

C H A N G I N G



R E S E A R C H



CHANGING THE GAME

NDARC SHARES GAME
CHANGING HIGHLIGHTS
FROM 30 YEARS OF DRUG &
ALCOHOL RESEARCH.

BUILDING

THE

FUTURE

MESSAGE FROM THE DIRECTOR AND CHAIRMAN

We are honoured to be writing the introduction to this 30th year anniversary celebration magazine.

Things have changed a lot over this long period. But to begin with I must thank all those who, from the very start, have made NDARC what it is today – in particular the founding Director Ian Webster and inaugural Director Nick Heather, followed by Wayne Hall and then Richard Maltick. But I would also like to thank the huge range of people in NDARC and across the community who have encouraged and supported us all this time.

Especially we thank Marion Downey, NDARC's communications manager, for the passion and commitment she has put into preparing this publication, which captures the challenges, excitement and achievements of the Centre over the period.

The decades are graphically presented and the versatile and pragmatic response of the teams well captured. There is no question in our view that the field has functioned effectively to make some major contributions to the nation's health and wellbeing in a complex and challenging arena.

The nuanced approach of the field in Australia has been assisted by the long-term investment in building sound knowledge and good information on which to base responses. I think the vision of the politicians, policy makers, bureaucrats, clinicians, drug workers, community groups, drug users organisations, families and, of course, researchers has been returned handsomely.

We can see the evolution, maturation and diversification of the problems, the research and the clinical, social and policy responses over time. The pace of change and the need to incorporate new technology and adapt and respond has not lost momentum. We are happy to see that our NDARC team has more than kept pace with the changes and has grasped much of the exciting opportunity available to us.

The challenge for the future is no less daunting but we are hungry to keep making a strong and impactful contribution to the health and wellbeing of the community – and to reduce the burden of disease – through our research and our capacity to translate this into clinical practice.

This document provides a colourful description of the journey of the past 30 years and some indication of the exciting ambitions for the future.

NDARC has worked closely with the National Drug Research Institute (NDRI) at Curtin University and the National Centre for Education and Training on Addiction (NCETA) at Flinders University as well as a wide range of other organisations. We deeply value our collaborators and partners and list all of these and the varied projects and CIs in detail in our Annual Report.

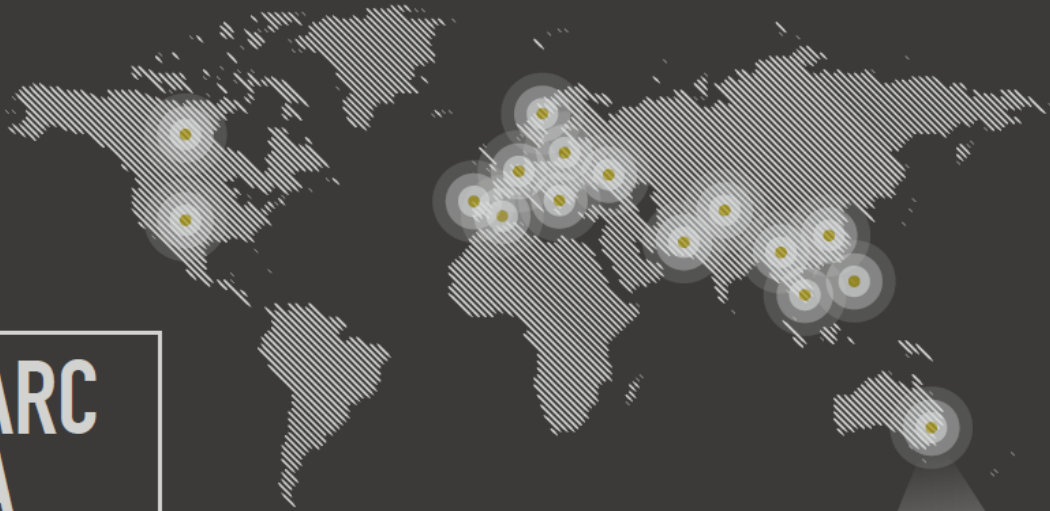


Michael Farrell
Director NDARC
(Left)


Bob Mansfield AO
Chairman NDARC
(Right)



46 COLLABORATING
INSTITUTIONS
INTERNATIONALLY IN 2016




**NDARC
AT A
GLANCE**

66 
PhDs AWARDED
BY NDARC
SINCE 1987

83
COLLABORATING
INSTITUTIONS IN
AUSTRALIA IN 2016

50,000+ 
NDARC CITATIONS
OVER THE PAST 5 YEARS


NDARC STAFF
GROWS
FROM 16 IN 1987

140 
TO IN 2016

1980
1990
2000
2010



THIRTY YEARS OF CHANGING THE GAME

—

EACH DECADE HAS PRODUCED UNIQUE CHALLENGES. OUR RESEARCH HAS RESPONDED TO AND GROWN WITH THESE SOCIAL CHANGES ALWAYS AIMING TO IMPROVE UNDERSTANDING, REDUCE HARMS AND PROVIDE SOLID EVIDENCE ON WHICH TO BASE POLICY AND CLINICAL PRACTICE.

1980s

1985-1989

In April 1985 the National Campaign Against Drug Abuse (NCADA) was established. The National Drug and Alcohol Research Centre (NDARC), the National Drug Research Institute (NDRI) and the National Centre for Education and Training on Addiction (NCETA) all opened in 1987 with Commonwealth funding as early initiatives of the national campaign.



SIDE BY SIDE

STORIES OF COLLABORATION

LUCINDA BURNS

Associate Professor Lucinda Burns has developed gold standard guidelines for mothers who use drugs and their children

Q WHY DID YOU BRING YOUR AREAS OF EXPERTISE TOGETHER?

A In a past life I was a nurse and am still very interested in clinical research that can make a difference. A number of years ago I worked on a large data linkage project examining outcomes from drugs in pregnancy. Ju-Lee was working in the area clinically and we started to work together. Being able to really see what is happening in the clinical world keeps research fresh and alive for me.

Q WHAT DO YOU SEE AS YOUR MOST IMPORTANT WORK TOGETHER?

A We have worked on the development of policy documents and peer reviewed publications. We are currently working with a student examining issues around exposure to methamphetamine in utero. Given the increasing use of methamphetamine, I think this is and will be a very important piece of work.

Q WHAT HAS YOUR WORK CONTRIBUTED TO THE FIELD?

A We share the philosophy that mothers and children must be treated as a unit and this should be done with dignity and respect. We have identified what sorts of drugs women who are pregnant are using and how these affect their babies. We have consulted with others to determine what treatment approaches should be considered gold standard and how these might be accessed. For example, NSW Health guidelines for drug in pregnancy now discuss buprenorphine and prescription opioids.

Q WHAT DO YOU THINK REMAINS UNANSWERED?

A Given the ever-changing trends in drug use, the next step is to move towards testing clinical treatments for the neonate exposed to different drugs in utero. These interventions needn't be complex.

Q WHAT IS IT YOU LIKE BEST ABOUT WORKING WITH EACH OTHER?

A Ju-Lee's endless energy and willingness to take new ideas on board. Basically she is a lot of fun!

LUCINDA BURNS AND DR JU-LEE OEI, A PAEDIATRICIAN SPECIALISING IN NEWBORNS, HAVE BEEN WORKING TOGETHER FOR 10 YEARS FOCUSING ON MATERNAL DRUG USE

JU-LEE OEI

Neonatologist Dr Ju-Lee Oei helped write the guidelines for the management of neonatal abstinence syndrome

Q WHY DID YOU BRING YOUR AREAS OF EXPERTISE TOGETHER?

A When I started out in research in this field, Lucy's expertise was invaluable in guiding my research efforts and in opening contacts for our group. Through Lucy and NDARC's support, we were able to organise conferences, collaborate on research projects that are still ongoing and supervise many students together through the ILP and honours scheme at UNSW.

Q WHAT DO YOU SEE AS YOUR MOST IMPORTANT WORK TOGETHER?

A The studies looking at long-term outcomes of children affected by maternal drug use disorders. Obtaining data on this marginalised and vulnerable group of children is difficult in any country but with the data available in Australia and Lucy's epidemiological expertise, we were able to show that children with Neonatal Abstinence Syndrome (NAS) or withdrawal from maternal drugs, were at high risk of poor outcomes (including death) even until they were teenagers, emphasising the urgent need to provide continued support for these families for many more years than is currently the norm.

Q WHAT HAS YOUR WORK CONTRIBUTED TO THE FIELD?

A Our work has contributed to the development of state (NSW), national and international guidelines for the care of children with NAS.

Q WHAT DO YOU THINK REMAINS UNANSWERED?

A Children of drug-using mothers are a rapidly increasing population. We still don't know what happens to them (the current data is not reassuring) and whether we can do anything to prevent the inexorable intergenerational slide towards disadvantage.

Q WHAT IS IT YOU LIKE BEST ABOUT WORKING WITH EACH OTHER?

A Lucy is supportive of all my crazy ideas, she never loses her cool and her advice is consistently intelligent, measured and practical. And she makes great coffee.



Photo credit: Clay Watson Photography

1980s AND NDARC'S ESTABLISHMENT



Professor Ian Webster Acting Director NDARC 1986/87.

IT'S A SCENE THAT IS DIFFICULT TO PICTURE ON TODAY'S TIGHTLY MANAGED POLITICAL STAGE. A PRIME MINISTER REDUCED TO TEARS AT A PRESS CONFERENCE, DISTRAUGHT OVER A REPORTER'S IMPUTATION HE MIGHT HAVE GONE SOFT ON DRUG DEALERS.

It was spring 1984 and the nation's drug problem was about to go public in a big way. The Prime Minister's daughter had been using heroin.

Bob Hawke's family was far from alone in its crisis. Heroin use was growing, reaching into communities that had never seen it before. Heroin was not the only problem facing the nation. There were other illicit drugs, as well as the largely unspoken risks raised by alcohol and tobacco.

Drug use, legal and illicit, was a highly contentious and politicised area, but the nation's grasp on the true scope of the problems much less how to tackle them – was limited.

There was, at best, "a spotty understanding of the scale of the problem," said Professor Wayne Hall, deputy director, and then director, of the yet to be formed National Drug and Alcohol Research Centre.

Australia's research field was scattered and tiny, stigmatised and divided, and crying out for national leadership.

For some time, a group of what Dr Alex Wodak, Emeritus Consultant at St Vincent's Hospital, calls "scientifically minded" clinicians, public health practitioners and researchers had been agitating for an evidence-based response.

The idea for a national research centre was first raised in a trailblazing Senate committee report in 1977 led by Liberal senator Peter Baume, a medical doctor, called Drug Problems in Australia – an intoxicated society?

—
"We really had to start from scratch, there was no research infrastructure in the addiction field."
—

Professor Wayne Hall

Dr Les Draw, a psychiatrist who was a senior adviser to federal health ministers from 1975 to 1988 including Hawke's health minister Dr Neal Blewett, worked hard to drive policy change and make alcohol and drug problems a central public health concern. At the same time, doctors such as UNSW Emeritus Professor Ian Webster and Dr Wodak pushed for a new approach. But the community was yet to catch up.

Propelled by his family's crisis, Hawke called a special Premiers' conference on 2 April 1985 to plan a national drug strategy. It was to be, in the words of Professor Webster, who was on the committee that guided the creation of NDARC, "a watershed" moment. That fundamental shift was the adoption of harm minimisation as national drug policy, a philosophy that has shaped Australia's response ever since. In addition, all drugs – alcohol, tobacco and illicit ones, were considered within the same strategy.

At the time, there was a stigma attached to the field, even within public health circles. As Professor Richard Mattick, one of the first recruits to NDARC, put it, "prior to the 1990s drug and alcohol research internationally was fairly poor to moribund."

"What was needed," Dr Wodak said, "was a national centre that would raise the level of discussion in medical and scientific health circles, in the bureaucracy and in the community."

In what looks now like a rare moment of political bipartisanship, the proposal for the centre was approved at the 1985 Premiers' conference. On 4 December 1985, Ronald Mulock the Deputy Premier of NSW under Neville Wran and the NSW Health Minister, invited the University of New South Wales to submit a proposal to establish a research centre to "focus initially on extending the knowledge base required for effective treatment and rehabilitation programs."

The proposal was developed by Emeritus Professor Syd Lovibond, Dr Wodak, Dr Robyn Richmond, Dr Chris Clarke and Ian Webster as chair.

