** Young people who participated in peer leadership training reported that the materials were acceptable. Challenges to working with CSO staff and mental health practitioners are discussed. Outcomes of mental health and wellbeing measures indicate that peer leadership training is beneficial for young people. **Conclusion:** Youth participation can allow decision makers to hear the views of young people about the services and about what determines emotional wellbeing and mental health, and help create a positive climate and generate useful ideas and linkages. This is likely in turn to improve the young peoples' engagement and outcomes and quality of services.

PRESENTER 4

The rate of smoking and other drug use among young people in out of home care

Kristen Moeller-Saxone[1,2]

[1]Orygen The National Centre for Excellence in Youth Mental Health, Melbourne, Australia
[2]The University of Melbourne, Melbourne, Australia

Background: Young people in out of home care are unable to live with their families as a consequence of abuse, neglect or other adversities and often have high levels of smoking, drug and alcohol use and other poor mental health outcomes. The Ripple project aims to improve mental health support to young people in OoHC and as part of the study, collected baseline data on smoking, alcohol and other drug use. **Methods:** 177 young people aged 12-17 years in OoHC in metropolitan Melbourne were interviewed. Smoking, alcohol and other drug use rates were collected using the ASSIST-Y. **Results:** The prevalence of smoking, alcohol and other drug use was notably higher among this group than general population samples. **Conclusion:** Young people in OoHC are a vulnerable group who often require support to develop and maintain good mental health. Smoking cessation is an important part of mental health promotion activities. OoHC support agencies require help to implement smoking cessation policies and programs.

Concurrent Symposia 8, St Germain Substance Use – Alcohol, 1525–1700

Innovations in the treatment of alcohol misuse

David Kavanagh[1,2,5] **Jason Connor**[2,3,4], **Leanne Hides**[1,2,5], **Frances Kay-Lambkin**[6,7], **Sally Hunt**[6,7]

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[7]National Health and Medical Research Council Centre of Research Excellence in Mental Health and Substance Use, National Drug and Alcohol Research Centre, University of New South Wales, Australia

Background: While existing approaches to address alcohol misuse and associated comorbidities have established effects, additional impact and reach are needed to address the extent of problems they cause individuals and communities. **Methods:** This symposium presents papers arguing for novel approaches to treatment, which are firmly based in psychological, genetic and neuroscientific theory and research. Delivery using multidisciplinary expertise and recent and emerging technologies are suggested to have potential to increase cost-effectiveness and impact. **Results:** An initial paper demonstrates the importance of interactions between genotypes, pharmacotherapy and CBT for alcohol dependence, while a second presents two pilot studies on a new imagery-focused treatment that supports self-management using mobile phones and is based on recent psychological theory and research. Papers 3 and 4 present trials on e-therapies for binge drinking: Paper 3 tested effects of a phone app, while Paper 4 trialed a web program and social networking site for people who also have depression. The final paper returns to the integrative theme of Paper 1, reviewing the importance of neuropsychological functioning in comorbid alcohol misuse and depression. **Conclusion:** Emerging treatments for alcohol misuse are increasingly incorporating both recent advances in the science of addiction, and advances in technology. A combination of these approaches may represent a significant advance in our struggle with this endemic problem.

PRESENTER 1

Where to from now: alcohol use disorder treatment

Jason Connor[1-3], Gerald Feeney[1,3], Ross Young[1,3-5], Matthew Gullo[1,3], David Kavanagh[1,5], Martyn Symons[3], John Saunders[1]

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[5]Institute of Health and Biomedical Innovation & School of Psychology and Counselling, Queensland University of Technology, Brisbane, Australia

Background: Despite recent advances in the treatment of Alcohol Use Disorders (AUDs), short-term treatment outcomes remain modest, and longer-term prognosis poor. This presentation reviews the outcomes of a forthcoming Lancet seminar (Connor, et al, 2015) and highlights evidence driven clinical approaches that improve patient treatment outcome. It argues that that cross-disciplinary research is essential to the future of treatment of AUDs. The presentation concludes with preliminary data from a new clinical trial which targets psychological and genetic risk factors. **Methods:** a) Review of recent evidence and b) preliminary data from a Randomised Controlled Trial (RCT) of 178 alcohol dependent patients undertaking targeted ('personalised') dependence treatment versus treatment as usual. **Results:** a) Review: Cross-disciplinary research is critical to treatment outcomes. b) Study: Patients receiving pharmacotherapy (naltrexone and acamprosate) for alcohol dependence with the CC allele of the DRD2 rs1799732 SNP (-141delC; functional variant in the DRD2 promoter gene) were more likely to complete the 12 week program abstinent (d = 503). There was no genetic effect for patients receiving CBT only (no medication). Carriers of the CC genotype also reported greater levels of alcohol craving at assessment (d = .57) and greater reductions in craving in response to pharmacotherapy (over 8 treatment points, MLM ß = -.22, p = .011). Replication is required. **Conclusion:** Addiction science must embrace research design technologies and evidence-based findings from multiple disciplines to improve AUD treatment outcomes. Pharmacogenetic response to treatment is a promising filed of research, with high translation potential.

PRESENTER 2

Functional Imagery Training: a new way to support self-management of substance misuse

David Kavanagh[1-3], Jackie Andrade[1,3], Jon May[1,3], Jennifer Connolly[1]

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[2]Centre for Youth Substance Abuse Research, Queensland University of Technology, Brisbane, Australia
[3]School of Psychology, University of Plymouth, Plymouth, UK

Background: While brief interventions for alcohol and other substance misuse have established efficacy, there is substantial room to increase their impact. Our Elaborated Intrusion Theory of desire predicts that training people to use imagery to maintain motivation and address situational challenges should strengthen these effects. Functional Imagery Training (FIT) applies this idea, and short-term randomised controlled trials to reduce high-energy snacks and increase physical activity confer plausibility to the prediction. **Methods:** Two uncontrolled pilot studies on FIT for alcohol misuse were conducted with total contact of 3-4 hours, and assessments at Baseline, 3 and 6 months. In Study 1, 12 community volunteers had 2 face-to-face sessions and 4 phone sessions over 6 months; in Study 2, 24 participants received 7 phone sessions and up to 24 SMSs. In Study 1, FIT was supported by a smartphone app that cued imagery practice with photos and reminders, while Study 2 used standard phone features to undertake these functions. **Results:** Despite their altered delivery modes, there was no difference in outcomes between studies. Reductions in alcohol consumption were robust: on average, weekly drinks fell by 56%, or 1.18 Baseline SD units, to a mean of 20.5. In comparison, our last trial of 2 hours of Motivational Interviewing showed a reduction of 0.87 SD. **Conclusion:** While randomised trials are needed to demonstrate the superiority of FIT over comparable treatments for Alcohol Use Disorder, the substantial effect size from these pilots suggests that FIT has significant promise as a low-intensity intervention.

PRESENTER 3

Ray's night out: a new iPhone app for reducing risky alcohol use in young people

Leanne Hides[1,2], David J Kavanagh[1,2], Stoyan Stoyanov[1,2], Wendell Cockshaw[1,2], Oksana Zelenko[2,3], Dian Tjondronegoro[2,4]

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[2]Young and Well Cooperative Research Centre, Melbourne, Australia
[3]School of Design, Creative Industries Faculty, Queensland University of Technology, Brisbane, Australia
[4]Science and Engineering Faculty, Queensland University of Technology, Brisbane, Australia

Background: Up to 30% of young people drink at risky levels at least weekly. Yet, many do not view their alcohol use as problematic. Innovative, youth-friendly and highly accessible ways of delivering preventative health messages are required. Ray's Night Out, is a new iPhone app designed to promote harm minimization and controlled drinking strategies in young people. This presentation reports the results of a randomized controlled trial aimed at testing the effectiveness of the app. **Method:** 197 young people aged between 16 and 25 who had used alcohol in the last month, were randomized to immediate versus delayed (1 month) access to the app. The impact of the app on alcohol-related knowledge, alcohol attitudes, alcohol use and related problems was assessed at 1, 2, 3 and 6 months follow up. App quality was also assessed on the Mobile App Rating Scale-User version (MARS). **Results:** Young people had a very positive response to the Ray animated character and rated the app highly on the MARS engagement, functionality, information quality and visual aesthetics subscales. Ray's Night Out was associated with between group improvements in alcohol knowledge at 1 month follow up. Significant reductions in the quantity of alcohol consumed, the frequency of alcohol-related problems and the severity of problematic drinking were found in both groups over time. **Conclusion:** The Ray app provides an innovative, youth friendly, high quality and effective way of increasing awareness of alcohol use limits and promoting harm minimization and controlled drinking strategies in young people.

PRESENTER 4

Social networking and online cognitive behavior therapy for depression and binge drinking in young people: the iTreAD study

Frances Kay-Lambkin[1,2], Amanda Baker[2], Maree Teesson[1], Jenny Geddes[1], Sally Hunt[1], Kathryn Woodcock[1,2], Mark Deady[1], Louise Thornton[1], Kathleen Brady[3]

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[2]Priority Research Centre for Translational Neuroscience and Mental Health, The University of Newcastle, Australia

[3]Psychiatry and Behavioral Sciences, Medical University of South Carolina, USA

Background: Depression and binge drinking behaviours peak in young adulthood, and commonly co-occur. Young people, who are reluctant to seek help via traditional pathways to care. **Methods:** Participants aged 18-30 years reporting current symptoms of depression and concurrent binge drinking were randomised to: (a) online monthly self-assessments (OSA), (b) OSA + 4 weeks online automated program for binge drinking and depression (DEAL); or (c) OSA + DEAL + access to a social networking site (Breathing Space). Independent, blind follow-up assessments occurred at 26, and 39 weeks. **Results:** Participants completed 2 out of 4 modules of the DEAL program on average, with those allocated to the Breathing Space condition reporting higher rates of full completion of the DEAL program relative to the other conditions. Those in the DEAL online condition reported an average reduction between baseline and 6 month follow-up of 3.62 points on the DASS21 (depression) scale, and reduced their use of alcohol in the past month from 4-5 days per week at baseline to 2-3 days per week at 26-weeks. Those who also received the Breathing Space intervention, reported reductions in depression of 4.18 DASS21 points, and reduced their past-month drinking from 4-5 days per week to 1-2. Results through to 39-weeks follow-up will be reported. **Conclusion:** Preliminary results indicate the potential benefits of adding a social networking intervention to automated online treatment for depression and binge drinking in young people. Implications of using social networking as a mechanism to encourage uptake of treatments for comorbidity will be discussed, along with its potential to improve treatment outcomes.

PRESENTER 5

Neuropsychological functioning in people with co-occurring alcohol misuse and depression: a systematic review

Sally Hunt[1,2], Amanda L Baker[1], Patricia T Michie[1], Frances J Kay-Lambkin[1,2]

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[2]National Health and Medical Research Council Centre of Research Excellence in Mental Health and Substance Use, National Drug and Alcohol Research Centre, University of New South Wales, Australia

Background: The comorbid presentation of alcohol misuse and depression is common and is associated with poorer treatment outcomes and worse prognosis than singly occurring alcohol misuse or depression. While the presence of alcohol misuse or depression alone have been associated with cognitive impairments, few studies have examined the impact of co-occurring alcohol misuse and depression on cognitive functioning. This presentation will critically review findings from peer-reviewed published articles examining neuropsychological test performance among samples of people with co-occurring alcohol misuse and depression, with an aim of identifying any neurocognitive deficits common across studies. **Methods:** A comprehensive literature search yielded six studies reporting neuropsychological profiles of people with co-occurring alcohol misuse and depression. Results comparing cognitive functioning of people with this comorbidity to those with alcohol misuse alone, depression alone, healthy controls and published norms were examined as well as those describing the correlation between depressive symptoms and cognitive functioning in people with alcohol use disorders. **Results:** Variation in inclusion criteria for co-occurring alcohol misuse and depression was observed between studies, as well as differing assessment tools and methodologies. In the majority of neuropsychological tests, the comorbid groups did not differ significantly from those with depression or alcohol misuse alone, nor from healthy controls or published norms. In the cases where a difference in neuropsychological test scores between comorbid and depression or alcohol misuse only samples was found, it was not consistently identified across studies. However, visual memory was identified in two studies as being impaired in comorbid samples and is worthy of inclusion in future studies. **Conclusions:** There is an accumulating body of research into cognitive deficits among people with co-occurring alcohol misuse and depression. Existing evidence suggests that neuropsychological performance among samples with this comorbidity is generally not severely impaired and is unlikely to preclude benefit from cognitive interventions.

Thursday 3 December 2015: Day 2

Plenary 2, Le Grand Ballroom 3, 0830–0900

Healthy Active Lives (HeAL): building a healthier future for youth with psychosis

Jackie Curtis[1,2]

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[2]South Eastern Sydney Local Health District, Sydney, Australia

Background: HeAL is an international statement with a focus on prevention of the 20 year life expectancy gap for people living with severe mental illness. Youth with first episode psychosis (FEP) receiving antipsychotic (AP) medications are at risk of obesity and metabolic syndrome. AP initiation induces rapid deterioration in metabolic health, with up to 77% experiencing clinically significant (>7%) weight-gain within 12 months. **Methods:** We developed a multidisciplinary, 12-week intervention aimed at attenuating weight gain in young people who had recently commenced anti-psychotic medication. Young people with FEP aged 15-25 were enrolled in the 'Keeping the Body in Mind' program, including weekly individualized dietetic monitoring and education and participation in a cooking group, and individualized exercise prescriptions by an exercise physiologist, utilising a supervised on-site gym. Health-coaching and motivational interviewing were provided by an experienced nurse with metabolic expertise, and peer-wellness coaches encouraged participation and adherence. **Results:** Participants who completed the intervention, experienced significantly less weight gain than a comparison group who received best-practice FEP care without additional lifestyle intervention (1.8kgs ± 3.0 versus 7.8kgs ± 4.7, $p<0.001$). Similarly, waist circumference did not increase significantly in the intervention group, whilst waist circumference increased significantly for controls (0·1cm ± 4·0 versus 7·1cm ± 3·6, $p<0.001$). 75% of the intervention group did not experience clinically significant weight gain. Having lifestyle intervention embedded in the community-based treatment program enhanced client engagement. Based on these findings, the lifestyle intervention program is now being extended throughout the mental health service. **Conclusion:** Multidisciplinary early lifestyle interventions can attenuate antipsychotic induced weight gain, and may be an important means of achieving one of the key HeAL targets (www.iphys.org.au). Young people with psychosis deserve support to secure the same life expectancy and expectations of life as their peers who do not have psychosis.

Plenary 3, Le Grand Ballroom 3, 0900–0930

Towards a molecular parsing of schizophrenia

Suresh Sundram[1,2]

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[2]Monash University, Melbourne, Australia

Background: Delineating core components of schizophrenia may increase understanding of the genetic and molecular lesions underpinning the disorder. The singular efficacy of clozapine in treatment resistant schizophrenia (TRS) and in reducing suicidality associated with the disorder prompted our investigations of its mechanism of action to probe the pathology of schizophrenia. **Methods:** Using cell culture and animal treatment studies we identified a novel mechanism of action of clozapine which we proposed may be involved in its clinical actions. We applied these findings to clinical studies by measuring peripheral protein and genetic markers in relation to clozapine response. In addition, we examined prefrontal cortical tissue from post-mortem human brain samples for protein, mRNA and genetic changes in relevant markers. Using the Australian Schizophrenia Research Bank dataset we tested relationships between these genetic markers and clinical features to explore the generalisability of our findings. **Results:** Clozapine transactivated the epidermal growth factor (EGF) receptor initiating intracellular signalling pathways in prefrontal cortical neurons in vitro and in vivo distinct from other antipsychotic drugs. This novel mechanism of action suggested EGF system changes may be involved in the pathology of schizophrenia especially in TRS and suicidality in schizophrenia. Peripheral biomarker studies showed that some EGF proteins are low compared to healthy controls and increase with clozapine treatment prior to and in conjunction with symptom response. Changes in EGF system markers in human brain in schizophrenia are consistent with a decreased functional activation of the EGF system for a proportion of people with schizophrenia. **Conclusion:** EGF system changes may be associated with the pathology of schizophrenia especially in TRS and suicidality through the capacity of clozapine to influence signalling in this system. These findings may open avenues for the development of new therapeutics for TRS and suicidality and biomarkers for early detection of these problems.

Plenary 4, Le Grand Ballroom 3, 0930–1000

Using collaboration to advance the understanding of the impact of common genetic variants and psychiatric disease on the brain

Sarah Medland[1] for the Enhancing Neuro Imaging Genetics through Meta-Analysis (ENIGMA) Consortium

[1]QIMR Berghofer Medical Research Institute, Brisbane, Australia

Background: At the individual level, there is substantial variation in brain structure morphology and brain functions. To identify robust and replicable associations with genetic variants or psychiatric conditions large well-powered studies are required. Due to the substantial costs associated with imaging studies collaborative research strategies are becoming increasingly important. **Methods:** Within the context of the Enhancing Neuro Imaging Genetics through Meta-Analysis (ENIGMA) Consortium, we conduct collaborative large-scale genetic analysis of magnetic resonance imaging (MRI) scans. Our work focuses both on the discovery of genetic variants that exert lasting influences on brain structure and function and on the identification of disease correlates. **Results:** Our recent findings will be discussed focusing on genetic variants influencing the morphology of subcortical and cortical structures. In addition, we will present the findings from joint meta-analyses of ICV and Hippocampal volume from 26,577 participants from the ENIGMA and CHARGE cohorts. We will also present an overview of our meta-analyses looking at case-control differences in brain morphology for Schizophrenia, Major Depression, Bipolar Disorder and Attention Deficit Hyperactivity Disorder. **Conclusion:** These analyses have identified novel variants influencing brain structure and have revealed substantial overlap between genetic variants influencing hippocampal volume and those influencing risk for Alzheimer's disease. Our phenotypic meta-analyses have also quantified the variation in brain structure associated with common psychiatric conditions. These studies and the findings they have yielded highlight the importance of collaboration and cooperation in advancing neuro imaging studies.

Concurrent Symposia 9, Mental Health Reform, Le Grand Ballroom 3, 1100–1230

The NHMRC centre of research excellence in mental health system improvement: evidence for guiding mental health reform in Australia

Harvey Whiteford[1,2], Meredith Harris[1,2], Louisa Degenhardt[3], Cathrine Mihalopoulos[4], Jane Pirkis[5], Emily Stockings[3], Yong Yi Lee[1,2], Long K D Le[4], Sandra Diminic[1,2]

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[3]National Drug and Alcohol Research Centre, University of New South Wales, Sydney, Australia
[4]Deakin Health Economics, Deakin University, Melbourne, Australia
[5]Melbourne School of Population Health, The University of Melbourne, Melbourne, Australia

Background: The Centre of Research Excellence in Mental Health System Improvement (CREMSI) is a five-year program of research funded by the National Health and Medical Research Council. **Methods:** The overarching goal is to design a model mental health service system for Australia that will optimally reduce the burden of mental disorders. The work includes a detailed analysis of: the epidemiological burden of mental disorders in Australia, what service system could optimally reduce the burden, how the model service system differs from the existing system and what policy reforms are need to move the current system closer to the optimal system. The work therefore has three streams: (1) priority setting for cost-effective mental health interventions and service platforms; (2) mental health system planning to maximize the delivery of evidence based services; and (3) translation of evidence-based service system planning into policy. Results and **Conclusion:** This symposium will comprise four presentations representing the streams of research and will conclude with a summary of how this research can contribute to the current mental health reforms underway in Australia.

PRESENTER 1

The efficacy and population cost-effectiveness of universal school-based interventions to prevent the onset of depression among children and adolescents in Australia

Emily Stockings[1], **Yong Yi Lee**[2,3], Jan Barendregt[3], Louisa Degenhardt[1], Alize Ferrari[2,3], Cathrine Mihalopoulos[4], George Patton[5], Harvey Whiteford[2,3]

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Background: Depression is the largest contributor to the non-fatal health burden among young people. Given the recent push for reforms in the Australian mental health system to increase investment in prevention and early intervention, we sought to: 1) determine the efficacy; and 2) the cost-effectiveness of scaling up the delivery of universal school-based interventions in preventing the onset of depression among youth in the 2013 Australian population. **Methods:** To determine intervention efficacy, we conducted a systematic review and meta-analysis of randomised controlled trials examining the efficacy of universal school-based depression prevention programs among young people (aged 5-18), with outcomes expressed as relative risks (RR) for disorder onset. We used a multiple cohort Markov model to assess intervention cost-effectiveness in the population relative to a 'no intervention' comparator over a 10-year time horizon, with health benefits measured as Disability-Adjusted Life years (DALYs). Net intervention costs were calculated using relevant Australian data, and incremental cost-effectiveness ratios (ICERs) were measured in 2013 Australian dollars per DALY averted. **Results:** Psychological-based universal preventive interventions in school settings were found to prevent the onset of depression up to 6-9 months post-intervention (RR = 0.55, 95% Confidence Interval (CI): 0.39 to 0.77). These interventions delivered through face-to-face and internet-based modalities lead to ICERs below $50,000 per DALY averted and were classified as cost-effective. **Conclusion:** Universal school-based psychological interventions, particularly those delivered through the internet, are efficacious and cost-effective and should be scaled up for delivery in the Australian population. These interventions might be considered as repeated exposures in school settings across childhood and adolescence.

PRESENTER 2

Using cost-effectiveness to develop a model service system for eating disorders in Australia

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Background: Eating disorders (EDs) such as Anorexia Nervosa (AN) and Bulimia Nervosa (BN) are serious mental disorders which have significant physical and psychological impacts. An important part of the first research stream of CREMSI is to apply a high-quality consistent approach to the economic assessment for both preventive and treatment interventions for EDs that will inform a model service system for EDs in Australia which can optimally reduce the burden of eating disorders. The first study in evaluating the cost-effectiveness of preventive and treatment interventions for ED was to conduct a review of evidence-based interventions. **Method:** Systematic searches were undertaken from 2009 to 2014 via electronic databases (including the Cochrane Controlled Trial Register, MEDLINE, PsychInfo, EMBASE, and Scopus). Randomised controlled trials (RCTs) completed prior to 2009 were retrieved from the published systematic reviews and RCT published after the most recent reviews were individually retrieved. Three hundred twenty one RCTs were included in the current study. **Results & Conclusion:** This review found that that indicated prevention interventions using cognitive behavioural therapy (CBT) and cognitive dissonance (CD) approaches are effective for ED prevention. Universal prevention using media literacy is promising. There is a lack of evidence to supported interventions for AN treatments in adults. Family based therapy appears to be an effective treatment intervention for both adolescents with AN and BN. Different versions of CBT treatments, such as face to face CBT, CBT with guided self-help and CBT delivered online are promising in the treatment of BN. Lastly only antidepressant drugs have been demonstrated to be effective in BN treatment.

PRESENTER 3

Population cost-effectiveness of a parenting programme for the treatment of Conduct Disorder: a modelling study to assist priority setting in Australia

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Background: Parenting programmes are the gold standard for the treatment of Conduct Disorders (CD) but little is known about their possible longer-term cost-effectiveness. This study evaluated the population cost-effectiveness of Triple P, for the treatment of CD in children, from the health sector perspective. This study is part of a series of economic evaluations undertaken at the Centre for Research Excellence in Mental Health Systems Improvement in Australia. **Methods:** A population-based Markov model was developed to estimate the cost per disability adjusted life year (DALY) of Triple P compared with no intervention. The target population was a cohort of 5-9 year old children with CD in the 2013 Australian population followed through the age of 18 years. Multivariate probabilistic and univariate sensitivity analysis were conducted to test model assumptions. **Results:** Triple P was evaluated in three formats: Group face-to-face, Self-directed (SD)+telephone, and a mixed provision alternative of 50% Group+50% SD+telephone. Preliminary results suggest group face-to-face had an incremental cost-effectiveness ratio (ICER) of AU$19,000/DALY with a 0.998 probability of cost-effectiveness; SD+telephone had an ICER of AU$31,920/DALY with a 0.931 probability of cost-effectiveness; and the mixed provision alternative had an ICER of AU$25,494/DALY with a 0.986 probability of cost-effectiveness. **Conclusion:** Triple P for treatment of CD is good value for money and should be considered as part of the priority setting process in Australia. Group face-to-face Triple P is the most cost-effective option. The model will be used for economic evaluations of other interventions targeting CD.

PRESENTER 4

Analysing patterns of current mental health service utilisation and concordance with treatment recommendations

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Background: Identifying areas for mental health system reform requires an understanding of current patterns of service utilisation within the Australian mental health system and how well these patterns conform to evidence based guidelines for the treatment of various disorders. Stream 2 of CREMSI aims to 1) profile service utilisation for key mental health disorders including major depression, anxiety disorders, schizophrenia, bipolar disorder, eating disorders and behavioural disorders, and 2) highlight treatment gaps for each disorder. **Methods:** Stream 2 draws on data from diverse sources including nationally representative surveys (e.g. 2007 NSMHWB, 2010 SHIP), longitudinal cohort studies (e.g. DIAMOND), administrative data and program evaluations. Outcomes of interest include the number of people accessing services, the types of service providers accessed, the types and quantities of interventions received, and how these align with evidence-based treatment recommendations drawn from clinical practice guidelines and the literature. **Results:** Initial analyses have focused on schizophrenia, depression and anxiety disorders. Results indicate that only a small proportion of people with these disorders receive interventions consistent with treatment guidelines. Areas of particular concern include lower than expected receipt of psychological interventions and greater prescribing of medications than recommended in some groups. Examples of up to date findings for selected disorders such as schizophrenia and depression will be presented. **Conclusion:** Divergence from treatment recommendations likely reflects a combination of patient, provider, and system-level factors. Multifaceted responses will be required to ensure the best possible service delivery and consumer outcomes.

Concurrent Symposia 10, Patterns of Substance Abuse, Bastille, 1100–1230

Trends and patterns of substance use among young people in Australia 1996–2013

Gary C K Chan[1], **Catherine Quinn**[2], **Megan Weier**[1], Adrian Kelly[1], Leanne Hides[2], Jason Connor[1], Victoria White[1], Wayne Hall[1]

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[2]Centre for Youth Substance Abuse Research, Queensland University of Technology, Brisbane, Australia
[3]Centre for Behavioural Research in Cancer, The Cancer Council Victoria, Melbourne, Australia

Background: Substance use is often initiated in adolescence and peaks during young adulthood. This symposium combines data from three nationally representative datasets to present prevalence and changes in alcohol, tobacco, cannabis and polydrug use in young people over the past decade. Demographic and mental health correlates are also examined. **Methods:** Data were drawn from The National Drug Strategy Household Survey (1998 to 2013; N > 20,000), the Australian Secondary Student's Alcohol and Drug Survey (1996 to 2011; N > 120,000), and the Alcohol and Other Drug Treatment Service National Minimum Dataset (2002 to 2013; N > 100,000) for young people aged 12-25 years. **Results:** Overall, rates of alcohol, tobacco, cannabis and polydrug use have all decreased steadily over the past decade. However, results from the most recent surveys indicate that prevalence of substance use remains high – One in seven young people engaged in heavy drinking in past 12 months, one in ten smoked daily, one in five used cannabis in the past 12 months, and one in eight engaged in polydrug use in past month. Young people experiencing social disadvantage or psychological distress are at higher risk of substance use. **Conclusion:** The symposium investigates trends and patterns of substance use among young Australians. Reductions in substance use are considered within the context of recent policy and population level interventions. While rates of alcohol, tobacco, cannabis and polydrug use have all decreased among Australian adolescents and young adults, prevention of substance use and its related harm remains a public health priority.

PRESENTER 1

Changing patterns of alcohol use and parental supply among young Australians from 2001–2013

Gary C K Chan[1], Adrian Kelly[1], Catherine Quinn[2], Megan Weier[1], Leanne Hides[2], Matthew Gullo[1], Jason Connor[1], Rosa Alati[1], Wayne Hall[1]

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Background: Alcohol misuse is a key contributor of disease burden and cause of preventable death among young people in Australia. The Australian Government has implemented a range of policies, such as increased taxation and limiting supply of alcohol to minors, to reduce alcohol use and alcohol related harms among young people. This study presented population data on the trends in alcohol use among 14-17 year olds, and prevalence of parental supply of alcohol in this age group. It also presents trends in alcohol related harm as documented in national treatment data. **Methods:** Data were drawn from the National Drug Strategy Household Survey (2001-2013) and Alcohol and Other Drug Treatment Service National Minimum Dataset (2002-2013). **Results:** For young people 14-17 years of age, the rate of weekly drinking decreased from 18.3% in 2001 to 5.1% in 2013; the rate of heavy drinking (5+ standard drinks in a day) dropped from 28.5% to 14.4%; the rate of parental supply of alcohol decreased from 26.5% to 13.9%. Despite the decreases in the prevalence of alcohol use in this age group, treatment data indicated that the rate of treatment episodes increased from 110 per 100,000 population in 2003 to 280 in 2011, and decreased to 210 per 100,000 population in 2013. **Conclusion:** While the decreases in rate of alcohol use and parental supply of alcohol among young Australians aged 14-17 is encouraging, treatment data suggested that those who consumes alcohol may experience more harm in recent years.

PRESENTER 2

Trends in tobacco use and quitting from 1998–2013: Australian nationally representative data

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[2]Centre for Youth Substance Abuse Research, The University of Queensland, Brisbane, Australia

Background: There has been considerable progress in reducing the prevalence of tobacco use in Australia, with specific legislative and policy changes aimed at reducing the uptake of cigarette smoking. However, tobacco use is commonly higher, and quit attempts less successful for those experiencing socioeconomic disadvantage, and mental health disorders. Trends in tobacco use and quitting from 1998 to 2013 were examined in a large representative sample of young Australians. How these trends differed across age, sex, socio-economic status and psychological distress, were also examined to identify the sub-populations where less progress has been made. **Methods:** Participants included 14 to 25 year olds (N = 22, 047) from the last six available Australian National Drug Strategy Household Surveys (1998-2013). Tobacco variables included smoking initiation (having smoked full cigarette), having smoked 100 cigarettes and daily smoking. Socio-economic status was assessed through an Index of Relative Socio-Economic Advantage and Disadvantage and psychological distress was assessed using the Kessler Psychological Distress Scale. Cross-survey tabulations of smoking initiation, daily smoking and smoking cessation from 1998 to 2013 were conducted using weighted prevalence estimates. **Results:** The results indicate there has been a meaningful decrease in the tobacco use in Australia from 1998 to 2013, with the greatest decreases observed in younger groups. Smoking was consistently higher for young people with high socio-economic disadvantage and psychological distress. **Conclusion:** While there have been significant declines in tobacco use from 1998 to 2013, there are continuing challenges in reducing smoking among disadvantaged and psychologically distressed groups.

PRESENTER 3

Cannabis use in 14 to 25 year old Australians 1998–2013

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Background: Cannabis use has been monitored in National Drug Strategy surveys, however changes in use over time have not been reported. We investigate changes in rates of life-time and past year cannabis use among young Australians aged 14 to 25 between 1998 and 2013. The relationship between self-reported cannabis use and physical and mental health is also investigated. **Methods:** Analysis of data from the Australian National Drug Strategy Household Surveys years 1998, 2001, 2004, 2007, 2010 and 2013 on cannabis use and self-rated physical and mental health (Kessler 10). **Results:** Both lifetime and past year cannabis use have decreased since 1998 among young people aged 14 to 25 years. Lifetime use decreased from 54.8% in 1998 to 31.1% in 2013. Past year use decreased from 37.5% in 1998 to 19.1% in 2013. The mean age of first cannabis use increased from 15.8 years in 1998 to 16.8 in 2013. Over the whole period rates of use were higher in males than females and increased with age. Those who reported past year cannabis use reported poorer physical and mental health. **Conclusion:** There has been a significant decrease in the number of young people using cannabis, and an increase in age of first use. Poorer physical and mental health are reported by those who use cannabis. Trends in cannabis use need to be monitored, and research undertaken to assess whether decreased cannabis use has been replaced by other forms of licit or illicit drug use among young Australians.

PRESENTER 4

Trends and patterns of polydrug use in Australian secondary school students 1996-2011

Gary C K Chan[1], Adrian Kelly[1], Wayne Hall[1], Victoria White[2]

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[2]Centre for Behavioural Research in Cancer, The Cancer Council Victoria, Melbourne, Australia

Background: A significant proportion of adolescents engage in polydrug use in developed countries. Most epidemiological studies only focus on one specific drug. Polydrug use remains understudied. This study used the largest nationally representative data series of adolescent drug use from 1996 to 2011 in Australia to document the trends and most prevalent drug use patterns. **Methods:** Data were drawn from the Australian Secondary Student's Alcohol and Drug (ASSAD) survey from 1996 to 2011 (N > 120,000). **Results:** The prevalence of no drug use was fairly stable between 1996 and 2002 (42.2%-44.1%) and increased steadily to 62.9% in 2011. The prevalence of single drug use showed an inverted U-shape. It increased from 27.7% in 1996 to 33.0% in 2002 and then dropped to 24.0% in 2011. The prevalence of polydrug use decreased steadily from 29.5% to 13.1%. Despite changes in the prevalence of use, the patterns of drug use in the study period were very stable. In each year, the most common pattern of drug use were (1) alcohol only, (2) alcohol and tobacco, (3) alcohol, tobacco and cannabis, (4) inhalant only, (5) alcohol and inhalant, (6) alcohol and cannabis, and (7) tobacco only. **Conclusion:** There was a decrease in the prevalence of polydrug use and the patterns of use were very stable from 1996 to 2011. Majority of polydrug use involves alcohol and this suggests that selective prevention targeting alcohol users can be an important strategy to prevent progression to polydrug use among adolescent drinkers.

Concurrent Symposia 11, Population Mental Health, Concorde, 1100–1230

Better assessment of mental health in the population

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[2]Centre of Research Excellence in Mental Health and Substance Use, University of New South Wales, Sydney, Australia
[3]Centre for Research on Ageing, Health and Wellbeing, Research School of Population Health, The Australian National University, Canberra, Australia

Background: Assessment of mental health problems in many settings requires brief but precise self-report measures that are validated in the population of interest. Self-report measures can be used in both research and clinical settings. **Methods:** Data from three large population-based Australian studies form the basis of the presentations. An online cross-sectional study (N = 3,175) was used to develop new assessment tools for common mental health problems. A randomised controlled trial (RCT) embedded in this study tested the effect of online screening on mental health and service use outcomes. In addition, data from longitudinal cohort studies of adults (N = 2,061) and adolescents (N = 527) were used to validate four measures of depression/anxiety and a substance use risk scale respectively. **Results:** The development of item banks for mental health problems such as panic disorder and suicidality enabled more accurate and rapid measurement than existing self-report measures. Population-based measures of depression and anxiety were demonstrated to have strong validity compared to clinical diagnosis, while risk of substance use was accurately identified in the third study. The RCT indicated that providing online feedback from symptom screeners may not be sufficient for increasing service use. **Conclusion:** These studies present important developments in the measurement of mental health problems in the population, with the identification of accurate and efficient methods for assessing risk. The application of new and existing screening measures to population-based assessment requires careful examination of the context in which assessment is conducted.

PRESENTER 1

Validating four measures of mental health against clinical criteria in a community based sample

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Background: There is a need to validate screening measures of affective and generalized anxiety disorders for use in epidemiological surveys of mental health in the general population. This study examined the diagnostic accuracy of the Patient Health Questionnaire (PHQ-9), Goldberg Anxiety and Depression Scales (GAS, GDS) and the 12-item Short Form Health Survey (SF-12) Mental Health Component Summary Scale (MCS-12). **Methods:** We report analyses of data from a sub-sample of 2,061 respondents selected from two narrow age birth cohorts in the Personality and Total Health (PATH) through Life study (aged 32-36 and 52-58 years). Depressive episodes (severe, moderate, and mild), dysthymia and generalized anxiety disorder were assessed according to International Classification of Diseases (ICD-10) criteria using the World Health Organisation (WHO) Composite International Diagnostic Interview (CIDI). **Results:** All scales demonstrated high concordance with their target 30-day diagnoses, with area under the Receiver Operating Characteristic (ROC) curve (AUC) ranging between 0.85 and 0.90. The PHQ-9, GDS, GAS and MCS-12 were all valid instruments for identifying possible cases of depression and anxiety, and assessing the severity of these common mental disorders in the general population. We report recommended cut-points for each scale, though note that the optimal cut-point on mental health screening instruments may vary depending on the context of test administration. **Conclusion:** The scales examined in this study all had good criterion validity and can be considered valid instruments for identifying probable cases, and the severity of depression and anxiety disorders.

PRESENTER 2

Validity of the Substance Use Risk Profile Scale (SURPS) amongst Australian adolescents

Maree Teesson[1], Nicola C Newton[1], Emma L Barrett[1], Natalie Castellaneous-Ryan[2], Erin Kelly[1], Katrina E Champion[1], Lexine Stapinski[1], Tim Slade[1], Natasha Nair[1], Patricia J Conrod[2]

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[2]Department of Psychiatry, Université de Montréal, Montreal, Canada

Background: This study investigated the validity, and derived the Australian norms, of a measure for personality risk factors for substance use in adolescents, the Substance Use Risk Profile Scale (SURPS). **Method:** A total of 527 adolescents (mean age: 13.38 years, SD = 0.43) from seven Australian schools were assessed at two time points, 24 months apart. The concurrent and predictive validity of the SURPS was determined using a series of linear and logistic regressions, and was compared to the results in a United Kingdom (UK) sample. Normative data for the Australian population were reported and compared to norms in the UK. **Results:** Overall, the norms for the Australian adolescents were similar to those for the adolescents from the UK sample. Tests of concurrent and predictive validity in the Australian sample demonstrated that the four personality profiles - Hopelessness (H), Anxiety Sensitivity (AS), Impulsivity (IMP), and Sensation Seeking (SS) - were related to measures of substance use and other behavioural and emotional characteristics. In addition, most of the predicted specific prospective relationships between the personality profiles and particular substance use and other behavioural problems were confirmed. Overall, the results were largely similar between the Australian and UK samples. **Conclusions:** The SURPS is a valid and useful measure for identifying Australian adolescents at high-risk for substance misuse and other emotional and behavioural problems. Implications for prevention are discussed.

PRESENTER 3

More efficient assessment of panic disorder in the community: Development and validation of the Rapid Measurement Toolkit for Panic Disorder (RMT-PD)

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[2]National Institute for Mental Health Research, Research School of Population Health, The Australian National University, Canberra, Australia

Background: The Rapid Measurement Toolkit for Panic Disorder (RMT-PD) was developed to facilitate the assessment of panic disorder using instruments with varying degrees of efficiency and precision to suit several clinical and research settings. **Methods:** Data comprised 3,175 respondents recruited using Facebook advertisements. The structure of a large item pool of self-reported panic disorder symptoms was assessed using confirmatory factor analysis. Multiple indicators multiple causes models were estimated to confirm measurement invariance across sex, age, and education status. Item response theory was utilized to develop a brief static dimensional screener and to simulate various computerized adaptive algorithms. Brief static and adaptive diagnostic screeners were developed using best-subsets logistic regression and decision tree models to predict a DSM-5 diagnosis of panic disorder. **Results:** The final unidimensional item pool comprised 19 items and was invariant across socio-demographic characteristics. The brief static and adaptive dimensional screeners exhibited very high correlations (r's>0.87) with the full item pool and generated scores with acceptable precision using a substantially reduced number of items (79% reduction). Newly developed static and adaptive diagnostic screeners demonstrated excellent predictive properties (AUC>0.86) and high sensitivity (>79%) and specificity (>77%) using less than three items. All newly developed screeners were equally valid (i.e. high correlations and similar predictive properties) with respect to an external brief instrument, the Panic Disorder Screener (PADIS). **Conclusion:** The development of the RMT-PD offers a flexible approach to screening for panic disorder in the community and provides a model for the development of measurement toolkits for a range of other disorders.