NDARC opened in 1986 in Randwick in Sydney and in October 1987 its first director Professor Nick Heather, a clinical psychologist from the University of Dundee took up his position. Nick had an impressive research record in addictive behaviours with a focus on alcohol, brief interventions and controlled drinking. These interests drove much of the early research program.

While the important work on heroin and methadone commenced early in the life of the centre, it was to be another few years before heroin and treatments for heroin became the major focus. The change in direction was driven by the work of Richard Mattick, Shane Darke and deputy director Wayne Hall. The emerging HIV/AIDS epidemic added further urgency to the research direction.

While many early recruits came from the behavioural sciences, NDARC's mission was always multidisciplinary, bringing together insights from public health and pharmacology, mental health and epidemiology, to generate rigorous research in what was a highly contested field.

Professor Hall said: "We really had to start from scratch, there was no research infrastructure in the addiction field."

PM's wife tells of daughter's heroin addiction

SYDNEY: Mrs Hazel Hawke, wife of the Prime Minister, said last night that her youngest daughter, Rosslyn, and her son-in-law have a heroin problem.

It was the reason for her husband's tears when questioned about drugs at a Canberra news conference last week. She made the disclosure on com-

A DECADE OVERVIEW OF THE 1980s

1985

National Campaign against Drug Abuse launched.

1986

Three research centres are established by the Australian Government in response to the emergence of HIV/AIDS. The Sydney centre is called the NHMRC Special Unit in AIDS Epidemiology and Clinical Research. In 1988, this unit was renamed the National Centre in HIV, Epidemiology and Clinical Research (NCHECR). In 2011 the name was changed to the Kirby Institute.

1987

NDRI and NDARC established.
—
First needle syringe program (NSP) opened in Darlinghurst.
—
National Task Force on Cannabis convened.
—
NCETA launched in Adelaide.

1988

Report of the NCADA taskforce on evaluation concluded there had been considerable progress.
—
Australian IV League (AIVL) began as an unfunded national network representing drug users and drug user organisations.

1989

National HIV/AIDS strategy launched. Hepatitis C studies show high prevalence of hepatitis C among drug users.

1990s

1990-1999

By the 1990s NDARC had clearly established itself as a significant public health research institute, providing rapid responses to governments and policy makers at a time when there was limited evidence on treatment responses and the emerging issue of HIV among people who inject drugs.

Photo: © Alan Tan - and Roger Leighton
 (The photo was used with the permission of the artist.)

Scientist Alan Tan, who has spent the last 10 years of his life studying the impact of HIV on the immune system, is a leading expert on the disease.

The Scientist (1) has been a leading expert on the disease, and has been instrumental in the development of the first HIV vaccine, which is now being tested in a clinical trial in South Africa.

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No room for apathy in fighting HIV

Today in World AIDS Day, John Strang urges how the battle against the disease is going in Australia and the challenges that lie ahead



Stephen Hillier: The great 'backlash' over medication in women, by the numbers about HIV

The great 'backlash' over medication in women, by the numbers about HIV

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The great 'backlash' over medication in women, by the numbers about HIV

Kids start shooting up at eight years old



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Young addict to go free

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Young addict to go free

Young addict to go free

Young addict to go free

Young addict to go free

Hopes pinned on summit

Hopes pinned on summit

Hopes pinned on summit

Hopes pinned on summit

Hopes pinned on summit

Hopes pinned on summit

Hopes pinned on summit

Hopes pinned on summit

Hopes pinned on summit

Hopes pinned on summit

Hopes pinned on summit

Hopes pinned on summit

Hopes pinned on summit

The Opioid Epidemic

Heroin deaths soar to crisis level

Heroin deaths soar to crisis level

Heroin deaths soar to crisis level

Heroin deaths soar to crisis level

Heroin deaths soar to crisis level

Heroin deaths soar to crisis level

By Jupiter, there's another solar system out there



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A DECADE DEFINED BY HEROIN



 1/5

In 1997, one in five Australians met criteria for a substance use or mental disorder – only a third of these people had sought any treatment in the previous 12 months.

The 1990s was a decade defined by heroin, which was seen as a national crisis. NDARC's important work throughout this period focused on understanding overdose and treatment responses.

Heroin in the 1990s was cheaply available and of high purity. There was a steep rise in overdose deaths and drug-related crime and the emergence of street-based public heroin markets in both Sydney and Melbourne.

NDARC research at this time included detailed ethnographic analyses of the street-based heroin market in Cabramatta led by Lisa Maher along with the beginning of detailed, world-first analyses of methadone maintenance as a first-line treatment. Led by Jeff Ward with Richard Mattick and Wayne Hall, the centre conducted a comprehensive review of methadone maintenance.

"What we did from a public policy point of view in the early 90s in addressing the risks associated with heroin use and with injecting drugs, particularly as related to the transmission of HIV, was absolutely remarkable, historically remarkable," said Danny O'Connor, who was then the NSW manager for the methadone program and is now CEO of the Western Sydney Local Health District.

Methadone was highly controversial. NDARC's work gave administrators and clinicians robust guidelines and evidence about effectiveness for the first time.

"We were surprised by the evidence which was so strong, almost like penicillin, it just works. Not perfectly – but it does reduce deaths, reduce injecting drug use and reduce risk of HIV and other infectious disease," Professor Mattick said.



Cabramatta 1995.

"What we did from a public policy point of view in the early 90s in addressing the risks associated with heroin use and with injecting drugs, particularly as related to the transmission of HIV, was absolutely remarkable, historically remarkable."

Danny O'Connor

Their work became the "international benchmark," Mr O'Connor said. The review was picked up in the UK and helped to guide British policy. Later Professor Mattick wrote guidelines for the WHO on methadone treatment and got both methadone and buprenorphine on to the model list of medicines worldwide.

NDARC was not just concerned with treatment responses, but also how to stem the tide of fatal and non-fatal heroin overdoses, and reduce harms from injecting behaviour.

NDARC Professor Shane Darke's work on overdose and how to treat it changed the medical orthodoxy in the area.

"Back in the late 80s and early 90s we were told there was nothing to study on overdose, we knew it all," he said.

Professor Darke showed that with most overdoses, there is at least half an hour in which something could be done to save the person's life. The benefits of the drug naloxone, which reverses overdose, were published by NDARC, though the drug has only recently been made available over the counter in pharmacies.

Needle and syringe programs were a central part of Australia's response to reducing the harms from illicit drug use. Professor Kate Dolan joined the centre in 1993, bringing her experience in needle and syringe programs in the UK. With a focus on a highly marginalised population, characteristics of much of NDARC's work, Professor Dolan established the first large-scale randomised controlled trial of methadone treatment for inmates in NSW prisons.

That and much of her prisons work since in Australia and overseas demonstrated the best ways to reduce injecting and the risk of HIV transmission.

This commitment to criminal justice research has continued at NDARC both through its epidemiology research and its policy research at the Drug Policy Modelling Program.

Despite the focus on heroin use, cannabis use continued to grow across Australia, and NDARC was on the front foot in developing a stronger epidemiological base to understand trends in cannabis use and harms.

Significant national reviews conducted by NDARC led to its involvement in the WHO's review of cannabis health effects and studies of long-term users. Once again, NDARC research was taken up internationally.

The growth of a new epidemiological program at NDARC in the 1990s was also a key achievement. Not only monitoring cannabis and heroin but also some of the world's earliest work on MDMA patterns of use and other stimulants and so-called party drugs was conducted by NDARC in the early 1990s. NDARC set up the first Illicit Drug Reporting System in the mid 90s, which tracked NSW trends in drug use, including the price, purity and availability of the major drugs being used. It was later made national.

NDARC contributed to the National Survey of Mental Health and Wellbeing in 1997, uncovering the significant overlap between mental health issues and drug and alcohol problems but treatment services remained completely separate.

As the 1990s decade started, so it closed, with a continued crisis around heroin. By the late 1990s, heroin deaths in Australia reached 1000 a year, and NSW Premier Bob Carr, who was standing for re-election, called a drug summit to tackle the problem. "We had a heroin epidemic at the time," said Professor Wayne Hall who was director of NDARC from 1994-2001, "and by the mid 90s we saw a huge surge in heroin overdose deaths that really required and demanded a political response."

A DECADE OVERVIEW OF THE 1990s

1990

Commonwealth Government ratified the UN Convention against Illicit Trafficking in Narcotics and Psychotropic Substances.

1991

Second evaluation of NCADA. No Quick Fix (Ian Webster) concluded there were no quick solutions.

1992

National Task Force on Cannabis convened. — NCETA launched in Adelaide.

1993

First national policy on methadone adopted. — Needle syringe programs made national policy.

1994

National Cannabis Task Force recommended that jurisdictions consider removing criminal penalties for personal use/possession of cannabis. — Hepatitis C action plan adopted.

1995

Friends and Families for Drug Law Reform was launched following a high number of heroin overdose deaths between Christmas and New Year.

1996

Collins and Lapeley report concluded the social cost of drugs of abuse was a minimum of \$18.8 million with tobacco accounting for 67 per cent, alcohol 24 per cent and illicit drugs 9 per cent.

1997

Ministerial Council on Drug Strategy meeting held to discuss ACT heroin trial. Supported by Health Minister Michael Wooldridge in July. — Prime Minister John Howard blocks the heroin trial in August.

1998

Evidence released that heroin overdose had increased from 70 to 550 between 1979 and 1995, a six-fold increase.

1999

Bob Carr convened NSW Drug Summit. — Australian Treatment Outcome Study (ATOS) funded to conduct large-scale prospective study of treatment outcomes for heroin users.

TEN PROJECTS THAT SHAPED THE 1990s

1991

Evidence-based treatment guidelines

NDARC produced the first evidence-based guidelines for management of nicotine, alcohol and opioid dependence. Treatment at the time often relied on 12-step inpatient rehabilitation or, for opioid dependence, methadone, which at the time was controversial. The guidelines were used to assess government and NGO services.

1992

Key issues in methadone maintenance treatment

This world-first summary of research on methadone maintenance treatment (MMT) found convincing evidence for its effectiveness in reducing heroin use, especially at higher doses, for reducing HIV risk and for use in pregnancy, but little role for urinalysis. The work led to new found policy/practitioner confidence in MMT.

1992

Fatal heroin overdose

The 1990s saw a major heroin epidemic. In this study we examined all NSW heroin overdose deaths over the first five years of the epidemic.

We found close to 1,000 cases, mainly among people aged in their 20s-30s, and most often with no help sought. The study illustrated the role of the co-use of other drugs, particularly alcohol and sleeping tablets, in causing these overdoses. This work transformed our understanding of overdose.

1993

Cannabis and mental health

In 1993, NDARC was asked to review the adverse health effects of cannabis for a National Task Force on Cannabis.

We found reasonable evidence that cannabis could produce dependence, and that daily use was associated with an increased risk of adverse psychosocial outcomes. While controversial at the time, the fact of cannabis dependence is now generally accepted.

1993

Brief Interventions Unit

Prior to this work, interventions were restricted to assisting severely dependent drinkers to abstain. The randomised controlled trials conducted in general practice found a significantly greater reduction in tobacco use as well as alcohol-related problems compared to control groups. Brief interventions are now accepted as one of the range of effective clinical interventions to assist smokers to quit and to reduce alcohol problems in our community.

1995

Running the Risk: Heroin, Health and Harm in South West Sydney

This first ethnographic study of its kind in Australia documented an emerging epidemic of heroin use among young Australians. Results informed public health responses, demonstrated the method's value in identifying emerging trends, hidden populations, and risk practices. It informed the establishment of the Illicit Drug Reporting System and drew attention to negative public health outcomes of aggressive street-level policing.

1995

Patterns and correlates of cannabis dependence

In the 1990s, the extent to which cannabis was a problem drug was hotly debated globally, and interventions were largely non-existent. This body of research was one of the first to document problematic cannabis use and dependence in regular users and led to some of the first international clinical trials of innovative psychological treatments for problematic use.

1996

Trial of methadone in prison

Our study of HIV and injecting drug use in NSW prisons highlighted the ongoing risky behaviour in prisons among people who inject drugs. We found that providing methadone treatment to inmates reduced levels of injecting, sharing, risk of HIV and HCV and mortality. The study led to an expansion of the methadone program in NSW prisons. It is cited by the WHO as the most important piece of evidence on methadone treatment for prisoners.

1997

First National Survey of Mental Health and Wellbeing

This survey provided the first estimates of the prevalence of all common mental disorders in Australia, showing they were as common as in other comparable, developed countries; there were high levels of comorbidity between anxiety, depressive and addictive disorders; and most Australians did not receive treatment. The findings prompted the Commonwealth to fund the National Comorbidity Initiative.

1998

Development of the Illicit Drug Reporting System (IDRS)

In the mid-1990s there was no Australian system tracking drug use, purity, availability and prices. In developing the Illicit Drug Reporting System (IDRS), NDARC has provided an annual snapshot of trends in illicit drugs. We identified major trends such as the heroin epidemic, the heroin drought and the ice epidemic. The system has been the major source of data on drug use trends in Australia for 20 years.

FINDING ANSWERS THE NSWERS

For a full list of investigators and collaborators please refer to the Appendix on Page 56



KEY ISSUES IN METHADONE MAINTENANCE (MMT)

Methadone was introduced into Australia by psychiatrist Dr Stella Dalton in 1970 to deal with heroin dependence but its use did not expand until the late 1980s as part of a pragmatic approach to heroin dependence and HIV prevention. Its use was polarising and politicians and senior policy makers were actively lobbied to restrain its expansion.

In urgent need of evidence on which to base policy and clinical practice, the NSW Department of Health approached Richard Mattick to produce several "position papers" on effectiveness, dose, utility of urinalysis, role of counselling, duration of MMT, role in HIV prevention, use in pregnancy, and consideration of comorbid psychiatric disorders.

Mattick hired the erudite Jeff Ward and asked Wayne Hall to help produce what was the most comprehensive review of its kind, internationally drawing on about 600 papers, at a time when the emerging epidemic of heroin use among young Australians continued unabated.

Results were central to informing public health responses, demonstrating the value of MMT in reducing heroin use, and of the need for higher doses (over 60mg per day) and of including pregnant women in MMT.

It pointed to reasonable evidence for prevention of HIV seroconversion and highlighted the need to provide additional care for heroin-dependent people with comorbid psychiatric disorders.

The body of work was one of the first substantial pieces of NDARC research to consolidate the centre's role in providing policy advice both in Australia and internationally. It led to several ongoing studies including the world's largest head-to-head double blind double dummy RCT of methadone and buprenorphine maintenance.

Mattick drafted submissions to accompany the successful listing of methadone and buprenorphine on the WHO Model List of Essential Medicines for management of opioid dependence, and contributed to the 2009 WHO Guidelines for Psychosocially Assisted Pharmacological Treatment of Opioid Dependence.

Key issues in methadone maintenance treatment by Jeff Ward, Richard Mattick and Wayne Hall was published by New South Wales University Press in 1992.

More than 50 publications resulted from the review. Later, Cochrane Collaboration group reviews on MMT and buprenorphine were among the Centre's most highly cited, with more than 700, and 1100 citations respectively.

AN EMERGING EPICENTRE OF HEROIN: CABRAMATTA

In the early 1990s concerns emerged in relation to street-based drug markets and public injecting drug use. Cabramatta was identified in the media as an emerging epicentre of heroin use and distribution and related violence.

Lisa Maher, now Professor and Program Head at UNSW's Kirby Institute, joined the centre after completing four years of ethnographic fieldwork in New York City examining the economic lives of female drug users. With the support of Director, Professor Wayne Hall, she developed and led NDARC's first and most influential ethnographic study, *Running the Risks*, designed to examine the economics of drug markets – how drug users generated income and what they spent it on.

"The first thing I noticed in Cabramatta was the young people hanging around on the street. There was a lot of activity and it was a very open drug market. I realised I was witnessing a heroin epidemic and that many of these young people would go on to become dependent, some would end up in jail and too many would lose their lives to fatal overdoses."



The media identified Cabramatta as an emerging epicentre of heroin use and related violence.



Our research produced a ground-breaking ethnography of an emerging epidemic of heroin use among young Australians and was instrumental in the development of public health responses, including the establishment of a targeted primary health care centre and a volunteer outreach service. Importantly the study informed the establishment of Australia's Illicit Drug Reporting System.

It was the first ethnographic research to document the negative public health impacts of intensive street-level policing. It informed the Wood Royal Commission into NSW police corruption and resulted in several sub-studies with Dr Wendy Swift and others. Sub-studies included the first Australian study of transitions from heroin smoking to injecting, the first laboratory-based investigation of heroin purity, composition and smoking efficiency, and several studies of drug market organisation and policing, including the first research examining young Asian people's experiences of policing.

Importantly, *Running the Risks* also led to the first Australian prospective observational study of anti-HCV negative young people who inject drugs documenting the highest HCV incidence in the literature, informing prevention strategies, including resources based on the identification of sharing filters as a risk factor, resulting in significant changes to prevention policy and practice.

"The first thing I noticed in Cabramatta was the young people hanging around on the street. It was a very open drug market."

Lisa Maher

SIDE BY SIDE

STORIES OF COLLABORATION

SHANE DARKE

Professor Shane Darke has been investigating the causes of drug-related deaths since the late 1980s.

Q WHY DID YOU BRING YOUR AREAS OF EXPERTISE TOGETHER?

A We had two very different areas of expertise. Jo is a highly regarded forensic pathologist, so he covers the medical and clinical areas, while I am a psychologist, trained in research design and statistics, whose speciality is drug-related problems. By working together we have been able to produce a unique research program in behavioural medicine.

Q WHAT DO YOU SEE AS YOUR MOST IMPORTANT WORK TOGETHER?

A In my opinion, our work on overdose has been the stand-out. This has included work on opioids, methamphetamine, cocaine, hypnotic sedatives and alcohol. No-one worldwide has been doing the type of work we have been engaged in.

Q WHAT HAS YOUR WORK CONTRIBUTED TO THE FIELD?

A I believe we have changed the way the field thinks about overdose. This has resulted in new ways of thinking about overdose, and of how to prevent it. The role of polydrug use in overdose that has come out of our work has been crucial, as well as our work on the role of disease in drug-related death.

Q WHAT DO YOU THINK REMAINS UNANSWERED?

A We still do not fully understand overdose. Why a person dies on one day, and not another, while doing pretty much what they have been doing for years, remains a mystery. If anyone tells you that we know all about drug-related death, they are selling snake oil.

Q WHAT IS IT YOU LIKE BEST ABOUT WORKING WITH EACH OTHER?

A Jo is super intelligent, quick witted and highly efficient. Over and above all that, he is just so much fun to work with.

SHANE DARKE AND FORENSIC PATHOLOGIST JOHAN DUFLOU HAVE COMBINED STATISTICS, RESEARCH DESIGN AND ILLICIT DRUG KNOWLEDGE WITH CLINICAL AND FORENSIC EXPERTISE TO CREATE WORLD FIRST FINDINGS

JOHAN DUFLOU

Forensic pathologist Professor Johan Dufloou worked at the Glebe Morgue in Sydney for 27 years

Q WHY DID YOU BRING YOUR AREAS OF EXPERTISE TOGETHER?

A Being able to collaborate with a researcher who was willing to question commonly held beliefs. I had ready access to the mortality data and medical and toxicology knowledge, but lacked statistical knowledge and that in-depth knowledge of illicit drug use.

Q WHAT DO YOU SEE AS YOUR MOST IMPORTANT WORK TOGETHER?

A Measured by citations, the work with Sharlene Kays on the harms caused by methamphetamine is head and shoulders above the rest. From a media perspective, it appears to be all about the effects of anabolic steroids on muscle-bound men's testicles. For me, it's the entire body of work that matters.

Q WHAT HAS YOUR WORK CONTRIBUTED TO THE FIELD?

A We've shown that very important data can be extracted from death investigation reports. Individually the reports tell you little about trends and the science of overdose but when large numbers of cases, often in the thousands, are reviewed you can get a very clear understanding of the time leading up to death. This can inform interventions that could prevent at least some of those deaths.

Q WHAT DO YOU THINK REMAINS UNANSWERED?

A Worldwide, novel psychoactive substances are or are becoming a major public health challenge. An in-depth understanding of the harms associated with these drugs and from there the provision of recommendations to minimise those harms is an important challenge for us all.

Q WHAT IS IT YOU LIKE BEST ABOUT WORKING WITH EACH OTHER?

A Simply that we get on with each other, we have many similar interests, we're from the same era, and we're able to harness each other's strengths. And of course you can't work with Shane without sharing his love of David Bowie.

Photo credit: Clay Norton Photography



RCT OF METHADONE TREATMENT IN AUSTRALIAN PRISONS

NDARC's first study in NSW prisons in 1993 highlighted the ongoing risky behaviour of people with HIV infection when in prison. About half injected in prison and nearly all were sharing syringes. In 1996 NDARC led a world-first trial of methadone treatment in Australian prisons in collaboration with St Vincent's Hospital and NSW Justice Health.

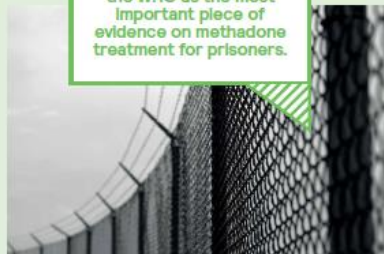
Of 593 eligible prisoners, 382 were randomised to methadone maintenance treatment (MMT) or control. At five months follow-up, heroin use was significantly lower among treated than control subjects. Treated subjects also reported lower levels of drug injection and syringe sharing. Subjects' reports of abstaining from heroin use were confirmed with hair analysis. There was no difference in HIV or hepatitis C incidence.

At the time, the study provided the impetus to expand the prison methadone program in Australian prisons, and then other countries followed. Today it is cited by the WHO as the most important piece of evidence on methadone treatment for prisoners.

The study continues to inform prison research in Australia and elsewhere. Four years later subjects were followed up again. No one had died while enrolled in MMT, but 17 subjects died while out of MMT, representing an untreated mortality rate of 2.0 per 100 person-years. In 2012 chief investigator Professor Kate Dolan led an Australian National Council on Drugs (ANCD) review of harm reduction strategies in Australian prisons. It found that provision of methadone in prisons had improved in all jurisdictions apart from Queensland since 2004 but no prisons had introduced needle syringe programs, despite the strong evidence in prisons overseas.



The trial is cited by the WHO as the most important piece of evidence on methadone treatment for prisoners.



THE HEALTH & PSYCHOLOGICAL EFFECTS OF CANNABIS

In 1993 the Commonwealth and States established a National Task Force on Cannabis. As a member of the task force Mel Miller approached Wayne Hall to review the adverse health effects of cannabis which he co-authored with Nada Solowj (then a PhD student at NDARC, now a professor at Wollongong University), and Jim Lemon.

The mental health consequences of cannabis use were central to the review because of community concerns about its effects on the mental health of adolescents and young adults.

The review found reasonable evidence that cannabis could produce dependence. It also summarised emerging evidence from longitudinal studies in New Zealand that daily cannabis use was associated with an increased risk of adverse psychosocial outcomes such as psychoses, depression, early school leaving, poorer cognitive performance and the use of other illicit drugs.

The findings on dependence were controversial because many people in the addictions field did not accept that cannabis dependence existed or, if it did, that it presented a problem serious enough that users would seek help.

Work by Professor Jan Copeland and colleagues showed that people with cannabis dependence would accept help if it were offered and cannabis dependence is now generally accepted as a phenomenon because of the large number of problem users who seek help to stop.

There continue to be debates about whether cannabis is a contributory cause of the psychosocial outcomes that the review identified. This is because of the difficulty in observational studies of disentangling the effects of daily cannabis use from the effects of other drug use, and the personal characteristics of those who become involved in daily cannabis use.

The researchers who undertook the original review were all based at NDARC. This work was important not just for its findings and advice to policy makers. It led to later collaborations with WHO, the Addiction Research Foundation in Toronto and to a long-standing collaboration with George Patton and colleagues at the Centre for Adolescent Health, University of Melbourne, on the effects of adolescent cannabis use on psychosocial outcomes in young adulthood in the Victorian high school cohort.

The first edition of *The health and psychological effects of cannabis use* (Hall, Solowj and Lemon) was published in 1994. A second edition (Hall, Degenhardt and Lynskey) was published in 2001.