PRESENTER 4

An item bank to assess suicidality in the population: development and validation of the Rapid Measurement Toolkit for Suicidal Thoughts and Behaviours (RMT-STB)

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[2]Centre of Research Excellence in Mental Health and Substance Use, University of New South Wales, Sydney, Australia

Background: Suicide is a significant public health problem, with low rates of help-seeking behaviour. The assessment of suicidal thoughts and behaviours has typically been based on expert consensus of the characteristics associated with suicide risk. The aim of the current project was to take a multi-stage data-driven approach to developing new assessment tools for suicide, which took both consumer and expert opinion into account. **Methods:** Initially, 817 items to assess suicidal thoughts and behaviours were identified from a systematic search of current suicide risk scales. Of these items, 57 were selected through a systematic process involving consumer input and expert consensus. These 57 items were then calibrated in a community-based sample of 3,175 Australian adults. Using an Item Response Theory approach, a final item bank of 23 items was developed, from which short screeners assessing symptom severity have also been developed. **Results:** The 23 item bank provides considerable information about the suicide risk profile of individuals. A four-item screener built from the item bank provides greater precision than the widely used SBQ-R in assessing severity of current suicidal thoughts and behaviours with considerably less response burden. At comparable cut-points, both the SBQ-R and the new screener had sensitivity of 0.77 and specificity of 0.74 for suicide attempt after 3 months. The item bank will also enable the administration of adaptive measures of suicide severity. **Conclusion:** More rapid and tailored methods for screening in the population may provide direct linkages to appropriate care pathways for individuals at risk of suicide.

PRESENTER 5

The effect of population-based online screening and feedback on help seeking for depression and social anxiety: randomised controlled trial

Philip J Batterham[1], Alison L Calear[1], Matthew Sunderland[2], Natacha Carragher[2], Jacqueline Brewer[1]

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Background: Screening for mental health problems in clinical settings has been purported to increase recognition and lead to better treatment outcomes. However, evidence suggests that screening alone has little impact on the detection and management of depression by clinicians. Nevertheless, the effectiveness of online population-based screening has not previously been systematically tested, and may lead to increased service use through feedback to individuals about their severity of symptoms and provision of contacts for appropriate services. Methods: Australian adults were recruited online, with 2,773 participants completing a comprehensive survey including screening for depression (n=1,366) or social anxiety (n=1,407). Across these two versions, approximately half (n=1,342) of the participants were randomly allocated to receive tailored feedback. Respondents were invited for follow-up assessment after 3 months to examine whether screening and feedback increased service use, decreased symptoms or decreased study attrition. Results: Providing social anxiety feedback was associated with significant reductions in professional service use. Greater attrition from the study and reduced intentions to seek help were also observed among the feedback condition. Conclusion: Online mental health screening with feedback is not effective for promoting professional service use. Screening in the population requires careful examination of the context in which assessment is conducted. Screening may be more effective for tailoring and targeting interventions, rather than promoting behaviour change.

Concurrent Symposia 12, Cortical Development, St Germain, 1100–1230

Cortical development and plasticity

The aim of this symposium is to provide insight into the fundamental principals governing the development of the neocortex and to demonstrate how changes in the activity of key genes through mutation or epigenetic events lead to functional disruption.

PRESENTER 1

Understanding the developmental origins of cortical malformations and psychiatric disorders

Helen Cooper[1], Cathrin Nourse[1], Ka Foc[1], Amanda White[1], Conor O'Leary[1], Natalie Lee[1]

[1]Queensland Brain Institute, The University of Queensland

Background: Radial progenitors (RPs) in the embryonic brain give rise to all neurons in the central nervous system. Successful development of the neocortex relies on the delicate balance between RP self-renewing symmetric and neurogenic asymmetric divisions and the ability of newborn neurons to migrate into the correct cortical layer. Loss of RP function disrupts these fundamental processes, leading to cortical malformations. Evidence is now emerging that genes linked to psychiatric disorders also play essential roles in cortical development. Copy number variants and microdeletions at 15q11.2 are prominent risk factors for autism, intellectual disability and schizophrenia. Loss of the candidate gene at this locus, CYFIP1, disrupts RP function in the developing mouse cortex, resulting in cortical malformations. However, its function in the cortical stem cell niche and its upstream regulators and downstream effectors are unknown. **Methods:** We have introduced small interfering RNAs (siRNAs) into the lateral ventricles of embryonic mice via in utero electroporation to knockdown the expression of key developmental genes. In vitro cell assays were then utilized to map out the molecular mechanism through which these genes have their effect. **Results:** Loss of the axon guidance receptor, Neogenin, leads to cortical malformations due to the severe disruption of RP morphology and function. Neogenin interacts with Cyfip1 to control its ability to stabilize cellular morphology and adhesive interactions. **Conclusion:** We have identified Neogenin as an important regulator of Cyfip1 function in the cortical stem cell niche. We will discuss how Neogenin and Cyfip1 ensure the fidelity of corticogenesis.

PRESENTER 2

Identification of genes implicated in cerebral cortex development and the etiology of mental disability

Julian Heng[1]

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Background: Recent improvements in genome sequencing technologies have empowered researchers and clinicians with a means to investigate the genetic basis for neurological disorders that result from copy-number variation (CNV). However, what continues to remain a challenge is to establish the pathogenicity of genomic abnormalities, such as CNVs, and their causative effects on nervous system impairment. Our goal is to study the neurobiology of brain development disorders with a genetic origin, as well as to characterise novel players in brain development and disease. In this project, we explore possible genotype-phenotype relationships in brain developmental disorders which are associated with microdeletions. **Methods:** We use a range of molecular and cellular approaches combined with in utero electroporation of siRNAs into the embryonic mouse cortex. **Results:** Our investigation has led to the identification of ZNF238 on 1q43-44 as a critical gene for brain development. We further show how loss of ZNF238 leads to impairments in the production of cerebral cortical neurons during fetal development. **Conclusion:** Through this research, we will better understand the molecular and cellular functions within the developing brain which guide the development of new neural circuits as they fire and wire appropriately. We will apply this knowledge towards developing tools which improve the genetic diagnosis and clinical management of patients born with brain disorders such as epilepsy, intellectual disability and autism.

PRESENTER 3

The contralateral targeting of the corpus callosum and its implications in neurodevelopmental disorders

Laura Fenlon[1], Rodrigo Suárez[1], Roger Marek[1], Lilach Avitan[1], Pankaj Sah[1,2], Geoffrey J Goodhill[1,3], Linda J Richards[1,2]

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Background: The corpus callosum is a large fibre tract that connects the two hemispheres of the brain, facilitating their communication. Developmental malformation of this structure can result in emotional, cognitive and motor deficits. Indeed, many neurodevelopmental disorders, such as autism and schizophrenia, involve changes in callosal organisation and interhemispheric connectivity, but it is unclear how this miswiring occurs. Such subtle changes in connectivity could be caused by defects in contralateral callosal targeting, where axons must locate and innervate their final targets in the opposite hemisphere of the brain. However, very little is known about how this process occurs and what factors regulate it (Fenlon and Richards, 2015). **Methods:** We used in utero electroporation of reporter genes, optogenetic constructs, and direct disruption of activity in callosal neurons combined with whisker ablations to investigate the mechanisms of contralateral callosal targeting. **Results:** Experiments investigating the mechanisms that might drive this development revealed a balance of interhemispheric activity, rather than intact activity in each hemisphere, is required for correct callosal wiring. We showed this both by disrupting sensory activity as well as endogenous cortical activity. Only spatially symmetric patterns of bilateral whisker-disruption results in correct callosal targeting, showing that spatially balanced sensory input is also required for targeting. Optogenetic dissection of the circuit revealed that the disruption and rescue of this projection corresponded to functional disruption and rescue of the connections, suggesting that cognitive changes may underlie these morphological observations (Suárez, Fenlon et al., 2014). **Conclusion:** Taken together, this work reveals some key developmental events and mechanisms in the wiring of the corpus callosum and may help us better understand developmental malformations of this structure in the future.

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PRESENTER 4

Experience-dependent plasticity modulating brain maturation and function in gene-edited models of psychiatric disorders

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Background: We have investigated the role of gene-environment interactions and experience-dependent plasticity in the pathogenesis of psychiatric disorders, including schizophrenia and autism spectrum disorder (ASD). We have characterised genetically targeted lines of mice as models of schizophrenia and ASD based on presence of altered cortical development, schizophrenia and ASD-like behavioural abnormalities, and improvement of the phenotype with relevant drug administration. **Methods:** To investigate gene-environment interactions, we assessed mutant and wild-type (WT) littermate mice after exposure to environmental enrichment (EE) or rearing under standard housing conditions, from weaning, thus impacting experience-dependent brain maturation. After the mice had reached adulthood, a full battery of behavioural tests was performed, including touchscreen assays of learning, memory and various cognitive endophenotypes. Additional experimental approaches, including behavioural pharmacology, neuronal morphometry, dendritic spine analysis and gene expression assays, were used to investigate potential molecular and cellular mechanisms. **Results:** The metabotropic glutamate receptor 5 (mGlu5) knockout (KO) mice showed reduced prepulse inhibition (PPI), long-term memory deficits, and spontaneous locomotor hyperactivity, which were all attenuated by EE. Examining the cellular impact of genetic and environmental manipulation, we show that EE significantly increased pyramidal cell dendritic branching and BDNF protein levels in the hippocampus of wild-type mice; however, mGlu5 KO mice were resistant to these alterations, suggesting that mGlu5 is critical to these responses. A selective effect of EE on the behavioral response to the NMDA receptor antagonist MK-801 in mGlu5 mice was seen. MK-801-induced hyperlocomotion was further potentiated in enriched mGlu5 KO mice and treatment with MK-801 reinstated PPI disruption in EE mGlu5 KO mice only, a response that is absent under standard housing conditions. We have also explored other mouse models. **Conclusion:** Together, these results demonstrate an important role for mGlu5 in environmental modulation of schizophrenia-related impairments. This experimental approach allows us to model gene-environment interactions of relevance to schizophrenia, ASD and other psychiatric disorders.

Plenary 5, Le Grand Ballroom 3, 1330–1400

Bullying: A modifiable risk factor for mental illness

James Scott[1,2]

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Bullying during adolescence is a significant risk factor for both contemporaneous and future mental illness. In any school term, approximately one in ten Australian Adolescents are involved in bullying as perpetrators, victims or both. Bullying can be categorised as verbal (name calling and teasing), relational (spreading rumours and exclusion), physical and cyber bullying and these often co occur. Those adolescents involved in bullying are at increased risk of depression, anxiety and suicide attempts. Furthermore they are at increased risk of exiting education prematurely and experiencing higher rates of unemployment as adults. Prevention of bullying provides an opportunity to reduce the prevalence of mental disorders in the community. The challenges and opportunities associated with the identification of bullying and implementation of effective interventions in schools will be discussed.

Concurrent 1, Biological Psychiatry Genetics, Le Grand Ballroom 3, 1430–1600

Big data in neuropsychiatry

Murray J Cairns[1,2,3]

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[2]Schizophrenia Research Institute, Sydney, Australia
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The major neuropsychiatric and neurocognitive syndromes are characterised by multiple dimensions of complexity that have so far thwarted reductionist approaches to identifying their molecular determinants and establish a firm basis for rational drug design. At the same time our capacity for agnostic/hypothesis-free analysis of neural systems and their molecular/genetic basis has evolved to unprecedented levels of coverage and refinement. 'Big-data' approaches, highlighted by the most recent mega genome-wide association studies (GWAS) in schizophrenia, are now at the scale needed to resolve significant new associations of common variants. A reduction in the cost of high-throughput sequencing is also providing an opportunity to explore complex traits in the whole genome at nucleotide resolution, and determine implication of rare variants examined through high-resolution functional genomics. Further advances in the analysis of high-resolution neuroanatomical and connectivity imaging is providing the foundation for describing sub-phenotypic, cross disorder components of psychiatric syndromes. Integration of these "big data" approaches to raise and solve questions in neuropsychiatry is presenting many new challenges in high-performance computing, algorithm development, biostatistics, systems biology and bioinformatics. Regardless, these methods have tremendous potential for generating new unbiased insight and ultimately biomarkers and drug targets into these most intractable syndromes. In this symposium, Jake Gratten, Murray Cairns, Melissa Green and Andrew Zalesky will explore the current capacity and discuss the future potential of 'big data' projects to refine the phenotype and identify the molecular basis of these in complex neuropsychiatric syndromes.

PRESENTER 1

Big data, genomics and psychiatric disorders

Jake Gratten[1]

[1]Queensland Brain Institute, The University of Queensland, Brisbane, Australia

Family study results are consistent with genetic effects making substantial contributions to risk of psychiatric disorders such as schizophrenia, yet efforts to robustly identify specific genetic risk factors had been disappointing until the advent of technologies that assay the entire genome in large samples. The Psychiatric Genomics Consortium (PGC) has made exceptional recent progress for schizophrenia, reporting >100 genome-wide significant loci. The number of genetic discoveries for schizophrenia has climbed dramatically as sample size has increased from ~10K cases to >35K cases, in line with predictions from whole genome statistical analyses that imply a large number of contributing loci each accounting for a small proportion of the total variance in liability. The genetic findings for schizophrenia are biologically plausible, including genes that are known to be of therapeutic relevance and genes that are consistent with prominent hypotheses regarding pathophysiology. The PGC is currently genotyping large samples across nine disorders (total 265K cases), and the objective is to increase this total to >500K. The rationale for larger GWAS mega-analyses is that the resulting genetic discoveries will improve biological understanding and provide a rational path to drug discovery. The main limiting factor for future progress will not be genomic data, but access to deep phenotype information, in particular if we are to exploit opportunities to investigate the combined effects of genes and the environment.

PRESENTER 2

High-resolution systems analysis of schizophrenia

Murray J Cairns[1,2,3]

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[2]Schizophrenia Research Institute, Sydney, Australia
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Schizophrenia is a complex polygenic disorder that has evaded robust genetic characterisation despite heritability estimates exceeding 70%. Even with the recent progress in very large international genome-wide association studies, the contribution of common variants captured by SNP array, account for only part of the overall risk burden. A significant portion of the "missing heritability" is likely due to relatively penetrant rare to intermediate frequency variants, for which the feasibility of discovery has been limited. The recent implementation of ultra high-throughput sequencing methodology, however, now provides extraordinary capacity for comprehensive genomic investigation at nucleotide resolution. In this study we have commenced whole genome sequencing of 500 hundred individuals in the Australian Schizophrenia Research Bank. High-resolution functional genomic information is also being collected in a subgroup of these patients through RNA-Seq and small RNA-Seq. This data is providing the basis for a systems biology approach to identifying disrupted regulatory modules and networks functionally integrated using in the context of diagnosis as well as other psychological and neuroanatomical parameters. This "big data' approach to schizophrenia genomics outlined here, has significant potential for the development of new system-level diagnostic biomarkers, personalised genomics and ultimately targeted therapeutics with greater activity, specificity and lower side effects because they target specific pathways affected in each individual.

PRESENTER 3

Brain anatomy distinguishes deficit from spared schizophrenia cases: a machine learning approach

Melissa J Green[1,2]

[1]School of Psychiatry, University of New South Wales, Sydney, Australia
[2]Schizophrenia Research Institute, Sydney, Australia

Cognitive subtypes of psychosis have been distinguished in a number of studies on the basis of performance across a range of cognitive abilities; cognitively spared patients show only subtle impairments on selective domains (if any) relative to healthy controls, while cognitive deficit patients show severe impairment across all tasks, and show some genetic distinction from cognitively spared patients. Here we investigate the capacity to distinguish cognitive subtypes of schizophrenia – 'cognitive deficit' (CD) and 'cognitively spared' (CS) – in on the basis of multivariate patterns of volumetric brain differences. We applied support vector machine classification to grey- and white-matter volume data from 126 schizophrenia patients previously allocated to the cognitive spared subtype, 74 cognitive deficit schizophrenia patients, and 134 healthy controls. Using this method, cognitive subtypes were distinguished from healthy controls with up to 72% accuracy. Cross-validation analyses between subtypes achieved an accuracy of 71%, suggesting that some common neuroanatomical patterns distinguish both subtypes from healthy controls. Notably, cognitive subtypes were best distinguished from one another when the sample was stratified by sex prior to classification analysis: cognitive subtype classification accuracy was relatively low (< 60%) without stratification, and increased to 83% for females with sex stratification. Distinct neuroanatomical patterns predicted cognitive subtype status in each sex, consistent with previous evidence of disrupted relationships between brain structure and cognition in male, but not female, schizophrenia patients. The results suggest that the volumetric brain differences between cognitive subtypes are relatively minor in contrast to the large common disease-associated changes.

PRESENTER 4

Connectome meets genome: combining genetic and multimodal neuroimging data in schizophrenia

Andrew Zalesky[1,2]

[1]Melbourne Neuropsychiatry Centre and Melbourne Health, The University of Melbourne, Australia
[2]Melbourne School of Engineering, The University of Melbourne, Australia

Psychiatric disorders are genetically complex and have a complex pathophysiology. Bringing together large genetic and multimodal neuroimaging data sets is therefore needed to identify intermediate biological phenotypes (endophenotypes) and decompose psychiatric diagnosis into biologically valid disease entities. I will discuss genetic influences on the human connectome in psychiatric illness, focussing on recent applications of this work in schizophrenia. Connectome genetics aims to understand how genetic disease risk variants affect brain connectivity. I have mapped brain connectivity in vivo with diffusion and functional MRI. Using these techniques, I have identified widespread disruptions to white matter fasciculi and functional connections in individuals with schizophrenia. While circumscribed disruptions to the arcuate fasciculus, fronto-striatal and fronto-temporal connectivity have been extensively discussed in the schizophrenia literature, I will highlight that functional and white matter connectivity alterations are widespread and involve multiple brain systems. It will therefore argue for the importance of adopting a systems neuroscience, whole-brain perspective to the pathophysiology of this debilitating disorder, as opposed to studying individual circuits and genes in isolation. I will also present preliminary work in the connectome genetics of schizophrenia, which aims to identify the genetic underpinnings of these connectivity disturbances.

Maternal vitamin D deficiency is associated with autism spectrum symptoms in offspring

Anna Vinkhuyzen[1], Darryl Eyles[1,2], Thomas Burne[1,2], Laura Blanken[3,6], Claudia Kruithof[3,4], Frank Verhulst[6], Vincent Jaddoe[3,4,5], Henning Tiemeier[4,6], John McGrath[1,2]

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[6]Department of Child and Adolescent Psychiatry/Psychology, Erasmus MC, University Medical Center, Rotterdam, The Netherlands

Background: Maternal vitamin D deficiency during pregnancy has been hypothesized as a risk factor for increased risk of autism related outcomes in the offspring. **Methods:** This study was embedded in a population-based prospective cohort study from fetal life onwards in the city of Rotterdam, The Netherlands. Data were available for 7,256 mothers and 5,023 children. We measured midgestation and birth cord blood concentrations of vitamin D and tested whether maternal vitamin D was predictive of severity of autism spectrum symptoms as measured with the Social Responsiveness Scale (in 6 year old children). **Results:** Prevalence of vitamin D deficiency (defined as concentrations less than 25 nmol/L) was substantial: 26% of the mothers had deficient levels midgestation and proportion of deficiency increased to 46% at time of birth. 21% of the mothers had persistent vitamin D deficiency implying that they were deficient both midgestation and at time of birth. Vitamin D deficiency at time of birth was significantly associated with severity of autism spectrum symptoms and this association was stronger when mothers were persistent vitamin D deficient during pregnancy. **Conclusion:** A substantial proportion of the pregnant women were vitamin D deficient during pregnancy. Our observation that maternal vitamin D deficiency is a risk factor for autism spectrum symptoms in the offspring raises the prospect of primary prevention through supplementation. Further research into the causal mechanisms is essential for a better understanding of the underlying biology of the association.

Mapping of the kynurenine pathway metabolism in autism: implication for immune-induced glutamatergic activity

Chai Lim[1], Mohamed Essa[2], Roberta de Paula Martins[1], David Lovejoy[1], Mostafa Waly[2], Yahya Al-Farsi[2], Marwan Al-Sharbati[2], Mohammed Al-Shaffae[2], Gilles Guillemin[1]

[1]Macquarie University, Sydney, Australia
[2]Sultan Qaboos University, Muscat, Oman

Background: Dysfunctions in the serotoninergic and glutamatergic systems are implicated in the pathogenesis of autism together with various neuroinflammatory mediators. As the kynurenine pathway (KP) of tryptophan degradation is activated in neuroinflammatory states, we hypothesized that there may be a link between inflammation in autism and enhanced KP activation resulting in reduced serotonin synthesis from tryptophan and production of neuroactive KP metabolites capable of modulating glutamatergic activity. **Methods:** A cross-sectional study of 15 different Omani families with newly diagnosed autistic children (n=15) and their age-matched healthy siblings (n=12) was designed and the immunological profile and the KP metabolic signature characterized in study participants. Immunological profiling was carried out using a multiplexing immunoassay kit while KP metabolites were quantified using ultra-high pressure liquid chromatography and gas chromatography-mass spectrometry. Data were compared for differences between cohorts. Additionally, correlation analysis was performed between immunological and KP parameters in the autistic cohort. **Results:** Our data indicate that there are alterations to the KP in autism. Specifically, increased production of downstream metabolite, quinolinic acid which is capable of enhancing glutamatergic neurotransmission was noted. Our correlation studies also indicated that markers of inflammation induced KP activation. More importantly, inflammatory signature of activated macrophages corresponded with quinolinic acid production supporting our previous studies showing that activated monocytic cells such as macrophages and microglia are the major source of quinolinic acid production. **Conclusion:** Until now, previous studies have failed to establish the link between inflammation, glutamatergic activity and the KP. We show here that inflammatory-induced KP activation leads to increase production of a potent glutamatergic agonist, quinolinic acid in the serum of an autistic cohort of Omani children. Our findings suggest that this increased quinolinic acid may be linked to 16p11.2 mutations leading to abnormal glutamatergic activity associated with autism pathogenesis and point towards novel therapeutic targets.

Concurrent 2, Work Mental Health, Bastille, 1430–1600

Work and mental health: what have we learnt from recent studies?

Samuel Harvey[1,2,3], Nick Glozier[4], Bridianne O'Dea[4], Peter Butterworth[5], Simon Øverland[6,7], Arnstein Mykletun[1,8,9,10]

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[8]Division of Mental Health, Norwegian Institute of Public Health, Bergen, Norway
[9]University of Tromsø, Department of Community Medicine, Tromsø, Norway
[10]Nordland Hospital Trust, Centre for Work and Mental Health, Bodø, Norway

Background: The relationship between work and mental health is increasing relevant for both clinicians and policy makers. Mental ill health is now the leading cause of long term sickness absence in Australia and is the most expensive claim group under Worker's Compensation arrangements. Many individuals who suffer from mental illness never make a full occupational recovery, which contributes to their sense of exclusion from society. **Methods & Results:** Research groups from Australia and Norway will present the results of recent observational studies aimed at better understanding the link between work and mental health and ground breaking interventional studies that are building an evidence base for interventions that may improve the occupational and mental health outcomes of workers. **Conclusion:** Work status and the work environment are important and potentially modifiable risk factors for mental ill health. There is now an emerging evidence base for a range of novel work focused interventions that appear able to improve the mental health and functioning of at risk workers.

PRESENTER 1

Work and mental health–what we know, what we don't know from the last few years

Nick Glozier[1], Samuel Harvey[2,3,4]

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[2]School of Psychiatry, University of New South Wales, Sydney, Australia
[3]Black Dog Institute, Sydney, Australia
[4]St George Hospital, Kogarah, Australia

Background: The interface of mental health and the workplace is receiving increasing policy attention as mental ill health is now the leading contributor to Disability Support Pension awards, vocational disability in young adults, and the most expensive claims under Worker's Compensation arrangements. Sustainable work is seen as a key goal of "recovery" for many with mental illness **Methods:** Review of recent epidemiology, intervention, organisational and policy literature. **Results & Conclusion:** This review will outline current knowledge about: 1) high prevalence disorders (depression, anxiety, PTSD) in the workforce; 2) the transition of young people with mental illness from school to work and their functional disability; 3) evidence on what works to enhance employment or people with mental illness; 4) where there are implementation gaps. It will set up the background for the symposium's subsequent presentations.

PRESENTER 2

Depression, functional disability and NEET status in young adult help-seekers

Bridianne O'Dea[1], Rico S Lee[1], Patrick McGorry[2], Ian B Hickie[1], Rosemary Purcell[3], Jan Scott, Eoin Killacky[2], Alison R Yung[5], Daniel F Hermens[1], Elizabeth M Scott[1], Adam Guastella[1], Nick Glozier[1]

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[4]Institute of Neuroscience, Newcastle University, UK
[5]Institute of Brain, Behaviour and Mental Health, University of Manchester, UK

Background: Depression is a leading cause of functional disability in young adults and is associated with NEET status ("Not in Employment, Education or Training"). Understanding the link between functional disability and NEET status in depressed young adults is important to determine whether interventions delivered earlier in the course of illness are likely to improve functional outcome. This study aimed to examine the temporal relationship between depression, functional disability and NEET status, in young adults seeking help for mental health problems. **Methods:** Using a prospective and multisite clinical cohort of young people aged 12–25 years recruited via headspace; clinical and demographic measures were taken at baseline and 12 month follow-up via self-report and interview. **Results:** Among this sample (N = 448), baseline functioning was below the national age-adjusted average. Nearly one third had been NEET at some point. A synchrony of change was found between depression and functional disability such that as depression improved functioning improved and vice versa. No synchrony of change was found between depression and NEET status. During the study, only 10% of those who were NEET received any professional mental health support to improve their work ability. **Conclusion:** This is the first study to examine the course of depression, functional disability, and NEET rates among help-seeking young adults with mental health conditions. These findings validate the importance of depression to functioning, and advocate for the increased availability of employment and education support within mental health services to attempt to improve the vocational outcome of disorder focused care.

PRESENTER 3

The association between poor psychosocial job quality and mental health, and how this influences primary care consultations

Peter Butterworth[1], Liana Leach[1], Allison Milner[2], Tony LaMontagne[2]

[1]Research School of Population Health, The Australian National University, Canberra, Australia
[2]School of Health and Social Development, Deakin University, Burwood, Australia

Background: There is considerable research evidence showing that exposure to adverse psychosocial characteristics is associated with poorer physical and mental health. However, the self-report and cross-sectional nature of much of this literature limits interpretation. This study uses longitudinal data from a representative cohort study to investigate whether change in psychosocial job characteristics over time is associated with change in number of primary care consultations, and the explanatory role of physical and mental health. **Methods:** Longitudinal analysis of three waves of data form the middle-aged cohort from the PATH through Life study. Job quality was assessed by well-established measures of job demands, job control and insecurity. Number of GP consultations was objectively assessed using individually linked Medicare data for each wave. Longitudinal Poisson models were used, controlling for social-demographic, health and personality measures. **Results:** Preliminary analyses confirmed that psychosocial job quality was associated with symptoms of common mental disorders. There was evidence of a dose-response in the association between adverse psychosocial job quality and number of GP consultations, with each additional adversity associated with a 12% increase in the number of consultations. While the models showed that poorer physical and mental health were each associated with increased primary care consultations, reported anxiety and depression symptoms explained more of the association between job quality and GP consultations. **Conclusion:** The current study addressed some of the common limitations in the existing research literature, confirming the adverse mental health consequences of poor psychosocial job conditions and quantifies the potential impact of job quality in primary care.

PRESENTER 4

The mental health of emergency workers: studies examining the impact of cumulative trauma exposure and the effectiveness of manager mental health training

Samuel Harvey[1,2,3], Helen Christensen[2], Arnstein Mykletun[1,4,5,6], Ira Madan[7], Caryl Barnes[1,2], Helen Paterson[8], Richard Kemp[9], Richard Bryant[9]

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[9]School of Psychology, University of New South Wales, Sydney, Australia

Background: Emergency workers are routinely exposed to potentially traumatic events. While studies have shown emergency workers have increased rates of posttraumatic stress disorder (PTSD), the impact of cumulative trauma on other mental health outcomes, such as depression and alcohol use, remain unclear. Additionally, at present there is very limited evidence regarding which, if any interventions can improve the mental health and occupational outcomes of emergency workers. **Methods:** We will present an overview of a program of research focused on the mental health of emergency workers. The results of two studies will be discussed in detail. Firstly, a cross sectional prevalence survey completed by current (n=488) and retired (n=265) fire-fighters. Secondly, a randomized controlled trial (RCT) examining the effectiveness of manager mental health training within emergency services. **Results:** Fire-fighters suffer from high rates of mental disorders, particularly PTSD (8%) and alcohol use disorders (19%), with rates of mental disorder continuing to rise in a linear manner with each additional trauma exposure. Training emergency service managers resulted in increased mental health literacy and greater confidence in dealing with mentally unwell workers ($p<0.001$). This increased confidence was maintained at 6 month follow up ($p=0.01$) and associated with altered behavior, particularly increased contact with staff on sickness absence due to mental illness ($p=0.04$). **Conclusion:** The cumulative trauma experienced by emergency workers can result in a range of adverse mental health and occupational outcomes. Novel workplace interventions appear to be effective in mitigating against some of these effects.

PRESENTER 5

Three year outcome data from the "At Work and Coping-trial"

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[4]Uni Research Health, Bergen, Norway

Background: We need better evidence on how to help people with common mental disorders stay connected to working life. In the "At Work and Coping-trial" a combination of work-directed CBT and job support was superior to treatment as usual in keeping people connected to work after twelve months. We will present long-term results from the study as the participants are followed three years after the intervention. **Methods:** A randomized controlled multicenter trial (N=1193) was conducted. Participants were on sick-leave, at risk of going on sick-leave, or on long-term benefits at baseline. The intervention integrated work-focused CBT with individual job support. The control group received usual care. The main outcome was objective work participation at 12-months follow-up. Results after three years will be based on registry data. **Results:** At the 12-month follow-up, a higher proportion of participants in the intervention group had increased or maintained their work participation (44.2% vs 37.2%, P=0.015). The difference remained significant after 18 months (diff: 7.8%, P=0.018), and was even stronger for those on long-term benefits (diff: 12.2%, P=0.007). Complete results after three years will be ready and available to be presented at the conference. **Conclusion:** The main results after 12 months showed that work-focused CBT and individual job support was more effective than usual care in increasing or maintaining work participation for people with CMDs. The effects were profound for people on long-term benefits. This is the to-date largest trial in this area with complete long-term follow-up data covering three years for all participants.

PRESENTER 6

Can long-term sickness absence be reduced by supervision of GPs in their handling of difficult cases? A randomised controlled trail

Hans Petter Nordhagen[1], Stein Nilsen[1], Hege Rebecca Jakobsen[1], Elin Olaug Rosvold[2], Dag Bruusgaard[2], Samuel Harvey[3], Bridianne O'Dea[3,5], Roland Blonk[4], **Arnstein Mykletun**[3,5,6,7]

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[4]TNO, Netherlands Organization for Applied Scientific Research, Quality of Life, Hoofdorp, The Netherlands
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[6]University of Tromsø, Department of Community Medicine, Tromsø, Norway
[7]Nordland Hospital Trust, Centre for Work and Mental Health, Bodø, Norway

Background: Long duration of sickness absence (SA) is associated with higher risk of never returning to work. This calls for evidence based interventions to promote return to work. In Norway, the vast majority of SA certification is handled by GPs, a task reported to be both challenging and difficult. Symptoms of mental disorder and muscle-skeletal pain are the most common causes for long term sickness absence. Still, patients are sometimes reluctant to return to work after long periods of absence, despite considerable improvement in their symptoms. The aim of this study was to test the effectiveness of supervising GPs in their handling of long term sickness absence. **Methods:** A total of 233 GPs covering a population of 273,000 inhabitants in Bergen municipality were invited to participate in the study. A random half of 170 included GPs received four sessions over 12 months of supervision on their handling of patients currently on long-term SA. The control group received no attention or intervention. Outcome registry data was collected from public registries of public reimbursements of sickness absence. The GPs also evaluated the intervention anonymously in a survey. **Results:** According to the survey, the GPs received the supervision with enthusiasm, and the majority reported it had improved their handling of long term sickness absence. However, despite generous statistical power, we found no statistical effect on outcome data. **Conclusion:** Contrary to expectations by the GPs and the project team, the model does not seem to improve the GPs handling of sickness absence at all.

Concurrent 3, Psychosis, Concorde, 1430–1600

The contributions of qualitative inquiry in early psychosis

Katherine M Boydell[1], Alan Rosen[2]

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[2]Brain & Mind Research Institute, Sydney Medical School, Brain & Mind Centre, University of Sydney, Sydney, Australia

Background: Qualitative methods allow us to explore the lives, socio-culturally and experientially, of those with first-episode psychosis. It is important to achieve a deeper understanding of the ways in which mental illness interferes with everyday life and how individuals can learn to manage and minimize illness in order to fully pursue their lives. **Methods:** McCann and Lubman profile their qualitative process evaluation, demonstrating that guided self-help is useful in informing and supporting caregivers of young people affected by psychosis. Boydell et al describe a participatory project where young people used digital narrative storytelling to share experiences of helpseeking in rural communities. Watkins and colleagues profile an intensive lifestyle intervention via in-depth interviews with clients and staff to enhance understanding of motivators to attend, effects of peer support, and the impact of life-skills training. De Jager uses narrative inquiry to investigate voice-hearer's lived experience of recovery and Rosen and Shiers complete the symposium with qualitative work on the central features and constructs of recovery practice as it relates to the early intervention paradigm. **Results:** These studies demonstrate the contextually rich, detailed information made possible through in-depth interviews, focus groups and documents analysis. They account for active engagement of young people affected by psychosis in making sense of their experience across a range of areas including help seeking, hearing voices, attending to physical health, and recovery. **Conclusion:** Qualitative inquiry offers much more than an adjunct to quantitative studies. Studies suggest that a focus on lived experience and meaning making may lead to the development of more clinically sensitive interventions that encourage a person-centred model of care, wherein a young persons' sense of self is valued and their agency in recovery is furthered.

PRESENTER 1

Qualitative process evaluation of guided self-help manual for family caregivers of young people with first-episode psychosis

Terence V McCann[1], Dan I Lubman[2]

[1]College of Health and Biomedicine, Centre for Chronic Disease, Victoria University, Melbourne, Victoria, Australia
[2]Turning Point, Eastern Health and Monash University, Melbourne, Australia

Background: Family caregiving for a young person with first-episode psychosis (FEP) is challenging and can have detrimental effects on caregivers' well-being. Although some face-to-face interventions have achieved promising outcomes, they are costly and resource-intensive to provide, restricting their reach and penetration. Guided self-help in book-form (bibliotherapy) is an alternative but untested approach in these situations. In this study, we aimed to evaluate carers' beliefs about the usefulness of a problem-solving based guided self-help manual for primary caregivers of young people with FEP. **Methods:** A qualitative process evaluation situated within a randomised controlled trial, conducted across two FEP services in Melbourne, Australia. 124 caregivers were randomised to problem-solving guided self-help intervention or treatment as usual. In addition, we undertook a qualitative process evaluation, using individual interviews, with a random sample of 24 of the intervention group. A thematic analysis of the qualitative data was undertaken, which is the subject of this presentation. **Results:** Three themes were abstracted from the data, reflecting caregivers' beliefs about the usefulness of the manual: promoting carers' well-being, increasing carers' understanding of and support for the young person with FEP, and accessibility and delivery modes of the programme. **Conclusion:** This process evaluation highlights that guided self-help is useful in informing and supporting caregivers of affected young people. While there is scope for broadening the delivery modes, the approach is easy to use and accessible, and can be used as a cost-effective adjunct to standard support provided to carers, by mental health clinicians.

PRESENTER 2

(Co) producing narratives on access to mental health services in rural communities: participatory research with young people experiencing psychosis

Katherine M Boydell[1], Brenda Gladstone[2,3], Elaine Stasiulis[2], Chiachen Cheng[4]

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Background: Understanding the help seeking process is critical to designing an equitable health system and assisting young people and their significant others in decision-making regarding seeking mental health intervention. Care pathways differ according to geography; little attention is paid to health care inequities facing youth experiencing psychosis in rural communities. **Methods:** A participatory inquiry approach guided the study and observational, interview and arts-based methods were used. We examined how youth manage everyday life in the context of their experiences of first episode psychosis and help seeking via help seeking narratives using digital storytelling. We explored ways in which youth acquire competencies through guided participation and active engagement in the research process. Lundy's (2007) framework for meaningful participation was used to investigate how digital storytelling in combination with participatory analysis addresses concepts of voice, space, audience, and influence. **Results:** The reflexive practice of exploring meaning making as a group enabled collective co-creation of individual narratives. Common themes in the helpseeking pathway involved denial of a problem, active efforts to ignore and hide symptoms and, coupled with the dearth of resources in rural locales, led to hospitalization as a first route into the mental health system. **Conclusion:** Production of narrative stories provides a way to assemble individual and collective experiences of helpseeking in rural communities and lends credence to the lived experience of young people. By critically engaging young people through participatory analysis, their experience and wisdom is valued; opportunities are opened to explore questions of power, privilege and identity and to reflect on and (re) imagine narratives about their lives.

PRESENTER 3

"Seeing the Doc at 11am, cooking group at midday, and hitting the gym at 2pm": participants perspectives of an embedded lifestyle intervention within an early psychosis programme

Andrew Watkins[1,2], Jackie Curtis[1,3], Simon Rosenbaum[1,3], Scott Teasdale[3], Megan Kalucy[1], Katherine Samaras[4,5], Phillip B Ward[2,6]

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[5]Diabetes and Obesity Program, Garvan Institute of Medical Research, Darlinghurst, Australia
[6]Schizophrenia Research Unit, South Western Sydney Local Health District, Liverpool, Australia

Background: Keeping the Body in Mind (KBIM) is an intensive 12-week, strength-based multidisciplinary lifestyle intervention delivered at the initiation of anti-psychotic treatment for young people experiencing first episode psychosis. The KBIM program comprised dietitian and exercise physiology interventions, in addition to individualised health coaching delivered by a clinical nurse consultant and youth peer support workers to maximize participation through a recovery-oriented approach. **Methods:** Semi-structured 45 minute interviews were conducted with 11 of the 16 young people that completed in the KBIM intervention. Interviews were conducted independently of the program and the interviewer was not known to participants. The participants were invited to reflect on their experience with the KBIM program. Questions sought to determine the acceptability of the program and sought to draw further information around the benefits and drawbacks of participating in the KBIM lifestyle intervention. Grounded theory was the theoretical framework used and data was analysed using NVivo 10 software. **Results:** Participants universally felt that participating in the program encouraged them to look after their physical health but never felt like this process was forced. A greater knowledge and awareness of physical health was gained as a result of participating, and this provided motivation to improve their physical health. Strong themes that emerged in the interviews were an improvement in mood, sleep and self-confidence. **Conclusion:** The KBIM lifestyle intervention program was highly acceptable to program participants. The perceived benefits of the program exceeded just improved physical health outcomes to a broad range of psychosocial benefits.