—
“The mental health consequences of cannabis use were central to the review because of community concerns about the effects on young people.”
—



OVERDOSE PROGRAM OF RESEARCH

The seminal work on overdose led by Professor Shane Darke, with colleagues Joanne Ross and Deborah Zador, is among NDARC's most highly cited and influential and has established both the centre and Professor Darke as the leaders in this field of research globally.

“There were a number of myths surrounding overdose,” says Darke. “It was widely believed that victims were very young, death was instantaneous, it was due to impurities or it was due to wild variations in drug purity.”

All were proved to be wrong by extensive research on the demographics, cause and circumstances of both fatal and non-fatal drug overdose. Importantly the research showed that overdoses are not a random event. We know why they occur, to whom and where. This means we can intervene to stop them.

Darke and colleagues conducted the first study worldwide of how common non-fatal heroin overdose was, what factors were associated with it, and how people responded.

The research identified the crucial role of polydrug use in heroin overdose – that is most overdoses involve other drugs being used with heroin.

Of these, alcohol and benzodiazepine, both central nervous system depressants magnifying the respiratory depressant effect of heroin, were identified as major risk factors.

Other myths explored include that impurities were a major risk factor; and that contrary to belief the typical overdose involved young inexperienced users when, in fact, overdose in older experienced users is more common.

A crucial finding has been that overdose is not instant and there is a window of opportunity to intervene. In the light of this finding, the research team conducted the first overdose intervention program, even though it was to be another 20 years before naloxone was rescheduled as an over-the-counter medication.

The research program has since expanded to look at overdose from other drugs, with studies on methamphetamine, cocaine, benzodiazepine and alcohol and to look at the effect of various drugs not only on overdose but on other complications such as heart disease and psychosis.



Did You Know?
—
The findings on dependence were controversial because many people did not accept that it existed or was serious enough to need treatment.
—

SIDE BY SIDE

STORIES OF COLLABORATION

WAYNE HALL

Professor Wayne Hall was Director of NDARC from 1994 to 2001 before moving to the University of Queensland

- Q WHY DID YOU BRING YOUR AREAS OF EXPERTISE TOGETHER?**
- A Louisa initially joined NDARC as a research assistant. Her superb statistical skills were immediately evident and were put to good use in the analysis of the National Survey of Mental Health which was under way. She later applied to do a PhD on comorbidity.
- Q WHAT DO YOU SEE AS THE MOST IMPORTANT WORK YOU HAVE DONE?**
- A I believe we have made a difference in many areas, including: identifying patterns of comorbidity from the National Survey; trends in opioid overdose deaths in Australia; the relationships between cannabis use and mental health; and analyses of the contribution that illicit drug use makes to the global burden of disease.
- Q WHAT HAS YOUR WORK CONTRIBUTED TO THE FIELD?**
- A It has improved our understandings of the epidemiology of common mental and substance use disorders; the epidemiology of major types of drug-related harm, and estimates of the contribution that different types of illicit drugs make to the global burden of disease.
- Q WHAT DO YOU THINK REMAINS UNANSWERED?**
- A Drug use is dynamic enough to continue to surprise us. One of the most pressing questions from a public policy perspective is: How can we best anticipate, detect and respond to new drug trends? These may involve a renewed interest among young adults in old drugs like heroin or methamphetamine, or the advent of new drugs.
- Q WHAT IS IT YOU LIKE BEST ABOUT WORKING WITH EACH OTHER?**
- A It's always good fun! Louisa's systematic approach and thoroughness in conducting literature reviews, and her attention to detail in the analysis and reporting of data and the preparation of papers, nicely complement my lack of all these virtues.

WAYNE HALL AND LOUISA DEGENHARDT'S RESEARCH COLLABORATION ON CANNABIS RELATED HARMS HAS BEEN PIVOTAL WORK IN THE GLOBAL DEBATE ON CHANGING CANNABIS POLICY

LOUISA DEGENHARDT

Professor Louisa Degenhardt was appointed Professor of Epidemiology at UNSW in 2007

- Q WHY DID YOU BRING YOUR AREAS OF EXPERTISE TOGETHER?**
- A I contacted Wayne after attending his lectures during my honours year saying I would be interested in any work he had!
- Q WHAT DO YOU SEE AS THE MOST IMPORTANT WORK YOU HAVE DONE?**
- A Wayne and I have worked on a wide range of topics which I hope have made a difference. Wayne's commitment to international and global exercises has also been a major shaping factor in my career. Wayne and I first worked on the Global Burden of Disease project for the World Health Organisation in 2001 and involvement continues to this day, now with the Institute of Health Metrics and Evaluation.
- Q WHAT HAS YOUR WORK CONTRIBUTED TO THE FIELD?**
- A We are both committed to increasing awareness of what is and is not known about the health and social consequences of illicit drug use. Wayne showed me by example, and hopefully what we have succeeded in doing together, is demonstrating the power of applied epidemiological research.
- Q WHAT DO YOU THINK REMAINS UNANSWERED?**
- A The dynamic nature of illicit drug markets means that new drugs often appear, and ones that may have disappeared from use for some time return, along with the questions about how to address harms related to their use. The recent rise in problematic methamphetamine use and its associated harms in Australia is a good example.
- Q WHAT IS IT YOU LIKE BEST ABOUT WORKING WITH EACH OTHER?**
- A I've always loved working with Wayne. We both love to write. Wayne is also a lot calmer than I am. In our catch-up phone calls he has very often indulged me, and let me have a bit of a rant about something or other. He always has sensible, clear, and seemingly obvious advice that I often didn't see myself before that.



2000s

2000s

2000-2009

In the 2000s NDARC not only grew significantly in size, it developed a strong epidemiological research program measuring the harms attributable to alcohol and other drugs at a population level. The Centre launched national monitoring programs, the Illicit Drug Reporting System and Ecstasy and Related Drugs Reporting System, which provide an annual snapshot of trends in injecting drug use and ecstasy and related drugs.

The recession, croc attacks, football police, hairy men

Blame it on the booze

ANALYSIS The link between alcohol and violence is well established. But a new study suggests that the connection is even stronger than we thought. The researchers found that people who drink alcohol are more likely to be violent than those who don't. The study also found that people who drink alcohol are more likely to be violent than those who don't.



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The Sydney Morning Herald

THE ECSTASY CRAZE

Love is the drug, and it's far from cheap

By David Campbell

It is a little-known fact that the ecstasy craze in Sydney is far from cheap. The drug is sold for up to \$1000 a gram, and the market is dominated by a few large suppliers. The drug is sold in small quantities, and the market is dominated by a few large suppliers. The drug is sold in small quantities, and the market is dominated by a few large suppliers.



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The Sydney Morning Herald



Kings Cross businesses, including sex shops, have united to fight a church's move to locate a safe injecting room in the area.

Ian Verrender reports

Parlour games

METHAMPHETAMINE – THE NEW DRUG OF CONCERN



The 2000s were characterised by massive growth in the size and scope of the Centre's research portfolios, as well as expanded national and international relevance.

In this period the National Cannabis Prevention and Information Centre (NCPIC) was established, the Drug Policy Modelling Program (DPMP) came to NDARC, significant new school-based online prevention programs (Climate Schools) were developed by Professor Maree Teesson and colleagues, comorbidity became an increasing focus and epidemiology became a major focus. In the 2000s, NDARC went from about 30-40 staff to more than 100.

Building on the substantial work on methadone maintenance treatment, and in light of Prime Minister John Howard's refusal to permit a trial of prescribed heroin, there was a need to examine alternative medications for the treatment of heroin dependence, including naltrexone, levo-alpha acetyl methadol (LAAM), and buprenorphine. None of these was registered in Australia for the treatment of heroin dependence.

In the late 1990s, treatment trials of these medication options began in many States, including NSW (conducted by NDARC). However, the most important work for NDARC was in establishing a national coordinating group, the National Evaluation of Pharmacotherapies for Opioid Dependence (NEPOD), to ensure that efforts across Australia were combined and synergised, and that results could be analysed together to create a stronger evidence base.

This research combined the evidence from 13 State and territory trials in a way that was transparent and authoritative. Both buprenorphine and naltrexone were subsequently registered as treatments for heroin dependence in Australia.

“NDARC's work has been vital in exposing the significance of coexisting mental health and substance use problems, or comorbidity.”

Besides new medications to treat heroin dependence, there was still a lack of knowledge and understanding of the effectiveness of other available treatments – detoxification and residential rehabilitation/therapeutic communities. In 2001 NDARC started the Australian Treatment Outcome Study (ATOS), led by Professors Maree Teesson and Shane Darke. ATOS was the country's first large-scale longitudinal treatment outcome study of people with heroin dependence, which evaluated the effectiveness of a range of treatments.

One of the important findings to emerge from the early ATOS work was a concern with the very high rates of mental health disorders among those seeking treatment for alcohol or other drug dependence. This was also an important topic for governments seeking to better understand the intersection of substance dependence and mental health problems, and how to improve responses. Professor Maree Teesson began documenting the prevalence of comorbidity which led to advances in integrated treatment of trauma and substance abuse. This work would eventually be brought together under the umbrella of the NHMRC Centre for Research Excellence in Mental Health and Substance Use led by Professor Teesson.

“NDARC's work has been vital in exposing the significance of coexisting mental health and substance use problems, or comorbidity,” said UNSW Emeritus Professor Dr Ian Webster.

Advances in epidemiological research led by NDARC also revealed the constant changing patterns of illicit drug use over time.

In early 2001, the Illicit Drug Reporting System (IDRS) recorded an abrupt and substantial reduction in the availability of heroin that was widely reported by health and law enforcement across Australia. An NDARC technical report on the national heroin shortage was first published in 2004 with Professor Louisa Degehardt as the lead author.

But drug markets never stand still and, in association with the heroin shortage, was an increase in other drugs, particularly methamphetamine, where harms and use peaked for the first time in 2006.

This became a major research focus for NDARC, including Associate Professor Rebecca McKetin's longitudinal studies on the treatment outcomes for people using methamphetamine. This revealed a disturbing lack of evidence of success in current treatment methods. The arrival of crystal methamphetamine in Australia saw a new profile of users of the drug who were smoking rather than injecting.

Today, there is some early promise in pharmacotherapy treatments for methamphetamine users, which are starting to be tested.

There were other illicit drugs of increasing concern, including so-called party drugs like ecstasy, and the Centre launched a similar program to the IDRS, initially known as the Party Drugs Initiative and later renamed the Ecstasy and Related Drugs Reporting System (EDRS).

The sin qua non of NDARC has been the generation of rigorous scientific evidence and Professor Alison Ritter developed a new approach to drug policy research with the DPMP, which moved to the Centre in 2006.

Cannabis has always been the most widely used illicit drug in Australia, and while drugs that are injected may capture the front page news headlines, cannabis and its associated harms continue to be an important area of work. The federal government's commitment to the prevention of cannabis use and related harms resulted in the establishment of NCPIC, led by Professor Jan Copeland who had spent many years at NDARC.



The arrival of crystal methamphetamine in Australia saw a new profile of users of the drug who were smoking rather than injecting.

A DECADE OVERVIEW OF THE 2000s

2000

Number of heroin deaths in Australia exceeded 1000 for the first time.
—
Illicit Drug Reporting System (IDRS) launched by the Federal Government.

2001

Heroin shortage reported in Sydney.
—
Australia's first Medically Supervised Injecting Centre commenced as a pilot in Kings Cross, NSW.
—
IDRS reported dramatic reduction in heroin availability.

2002

Drug detection dogs deployed as mainstream strategy by police.
—
Federal Government increased budget for the National Illicit Drugs Strategy.

2003

Federal Government provided \$343 million in new funding over four years for the National Illicit Drug Strategy, including \$4 million for a comorbidity strategy.

2004

Soft gelatine transperine capsules removed from Australian market.
—
Report of clinical trials for opioid dependence released “National Evaluation of Pharmacotherapies for Opioid Dependence” (NEPOD), coordinated by NDARC.

2005

Buprenorphine-naloxone registered by Therapeutic Goods Administration.
—
Ministerial Council on Drug Strategy agrees act to explore the development or use of drug testing kits for personal use.

2006

Four Corners report “The Ice Age” heralded the beginning of media attention to methamphetamine.
—
Drug Policy Modelling Program moves to NDARC.