PRESENTER 4

Investigating the lived experience of recovery in people who hear voices

Adele de Jager[1]

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Background: Despite evidence of both clinical and personal recovery from distressing voices, the process of recovery over time is not clear. **Methods:** Narrative inquiry was used to investigate 11 voice-hearer's lived experience of recovery. Semi structured interviews concerning patients' recovery over time were conducted and audio recorded. **Results:** Following a period of despair and exhaustion, two recovery typologies emerged: turning toward/empowerment, which involved developing a normalized account of voices, building voice-specific skills, integrating voices into daily life, and a transformation of identity, and turning away/protective liberation, which involved harnessing all available resources to survive the experience, with the importance of medication in recovery being emphasized. **Conclusions:** Coming to hold a normalized account of voice-hearing and the self and witnessing of preferred narratives by others were essential in more robust turning toward recovery typology.

PRESENTER 5

Using narrative to provide a new context for applying a recovery paradigm after the early phase of psychosis

Alan Rosen[1], David Shiers[2]

[1]Brain & Mind Research Institute, Sydney Medical School, Brain & Mind Centre, University of Sydney, Sydney, Australia
[2]Retired GP, Former Joint Lead on National EI development Programme, Co-author of HeAL

Background: This presentation considers how early intervention in psychosis can support a recovery paradigm. **Methods:** Significant numbers of those developing a first episode of psychosis are on a path to a persisting and potentially life long condition. Constituting the schizophrenia spectrum disorders, such conditions demand the particular qualities and attitudes inherent within recovery-based practice. This presentation explores some of these qualities and attitudes by examining the tension between a traditional 'clinical' narrative used by many health providers and a 'human' narrative of users of services and their families. **Results:** Key features and constructs of recovery practice as they relate to the EI paradigm are presented. These include: woodshedding, turning points, discontinuous improvement models, therapeutic optimism, gradualism and narratives of story telling. We also highlight the role of family members and other close supporters and believe their potential contribution requires greater consideration. **Conclusion:** The early intervention (EI) paradigm can resonate and indeed offer a stronghold for recovery-based practice where traditional mental health services have sometimes struggled. Conversely, failure of caregivers to provide such an approach in the early phase of illness can cause unnecessary and sometimes disastrous consequences.

An antipsychotic treatment that provides a 3-month dosing interval to deliver paliperidone: a relapse-prevention trial assessment

Larry Alphs[1], Joris Berwaerts[2], Isaac Nuamah[2], **Srihari Gopal**[2]

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[2]Janssen Research and Development, LLC, Titusville, NJ, USA

Background: An investigational long-acting injectable formulation of paliperidone palmitate (PP) provides a 3-month dosing interval (PP3M). An international, placebo-controlled, relapse-prevention study evaluated the efficacy and safety of PP3M in patients with schizophrenia (NCT01529515). **Methods:** Adults with schizophrenia (per DSM-IV-TR) were stabilized with PP once-monthly (PP1M) in an open-label (OL) 17-week transition phase, followed by a single PP3M injection in an OL 12-week maintenance phase. Qualifying subjects were then randomly assigned to PP3M or placebo in a double-blind (DB) relapse-prevention phase. An interim analysis after 42 relapse events was overseen by an independent data-monitoring committee (IDMC). Time to relapse of complete study data was assessed using the Kaplan-Meier method (with a log-rank test for treatment difference). The efficacy of PP3M vs placebo was further evaluated using the Cox proportional hazard models after adjusting for age group, sex, and OL baseline body mass index (BMI) category. **Results:** A total of 305 (60.3%) were randomly assigned to PP3M (n=160) or placebo (n=145). At the interim assessment, PP3M was associated with a significant delay in relapse of psychotic symptoms compared to placebo (2-sided log rank test $p<0.001$). The Cox analysis showed a 3.45-fold greater risk of relapse with placebo vs PP3M (hazard ratio [HR], 3.45; 95% confidence interval [CI], 1.73-6.88; $p=0.0004$). Based on this interim analysis, the IDMC recommended early study termination for proof of efficacy. Final study results were consistent with the interim analysis (HR: 3.81; 95% CI, 2.08-6.99; $p<0.0001$). These findings were consistent regardless of age, sex, or BMI ($p<0.0001$). Treatment-emergent adverse events more frequently reported by subjects receiving PP3M than placebo in the DB phase included weight gain (8.8% vs 3.4%), headache (8.8% vs 4.1%), nasopharyngitis (5.6% vs 1.4%), and akathisia (4.4% vs 0.7%). **Conclusion:** PP3M significantly delayed relapse of psychotic symptoms compared to placebo in patients with schizophrenia who were initially treated with PP1M for 4 months.

Concurrent 4, Epidemiology – Free, St Germain, 1430–1600

Hour-glass ceilings: work time thresholds, gender and health inequities

Huong Dinh[1], Lyndall Strazdins[1], Jenny Welsh[1]

[1]Australian National University, Australia

Background: When is working good for mental health and when is it not? On the one hand jobs confer income, on the other, they take time. Income is generally linked to better mental health, as is having a job compared with being unemployed. While employment delivers material and social resources, there may be time-related thresholds to the health benefits jobs give, and working past them could impair mental health. Such work hour - health thresholds may not be fixed, but are likely to vary when people combine working with caregiving, if they lack control over their work time or if they are required to work very fast and to deadlines. **Methods:** We test these possibilities using six waves of data from a nationally representative sample of working age adults (24-65 years), surveyed in the Household Income Labour Dynamics of Australia Survey (N = 3828 men; 4062 women). Our study uses a longitudinal, simultaneous equation approach, addressing the mutual influence and endogeneity between work hours, wages and health to estimate net effects of work time. **Results:** Across the six years of data, we find a curvilinear work hour - health threshold which is gender distinctive. Working up to 46 hours (men) or 34 hours (women) is beneficial for mental health, however working longer is detrimental. This gendered work hour - health threshold stems from women's greater care-giving; high care loads shift the tipping point. Lacking control over working time also lowers hour - health thresholds, as does working very fast and to deadlines. **Conclusion:** In the context of aging populations and economic uncertainties, working more, working harder, and combining work with caregiving is being encouraged. Our study reveals the temporal limits to the mental health benefits of jobs, and exceeding them may be generating health inequities that are gendered and care-based.

No mental health without oral health - a meta-analysis of the prevalence of dental disease in a range of psychiatric disorders

Steve Kisely[1,2], Hooman Baghaie[3], Rati Lalloo[4], Dan Siskind[1], Newell Johnson[2]

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Background: Psychiatric patients have increased comorbid physical illness. There are less data on dental disease, especially tooth decay, in spite of risk factors in this population of diet, lifestyle or psychotropic-induced dry mouth. Importantly, poor oral health can predispose to chronic physical diseases such as myocardial infarction, stroke and diabetes leading to avoidable admissions to hospital for medical causes. **Methods:** We undertook a systematic search for studies from the last 25 years of the oral health of people with eating disorders (ED) and severe mental illnesses (SMI) such as schizophrenia, other psychoses and bipolar affective disorders. We searched MEDLINE, PsycInfo, EMBASE and article bibliographies. Results were compared with the general population. The outcomes were total tooth-loss (edentulism), erosion and dental decay measured through the following standardized measures: the mean number of decayed, missing and filled teeth (DMFT) or surfaces (DMFS). **Results:** There were twenty-five studies of SMI and 10 of ED. These covered 5631 psychiatric patients and 40101 controls, the latter from either the same study or community and epidemiological surveys. All the psychiatric diagnoses were associated with increased dental decay on both DMFT and DMFS scores. In addition, people with SMI had 2.8 the odds of having lost all their teeth compared with the general community (95%CI=1.7-4.6) while those with eating disorders had 5 times the odds of dental erosion (95%CI=3.31-7.58) especially in the presence of self-induced vomiting (SIV)(OR=7.32). **Conclusion:** The increased focus on the physical health of psychiatric patients should encompass oral health including closer collaboration between dental and medical practitioners. Possible interventions include oral health assessment using standard checklists that can be completed by non-dental personnel, help with oral hygiene, management of iatrogenic dry mouth, and early dental referral. Mental health clinicians should also be aware of the oral consequences of inappropriate diet, psychotropic medication and SIV.

Bullying and academic performance in primary school children

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Background: Bullying is one of the clearest antecedents of mental health problems in children and adolescents. Bullying is common in schools but relatively neglected, possibly because schools prioritise educational outcomes over health, and yet it may also impact upon academic performance. The aim of this study was to quantify the associations between bullying and academic performance in a large population sample of children in mid-primary school. **Methods:** The Childhood to Adolescence Transition Study (CATS) recruited n=1,239 8-9 year olds (grade 3) in Melbourne, Australia. Academic performance was measured on a national achievement test (NAPLAN: National Assessment Program – Literacy and Numeracy). As a guide, one year of learning between grades three and four equates to approximately 40 NAPLAN points1. Experiencing physical and verbal bullying was measured by child self-report on the Gatehouse Bullying Scale2. Parent report on the Strengths and Difficulties Questionnaire (SDQ) was used to assess child emotional and behavioural problems. **Results:** Experiencing physical bullying was associated with poorer academic performance on both reading (males ß= 26.8, 95% CI: 46.7 to 7.0; females ß=-28.3, 95% CI: 42.6 to -14.0) and numeracy (males ß= 22.9, 95% CI: 39.2 to 6.6; females ß=-18.4, 95% CI: 36.1 to -0.7). Patterns of association were similar for all academic domains (writing, spelling, and grammar and punctuation). Results were similar when controlling for emotional and behavioural problems, as measured by the total difficulties score on the SDQ. **Conclusions:** Children who were being physically bullied in mid-primary school were over 6 months behind their peers on measures of academic performance and this association remained even when controlling for emotional and behavioural problems. Given the association between bullying and academic performance, this gives further motivation for schools to make an investment in the prevention of bullying and to begin this from the earliest years of school.

References:

[1] Australian Curriculum Assessment and Reporting Authority. 2012, NAPLAN Achievement in Reading, Persuasive Writing, Language Conventions and Numeracy: National Report for 2012. Sydney, Australia: 2012.

[2] Bond L, Wolfe S, Tollit M, Butler H, Patton G. A comparison of the Gatehouse Bullying Scale and the peer relations questionnaire for students in secondary school. *J Sch Health*. 2007;77(2):75-9.

Suicide among emergency and protective service workers: a retrospective mortality study in Australia, 2001 to 2012

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Background: Emergency and protective services personnel (e.g., police, ambulance, fire-fighters, defence, prison and security officers) report elevated levels of job stress and health problems compared to other occupational groups. While population-level research is lacking, there have been some small studies suggesting suicide rates may be elevated in emergency and protective services. This paper investigates differences in suicide rates comparing these occupational groups to all other occupational groups over a 12-year period (2001-2012) in Australia. **Methods:** Labour force data was obtained from the 2006 Census. Suicide data was obtained from the National Coroners Information System (NCIS). Negative binomial regression was used to estimate the association between suicide and employment as an emergency or protective service worker over the period 2001-2012 as compared to all other occupations. **Results:** The suicide rate in emergency and protective service workers as a group was 27.8 (95% CI 19.2 to 36.5) per 100,000 in males and 11.9 in females (95% CI 3.1 to 20.7). The age adjusted suicide rates among those in other occupations was 13.3 per 100,000 (95% CI 12.9 to 13.7) for males and 3.3 (95% CI 2.7 to 4.0) among females. The highest rates in sub-groups were among those employed in the ambulance and the defence force. Access to lethal means appeared to play a role for police and ambulance personnel in particular. **Conclusion:** Our results clearly highlight the need for prevention among emergency and protective service occupations, but most particularly among ambulance personnel. This study emphasises the importance of targeting at-risk occupations with suicide prevention and intervention initiatives. Addressing access to lethal means of suicide appears to be play a more important role in specific occupations.

Depression as a risk factor for fracture: cross sectional and longitudinal evidence

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Background: Impairments in bone metabolism are noted in individuals with depression. While reduced BMD is a known risk for fracture, a direct link between depression and fracture risk is yet to be confirmed. In women spanning the full adult age spectrum, we aimed to examine the role of depression as a risk factor for incident fracture, using both cross-sectional and longitudinal data. We also aimed to examine the role of potential confounders in accounting for any observed associations. **Methods:** This study examined data collected from women participating in the Geelong Osteoporosis Study; a large, ongoing, population-based study located in south-eastern Australia. A lifetime history of depression was identified using the Structured Clinical Interview for DSM-IV-TR Research Version, Non-patient edition (SCID-I/NP). Incident fractures were identified from radiological reports and bone mineral density was measured at the total body using dual energy absorptiometry (Lunar DPX-L). Anthropometry was measured and information on medication use and lifestyle factors was obtained via questionnaire. **Results:** Among 179 cases with incident fracture and 914 controls, depression was associated with increased odds of fracture (adjusted OR 1.62, 95%CI 1.06-2.46). Among 165 women with a history of depression at baseline and 693 who had no history of depression, depression was associated with a 71% increased risk of incident fracture (adjusted HR 1.71, 95%CI 1.04-2.82) during 8330 person-years of observation, with further adjustment for current psychotropic medication use attenuating the association (HR 1.59, 95%CI 0.96-2.64). **Conclusion:** This study provides both cross-sectional and longitudinal evidence to suggest that clinical depression is a risk factor for radiologically-confirmed incident fracture, independent of a number of known risk factors. If there is indeed a clinically meaningful co-morbidity between mental health and bone health, potentially worsened by psychotropic medications, the issue of screening at-risk populations needs to become a priority.

Depression is a risk factor for incident coronary heart disease in women: an 18-year longitudinal study

Adrienne O'Neil[1,2,3], Aaron J Fisher[4], Katherine Kibbey[5,6], Felice N Jacka[2,7,10,11], Mark A Kotowicz[2,5,12], Lana J Williams[2], Amanda L Stuart[2], Michael Berk[2,3,5,7,8,9], Paul A Lewandowski[2], John J Atherton[12,13], Craig B Taylor[14], Julie A Pasco[2,5,15]

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[13]School of Medicine, University of Queensland, QLD, Australia
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[15]NorthWest Academic Centre, Department of Medicine, The University of Melbourne, St Albans, VIC Australia

Background: According to a recent position paper by the American Heart Association, it remains unclear whether depression is a risk factor for incident Coronary Heart Disease (CHD). We assessed whether a depressive disorder independently predicts 18-year incident CHD in women. **Design:** A prospective longitudinal study of 860 women enrolled in the Geelong Osteoporosis Study (1993-2011). **Methods:** Participants were derived from an age-stratified, representative sample of women (20-94 years) randomly selected from electoral rolls in South-Eastern Australia. The exposure was a primary diagnosis of a clinical depressive disorder using the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders, using retrospective age-of-onset data. Outcomes data were collected from hospital medical records: (1) Primary outcome: a composite measure of cardiac death, non-fatal Myocardial Infarction or coronary intervention. (2) Secondary outcome: any cardiac event (un/stable angina, cardiac event not otherwise defined) occurring over the study period. **Results:** Seven participants were excluded based on CHD history. Eighty-three participants (9.6%) recorded ≥1 cardiac event over the study period; 47 had a diagnosis that met criteria for inclusion in the primary analysis. Baseline depression predicted 18-year incidence, adjusting for (1) anxiety (adj. OR:2.39; 95% CIs:1.19-4.82), plus (2) typical risk factors (adj. OR:3.22; 95% CIs:1.45-6.93), plus (3) atypical risk factors (adj. OR:3.28; 95% CIs:1.36-7.90). This relationship held when including all cardiac events. No relationship was observed between depression and recurrent cardiac events. **Conclusions:** Depression appears to be an independent predictor of CHD incidence in women, providing some support for shared pathways.

Friday 4 December 2015: Day 3

Plenary 6, Le Grand Ballroom 3, 0830–0900

What is the impact of amphetamine-type stimulants on the burden of psychosis in Australia?

Grant Sara[1]

[1]NSW Ministry of Health & University of Sydney, Sydney, Australia

Background: Amphetamine-type stimulants may influence the course of psychosis. However, their impact is difficult to assess because stimulant use is usually preceded by cannabis use. Epidemiological approaches provide an additional strategy for examining the impact of stimulants on psychosis. **Methods:** The National Survey of Mental Health and Wellbeing (2007) and NSW Health administrative data collections were used to study the prevalence, correlates and impacts of stimulant misuse in: (i) a representative Australian population sample, (ii) people with first episode psychosis (n=9919) and (iii) people with ongoing diagnoses of schizophrenia (n=13,624). **Results:** More than 97,000 Australians (3.3%) have a lifetime stimulant disorder, with higher rates in people with other risk factors for psychosis, including younger age, male gender, a family history of psychosis, earlier cannabis use, anxiety, depression and subclinical psychotic symptoms. Variations in amphetamine availability accounted for 50% of variation in the rate of admission for stimulant induced psychosis. Around one in seven Australians with psychosis also had a stimulant use disorder, a rate at least ten times that of the general population. Stimulant misuse in early psychosis was associated with brief and drug induced psychoses, brief service contact, diagnostic instability and reduced risk of progression to schizophrenia. However in people with diagnoses of schizophrenia, stimulant misuse was associated with physical health comorbidities, social dislocation and frequent use of mental health and emergency services. **Conclusion:** Stimulant misuse is relatively common in Australia. Stimulants appear to be potent triggers of acute psychosis and make a significant contribution to the burden of psychosis in Australia. In early psychosis stimulants may be associated with positive outcomes, triggering psychotic symptoms in people with less personal vulnerability to psychosis. However in people with schizophrenia, ongoing stimulant misuse is associated with significant harms. There is an important window of opportunity for intervention in stimulant-related psychosis.

Plenary 7, Le Grand Ballroom 3, 0900–0930

The changing landscape of mental and substance use disorders among young people: Epidemiological evidence and implications for prevention and early intervention

Tim Slade[1]

[1]NHMRC Centre of Research Excellence in Mental Health and Substance Use, National Drug and Alcohol Research Centre, University of New South Wales, Sydney, Australia

Anxiety, depression and substance use disorders are among the leading causes of burden in people aged 15-24. I direct a research program that asks the following questions: how many young Australians experience mental and substance use disorders? What is the impact of these disorders on young people? When do these disorders typically start? What is the natural course of these disorders once they begin? How do peer influences exert their effect on the development of substance misuse and mental health problems? Do young people seek treatment for these disorders? How are patterns of mental and substance use disorders changing over time, in Australia and across the globe? And what are the implications for research, prevention and treatment? Data from several sources including the 2007 National Survey of Mental Health and Wellbeing; a national school-based prevention program for substance misuse, anxiety and depression; as well as a large international systematic review informed a range of studies examining the prevalence, impact, natural history, etiology and changing patterns of mental and substance use disorders among young people. The results of these studies will be discussed. The findings provide important insights into the epidemiology of mental and substance use disorders among young people in Australia and across the world. These insights can be used to inform future epidemiological and prevention research as well as to guide the timing and targeting of interventions.

Plenary 8, Le Grand Ballroom 3, 0930–1000

Mental health economics: what should matter

Cathrine Mihalopoulos[1]

[1]Deakin University, Melbourne, Australia

The discipline of economics concerns itself with the task of allocating scarce societal resources to maximize societal welfare. The tools of economic evaluation are now widely used to help decision-makers, both in health and other contexts decide what might be a "cost-effective" use of resources. Ultimately trade-offs between competing resource uses are made. Within these trade-offs the concept of benefit or value, always plays a fundamental role, either implicitly or explicitly. This lends itself to the question of how should outcome or "value" of health and specifically mental health services be measured and considered in resource allocation decisions. While generic health outcome measures incorporating length and quality of life such, as Quality-Adjusted Life-years (QALYs), are now routinely used by many National and International decision-making bodies, they have been criticized on both pragmatic and theoretical grounds. The presentation of A/Prof Mihalopoulos will discuss the use of the tools of economic evaluation within the mental health context with a focus on how outcome and value is measured within mental health economic evaluations. She will draw on both her own work, which has consisted of numerous economic evaluations of single interventions, broader priority-setting studies and more recently a focus on outcome measurement for use in mental health economic evaluations, as well as the international literature to explore the topic of what "should' matter in mental health economics.

Concurrent 5, Global Burden of Disease, Le Grand Ballroom 3, 1030–1215

Mental and substance use disorders in the Global Burden of Disease Study 2013: an in depth analysis of methods, results, and applications

Harvey Whiteford[1,2,3], **Louisa Degenhardt**[3,4,5], **Alize J Ferrari**[1,2,3], **Holly E Erskine**[1,2,3], **Fiona J Charlson**[1,2,3], **Janni Leung**[1,2,3]

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[2]Queensland Centre for Mental Health Research, Brisbane, Australia
[3]University of Washington, Institute for Health Metrics and Evaluation, Seattle, United States of America
[4]University of New South Wales, National Drug and Alcohol Research Centre, Sydney, Australia
[5]University of Melbourne, Melbourne School of Population and Global Health, Melbourne, Australia

Background: The Global Burden of Disease Study 2013 (GBD 2013) quantified burden for 306 diseases and injuries, across 188 countries, by sex, age, and year. The study included twenty mental and substance use disorders in its scope. This symposium presents the GBD 2013 findings relating to mental and substance use disorders and demonstrates the application of these findings in a variety of contexts. **Methods:** Burden was quantified in terms of years lived with disability (YLDs) and years of life lost due to premature mortality (YLLs) representing non-fatal and fatal burden respectively. The sum of these two measures gave disability-adjusted life years (DALYs) as a measure of total burden. The advantages and limitations of these methods in relation to mental and substance use disorders are discussed. Application of GBD 2013 findings for service planning are also demonstrated. **Results:** As a group, mental and substance use disorders were the leading cause of disability worldwide, responsible for over 20% of global YLDs. However, limitations were identified particularly in regards to the calculation of YLLs, definition of 'health loss', and availability of data. Despite these limitations, implications of GBD findings are significant, and estimates can be used to project service requirements and identify treatment gaps for mental and substance use disorders. **Conclusion:** GBD 2013 demonstrates the significant health impact of mental and substance use disorders across the globe. These findings and their relevant methodology can be used in a variety of contexts to improve both research and services.

PRESENTER 1

The global burden of mental disorders: findings from the Global Burden of Disease Study 2013

Harvey Whiteford[1,2,3], Alize J Ferrari[1,2,3], Holly E Erskine[1,2,3], Fiona J Charlson[1,2,3], Janni Leung[1,2,3], Louisa Degenhardt[3,4,5], Theo Vos[3]

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[5]University of Melbourne, Melbourne School of Population and Global Health, Melbourne, Australia

Background: The Global Burden of Disease Study 2013 (GBD 2013) quantified burden for 306 diseases and injuries, across 188 countries, by sex, age, and year. The study included thirteen mental disorders in its scope. **Methods:** In GBD 2013 burden was estimated using disability-adjusted life years (DALYs), a metric which combines the disability (years lived with disability, YLDs) and mortality (years of life lost due to premature mortality, YLLs) associated to a given disease. For mental disorders, this work incorporated recently published data on the epidemiology of each disorder. **Results:** GBD 2013 estimates are currently being finalized and will be published in late 2014. Findings not only confirmed that mental and substance use disorders were a global health priority but also identified salient gaps in the epidemiological literature. **Conclusion:** Updated estimates of burden assist in ensuring that a country's health system is sufficiently aligned to its population health challenges. They allow decision-makers to compare the effects of different mental and substance use disorders to other diseases and injuries, as well as changes in burden across time.

PRESENTER 2

The global burden of substance use disorders: findings from the Global Burden of Disease Study 2013

Louisa Degenhardt[1,2,3], Alize J Ferrari[3,4,5], Fiona J Charlson[3,4,5], Holly E Erskine[3,4,5], Janni Leung[3,4,5], Harvey A Whiteford[3,4,5], Theo Vos[3]

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Background: The Global Burden of Disease Study 2013 (GBD 2013) quantified burden for 306 diseases and injuries, across 188 countries, by sex, age, and year. The study included seven substance use disorders in its scope. **Methods:** In GBD 2013 burden was estimated using disability-adjusted life years (DALYs), a metric which combines the disability (years lived with disability, YLDs) and mortality (years of life lost, YLLs) associated to a given disease. For substance use disorders, this work incorporated recently published data on the epidemiology of each disorder as well as key changes to the quantification of severity used to estimate YLDs. **Results:** GBD 2013 estimates are currently being finalized and will be published in late 2014. Findings showed significant differences in the distribution and burden of substance use disorders between countries, age, sex and year. Unlike mental disorders, substance use disorders were also associated with considerable deaths and YLLs and were identified in GBD 2013 as risk factors to other causes of disease burden. **Conclusion:** GBD 2013 estimates of burden for substance use disorders can be further improved with more and better quality epidemiological data. In spite of this, the estimated health loss associated with these disorders was significant, making them important contributors to the global disease burden. GBD 2013 estimates provide an updated picture of the proportion of disease burden attributable to substance use disorders.

PRESENTER 3

The Global Burden of Disease Study 2013: an overview of methods and data limitations for mental and substance use disorders

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Background: The Global Burden of Disease Study 2013 (GBD 2013) is the latest iteration of burden estimation for 306 diseases and injuries. We discuss the method used to quantify burden for mental and substance use disorders and highlight limitations and applications of this work. **Methods:** GBD 2013 included a complete re-analysis of burden for twenty mental and substance use disorders. Epidemiological data were obtained from systematic literature reviews and assembled using a Bayesian meta-regression technique to produce prevalence by country, age, sex and year. Years lived with disability (YLDs) were estimated by combining prevalence data with a disability weight quantifying the severity of health loss for each disorder. Years lost to premature mortality (YLLs) were calculated using disorder-specific death and life expectancy data. YLDs and YLLs were summed into disability-adjusted life years (DALYs). **Results:** GBD 2013 showed that mental and substance use disorders imposed significant burden onto the population, although certain findings were within large bounds of uncertainty. Heterogeneous and missing epidemiological data limited prevalence estimation. GBD 2013 disability weights captured 'within the skin' health loss, welfare loss was not considered. As YLL estimations assigned deaths to the direct physical cause, burden attributable to disorders as underlying causes of death were not captured. **Conclusion:** As GBD 2013 estimated burden by cause, age, sex, year, country and region, it provides the opportunity for in-depth analysis of the epidemiology and burden of mental and substance use disorders. Key restrictions to the input data and GBD 2013 method need to be explored further.

PRESENTER 4

A known unknown: the global coverage of prevalence data for mental disorders in children and adolescents

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Background: Children and adolescents make up almost a quarter of the world's population with 90% living in low- and middle-income countries. Globally, mental (and substance use) disorders are the leading cause of disability in young people however the representativeness or 'coverage' of the prevalence data is unclear. Coverage refers to the proportion of the target population (5-17 years) represented by the available data. **Methods:** Prevalence data for conduct disorder (CD), attention-deficit/hyperactivity disorder (ADHD), autism spectrum disorders (ASDs), eating disorders (EDs), depression, and anxiety disorders were sourced from systematic reviews conducted for the Global Burden of Disease Study 2010 (GBD 2010) and 2013 (GBD 2013). For each study, the proportion of the country's population represented by the sample (study location population/country population) was multiplied by the proportion of the population aged 5-17 years (e.g. 12-17 years) included in the sample. These results were summed for each country to quantify coverage. This was repeated at the region and global level, and separately for GBD 2013 and GBD 2010. **Results:** Average global coverage of prevalence data for mental disorders in ages 5-17 years was 6.7% (CD: 5.0%, ADHD: 5.5%, ASDs: 16.1%, EDs: 4.4%, depression: 6.2%, anxiety: 3.2%). Of 187 countries, 124 had no data for any disorder. Coverage increased between GBD 2010 and GBD 2013 although this differed between disorders. **Conclusion:** The global coverage of prevalence data for mental disorders in children and adolescents is poor. Practical methodology must be developed and epidemiological surveys funded to enable effective resource allocation and advocacy.

PRESENTER 5

Applications of epidemiological and burden of disease estimates for targeted mental health planning

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Background: Health estimates provided by the Global Burden of Disease Study (GBD) begin with the epidemiological modelling of disorders through DisMod-MR. It is these epidemiological estimates which are one of the key inputs for burden of disease estimation. However, the use of DisMod-MR outputs can extend well beyond the calculation of GBD health estimates. Epidemiological estimates can act as fundamental inputs for other epidemiological and health service estimations which can inform various aspects of mental health planning. **Methods:** Epidemiological estimates obtained from GBD DisMod-MR modelling may be used for calculating age-and sex-specific prevalent cases in a given population. For subpopulations not well represented by GBD mental disorder burden estimates, applying disability weights to subpopulation prevalence estimates can enable burden of disease estimation. Projections of years lived with disability (YLDs) are also feasible for mental disorder by drawing on United Nations population projections. **Results:** Incorporating age-and sex-specific epidemiological estimates into health economic models allows estimation of human resource requirements and fiscal costs for targeted scale-up of mental health services. Taking these combined concepts one step further, health benefit analyses may estimate associated avertable burden of a select set of intervention packages with known efficacy applied at nominated target coverage rates. GBD prevalence data additionally provides the opportunity to explore global treatment gaps when combined with service utilization data. **Conclusion:** Epidemiological estimates derived from GBD methodology can provide a rich source of data for various components of informed mental health service planning and reform.

PRESENTER 6

Investigating prevalence and treatment gaps for depressive disorders in 2013: where are we now?

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Background: The Global Burden of Disease Study 2013 (GBD 2013) showed that depressive disorders cause a large amount of disease burden in the population. Here we make use of GBD 2013 prevalence data to estimate treatment gaps for depressive disorders. **Methods:** Data on the prevalence of depressive disorders were obtained from GBD 2013. We conducted a separate systematic review, based on PRISMA guidelines, to collect service utilization data for major depressive disorder and dysthymia. Prevalence and treatment rates data were pooled by country using GBD 2013 meta-regression modelling strategy. Treatment gaps were estimated as the difference between the proportion of the population with depressive disorders (i.e. prevalent cases) and the proportion of these individuals who received treatment for depressive disorders (i.e. treated prevalent cases). **Results:** Analyses are currently underway and are expected to be completed in late 2015. Preliminary work shows that treatment gaps for depressive disorders are large, with considerable variation between countries. There was also variability in the type of mental health service used between countries. **Conclusion:** There is a large treatment gap for depressive disorders globally. Policies are needed to reduce this unmet need, better deliver, and facilitate service use to reduce the burden of depressive disorders.

The CORE Study: Trialing co-design for recovery

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Background: Service user engagement (both consumers and carers) in mental health planning and service design is recognised as an important component of health system improvements that are aligned with user needs and patient-centred care. The CORE Study is a world first trial of a modified version of Mental Health Experience Co-Design (MH ECO) to determine whether user engagement improves psychosocial recovery outcomes for people with severe mental illness. **Methods:** A stepped wedge cluster randomized controlled trial (SWCRCT) with a nested process evaluation is taking place in Victoria, Australia over four years (2013-2017). The stepped wedge design means that the nine clusters are allocated to one of three waves to receive a modified version of the MH ECO intervention. MH ECO involves two stages: information gathering about what's going well and what could be better in service experiences and co-designing solutions to improve experiences. Outcome data is collected at baseline and follow up occurs every nine months at completion of each intervention wave. The primary outcome is improvement in individual recovery score using the 24-item Revised Recovery Assessment Scale for service users. Secondary outcomes are improvements to user and carer mental health and well-being using the shortened 8-item version of the WHOQOL Quality of Life scale (EUROHIS), changes to staff attitudes using the 19-item Staff Attitudes to Recovery Scale and recovery orientation of services using the 36-item Recovery Self Assessment Scale (provider version). **Results:** 235 consumers, 56 carers and 174 staff have been recruited from nine clusters. Wave one of the intervention is currently underway. **Conclusion:** Service user and carer engagement is central to mental health policy directives regarding planning and service re-design. Finding ways to engage participants meaningfully is challenging. Co-design represents one method for better understanding the role of user engagement in recovery experiences.

Concurrent 6, Biological Psychiatry - Free, Bastille, 1030–1215

Developmental metabotropic glutamate 5 receptor expression in the prefrontal cortex and hippocampus in the perinatal PCP rodent model of schizophrenia

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Background: Metabotropic glutamate receptor 5 plays a critical role in brain development and cognitive processes. Metabotropic glutamate receptor 5 (mGluR5) is implicated in the pathophysiology and treatment of cognitive dysfunction in psychiatric disorders such as schizophrenia. Understanding the developmental regulation of mGluR5 is essential to appreciate the impact mGluR5 alterations may have on the development of neuropsychiatric disorders. In the present study we assessed mGluR5 expression at critical neurodevelopmental time points, and whether this development is disrupted in the perinatal phencyclidine (PCP) rodent model, which mimics many aspects of schizophrenia, including the cognitive deficit. **Methods:** Female rats were administered PCP (10mg/kg) or saline on post-natal (PN) days 7, 9 and 11. Rats (n=6/group) were euthanised on PN12, 35 and 96 representing juvenile, adolescence and adulthood. The PFC and hippocampus were dissected and immunoblot was performed under non-reducing conditions to quantify the mGluR5 dimer (representing the mature functional form) and mGluR5 monomer. **Results:** mGluR5 expression showed an age dependent profile in the PFC and hippocampus. In both regions mGluR5 monomer was highly expressed at PN12 and was dramatically reduced at PN35 and PN96 (-95-97%; $p<0.001$). mGluR5 dimer levels in the PFC were also abundant at PN12, followed by a reduction at PN35 (-56%; $p<0.001$) and subsequent increase at PN96 compared to PN35 (+86%; $p=0.009$). In the hippocampus, mGluR5 dimer expression was consistently abundant across the ages measured. Perinatal PCP treatment did not alter this neurodevelopmental profile in either region examined. **Conclusion:** mGluR5 expression is developmentally regulated in the PFC and hippocampus, with a dramatic shift towards reduced monomeric mGluR5 as the brain matures. In contrast, we report for the first time that the mGluR5 dimer is relatively abundant throughout development. Although perinatal PCP treatment did not affect mGluR5 expression levels, furthering our understanding of mGluR5 through neurodevelopment may elude to its role in psychiatric disorders.

Vitamin D deficiency leaves the brain vulnerable to second hit exposures

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Background: Vitamin D deficiency is prevalent throughout the world and there is growing evidence to support a requirement for optimal vitamin D levels for the healthy developing and adult brain. There is accumulating evidence that low vitamin D levels may compromise the ability of the brain to recover after various stressors, such as an early prenatal "hit" (e.g. a susceptibility genetic variant, prenatal environmental insult) and may leave that individual more vulnerable to later environmental exposures (e.g. cannabis use, trauma, social stress). **Methods:** Vitamin D deficient mice are exposed to hypovitaminosis D during either gestation or as adults. Under these conditions the animals have normal calcium levels for at least 20 weeks on the vitamin D-deficient diet. We have assessed a wide range of behavioural and neurochemical outcomes with a particular focus on social, cognitive and depressive-like behaviours, neuroprotective pathways and neurochemical dysfunction. **Results:** Our data suggest that vitamin D deficiency is associated with an altered balance of excitatory and inhibitory neurotransmitters. In addition we have shown that vitamin D deficiency is associated with changes in pathways related to protein transport, cell surface receptors, glutathione metabolism and amino acid metabolism. We have also shown that second hit exposures, such as social stress, and fetal alcohol exposure lead to changes in discrete behavioural domains, including anxiety-related behavior and cognitive performance. **Conclusion:** These findings provide compelling evidence that low concentrations of vitamin D impact on brain neurochemistry and behaviour. In particular our data suggest that vitamin D deficiency during different stages of development may exacerbate underlying brain disorders, and/or worsen recovery from brain stressors. This research has implications for a wide range of adverse psychiatric and neurological outcomes.

Treatment of depersonalisation disorder with high frequency left-sided repetitive transcranial magnetic stimulation

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Background: Depersonalization Disorder (DPD) is very difficult to treat and we present a case effectively treated with repetitive transcranial magnetic stimulation (rTMS). **Methods:** The patient is a 30 year old single Asian male, physician in the US Navy with a history of depersonalization symptoms as a teenager that later spontaneously resolved. His current symptoms include feelings of unreality, emotional numbing, detachment, and feeling that his mind is empty of thoughts and memories. He did meet criteria for major depression but not any anxiety disorder. He was started on bupropion XL 300mg which improved his depressive symptoms though had no effect on his depersonalization symptoms and was referred for treatment with rTMS. **Results:** Pretreatment Montgomery-Asberg Depression Rating Scale (MADRS) was 12, Hamilton Anxiety Scale (HAM-A) was 4 and Cambridge Depersonalization Scale (CDS) was 149 (endorsed 20 of 29). He began rTMS using low frequency 1 Hz stimulation applied to the right DLPFC delivered over 20 minutes at 110% of motor threshold for a total of 1200 pulses per session. Depressive symptoms continued to gradually improve through session 25 but depersonalization symptoms continued, albeit improved, with MADRS being 2, HAM-A was 2 and CDS was 100 (endorsed 17 of 29). At this point he was switched to high frequency (10 Hz) rTMS applied to the left DLPFC, delivered over 37.5 minutes for a total of 3000 pulses per session. After 22 sessions he reported improvement in his depersonalization symptoms and MADRS was 2, HAM-A was 1 and CDS was 43 (endorsed 13 of 29). **Conclusion:** There have been two case reports in which rTMS was effective in reducing symptoms of DPD, both using high frequency (20 Hz) rTMS to the left DLPFC [8], [9]. Given its effectiveness in our patient, the use of high frequency rTMS to the left DLPFC for treatment of DPD should be further explored.

Predictors and patterns of long-term mental health and heroin use: findings from the 11-year follow-up of the Australian Treatment Outcome Study

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Background: Heroin dependence is a chronic and in many cases, lifelong condition, associated with comorbid mental health disorders. Using data collected as part of the Australian Treatment Outcome Study, this paper aims to examine the major findings pertaining to heroin use, comorbid disorders and treatment patterns over 11 years. **Methods:** 615 people with heroin dependence were recruited to the study in 2001-2002, and re-interviewed at 3-, 12-, 24-, 36-months and 11-years post-baseline (follow-up rates of 89%, 81%, 76%, 70% and 70% respectively). At each time point, participants were administered the Australian Treatment Outcome Study (ATOS) structured interview, addressing demographics, treatment history, drug use, heroin overdose, criminality, health and mental health at all interviews. **Results:** At 11-years, just over 10% of the cohort was deceased. More than one third of participants (41%) met criteria for current post-traumatic stress disorder (PTSD), and one in five (20%) for current depression, with major depression consistently associated with poorer outcome. Overall, physical and mental health was poorer than population norms. There were significant reductions in past month heroin use from baseline to 11-years, with 14% of the cohort endorsing criteria for heroin dependence and 47% in current treatment. The overwhelming majority of the cohort (98%) had experienced a period of abstinence in the follow-up period, with a median period of consecutive abstinence of 5 years. **Conclusion:** Despite significant reductions in heroin use and dependence over the 11-year follow-up period, there were continued high rates of other comorbidities. These findings highlight the importance of treatment and the need for people with heroin dependence to receive appropriate mental health care. Future work funded by an SMHR fellowship will build on these findings, by identifying the trajectories of relapse and recovery from heroin dependence, and the factors associated with these pathways, which will inform and guide treatment responses as well as health service planning.

An inflammatory dietary pattern is associated with increased psychological symptoms in Australian women

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Background: Diet quality is positively associated with mental health and systemic inflammation is posited to be a potential explanatory factor. Recent evidence suggests that dietary patterns associated with systemic inflammation are also associated with the risk for depression. This study aimed to investigate the association between a dietary pattern associated with inflammation and psychological symptoms in a randomly-selected, population-based sample of women. **Methods:** Data were drawn from the Geelong Osteoporosis Study (GOS), an ongoing cohort study of adults in Australia. At the GOS ten-year follow up, 1009 women (aged 20-94yr) provided data on dietary intakes and psychological symptoms, measured using the 12-item General Health Questionnaire (GHQ-12). Dietary Inflammatory Index (DII) scores were derived from the validated Cancer Council Food Frequency Questionnaire and calculated for each participant. The DII is based on extensive literature review of the association between 45 food parameters and biomarkers of inflammation and takes into account energy intake and whole diet. In this study, the DII scores range from +3.4 (pro-inflammatory) to -3.1 (anti-inflammatory). **Results:** A linear regression analysis revealed a significant positive association between Z-score standardised scores on the dietary inflammatory index and Z-score standardised GHQ-12 scores that was not confounded by age, education, socio-economic status, anti-inflammatory medications (eg. statins), BMI or smoking. Each one standard deviation increase in DII was associated with a 0.08 standard deviation increase in GHQ-12 scores (95% CI 0.02-0.14). Adjustment for physical activity (active vs non-active) slightly attenuated this association (B= 0.07, 95%CI 0.01-0.13). **Conclusion:** A pro-inflammatory dietary pattern, as indicated by a positive DII, is associated with higher levels of psychological symptoms in women. These data suggest that immune dysfunction arising from unhealthy dietary choices may be, at least in part, an explanatory pathway for the associations commonly observed between diet quality and mental health.

Methamphetamine psychosis: studying the role of BDNF in animal models

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Background: One of the most devastating consequences of methamphetamine (METH) abuse is increased risk of psychosis. Brain-derived neurotrophic factor (BDNF) has been implicated in both schizophrenia and neuronal responses to METH. We therefore examined persistent psychosis-like behavioural effects of METH in BDNF heterozygous mice (HETs) and in mice carrying the human val66met BDNF polymorphism. This polymorphism is associated with reduced activity-dependent BDNF release. **Methods:** Mice were chronically treated with escalating doses of METH from 6-9 weeks of age and locomotor hyperactivity to an acute D-amphetamine or METH challenge was tested in photocell cages after at least a two-week withdrawal period. **Results:** Chronic METH-treated wildtype mice (WT) showed the expected locomotor sensitization to an acute challenge dose of D amphetamine, a model of psychosis-like behaviour. BDNF HET mice chronically pre-treated with saline already showed significantly enhanced acute effects of D-amphetamine compared to WT mice but they completely lacked further sensitization by prior METH pre-treatment. Preliminary results in val66met polymorphic mice suggest that, similarly, mice with the met/met genotype show enhanced locomotor hyperactivity to an amphetamine challenge at baseline but reduced sensitization after METH pre-treatment compared to val/val mice. **Conclusion:** Chronic METH exposure induces contrasting profiles of behavioural changes in WT and BDNF HETs, with attenuation of behaviours relevant to psychosis in METH-treated BDNF HETs. Preliminary results suggest that a similar reduction of METH-induced sensitization is found in mice carrying the human met/met variant. This suggests that changes in BDNF signalling may contribute to development of psychosis in METH users.

Childhood trauma-related gray matter concentration alterations in psychotic disorders

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Background: Childhood trauma (CT) is a significant risk factor for the development of schizophrenia (SCZ), schizoaffective disorder (SZA) or bipolar disorder (BD), and is implicated in volume reduction of stress-sensitive brain regions (amygdala, hippocampus). However, previous voxel-based morphometry (VBM) studies have not accounted for spatial dependencies between different brain locations. The source-based morphometry (SBM) approach uses independent component analysis (ICA) to obtain patterns of common gray matter concentration (GMC) variation among subjects. **Methods:** Participants were 62 patients (SCZ/SZA=34; BD=28) and 21 HC reported significant levels of CT, while 37 patients (SCZ/SZA=19; BD=18) and 34 HC did not. Following standard preprocessing, ICA was performed on high-resolution T1 MPRAGE scans using the SBM toolbox. To identify GMC variations associated with psychosis, CT exposure or their interactive effects, series of 2 (Group: patients/HC) by 2 (Trauma: exposed/non-exposed) ANCOVAs, controlling for age, sex, and total brain volume, were performed for each component identified. **Results:** Of the 15 components identified following ICA, two components remained significant. The first component, including the posterior part of the left and right inferior, middle and superior temporal gyri, surrounding parietal and occipital regions, and a region including medial and middle frontal gyri showed a significant main effect of CT exposure across both patients and HC. The second component, including the dorsal anterior cingulum, both the left and right inferior temporal gyri and cunei showed a significant main effect of psychosis, independently of trauma history. **Conclusions:** These preliminary results suggest that CT exposure is associated with decreased patterns of GMC in regions associated with auditory/visual hallucinations (temporo-parieto-occipital junction), along with increased GMC in sensorimotor regions. On the other hand, regardless of trauma exposure, psychosis was associated with increased GMC in regions involved in high-level visual integration and with decreased GMC in the dorsal anterior cingulate, which may impact salience detection.

Concurrent 7, Psychosis - Free, Concorde, 1030–1215

Factors that predict detection and awareness of pre-diabetes and diabetes in a national Australian sample of adults with psychosis

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Background: People treated with antipsychotic drugs are at high risk of diabetes. Our objective was to estimate the proportion of people with psychosis with detected versus undetected pre-diabetes or type 2 diabetes and to explore factors associated with detection. **Methods:** Cross sectional analysis of a national sample of adults aged 18-64 years with an ICD-10 psychotic disorder who gave a fasting blood sample (n=1155), had current pre-diabetes or diabetes based on testing (n=359), and who gave a codable response when asked if they knew they had high blood sugar or diabetes (n=356). Logistic regression was used to identify factors associated with detection of pre-diabetes or diabetes. **Results:** The prevalence of pre-diabetes and type 2 diabetes was 31% (359/1153; 19% and 12% respectively). The detection rate was 45% (160/356). Predictors of detection were elevated fasting blood glucose, older age, a perception of poor health, severe obesity, dyslipidemia or treatment with a lipid regulating drug, a family history of diabetes, Aboriginal or Torres Strait Islander descent, cognitive processing speed/efficiency, regional poverty, treatment with an antihypertensive drug and an elevated 5-year risk for cardiovascular disease. Medical checks associated with detection were having fasting blood or weight checked in the previous year. Case management and current treatment with clozapine, olanzapine, quetiapine or risperidone were not associated with detection. **Conclusion:** Less than half of the sample with elevated blood sugar or diabetes were aware of this, even though every participant was in contact with services or non-government support agencies at the time of survey. Detection was strongly dependent on the presence of established, general risk factors for type 2 diabetes, especially older age, morbid obesity and treated dyslipidemia, but not on current antipsychotic drug treatment or case management. Greater emphasis on assessing risk from the early stages of psychosis in all settings is required.

Differentiating early and very early onset psychosis: do we have the cut-off for age of psychosis onset correct?

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Background: It remains unclear whether very early onset psychosis (VEOP; ≤ 12 years of age) and early onset psychosis (EOP; onset 13-17 years of age) are homogeneous in their clinical presentation. We investigated the predictive value of age of psychosis onset for severity, functioning and demographic variation by: 1) comparing groups based on traditional cut-offs for age of psychosis onset, and 2) using receiver operating characteristic (ROC)-curve calculations, without a priori age of onset cut-offs. **Methods:** Participants were 88 (45 female, 43 male) children and adolescents assessed at presentation for their first episode of psychosis (age range=6.7-17.5 years; M=13.74, SD=2.37). **Results:** The VEOP group had significantly shorter duration of untreated illness and untreated psychosis, and lower functioning than the EOP group. The VEOP and EOP groups did not differ significantly on gender proportion, urbanicity, psychotic diagnosis, family history of psychotic disorder, psychotic, depressive and anxiety symptoms or IQ. When applying ROC-curves to the lowest three quartiles of positive psychotic symptoms scores, the optimal age-cut-off was 14.0 years (sensitivity=0.62; specificity=0.75). For the highest quartile of functioning scores, the optimal differentiating cut-off for age of psychosis onset was 14.7 years (sensitivity=0.71; specificity=0.70). **Conclusion:** Findings demonstrate the need for more investigation in this area. Larger samples of young patients, assessed at presentation and followed-up, are necessary to clearly examine clinical presentation and outcome as a function of social and neural development. This will aid the development of predictive diagnostic tools, more accurate prognosis prediction, and age-tailored therapeutic interventions.

The first episode psychosis outcome study: preliminary data on the long-term follow-up of first episode psychosis patients who were treated at the Early Psychosis Prevention and Intervention Centre between 1998-2000

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Background: Specialist early intervention (SEI) service models are designed to treat symptoms, promote social and vocational recovery, prevent relapse, and resource and up skill patients and their families. While the immediate benefits of SEI are clear, and have been demonstrated, the long-term impact of SEI on illness course is less clear. The First Episode Outcome Study involves the long-term follow-up of a representative sample of first episode psychosis patients who were first treated at the Early Psychosis Prevention and Intervention Centre (EPPIC) between 1998 and 2000. The aim of this presentation is threefold: (i) to describe the methodology of FEPOS long-term follow-up; (ii) to present preliminary mortality data; and (iii) examine the preliminary characteristics of those who have been contacted and interviewed. **Methods:** Between January 1998 and December 2000, 661 patients between the ages of 15-29 years were treated at the Early Psychosis Prevention and Intervention Centre, Melbourne Australia. The 18 month treatment characteristics of this cohort have been extensively examined in the First Episode Psychosis Outcome Study (FEPOS). The long-term outcomes of this cohort are now being examined in a new study (known as FEPOS15). **Results:** Characteristics of 43 individuals who are deceased will described. For those who are not deceased, a description of those who have been contacted, those who have consented, and those have refused to participate will be provided. The clinical, functional, physical health and quality of life characteristics of the first 60 individuals who have been assessed will be presented. **Conclusion:** This follow-up study is one of the longest, largest and most comprehensive studies of the multidimensional outcomes of a SEI service for psychosis.

Oxytocin induced grey matter changes in an early psychosis population

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Background: Schizophrenia is a heterogenous disorder characterised by the presentation of positive, negative and disorganised symptoms. Schizophrenia symptoms typically emerge between the ages of 18 and 24 and the majority of the deterioration occurs in the 5 years following onset. One issue with current treatments is the failure to impact the negative symptoms and social functioning. In this regard, the neuropeptide and hormone oxytocin has garnered interest as a treatment option for schizophrenia. Oxytocin has been shown to improve performance on a variety of social performance measures in single-dose studies, but there have been mixed results for longer-term oxytocin use. Our study investigated oxytocin combined with social cognition training as treatment for those experiencing first episode psychosis. **Methods:** Participants were recruited into a double-blind, placebo controlled trial at the Brain & Mind Centre at the University of Sydney. Participants received either oxytocin (24 IU) or placebo nasal spray, twice daily, for 6 weeks. An additional dose was given before the weekly social cognition training sessions. Twenty four participants completed the imaging subcomponent of the study. **Results:** Two clusters of grey matter change were found within the somatosensory cortex (post-central gyrus). Increased grey matter volumes within the somatosensory cortex was found post-treatment for those who were treated with oxytocin when compared to those who received placebo. **Conclusion:** This novel finding suggests neurological change as a result of treatment with oxytocin. The finding of the change within the somatosensory cortex is interesting given the link between somatosensory stimulation and oxytocin release. These neurobiological changes resulting from oxytocin administration may enhance the perception of social stimuli to facilitate processing of cues and social contexts.

Service use and illness profiles in FEP patients – why we should intervene early

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Background: Specialist early intervention in psychosis services (EIS) provide care to individuals experiencing their first episode of psychosis. EIS have historically been youth-focused, based on the rationale that those who develop psychosis at a younger age suffer greater long-term clinical and functional impairment and have greater service needs. We tested this premise by comparing service use, and clinical and functional outcomes, over 10-year follow-up in a cohort of first episode psychosis patients who would and would not meet age criteria for EIS (35 years and below) in the UK, in an era prior to EIS introduction. **Methods:** Data were analysed from AESOP-10, a follow-up study of the AESOP incidence cohort of first episode psychosis (FEP) cases from 2 UK cities. Service use, clinical and functional outcomes were compared over follow-up between groups who would and would not have received care in EIS, had these been available at the time. **Results:** Under current UK criteria, 81% of men but only 66% of women with FEP would have been eligible for EIS (EIS+) (chi2 10.95, p=0.001). A very high proportion (91%) of all FEP individuals who had treatment resistant illness from onset would be EIS+. Service use was significantly greater in the EIS+ group (Z =-2.838, p= 0.0045). Greater service use was predicted by male gender, treatment resistant illness, and urbanicity. No significant differences existed between clinical and functional outcomes in those who and would not have been eligible for EIS. **Conclusions:** Current EIS provide a gender-inequitable service, accepting a preponderance of male patients. EIS+ patients have a high proportion of treatment resistant illness and high service use. These data provide strong support for the recent decision in the UK to increase the upper age-limit for EIS; and suggest a similar strategy should be adopted in EI services worldwide.

Polygenic risk scores among cognitive subtypes of schizophrenia and bipolar disorder

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Background: Shared polygenic risk for schizophrenia (SZ) and bipolar-I disorder (BD) may be associated with shared intermediate phenotypes for these disorders. Delineation of subtypes of patients with SZ and BD who share common cognitive profiles – typically representing severe 'cognitive deficit' (CD) or relatively 'cognitively spared' (CD) performance on a range of tests – may distinguish common biological profiles of individuals with ostensibly different pathologies. **Methods:** Participants with SZ (n=39) or BD (n=28), and 36 healthy controls (N=103) were allocated to either a cognitive deficit (CD) or cognitively spared (CS) subtype via two-step cluster analysis of performance on eight cognitive domains (general verbal ability, verbal memory, visual memory, executive function, processing speed, visual processing, language ability, and working memory); there were no HCs with a CD profile. All participants were genotyped using the Infinium PsychArray BeadChip, in collaboration with the Psychiatric Genomics Consortium (PGC); Polygenic Risk Scores (PRS) were calculated using imputed data for approximately 93,000 SNPs, according to previous findings of the PGC. **Results:** Polygenic risk scores were highest in CD the group, followed by CS cases, then HC cases. Notably, the mean PRS for CD cases was higher than that for the SZ group as a whole. Within the CD subgroup only, higher PRS scores were significantly associated with scores on cognitive domains of attention and language, and poor reversal learning on the executive function (Intra-Extra Dimensional Shift) test. **Conclusion:** Patients with SZ or BD with severe cognitive deficits across a number of domains show higher PRS than their cognitively spared counterparts. In addition, polygenic risk estimates are associated with specific cognitive abilities only in SZ or BD cases with other severe cognitive deficits. These findings suggest that polygenic risk for SZ may impact brain development supporting these cognitive functions that is relevant to both psychotic and mood disorders.

The addition of depression to the Framingham Risk Equation model improves risk prediction for coronary heart disease in women

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Background: Depression is widely considered to be an independent and robust predictor of Coronary Heart Disease (CHD), however is seldom considered in the context of formal risk assessment. We assessed whether the addition of depression to the Framingham Risk Equation (FRE) improved accuracy for predicting 10-year CHD in a sample of women. **Methods:** Data from the Geelong Osteoporosis Study comprising an age-stratified, population-based sample of women were collected from 1993-2011 (n=859). Clinical depressive disorder was assessed using the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders (SCID-I/NP), using retrospective age-of-onset data. A composite measure of CHD included non-fatal Myocardial Infarction, unstable angina coronary intervention or cardiac death. Cox proportional-hazards regression models were conducted and overall accuracy assessed using Area Under Receiver Operating Characteristic (ROC) curve analysis. **Results:** ROC curve analyses revealed that the addition of baseline depression status to the FRE model improved its overall accuracy (AUC:0.77, Specificity:0.70, Sensitivity:0.75) when compared to the original FRE model (AUC:0.75, Specificity:0.73, Sensitivity:0.67). **Conclusion:** The addition of a depression variable to the FRE equation improves the overall accuracy of the model for predicting 10-year CHD events in women. This model now requires validation in larger samples.

Concurrent 8, Substance I - Free, St Germain, 1030–1230

The Australian Perinatal Depression Initiative (NPDI): a policy evaluation

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Background: The morbidity and cost associated with maternal mental illness in the perinatal period (pregnancy: 1st postnatal year) is substantial for mother, infant, and family and may impact on the health of the next generation. The National Perinatal Depression Initiative (NPDI) endorsing routine depression screening and psychosocial assessment and improving access to mental health services for perinatal women was implemented 2008-2014. This project aimed to measure hospital and Medicare mental health (MH) service utilisation and costs in perinatal women; To assess the range of factors (e.g., socio-demographic, geographical) associated with MH service utilisation; and To assess the impact of perinatal mental health initiatives on mental health service utilisation. **Methods:** a retrospective evaluation of the NPDI's impact on 1) service uptake and 2) cost in terms of psychiatric hospitalisation (data linkage in NSW & WA) and Medicare MH item (aggregate data national and Jurisdictional), was undertaken as was 3) Policy analysis of the NPDI pre/post its introduction. Finally we undertook 4) data development with a view to inclusion of one or more perinatal mental health item(s) in the Perinatal National Minimum Dataset – eventually allowing for prospective evaluation of the NPDI. **Results:** are reported for each of the objectives with a focus on process required for national policy development and evaluation; the strengths, limitations and challenges of these "big data" methods. **Conclusions:** It is recommended that new mental health policy initiatives incorporate a planned strategic approach to evaluation, which includes sufficient follow up to assess the impact of public health strategies.

PRESENTER 1

What was the NPDI funded to achieve and what was the plan for its evaluation: ideal vs. reality

Nicole Highet[1], **Marie-Paule Austin**[2]

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Background: In 2005 a large Australian screening study identified a 16% prevalence of perinatal depression with more than 30,000 families affected/annum. A National Plan for the implementation of a coordinated approach to perinatal mental health was then proposed with a view to reducing the significant personal, social and economic costs associated with unidentified and delayed treatment of perinatal mental health conditions. **Methods:** In 2008, Australia's $85M National Perinatal Depression Initiative (NPDI) was established under a bi-partisan agreement, with matched funding from the Commonwealth and all State and territory Governments. Key outcomes of the 5-year initiative included the development of Clinical Practice Guidelines, training and education for health professionals to undertake screening and provide evidence-based treatments, health promotion activities and the dissemination of information to consumers and carers to raise awareness and understanding and promote help-seeking. **Results:** Despite significant progress in the uptake of screening across jurisdictions, lack of resources and prioritization of the Initiative's evaluation makes it difficult to monitor and evaluate the scope of the Initiative and its impact. Whilst there are positive indicators of training and resources uptake, the degree and impact of screening remains unknown. **Conclusion:** In the absence of a prospective, coordinated evaluation, the Partnership Grant – using population level administrative data- examined the impact that the Initiative had on the uptake of perinatal mental health care services. The key outcomes from these will be discussed in the following papers. Further, considerations for ongoing monitoring and sustainability of the NPDI into the future and will be outlined.

PRESENTER 2:

How does the NPDI policy translate into clinical practice?

Marie-Paule Austin[1]

[1]University of New South Wales, Sydney, Australia

Background: Understanding of the NPDI's implementation within public health (universal psychosocial screening) and clinical (diagnosis and treatment) settings was needed to inform the approaches taken to its evaluation through the Partnership Grant. **Methods:** a case vignette traces the trajectory from routine pregnancy psychosocial & depression screening where a woman screens positive for possible depression; is then diagnosed with major depression by her GP; treated in the community, then as she worsens by the MH Team, and eventually admitted to hospital. **Results:** this vignette demonstrates how the NPDI is implemented in the Australian public health setting in terms of universal screening- predominantly undertaken by maternity and early childhood services. Diagnosis of mental health conditions is undertaken via the GP Mental Health Care Plan which allows for referral for psychological intervention via Commonwealth Medicare subsidized MH care items (psychology and allied health). More acute psychiatric care is provided through community MH teams and ultimately more severe cases may be admitted to hospital (State funded). **Conclusions:** for effective implementation, national initiatives such as the NPDI need to be embedded within universal primary health care services; underpinned by clinical practice guidelines; adequate workforce training and ongoing support of the primary care sector by mental health services.

PRESENTER 3

Patterns of obstetric, psychiatric and other inpatient service utilisation among women giving birth in Australia

Taryn Major[1], Marie-Paule Austin[2], Jolie Hutcherson[2], Mary-Lou Chatterton[3], Cathy Mihalopoulos[3], Elizabeth Sullivan[4], Georgina Chambers[2], Nicole Reilly[2], Nicole Highet[5], Maxine Croft[1], Vera Morgan[1]

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Background: Our work aimed to examine obstetric, psychiatric, and other inpatient admissions among Australian childbearing women and to compare psychiatric inpatient admissions between women with at least one psychiatric admission in the perinatal period and women with one or more psychiatric admissions but not in the perinatal period. **Method:** Data were extracted from NSW & WA birth and hospital admission data collections to include women giving birth between July 2000 and December 2009. The cohort comprised three groups of women: Case women with at least one psychiatric admission within the perinatal period; Comparison 1 women with at least one psychiatric admission but only outside of the perinatal period; and Comparison 2 women without any psychiatric admissions during the study period. Outcomes were number of psychiatric admissions, and length of stay examined in terms of admission type (obstetric vs. psychiatric vs. other). Outcomes were adjusted for maternal socio-demographic factors. **Results:** Unadjusted results indicated higher burden of all admissions in both psychiatric groups (Cases and Comparison 1) compared to the non-psychiatric group (Comparison 2). Multivariate analysis showed that socially disadvantaged Case women had significantly more psychiatric admissions than their less disadvantaged counterparts, whereas the trend was reversed amongst Comparison 1 women. Uninsured Case women had more psychiatric admissions and these were of longer duration than either insured Case women or uninsured Comparison 1 women. **Conclusion:** Results suggest a greater burden of psychiatric morbidity associated with the perinatal period especially in disadvantaged mothers. This has significant cost implications for Australia's public health system.

PRESENTER 4

Hospital costs associated with perinatal mental health diagnoses for Australian women

Mary Lou Chatterton[1], Cathrine Mihalopoulos[1], Jolie Hutchinson[2], Maxine Croft[3], Vera Morgan[3], Georgina Chambers[2], Elizabeth Sullivan[4], Nicole Highet[5], Marie-Paule Austin[2]

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Background: The aim of this analysis was to measure hospital-related costs in women presenting with mental health morbidity in the perinatal period using available administrative databases. **Methods:** The same linked hospital data and diagnosis groups as the previous analysis were utilised. Hospital separations were costed using National Hospital Cost Data Collection 2009-2010 public sector total average costs for each Australian refined diagnosis-related group coded to each admission. A summary index for hospitalisation costs was created by adding hospital costs over the ten year study period for each woman. A Generalised Linear Model with a gamma distribution for the summary index was fit which adjusted for the following covariates: group status, maternal age, state, number of births, insurance status, marital status and socio-economic status (index of relative disadvantage) including interaction terms for group status interacting with maternal age, insurance, marital and socio-economic status. **Results:** Total mean hospital costs for women in the case group were significantly higher ($P<0.001$) than women in the Comparison 2 group (mean $29,914 vs $14,691). The difference in mean costs [95% CI] was estimated at $15,223 [$15,049, $15,395]. Significant interactions were found with unmarried women in the case group having significantly higher total average costs ($7000) than married case women. Case women without private insurance also had significantly higher total costs than case women with insurance. **Conclusion:** Women with perinatal depression incurred significantly greater hospital costs than women without a mental health diagnosis. Lack of private insurance and unmarried status was associated with increased costs.

PRESENTER 5

What has been the impact of the National Perinatal Depression Initiative (NPDI) on Medicare and hospital service use?

Georgina Chambers[1], Wang Sheng Lee[2], **Cathrine Mihalopoulos**[2], Sean Randall[3], Van Phuong Hoang[1], Mary Lou Chatterton[2], Elizabeth Sullivan[4], Nicole Highet[5], Maxine Croft[6], Vera Morgan[6], Nicole Reilly[1], Marie-Paule Austin[1]

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Background: In 2008 the Australian Department of Health and Aging introduced the National Perinatal Depression Initiative (NPDI). The aim of the current presentation is to describe two studies that assessed the impact of the NPDI on i) access to mental health (MH) Medicare services (GPs, psychologists and psychiatrists) and ii) inpatient hospital admissions for women giving birth in Australia. **Methods:** Study 1) A retrospective cohort study using difference-in-difference analytical methods to isolate the effect of the NPDI on rates of MH Medicare services for women giving birth compared to those who did not give birth between 2006-2010. Study 2) Using hospital admission data on all births in NSW and WA during the study window a quasi-experimental design was used to assess rates of MH-related hospitalisations before and after the NPDI introduction. **Results:** Study 1) The NPDI significantly increased access in subpopulations of women, particularly those aged under 25 and over 34 years living in major cities. However, an overall increase in all groups was not found. Study 2) Based on our preferred control group, we found a small negative statistically significant impact of the NPDI on MH-related hospitalisations. **Conclusion:** The NPDI appears to have increased access to Medicare funded services for some subgroups of women and resulted in a small reduction in MH related hospitalizations for perinatal women. These findings suggest that women are perhaps accessing more care in the community, resulting in less severe disorders requiring hospitalisation.

PRESENTER 6

The development of data items for national collection and reporting about perinatal mental health

Natasha Donnolley[1]

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Background: The absence of standardised national reporting mechanisms as part of the National Perinatal Depression Initiative (NPDI) resulted in difficulty measuring improvements in the rate of depression screening. There was also a limited capacity to examine whether the NPDI had achieved its primary goal of improving the mental health outcomes of women and their families. The National Perinatal Data Collection (NPDC) is a compilation of data collected by each jurisdiction about women who give birth and their babies and includes a specification for data items for mandatory collection and reporting at a national level. A program of review and expansion of the NPDC, the National Maternity Data Development Project (NMDDP) also identified gaps in data collected about perinatal mental health. **Methods:** A desktop review of existing jurisdictional perinatal data collections and targeted consultations identified a set of potential data items for national collection. These options were reviewed and considered through a consensus process at a national consultation workshop with a wide range of expert stakeholders. **Results:** Three data items were identified for future addition to the Perinatal National Minimum Data Set: whether antenatal depression/anxiety screening was conducted; whether additional care or action was required as a result of identification of perinatal mental health risk factors; and the history or presence of a mental health condition. **Conclusion:** Once these data items are added into the NPDC it will be possible to monitor changes in perinatal depression/anxiety screening over time as well as monitor the impact of other perinatal mental health reforms.

Mini Concurrent 1, Epidemiology - Free, Le Grand Ballroom 3, 1300–1400

The degree of treatment resistant depression (TRD) in an Australia tertiary care setting

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Background: Treatment-resistant depression (TRD) is the conventional term for non-response to treatment in individuals with Major Depression. In depressed outpatients, the STAR*D trial reports a cumulative remission rate of 50% after two different treatments are trialled. Research suggests that TRD is more prevalent in tertiary care settings as patients with TRD are more likely to be hospitalised and have higher health service utilisation rates than patients with treatment responsive depression. **Methods:** The aim of the study was to assess the degree of TRD in an Australian tertiary care setting and to investigate the factors associated with TRD in this specialized setting. Treatment-resistant depression was identified and modelled using available staging models in 70 depressed inpatients. Multiple methods were used to assess treatment resistance and factors associated with TRD including structured clinical interviews, psychological assessments and medical chart auditing. **Results:** The majority of the depressed inpatients had a chronic illness trajectory ($N = 64$; 91.4%) and had a moderate to high level of TRD as determined by the staging models of TRD. An omnibus measure of TRD was created by combining the TRD models into one composite index. Using this composite index, the following factors were found to be associated with higher levels of TRD: higher prevalence of suicide attempts ($\beta = 1.71$, $t(11) = 3.62$, $p < .001$), older current age ($\beta = 14$, $t(11) = 2.92$, $p < .005$), earlier age of onset ($\beta = -.12$, $t(11) = -2.58$, $p < .012$), and poorer cognitive functioning ($\beta = -.16$, $t(11) = -2.13$, $p < .038$). **Conclusion:** Chronic and treatment-resistant depression is highly prevalent and disabling, and associated with many poor long-term outcomes. The factors found to be associated with TRD are most likely consequences of the chronic and resistant nature of the illness. Identifying endophenotypes that distinguish between varying levels of TRD may improve the classification of TRD cases and add to the general predictive validity of staging models.

Is the mental health of older persons impacted differently after natural or human induced disasters. A systematic review and meta-analysis of epidemiological data

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Background: Older Persons are increasingly "in harm's way" following natural disasters (ND) and human-induced disasters (HID). There is debate in the literature as to the impact of disasters on the psychological health of older persons, ND and HiD are known to impact survivors differently, and may impact older persons differently. In the absence of existing systematic reviews, we aimed to synthesis the available evidence and conduct meta-analyses of the effects of ND and HID on the psychological health of older versus younger adults. **Methods:** A meta-analysis was conducted on papers identified through a systematic review. The primary outcomes measured were post-traumatic stress disorder (PTSD), depression, anxiety disorders, adjustment disorder, and psychological distress, with results divided between ND and HID. **Results:** We identified six papers on ND (n=63,92) and seven papers on HID (n=19,053), with sufficient data for a random-effects meta-analysis. Older adults were 2.11 times more likely to experience PTSD symptoms following ND (95% CI=1.40– 3.17), but 2.67 times less likely to experience PTSD symptoms following HID (95% CI=1.11-6.44) when compared to younger adults. **Conclusion:** Mental health services need to be prepared to meet the needs older persons, notably PTSD, given the global rise in the numbers of older adults affected by both natural and human-induced disasters. It is possible that the pervasive destruction of livelihoods from the included natural disasters (tsunamis and earthquakes) has a greater impact of older persons than the included human-induced disasters (bombings and hijacked-plane terror attacks).

Supporting mental health in mothers of children with a disability: informing a public health approach

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Background: Substantial inequalities exist in mental health for parents of children with disabilities compared to parents of typically developed children. Consistently higher rates of depressive symptoms are found in addition to elevated chronic stress, sleep deprivation and poor physical health. Poor mental health has the potential to reduce the much-needed quality of care by parents to children with disabilities and their siblings. Furthermore, some parents are forced to relinquish the care of their child because of heightened parental distress. System level changes are needed to support parents and prevent mental ill health. This study aimed to investigate the needs, gaps and barriers to supporting the mental health of mothers of children with disabilities. **Methods:** A parent engagement group was established to ensure maximum consumer involvement from devising the research questions through to the design and conduct of the study. A quantitative and qualitative approach was adopted. Semi-structured interviews were conducted with 15 mothers of children with a disability (aged 0-25 years) and 15 health professionals. An online survey is currently active for mothers with final results in October 2015 (current n = 169). **Results:** Qualitative findings suggest many mothers experience significant long-term anxiety and depression, are taking anti-depressant medication and/or accessing a psychologist. Survey data showed 73% of mothers (n = 124) needed to access a mental health professional in the last year and of these 54% sought support. Eighty five percent thought it was essential for their child's health professional to make time to discuss their mental health and 70% felt this was essential at the time of their child's diagnosis. Although professionals expressed a high concern for the need to support mothers' mental health, key issues of confidence and role expectations were raised. **Conclusion:** Several barriers to accessing mental health care were reported and gaps in the current service system highlighted. The results can inform preventative mental health initiatives within primary and secondary health services.

De novo mutations associated with advanced paternal age have a limited influence on autism risk

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Background: Advanced paternal age is consistently associated with risk for autism spectrum disorders (ASDs), as well as many other neurodevelopmental and psychiatric disorders (Hultman et al. 2011). It is commonly hypothesized that this risk reflects increases in the rate of de novo (DNV) mutations with increasing paternal age (Kong et al. 2012). Using data from large exome sequencing projects, we aimed to estimate the actual contribution of paternal age related changes in DNV mutation rate to ASD risk at a population level. **Methods:** We built a model predicting the population-level effect of paternal age related changes in DNV mutation rate on ASD risk. To do so, we estimated the association between DNV mutation rate in the exome and paternal age in control individuals, as well as the average risk for ASDs conferred by multiple classes of DNV mutations. **Results:** DNV mutations in the exome were estimated to increase at a rate of approximately 3.6% per additional year of paternal age, consistent with the rate estimated in a previously published whole genome sequencing study (Kong et al. 2012). On average, DNV loss of function and missense variants in the exome increased ASD risk by 20%. Modeled in conjunction with the prevalence of ASDs in the population, these data suggest that a 25 year increase in paternal age (e.g. 25 to 50 years) is associated with approximately a 1.15 fold increase in ASD risk in the population. **Conclusion:** As epidemiologic meta-analytic estimates report a 25 year gap in paternal age is associated with an approximate 2.5 fold increase in ASD risk (Hultman et al. 2011), our analyses suggest that only a limited amount of that risk is introduced by DNV mutations in the exome. The association between paternal age and neuropsychiatric disease risk should be further explored.

Mini Concurrent 2, Psychosis - Free, Bastille, 1300–1400

How often do persons with major depression convert to bipolar disorder on prospective follow-up? A systematic review and meta-analysis

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Background: Among the possible precursor syndromes for Bipolar Disorder (BD), Major Depressive Disorder (MDD) could be a target for preventive interventions. We aimed to systematically identify the conversion rate and predictive baseline characteristics of participants with MDD in studies where such participants were followed up for identification of conversion to BD. **Methods:** We undertook a Medline and Embase search using the terms: 'major depression',' depressive disorder', 'bipolar disorder', 'manic depression', switch, prospective and truncated terms conver* and predict*. Studies were included if the mean age of the baseline sample was above 15, and the diagnostic ascertainment of MDD and BD were of an acceptable standard and the minimum length of follow up was 6 months. We determined pooled prevalence of BD at 2, 4 and 8-year intervals of follow up from baseline. **Results:** Among 1694 reports identified from initial search, 26 were included for the analysis of rates of conversion to BD. In the first 2 years of follow up, 9.4% [95%CI- 5.1-16.7] of MDD participants converted to BD. The incidence of BD during this period was 3.7 per 100 person-years of follow up. The incidence was higher for inpatient cohorts (4.8 per 100 person-years) than outpatients (3.6 per 100 person-years). Among 12-20 year follow up studies, the conversion rates were higher among clinical inpatient samples (21.1%[95%CI-10.4-38.1]) than representative community samples (6.7%[95%CI- 1.9-20.8]). Characteristics such as age of onset, psychosis, subthreshold mania, comorbid anxiety and family history of BD could be examined in multiple studies for pooled Odds Ratios for conversion to BD. **Conclusions:** Adults and adolescents with MDD from clinical samples followed up for long periods have a moderate risk of conversion to BD. Clients with MDD and risk factors for BD merit closer observation to prevent conversion to BD and may benefit from early intervention efforts.

Missed opportunities for early intervention in first episode psychosis in methamphetamine users

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Background: Several sources of evidence support an association between methamphetamine use and psychosis: dose-related psychotic symptoms in chronic users (McKetin, 2013), and significantly increased risk of schizophrenia development in methamphetamine users (Callaghan, 2012). Methamphetamine users are therefore a group at high-risk for development of first episode psychosis (FEP). Current service provision for psychotic symptoms in the context of methamphetamine use varies widely. Aims: to examine whether there are missed opportunities for early intervention with methamphetamine users prior to development of FEP in New South Wales (NSW). The NSW administrative dataset is large and representative, covering a whole population comprising more than 7 million people. **Methods:** Analysis of NSW administrative data: retrospective cohort comprising all NSW residents aged 16-65 admitted for treatment of FEP between 2005 and 2015. Record linkage identified health service contacts (emergency department, ambulatory mental health and hospital separations) in the preceding 2 years. Service contacts were compared in individuals with and without comorbid methamphetamine use prior to first admission for FEP, to identify whether there are missed opportunities for early identification and management of individuals at-risk for later development of FEP. **Results:** 48,135 persons with an FEP were identified, of whom 7,496 had a primary diagnosis of drug-induced psychosis. 10% of people with psychosis, and 46% of those with drug-induced psychosis, had a comorbid amphetamine disorder. Patterns of care prior to the index admission are currently being examined, comparing people with amphetamine disorders to those with cannabis- or no drug-use disorders. **Conclusions:** Individuals with prior amphetamine-related psychosis are expected to have different patterns of care to those with no prior use. Implications of this will be considered with a view to harnessing identified missed opportunities for early intervention in order to enhance pathways to care for individuals with methamphetamine use at high risk of developing FEP.

Emotional unrest at rest: functional dysconnectivity of the inferior frontal gyrus in young people at genetic risk for bipolar disorder

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Background: Bipolar disorder (BD) is characterized by a dysregulation of affect, and impaired integration of emotion with cognition. These traits are also expressed in probands at high genetic risk of BD. The inferior frontal gyrus (IFG) is a key cortical hub in the circuits of emotion and cognitive control, and has been frequently associated with BD. Here we studied resting state functional connectivity of the left IFG in participants with BD and in those at increased genetic risk. **Methods:** Using resting state functional magnetic resonance imaging (rs-fMRI) we compared 49 young bipolar disorder (BP) participants, 71 individuals with at least one first-degree relative with BD (AR), and 80 controls (CON). We first performed between-group analyses of the functional connectivity of the left IFG. We then used graph theory to study its local functional network topology. We finally used machine learning to study diagnostic classification based solely upon the functional connectivity of their IFG. **Results:** In BD, the left IFG was functionally dysconnected from a network of regions including bilateral insulae, ventrolateral prefrontal gyri, superior temporal gyri and the putamen. Compared to controls, participants at high genetic risk showed a functional dysconnection intermediate in strength to the BD group. This constellation of regions overlapped with fronto-limbic regions which a machine learning classifier selected as predicting group membership with an accuracy of 50% greater than chance. **Conclusion:** Functional dysconnectivity of the IFG from regions involved in emotional regulation may represent a trait abnormality for BD and could potentially aid clinical diagnosis.

Neural correlates of dynamic emotion perception in schizophrenia and the influence of prior expectations: an fMRI multivariate analysis

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Background: Impaired emotion perception is a well-established and stable deficit in schizophrenia, having a significant impact on functional outcome. Recent work has examined the basic processes underlying emotion perception impairment, finding that difficulties arise from overdependence on 'prior expectations'. Prior expectations direct attention to emotions that are congruent with what is expected; in schizophrenia, dependence on prior expectations is heightened, particularly for threatening stimuli, and results in impaired recognition of emotions incongruent with expectations. However, the brain processes underlying overdependence on prior expectations in emotion perception have not been examined. The present study aimed to investigate the effect of prior expectations (induced by cues) on dynamic, multisensory emotion perception in patients with schizophrenia and the brain activity and networks resulting in impaired perception of incongruent emotion. We were particularly interested in the brain processes which are associated with attribution of threatening emotions to neutral expressions. **Methods:** Twenty patients with schizophrenia and 20 healthy controls completed the study. We used a functional Magnetic Resonance Imaging (fMRI) paradigm with emotional videos and manipulated prior expectations with congruent or incongruent preceding emotional cues. **Results:** We found that when viewing neutral videos preceded by angry cues patients with schizophrenia recruited brain regions associated with congruence perception, and failed to recruit brain areas associated with error and incongruence detection, such as the anterior cingulate and temporoparietal junction. **Conclusion:** In schizophrenia an overdependence on prior expectations for threatening events may occur due to an aberrant neural network, which fails to signal incongruence between threatening prior expectations and incoming non-aggressive emotional cues.