2007

National Amphetamine-Type Stimulant (ATS) Strategy consultation paper released.
—
National Cannabis Prevention and Information Centre (NCPIC) established by the Commonwealth as a national collaboration based at NDARC.

2008

Media reports that heroin shortage has ended, with more availability, increased purity and lower price for white heroin in the Sydney area. Also evident was a rise in heroin overdose.

2009

Second Needle and Syringe Program (NSP) return-on-investment study in Australia released. Concludes that for every \$1 invested in NSP, \$4 is saved in healthcare costs.

TEN PROJECTS THAT SHAPED THE 2000s



2000

Development of the drug trends program

In 2000, the NSW pilot of the Illicit Drug Reporting System (IDRS) was launched nationally. Indicator data from the National Illicit Drug Indicators Project (NDIP) such as hospitalisations and deaths due to drug use was also included. In 2003, NDARC developed the Ecstasy and Related Drugs Reporting System (EDRS) to track the increasing use of ecstasy, and later psychostimulants more broadly.

2001

Australian Treatment Outcome Study (ATOS)

ATOS was the first naturalistic, prospective longitudinal study to examine treatment outcomes of heroin dependence in Australia. From ATOS we've learned that heroin dependence is a chronic relapsing condition with high rates of morbidity and mortality, and co-occurring psychiatric conditions. Despite this, people can, and do, get better.

2003

Buprenorphine versus methadone maintenance therapy

Throughout the 1990s and early 2000s, methadone treatment was demonised by its opponents.

Randomised controlled trials (RCT) in the US had suggested buprenorphine as a maintenance agent, but studies were underpowered, and used fixed doses. This largest head-to-head RCT showed buprenorphine was as effective as MMT, and registration of buprenorphine was supported.

2004

National Evaluation of Pharmacotherapies for Opioid Dependence (NEPOD)

This study integrated data on costs and effects of methadone, buprenorphine and naltrexone from 13 separate Australian trials involving more than 1400 users. Maintenance treatment with methadone and buprenorphine was effective in reducing heroin use and retaining patients, while naltrexone attracted and retained many fewer patients but in those retained it did reduce heroin use.

2004

Report on heroin shortage

The early 2000s saw a sudden and substantial drop in heroin supply in Australia. This study provided a detailed description of the course of the heroin shortage, a comprehensive analysis of its effects and an examination of the factors contributing to its occurrence. The work was undertaken in collaboration with researchers from Turning Point in Victoria and the Drug and Alcohol Services Council (DASC) in South Australia.

2005

Prevention: Climate Schools

NDARC developed and trialled the online Climate Schools programs in six cluster randomised controlled trials with over 14,000 students. Results found reduced uptake and harmful use of alcohol and other drugs for up to three years. Climate Schools were the first online drug prevention programs shown to be effective and are now available worldwide.

2006

The Cannabine Cohorts Research Consortium (CCRC)

The CCRC is a multi-organisational and multi-disciplinary international collaboration of researchers from some of the largest and longest running longitudinal studies in the world. The collaboration stemmed from the need to better address pressing questions about the relationship between substance use, life-course outcomes and mental health that cannot be addressed in the individual cohorts. It provides unique public policy insights.

2006

The Methamphetamine Treatment Evaluation Study (MATES)

A collaboration between academic institutions and drug treatment agencies across Australia, the MATES study tracked 601 people who used methamphetamine over three years. The results highlighted the time-limited benefits of current residential treatment options and high relapse rates and mental health disorders in this population.

2007

National Survey of Mental Health and Wellbeing

The 2007 survey built upon the original 1997 study. It demonstrated that mental and substance use disorders affect nearly one in two Australians across their lifetime and that comorbidity was high, resulting in significant disability and lost productivity. This information has guided mental health services policy and clinical practice.

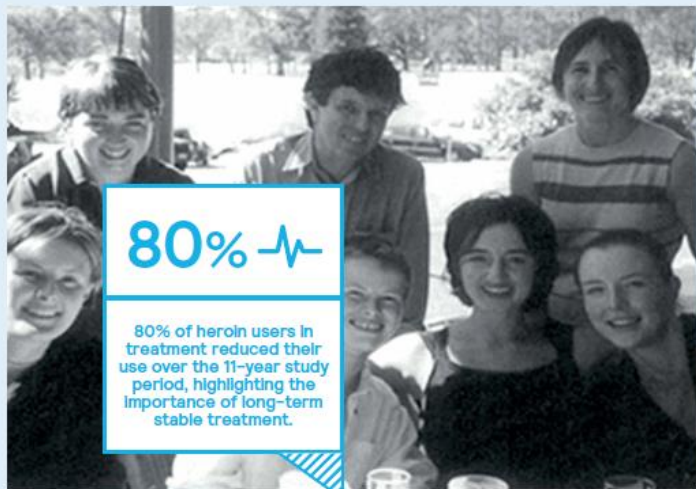
2007

National Cannabine Prevention and Information Centre (NCPIC)

NCPIC was established in 2007 in response to community concern. NCPIC has provided resources, information and training to support workers in various sectors, as well as the general public. Based at NDARC and led by Professor Jan Copeland, the Centre also had a strong clinical research program that included the Sativex trial. The centre closed in 2016.

FINDING THE ANSWERS

For a full list of investigators and collaborators please refer to the Appendix on Page 56



80% 

80% of heroin users in treatment reduced their use over the 11-year study period, highlighting the importance of long-term stable treatment.

Members of the original ATOS research team from left to right: Dr. Alys Howard, Dr. Joanne Ross, Professor Shane Darke, Dr. Katherine Milia, Dr. Kate Hollington, Professor Maree Teesson and Dr. Anna Williamson.

AUSTRALIAN TREATMENT OUTCOME STUDY (ATOS)

“ATOS aimed to evaluate the effectiveness of ‘real world’ treatments for heroin within the context in which they were typically delivered.”

In 2001, a team of researchers at NDARC, including Professor Maree Teesson, Professor Shane Darke, Dr Joanne Ross and national collaborators, started the Australian Treatment Outcome Study (ATOS). This was the first naturalistic, prospective longitudinal study to examine treatment outcomes of heroin dependence in Australia, and aimed to evaluate the effectiveness of ‘real world’ treatments for heroin within the context in which they were typically delivered.

The original ATOS cohort was recruited from treatment agencies and needle exchanges in Sydney, Melbourne and Adelaide and was followed up to 12 months. A crucial feature of the study was that it looked at outcomes across three different treatment modalities: methadone and buprenorphine maintenance therapy, detoxification and residential rehab.

The ATOS study found that the annual mortality rate of Australians with heroin dependence was less than one per cent, and lower than that observed among cohorts in other parts of the world. However, the rate is 10 times the rate expected in the general population.

Men were seven times more likely to die than men in the general population, and women 17 times more likely than women in the general population. Based on average life expectancy, people with heroin dependence died 44 years earlier than would have otherwise been expected – a premature death rate greater than that associated with major psychiatric disorders and cancers.

As also seen in NDARC’s other work on comorbidity, mental illness was a major predictor of involvement with heroin and a predictor of poorer outcomes. People in the cohort were exposed to exceedingly high levels of trauma, and have high rates of post-traumatic stress disorder.

An important finding of the 11-year follow up of 428 of the original cohort of 615 is that outcomes were remarkably diverse with no clear indicator of what group people would belong to. For some, heroin dependence is a chronic, debilitating disorder and one in five of the cohort continued to use at high levels. At the other extreme, one in six were on maintained abstinence.

Did You Know?

Heroin-dependent men were seven times more likely to die than men in the general population, and women 17 times more likely

THE METHAMPHETAMINE TREATMENT EVALUATION STUDY (MATES)

The MATES study was established in response to uncertainty about the effectiveness of community-based treatment options for methamphetamine dependence, amidst increases in its use in the early 2000s. A collaboration between academic institutions and drug treatment agencies across Australia, the study tracked 501 people who used methamphetamine over three years. Associate Professor Rebecca McKein, who had earlier completed her PhD at NDARC on illicit amphetamine use, was chief investigator.

The results were sobering. They highlighted the time-limited benefits of current residential treatment options, and the need to address high relapse rates and mental health disorders in this population.

People who received detoxification without any additional/follow-up treatment such as counselling or rehabilitation did not reduce their methamphetamine use any more than people who received no treatment.

People who received residential rehabilitation showed strong reductions in their methamphetamine use (with many becoming abstinent) three months after starting treatment. However, relapse rates were high, and within three years, their methamphetamine use patterns looked very similar to those people who did not receive any treatment.

Abstinence was more likely to be achieved by individuals who received individual counselling while they were in residential rehabilitation, provided they had good rapport with their counselor, and those who stayed in treatment for a long time (more than 12 weeks).

MATES also provided important data on mental health issues among people going to treatment for methamphetamine use: 84% of methamphetamine treatment entrants reported clinical levels of depression, often related to their substance use; the majority reported suicidal ideation. There was also a dose-related increase in the risk of both psychotic symptoms and violent behaviour during periods when people were using methamphetamine more often.

Methamphetamine use began to decline towards the end of the decade, only to increase significantly again from 2010 to the present time. The earlier work has now been expanded to include randomised controlled trials of novel pharmacotherapy options for methamphetamine dependence, the development of online treatment options, and responses to methamphetamine use in Aboriginal and Torres Strait Islander communities.



 84%

84% of methamphetamine treatment entrants reported clinical levels of depression, often related to their substance use

NATIONAL EVALUATION OF PHARMACOTHERAPIES FOR OPIOID DEPENDENCE (NEPOD)

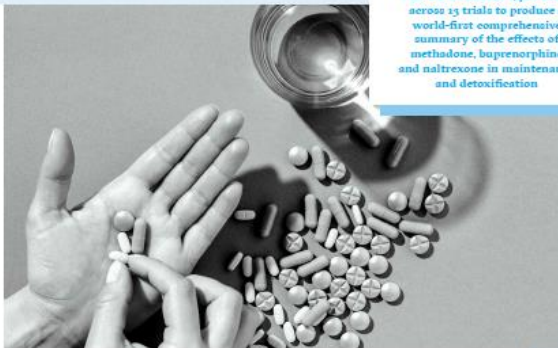
By the late 1990s, views on the medical treatment of heroin dependence were highly polarised.

Advocates of an Australian heroin trial inadvertently contributed to the lack of confidence in methadone treatment as they argued for the need to trial heroin prescription. The eventual failure to get a heroin trial off the ground in Australia, after it was vetoed by Prime Minister John Howard in 1997, made the need for robust evidence on the effectiveness of available pharmacotherapies even more urgent.

Complicating the debate, in 1998 an Israel-based doctor, Andre Waismann, toured Australia claiming he had a "cure" for heroin dependence: rapid opioid detoxification under anaesthetic followed by ongoing maintenance treatment with naltrexone, an opioid blocker. Opponents of rapid detoxification argued it over-promised and could lead to increased harms and deaths.

What followed was enormous uncertainty in senior government ranks about how to address the heroin use epidemic, as each advocacy group expertly used the media to preach its personal brand of the truth.

Australian researchers had already started to plan randomised controlled trials (RCTs) of newer pharmacotherapy treatments, and many State governments keen to settle the arguments paid for further research. The methods of evaluation were all slightly different. The Australian Government approached NDARC to coordinate a core dataset of agreed outcome data and full top-down financial cost data for treatment provision, to create an integrated pool of outcome and cost data.



Did You Know?

NEPOD evaluated 1,400 users across 13 trials to produce a world-first comprehensive summary of the effects of methadone, buprenorphine and naltrexone in maintenance and detoxification

The National Evaluation of Pharmacotherapies for Opioid Dependence (NEPOD) project evaluated 1,400 users across 13 trials and produced a world-first comprehensive summary of the effects of methadone, buprenorphine and naltrexone in maintenance and detoxification, from RCTs.

The impact of NEPOD lasts today, providing support for evidence-based therapies for opioid dependence management. Naltrexone emerged as a niche treatment that holds promise for the small proportion of opioid-dependent people willing to enter into it.

More than 25 papers were published from the project. An important finding on adverse events emerged from the studies and was published in *Addiction* in 2004: individuals who cease pharmacotherapies for opioid dependence experience higher overdose and death rates compared with those who remained in treatment. Overdose and death rates were eight times higher for those who left naltrexone treatment as for those who left agonist treatment (methadone maintenance treatment or buprenorphine).