Mini Concurrent 3, Physical Health - Free, Concorde, 1300–1400

Feeding the elephant in the room: a systematic review and meta-analysis of nutrition interventions in severe mental illness

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Background: A twenty-year life expectancy gap in people living with psychotic disorders, primarily driven by cardiometabolic complications means the potential for nutrition interventions as adjunctive treatments is high. As mental health teams evolve to incorporate nutritional interventions, evidence needs to guide clinical practice. Until now, nutritional interventions have not been systematically reviewed to determine the most effective components of interventions in this highly vulnerable group. **Methods:** An electronic database search was completed from earliest record to February 2015 using MEDLINE, Embase, Cochrane Central Register of Clinical Trials, PsychINFO and CINAHL, using key nutritional, anthropometric and psychiatric terminology. Google Scholar and relevant published systematic reviews were manually searched for additional titles. Inclusion criteria were; randomised controlled trial, nutrition intervention, human subjects, and diagnostic criteria of severe mental illness. Included trials were pooled for meta-analysis. Primary outcomes were weight, body mass index (BMI) and waist circumference. Secondary outcomes included blood lipids, glucose and nutritional intake. **Results:** Twenty studies were pooled for meta-analysis. Nutrition interventions improved weight (SMD=-0.101, p=0.001), BMI (SMD=-0.110, p=0.001), waist circumference (SMD=-0.132, p=0.001) and blood glucose (SMD=-0.218, p=0.042). Interventions delivered at the commencement of antipsychotic therapy were more effective than interventions aiming to treat cardiometabolic complications at a later stage. Dietitian-led interventions were significantly more effective (SMD=-0.56, p<0.001). There was considerable heterogeneity between studies among nutrition specific outcomes (e.g. fruit and vegetable consumption, energy intake) and these were not pooled for meta-analysis. **Conclusion:** Dietitian delivered nutrition interventions are an effective strategy for improving the physical health of people with severe mental illness. The integration of nutrition interventions into standard care will be enhanced by further RCTs and implementation studies targeting prevention of antipsychotic-induced weight gain, delivered by specialist clinicians such as dietitians. There is a clear need for a standardised and validated nutrition assessment tool for this population.

Yes we can! Weight gain prevention during the first two years after antipsychotic initiation in youth with first episode psychosis

Jackie Curtis[1,2], Andrew Watkins[1,3], Scott Teasdale[1,2], Megan Kalucy[1,2], Simon Rosenbaum[1,2], Oscar Lederman[1,2], Katherine Samaras[4,5], **Philip B Ward**[2,6]

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Background: Addressing the scandal of premature mortality in people with severe mental illness has been recognized as a priority. We recently demonstrated that weight gain could be prevented in young people experiencing a first episode of psychosis commencing treatment with antipsychotics. A 12-week, intensive lifestyle and life skills intervention – the Keeping the Body in Mind program, - was delivered by dedicated nursing, dietetic and exercise physiology clinicians, for new referrals with < one month of antipsychotic exposure. (Curtis et al, Early Intervention in Psychiatry, in press). At the conclusion of the intervention the 16 young people participating in the program experienced a mean weight gain of 1.8 kilograms, and a mean increase in waist circumference of 0.1 centimeters. The participants were followed up for two years after initial referral. **Methods:** During the two-year follow-up, participants had continuing access to an in house gym and weekly cooking groups, but without the same intensity of follow-up that characterized the initial 12-week intervention. Of the 16 participants who completed the 12-week intervention, two year data were available in 10; three left the programme and two-year data are not yet available on the remaining three. **Results:** Mean weight gain at two-year follow-up was 2.35 (SD 7.60) kilograms. The difference between baseline weight and weight at 2 years was not statistically significant ($t(9) = 0.98$, NS). The mean increase in waist circumference was 0.5 (SD 6.64) centimeters. The difference between baseline waist circumference and waist circumference at 2 years was not statistically significant ($t(9) = 0.23$, NS). Eight of the participants (80%) did not experience clinically significant weight gain (>7% baseline) two years after initiation of antipsychotic medication. **Conclusion:** This preliminary analysis demonstrates that it is feasible to prevent weight gain in youth with first episode psychosis over the first two years of treatment.

The impact of childhood parental quality on mental health outcomes in older adults

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Background: Quality of parental bonding is frequently cited as a determinant of mental health outcomes in childhood, adolescence and early adulthood. Examination of the long-term impact of this effect across the lifespan is limited. We present here the findings of the long-term impact of parental bonding on mental health across the lifespan into early old age in an Australian sample. **Methods:** Participants (N = 1,255) were drawn from the Australian Life Histories and Health Life Histories which is a sub-study of the Australian '45 and Up Study'. The quality of parental bonding was assessed with the Parental Bonding Inventory. Self-reported history of doctors' mental health diagnoses for each participant was recorded, whilst current treatment and depression was assessed with the CESD-8. Analyses were adjusted for current wellbeing with the Control, Autonomy, Self-Realisation and Pleasure-19 wellbeing scale. Due to known gender differences in the trajectories of mental health, analyses were stratified by sex. **Results:** Overall poor parental quality and over-protective mothers were associated with current treatment, and both ever and current diagnosis of anxiety or depression, for both sexes. However, effects for men were mostly attenuated when addressing for current wellbeing. **Conclusion:** Overall poor parental quality was associated with self-reported history of depression or anxiety diagnosis, current depression and treatment. In particular was the effect of over-protective mothers on children's mental health outcomes across the lifespan. Whilst these effects were attenuated by current mood in men, most effects for poor parental quality remained for women. Clearly, whilst current mood does impact on life-history methods, effects still remained robust for women.

A randomised, controlled trial of a dietary intervention for adults with major depression (the "SMILES" trial)

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Background: There is now extensive observational evidence across countries, cultures and age groups to suggest that diet and nutrition play a role in the risk for and the genesis of depression. However, there are currently few data regarding the possible therapeutic impact of dietary changes on existing mental illness. Using a randomised controlled trial design we aimed, for the first time, to investigate the efficacy of a dietary improvement program for the treatment of Major Depressive Episodes (MDE). **Methods:** Participants suffering from current MDE were randomised into a dietary intervention group or a social support group. Depression status was assessed using the Montgomery–Åsberg Depression Rating Scale (MADRS) and Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders (Non Patient Edition) (SCID-I/NP). The intervention consisted of 7 individual nutrition consulting sessions (of approximately 60 minutes), delivered by an Accredited Practising Dietitian (APD). Sessions commenced within one week of baseline assessment. The intervention focused on advocating a healthy diet based on the Australian Dietary Guidelines and the Dietary Guidelines for Adults in Greece. The control condition comprised a befriending protocol using the same visit schedule and length as the diet intervention. The study was conducted at two locations in Victoria, Australia (a metropolitan and regional centre). Data collection occurred at baseline (pre-intervention), and at 3 - and 6 - month post-intervention. The primary endpoint was MADRS scores at 3 months. **Results:** Recruitment for this trial finished in May and primary results will be available in November 2015. These will be presented. **Conclusion:** This is the first randomised controlled trial to seek to answer the question 'If I improve my diet, will my mental health improve?" If efficacious, this program could provide an alternative or adjunct treatment strategy for the management of this highly prevalent mental disorder; the benefits of which could extend to the management of common co-morbidities including cardiovascular disease (CVD), obesity, and type 2 diabetes. **Trial Registration:** Australia and New Zealand Clinical Trials Register (ANZCTR): ACTRN12612000251820

Mini Concurrent 4, Youth Mental Health, St Germain, 1300–1400

Borderline Personality Disorder in Youth

Andrew Chanen[1,2,3] (Discussant)

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Borderline personality disorder (BPD) is a unitary construct across the life course and is a reliable and valid diagnosis in young people (12-24 years old). However, we lack a comprehensive and useful diagnostic framework to inform early detection and treatment of borderline pathology. Moreover, we understand little about core developmental processes that underpin the disorder, such as parent-child interaction and identity formation, or about the outcomes among outpatient youth with BPD, especially with regard to premature mortality. The presentations in this symposium contribute valuable data to this emerging field of research.

PRESENTER 1

Clinical staging: a comprehensive and useful diagnostic framework to inform early intervention in borderline personality disorder

Francesca Kuperman[1,2], Katherine Lawrence[1], Jennifer Betts[2,3], Andrew Chanen[2,3,4]

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Background: The current categorical DSM-5 diagnostic approach does not account for sub-threshold Borderline Personality Disorder (BPD), and provides little guidance or support for early intervention. Consequently, this study investigated the utility of a clinical staging approach – incorporating DSM-BPD criteria, psychopathological and functional outcomes - as a diagnostic framework for adolescents with BPD symptoms, at initial presentation to a mental health service. **Methods:** Clinical assessment data of 177 psychiatric outpatients (M = 16.25 years, SD = .93; 68.4% female) presenting to Orygen Youth Health, between March 1998 and July 1999, and November 2000 and September 2002 were utilized. Participants were allocated to a clinical stage based on the number of DSM BPD criteria met at baseline assessment (Stage 0 = 0 criteria, Stage 1a = 1-2 criteria, Stage 1b = 3-4 criteria, Stage 2 = 5-9 criteria). Stages were then compared on psychopathological and functional outcome measures. **Results:** Patients in later clinical stages (Stage 1b and Stage 2) exhibited poorer social and occupational functioning, and greater levels of state and personality pathology, rates of deliberate self-harm, and internalizing and externalizing behavior problems, compared with those in earlier illness stages (Stage 1a and Stage 0). **Conclusion:** This study demonstrates promise for the application of clinical staging in adolescent BPD. Its strengths lie in differentiating ranging levels of BPD illness severity, identifying sub-threshold patients in need of specialized care, and as a tool to inform targeted interventions. Prospective studies are required to further develop this approach for adolescent BPD.

PRESENTER 2

The association between mother-child transactions and borderline personality pathology in 11–13 year olds.

Katherine Thompson[1,5], Emma J McDougall[1,5], Martina Jovev[1,2,5], Nick Allen[3], David Mellor[4], Andrew Chanen[1,2,5]

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Background: Parent-child interactions during childhood and adolescence have been suggested to perpetuate and protect against the development of borderline personality disorder (BPD) pathology. Our study aimed to investigate the association between BPD pathology and behavior during a mother-child interaction task. Second to this, it investigated the similarities and discrepancies between adolescent-rated BPD pathology and parent-rated adolescent BPD pathology in 11-13 year olds. **Methods:** A total of 149 mother-child dyads were recruited from a community sample. They completed a child and parent rating of adolescent BPD pathology together with a dyadic interaction task. **Results:** Results suggested there was a significant difference between mother and adolescent ratings of adolescent BPD pathology, with higher concordance in externalized BPD items. There was a significant association between parent-rated BPD pathology and the duration of mother aversive behavior during the interaction task, and a significant association between parent-rated adolescent BPD pathology and mother aversive behavior in response to adolescent aversive behavior. **Conclusion:** These results provide some support for the biosocial model of BPD, suggesting the way mothers interact with their adolescents, particularly when they respond to adolescent aggression with like aggression, can influence the expression of BPD pathology during early adolescence.

PRESENTER 3

Who am I? fMRI and identity in adolescent borderline personality disorder

Laura Finlayson-Short[1,2], Sarah Whittle[1], Christopher Davey[1,2,3], Martina Jovev[2,3], Andrew Chanen[2,3,4]

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Background: This project investigated identity disturbance in youth with borderline personality disorder (BPD). This key feature of BPD has so far been the subject of scant neuroimaging research. **Methods:** This study involved two groups, those with BPD pathology who met the SCID-II criterion for identity disturbance, and healthy controls. Participants underwent fMRI scanning while they completed a task designed to examine processing of self-related information. Previous studies have found that this task engages the default mode network (DMN). The task contained two conditions. The first asked participants to determine whether trait-adjectives applied to them. The second was a control condition in which participants counted the number of vowels in a matched set of adjectives. Participants completed the Self Concept and Identity Measure (SCIM) to determine their level of identity disturbance. **Results:** Significant differences were found in regions of the DMN when the neural activity during the self-referential task was compared across the groups. BPD patients had significantly greater identity disturbance than controls, evidenced by higher SCIM scores. Regional activations in the self-referential condition were correlated with these SCIM scores in BPD patients. **Conclusion:** Disturbed processing of self-related information, reflected in abnormal DMN functioning, underlies identity disturbance in BPD. These results should inform future treatment research.

PRESENTER 4

Premature mortality among youth with borderline personality pathology

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Background: Borderline Personality Disorder (BPD) is a severe mental disorder associated with a high rate of suicide and premature death. Patients with BPD have been shown to live 20 years less than the general population. This study follows-up youth (15-24 years old) diagnosed with BPD to determine the mortality rate 10 years from diagnosis. **Methods:** Four-hundred and ninety-three youth who were diagnosed between 1998 and 2008 with at least one BPD criterion, where followed-up a mean of 10 years later to determine mortality. Data-linkage with the National Death Index and a search of the National Coronial Information System was conducted to identify deceased individuals as at December 2014. **Results:** Twelve individuals were identified as deceased: 2.43% from all-causes; 0.20% of natural causes; 0.20% of accidental causes; 1.22% from suicide; 0.81% cause unavailable. The mean age at death was 24.30 years. Five deceased individuals had been diagnosed with BPD, seven deceased had between 1 and 4 BPD criteria. **Conclusion:** The all-cause mortality rate was within the range expected in the general population. Although a low rate of suicide was found, the data reflected an increased risk of suicide of 19 times the general population rate.

Mini Concurrent 5, E-Mental Health - Free, Le Grand Ballroom 3, 1400–1500

The effectiveness of an online mental health induction program for the workplace: a randomised controlled trial

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[2]Australian Institute of Criminology, Canberra, Australia

Background: The Internet offers an unparalleled opportunity for the large scale, cost-effective delivery of mental health awareness and destigmatisation programs in the workplace. However, to date assessments of the effectiveness of such workplace programs have been confined to health professional settings. This paper describes the effectiveness of Mental Health Guru (MHGuru), a 2-module, 2-week, online mental health workplace induction program designed to improve depression and anxiety literacy, decrease depression and anxiety stigma, and improve help-seeking among general employees. **Methods:** A total of 506 employees from a large government workplace were randomized to receive the online Mental Health Guru (MHGuru) educational program or to a Wait List Control condition. Participants completed an online survey at baseline, post-test and 6-month follow-up. Primary outcomes measures included depression and anxiety literacy (D-Lit; A-Lit respectively), personal stigma (DSS-personal; GASS-personal), and help seeking intentions for anxiety and depression (GHSQ). Data were analysed using an intent-to-treat approach and mixed models repeated measures analysis. **Results:** Dropout at post intervention was 26.8% and 21.4% for the MHGuru and Control conditions respectively. Relative to the Control condition, participants who received MHGuru showed significantly greater improvements in depression and anxiety literacy (g = 0.79 and 0.81 respectively).and significantly greater reductions in depression and anxiety personal stigma (g = 0.55 and 0.42 respectively). **Conclusion:** MHGuru has the potential to play an important role in increasing mental health awareness in the workplace and by extension the general community.

Outcomes of internet-based CBT for depression and anxiety in 'real-world' clinical settings: how do transdiagnostic and disorder-specific programs compare?

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Background: More research is needed to compare the efficacy of transdiagnostic (one-size-fits-all) versus disorder-specific treatments for anxiety and depression in adults. We aimed to compare patient characteristics, adherence, and effectiveness of a 'transdiagnostic' internet-delivered automated cognitive behavior therapy (iCBT) program for anxiety and depression (n=1005) versus disorder-specific iCBT programs for either generalised anxiety disorder (GAD) (n=738) or depression (n=366) in a non-randomised naturalistic comparison study in primary care. **Methods:** Patients completed their iCBT program (delivered via This Way Up Clinic: www.thiswaupclinic.org) under the supervision of primary care clinicians in Australia (including GPs, psychologists, and nurses), and were assessed on PHQ-9 (depression), GAD-7 (generalised anxiety), K-10 (distress), and the WHODAS-II (disability) at pre- and post-treatment. **Results:** Patients in the transdiagnostic program had higher comorbidity rates and baseline distress. While all three programs significantly reduced scores on primary outcomes, we found small effect sizes favoring the transdiagnostic program over the GAD program in reducing PHQ-9 (d=0.44, 95%CI: 0.34-0.53), K-10 (d= 0.21, 95%CI: 0.16-0.35) and WHODAS scores (d=0.20, 95%CI: 0.10-0.29), and small effect sizes favoring the transdiagnostic program over the Depression program in reducing GAD-7 scores (d = 0.48, 95%CI: 0.36-0.60). A smaller proportion of patients completed the transdiagnostic program (44.9%) compared to the depression (51.6%) and GAD (49.2%) programs, which was attributable to baseline differences in demographics and severity. **Conclusion:** Both transdiagnostic and disorder-specific iCBT programs are effective in primary care, and there may be small effects favoring transdiagnostic iCBT. These findings need to be replicated in a RCT. Methods to increase adherence to iCBT in routine clinical settings are needed to optimise the benefits to patients.

Should I recruit via Facebook? A systematic review of studies that have used Facebook to recruit participants

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Background: Recruiting participants can be a challenge for any scientist conducting human research. One tool increasingly being used to recruit participants to research, and to overcome some of the limitations of more traditional methods, is the social networking website Facebook. The current review aimed to examine for which topics, settings, populations and methodologies Facebook recruitment has been most successful. **Methods:** A systemic review was conducted to identify studies which have used Facebook to recruit participants to research. **Results:** Of 151 potentially relevant papers identified, 110 unique studies recruiting via Facebook were identified and included in the review. Physical health/disease was the most common topic addressed by included studies (n=63), while 17 studies addressed mental health issues and 16 addressed substance use. Twenty-three included studies addressed 'other' issues such as homophobia, disability benefits and public attitudes towards sex offenders. The majority of papers (n=88) reported recruiting via Facebook to cross-sectional surveys, however 17 trials, 7 longitudinal surveys and 4 qualitative studies were also identified. Half of the included studies reported details of the recruitment processes using Facebook. Preliminary analyses indicate that the average cost per completing participant was US$6.54 (Range: US$1.36 - US$109.55). Further analyses describing relationships between topic of study, study design, target population and cost-per-participant will be discussed. **Conclusion:** The preliminary results of this review indicate that recruiting via Facebook is a potentially efficient way to contact a large number of individuals in a cost-effective manner. It is hoped that this review will provide researchers with some guidance regarding the types of research questions, populations and methodologies for which recruiting via Facebook is likely to be an effective strategy. A synthesis of the limitations associated with this method of recruitment, particularly for generalizability, will be discussed.

Experience sampling of thought using mobile technology

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Background: Mobile technologies are providing a new means of conducting experience sampling research, by delivering probes and as a method of rapidly reporting thoughts, emotions and behaviour in situ. This research has begun to provide a wealth of data on 'real life' mental states, and interest has grown in how the mind 'wanders' to the past and future in everyday life, and how this relates to emotion and behaviour. The current study extended previous research by using mobile technology to elicit the temporal direction, content and episodic nature of thought, as well as mood, behaviour and context, in daily life. **Methods:** Participants (N = 214) were exposed to 20 short message service (SMS) probes over one or two days. Upon receiving a probe participants provided the content and temporal location of their thoughts at the time of the probe, mood, actions and surrounding context. Responses were input through a mobile survey application or SMS. **Results:** On average participants responded to 14 of 20 probes. Over half of responses (52%) were received in the four minutes after the probe was sent, and 92% within the hour. Half of thoughts were sited in the present; of the remainder future-oriented thoughts were more frequent than past-oriented. Around 20% of thoughts were episodic, involving remembering or imagining a past or future personal event. Relationships were found between temporal direction of thought and physical location, company, and likelihood of resulting actions. **Conclusion:** The findings of this study confirm the important role of non-present thoughts in everyday life, and provide a more detailed picture of frequency of episodic thought and relationships with behaviours and context. While there are theoretical implications for the role of past and future thinking in daily functioning, these results also provide input into the ongoing development of mobile interventions for behaviour change.

Mini Concurrent 6, Epidemiology- Free, Bastille, 1400–1500

Examining DSM and ICD definitions of alcohol and cannabis dependence: a population-based study

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Aims: We compared how definitions of alcohol and cannabis use disorders in the World Health Organization's ICD-10 and draft ICD-11, and the American Psychiatric Association's DSM-IV and DSM-5, classified individuals in a nationally representative sample of adults Australians. **Methods:** Data from the Confidentialised Unit Record File for the 2007 National Survey of Mental Health and Well-Being were obtained from the Australian Bureau of Statistics. Cannabis and alcohol use disorders were assessed using the Composite International Diagnostic Interview. Agreement between classification systems was examined and confirmatory factor analyses tested the fit of each definition to a unidimensional syndrome. **Results:** In ICD-11, the population rate of alcohol dependence was three times higher than ICD-10 (13.1% vs. 3.8%), and cannabis dependence was twice as prevalent (4.1% ICD-11, 2.0% ICD-10). Dependence prevalence in DSM-IV was 3.9% for alcohol and 1.9% for cannabis; and in DSM5 moderate or severe use disorder was 8.2% for alcohol and 3.1% for cannabis. Among alcohol users (n=5,522) and cannabis users (n=1,639), criteria for all definitions loaded well on a single factor. The best model fit was for the draft ICD-11 dependence definition; the worst for DSM-5. **Conclusion:** Classification of alcohol and cannabis use disorders varies across editions of ICD and DSM. The differences are in some cases sizeable. ICD-11 may increase the estimated rate of people needing treatment for alcohol and cannabis dependence; future work needs to examine whether this is consistent across countries and patient groups

Cost of illness for high prevalence mental disorders in Australia; comparison of 1997–2007

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Background: The disease burden of mental illness and substance use disorders has increased, but few detailed estimates of their cost in Australia are available. The aim of the project is to assess the changes in costs associated with high prevalence mental disorders (depression, anxiety-related and substance abuse) between 1997 and 2007. **Methods:** The 1997 and 2007 National Surveys of Mental Health and Wellbeing were used in the analysis. Respondents diagnosed within the preceding 12 months with depression (D), anxiety disorders (ANX), and substance use disorders(SUB) by ICD-10 were included. The use of healthcare resources (hospitalizations, consultations) and days out of work due to their mental health in the past 12 months collected in the survey were costed in 2013-14 AUD. Only categories of consultations included in both surveys were included for consistency between surveys. Unit costs of health care services were obtained from the Independent Hospital Pricing Authority and Medicare. Hourly wage rates adjusted for age and sex were obtained from ABS. **Results:** Despite similar prevalence (~17%) and treatment seeking (35%) rates, total costs of health care resource use were lower in 2007 at $678 million compared to $1,520 million in 1997. The average total cost for people seeking treatment in 1997 and 2007 was estimated at $1,980 AUD and $760 AUD, respectively. Hospitalization primarily accounted for the gap in cost between 1997 and 2007. Estimation of productivity loss is still in progress and will be ready by December. **Conclusion:** The results suggested a change in the structure of treatment of high prevalence mental disorders between 1997 and 2007. The change was due to lower hospitalisation costs in 2007 which might be due to the trend toward community treatment of mental disorders, but a corresponding increase in outpatient consultations was not observed.

Emergency department and ambulance contacts due to self-harm after release from prison in Queensland: a prospective data linkage study

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Background: Incidence rates of self-harm are higher in incarcerated adults than in the general population. However, little is known about patterns of self-harm following release from prison. In this study we aimed to better understand the incidence and contextual characterisation of self-harm in adults following release from prison. **Methods:** Data from baseline self-report interviews with 1325 adults immediately prior to release from prison in Queensland were linked prospectively with correctional records and emergency department and ambulance records. Data from all emergency department presentations and ambulance attendances resulting from self-harm were subjected to secondary coding to further characterise these incidents. **Results:** Participants made >3750 unique presentations to the emergency department and were attended by an ambulance on >2000 occasions after release from prison. Preliminary analyses show that 4.4% of emergency department presentations and 4.9% of ambulance attendances were due to self-harm. Contact with emergency health services due to self-harm was independently associated with Indigenous status, previous mental health inpatient admissions and a prior history of self-harm. The most common method of self-harm recorded in both ambulance and emergency department data was poisoning. **Conclusions:** Internationally, these are the first data examining self-harm in a sample of adults following release from prison and the findings demonstrate that a clearly-defined profile of ex-prisoners has contact with emergency health services due to self-harm. There is a critical need to acknowledge the public health challenges associated with the transition from prison to the community, including the need for pre-release mental health support and continuity of care for at risk individuals.

The mental health of children and adolescents: report on the second Australian child and adolescent survey of mental health and wellbeing

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Background: Two national surveys investigating child and adolescent mental health have been conducted in Australia; the first in 1997/98 and the second in 2013/14. Key aims of the second survey were to determine the: (i) prevalence of mental disorders among 4-17 year olds; (ii) nature and impact of these disorders; (iii) patterns of service use; and (iv) role of the education sector in service provision. This presentation will describe the prevalence of mental health disorders identified in the second survey, the extent to which health and education services are used by those with mental disorders, and compare these findings with those in the first survey. **Methods:** The survey employed area-based sampling with 266 Level 1 Statistical Areas (SA1s) selected from SA1s in Australia containing at least 10 families with children and adolescents at the time of the 2011 Census. Parents/carers from 6,310 eligible households participated (Response Rate=55%) along with 2,967 eligible 11-17 year-olds (Response Rate=89%). The Diagnostic Interview Schedule for Children Version IV (DISC-IV) completed by parents/carers identified mental disorders. Eleven-to-seventeen year-olds also reported the impact of mental health problems, health-risk behaviours, and service use. **Results:** Among those disorders investigated, ADHD had the highest 12-month prevalence (7.4%), followed by Anxiety Disorders (6.9%), Major Depressive Disorder (2.8%) and Conduct Disorder (2.1%). Overall, 13.9% of 4-17 year-olds met the criteria for at least one of these disorders. Among those with a mental disorder, 56% had used a service 'for emotional and behavioural' problems during the previous 12 months, with 53% accessing health services and 40% accessing school services. **Conclusion:** Despite increased rates of service utilization, there has been little change in the prevalence of mental disorders since the first national survey. This suggests that current approaches to reduce the prevalence of child and adolescent mental health problems are not achieving this goal.

Mini Concurrent 7, Sleep and Depression - Free, Concorde, 1400–1500

Preventing depression through an insomnia intervention

Helen Christensen[1], Philip J Batterham[2], Lee M Ritterband[3], Kathleen M Griffiths[2], Frances P Thorndike[3], Nick Glozier[4], Bridianne O'Dea[1], Ian B Hickie[4], Andrew J Mackinnon[5]

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[5]ORYGEN Research Centre, University of Melbourne, Australia

Background: A novel way to reduce the risk of escalating depression symptomatology may be to offer an insomnia intervention rather than a standard intervention such as Cognitive Behaviour Therapy (CBT) or antidepressant medication, for those with insomnia and elevated but sub-clinical depression symptomatology. We investigated the potential for an online, self-help insomnia program to reduce depression symptoms, lower the number of cases of Major Depressive Disorder (MDD), and reduce suicide risk in individuals with both sleep difficulties and subclinical depression. **Methods:** For this 2-arm randomised controlled trial we recruited Australian Internet users aged between 18 and 64 with insomnia and depression symptoms but not Major Depressive Disorder (MDD). Participants completed the primary outcome measure (PHQ-9) and secondary outcomes Psychiatric Symptom Frequency Scale (PSF) at baseline, endpoint (6 weeks) and 6 months, and diagnostic status at 6 months by assessors blinded to participant allocation. **Results:** SHUTi significantly lowered depression symptoms at endpoint and 6 months compared to HealthWatch. Major depressive disorder was diagnosed in 22 participants at 6 months (9 from the SHUTi group and 13 from the HealthWatch group). There was no superior effect of SHUTi effect on MDD diagnosis (Fisher's exact test=0.52, p=0.32). The incidence risk ratio (IRR) was 0.69. Psychiatric Symptom Frequency Scale scores were significantly lower in the SHUTi condition at endpoint (t69.3 = -2.5, p=0.012), but not significant at six months. **Conclusion:** To our knowledge this is the first trial to, first reduce depression psychopathology using an insomnia treatment in participants with subclinical depression and insomnia, and second, to demonstrate the scalability and effectiveness of internet based self help for those a risk of depression using an insomnia intervention.

Looking for structural brain features associated with depression in young adults

Baptiste Couvy-Duchesne[1,2,3], Lachlan Strike[1,2,3], Paul Thompson [6], Katie McMahon[3], Greig de Zubicaray[2], Nick Martin[1], Ian Hickie[5], Margie Wright[1]

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Background: There is little consensus in the literature about brain changes associated with depression and anxiety. Structural markers of depression-anxiety are of importance as they could provide insight into the aetiology of depression and anxiety, as well as quantitative assessment of the depressed/anxious brain. **Methods:** In a population sample of young adults comprising 865 twins and siblings (63% female) we tested the association of 170 standard structural brain phenotypes (subcortical volumes, cortical surface area and thickness) with anxiety-depression from the Somatic and Psychological HEalth REport (SPHERE) (Hansell, et al., 2012; Hickie, et al., 2001). The SPHERE provides a self-reported measure of anxiety and depression computed from 18 items. Brain phenotypes were acquired on a 4T MRI scanner. Boundaries of the lingual gyrus were defined using parcellation available in Freesurfer 5.3. Models were corrected for age at MRI, sex, time difference between scoring and scanning, mean surface area or cortical thickness. **Results:** The only association to survive multiple testing correction was between anxiety-depression and surface area of the lingual gyrus (cubic relationship, p-value=4.9E-5). Higher anxiety-depression score was associated with a reduction (up to~15%) in surface area, with a genetic correlation of -0.31 [-0.51, -0.13], p-value=7.0E-4. The association was observed despite the anxiety depression score being acquired on average 4 years prior to scanning, (mean age at scan was 22, sd=3.1). In a nested case-control sample, a 3.3% reduction of right lingual surface area was observed in recurrent MDD cases (DSM-IV definition, p-value=0.015). **Conclusion:** We sought replication in an independent young adult clinical sample and investigated the robustness of the result using a genetically derived cortical atlas and a voxel based approach. We aimed to confirm the association of right lingual gyrus surface area with our continuous measure of anxiety-depression.

Can we identify which patients are most likely to have a nocebo response? Results from meta-analyses of the placebo arms of clinical trials

Seetal Dodd[1,2,3]

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Background: A nocebo response is an adverse reaction to treatment not adequately explained by the physical or pharmacologic actions of the agent, which may be a placebo. The nocebo effect may be an important yet covert factor contributing to adverse effects, poor clinical outcomes, and treatment non-adherence. **Methods:** Data from participants (N=2,457) randomised to placebo arms of clinical trials of duloxetine versus placebo as a treatment for major depressive disorder were analysed to identify variables associated with treatment emergent adverse events (TEAEs). The data was also probed to investigate; the expectancy hypothesis, that placebo treated participants will report TEAEs resembling those listed in the PI&CF, and; the conditioning hypothesis, that placebo treated participants will report AEs similar to the AE profiles of their previous treatment. **Results:** 1,569 placebo-treated participants (63.9%) reported treatment-emergent adverse events (TEAEs), with 115 (4.7%) discontinuing from the clinical trial due to a TEAE. Participants reporting TEAEs were characterised, revealing a complex profile of predictors of TEAEs. Unexpectedly, there was no evidence to associate TEAEs with adverse clinical outcomes, nor were the conditioning or expectancy hypotheses supported by these data. There was some evidence to suggest that people who had previously used complementary medications were more likely to report TEAEs. Placebo-treated study participants who reported or experienced HDRS worsening, study discontinuation, or TEAEs were studied to identify participant variables that were associated with these adverse outcomes. HDRS worsening was significantly associated with pre-existing apathy, greater number of previous episodes, longer duration of current episode, previous antidepressant treatment, smaller CGI-S score at study baseline and participant location in the United States. TEAE were significant for female gender. **Conclusion:** The factors contributing to the nocebo effect remain elusive and are inherently difficult to profile and characterize.

Online insomnia treatment and the reduction of anxiety symptoms: the role of cognitive-behavioural factors

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[5]Orygen Youth Health, University of Melbourne, Melbourne Australia

Background: Insomnia and anxiety commonly co-occur, yet the mechanisms underlying this remain unclear. The current paper describes the impact on anxiety of an internet-based intervention for insomnia, and explores the influence of two cognitive-behavioural factors – dysfunctional beliefs about sleep and sleep-threat monitoring. **Methods:** A large-scale, 9-week, two-arm randomised controlled trial (N = 1149) of community-dwelling Australian adults was conducted, comparing a CBT-based online intervention for insomnia (Sleep Healthy Using The Internet – SHUTi) with an attention-matched online control intervention (HealthWatch). Symptoms of Generalised Anxiety Disorder were assessed at pretest, posttest, and 6-month followup. Cognitive-behavioural factors were assessed only at pretest. **Results:** Reduction in anxiety symptoms was found to be significantly greater in the intervention condition at both posttest (d = 0.37; 95% CI: 0.25-0.48) and at 6-month follow-up (d = 0.24; 95% CI: 0.13-0.36). This effect was mediated by sleep-threat monitoring but not by dysfunctional beliefs about sleep; participants in the SHUTi condition with higher levels of sleep-threat monitoring showed a greater reduction in anxiety from pretest to posttest ($t1432.03 = -2.52$, $p < 0.05$). **Conclusion:** Online treatment for insomnia leads to significant reductions in anxiety, particularly for people who have high baseline levels of sleep-associated monitoring. This might suggest that CBT for insomnia is more effective for people whose sleep disturbance is maintained primarily by maladaptive behavioural patterns rather than cognitive factors.

Mini Concurrent 8, Depression - Free, St Germain, 1400–1500

Identification of co-occurring depression and alcohol misuse by general practitioners

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Background: Depression and alcohol misuse commonly co-occur and have a debilitating impact on sufferers. Identifying these individuals in a general practice setting offers opportunity for treatment and referral. Identification of depression and alcohol misuse by General Practitioners (GPs) is the initial step for this process. This study will determine agreement rates between GP unassisted identification of depression and alcohol misuse compared to patient self-report measures. The characteristics associated with accurate identification by GPs will also be examined. **Methods:** Patients attending selected GP clinics were asked to complete a survey on a computer tablet. The survey included demographic and health risk behaviour questions, including measures for depression and alcohol use. For a random subsample of consenting participants, GPs were provided with a single page checklist of six health risks and were asked to indicate the presence or absence of each health risk. **Results:** Of the 1,306 patients with complete data available, 96 (7.4%) were at risk for co-occurring depression and alcohol misuse. Overall sensitivity of GP identification compared to patient self-report was low (21%). Higher alcohol misuse, no chronic diseases and lower education were found to increase likelihood of GP identification. **Conclusion:** There was a large disagreement between GP identification of co-occurring depression and alcohol misuse and patient self-report. Routine screening for mental health conditions prior to patient appointments may be a simple, efficient way to overcome this gap. Further research is needed to increase GP awareness and identification of individuals suffering depression and alcohol misuse.

Effectiveness of systems-based suicide prevention programs for protective and emergency services employees: a systematic review and meta-analysis

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Background: Work suggests that protective and emergency services workers (e.g., police, defense employees) have higher rates of suicide compared to the general working population. Although a number of organizational responses have been developed to prevent suicide in this population, to date there have been few investigations into the effectiveness of these programs. Systems-based approaches, which combine primary, secondary, and tertiary activities to foster resiliency and provide better access to specialist mental health services may be better placed to address suicide risk in these occupational groups compared to individually focused initiatives. The aim of this project was therefore to provide an overview of the effectiveness of systems-based suicide prevention programs in protective and emergency service workers. **Methods:** A systematic search of 11 electronic databases indexing literature from criminology, police science, psychology, medicine, population health, and sociology was undertaken. Studies of systems-based suicide prevention programs indexed to 30 June, 2015 were eligible for inclusion. Pooled risk ratios and 95% confidence intervals were calculated using the random effects model in Comprehensive Meta-Analysis, version 3. **Results:** Most included studies evaluated the effectiveness of a suicide prevention program for defense employees. There were no eligible studies of programs targeting ambulance personnel despite recent work reporting significantly elevated rates of suicide in this occupational group. Overall, programs were associated with a significant reduction in suicide rates as compared to pre-intervention rates. **Conclusion:** Systems-based responses appear to be successful in reducing suicide rates in these occupational groups. However, relatively few have been evaluated for effectiveness using either a case-control or randomized research design. Furthermore, most interventions currently intervene at the secondary and tertiary level by providing basic psychoeducation and facilitating referral to mental health services. Few truly embrace a systems-based response to address organizational factors that contribute to suicide risk.

Disproportionate impulsive and repeated intentional self-poisoning associated with use of selective serotonin reuptake inhibitors in patients with comorbid depression and alcohol use disorders

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Background: Selective serotonin reuptake inhibitors (SSRIs) are commonly used to treat comorbid depression and alcohol use disorders (DEP+AUD), though available clinical trials that assess SSRI efficacy in dual diagnosis patients are limited and findings are inconsistent. Furthermore, studies that have investigated safety and efficacy of SSRI use in presence of comorbid AUD do not compare outcomes in depressed patients without an AUD (DEP-AUD). This study compared rates of impulsive self-harm, rates of repeated self-harm and severity of suicidal thoughts between DEP+AUD and DEP-AUD with respect to SSRI use. **Methods:** This study is an analysis of consecutive hospital presentations following deliberate self-poisoning between 1992 and 2013. 1673 patients (563 males and 1110 females) diagnosed with DEP were included. Patients were split up into six groups according to their prescribed medication (i.e. medication-free, SSRI, non-SSRI antidepressant) and the presence/absence of an AUD (DEP+AUD, DEP-AUD). **Results:** Compared to DEP+AUD that were medication-free, DEP+AUD treated with SSRIs had higher odds of impulsive self-poisonings (OR = 2.01, 95%CI: 1.09, 3.68, $p < 0.05$), and repeat hospital admissions (OR = 2.55, %CI: 1.25, 5.20 $p < 0.05$). No other diagnostic or medication group displayed similar increased ORs. There were no differences noted in presence or severity of suicidal thoughts between the groups. **Conclusions:** These results show that use of SSRIs in DEP+AUD are associated with higher odds of impulsive and repeated self-poisoning. These findings may suggest that efficacy of SSRI use in reducing impulsivity (and hence impulsive and repeat self-poisoning) is reduced in people with comorbid AUD. These findings add to accumulating evidence that comorbid AUD in depression significantly impacts treatment response to SSRIs, and this may be related to differential neurobiology.

Depressed, substance dependent individuals with and without social anxiety: occurrence and clinically important differences

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Background: Substance use disorders (SUDs) are strongly related to depression and social anxiety disorder (SAD). It is well established that depression among individuals with SUDs is associated with poorer physical and mental health, poorer treatment outcomes, and higher rates of attempted and completed suicide. What is less well known is the impact of SAD on individuals with comorbid depression and SUDs. **Methods:** This study will use data from the Activate study, which is a parallel, single blind, randomised controlled trial that seeks to evaluate the efficacy of Behavioural Activation Treatment for Depression in individuals in treatment for substance dependence. Using the Activate data, alongside measures of SAD added to the baseline Activate questionnaire, this study aims to: 1) Provide new information on the prevalence of co-occurring SAD in a clinical sample of depressed, substance dependent individuals; and 2) Compare baseline characteristics of people with and without SAD in terms of their demographics, mental health and wellbeing. **Results:** Of the 132 participants recruited, 72.7% (n = 94) met DSM-IV criteria for SAD. No differences in socio-demographic characteristics between those with and without SAD were identified. Compared to those without SAD, those with comorbid SAD were more likely to have problematic levels of drinking, to have a history of self-harming behaviours, and to have higher levels of rumination. They were also less able to tolerate or withstand distress and had lower levels of behavioural activation for depression symptoms (all p-values were <.05). **Conclusion:** The high rates of co-occurring SAD amongst depressed individuals presenting to alcohol and other drug treatment services, and the associations this comorbidity has with health and wellbeing, is concerning. These findings are required to guide the development and implementation of appropriate treatments to this underserved population.

Keynote 3, Le Grand Ballroom 3, 1515–1600

Revitalising translational psychiatry

Steven E Hyman[1]

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The genetic analysis of schizophrenia, bipolar disorder, and autism spectrum disorders has achieved significant initial success. If the ultimate goal is better diagnostics and new therapies, however, there is still a long way to travel. We now face the significant challenge of transforming long lists of low penetrance genetic variants into molecular mechanisms that can inform the identification of biomarkers and the discovery of new effective treatments. Success will require that we (1) take seriously the polygenicity and heterogeneity of disorders; (2) respect the cellular diversity and circuit architecture of the human brain; (3) "humanize" our model systems; and (4) advance our understandings of the human biology of disease. Initial examples steps forward will be illustrated by research in schizophrenia.

Invited Presentation, Le Grand Ballroom 3, 1600–1630

Schizophrenia, the MHC locus, and complement: from human genetics to molecular mechanisms

Steven McCarroll[1,2], Aswin Sekar[1,2], Allison Bialas[3,4], Heather de Rivera[1,2], Timothy Hammond[3], Avery Davis[1,2], Jessy Presumey[4], Nolan Kamitaki[1,2], Katherine Tooley[1,2], Giulio Genovese[1,2], Matthew Baum[1,2,3], Vanessa Van Doren[1], Sam Rose[2], Robert Handsaker[1,2], Schizophrenia Working Group of the Psychiatric Genomics Consortium, Mark J Daly[2,5], Michael Carroll[4], Beth Stevens[2,3]

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[5]Analytical and Translational Genetics Unit, Massachusetts General Hospital, Boston, Massachusetts, USA

Background: Human genetics is beginning to identify parts of the genome that associate with schizophrenia risk; the difficult problem is increasingly to go from genetic associations to insights about molecular mechanisms. Perhaps nowhere has this problem seemed more daunting than in schizophrenia's strong but previously unexplained association with common genetic variation across the Major Histocompatibility Complex (MHC) locus, by far the strongest genetic result in schizophrenia at a population level. The potential for immune molecules or processes to contribute to schizophrenia has long been hypothesized, but the manner in which they do so is not known. **Methods:** We developed new molecular tools for dissecting complex forms of genome variation, and statistical/computational approaches for then imputing structural alleles into large genome-wide SNP data sets. We applied these to data for SNPs across the MHC locus from 28,799 cases with schizophrenia and 35,986 controls, from the Psychiatric Genomics Consortium. **Results:** We found that schizophrenia's association with the MHC locus arises in large part from an extreme form of structural variation affecting the complement component 4 (C4) gene. C4 segregates in many different structural forms, which we found promote widely varying levels of C4A and C4B expression in different individuals' brains. Among 28,799 cases with schizophrenia and 35,986 controls, structural alleles of C4 associated with schizophrenia in proportion to their tendency to promote higher brain expression of C4A. Conditional analysis and analysis of a long allelic series strongly indicated that this affect arose from C4. We found human C4 protein localized at neurons and synapses. We describe experiments indicating that C4 promotes the elimination of synapses in the developing nervous system. **Conclusion:** The implication of the classical complement pathway and synaptic pruning in schizophrenia may help to understand the principal known pathological observation in schizophrenia brains – the abnormal loss of gray matter and dendritic spines. The implication of excessive complement activity in schizophrenia might point the way toward novel potential therapeutic strategies.

SMHR Poster Abstracts

Smoking behaviours and motivators and a pilot feasibility smoking cessation intervention for young people with first episode psychosis (FEP) or at high risk of psychosis

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Background: Patients with severe psychotic illness have higher rates of cardiovascular disease and premature death in comparison to the general population, resulting in a 10-20 year mortality gap. At the onset of first episode psychosis (FEP) the rate of smoking is estimated to be six times higher than age-matched peers. This study examined the prevalence of smoking and motivators to smoke among a sample of patients receiving specialist early intervention services in a community mental health centre. A pilot smoking cessation intervention was developed and trialed to assess feasibility and preliminary effectiveness. **Methods:** A cross-sectional study among 89 patients aged 16-27 years attending the Early Psychosis Service between April 2015 and July 2015 was conducted to identify daily smokers, those who had smoked within the past six months, and non-smokers. Among the smokers, data was collected assessing usage history, nicotine dependence, and motivators to smoke using validated assessment items. Carbon monoxide biofeedback was utilized to confirm smoker status. Subsequently a 4-week individualized smoking cessation intervention comprising counseling and nicotine replacement therapy was developed and trialed to assess suitability and applicability among this population. **Results:** Preliminary statistical analysis indicates that 40.7% of patients are current daily smokers (n=59, 62% male). Among daily smokers, the mean number of cigarettes smoked per day was 10 and the average age of first cigarette was 14. In total, 45% of smokers were assessed to be of moderate nicotine dependence, 40.9% had not received cessation advice from a health professional in the previous 12 months, and 72.7% had attempted to quit in the previous 12 months. The sedative and addictive properties of cigarettes were most commonly listed as motivators to smoke. **Conclusion:** The results provide important information regarding smoking habits and behaviours of young people with FEP and those at high risk.

Modifiable cardiometabolic risk factors in youth with at-risk mental states: a cross-sectional study

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Background: Young people experiencing psychotic illness are known to engage in low amounts of physical activity, have poor fitness levels and poor sleep quality. This study aimed to determine if these cardiometabolic risk factors were prevalent among individuals with At-Risk Mental States (ARMS), a population at increased risk of developing psychosis. This study aimed to recruit individuals with ARMS (established by a detailed clinical assessment conducted by a youth mental health clinician) who will be compared to age and gender matched controls. **Methods:** A cross-sectional, feasibility study was conducted at the Bondi Junction community centre (SESLHD). Participants were males and females between the ages of 18-25 who were not currently pregnant. Physical activity levels were assessed using the International Physical Activity Questionnaire - Short form and ActiGraph accelerometers over a seven-day period. Aerobic capacity was assessed via a sub maximal aerobic exercise test (YMCA protocol). Other assessments included upper body strength (push up test), hamstring flexibility (sit and reach), forearm grip strength (dynamometer) and core endurance (1 minute crunch test). Anthropometry (weight, body mass index (BMI) and waist circumference) and metabolic profile (resting blood pressure and fasting blood glucose) were also obtained. Sleep behaviour was assessed via objective (wrist-worn accelerometers) and subjective (Pittsburgh Sleep Quality Index) measures. **Results:** As of August 2015, 10 (80% males) participants had been recruited (ARMS n=5, control n=5). The mean age of participants was 21.3±1.7 years. The ARMS group did not differ significantly on anthropometric and physical activity measures, however did display significantly worse sleep rating to the PSQI ($p<0.05$). **Conclusion:** Preliminary analysis suggests that youth with ARMS do not have a worse cardiometabolic profile compared to age-matched controls. When completed this study will provide evidence regarding the physical health of individuals with ARMS.

Personality risk factors for adolescent bullies, victims and bully-victims

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Background: Bullying is a significant problem affecting the wellbeing of children worldwide. Identifying risk factors for bullying can aid bullying prevention. Personality is an individual risk factor found to be important in many emotional and behavioural problems among adolescents, yet research on the association between personality and bullying among adolescents is limited. The current study aimed to examine concurrent and prospective associations between personality and bullying victimization and/or perpetration among a sample of Australian adolescents. **Methods:** This study examined associations between bullying and personality in a longitudinal cohort of secondary school students in Australia over 24 months (Baseline: n=527; average age 13 years, 67% female, 93% Australian-born). Bullying was measured using an amended version of the 'Revised Olweus Bully/Victim Scale' (Olweus, 1996); participants were classified as passive victims, pure bullies, bully-victims or uninvolved. Personality was measured using the Substance Use Risk Profile Scale (Woicik et al., 2009); total scores were computed for hopelessness (H), anxiety-sensitivity (AS), impulsivity (IMP), and sensation seeking (SS). The data was analysed using multinomial logistic regression. **Results:** 20% of students were classified as passive victims, 5% as bully-victims and 2% as pure bullies. Concurrent associations provided evidence of different personality profiles for each bullying group: passive-victims were characterised by high H (at age 13 and 15); pure bullies were characterised by high IMP (at age 13 and 15) and low SS (at age 15); bully-victims were characterised by high IMP and high SS at age 13 and by high H and high AS at age 15. A prospective relationship was found between high H at age 13 and passive victim status at age 15. **Conclusion:** Personality appears to be a significant risk factor for bullying involvement. The current findings indicate that a personality-focused intervention may be effective in improving bullying prevention outcomes among adolescents.

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The development of a personalised assessment and feedback system for young people with emerging mood disorders

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A major focus for clinical neuroscience internationally is to further our understanding of psychiatric disorders and investigate clinical sub-groupings that more closely link to brain development and underlying pathophysiology1. This is particularly important for emerging mood disorders with an early onset (before age 25) since young people often present with mixed syndromes and sub threshold symptoms that don't necessarily meet traditional diagnostic criteria, making it difficult to reliably identify a particular illness trajectory2. Moreover, this affects our current capacity to provide tailored early interventions and prevent the progression of illness or slow the pathway to social, educational and vocational disability. In collaboration with young people through participatory design workshops, rapid prototyping and user testing, we have developed an innovative online system that delivers a comprehensive tailored assessment of a young person, which along with clinical input from their clinician produces a personalised clinical report that is meaningful and useful to both the young person and clinician. The personalised clinical report provides information regarding, social and economic functioning, physical health risks, suicide and self-harm concerns, alcohol or other substance misuse, lifetime and current psychiatric symptoms and/or diagnosis, and medical history. The report is displayed in a way that is easy to understand so that detailed and sometimes complicated results are made clear for the young person and their clinician. Since the report supported by innovative technology developed specifically for improved personalised assessment, it can be used to monitor particular clinical outcomes, direct specific interventions, or direct more detailed assessments that aim to clarify a young person's clinical subgrouping to increase a clinician's confidence in the young person's phenotype and/or diagnosis. Importantly, the system actively engages the young person in the assessment and intervention process by providing feedback that keeps them informed and in control of their care.

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University student expectations and experiences of stigma when disclosing mental health problems in the university context

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Background: The prevalence of mental disorders is high amongst university students. Despite this, very few students seek help for mental health problems. University teaching staff members may be well positioned to offer an initial point of contact for referral onto appropriate sources of professional help. However, little is known about student views on the role of university teaching staff in supporting student mental health, and their expectations and experiences of stigma surrounding the disclosure of mental health problems in the university context. **Methods:** An anonymous online survey was sent via e-mail to a random sample (n = 5265) of students at the Australian National University. A total of 611 students completed the survey (11.6% response rate). Measures included demographic information, intentions to disclose a mental health problem at university, anticipation and the experience of stigma or discrimination associated with disclosure of mental health problems at university, and student opinions about the role of university teaching staff in supporting student mental health. **Results:** Overall, 39.5% of students reported that they would not disclose a mental health problem in a university context, 57.2% expected to experience stigma or discrimination if they disclosed, and 11.8% had previously experienced stigma or discrimination about mental health problems at university. Despite this, the majority of students (82.3%) agreed that lecturers and tutors could play a role in supporting student mental health. **Conclusion:** A large percentage of students would not report a mental health problem at university, with many of these anticipating encountering stigmas if they chose to disclose this information. Reducing perceptions of stigma and discrimination from staff and students is critical in encouraging young people to seek help in a university context.

Tracking subcortical volume changes in young people with affective and psychotic disorders

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Background: Affective and psychotic disorders are among the most common disorders affecting young people, leading to deficits in psychosocial and cognitive functioning. Early intervention has been effective in helping young people before symptoms become more severe, however objective measures that track the progression of illness in this cohort are lacking. The present study used neuroimaging to investigate subcortical volume differences between healthy controls, young people at an early stage of their disorder and those with more advanced illness to identify the relationship between neuroimaging markers and functional outcomes. **Methods:** Young females presenting to youth mental health services with admixtures of depressive, manic and psychotic symptoms (n=108), and control females (n=37) aged 18-25 were recruited. All participants underwent magnetic resonance imaging, standardized clinical assessments and were rated clinically as to their current stage of illness. Sixty-four patients were identified at the early stage of illness and 44 were classified as being at a more advanced stage of illness. Automated segmentation was performed using NeuroQuant® to determine volumes of subcortical structures. Volumes of six subcortical structures were compared between groups, using MANOVA with bonferroni corrections. **Results:** In the early staged group caudate volumes were significantly lower compared to controls ($p=0.015$), but not compared to the later staged group ($p=0.279$). Reduced caudate volume was correlated with worse functional outcomes including: higher ratings of depression, self-reported psychological distress and disability and poorer social and occupational functioning across all groups ($p<0.05$). **Conclusion:** Abnormalities in caudate volume predict the development of affective and psychotic disorders in young people, even at an early stage. Poorer functional outcomes are already evident in this early stage, which may relate to structural changes in the caudate. Further investigation into the relationship between the caudate and illness progression is necessary to understand its role in the later stages of these disorders.

An investigation of the relationship between state and trait anxiety and executive functioning in youth and young adults with autism spectrum disorders and social anxiety disorder

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Background: Negative emotional states (anxiety, stress and depression) are often associated with clinical populations and anxiety has often been described as a core feature in individuals with Autism Spectrum Disorder (ASD) and it is also a diagnostic criterion in people with a Social Anxiety Disorder (SAD). Although both groups display deficits in social functioning the underlying mechanisms which lead to social dysfunction are subject to debate with deficits in executive functioning (EF) identified as a probable mechanism. This suggests that clinical correlates including anxiety may play an important role in the expression of executive dysfunction and the underlying mechanisms may vary dependent on the population of interest. The present study first examined differences in executive functioning between ASD and controls in a meta-analysis across five key domains of executive function. These findings where then examined in the ASD and SAD clinical populations and their correlation with self-reported measures of emotional states (anxiety, stress and depression) was explored. **Methods:** A meta-analysis of EF studies in ASD was undertaken examining differences between ASD and controls across five key domains of EF. The meta-analysis included 151 studies and over 4000 subjects in each of the groups. These findings guided the second part of the research. Specifically, two groups of patients (youth and young adults with a diagnosis of either ASD or SAD) were compared on neurocognitive measures of EF and the correlation of the above with self-reported measures of state and trait anxiety and other emotional states was explored. **Results:** The meta-analysis identified differences in in the five key domains of executive function. These results and the differences between the two clinical groups are discussed in the context of the overall clinical correlates of emotional states and their relationship to neurocognitive function. **Conclusion:** Implications for future research including theoretical models and clinical interventions will be outlined.

The Keeping Our Staff In Mind initiative: empowering mental health staff to address poor physical health through an individualised lifestyle intervention

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Background: People experiencing severe mental illness face a shortened life expectancy of up to 20 years, primarily due to preventable cardiovascular diseases. Physical health issues of people experiencing mental illness are often overlooked due to diagnostic overshadowing of mental health issues. The Keeping the Body in Mind (KBIM) program, established by SESLHD, aims to help close the gap in life expectancy for people with severe mental illness through multidisciplinary teams, including clinical nurse consultants, dietitians, exercise physiologists, and peer support workers. Prior to the rollout of the KBIM program, an individualized lifestyle intervention called Keeping Our Staff In Mind (KoSiM) was offered to all district mental health staff. **Methods:** All mental health staff (clinical and non-clinical) were invited to participate in an online survey and/or a 4-week individualized lifestyle intervention. The survey assessed staff physical health and knowledge and confidence in providing physical health interventions, as well as perceived barriers to physical health care. The intervention consisted of personalised health screening and lifestyle advice with a 16-week follow-up. Outcomes assessed included: Metabolic Barriers Attitudes Confidence and Knowledge Questionnaire (M-BACK), cardiometabolic health (weight, BMI, waist circumference, blood pressure), sleep behaviour, smoking, diet, physical activity and exercise capacity. **Results:** Out of a total of 702 staff, 204 completed the survey (29%). Among those completing the survey, 154 staff (75%) participated in the intervention. Staff participated in a four-week intervention that was delivered by the new KBIM teams. While the intervention targeted the physical health of staff, the goal was to inform staff about how dietetic and exercise interventions are delivered, to help facilitate culture change and challenge the embedded culture of acceptance regarding poor physical health of mental health consumers. **Conclusion:** KoSIM aims to drive culture change in mental health services to improve physical health outcomes for people living with mental illness.

Assessing physical activity among people experiencing mental illness: development and validation of the Simple Physical Activity Questionnaire (SIMPAQ)

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Background: Physical activity is consistently associated with improved physical and mental health among people experiencing mental illness. This vulnerable population engages in high levels of sedentary behavior resulting in poor cardiorespiratory fitness, which is independently associated with all cause morbidity and mortality. Coupled with high rates of smoking and poor dietary habits, physical inactivity is a key modifiable risk factors contributing to the gap in life expectancy facing people with mental illness. Given increasing interest physical activity as a component of treatment, ensuring that valid, clinically useful and feasible measures of physical activity are available for routine use is of paramount importance. Existing self-report measures fail to address unique considerations and limitations faced by people experiencing mental illness. Therefore a new, dedicated self-report tool was required. **Methods:** A multi-disciplinary international working group was established in Padua, Italy in April 2014 with the aim of developing a new self-report physical activity measure for use with mental health populations. An interdisciplinary team with expertise in physical activity, physiotherapy, exercise physiology, psychiatry, epidemiology and public health from 18 countries was involved in the iterative design of the new measure. In addition, 49 clinicians and researchers completed an online survey in May 2014, to help guide the development of the new tool named the Simple Physical Activity Questionnaire (SIMPAQ). A subsequent meeting of the international working group was held in London, UK June 2015. **Results:** The five-item SIMPAQ is a pragmatic clinical interview by which clinicians can assess the physical activity levels of people experiencing mental disorders. SIMPAQ has been designed to more accurately assess physical activity levels among populations at high risk of very sedentary behavior. **Conclusion:** Validation will occur across various sites, diagnostic groups and languages (including Dutch, German, Portuguese, Icelandic, Finnish, Mandarin) and will be completed by the end of 2016.

The effects of a 2 year diet & exercise programme on mental health

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Background: The effects of a 2 year diet and exercise programme on Mental Health. The study involved 39 participants who were offered the opportunity to take part in a mental health assessment, which included neurological (Webneuro) and psychological assessments using the structured clinical interview for the DSM-IV. The objective of the interview process was to enable to determine the differences between two very different diets on mental health. **Methods:** Each participant underwent a 3 hour interview which included the Becks Depression Inventory, the Hamilton Depression Scale, the Hamilton Anxiety scale, the Structured Clinical Interview (SCID) for the DSM-IV and the Webneuro. All participants were diabetics, but the long term diet had a major impact on their lives with some people losing up to 20kg. There were two types of isocaloric diets – diet 1 was a low carb version, and diet 2 was a high carb version. We correlated the neuropsychological results with all of the physiological factors that had been measured across the 2 year CSIRO led programme. **Results:** The two diets showed differing results for specific neurological attributes, but diet 1 showed that there were more benefits for memory ($p<0.002$), such as attention of digit span recall ($p<0.00003$), and higher scores on the verbal interference tests ($p<0.001$), which correlated with a lowering of diastolic blood pressure. Those on diet 2 however had a greater ability to more readily identify with happy facial expressions (happiness accuracy bias), which also correlated to a lowering of blood cholesterol ($p<0.0003$). **Conclusion:** There were overall psychological benefits to this two year diet and exercise programme. The pilot study has demonstrated the need for long term research on diet, exercise and mental health. We can attune diets to specific mental health deficits, and with more research we can refine our diet to produce the best mental health outcomes for Alzheimer's, depression and other disorders.

Systematic meta-review of the effectiveness of treatments for comorbid mental and substance use disorders

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Background: Various treatment modalities exist for people with comorbid mental and substance use disorders. A comprehensive understanding of the effectiveness of different treatment types for this population can inform evidence-based health service planning. **Methods:** We conducted a meta-review of systematic reviews published between 2004 and 2014 that evaluated treatments for adults with a diagnosis of comorbid substance use and mental disorder. Reviews were identified via a systematic search of the Pubmed, PsycINFO, CINAHL and Cochrane library databases. Outcomes of interest included changes in substance use or increased abstinence rates, and changes in mental health outcomes, such as reduced psychiatric symptoms or improved psychological functioning. Interventions were considered within four broad categories: integrated treatments (i.e., the delivery of treatments for mental and substance use disorders by the same service provider), non-integrated psychosocial treatments, non-integrated pharmacological treatments and other treatments. **Results:** Twelve reviews met inclusion criteria. Integrated treatments demonstrated superior substance use and mental health outcomes compared to standard or no treatment; with mixed findings when compared to non-integrated treatments. Integrated treatments were more effective if targeted at specific mental disorders such as depression, anxiety or post-traumatic stress disorder that were also co-morbid with a substance use disorder. Non-integrated psychosocial treatments, delivered individually and through group format, also demonstrated positive substance use and mental health outcomes compared to standard or no treatment. Few reviews focused on pharmacological treatments and other treatments (e.g. rehabilitation). Quality of the reviews was generally low. In particular, the methodological quality and publication bias of included studies were rarely assessed. **Conclusion:** Implications for service planning include the provision of disorder-focused interventions and group psychosocial treatments to improve the effectiveness of treatments for this population. Failure to consider potential publication bias in the evaluation of evidence is especially problematic, as this may systematically overestimate conclusions on treatment effectiveness.

A prospective study of the substance use and mental health outcomes of young adult cannabis users and past users

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Background: Little is known about the impact of ceasing cannabis use in young adulthood at a point beyond the peak period of experimentation. We aimed to investigate the substance use and mental health outcomes associated with past and regular cannabis use in young adulthood. **Methods:** Data (N=1410) were reported from the 20+ year cohort of the PATH Through Life Study. Lifetime cannabis users at age 23 years were classified as former/occasional/regular users. Multivariable logistic regression models were used to estimate the association between cannabis use at age 23 years and six outcomes assessed at age 27 years. **Results:** Compared to occasional users, former cannabis users had odds of subsequent: (i) tobacco use that were 30% lower; (ii) recent cannabis use that were 80% lower; (iii) cannabis dependence symptoms that were 80% lower; (iv) other illicit drug use that were 70% lower; and, (v) mental health impairment that were 30% lower. Regular cannabis users had odds of subsequent: (i) regular alcohol use that were two times greater; (ii) tobacco use that were four times greater; (iii) recent cannabis use that were 12 times greater; (iv) cannabis dependence symptoms that were 13 times greater; and, (v) other illicit drug use that were three times greater. Associations were attenuated after adjustment but most remained significant. **Conclusion:** Ceasing cannabis use in young adulthood confers considerable benefits over and above even infrequent use. Regular cannabis use in young adulthood has multiple adverse consequences. Findings support interventions that actively target young adult cannabis users after the peak age of onset.

The feasibility and efficacy of exercise as an adjunctive treatment for reducing craving levels among inpatients with alcohol use disorders

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Background: Alcohol use disorders affect 18.3% of Australians, of which 3.9% are classified as alcohol dependent. Alcohol dependency is associated with a range of comorbidities leading to premature mortality. Individuals living with an alcohol use disorder suffer from poorer physical health increasing the risk of developing cardiometabolic disease and other chronic diseases which have been identified as key modifiable risk factors. The use of structured physical activity may assist individuals affected by substance use disorders. Although limited, previous research has demonstrated that physical activity and structured exercise may decrease levels of substance use and increase duration of abstinence. There is a lack of research investigating of the effect of exercise on alcohol urges among inpatient populations. Therefore we aimed to assess the feasibility and effecacy of an exercise intervention on alcohol urges among inpatients with a diagnosis of alcohol dependency. **Methods:** A prospective 14-day intervention study was conducted among 10 (60% males) participants with a DSM-V diagnosis of alcohol dependency. Inpatients receiving treatment at St John of God Hospital Richmond, Sydney aged 18 – 65 years and medically cleared to participate in an exercise program were eligible to participate. Outcomes were assessed at various time-points (baseline, pre- and post exercise sessions, and discharge) and included alcohol dependency (AUDIT), alcohol urge questionnaire (AUQ), mood (DASS and PANAS), physical activity (IPAQ) and sleep behaviour (PSQI). An individualised 6-session exercise program was delivered by an accredited exercise physiologist. **Results:** Significant reductions in post exercise alcohol cravings were found (p=001). Significant post exercise reductions were also found for all mood measures including depression (p=0.002), anxiety (p=0.013) and stress (p=0.004) respectively. A significant change in positive affect post exercise was demonstrated (p= 0.001). **Conclusion:** Preliminary data suggest that exercise may be a promising adjunctive treatment for inpatients with alcohol dependence.

The role of planning in naturalistic quitting success among people with severe mental illness

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Background: People with severe mental illness are less likely to quit smoking successfully. Planning is widely believed to increase rates of successful quitting and popular models of behavior change focus on planning as key. Symptoms of severe mental illness can limit the psychological forces available for quitting and impede planning. This study aimed to explore the role and nature of planning in smoking cessation among people who use Community Managed Mental Health Services (CMMHS). **Methods:** This study used Interpretative Phenomenological Analysis to explore naturalistic quitting success among people with severe mental illness who use CMMHSs. **Results:** Analysis of the experiences of fifteen participants who had quit smoking for periods ranging from one week to eight years was used to develop definitions of spontaneous, unplanned and planned smoking cessation. **Conclusion:** Planning was not a necessary precursor to quitting success. The need for clear definitions of quitting types is important because current models encourage health professionals to promote planning. People with severe mental illness should be supported with the method of their choosing, rather than emphasizing planning in all cases.

The long-term impact of PTSD on recovery from heroin dependence

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Background: Post traumatic stress disorder (PTSD) is highly prevalent among individuals with heroin dependence. Although a number of studies have examined the impact of PTSD on treatment outcomes for heroin dependence in the short-term, none have investigated the impact of this disorder on long-term recovery. Using data collected as part of the Australian Treatment Outcome Study, the present paper aims to examine the impact of PTSD on heroin use over 10-11 years. **Methods:** 615 people with heroin dependence were recruited to the study in 2001-2002, and more than 68% of the sample was re-interviewed in 2011-2013. Lifetime and current DSM-IV diagnoses PTSD were obtained at study entry using the Composite International Diagnostic Interview version 2.1. **Results:** At baseline, approximately 40% of the sample was diagnosed with lifetime PTSD and 30% were experiencing current symptoms. There were no significant differences between those with and without PTSD in terms of heroin or other substance use at the 10-11 year follow-up. Close to one-half were in treatment for their heroin dependence, approximately 25% were still using heroin, and 15% met criteria for a diagnosis of dependence. However, at the 10-11 year follow-up, those who met criteria for PTSD at baseline were significantly more likely to meet criteria for current major depression, and more likely to have attempted suicide over the follow-up period. **Conclusion:** Consistent with research examining the short-term impact of PTSD on treatment outcomes for heroin dependence, the present study found that comorbid PTSD has a long-term impact on the mental health of individuals with heroin dependence. These findings highlight the importance of addressing underlying comorbid presentations among this group.

Genetic variation in the 15q25 nicotinic acetylcholine receptor gene cluster is not associated with snus use in Sweden, Norway and Finland

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Background: Meta-analyses of genome-wide association studies have established a robust association between the number of cigarettes smoked per day (CPD) and the CHRNA5-CHRNA3-CHRNB4 gene cluster on chromosome 15q25 which encode nicotinic acetylcholine receptor subunits. Variation in this gene cluster is also associated with nicotine dependence and a wide range of cigarette smoking behaviours. This meta-analysis examines snus use in three Scandinavian cohorts to assess whether the gene cluster is also associated with other forms of tobacco use. **Methods:** Three phenotypes were analysed; age of onset of snus use (AOI), ever versus never snus use (EVRSNUS) and the number of boxes of snus consumed per month (BPM). Association analyses included cigarette use (ever or regular smoking), gender, age, birth year and Principal Components as covariates. This study included a maximum of 7619 participants spanning three countries (Sweden, Norway and Finland): 1474 EVRSNUS cases and 6145 controls, 1205 subjects with AOI and 1247 subjects with BPM data. Meta-analyses were conducted in METAL using summary statistics. **Results:** There was little or no evidence for association between the snus traits and 15q25 variants (non adjusted P-values ≥ 0.001). However, three genome-wide significant associations ($p < 5E\text{-}08$) were observed in CHRNB4 for the cigarette-related trait CPD in the Swedish sample. **Conclusion:** These results provide evidence that the CHRNA5-CHRNA3-CHRNB4 gene cluster does not have a significant effect on snus use and that the influence of variants in this region on tobacco use may depend on the mode of ingestion.

Pharmaceutical cognitive enhancement among Australian university students

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Background: 'Pharmaceutical cognitive enhancement (PCE)' is the non-medical use of prescription stimulant medications, such as Methylphenidate or Modafinil, in an attempt to enhance cognitive performance in normal individuals. University students are often portrayed as the biggest consumers of PCEs and there are claims in the bioethics literature and popular media that this practice is widespread and increasing (especially in the US). There is limited evidence that PCE takes place among university student populations in Australia. It is important to assess its prevalence and potential harms. **Methods:** An online survey was constructed and piloted, based on previous literature and interviews with students, using Checkbox software. Students from 3 institutions on the east coast of Australia were emailed a link to the survey via their institution's online blackboard. 996 students participated (aged 18-29). The survey covered demography, educational profile, attitudes towards PCEs, use of substances for cognitive enhancement, health habits, drug and alcohol use, and attitudes and styles of studying. **Results:** 63% of students had heard of PCE, predominantly from the Internet/media and friends/peers, with 58% of students stating that they would not be willing to try PCEs for cognitive enhancement purposes. Majority of students rated the use of PCEs as 'never or rarely' acceptable. 2.5% of students have tried prescription stimulants for cognitive enhancement on at least one occasion in the past, with only 0.05% students having done so in the last year. 81% of stimulant PCE users reported that these stimulants 'worked as expected' by the user. The most common motivations reported for use were 'to help me study better' and 'to help me take exams better'. **Conclusion:** Although some Australian university students report PCE use, the prevalence rates are low and regular use is rare. The majority of students do not think it is acceptable to use prescription stimulants non-medically for cognitive enhancement purposes.

Alcohol misuse in rural Australia: an investigation of rural-urban differences in adolescent alcohol use, alcohol supply and parental drinking

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Background: Alcohol misuse and harm are disproportionally higher in adults living in rural than urban Australia. Prevention of harm from alcohol consumption begins at early life. However few studies have examined rural-urban differences in adolescent drinking. This study investigated level of alcohol use in adolescents, and parental drinking and parental alcohol supply across regions. **Methods:** Data were drawn from the National Drug Strategy Household Survey (NDSHS) 2013. Participants who were aged 12-17 (N = 1159) and participants who indicated they were parents or guardians of a dependent child (N = 7059) were included in the analyses. Area of residence was defined based on the Accessibility/Remoteness Index of Australia Plus. Outcome measures were adolescent and parental alcohol use, parental supply of alcohol and drinking location. **Results:** Adolescents from rural areas were at 121% higher odds of obtaining their first alcohol from parents, at 287% higher odds of currently obtaining their alcohol from their parents, and at 126% higher odds of drinking in past 12 months. Parents from rural areas were at 63% higher odds of heavy drinking, at 52% higher odds of weekly drinking, and at 37% higher odds of drinking at home. **Conclusion:** Adolescents from rural areas were at higher risk of alcohol misuse. Parents in rural areas were more likely to use alcohol in ways that encourage adolescent drinking. A parent-focused community-based prevention approach that identifies contextual risk factors and utilizes local resources to increase parental awareness of the harmful effect of adolescent drinking and parents' role in preventing alcohol related-harm among adolescents is required to narrow the future disparities in alcohol abuse between rural and urban areas.

Patterns and correlates of new psychoactive substance use in a sample of Australian high school students

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Introduction: In recent years there has been growing concern about New Psychoactive Substances (NPS) designed to mimic the effects of established illicit drugs. This poster explores the patterns and correlates of NPS use in a sample of Australian students. **Methods:** A cross-sectional survey was conducted in 2014. Data were collected from 1126 students (mean age: 14.9 years) from 11 Sydney schools. Students completed a self-report questionnaire assessing NPS use and knowledge, beliefs and intentions to use these substances. NPS-users were compared to non-users and illicit drug users, who had not used NPS, in terms of gender, binge drinking, tobacco use, psychological distress and self-efficacy to resist peer pressure. **Results:** Of the 1126 students, 3% reported having ever tried NPS, 2.4% had used synthetic cannabis and 0.4% had used a synthetic stimulant. Analyses revealed that NPS-users were more likely to have had an episode of binge drinking in the past six months, tried tobacco and had higher levels of psychological distress and lower perceived self-efficacy to resist peer pressure than non-users, but did not significantly differ from users of other illicit drugs. **Conclusion:** NPS use appears to be uncommon among Australian school students. Although adolescents that do use these substances did not differ from students that had used traditional illicit drugs, both appear to be higher-risk groups of students than non-users. The findings suggest that universal education about NPS be incorporated into existing drug prevention programs, and that targeted NPS prevention may also be warranted among high-risk adolescents.

The Needs Focused Parenting (NFP) program: a pilot study protocol

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Background: Parental substance use disorder (SUD) is a serious concern affecting the well-being of children and families. Substance use amongst parents involved in the child protection system in Australia has been estimated at fifty percent1. Parents with a SUD have an increased risk of neglecting or abusing their children2, yet few parenting programs exist to address the complex needs of these families. This study aims to assess the feasibility and efficacy of a multi-component intervention for parents with a SUD. The NFP program targets risk and protective factors in a number of settings with the aim of increasing parent reflective functioning and parental confidence. **Methods:** The study is a single blind, randomised controlled trial conducted with clients identified through Child Youth and Family Services with substance use problems and willing to engage in a parenting intervention. Participants will be randomly allocated to either the NFP program (10 individual 60 minute therapy sessions) in conjunction with standard care (N=10), or standard care alone (N=10). Data collection will occur at baseline (pre-intervention), and three months post baseline. All interviews will measure substance use (Opiate Treatment Index), reflective functioning (Parent Development Interview), parenting style (Alabama Parenting Questionnaire-SF), parental discipline practices (Parenting Scale), distress tolerance (Distress Tolerance Scale), anxiety and depression (DASS). Client satisfaction will also be measured. **Results:** Currently the parenting intervention is being finalised and we are negotiating with services regarding recruitment of participants. An overview of the NFP program will be presented, and the methodology outlined. **Conclusions:** Parents with a SUD generally have fewer resources available to cope with the difficult task of parenting. The present study will explore the feasibility and effectiveness of the NFP program which is tailored for parents with a SUD. This will be of particular interest to services delivering interventions to parents with SUDs.

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Paternal hospital admissions for alcohol use disorders before, during and after the birth of their child: findings from a population based cohort using linked data

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Background: Alcohol is a known teratogen. Due to the negative effects of alcohol on the developing fetus, research into the impacts of alcohol in pregnancy has focused on maternal alcohol consumption and neonatal outcomes. Evidence suggests that maternal alcohol and other drug use decreases in pregnancy and that partners' alcohol and other drug use impacts use. Less is known about paternal drinking patterns during pregnancy. To address the gap, population-based data was linked to examine: i) Father's hospital admission rates of AUD before and after birth ii) Risk factors associated with hospital admission for AUD. **Methods:** Population birth data from the Perinatal Data Collection (PDC) was linked through the Registrar of Births, Deaths and Marriages (RBDM) and the NSW Admitted Patients Data Collection (APDC) to obtain information on fathers hospital admissions in the 2 years before and the 2 years after the birth of their first child. The study population includes fathers whose partner had their first baby between 2004 and 2009. Admission and readmission rates were calculated and demographic characteristics associated with admissions were examined. **Results:** Over 200 000 fathers were included. Almost 10% had an AUD hospital admission during the two years before pregnancy, the pregnancy and the two years after birth. There was a significant decrease in the rate of father's hospital admissions for AUD in the pregnancy period compared with the two years before and two years after the pregnancy. Compared to men admitted to hospital for a non-alcohol related diagnosis, those admitted with an AUD diagnosis were younger, unmarried and more likely to live in regional or remote areas. **Conclusion:** AUD admissions decrease for men during a partners' pregnancy. Interventions to prevent alcohol related harm post pregnancy may be required as AUD admission rates increase for fathers in the year post birth.

Surfing as an intervention for people with serious mental illness: a pilot study

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Background: Physical activity has been extensively linked with substantial mental health improvements. People suffering from mental health issues face many practical and psychological barriers to physical activity. Surfing in particular is an under-researched area that has great potential to target mental and physical health outcomes. **Methods:** A pilot program of the OneWave Surfing Experience was conducted from March to May 2015 and included 10 participants aged 20-55 suffering from serious mental health issues. The program provided a combined physical activity and psychological intervention in order to target multiple areas in an individual's life. The program offered additional support to overcome barriers and specific psychological skills training in conjunction with learning to surf. Data was collected to determine the impacts of the program. **Results:** Adherence was strong in this program, with participants attending an average of nine out of twelve sessions, a rate exceeding that usually seen in group programs with this population. There was a lack of change in most quantitative measures, however there was a slight increase in the WHO-QOL Psychological Domain. Qualitative analysis reviled that participants reported four areas of benefit through their participation: Life involvement (more direction, engagement, and overall improvements in life); psychological growth (cognitive shifts, empowerment, a stronger sense of self, learning perseverance, and experiencing pleasure); physical benefit (physical improvements and learning; and social support (experiencing a sense of community, practicing social skills, and decreased stigma). **Conclusion:** The OSWE achieved positive outcomes similar to those expects from a combination of individual therapy sessions, social skills groups, community de-stigmatising health initiatives, targeted physical activity programs, and structured lifestyle interventions. Participants enjoyed it and were therefore motivated to attend and achieve the full scope of these benefits. The OWSE program could therefore be a valuable component of care plans for individuals suffering from serious mental health issues.

The effect of bilateral saccadic eye movements on the performance of recognition memory task in patients with schizophrenia

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Background: Episodic memory impairments in patients with schizophrenia have been well demonstrated in the literature. Previous studies have shown that horizontal saccadic eye movements improve the retrieval of episodic memories in healthy individuals. The present study was conducted in order to investigate whether the memory-enhancing effects of bilateral saccadic eye movements could occur in schizophrenic patients. **Methods:** Twenty-one right-handed patients with schizophrenia participated in this study. Participants learned facial stimuli, which consisted of neutral and angry faces. Subsequently, they performed a recognition memory task using the facial stimuli after bilateral saccadic eye movements and eye fixation. Recognition accuracy, response bias and mean response time to hits were compared. Two-way repeated measure analysis of variance was performed for statistical analysis. **Results:** Mean response time after bilateral saccadic eye movements was significantly shorter than that after eye fixation ($F = 5.812$, $P < 0.05$). In addition, response bias was significantly reduced after bilateral saccadic eye movements relative to that after eye fixation ($F = 10.366$, $P < 0.01$). Statistically significant interaction effects were not observed between eye movement conditions and face emotion types. **Conclusion:** The present study showed that bilateral saccadic eye movements enhanced the performance of recognition memory task in patients with schizophrenia. This finding suggests that bilateral saccadic eye movements may be used for cognitive rehabilitation in patients with schizophrenia.