The results were clear, that agonist therapy assisted people who were terribly affected by their dependence, and marginalised in our community. While not a cure, agonist therapy has a strong role in assisting this group.

“The impact of NEPOD lasts today, providing support for evidence-based therapies for opioid dependence management.”

NATIONAL SURVEY OF MENTAL HEALTH AND WELLBEING (NSMHWB)



In 2007 Associate Professor Tim Slade and colleagues conducted the second National Survey of Mental Health and Wellbeing (NSMHWB). This was the first nationally representative study of the lifetime prevalence of mental disorders in Australia and it is still the largest life-course epidemiological study of mental and substance use disorders in Australia.

The data from the study have been used to guide government policy on the provision of services for people with mental and substance use disorders. For example, the Mental Health of Australians report was used by the NSW Department of Health to develop planning models for psychiatric services (the Mental Health Clinical Care and Prevention model) which have resulted in new services for people with mental disorders. This has raised the profile of mental disorders, their high prevalence and associated disability.

The study was one of the first in the world to show that alcohol-use disorders in young adulthood (18-24 years) are prevalent and associated with comorbid psychopathology, risky levels of alcohol consumption and disability. Despite the clinical significance of alcohol use disorders in this age group, few young adults with these disorders seek help.

The survey also added significantly to our understanding of comorbidity among the major classes of mental disorders (mood, anxiety and substance use disorders) and sought to identify, among people experiencing multiple mental or substance use disorders, which disorder comes first.

Results from the study also fed into key political issues in the field of mental health service delivery, such as the "Better Access" scheme, a national policy initiative to improve access to psychological services for people with mood and anxiety disorders. Published in the *British Journal of Psychiatry*, this paper was an innovative application of epidemiological data to address a significant public policy debate.

“Results from the study also fed into key political issues in the field of mental health service delivery.”

1/2

One in two Australians will meet criteria for a mental or substance use disorder over their lifetime. Half of those who do will experience more than one. [NSMHWB]

SIDE BY SIDE

STORIES OF COLLABORATION

RICHARD MATTICK

Professor Richard Mattick was Director of NDARC from 2001-2009

Q WHY DID YOU BRING YOUR AREAS OF EXPERTISE TOGETHER?

A Steve's interest was in intervention research with alcohol problems. At the time, I was developing clinical guidelines for the Australian Government for alcohol, tobacco and opioid dependence.

Q WHAT DO YOU SEE AS YOUR MOST IMPORTANT WORK TOGETHER?

A For me the collaboration of influence was during the period when Steve was leading government services in WA. I was Director at NDARC (2001-2009), and his practical friendly personable capacity on important national committees allowed for our research to get to the decision-makers - he facilitated good practice based on research.

Q WHAT HAS YOUR WORK CONTRIBUTED TO THE FIELD?

A The influence we had with policy makers - an influence nurtured initially by Wayne Hall as NDARC Director in the 1990s and continued until today. NDARC and NDRI were respected by senior government staff for unbiased opinions. It still is. That is a great contribution.

Q WHAT DO YOU THINK REMAINS UNANSWERED?

A The questions now relate to what to do as the "genie has got out of the bottle". Increased drug use - such as cannabis, stimulants, crystal methamphetamine, new psychoactive substances, illicit and licit pharmaceutical opioids, continued penetration by the alcohol industry to young people and the issue of the accumulation of low SES-smokers, are really issues that require a stronger approach. Additionally, the US and Canadian acceptance of "legal" recreational use of cannabis is likely to reach our shores soon.

Q WHAT IS IT YOU LIKE BEST ABOUT WORKING WITH EACH OTHER?

A Steve is a pleasure to work with as a research-oriented, practical health professional, who understands how to get government policy aligned with evidence and, where evidence is lacking, to fund data-gathering. Steve embodies that trusted professional - safe hands!

Photo credit: Clay Warren Photography



STEVE ALLSOP AND RICHARD MATTICK HAVE BEEN COLLABORATING ON INTERVENTION TRIALS AND TRANSLATION FOR 30 YEARS

STEVE ALLSOP

Professor Steve Allsop was Acting Director of the Drug and Alcohol Office in WA before becoming Director of NDRI

Q WHY DID YOU BRING YOUR AREAS OF EXPERTISE TOGETHER?

A We met at the NDARC seminars and found we shared an interest in clinical research. Around the same time, I provided some reviews of Richard's excellent work on treatment outcomes and so began an almost 30-year research relationship.

Q WHAT DO YOU SEE AS YOUR MOST IMPORTANT WORK TOGETHER?

A Two recent projects are of ongoing importance. The first is the project driven by Richard and Delyse Hutchinson establishing and following up a birth cohort of 2,000 families to examine the developmental impact of alcohol and drug consumption. The other is the Young Australians Alcohol Reporting System - an idea floated one day in Sydney over a coffee.

Q WHAT HAS YOUR WORK CONTRIBUTED TO THE FIELD?

A For me the most important thing with Richard's work has been the strong connection to and resonance with governments and practitioners. Governments were confident they were getting a balanced and considered interpretation of the evidence and practitioners were finding work that had direct practical relevance.

Q WHAT DO YOU THINK REMAINS UNANSWERED?

A The key question of how we can learn from the process of "giving up" and how this can inform more attractive and effective initiatives that extend beyond the confines of the clinic.

Q WHAT IS IT YOU LIKE BEST ABOUT WORKING WITH EACH OTHER?

A I am attracted to Richard's meticulous and considered approach to research design and interpretation and the high quality and applicability of his work. He has always been one of the more thoughtful researchers and one never got a sense of him driving a particular agenda. And I think we like each other and enjoyed each other's company.

2017

2010-2017

A significant development of 2010 and onwards has been the consolidation of centres within NDARC, such as the Drug Policy Modelling Program, the Centre of Research Excellence in Mental Health and Substance Use and the National Cannabis Prevention and Information Centre (NCPIC).

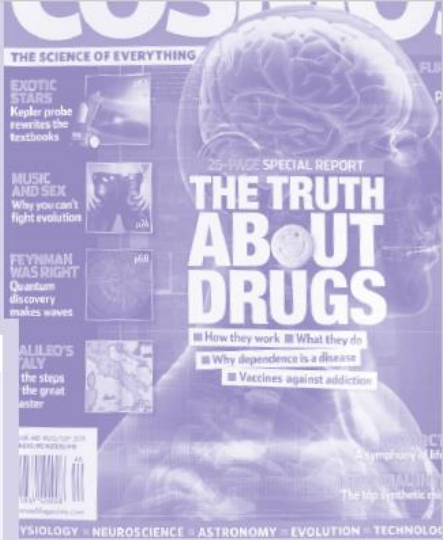
'Traits' point to binge drinking



IS YOUR TEENAGER AT RISK?

Genetic research suggests that certain traits, such as impulsivity and risk-taking, are linked to binge drinking. A study of twins found that these traits are heritable and can predict alcohol consumption in adolescence.

Researchers have identified several genetic variants associated with binge drinking. These include genes involved in dopamine signaling and impulse control. The study suggests that these genetic factors interact with environmental influences, such as peer pressure and access to alcohol, to increase the risk of binge drinking.



PSYCHOLOGY • NEUROSCIENCE • ASTRONOMY • EVOLUTION • TECHNOLOGY



Russell Lee
what trajectory you're going...

MICHAEL FARRELL, Australia's new director of the National Drug and Alcohol Research Centre, based at the University of New South Wales in Sydney, is reluctant to use the term 'disease' when it comes to drug addiction. Not everyone works in the field, he says, is comfortable with the disease paradigm for drug addiction. "Condition, disorder, disease," semantic," he says. "I think the problem for us is that this is a behavioural spectrum to it, so that actually you can get it into one little box but we don't do justice to the range of behavioural presentations when we look at health promotion points of view."

All the new research and surrounding drug addiction, Farrell says, he about responsibility for drug use and the disease model. "These things still have responsibility and responsibility..."

Studies on twins indicate that addiction has a genetic basis, but it's likely to be complex. How the involved genes function may also have a lot to do with the environment they operate in, and researchers now believe that heritability is only half the story.

NDARC AND FUTURE CHALLENGES



Much has altered since the mid 1980s: the social, political, economic and technological changes in Australia and globally have all brought associated changes to the work of NDARC.

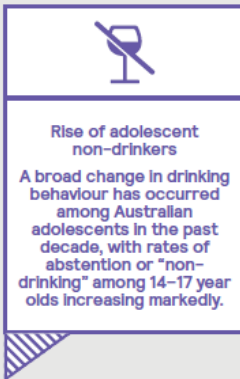
On the technology front, we now have “big data” which has provided new opportunities for evaluation methodology. Big data has permitted previously unimaginable research projects to be run at scale and almost in real time, said Professor Anthony Shakeshaft. He cites the lookout laws, introduced in Sydney in early 2014 to curb alcohol-related violence, as an example of how evaluation methods have changed.

“The evidence part of that debate from the research was saying if you close the pubs earlier you’ll get a 15 per cent reduction in assaults,” he said. “It’s not perfect but it is the idea of using evidence almost in real time to modify decisions as the evidence shifts.”

Another significant technological change has been the use of internet and social media to provide information, early intervention and treatment to individuals seeking assistance and support with their alcohol or other drug use.

As with earlier decades the shifting dynamics of drug markets and patient population has influenced the research agenda, with pharmaceutical opioids, methamphetamine and new psychoactive substances dominating media and political agendas.

Once again we are witnessing a rise in accidental opioid-related deaths but the 2013 figures, published by Amanda Roxburgh, show that two-thirds of these deaths are due to pharmaceutical opioids rather than heroin.



Methamphetamine use began to decline towards the end of the 2000s only to increase significantly again from 2010. While concerns have been expressed in many quarters that the most recent spike was more of a media epidemic than a real shift in behaviour and harms, NDARC data suggests the opposite. A recent analysis by Professor Shane Darke found that methamphetamine-related deaths doubled in the seven years from 2009 with over 1,649 Australians dying from methamphetamine-related causes.

NDARC is leading the field with its work on internet-based drug markets (the so called crypto or dark-net markets), which have changed the types of drugs available, the ways in which drugs are purchased, and the potential harms. “In terms of drugs overall we’ve moved from a plant-based use of drugs – heroin, cocaine and cannabis – to all these synthetic drugs available... there’s no boundaries any more,” said Associate Professor Lucinda Burns, head of NDARC’s Drug Trends Program until August 2017.

NDARC’s global relevance continued through the 2010s. The United Nations commissioned a team of NDARC and international researchers to undertake the most extensive reviews conducted of the prevalence of injecting drug use and HIV and viral hepatitis among people who inject drugs. Subsequently, significant funds were dedicated to preventing HIV and viral hepatitis in people who inject drugs. Professor Louisa Degenhardt, the lead academic on the review, went on to co-chair the Expert Group on Mental Disorders and Illicit Drug Use for the 2010 Global Burden of Disease study, led by the University of Washington.

A recurring theme of NDARC and the sector is that while responses to particular drugs of concern may be rapid, advances in treatment and prevention can take years or even decades to see real change.

NDARC’s world-leading research in comorbidity is a case in point. In 2012, decades of work in prevention, treatment and comorbidity were brought together when Professor Maree Teesson was awarded a five-year grant for the Centre of Research Excellence in Mental Health and Substance Use.

The policy framework has been similarly complex. Harm minimisation has been the federal stance and guiding principle behind all Australian national drug strategies since 1985, but numerous changes to the structures and systems for policy development have occurred since then. Changes include the removal of the expert committee structure, the dissolution of the Australian National Council on Drugs (ANCD), and the defunding of the national peak body the Alcohol and Drug Council of Australia. This has reduced opportunities for research evidence to be presented in policy forums, and challenged NDARC to consider multiple translational strategies.

This review of 30 years of NDARC has inevitably highlighted only a small number of achievements and research, yet clear themes have emerged. Other work throughout the period included research into women’s alcohol and drug consumption, work on tobacco and interventions, and significant programs of research with homeless people and Indigenous populations.

New centres established in this 30th anniversary year include one on methamphetamine and emerging drugs of concern, and another on Indigenous populations.

Current NDARC Director Professor Michael Farrell concludes “One of the big achievements of NDARC has been as a credible and reliable source of unbiased views in a complex area that tends to be dominated by fairly divided opinions. We state the facts as they are and stick to a very considered and balanced approach.”