Multiple mechanisms of clozapine toxicity related to infection

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Background: Clozapine is a unique antipsychotic medication that is effective in 30-60% of cases of treatment resistant schizophrenia. Regular white cell count (WWC) monitoring for agranulocytosis is required for prescription. At toxic levels seizures, hypotension, sedation, respiratory depression and death can occur. An increasing number of case reports have linked clozapine toxicity to infection. Here, we present a systematic review including 5 new cases of raised clozapine levels associated with infection or inflammation. **Methods:** We searched PubMed using the string "clozapine AND (infection OR inflammation OR antibiotic)" filtered for Human studies and English language publications and selected articles were searched for other primary references. Five incident cases of raised clozapine levels associated with infection were identified during routine clinical practice. **Results:** From 122 publications, 16 articles reported cases of raised clozapine associated with infection or inflammation. Levels were taken prior to antibiotic treatment in 16 cases and after antibiotic treatment known to increase levels in 12 cases. In 3 cases no infective organism was identified suggesting that toxicity was associated with inflammation alone. Levels increased between 52 and 836%. Clinical signs of toxicity occurred across a range of levels (890 ug/L to 4740 ug/L). Reporting of confounding factors such as smoking cessation, liver and renal function, baseline level, recent dose changes or adherence was incomplete. Toxicity was managed by temporary cessation or dose reduction. **Conclusion:** Thirty one cases of clinically significant elevations in clozapine levels were associated with infection, hospitalization and antibiotic treatment. It appears that smoking cessation, antibiotic treatment and the inflammatory response converge on metabolism at CYP1A2. Prospective studies are required to assess the individual contribution of these variables to clozapine toxicity. Routine WCC monitoring, use of therapeutic drug monitoring and timely dose reduction on presentation and during hospitalization for infection may reduce the rate of complications.

Comorbid depressive pathology, neurocognition and emotion recognition in first-episode schizophrenia spectrum

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Background: Depressive pathology (symptoms, caseness, full-threshold major depressive disorder [MDD]) is common in 'non-affective' or first-episode schizophrenia spectrum disorders (FES). Both MDD and FES are associated with significant neurocognition and emotion recognition deficits. Individuals with comorbid depressive pathology and FES may experience poorer neurocognition and emotion recognition functioning compared to those without comorbid depressive pathology; however, the nature of these relationships remains unclear. Therefore, the overall purpose of this study is to examine the relation between depressive pathology, neurocognition and emotion recognition in young individuals with FES. The specific aims are to: (1) delineate the degree of depressive pathology (viz., full threshold diagnosis and symptom severity) in FES; (2) determine whether current depressive pathology relates to current neurocognitive deficits; (3) determine whether a history of MDD relates to current neurocognitive deficits; (4) determine whether depressive pathology relates to emotion recognition deficits; and (5) determine if the operationalization of depressive pathology alters the findings. **Methods:** This study involves secondary data analysis of baseline data from a single blind, randomized controlled trial of vocational intervention for young individuals with first-episode psychosis. Cross-tabulation will be conducted to divide participants into groups pertaining to whether they have experienced a history of MDD and/or are experiencing current depressive pathology. Exploratory factor analysis (EFA) will be conducted to obtain meaningful neurocognitive domains, which will then be used in a multivariate analysis of covariance (MANCOVA) to examine the differences between participant groups in their neurocognitive performance. Analysis of covariance (ANCOVA) will then be conducted to examine emotion recognition performance between those with and without comorbid depressive pathology. **Results:** Results of this study are expected to advance our understanding of depressive pathology and how it relates to neurocognition and emotion recognition in FES. **Conclusion:** This is turn may provide important implications for therapeutic interventions and functioning.

Facial emotion identification deficits are stable and predict longitudinal real-world functioning

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Background: Facial emotion identification (FEI) deficits are present at onset of psychotic illness and show cross-sectional ties with functioning. The stability of these deficits, and their ability to predict longitudinal functioning in the early sages of illness are less explored. This paper extends a previous study that assessed FEI task performance in first-episode psychosis (FEP) 6-months after first presentation for treatment, which found FEI to be impaired in FEP compared to healthy controls, with particular difficulties identifying fear, anger and disgust. The current study aimed to determine whether these FEI deficits persist over the course of illness and whether baseline FEI deficits predict longitudinal functioning. **Methods:** Patients with FEP (n = 29, mean age = 20.30, 62% male) recruited from mental health services in Sydney, Australia, were re-contacted 6-months after baseline assessment (1 year after first presentation for treatment). Participants completed a task of FEI and measures of current functioning. Accuracy was analysed using 2 (Time) x 6 (Emotion) repeated measures ANOVA with paired samples t-tests. Next, linear regression analyses were carried out to determine whether impaired baseline FEI task performance predicted functional outcome. **Results:** Results indicate that FEI deficits are stable over time and that impaired baseline FEI performance predicts poorer social functioning at follow-up. More specifically, (i) baseline impairment in the accurate identification of anger and disgust predicted lower social functioning, (ii) baseline impairment in the accurate identification of fear predicted reduced engagement in pro-social activities, and (iii) baseline impairment in the accurate identification of disgust predicted lower levels of independent living. Longitudinal associations between FEI deficits and functioning were more robust than for clinical symptoms functioning. **Conclusion:** Despite the achievement of symptomatic improvement, cognitive dysfunction in patients with psychosis frequently persists. FEI deficits show cross-sectional and prospective ties with functional outcome, and thus represent a potential treatable determinant of real world functioning.

Patterns and predictors of service use following presentation to an early psychosis service

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Background: Early intervention services tend to focus on identification and treatment of psychosis and related non-psychosis conditions. High levels of comorbidity at service presentation have been linked with higher ongoing service use and poorer health outcomes. This paper explores the patterns and predictors of subsequent service use following presentation to an early psychosis service. **Methods:** A 10 year audit (1997-2007) was completed of all presentations to the Psychological Assistance Service (PAS) in Newcastle (N = 1,997), an early psychosis service specializing in assessment and treatment of young people aged 12 to 25 years who were either at risk for, or in the early stages of, a psychotic disorder. The contributions of baseline diagnostic and clinical information (and specifically psychosis and non-psychosis related comorbidity) to subsequent service use will be examined – key outcome measures: psychiatric admissions and high community MH contacts (bimonthly or more frequent contact). **Results:** PAS presentations: 59.0% by males; average age: 19.2 years; classified into six baseline groups: 14.4% with 'existing psychosis', 19.7% with 'recent psychosis', 9.5% with UHR, 35.3% with 'Non-psychosis MH disorders – No MH admissions', 8.3% with 'Non-Psychosis MH disorders - Previous MH admissions', and 12.5% assigned to the 'uncertain group'. There were significantly higher rates of subsequent psychosis episodes among those with existing psychosis (62.3%, AOR = 6.28) and recent psychosis (49.9%, AOR = 4.16) compared to the reference group. Likewise, there were higher rates of subsequent psychiatric hospital admissions among those with existing psychosis (61.6%, AOR = 2.82) and recent psychosis (46.1%, AOR = 1.64) compared to the reference group (26.9%); similar patterns emerged for high ongoing contacts with community MH services. Those with comorbid substance use (58.3%, AOR = 1.96), personality disorder (50.3%, AOR = 1.50), and physical disorders (60.2%, AOR = 1.70) had higher rates of subsequent psychiatric hospital admissions; however, among these predictors, only baseline substance use was predictive of high ongoing community MH contacts. **Discussion:** As expected, baseline comorbidity patterns were associated with higher ongoing service use, but the differential contributions to psychiatric admissions and community MH contacts may be informative and assist with the targeting of interventions and other service planning.

Identifying evidence gaps in interventions to prevent suicide and mental health problems following relationship separation

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Background: The effect of a relationship separation on well-being is substantial, with emotional, psychological and physical health affected. A systematic review was conducted to identify existing controlled trials of interventions targeting individuals who have experienced a relationship separation. The aim of the review was to assess the impact of these interventions on mental health, suicidal thoughts or suicidal behaviours. **Methods:** We systematically searched the PsycINFO and Medline databases from inception to February 2015. Eight trials meeting inclusion criteria were identified in the review, consisting of six randomised controlled trials and two controlled trials. Due to the varying quality ratings of the studies and inconsistent measurement of mental health outcomes, a formal meta-analysis was not completed. **Results:** Overall, three of the trials reported a significant improvement in specific mental health outcomes at post-test and/or follow-up. At post-test, all three of the effective trials reported significant outcomes for depression (Cohen's d = 0.86-3.02, Median = 1.25, n = 3), while two of the three trials also reported significant outcomes for anxiety (d = 0.49-2.74, Median = 1.77, n = 2). All of the effective trials used weekly forgiveness based, group interventions. Suicidal thoughts or behaviours were not reported as outcomes for any of the eight trials identified in the review. **Conclusion:** The review established the paucity of trials available to adequately assess the effectiveness of interventions. The need for more randomised controlled trials addressing consistent outcomes including standardised measures of social/emotional, mental health and suicidality following relationship separation was demonstrated. A lack of trials testing theory driven interventions for relationship separation is of particular concern. Further limitations of the existing literature and corresponding directions for future research will be discussed.

The Sources of Strength Australia Project: study protocol for a randomised controlled trial

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Background: Youth suicide is a significant public health problem in Australia. The need to promote and assist help-seeking behaviour among youth is critical, as young people often do not seek or receive help for suicidal thoughts and behaviour. A promising suicide prevention program is the universal Sources of Strength peer leadership program, which takes a social connectedness approach to improving help-seeking for suicide and general psychological distress. The program has been evaluated in a randomised controlled trial of 18 high schools, 453 peer leaders and 2,675 students located in the USA. Peer leaders in intervention schools undertook whole school messaging over a 3-month period, with pre- and post-messaging questionnaires conducted. The results of the study showed consistent evidence of a positive intervention effect on the norms, attitudes and behaviour of both peer leaders and the wider student population. **Methods:** The proposed project is a large trial designed to evaluate the effectiveness of the evidence-based Sources of Strength program in Australian high schools. The need to implement and evaluate suicide prevention programs in Australian schools is high, given a recent review of 43 school-based suicide prevention studies only identified one gatekeeper trial in Australia, with a second indicated trial underway. An RCT of 4,800 adolescents in 16 schools from the ACT and NSW will examine the effectiveness of the Sources of Strength program compared to a wait-list control condition at post-intervention and follow-up. **Results:** The primary aim is to determine the effect of the Sources of Strength intervention on help-seeking attitudes, intentions and behaviours for suicide. Secondary outcomes including suicide literacy and stigma, mental health symptoms and positive coping will also be measured. **Conclusion:** This project aims to increase help-seeking for suicide in adolescents, an important outcome given the low rates of help-seeking behaviour currently exhibited in young people for suicide.

Essential ingredients of engagement in mental health care: a meta-synthesis

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Background: Engagement is a core quality of community mental health treatment which not only encompasses attendance at clinics and adherence with medication, but also building a therapeutic relationship with a health professional and working towards recovery focused goals. Specialised services such as assertive outreach teams, mental health teams in the homelessness sector and early intervention teams for young people with emerging mental health disorders have been established in attempts to engage clients in potentially lifesaving treatment. However, with attrition rates of 19-40 per cent, disengagement continues to be of immediate concern. **Methods:** In order to better understand this important issue, we undertook a systematic review and meta-synthesis of the available qualitative evidence on clients' and staff perceptions of the engagement process. A search strategy was developed based on terms such as 'engagement', 'mental disorders' and 'qualitative research' and was run in both PsycINFO and Medline. Using the Critical Appraisal Skills Programme Qualitative Checklist, each study was independently appraised by two authors, or three authors in the case that any study that received contradictory ratings. **Results:** Preliminary analyses suggest that the review provides an in-depth understanding of how aspects of engagement, such as the therapeutic relationship, coercion and power, are experienced and managed by different types of services. **Conclusion:** There is an urgent need to stimulate discussion around disengagement to determine what individual clinicians, services and international policy makers can do to target this multifaceted phenomenon.

Family psychoeducation at the acute inpatient service: the role for senior mental health practice nursing

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Background: Whilst many early psychosis services are set up to engage and provide information to families what is less well known is whether the information provided by clinicians, meets the needs of families during this often very difficult stage in which there is often significant distress and confusion. Considering that families often have only brief contact with clinicians during the acute treatment phase; there would be benefits in further clarifying how initial psychoeducation can best targeted to the needs of families. **Methods:** During a 6-month period a Senior Early Psychosis Mental Health Nurse, located within the Acute Inpatient Service of a major metropolitan pubic hospital, conducted inpatient psychoeducation meetings with the families of individuals experiencing first-episode psychosis. This Senior Nurse–as a practice development undertaking–kept a record of these meetings, collating the needs/issues of families and the clinicians integration of these into psychoeducation. **Results:** The most frequent needs of families during a first episode of psychosis were noted to be: 1. Opportunity to discuss events leading to admission; 2. Space to share feelings and fears; 3. Have practical information concerning current care; 4) Education regarding the nature of psychotic symptoms and 5) Information about recovery. **Conclusion:** This practice development initiative suggests that family members of individuals experiencing a first episode of psychosis often require an opportunity to process the events leading up to the first admission, and their emotional reactions to the consumer's illness and admission. With the introduction of key assessment questions the psychoeducation process can be individualised and targeted to the needs of families – whilst allowing for key clinical concepts to be conveyed. The psychoeducational frameworks that were found to be the most adaptable to these sessions were the Stress Vulnerability Model and the Phases of Psychosis which served as a platform for explaining most issues raised.

Safewards: re-imagining a healthy future for acute inpatient settings

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Background: Safewards is a conceptual model and a set of nursing interventions designed to decrease conflict and restrictive practices, and increase interpersonal safety in acute psychiatric settings. Developed and recently trialed in the UK, Safewards is now being adopted and adapted in numerous countries. In 2014-15 the Victorian Government funded the implementation and independent evaluation of Safewards across 18 inpatient units. **Methods:** This paper will report on staff and consumer experiences of Safewards, as evaluated through focus groups in July 2015 with clinical staff and consumer workers from the participating wards in Victoria. **Results:** Evaluators interviewed 25 nurses, other clinical staff and consumer workers in 5 focus groups. Focus groups captured experiences across 12 of the units including: adult acute, youth, secure extended care and aged care wards. Staff found the Safewards conceptual model familiar and affirming of their role in keeping safe the consumers and staff within inpatient wards. Some interventions were more acceptable and easier than others to integrate into practice. Staff and consumers experienced a greater sense of mutual respect, readiness to share information and perceptions, and level of cooperation between all group of people in the units. Participants also reported less frequent frustration and physical aggression. **Conclusions:** Safewards is experienced as directly enhancing optimism, communication and relationships within inpatient settings, increasing the health of these challenging environments.

Hippocampal volume change following exercise: a systematic review and meta-analysis

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Background: Identifying the neurobiological substrates of the beneficial effects of exercise on brain function and behaviour has been a topic of growing research interest. A number of studies have examined the impact of exercise interventions on hippocampal volumes in both animal studies and those involving human participants. A study published in 2010 reported substantial increases (+12%) in hippocampal volumes in patients with schizophrenia following 12 weeks of stationary bike riding (Pajonk et al, Arch Gen Psychiatry, 2010). We aimed to conduct a systematic review and meta-analysis of the effects of exercise on hippocampal volume in humans. **Methods:** Electronic databases were searched from database inception to February 2015 for terms relating to, or describing exercise interventions, combined with terms referring to the 'hippocampus'. Non-exercise physical activity interventions were excluded. **Results:** A total of eight studies were identified that reported pre- and post-test data on hippocampal volumes following exercise interventions. Hedge's g was 0.113 (SD 0.064, Z =1.64, p=0.08). For studies examining exercise versus control interventions, seven studies were included. Hedge's g was 0.145 (SD 0.108, Z=1.349, p =0.177). Exercise effects were also non-significant for the smaller subset of exercise intervention studies that examined people with schizophrenia (n = 4), and for the three studies that provided data on exercise versus control interventions in people with schizophrenia. **Conclusion:** This review revealed no statistically reliable effect of exercise on hippocampal volumes in human subjects, and similar findings emerged when considering studies conducted in people living with schizophrenia. Whilst there is consistent evidence that aerobic exercise interventions can be effective in improving cardiorespiratory fitness, hippocampal volume change does not appear to be reliably linked to such fitness improvements.

Effects of childhood trauma exposure on brain function during emotion processing in psychosis

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Background: Childhood trauma (CT) is a significant risk factor for the development of psychosis including schizophrenia (SCZ), schizoaffective disorder (SZA), or bipolar disorder (BD). Exposure to CT is associated with specific structural and/or functional brain abnormalities related to cognitive and emotion processes that appear to be consistent among non-psychotic conditions. However, to date no studies have examined the effects of trauma on brain function in psychosis. **Methods:** Brain function during the performance of a face-matching task was examined in 42 patients (SCZ/SZA=25; BD=17) and 15 HC who reported moderate-high levels of CT, while 31 patients (SCZ/SZA=17; BD=14) and 36 HC did not. We examined cross-disorder effects of CT exposure on brain activation and task-related functional connectivity (psychophysiological interactions) for seed regions including the left and right amygdalæ, and the posterior cingulate cortex (PCC), using 2 (trauma: exposed/non-exposed) x 2 (diagnosis: psychosis/HC) ANOVAs. **Results:** Significant main effects of CT exposure were revealed in the PCC of all participants; main effects of diagnosis were also found in the PCC during face processing, but were opposing in their effects on activation in this region: that is, CT exposure was significantly associated with decreased PCC activation while diagnosis with SCZ or BD was associated with increased activation of the PCC. Trauma exposure was also associated with decreased connectivity between the PCC and the cerebellum, while psychosis was associated with decreased connectivity between the PCC and visual and parietal regions. **Conclusions:** Differential brain function and connectivity of the PCC that are associated with CT in psychosis may impact salience detection and attention networks that are typically found to be affected in these disorders, when studied regardless of CT exposure. Future investigations are required to investigate the potential long-term effects of CT on stress-related biological mechanisms that may be operating in the development of these disorders.

Cortical thickness alterations following childhood abuse

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Background: Childhood trauma is one of the greatest risk factors for the development of adulthood psychopathology. Prefrontal and hippocampal grey matter volume abnormalities have previously been reported to be associated with childhood trauma. Cortical thickness, despite being highly vulnerable to function-induced alterations, has rarely been studied in the context of childhood maltreatment. **Methods:** Using magnetic resonance imaging, we explored the relationship between cortical thickness and the severity of childhood trauma as determined using the childhood trauma questionnaire in a cohort of 63 young adults exhibiting an admixture of psychiatric symptoms. **Results:** The main finding that emerged from this study was that cortical thickness in the right isthmus cingulate was negatively correlated with childhood physical abuse severity. Post-hoc probabilistic tractography revealed the isthmus cingulate was predominately associated with the forceps major, a commissural tract that crosses the midline through the splenium of the corpus callosum. **Conclusion:** This exploratory study found that childhood physical abuse has long lasting detrimental effects on the right isthmus cingulate cortex. The use of a mixed psychiatric cohort shows that cingulate abnormalities linked to childhood physical abuse are not disorder specific.

Rising out-of-pocket costs disrupt utilisation of atypical antipsychotics for schizophrenia and bipolar disorder: a whole-population cohort study

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Background: In 2005, consumer copayments for medicines subsidised on the Pharmaceutical Benefits Scheme (PBS) increased by 21%. Aggregate-level data showed decreases in use of many medicines following this cost increase, however; use of atypical antipsychotics did not fall.1 It is unknown whether use of atypical antipsychotics for psychotic conditions is price insensitive or whether rising use of these therapies for dementia, autism and other conditions masked decreases for some individuals.2 This study aimed to determine whether the 21% increase in PBS copayments in January 2005 affected utilisation of atypical antipsychotics restricted for schizophrenia and bipolar disorder in Western Australia (WA). **Methods:** Seven years (2003-2009) of individual-level PBS data were examined for 20,418 individuals dispensed ≥1 atypical antipsychotic prescription restricted for treatment of schizophrenia and bipolar disorder in 2003-2004. Risperidone items restricted for dementia in the elderly and children with autism were excluded. Annual dispensing rates were compared by year using multi-level mixed-effects Poisson regression with a random intercept accounting for individual-level dependent clustering, controlling for demographic and clinical factors. An offset adjusted the exposure time to the month of the last PBS claim record or date of death. **Results:** Compared to 2004, adjusted post-copayment-change dispensing rates decreased significantly by 2.3%, 4.6%, and 3.0% in 2005 (IRR:0.98; 95%CI:0.97-0.98), 2006 (IRR:0.95; 95%CI:0.95-0.96), and 2007 (IRR:0.97; 95%CI:0.96-0.98), respectively. Compared to those with constant PBS concessional status, people with inconsistent pre-copayment-change concessional status experienced a further year (2008) of dispensing rate decrease (p=0.022). **Conclusion:** This study provides previously unavailable evidence that rising out-of-pocket costs interrupt utilisation of atypical antipsychotics restricted for schizophrenia and bipolar disorder. Among this vulnerable population, people with inconsistent concessional status were particularly affected by increasing costs. Clinicians and policy makers should be aware that even essential pharmacotherapy for symptomatic conditions can be disrupted by rising out-of-pocket costs.

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Physical activity in people living with psychosis: data from the survey of high impact psychosis

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Background: People with psychotic disorders are at increased risk of having comorbid physical health disorders. Within the matrix of factors that influence comorbidity in this group, it is recognized that those with psychosis tend to have low levels of Physical Activity (PA). Therefore, interventions that improve PA may result in better physical health outcomes. The aims of this study are to examine levels of PA and to describe clinical and demographic correlates of PA in Australian adults with psychosis, based on the Survey of High Impact Psychosis (SHIP). Methods The SHIP is a population-based cross-sectional study of adults living in Australia in 2010.The level of PA was assessed using the International Physical Activity Questionnaire (IPAQ). We examined the strength of association between PA and potential correlates using logistic regression. **Results:** Data for PA was obtained for 1801 participants (98.7%). Proportion of participants in each of the IPAQ category (low, moderate, high) was as follows; 856 (47.5%), 685 (38.0%) and 260 (14.4%). Younger age (OR 2.48; 95%CI=1.60-2.85), lower BMI (1.89; 1.46-2.45), shorter illness duration (1.51; 1.14-1.99), being employed (1.56; 1.23-1.99) and currently studying (1.71; 1.23-2.38) were the factors that showed statistically significant association with increased level of PA. There were no statistically significant differences in PA related to sex, smoking status or diagnoses. **Discussion:** The majority of people living with psychosis are engaged in at least some PA, however nearly half score low on IPAQ categorization. We found no difference in PA levels in those with psychosis by sex, smoking status or diagnoses. However we found that variables related to age, BMI, duration of illness, employment and education statuses were significantly associated with PA levels. These findings can provide insights into the complex web of causation underpinning PA in people with psychosis and guide the development of future intervention studies.

Utilisation of mental health-related services in females with mood and anxiety disorders: data from a population-based study

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Background: It is estimated that one in five Australians will experience a mental health disorder in their lifetime, yet it remains unclear what proportion seek treatment from health-related professionals and whether sociodemographic differences exist with regard to utilisation of mental health-related services. Thus, this study aims to describe mental health-related service utilisation patterns among women with mood and anxiety disorders. **Methods:** Complete data were available for 618 women enrolled in the Geelong Osteoporosis Study (2011-2014). Current mood and anxiety disorders were assessed using a semi-structured clinical interview (SCID-I/NP). Comprehensive mental health-related service presentations (yes/no) to psychologists, psychiatrists, general practitioners and allied health professionals were ascertained from linked data routinely collected from Medicare (Australia). Demographic information was documented by self-report and area based socioeconomic status (SES) was determined. **Results:** Of the group, 103 (16.7%) met criteria for a current mental health disorder (24.3% pure mood disorder, 48.5% pure anxiety disorder and 27.2% comorbid mood and anxiety disorder). Mental health-related services were accessed by 27/103 (26.2%) during the 76.6 person-years (p-y, median 0.7, IQR 0.4,0.9) of observation. Women who utilised services were younger (OR 0.97, 95%CI 0.94, 1.00, $p<0.05$) but did not differ in regards to SES, marital status, education or disorder compared to those not utilizing mental health-related services. **Conclusion:** Given the small proportion of women accessing mental-health related, our findings suggest there is a treatment gap for women with mood and/or anxiety disorders. Further investigations into sociodemographic correlates are required to determine which subgroups of the population are most at risk.

The contribution of mental health and mental health histories to receiving the disability pension

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Background: International research has estimated the contribution of poor mental health to subsequent receipt of disability pensions. However, the estimates from this existing empirical research have consistently fallen short of what would be expected based on administrative records. One methodological reason for this may be the use of baseline mental health to predict transitions to disability pension over a long follow-up period, rather than considering variability and change in mental health over time. **Methods:** 8,845 individuals not in receipt of the disability pension were identified in the HILDA survey, and their mental health and disability pension status was examined annually for 9 years. Mental health at baseline and later measurement occasions were modelled as potential predictors of subsequent transition to the disability pension. Mental health problems were defined as having a score under 50 on the SF-36 mental health subscale, or self-identified possession of a nervous and emotional problem requiring treatment, or mental illness requiring assistance. **Results:** Controlling for demographics and physical health problems, mental health predicted transitions to the disability pension in Australia. Those with (current) poor mental health had increased odds (OR = 2.30) of moving onto disability pension the following year. Baseline mental health had a residual, but weaker, associated with pension receipt (OR = 1.35). The population attributable fraction of disability pensions due to poor mental health was 0.35 (95% CI: 0.29, 0.41). **Conclusion:** Modelling the variability in mental health over time produces estimates consistent with Australian administrative records on the high level of take-up of disability pension due to psychological or psychiatric conditions. Previous approaches using time-invariant baseline measures significantly under-estimate the importance of mental health for this pressing policy concern.

The prevalence and risk of metabolic syndrome and its components among people with posttraumatic stress disorder: a systematic review and meta-analysis

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Background: People with posttraumatic stress disorder (PTSD) have a higher mortality than the general population, mainly due to cardiovascular diseases (CVD). Metabolic syndrome (MetS) and its components are highly predictive of CVD. The aim of this meta-analysis was to describe pooled frequencies of MetS and its components in people with PTSD and to compare MetS prevalence in PTSD versus the general population. **Method:** Databases were searched until 02/2015 for cross-sectional and baseline data of longitudinal studies in adults with PTSD. Random effects meta-analysis with a relative risk, subgroups and meta-regression analyses were employed. **Results:** Overall, 9 studies met the inclusion criteria including 9,673 individuals in midlife with PTSD and 6852 general population controls. The pooled MetS prevalence was 38.7% (95% CI = 32.1%–45.6%; Q = 52.1, $p < 0.001$; N = 9; n = 9,673; age range = 44–61 years). Abdominal obesity was observed in 49.3% (95% CI = 29.7%–69.0%), hyperglycemia in 36.1% (95% CI= 18.8%–55.6%), hypertriglyceridemia in 45.9% (95% CI = 12.2%–81.9%), low high density-lipoprotein-cholesterol in 46.4% (95%CI = 26.4%–67.0%) and hypertension in 76.9% (95% CI= 67.9%–84.8%). The MetS prevalence was consistently high across geographical regions, settings or populations (war veterans or not). Compared with matched general population controls, people with PTSD had an almost double increased risk for MetS (RR = 1.82; 95%CI = 1.72–1.92; $p < 0.001$). Most analyses were not statistically heterogeneous. **Conclusions:** MetS is highly prevalent in people with PTSD. Routine screening and multidisciplinary management of medical and behavioral conditions is needed. Future research should focus on how cardio-metabolic outcomes are moderated by clinical and treatment characteristics and genetic factors.

Utilisation of health services by women with personality disorder: a population-based study

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Background: There is a paucity of population-based data investigating associations between personality disorders and healthcare service utilisation. We therefore aimed to investigate associations between personality disorders and mental and physical health-related service utilisation determined from Medicare (Australia). **Methods:** Data were collected from 665 women participating in the Geelong Osteoporosis Study (2011-2014). Psychiatric disorders were assessed using semi-structured clinical interviews (SCID-I/NP and SCID II) and healthcare service utilisation was determined using data linkage with a comprehensive data source from Medicare (Australia). Sociodemographic information (age, marital status, education, country of birth) was documented by self-report, and area-based socioeconomic status (SES) was also determined. **Results:** Following adjustments for sociodemographics and lifetime psychiatric disorders, Cluster B [incident rate ratio (IRR) 7.57, 95%CI 1.36-42.23, $p<0.05$] and Cluster C PDs (2.52, 1.15-5.55, $p<0.05$), but not Cluster A PDs were associated with increased mental health-related service utilisation. In regard to associations with service provider type; Cluster C PDs were associated with increased utilisation of mental health-related services performed by GPs (1.70, 1.01-2.88, $p<0.05$), and Cluster A PDs were associated with increased utilisation of physical health-related services performed by GPs (1.40, 1.10-1.78, $p<0.05$). **Conclusion:** These data underscore the potential influence of PD's on mental and physical health care service utilisation within the public healthcare system. Awareness of the role of personality pathology might be necessary for informed healthcare service planning and delivery.

Humility, inquisitiveness and openness: translating research with Aboriginal peoples and service providers in the delivery of mental health and drug and alcohol services

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Background: The Looking Forward Aboriginal Mental Health Project is a research project undertaken in collaboration with mental health and drug and alcohol services and the Nyoongar community living in the south-east metropolitan region of Perth. The project aims to effect positive systems change in the delivery of services to Nyoongar families living with mental illness. Twelve organizations from the mental health and drug and alcohol sectors are working constructively with a group of 18 Nyoongar Elders to develop policies and practices that are sustainable and ensure better outcomes for Aboriginal people. **Methods:** Over two years, our methods included conducting 11 community forums, 10 community steering group meetings, semi-structured interviews with service executive staff and Nyoongar Elders and a staff survey on self-reflection. We applied the underlying participatory action research principle, of ensuring a commitment to work in partnership with participants to address community concerns, which meant being prepared and flexible in adjusting our methodology in response to community input. We also engaged in participant observations, and documented meetings and cultural activities between service staff and Elders. **Results:** Research findings have led to the development of an engagement framework underpinned by a Nyoongar worldview. Using this framework, services and Elders are currently working on changing service policies and practices to improve access to and responsiveness to Aboriginal clients and their families. A systems change framework will be applied in the next phase of the project (2016) and has been co-designed with project participants. **Conclusion:** As a further outcome of this work, we are exploring relevant methods to translate research findings to key project stakeholders. Our view is that a translation process that is based on new ways of working developed by Aboriginal people and services providers together presents new opportunities to the mental health sector more broadly in its efforts to engage more meaningfully with clients, families and carers.

Cost of illness for high prevalence mental disorders in Australia

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Background: Despite the high prevalence and burden associated with mental and substance use disorders, few detailed cost studies are available in Australia. The aim of this project was to assess the treatment costs associated with the high prevalence mental disorders (depression, anxiety-related and substance use) using community-based nationally representative data. **Method:** Respondents diagnosed within the preceding 12 months with depression(D), anxiety disorders(ANX), and substance use disorders(SUB) by ICD-10 from the Confidentialised Unit Record Files of The 2007 National Survey of Mental Health and Wellbeing were included in the analysis. The use of healthcare resources (hospitalisations, consultations, medications) and days unable to work due to mental health in the past 12 months was costed in 2013-14 $AUD. Unit costs of health care services were obtained from the Independent Hospital Pricing Authority, Medicare, and Pharmaceutical Benefit Schedule. Hourly wage rates adjusted for age and sex were obtained from ABS. **Results:** Total annual healthcare costs were estimated at $822 million consisting of $647 million to the public sector, $97 million to private sector and $78 million paid out of pocket by consumers. While less than 2% of people were hospitalised, these costs accounted for 40% and 60% of total costs from the public and private sector's perspective, respectively. The average total cost for people seeking treatment from the public sector was estimated at $680, $954 to the private sector and $100 from the individual perspective. People with co-morbid diagnoses had the highest average total cost among people using healthcare services from both the public and private sector perspectives. The estimation of productivity loss is in progress and will be presented in December November. **Conclusion:** The public sector was the major source of payment, which accounted for nearly 80% of total mental health treatment expenditures.

Comparing postnatal psychological distress in two samples: one recruited online and the other part of a national longitudinal study

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Background: Recruiting young adults to participate in epidemiological research has become increasingly difficult. This challenge has led researchers to progressively investigate the Internet and social media websites as a recruitment tool for mental health research. The current study examines the representativeness of a unique sample of postnatal women recruited online to investigate their psychological wellbeing. **Methods:** We compared the sociodemographic characteristics and levels of psychological distress between two samples of Australian women who had given birth to an infant during the previous year: 1083 women recruited online within the Living with a Young Baby Survey (LYBS) and 585 women from waves 11 and 13 of the nationally representative Household Income and Labour Dynamics in Australia (HILDA) Survey. **Results:** Postnatal women recruited online in LYBS were comparable to those from HILDA in their remoteness of residence, age and relationship status. However, women in the online LYBS were more likely to be located within Canberra (but no other location), were marginally more likely to speak English only at home (5%), were substantially more likely to have a single child (18.3%), were more likely to have attended university (10.1%), and were also more likely to have experienced 2 or more financial hardships during the past year (6.4%). The findings also show that mothers in the online LYBS were more likely to have poor self-rated general health and psychological distress. **Conclusion:** The current study suggests that samples recruited online for the purpose of mental health research are likely to have significantly poorer mental health than samples recruited randomly from the general population. However, in many ways the LYBS sample was largely comparable to the HILDA sample. The differences in mental health may be indicative of under-representation in population-based longitudinal research.

Mental health consumer and carer perspectives on ethical research

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Background: The involvement of mental health consumers and carers in research provides unique challenges for ethical research. Current guidelines assume that mental health consumers are more vulnerable than other populations, but consumers are not necessarily impaired in their ability to speak for themselves. Further, the inclusion of carer stories in research raises questions of ownership of story and disclosure. The current project sought to explore consumer and carer perspectives on these issues. **Methods:** We conducted a public forum with 14 people who self-identified as having lived experience of mental illness, either as a consumer or carer. Discussions were held in consumer-only groups, carer-only groups and combined discussion. Results were transcribed and coded using an essentialist inductive thematic procedure. **Results:** Consumers and carers were concerned about notions of ownership of stories, and were largely uncomfortable with the notion of people talking 'behind their back'. However, participants acknowledged that the carer also has a story to tell independent of the experience of the consumer. Additionally, participants were concerned about the whole approach of ethics committees to mental health consumers and carers. For example, there was a perception that the grouping of mental health consumers with those with intellectual disability, and the general assumption that people with mental illness are especially vulnerable, is patronising. **Conclusion:** Mental health consumers and carers see room for improvement in the ways in which they are included in research. As researchers we may need to rethink ethics guidelines that can be perceived as patronising. We may also need to consider the notion of ownership of stories so that we do not inadvertently breach people's privacy or become the cause of rifts in relationships.

Help seeking behaviour of mental health professionals during times of psychological distress

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Background: Mental health care is a demanding profession with high rates of stress and burnout. Given the implications of untreated illness, it is essential on both a personal and professional level that mental health professionals feel comfortable disclosing distress and feel able to seek help from appropriate service providers when required. However, to date little research has investigated what happens when mental health professionals experience symptoms of mental illness. This study investigated issues surrounding disclosure and help-seeking intentions within this population. **Methods:** A sample of 87 practicing mental health professionals and students (clinicians in training) completed an online survey assessing attitudes towards people with mental illness, barriers to accessing care for mental ill health, help-seeking intentions and past behavior, and concerns regarding disclosure of mental health problems. **Results:** Results indicated that while 71% of respondents specifically reported they would seek help from a psychologist, 11.5% reported that they would not seek help if they were in distress. Barriers to seeking help for mental health issues included self-reliance (63%), difficulties taking time off work (44%), and affordability (41%). Across the sample, 58% of participants reported that AHPRA's mandatory reporting requirements would act as a barrier to seeking help. While 73% of participants reported that they would not view a colleague differently if they knew they had a mental illness; fear of stigma, and concern that people would find out were further reported as preventing help-seeking and disclosure. **Conclusion:** The findings provide initial evidence that despite good mental health literacy, and personal experience with mental illness, significant barriers exist for mental health professionals seeking help for mental health conditions. Further research to understand the perceived barriers and the association between attitudes toward mental illness and help-seeking may assist in improving the help-seeking behavior and intentions of mental health professionals.

Epigenetic and gene-expression changes in immune candidates following two months of yoga practice: a pilot study

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Background: Stress is associated with psychiatric conditions and suppression of immunity. The empirical evidence for the practice of yoga as a therapeutic technique is promising however the molecular basis is not understood. Evidence supports changes in inflammatory proteins in yoga practitioners, however epigenetic and gene-expression changes have not been analysed. **Methods:** 115 stressed ("moderate" score on K10) women not participating in yoga were recruited. Women were randomized to receive twice-weekly one-hour yoga classes for 8 weeks (n=59), or to a waitlist control (n=56). Blood samples were collected on a sub-group of individuals (n = 15 yoga, 15 wait-list [pre- and post-yoga]). DNA methylation of CRP, TNF, and IL-6 was assessed using Sequenom MassArray, and gene-expression with Taqman gene-expression assays. We ran cross-sectional analyses (n=15 wait-list, n=13 yoga), and longitudinal analyses of the wait-list group (n=10 pre- and post-yoga measures). **Results:** Cross-sectional analyses of data demonstrate a 4% decrease in methylation in the yoga group at the TNF locus (p=0.032). Longitudinal analysis of methylation at the TNF locus confirms 4% reduction in methylation following yoga (p=0.061). Whilst we found no evidence for DNA methylation changes at loci in IL6 or CRP in cross-sectional analyses, our longitudinal analyses uncovered a 2% reduction in methylation at one IL-6 locus (p=0.049), and 0.5% increase at another IL-6 locus (p=0.040). These results will be described in context of gene-expression findings. **Conclusion:** This is the first study to investigate DNA methylation and gene-expression changes in context of yoga practice in a stressed sample of women. We present evidence for changes in methylation in TNF, limited evidence in IL-6, and none in CRP. Our findings do not withstand multiple-testing, however our study has low power. Limitations of our longitudinal analyses will be discussed. We will demonstrate if these are functional changes as represented by changes in gene-expression.

Evaluating the quality of prevalence data on mental and substance use disorders among Indigenous adults: a systematic review of four countries

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Background: Understanding the prevalence of mental and substance use disorders among indigenous people is important for health policy and service planning. We reviewed the quantity and quality of surveys providing prevalence data for Indigenous people in four developed countries. **Methods:** We conducted a systematic review for surveys of mental and substance use disorders among Indigenous adults in Australia, NZ, Canada and the USA. Sources included four academic databases, non-indexed literature (e.g. government websites and reports), and expert consultation. We required studies that defined disorders according to DSM or ICD diagnostic criteria and utilized a community-representative sample. We included national, state and community-level surveys of general health or mental health. **Results:** Seven surveys were identified: two from Australia, one from NZ, and four from the USA. No studies met inclusion criteria for Canada. While population-level general and/or mental health surveys were identified for each country, only three (one from NZ and two from USA) provided discrete prevalence estimates for Indigenous people. All countries (with the exception of NZ) conducted health surveys focusing on the Indigenous population. However, none of these used a validated tool to assess prevalence, relying on measures of distress or self-report of diagnosis. Geographical coverage of surveys from the USA and NZ were excellent (approaching 100%), while coverage in Australia was very poor (less than 1%). Pooling data across all studies gave a median 12-month prevalence estimate of 11.4% for mood disorders, 11.4% for anxiety disorders, 12.1% for alcohol use disorders and 4.9% for drug use disorders. **Conclusion:** Epidemiological surveys in developed countries rarely enable indigenous-specific prevalence estimates to be derived. Study methods, particularly sampling strategies and prevalence periods are highly variable. The majority of studies that focused on Indigenous health did not collect data on the distribution of mental disorders which significantly and negatively impacts service planning.