A DECADE OVERVIEW OF THE 2010s

2010

The first national report on prisoner health in Australia released. Key findings include that 70% had used illicit drugs and over half had consumed alcohol at risky levels during the 12 months prior to entering prison.

2011

The Therapeutic Goods Administration scheduled eight synthetic cannabinoids, thereby banning from 8 July their use for therapeutic purposes.

2012

The Australian National Council on Drugs (ANCD) called for expansion in the availability of naloxone. – Centre of Research Excellence in Mental Health and Substance Use (CREMS) launched at NDARC.

2013

Research by McKetin et al provided the first comprehensive evidence that methamphetamine use is linked to psychosis.

2014

National Drug Strategy Household Survey reports that while recent use of methamphetamine remained stable (at 2.1%), recent use of ice (or crystal methamphetamine) more than doubled, from 2.5% in 2010 to 5.0% in 2013.

2015

National Ice Taskforce launched by Prime Minister Tony Abbott.

2016

Data from the Kirby Institute revealed record numbers of Australians treated for hepatitis C since listing of new generation treatments on the Pharmaceutical Benefits Scheme. – First laws adopted for cultivation of medical cannabis in Australia.

2017

National Drug Strategy 2017–2026 adopted – the first decade-long drug strategy.

TEN PROJECTS THAT SHAPED THE 2010s

2010

Triple B: Bumps, babies and beyond

The Triple B Study is a longitudinal pregnancy cohort of 1600 families which examines a wide range of biopsychosocial factors that relate to the health and development of Australian children and families. The project has a key focus on the impacts of alcohol, tobacco and other drug use in pregnant women and their partners during the prenatal period, on infant development and family functioning.

2010

Global Burden of Disease

NDARC co-chaired the Expert Group on Mental Disorders and Illicit Drug Use for the 2010 Global Burden of Disease study, led by the University of Washington. The GBD found Australia and the US are the only two high-income countries where drug use disorders were a top 10 cause of disability. Globally the research found that deaths and disability related to illicit drug use had increased by nearly a third over the past 10 years. The GBD will continue to 2026.

2012

Australian Parental Supply of Alcohol Study

Parents are a major supplier of alcohol to adolescents. APSALS has followed 1,900+ families throughout the teenage years, examining the role of parental provision on adolescent alcohol use. The RADAR project is now following the cohort into adulthood, aiming to understand the transition from alcohol initiation to alcohol-use disorders.

2012

Centre of Research Excellence in Mental Health and Substance Use

Funded in 2012 by the NH&MRC, CREMS has generated new research to increase the knowledge base regarding the effective prevention and treatment of comorbid mental health and substance-use disorders. A significant achievement of CREMS has been the development of the \$5 million Federally funded Positive Choices and Cracks in the Ice portals, a collaboration with the NDR in Perth.

2012

Alcohol Action in Rural Communities (AARC)

AARC aimed to quantify the effectiveness of community action in reducing risky alcohol consumption and harm. The project comprised a cluster RCT with 20 communities and the first benefit-cost analysis of community intervention undertaken internationally. Active communities experienced a 20 per cent reduction in average alcohol consumption, and a net benefit of \$1.60 for every \$1.00 invested.

2012

Integrated treatment for substance use and post-traumatic stress disorder (PTSD)

Trauma exposure is almost among people seeking treatment for substance use disorders and for two-thirds recovery is complicated by the co-occurrence of post-traumatic stress disorder. This world-first randomised controlled trial demonstrated the safety and efficacy of an integrated treatment called COPE. Oxford University Press published the treatment manual as part of its Treatments That Work series.

2012

Drug trends expand into online market and new psychoactive substances

The 2010s have seen increasing use of a diverse range of synthetic drugs. In addition, drugs have become available through the internet (dark web) and drug makers have become increasingly globalised. As a result, NDARC began monitoring the dark web for sales and purchase of drugs. Findings are placed within the context of other available indicators, such as the Ecstasy and Related Drugs Reporting System (EDRS).

2014

New Horizons: The review of alcohol and other drug treatment services in Australia

This review and analysis was commissioned by the Commonwealth Government. We revealed the extent of unmet demand for treatment, the funding arrangements, and the lack of coordinated planning and purchasing. The research provided a pathway to reform for Australia's treatment service system, and was used to support a substantial new Commonwealth Government treatment investment in 2015.

2016

Cytisine versus varenicline for smoking cessation

Healthcare systems worldwide are spending millions on smoking cessation medications. Cytisine is a plant-based smoking cessation medication unavailable outside the European region. Its synthetic derivative varenicline is the most effective smoking cessation medication currently available but at a substantial cost. This project will compare the cost-effectiveness of the two.

2017

National Centre for Clinical Research on Emerging Drugs

The state of the art national centre, the first of its kind in Australia, will bring together the country's leading clinicians and drug and alcohol researchers to develop, evaluate and disseminate new treatments to respond to methamphetamine use disorder and other new and emerging drugs of concern. The Centre of Excellence will be run in partnership with NDARC, St Vincent's Health Australia, NDR and NCETA.

FINDING THE ANSWERS

For a full list of investigators and collaborators please refer to the Appendix on Page 56



CLIMATE SCHOOLS



Online universal prevention at age 13 halves the uptake of drinking and binge drinking two years later. (Climate Schools)

Since it was established in 2002 by NDARC researchers Professor Maree Teesson and Laura Vogl, along with Professor Gavin Andrews at the Clinical Research Unit for Anxiety and Depression at St Vincent's Hospital, Climate Schools has transformed the delivery of drug and alcohol prevention in Australian schools and more recently the UK and North America.

The efficacy of the programs, covering alcohol, cannabis, ecstasy, psychostimulants and new psychoactive substances, have been demonstrated through six randomised controlled trials with over 14,000 students in 157 schools across Australia. In addition, 375 schools have registered with the internet-based programs and there are currently 9,142 active students and 830 active teachers using the programs.

The development and evaluation of the Climate Schools programs have also helped develop and train a whole new generation of drug and alcohol researchers specialising in prevention, including Nicola Newton, Katrina Champion and Louise Birrell.

Associate Professor Nicola Newton, who completed her PhD at NDARC in 2009 evaluating the alcohol and cannabis modules in year eight students, now runs the prevention stream at NDARC's Centre of Research Excellence in Mental Health and Substance Use (CREMS).

After completing her post-doc in London with Professor Patricia Conrod she returned to NDARC and set up a trial comparing the effectiveness of Climate Schools with a targeted program called Preventure, which had been developed by Professor Conrod. Preventure differs from Climate Schools, which is for all students, in that it provides additional support for students who have one of four personality traits (sensation seeking, impulsivity, anxiety sensitivity and negative thinking) that put them at high risk of developing problems with drugs and alcohol.

"Our research has shown that students who receive either the online universal prevention or the selective Preventure program at age 13 halve their uptake of drinking and binge drinking two years later," says Newton. "Interestingly, students who received both the selective program and the universal program did no better than those who received just one program."

"The rigorous evaluation of these programs over more than 10 years suggests that we do have the tools to prevent substance use disorders developing among young people. For each year we can delay the onset of drinking, we reduce the chance of developing a full-blown substance abuse disorder by 10 per cent." This is crucial says Newton. "We know if you are going to develop a substance-use disorder, you pretty much have done it by early adulthood."

Did You Know?
—
375 schools have registered with the internet-based programs and there are currently 9,142 active students and 830 active teachers using the programs

COMMUNITY- AND INDIGENOUS-LED SOLUTIONS TO DRUG AND ALCOHOL HARMS

Led by Professor Anthony Shakeshaft, this program of research aims to find effective solutions to the significant variation in rates of drug and alcohol harms between communities, and the disproportionately high rates among Indigenous Australians.

"We need to find ways to equitably reduce the exposure of all Australians to drug and alcohol harms," said Professor Shakeshaft, "but solutions that are imposed on communities are not sustainable and rarely effective. We are working on achieving two outcomes. First, to present to the Australian community carefully considered and timely evidence supporting approaches that complement legislation and provide alternatives to an over-reliance on punitive strategies, such as increasing rates of incarceration for high-risk Indigenous young people. Second, to develop practical tools for communities and health services to use in developing solutions that are both aligned with best-evidence practice and tailored to their own circumstances."

Did You Know?
—
The Alcohol Action in Rural Communities (AARC) project remains the largest community-wide RCT undertaken internationally to reduce alcohol harm

The Alcohol Action in Rural Communities (AARC) project remains the only community-wide randomised controlled trial undertaken internationally to reduce alcohol harm. It achieved multiple positive outcomes, including a 20% reduction in average alcohol consumption and a 30% reduction in short-term risky drinking. The economic analysis showed that for every \$1 invested in AARC the net social benefit was estimated at \$1.60.

The community focus of AARC was subsequently improved in partnership with Aboriginal communities that partnered with the team to design their own solutions. The outcomes are being finalised, but they will show that a multi-component, Aboriginal-led program reduces police-recorded alcohol harms and improves community perceptions of alcohol harms. The economic analysis will show that this approach was cost-neutral.

We have also evaluated a community-led program for high-risk young people on the cusp of entering juvenile detention, where Aboriginal young people are significantly over-represented. This program has strong community support: our discrete choice experiment showed 75% of community members supported the program and were willing to pay \$150 a year per household for it. And it is very effective, achieving a remarkable cost-benefit ratio of 4.1. "In terms of scale, there are about 100 communities in Australia with a population of at least 30,000," said Professor Shakeshaft. "If all of them were supported to implement a community-based program aligned with this new evidence over the next five years, using the program framework we developed, it would cost governments about \$186 million, but the economic value of the net social benefit would be an estimated \$794 million."

—
"A multi-component, Aboriginal-led program reduces police recorded alcohol harms and improves community perceptions of alcohol harms."
—



DRUG POLICY MODELLING PROGRAM

In 2004 Professor Margaret Hamilton and Professor Alison Ritter, who at the time were working together at the Turning Point Alcohol and Drug Centre in Melbourne, obtained funding from the Colonial Foundation Trust to establish the Drug Policy Modelling Program.

Margaret Hamilton obtained the initial funding and support, with Alison Ritter then running the feasibility study.

"Drugs policy requires multiple responses, across multiple areas of government – health, policing, education and social welfare bureaucracies and ministries – and can be highly emotional and ideological," says Professor Ritter.

"It is often undertaken without rigorous evidence upon which to base policies and requires decision-making in the face of uncertainty. Good drug policy is also dependent on more than the provision of evidence alone. It is for all of these reasons that the DPMP was established and moved to NDARC in 2006."

"With the subsequent large grant we obtained after the feasibility study it made sense to locate DPMP within the premier national and international research centre."

Professor Ritter had run one of the National Evaluation of Pharmacotherapies for Opioid Dependence (NEPOD) trials being coordinated by NDARC's Professor Richard Mattick, so already had a close working relationship with the Centre.

DPMP's mission is to assist governments to develop sound drug policy. It has three streams of activity: generating new evidence of relevance to current policy dilemmas; translating research evidence into usable information to assist decision-making; and studying the processes of policy making.

DPMP has generated new research which has influenced Australian drug policy. This has included work to inform better treatment services, better drug law enforcement, changing laws to reduce harms, and engaging a wider range of stakeholders in drug policy processes. DPMP has become an international benchmark for drug policy research. We have completed more than 120 research projects – some of which have been independent research projects; others have been projects in partnership with government to provide evidence to assist their decision-making; or in partnership with communities.

The Centre has a strong translational focus. Significant recent projects include the New Horizons review of alcohol and other drug treatment services commissioned by the Commonwealth; an examination of legal thresholds that placed many drug users at risk of erroneous conviction and led to reform of threshold limits in the ACT; and an economic evaluation of compulsory drug treatment in Vietnam compared with community methadone maintenance.



DPMP research. Below: Dr. Caitlin Hughes and Professor Alison Ritter

200,000



200,000 people receive AOD treatment in any one year

Did You Know?