Preventing anxiety problems in children with Cool Little Kids Online: randomised controlled trial

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Background: Anxiety disorders are the most common type of mental health problem and begin early in life. Early intervention to prevent anxiety disorders in children who are at risk could have long-term impact. The 'Cool Little Kids' parenting group program was developed to prevent anxiety disorders in young children at risk due to inhibited temperament. It has been shown to be efficacious in two randomised controlled trials and has recently been adapted into an online format. 'Cool Little Kids Online' was developed to widen and facilitate access to the program's preventive content. A pilot evaluation of the online program demonstrated its utility and acceptability among parents. This study aims to evaluate the efficacy of Cool Little Kids Online in a large randomised controlled trial. **Methods:** Participants are parents of young children aged 3-6 years with an inhibited temperament (n=385). Parents are randomised to either immediate access to Cool Little Kids Online, or delayed access after a waiting period of 24 weeks. The online program has 8 modules that help parents address key issues in the development of anxiety problems in inhibited young children. Intervention participants will be offered clinician support when requested. The primary outcome is change in parent-report child anxiety symptoms. Secondary outcomes are child internalising symptoms, life interference due to anxiety, over-involved/protective parenting behaviours, and child anxiety diagnoses. Assessments take place at baseline, and 12 and 24 weeks after baseline. **Results:** Recruitment to the study began in June 2015 and is expected to be completed in September 2015, with data collection continuing into 2016. **Conclusion:** This trial expands upon previous research on the Cool Little Kids parenting group program and evaluates the efficacy of online delivery. Cool Little Kids Online could improve access to an evidence-based prevention program for child anxiety problems.

Implementing e-mental health services for depression and anxiety within the Australian mental health system

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Background: Growing evidence attests to the efficacy of e-mental health services to treat common mental disorders. However, questions arise as to how to facilitate the safe, effective and sustainable implementation of e-mental health services within the health system. Our research questions are: 1) What are the barriers and facilitators for e-mental health service use? 2) What are the next steps for optimising the use of e-mental health services within the I health system? **Methods:** We conducted a systematic review following the PRISMA protocol. The scope covered research conducted in Australia on e-mental health service use, including barriers and facilitators to e-mental health service use for depressive and anxiety disorders. **Results:** Several barriers to e-mental health service use were identified, such as socio-demographic factors, attitudes, and knowledge factors. However, the evidence is limited by the specific population profiles on which data are available, and the restricted range of factors affecting use that have been investigated. These biases in the available evidence limit our ability to determine a national population treatment target for e-mental health service delivery. **Conclusion:** Research gaps need to be addressed to realise the potential of e-mental healthcare within the Australian health system.

Discussion board engagement in the MoodSwings 2.0 online intervention for bipolar disorder

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Background: A number of online mental health interventions have included peer discussion boards, however none of these studies have specifically evaluated the role these boards play in terms of outcomes and attrition, or the influence the level of participant engagement may have on psychosocial variables. This project assesses the MoodSwings 2.0 program, an online self-help program for bipolar disorder. The aims of this study are to measure engagement in the online discussion boards included with the MoodSwings 2.0 online intervention for bipolar disorder, and to determine if there are any demographic and psychosocial differences between highly and poorly engaged users. **Methods:** This project evaluates the discussion boards included within the MoodSwings program, which is involved in an ongoing 3-arm randomised controlled trial. Participants are aged 21 to 65, and diagnosed with bipolar disorder. Recruitment is complete, with an international sample of 304. All participants have access to one of three moderated discussion boards allocated per intervention arm. Discussion board engagement is measured by quantity of posts and number of visits. Outcome measures are assessed quarterly both online and by phone. Other usage of the intervention is monitored by page views, entries within the interactive tools, and page visits. **Results:** Preliminary data on discussion engagement is presented. **Conclusion:** The results of these analyses may further clarify the contribution and possible benefits of discussion board engagement.

Structural changes in the cognitive control network are associated with improvements in cognitive performance during development

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Background: Cognitive control is the process of performing self-regulatory behavior towards a predefined goal. Recent findings suggests a superordinate cognitive control network made up of the dorsolateral prefrontal, anterior cingulate and posterior parietal cortices is responsible for a range of cognitive control related behaviors including sustained attention, working memory and other executive functions1. This study examines the developmental trajectory of these behaviors during its peak period, from late childhood to early adulthood2 and the relationship with structural changes in the cognitive control network. **Methods:** 141 participants aged 8 to 18 completed a cognitive battery of 12 tests measuring various aspects of attention, working memory and executive function using a computerized touchscreen and underwent structural MRI on a 1.5T scanner. Cognitive measures were analysed using a General Linear Model to evaluate age trends controlling for gender. Grey matter volume information of brain regions in the cognitive control network was extracted from structural magnetic resonance imaging data (MRI-T1) and a General Linear Model was applied to elucidate age and cognitive performance relationships. **Results:** For 8 to 18 year olds, all, except two, measures of attention, working memory and executive function had a significant improvement in performance with age ($p<0.008$), with the most dramatic improvement occurring for measures of attention. MRI-T1 data revealed a significant decrease in gray matter as age increased ($p<0.0001$). Grey matter volume and performance in cognitive tasks were associated across all domains. Attention and working memory performance were associated with parietal and anterior cingulate cortex volumes after controlling for age. **Conclusion:** Improvement in cognitive performance during childhood and adolescence appears to be linked to age-related decreases in gray matter volume throughout the cognitive control network. This may be the result of synaptic pruning and network refinement occurring during this time.

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Effect of Lurasidone on cognition: from the lab to the clinic

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Background: Cognitive impairment is a prevalent clinical symptom in patients with schizophrenia, and has been found to be correlated with functional outcomes in real-world settings. For this reason, improvement in cognitive function has long been recognized as a major goal in the treatment of schizophrenia. Lurasidone is an atypical antipsychotic that has been approved for the treatment of adults with schizophrenia in multiple countries including United States, the European Union, Canada, and Australia. **Methods:** The effects of lurasidone on aspects of cognitive function were evaluated in a series of pre-clinical behavioral tests, including the passive-avoidance and Morris water maze tests (assessing learning and memory), radial-arm maze test (working memory), the novel object recognition test (NOR), and the object retrieval with detour task (ORD; executive function and attention). The potential effectiveness of lurasidone in treating cognitive deficits was also evaluated in 2 clinical trials in patients who met DSM-IV-TR criteria for chronic schizophrenia with an acute exacerbation. In the first trial, patients (N=267) were randomized to 6 weeks of double-blind, placebo-controlled treatment with fixed doses of lurasidone (80 or 160 mg/d) or quetiapine-XR (600 mg/d), followed by a 1-year, double-blind extension study where patients continued treatment with flexibly dosed lurasidone (40-160 mg/d) or quetiapine-XR (200-800 mg/d). Patients treated initially with placebo were switched in blinded fashion to flexible dose treatment with lurasidone (40-160 mg/d). The Cog State computerized cognitive battery was administered at pre-treatment baseline, week 6; and at months 3 and 6 of the double-blind extension phase. In a second trial, patients (N=301) were randomized to 21 days of double-blind treatment with lurasidone (120 mg/d) or ziprasidone (160 mg/d). Study participants were assessed with tests from the MATRICS Consensus Cognitive Battery (MCCB) and an interview-based assessment of cognitive functioning, the Schizophrenia Cognition Rating Scale (SCoRS). **Results:** In the pre-clinical battery, lurasidone restored MK-801-induced memory impairment in the passive avoidance and Morris water maze tests, and improved working memory in the radial-arm maze test. Treatment with lurasidone also improved sub-chronic PCP-induced deficits in novel object recognition in rats, and increased the success rate of monkeys in performing an object retrieval with detour task. In the first clinical trial, treatment with lurasidone 160 mg was found to be significantly superior to both placebo and quetiapine XR 600 mg on the CogState composite score at week 6 ($p<0.05$), while lurasidone 80 mg, quetiapine XR, and placebo did not differ. In the double-blind extension phase, lurasidone treated patients performed significantly better than patients taking quetiapine XR on the CogState at month 6 ($p<0.01$). Patients switched from placebo to lurasidone also demonstrated improvement on the CogState over the course of 6 months. In the second clinical trial, lurasidone patients demonstrated significant within-group improvement from baseline on the MCCB composite score ($p=0.026$) and on the SCoRS ($p<0.001$), but ziprasidone patients did not improve on either the MCCB composite ($p=0.254$) or the SCoRS ($p=0.185$). At endpoint there was a statistical trend ($p=0.058$) for lurasidone to demonstrate greater improvement from baseline in SCoRS ratings. **Conclusion:** Taken together, these pre-clinical and clinical findings provide preliminary evidence to suggest that lurasidone may help improve cognition in patients with psychotic illness. Supported by Servier Laboratories

Efficacy and safety of Lurasidone in patients with schizophrenia: a review of clinical studies

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Background: Lurasidone is an atypical antipsychotic with strong affinity for dopamine D2 and serotonin 5HT7 and 5HT2A receptors. **Methods:** Efficacy, and safety data from primary publications of the lurasidone development program in schizophrenia (lurasidone 40, 80, 120, and 160 mg/d) were reviewed and summarized. Efficacy data were obtained from 7 published studies: 5 short-term (6-week), double-blind, placebo-controlled studies (including 2 studies with an active comparator [olanzapine or quetiapine XR]); 1 longer-term (12-month), double-blind, relapse-prevention study with an active comparator (quetiapine XR); and a 6-week, open-label, medication switch study. Efficacy was assessed as change from baseline in the Positive and Negative Syndrome Scale (PANSS) total score using mixed model repeated measures (MMRM) or last observation carried forward (LOCF) analysis. Safety data were pooled separately for 7 short-term, placebo-controlled studies and 8 uncontrolled, longer-term studies, and were reviewed for 1 longer-term, double-blind study with an active comparator (risperidone). **Results:** In 5 short-term efficacy studies, mean change from baseline to Week 6 in PANSS total score was -22.6 for lurasidone (n=1029, dose groups pooled) and -12.8 for placebo (n=496; P<0.001; MMRM). In 2 short-term efficacy studies with active comparators, LS mean change in PANSS total score at Week 6 (MMRM) was not significantly different for lurasidone 40 mg/d and 120 mg/d versus olanzapine 15 mg/d (-25.7 and -23.6 vs -28.7, respectively) or lurasidone 80 mg/d and 160 mg/d versus quetiapine XR 600 mg/d (-26.5 and -22.2 vs -27.8). In a long-term study, flexibly dosed lurasidone (40-160 mg/d) was noninferior to quetiapine XR (200-800 mg/d) in probability of relapse over 12 months (Kaplan-Meier estimate of relapse: 23.7% for lurasidone, 33.6% for quetiapine XR). In a 6-week study of nonacute patients with schizophrenia, switching to open-label lurasidone from other antipsychotics was generally successful; mean change in PANSS total score from baseline to endpoint (LOCF) was -5.8, and treatment failure rate was 7.9% The most common adverse events associated with lurasidone 40-160 mg/d (incidence ≥5% and at least twice the rate of placebo) in short-term studies (n=1437) were somnolence, akathisia, extrapyramidal symptoms, and nausea. Mean weight change from baseline to Week 6 (LOCF) ranged from 0.2 to 0.7 kg for lurasidone 40-160 mg/d (n=1415) compared with -0.02 kg for placebo (n=696), 4.1 kg for olanzapine 15 mg/d (n=122), and 2.1 kg for quetiapine XR 600 mg/d (n=111). Mean change from baseline to Week 6 (LOCF) in patients receiving lurasidone (40-160 mg/d) was -0.10 to -0.18 mmol/L for total cholesterol (n=1348), -0.04 to -0.15 mmol/L for triglycerides (n=1348), and -0.02 to 0.14 mmol/L for glucose (n=1382). In uncontrolled, longer-term studies, mean weight change was -0.7 kg (n=377) and mean change in total cholesterol, triglycerides, and glucose was -0.06 mmol/L, -0.08 mmol/L, and 0.13 mmol/L (n=307), respectively, in patients treated with lurasidone for 12 months. In a 12-month, double-blind study, change at LOCF endpoint was significantly different with flexibly dosed lurasidone (40-120 mg/d; n=419) versus risperidone (2-6 mg/d; n=202) for weight (mean change, -1.0 vs 1.5 kg; P<0.001) and prolactin (median change: men, 0 vs 7.5 ng/mL; women, 1.0 vs 26.4 ng/mL; both P<0.001). **Conclusion:** Lurasidone has demonstrated efficacy across the dose range of 40-160 mg/d in the short-term and longer-term treatment of patients with schizophrenia. Lurasidone exhibited a low potential to cause weight gain or metabolic disturbance during continuous treatment of up to 12 months. Supported by Servier Laboratories **Disclosures:** Drs Pikalov, Tocco, Hsu, Cucchiaro, and Loebel are employees of Sunovion Pharmaceuticals Inc.

Antibiotics in psychiatry

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Background: There is a growing interest in repurposing existing medications for psychiatric illness. Simultaneously there has been an explosion in the interest around the microbiome, microbiota and its impact on psychiatric disorders. **Methods:** This presentation will provide an overview of current postulated antimicrobials that may be useful in psychiatry. This includes an overview of the minocycline in depression trial, being conducted by Deakin University. **Results:** There is debate over efficacy compared with microbiota changes in this field. The presentation will explore current efficacy of antibiotics and will present preliminary findings from the minocycline trial we are conducting. **Conclusion:** The use of antibiotics in psychiatry may be useful. However, this has to be weighed against actual and public perception of long-term antibiotic use and its effects on treatment-resistance and microbiota.

Genetic risk for psychiatric disorders predicting Eysenck's personality traits

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Background: Hans Eysenck partly justified his dimensions of personality by the fact that proneness to depression could be predicted by Neuroticism, while psychosis could be predicted by Psychoticism. Both psychiatric disorders and normal personality being genetically influenced, we aimed to test the extent to which the genetic risk for the major depressive disorder and schizophrenia predict these dimensions of personality. **Methods:** Psychoticism and Neuroticism were measured on 8,345 subjects from twin families who have been genotyped genome-wide and imputed to 1000G v.3. The scales were transformed by taking the arcsine of the square root, corrected for age and sex effects and standardised. GWAS results from the latest Psychiatric Genomics Consortium mega/meta analyses for major depressive disorder and schizophrenia have been used to calculate polygenic risk scores (PRS) for these disorders. Several PRS were calculated including SNPs associated with the trait at levels p <0.00001, 0.001, 0.01, 0.1, 0.5 or 1. We tested the associations of the PRS with Psychoticism and Neuroticism using linear mixed models to account for the family structure. We applied Bonferroni correction (Sidak method) for multiple testing yielding a significant threshold of 3.7*10-3. **Results:** We found nominally significant predictions of SZ and MDD PRS of Psychoticism and Neuroticism, respectively. After correcting for multiple testing, schizophrenia PRS (thresholds p < 0.5 and 1) predicted Psychoticism p value = 3.41*10-3) and major depressive disorder PRS (thresholds p < 0.1, 0.5 and 1) predicted Neuroticism (p value = 8.09*10-6). **Conclusion:** Although limited by the power of the original PGC GWAS, the present analyses support Eysenck's theories of Neuroticism and Psychoticism. We found that people with a high genetic risk for major depressive disorder or schizophrenia had a significantly higher Neuroticism and Psychoticism scores, respectively. More research is necessary to further understand the genetic overlap between personality and psychopathology.

BDNF Val66Met genotype in mice recapitulates PTSD-related endophenotypes in adulthood via sensitivity to stress in adolescence

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Background: Brain-derived neurotrophic factor (BDNF) is a promoter of neuronal plasticity. The BDNF gene Val66Met polymorphism disrupts activity-dependent secretion of BDNF and has been associated with post-traumatic stress disorder (PTSD). However, despite being a requisite etiological factor, it has not yet been assessed whether prior stress exposure determines the expression or persistence of fear in Val66Met carriers. **Methods:** We therefore sought to model the long-term effects of chronic stress by using a Val66Met knock-in mouse which expresses human BDNF (hBDNF). To simulate adolescent/young-adult stress, corticosterone (CORT) was administered in the drinking water at a dose of 25mg/L from 6 to 9 weeks of age. Following a two-week wash-out period mice underwent behavioural testing and were screened for differences in spatial memory on the Y-maze, memory of fear, and extinction learning. **Results:** At baseline, memory of contextual fear was disrupted in hBDNFMet/Met mice relative to hBDNFVal/Val controls, but was rescued by a BDNF-CORT interaction which selectively enhanced the memory of hBDNFMet/Met mice. A similar phenotype was also observed on the Y-maze, where hBDNFMet/Met mice showed a lack of preference for the novel arm over the other arms, but was reinstated to levels consistent with controls following the chronic CORT treatment. While extinction learning was unaffected in male and female hBDNFMet/Met mice at baseline, chronic CORT attenuated extinction learning selectively amongst female hBDNFMet/Met mice during late extinction trials. **Conclusion:** Chronic adolescent/young adulthood stress, simulated by CORT exposure, interacts with the BDNF Val66Met polymorphism to selectively modify the expression and extinction of fear. This novel gene-environment interaction highlights how fear is regulated by both BDNF and stress. Sex differences found in this study provide mechanistic support for the predominance of PTSD in females, and recapitulate preliminary clinical evidence that the BDNF Val66Met polymorphism is a risk factor for this disorder.

The role of trauma in treatment attendance and study retention when treating comorbid depression and alcohol misuse

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Background: Premature treatment dropout is a known issue when treating post-traumatic stress disorder (PTSD). Premature dropout undermines the effectiveness of treatment of PTSD, thus identifying treatments that are more acceptable to patients is a priority. An RCT for the treatment of depression and alcohol misuse, The DAISI Project, concurrently assessed the presence of posttraumatic stress symptoms and found a reasonable proportion of those seeking treatment for depression and alcohol misuse were also experiencing high levels of posttraumatic stress symptoms. This paper will build on these results, and explore whether those with higher rates of trauma symptoms at recruitment had poorer rates of treatment attendance and study retention. **Methods:** Treatment attendance and study retention were classified as binary variables (optimal treatment attendance = attended 6 or more sessions; study retention = completed either the 6 or 12 month follow up assessments). Trauma symptoms, gender, age, alcohol use, depression scores and treatment condition will be examined within logistic regressions as potential predictors of attendance and retention. **Results:** Preliminary results suggest that the only factor involved in treatment retention is a sub-category of alcohol use. Further analyses are ongoing. **Conclusion:** Despite the expectation that those with higher trauma symptoms would have poorer treatment attendance and study retention, this was not found in the initial analysis. As these results are preliminary, further data exploration is being undertaken with separate trauma factors being reviewed. If trauma symptoms are not found to predict attendance or retention, it could be that the type of treatment delivered was acceptable to those with higher levels of trauma symptoms. Trauma-focused treatments, including exposure-based treatments, have been associated with higher rates of dropout than other treatments. It could be that as this treatment was not requiring participants to relive their trauma, that it was less threatening and allowed treatment to continue.

A meta-analysis of treatments for trauma: Is exposure necessary?

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Background: Posttraumatic stress disorder (PTSD) is a pervasive and often debilitating psychological disorder that develops from exposure to traumatic events. In the past two decades, there has been a plethora of research detailing treatment efforts for PTSD. There is a need to synthesize the research and provide an update of the effectiveness of treatments for PTSD, including treatment type, which is the aim of this meta-analysis. **Methods:** This review will include any published, peer-reviewed journal article that includes at least two bona fide psychological therapies for trauma symptoms assessed using a randomized controlled trial design. For a study to be eligible, there must be at least two bona-fide therapies compared within the one study, with the interventions originating from two different categories. The categories included are exposure based therapy, trauma focused therapy without exposure and present-focused therapy. Interventions delivered that are designed to control for non-specific therapeutic are excluded, as they do not meet the bona fide therapy criteria. EMBASE, PsycInfo and Medline electronic databases have been searched and search terms have been intentionally kept broad and general. **Results:** 14 articles have met inclusion criteria. Results are currently pending and will be reported at the conference, which will include a detailed description of the comparison between each of the two intervention categories (exposure vs. trauma-focused; exposure vs. present-focused; trauma-focused vs. present- focused). This will allow for a thorough exploration of the efficacy of each intervention type compared for trauma-related symptoms. **Conclusion:** This meta-analysis will assist therapists when making decisions regarding how best to treat their clients who are trauma-exposed.

Mental health help seeking in the mining industry

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Background: In Australia, the proportion of people with a mental illness who access treatment is low, particularly among men. In Australian mining industries, mental health has emerged as a priority for workplace health and safety. With a predominantly male workforce, the mining sector may provide unique opportunities for workplace mental health promotion to increase awareness and overcome barriers to help-seeking. This study investigates the mental health of employees in Australian coal mining, and associated individual and workplace factors. Participant knowledge and attitudes regarding mental health, and access to health care for mental health problems were examined. **Methods:** Employees from 8 mines across two Australian states completed measures of mental health literacy, attitudes towards mental health and suicide, and access to health care for mental health problems. These measures were included in a hierarchical linear regression model to investigate their association with psychological distress (Kessler-10). **Results:** 1457 coal mine employees (1266 male; 181 female); completed the baseline survey (Response Rate=43%). 13% of the sample reported high/very high levels of distress (12% male; 17% female). Of these 39% of males and 61% of females sought professional help from a primary care practitioner (GP) within the last 12 months. Multivariate analysis revealed a significant association between the perception of the mine's commitment to mental health ($p<.01$) and psychological distress. While most participants demonstrated high levels of mental health literacy, stigmatizing attitudes associated with mental health problems and suicide were identified. **Conclusion:** Treatment seeking for mental health problems was low especially for males. Knowledge of and attitudes to mental health are potential barriers to seeking assistance. Workplaces represent an important setting for addressing these barriers especially in male dominated industries. These results may guide tailored mental health interventions in workplaces in this and similar occupational settings internationally.

Factors associated with psychological distress and alcohol use in the Australian coal mining industry

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Background: Workplaces have the potential to play a significant role in addressing the mental health of the community. In rural and remote environments, resource-based industries such as mining play a major role. Mental health has emerged as a key health and safety issue in this industry, yet limited evidence is available regarding the specific needs of the industry, or on industry tailored workplace strategies. **Aim:** This study aimed to investigate the extent and impact of mental health problems among employees in the coal mining industry in Australia and examine the associated factors. Findings from the cross-sectional baseline phase will be presented. **Methods:** Eight mine sites across two eastern Australian states were surveyed, selected to encompass key geographic characteristics (accessibility and remoteness) and mine type (open-cut and underground). Two primary outcome measures of current health included psychological distress (Kessler-10+) and alcohol use (AUDIT). Factors associated with current distress (K-10) and alcohol use were assessed using multiple linear regression models to determine workplace and employment characteristics that influenced either outcome measure, after accounting for personal demographic, social and other health factors. **Results:** 1450 employees completed the baseline survey. Hierarchical linear regression analysis revealed significant contribution of personal past health and social characteristics ($p<.01$); and workplace support and satisfaction ($p<.01$) on current psychological distress; while alcohol use was significantly associated with age, gender ($p<.01$) and mine type ($p<.001$). Estimates of costs of mental health problems to industry will also be presented. **Conclusion:** Findings indicate the multiple contributions to mental health among mine workers. Identified workplace factors provide a basis for directed mental health interventions in this and other similar occupational settings internationally. The links with a newly established industry-based mental health strategy will be outlined.

Peripheral blood gene expression and proteomic analysis implicates B-cell development and ribosomal proteins in cognitive dysfunction in people with remitted major depression

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Background: Cognitive impairments are observed in a substantial proportion of patients suffering from Major Depressive Disorder (MDD), significantly impacting on patients' psychosocial functioning and quality of life. Molecular mechanisms underlying these cognitive deficits in MDD are incompletely understood. **Methods:** We utilized whole-blood transcriptomic data from 19 well-matched remitted MDD patients for weighted gene coexpression network analysis (WGCNA), comparing transcriptomes of patients with poor versus better cognitive performance as assessed by the Repeatable Battery for the Assessment of Neurocognitive Status (RBANS). Findings were followed up on the protein level in patient plasma, using a targeted proteomics approach. **Results:** WGCNA identified 16 transcriptomic modules in the analyzed samples. One module was significantly correlated with poor versus better RBANS performance, and significant correlation was also found between this module and participants' overall raw RBANS scores. The module contained several transcripts encoding a ribosomal family of genes. Ingenuity Pathway Analysis identified B cell proliferation and development as a major functional component of the module. On the plasma protein level, we confirmed significant group differences for two functionally interesting module proteins. **Conclusion:** This study suggests that ribosomal proteins and B cell biology are relevant to cognitive deficits in remitted MDD. If replicated in larger and independent cohorts, results could contribute to improved biologic understanding, biomarker development, and personalized treatment options for patients suffering from cognitive deficits in the context of MDD. The experimental workflow of this study may represent a novel and cost-effective approach to blood biomarker discovery for psychiatric phenotypes.

Kava for the treatment of Generalised Anxiety Disorder (K-GAD): neurophysiological and pharmacogenomic anxiolytic biomarkers

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Background: Generalised Anxiety Disorder (GAD) is a debilitating cluster of psychological and physiological symptoms that may markedly impair a sufferer's quality of life. Evidence exists for the dysregulation of various excitatory/inhibitory neurological pathways in the limbic and pre-frontal brain regions which underpin GAD pathophysiology; one particular region of import concerns the anterior cingulate cortex (ACC). The bioactive constituents from the Kava plant (Piper methysticum), known as kavalactones, possess anxiolytic properties previously shown to be efficacious in alleviating GAD symptomatology. This activity has been shown in preclinical models to be primarily mediated by modulation of the GABA pathway. To date however, the neurobiological effects of Kava on humans has not been studied. **Methods:** This novel double-blind RCT (n=80) assesses via fMRI and MRS technology whether changes in IAPS-provoked ACC activation and GABA metabolite levels in this region occur in GAD participants prescribed 8 weeks of Kava (versus placebo), and whether these are a markers of the plant's anxiolytic activity. Further, whether GABA receptor and transporter gene polymorphisms also act as interrelated modifiers of response. **Conclusions:** Aside from determining the biomarkers of response for Kava, this research will also contribute to a translational rationale for the investigation of other anxiolytics on the GABAergic system for the treatment of GAD.

Men's perceived barriers to help seeking for depression: longitudinal findings relative to symptom onset

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Background: In terms of help seeking for depression, compared to women, men are more likely to perceive and report stigma, are more likely to hold the belief that depression should be dealt with alone, and are less likely to engage in activities that promote positive mental health. The present exploratory study sought to examine the relationship between the chronicity of depression symptoms and help seeking by (i.) exploring group differences related to the longitudinal (i.e., ≥ 3 months) experience of depressive symptoms on help seeking attitudes, and ii.) examining whether previous mental health help seeking efforts resulted in more favourable attitudes regarding mental health help seeking barriers. **Methods:** A community sample of 125 men (M=39.02 years) provided self-report data on perceived barriers to mental health help seeking (i.e., need for control and self-reliance, minimising problems, privacy, concrete barriers, emotional control), and depression at baseline (T1), and 15-weeks (T2). Longitudinal depression caseness was used to investigate group differences in perceived barriers to help seeking. Based on self-reported depression diagnostic status (yes/no) at T1 and T2, four groups were created. **Results:** A strong multivariate effect was reported for the depression groups: Λ=.504, F(15,306)=5.77, p<.001, η^2=.204. Contrary to prediction, no significant effects were observed for previous help seeking for depression, and age was not a significant covariate. Scheffe post-hoc analysis indicated that those experiencing unremitting depression reported the highest perceived help seeking barriers. This finding was consistent over all five domains of help seeking barriers. **Conclusion:** Men at the highest risk of ongoing depressive symptoms were found to be the most likely to hold negative attitudes towards help seeking for these symptoms. Given men's relatively poor rates of mental health help seeking, and markedly higher rates of suicide, a concerted research agenda is required into the health psychology of men.

Investigating optimal stimuli for large-scale endophenotype studies of binocular rivalry rate in bipolar disorder

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Background: Presenting conflicting images, one to each eye, produces perceptual alternations known as binocular rivalry (BR). BR rate (BRR) is slower in the heritable psychiatric condition, bipolar disorder (BD), than in healthy controls, and is also around 50% genetically determined. Thus, slow BRR is a candidate endophenotype for BD. Endophenotype studies require very large datasets (N=1,000s–10,000s), presenting enormous logistic challenges and costs of laboratory-based BRR testing. A web-based BR test, using mail-able cardboard anaglyph glasses, can overcome these obstacles but requires psychometric validation. **Methods:** In a repeated-measures within-subjects BRR study, we examined psychometric parameters of various anaglyph stimuli in 19 BD outpatients and 19 age- and sex-matched healthy controls, using: (i) green orthogonally-drifting vertical/horizontal gratings; (ii) red/blue anaglyph orthogonally-drifting vertical/horizontal gratings; (iii) red/blue anaglyph opposite-drifting concentric rings; and (iv) stationary green vertical and horizontal gratings. All stimuli were square-wave, had a spatial frequency 8 cycles/deg, and were presented in a circular aperture subtending 1.5° of visual angle. Drift speed was varied between 4 and 8 cycles/sec. Subjects behaviourally reported perceptions in three separate test sessions. **Results:** Anaglyph gratings drifting at 4 cycles/sec were optimal for web-based BR testing because they induced BRR that was: (i) moderately to highly correlated with same-speed green stimuli used extensively in previous studies, (ii) significantly slower in BD than controls, and (iii) highly stable between test sessions. Moreover, (iv) predominance bias and mixed percept duration was low with these stimuli. **Conclusion:** These findings determine optimal stimulus parameters for large-scale endophenotype studies of BD, with web-based BR testing.

Prevalence and predictors of co-occurring depression and alcohol misuse in Australian general practice

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Background: There is significant burden associated with co-occurring depression and alcohol misuse for individuals and health care systems. General practitioners (GPs) are often the primary point of contact for both alcohol and mental health conditions, however little is known regarding the prevalence and predictors of co-occurring depression and alcohol misuse among general practice patients. This study aims to determine: 1) the prevalence of depression among individuals who are: i) non-consumers of alcohol; ii) non-risky alcohol consumers; iii) at risk for mild alcohol misuse; iv) at risk for moderate misuse or v) at risk for severe or very severe misuse; and 2) the socio-demographic predictors of depression and high levels of alcohol misuse. **Methods:** A cross-sectional survey was administered in 12 Australian general practices. Patients were invited to complete a touchscreen survey on a tablet computer before their scheduled appointments. Patients completed demographic questions, as well as questions on depressive symptoms and alcohol use. Counts and percentages were obtained for prevalence of depression and alcohol use. Ordinal logistic regression was employed to model the odds of depression and increasing degrees of alcohol misuse. **Results:** A total of 3,559 patients had complete data available. Depression prevalence was significantly differed among the levels of alcohol misuse ($P<0.001$). Those with severe/very severe alcohol misuse reported the highest prevalence of depression (26%), followed by those with moderate misuse (18%). The odds of having depression and higher levels of alcohol misuse were increased for males, younger patients, those with lower education and those with a greater number of GP visits. **Conclusion:** This study provides prevalence rates and predictors for co-occurring depression and alcohol misuse in Australian General Practice. These findings can assist GPs in detecting and screening for these conditions to aid with effective treatment and referral.

Can data mining and machine learning help us find biomarkers associated with depression?

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Background: Identification of the association between large numbers of biomarkers and clinical endpoints, such as depression, is a growing focus in psychiatry. However, optimal methods to achieve this are uncertain. The aim of this study was to apply a novel analytical approach to identifying key biomarkers associated with depression in a large epidemiological database. **Methods:** We used the National Health and Nutrition Examination Study (2009-2010) data for adults in the USA aged 18+ (n=5,227, Mean age=43 yr). Depression was measured with the Patient Health Questionnaire-9 (total score ≥10) and 67 biomarkers were derived from blood and urine samples. Covariates included gender, age, race (socially defined), smoking, food security, Poverty Income Ratio, Body Mass Index, diabetes, physical inactivity and medications. Atheoretical data mining techniques with an effective machine learning algorithm, and conventional logistic regression techniques, were used to identify key biomarkers associated with depression. The final imputed weighted multiple logistic regression model was controlled for possible confounders and moderators. **Results:** Four out of a possible 67 biomarkers were included in the final model. Three had a positive relationship with depression: red cell distribution width (OR 1.14; 95% CI: 1.01, 1.29), blood cadmium (OR 1.03; 95% CI: 0.99, 1.07) and serum glucose (OR 1.00; 95% CI: 1.00, 1.01). Significant interactions were found between blood cadmium and age (45-54yr, p=0.014; 55-64yr, p=0.015), and diabetes (p=0.032). Lastly, an inverse relationship with depression was found for total bilirubin (OR 0.12; 95% CI: 0.05, 0.27) with significant interactions for the Mexican American/Hispanic group (p=0.007), and current smokers (p=0.001). **Conclusion:** Four key biomarkers associated with depression were identified; these may be targets for future a-priori examination. This study supports the utility of this methodology as a hypothesis-generating approach.

The cognitive trajectory of people following first episode mania

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Background: Cognitive impairments are evident in the early stages of bipolar disorder; however, the trajectory of cognitive functioning in people following a first episode of mania (FEM) is unclear. The purpose of this study was to evaluate the cognitive trajectory following a FEM relative to healthy controls over a 12-month follow-up period. **Methods:** Sixty-one FEM participants and 21 healthy controls were compared on changes observed in cognitive performance over a 12-month follow-up period using an extensive cognitive battery. The cognitive domains measured included: processing speed, attention, sustained attention, verbal learning and memory, visual learning and memory, working memory, verbal fluency and executive functions. **Results:** A significant group x time interaction was observed in processing speed, reflecting an improved performance in FEM participants compared to healthy controls. There were no other significant interactions identified between group and time for the other cognitive domains. **Conclusion:** Our findings revealed that most cognitive domains remain constant in the first year following FEM, apart from an improvement in processing speed relative to healthy controls. Future studies should focus on the cognitive trajectory during the at-risk stage, as well as the effects of medication on the trajectory of cognitive functioning in the early stages of illness.

Systematic review and meta-analysis of psychological therapies used for the treatment of bipolar disorder

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Background: Bipolar disorder is a serious and disabling mental disorder characterized by acute episodes of depressed, manic and mixed mood states. Primary treatment consists of medications with psychological therapies being used as an adjunct. Previous meta-analyses of adjunctive psychological therapy for bipolar disorder have reported mixed results with the last meta-analysis being published in 2010, and new trials have been published. Therefore the aim of this review is to examine the efficacy of psychological interventions used for the treatment of bipolar disorder in adults on: 1) relapse rates; 2) depressive and manic symptoms; 3) psychosocial functioning, and 4) to identify factors related to efficacy. **Methods:** We conducted a systematic review of randomized controlled trials in the electronic databases Medline, PubMed, PsycINFO and the Cochrane Library of Systematic Reviews from 1964 to February 2015. Searches were limited to adults (>18 years old) diagnosed with bipolar disorder (types I or II, cyclothymia). Primary outcomes were relapse rates for mania and depression (assessed using risk ratios (RR)), and secondary outcomes were differences in symptom scales for mania, depression and psychosocial functioning (assessed using standardised mean differences (SMDs)). Factors related to efficacy were examined using meta-regression. **Results:** From 532 abstracts initially identified, 50 studies (n = 4,810 participants) met the inclusion criteria. Data analysis is ongoing and will be completed by September. **Conclusion:** This is the most recent, comprehensive analysis of the efficacy of adjunctive psychotherapy in bipolar disorder and will be useful to clinicians. The results will also be used for health economic modelling to estimate the cost-effectiveness of treatments for bipolar disorder within the Australian mental health system.

Symptom endorsement in men versus women with a diagnosis of depression: a differential item functioning approach

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Background: There is some evidence that depressed men report symptoms that may not be listed as current diagnostic criteria. This may lead to an under or mis-diagnosis of depression in men. This study aims to clarify presentation features that are associated with a diagnosis of depression in men. **Methods:** This study used data from the 2007 Australian National Survey of Mental Health and Wellbeing that was collected using the World Health Organisation's Composite International Diagnostic Interview. Participants with a diagnosis of a depressive disorder with 12-month symptoms (n = 663) were identified and included in this study. Differential item functioning (DIF) was used to test whether men and women with a diagnosis of a depressive disorder endorse different features associated with their condition. **Results:** Women had a higher probability of endorsing symptoms that were part of standard diagnostic criteria for depression than men. Women showed a higher probability of endorsing 'appetite/weight disturbance' than men. Conversely, 'alcohol use' and 'substance use'—not included in standard diagnostic criteria for depression—were more common in depressed men. **Conclusion:** While the results may reflect a greater risk of co-occurring alcohol and substance misuse in men, inclusion of these features in assessments may improve the detection of depression in men, especially if standard depressive symptoms are under-reported.

Repetitive transcranial magnetic stimulation in anxiety and depression

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Background: Treatment resistant depression (TRD) is common, and Electroconvulsive Therapy (ECT) remains the gold standard for TRD; however, it does not alleviate anxiety. We present the case of a gentleman with chronic TRD and social anxiety, who failed ECT and left sided repetitive transcranial magnetic stimulation (rTMS) but then responded to right sided rTMS. **Methods:** The patient is a 44 year old married mixed race male, with a history of chronic major depressive disorder, dysthymic disorder and social anxiety who is otherwise healthy. He had adequate trials of multiple psychotropic medications and psychotherapy. Right unilateral ECT was initiated, but after six sessions without any response, he was switched to bilateral ECT for a total of twenty sessions after which it was discontinued due to lack of clinical benefit. He thus began left unilateral, high frequency (10Hz) rTMS. **Results:** Using the Montgomery-Asberg Depression Rating Scale (MADRS), his initial score was 24. In total, the patient received 32 left sided treatments; however, he failed to respond. He was switched to right sided rTMS and after 20 sessions his MADRS score decreased to 9. He has been continued on maintenance rTMS therapy and remains in remission. **Conclusion:** To date, there have been no reported cases of TRD and comorbid anxiety with response to treatment with low frequency, right sided rTMS after first failing both ECT and left sided high frequency rTMS. This case illustrates that rTMS is emerging as a treatment option for TRD and anxiety and may play a crucial role in providing relief to those patients who suffer with both depression and anxiety. If the more commonly practiced left sided, high frequency rTMS proves ineffective, then right sided, low frequency treatment should be considered. Patients with TRD may be also suffering from anxiety, which, if alleviated, may help improve their depression.

The Kubler-Ross legacy: progressing the field of death, dying, grief, and loss

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Background: Despite the ubiquitous nature of grief and loss themes presented in psychiatric settings, education and training regarding care for such patients is inconsistent. With the diagnosis of Persistent Complex Bereavement Disorder ('Complicated Grief') being featured in the development of DSM-5 and ICD-11, there is a need for further education around death, dying, and bereavement. **Methods:** A narrative review was conducted to track research, theory, and practice developments in thanatology across the last 50 years. A particular focus was assessment of bereavement, grief, and loss in the tertiary curricula of psychiatry and other health professions in Australian and international institutions. **Results:** Results confirm that despite considerable developments in bereavement theory and research, healthcare professionals receive inconsistent and at times inadequate exposure to themes of death, dying, grief, and loss in their training curricula. Students in Australia, the United Kingdom, United States, and Denmark did not often receive broad biopsychosocial or diagnostic training in bereavement. Some students received only brief instruction with an emphasis on physical end-of-life issues and the 1960's work of Elisabeth Kubler-Ross. **Conclusion:** Further work is needed to address the identified needs of clinicians and practitioners, including providing psychiatrists and healthcare professionals with up-to-date and relevant information about death, dying, and bereavement.

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