Australia's current investment in AOD treatment was valued at around \$1.26 billion per annum. The Commonwealth contributes 31%, state/territory governments contribute 40%, and private sources contribute 20%

1,500



POINT began as a two-year study of 1,500 patients. Additional funding approved in 2016 will allow the cohort to be followed for a further three years

PAIN & OPIOID IN TREATMENT (POINT)

NDARC's Pain and Opioid IN Treatment (POINT) cohort study was designed to document patterns of pharmaceutical opioid prescribing for, and risk of adverse events in, patients prescribed Schedule 8 opioids for chronic non-cancer pain. The study has received international recognition for its efforts to delineate issues related to opioid prescribing for patients with chronic non-cancer pain. POINT originally began as a two-year study of 1,500 patients in 2012. Additional funding approved in 2016 will allow the cohort to be followed for a further three years.

Preliminary results from the POINT study suggest that people living with chronic pain and taking pharmaceutical opioids do not understand well (or in some cases, at all) the varied medications they are taking, says Professor Louisa Degenhardt, chief investigator of the study. However, lack of patient and doctor education is only one of many issues at play.

"There are multiple overlapping groups in our community taking these medications – most are likely to have other physical and mental health problems," says Degenhardt. "It is likely that a large number of people living with chronic pain also have mental health problems, particularly depression, which may not be so surprising given their life stories. Some have suffered serious accidents, others are experiencing the progression of slow-onset, irreversible disorders, but most are facing the fact that pain will be a part of their lives for the foreseeable future, if not for the rest of their lives."

Degenhardt's group is also looking at the use of pharmaceutical opioids among people who inject drugs. For the past decade heroin has been expensive, of variable quality and not readily available in many places. Despite this, NDARC estimates suggest that people who inject drugs consume a tiny proportion of the oxycodone that is being prescribed in this country. "One risk of use by this group, however, is that reports of diversion and injection of opioids will lead to calls for universal reductions in availability of pharmaceutical opioids to the wider community," says Degenhardt.

To shed further light on these complexities NDARC has been conducting a range of other studies, including research with people who use illicit drugs and the impacts of the introduction of new opioid formulations.

Did You Know?

Preliminary results suggest that people living with chronic pain and taking pharmaceutical opioids may benefit from additional information about the varied medications they are prescribed.

Dr. Catherine Campbell and Dr. Ebony Lunnace



SIDE BY SIDE

STORIES OF COLLABORATION

MARGARET HAMILTON

Professor Margaret Hamilton helped gain funding for the Drug Policy Modelling Program

Q WHY DID YOU BRING YOUR AREAS OF EXPERTISE TOGETHER?

A Alison was working in the Victorian Health Department. I was very keen to ensure that the research and training effort and capacity was not lost with the Department's decision to tender out treatment services.

Q WHAT DO YOU SEE AS YOUR MOST IMPORTANT WORK TOGETHER?

A The stand-out has been the Drug Policy Modelling Program (DPMP). I gained initial funding for DPMP but it has been Alison who has grown it to the level where it is now, internationally recognised as one of the key centres for study of drug policy.

Q WHAT HAS YOUR WORK CONTRIBUTED TO THE FIELD?

A I think we have both seen a need for mentoring talent. I look around at the people who are leaders in our field and it gives me some satisfaction to know many were once at Turning Point or DPMP or are still there.

Q WHAT DO YOU THINK REMAINS UNANSWERED?

A What it takes to have government recognise those who are disaffiliated and downtrodden or downhearted. How we might better distribute funding in a more evidence-informed and rational manner. Understanding sufficiently why some people do not take drugs. Understanding the processes involved for people in curbing or stopping their use of drugs.

Q WHAT IS IT YOU LIKE BEST ABOUT WORKING WITH EACH OTHER?

A We seem to be able to approach things in a way that allows each of us space and opportunity to use our knowledge, skills and capacity to the max. We know what we can expect of one another and we share important values. Our styles, ideas and capacities are a good match; they are different but each enhances the other.

MARGARET HAMILTON AND ALISON RITTER HAVE COLLABORATED FOR NEARLY 25 YEARS, SHAPING NATIONAL AND INTERNATIONAL DRUG POLICY

ALISON RITTER

Professor Alison Ritter trained in neuropsychology before helping establish the Drug Policy Modelling Program

Q WHY DID YOU BRING YOUR AREAS OF EXPERTISE TOGETHER?

A Margaret has incredible vision, leadership and strategic nous. She is also fabulous on political processes and networking. I am a skilled manager and organiser. I like the details, and getting things sorted out. It has been a perfect combination.

Q WHAT DO YOU SEE AS YOUR MOST IMPORTANT WORK TOGETHER?

A I think our biggest achievement has been the establishment of the Drug Policy Modelling Program. The Colonial Foundation Trust approached Margaret in 2003 for advice about the best investment for drugs policy. Given that we did not know the answer to that question, I led the initial feasibility grant, exploring ways to better support effective drugs policy. DPMP was born, and I led the next step which was a major grant to establish a new drug policy research capacity.

Q WHAT HAS YOUR WORK CONTRIBUTED TO THE FIELD?

A We have tackled many crucial policy issues including treatment funding, street-level policing, compulsory treatment, border control, dark-net markets, government spending allocations, public opinion and the media's role in shaping policy, and analyses shedding light on the policy actors, political processes and dynamics of policy making. We have also built a new generation of drug policy researchers.

Q WHAT DO YOU THINK REMAINS UNANSWERED?

A Many things. Why does policy not change in response to evidence? What might be the optimal balance in government spending between supply reduction, demand reduction and harm reduction? Does the way in which governments purchase treatment services affect treatment outcomes?

Q WHAT IS IT YOU LIKE BEST ABOUT WORKING WITH EACH OTHER?

A Margaret is incredibly generous – intellectually and personally. She can get to the heart of an issue quickly, and makes you feel completely relaxed and trusted. Our combined skill sets mean that whatever we tackle, we will succeed.

Photo credit: Clay Watson Photography



CAPACITY BUILDING

NDARC'S PHD STUDENTS

SINCE OPENING IN 1987, 66 STUDENTS HAVE SUCCESSFULLY COMPLETED A PHD AT NDARC.

1994 Lynette Lewis

Recreational drug use among the gay dance party scene in Sydney and its relationship to HIV risk-taking

1994 Nadia Solowij

Event-related potential indices of cognitive functioning in long-term cannabis users

1995 Jan Copeland

Development of a model for drug and alcohol treatment for women

1996 Amanda Baker

Cognitive-behavioural interventions among injecting drug users at risk for HIV infection

1996 Margaret Keisher

Environmental influences on HIV risk behaviour in injecting Drug Users

1996 Vaughan Rees

Associative learning in drug dependent smokers

1996 Claudia Sanmbele

An investigation of clinical subgroups among problem drinkers

1996 Jeff Ward

Factors affecting change and outcome in the NSW public methadone program

1997 Kate Dolan

HIV in Australian prisons: Transmission, risk behaviours and prevention

1999 Margaret Cooke

Barriers to the systematic provision of smoking cessation education during pregnancy

1999 Julie Hando

Patterns of psychostimulant use in Australia

1999 Rebecca McKein

Cognitive functioning and psychological morbidity among illicit amphetamine users

1999 Joanne Ross

Benzodiazepine use among heroin users in Sydney, Australia

1999 Wendy Swift

Patterns and correlates of cannabis dependence

1999 Libby Topp

Nature of the amphetamine dependence syndrome

2000 Catherine Spooner

Nature and treatment of psychoactive substance use disorders among adolescents

2001 Louisa Degenhardt

Substance use and mental health: What are the links between alcohol, cannabis and tobacco use and psychopathology

2003 Sharlene Keys

The use of cocaine among injecting and non-injecting drug users

2004 Luchina Burns

Patterns of comorbidity in problem drinkers

2006 Carolyn Day

Blood borne viruses and injecting drug use

2005 Peter Lawthman

Development of a brief treatment outcome measure for alcohol and other drug treatment services

2008 Neil Donnelly

Applied statistical methods in pharmacoepidemiology in primary care

2008 Jo Kimber

Health Service Evaluation: The regulation of injecting behaviour in Kings Cross

2008 Katherine Mills

Post-traumatic stress disorder among people with heroin dependence

2008 Anna Williamson

Comorbidity cocaine and heroin dependence

2007 Heather Proudfoot

Best use of health care services to treat alcohol problems in the community: Maximizing value for the treatment dollar

2007 Laura Vogl

CLIMATE Schools Alcohol Module: Evaluating the efficacy of a computer based preventative alcohol module for schools

2008 Elizabeth Maloney

Patterns of suicidal behaviour, comorbidity and drug use among opioid dependent subjects and matched control subjects

2008 Greg Marth

Brief motivational intervention for adolescent cannabis users

2009 Amy Gibson

Morbidity associated with pharmacotherapies for opioid dependence

2009 Devon Ingh

Detection of alcohol-related emergency department presentations

2009 Nicola Newton

CLIMATE Schools: the development of a computer based drug and alcohol prevention program for Year 8 students

2009 James Shearer

Agonist pharmacotherapy for psychostimulant dependence

2010 Elizabeth Conroy

The importance of child maltreatment as a correlates of mental disorder among opioid dependent persons

2011 Courtney Breen

Alcohol consumption and related harms in regional communities: Exploring individual and community factors

2011 Alys Hevard

Targeting alcohol problems among patients of rural Australian emergency departments: Establishing an evidence base

2001 Sarah Larmey

Opioid substitution treatment in prisons and post-release: Effects on criminal recidivism and morality

2011 Hector Navarro

Economic evaluations of community action interventions to reduce alcohol-related harm in rural communities in New South Wales

2011 Martin Shanahan

Assessing the economic consequences of cannabis policy options

2011 Fiona Shand

Patterns of substance abuse and mental health comorbidity in a heroin dependent group

2012 Emma Barrett

Hurt people who hurt people: Anger and violence among individuals with substance use disorder and post-traumatic stress disorder

2012 Joshua Byrnes

The impact of price on alcohol consumption and the cost effectiveness of a volumetric tax in Australia

2012 Peter Gates

The Cannabis Information and Helpline: Evaluation and randomised controlled trial

2012 Briony Laranoe

Non-adherence with opioid substitution therapy in Australia

2012 Francis Matthew-Simmons

Public opinion, the media, and illicit drug policy

2012 Louise Mawton

The classification of substance use disorders in young adults

2012 Edmund Sillins

Iritation, persistence and cessation of cannabis use and subsequent mental health outcomes

2013 Amy Johnston

Suicidality in Australia: prevalence, correlates, trends and health service use

2013 Lynne Major-Bleitch

Intervention for amphetamine-type stimulant (ATS) use in the therapeutic community

2013 Lucy Albertella

Longitudinal study of drug use, health, and offending outcomes for young offenders

2013 Melanie Simpson

Exploring the relationship between cannabis use and criminal offending among adolescents

2014 Bianca Calebris

Creating partnerships between researchers, healthcare providers and Indigenous Australians to improve Indigenous health: a demonstration model

2014 Timothy McSweeney

Promoting compliance, 'recovery' and 'desistance': Comparative case studies of presentence diversion schemes for drug misusing arrestees in Australia and England

2014 Monika Wedelowski

Disentangling early adolescent alcohol slipping and drinking: How do they relate to parental supply, parenting, peers and behaviour?

2015 Mark Deady

Comorbid depression and alcohol misuse in young people and the development of an internet-based intervention

2015 Dam Anh Tran

Accessibility to anti-retroviral (ARV) treatment in Vietnam

2015 Michelle Tye

Understanding the ability to violent offending among injection drug users: the contribution of predispositional and substance use risks

2016 Gabrielle Campbell

Complications and comorbidities in people living with chronic non-cancer pain: Subclassity and problematic pharmaceutical use

2016 Katrina Champion

Paying attention to prevention: An internet-based framework to address alcohol, cannabis, ecstasy and new psychoactive substance use

2016 Karl Lancaster

Social construction and the evidence based drug policy endeavour

2016 Claire McCormack

Impact of prenatal alcohol and drug exposure on infant cognitive development

2016 Larissa Rosen

Understanding the impact of early maternal bonding, parental substance use and mental health on bonding and emotional availability in the first year of life

2016 Thu Vuong

Economic evaluation comparing centre based compulsory drug rehabilitation and community-based voluntary methadone maintenance treatment in Hai Phong City, Vietnam

2017 Lucy Albertella

A prospective investigation of the relationship among attentional dysfunction, cannabis use, and schizotypy in adolescence

2017 Louise Birrell

Untangling co-morbidity: substance use and mental health in young Australians

2017 Meika Snelder

Working together with Aboriginal communities: balancing partnerships and rigorous research in the development and evaluation of community-based interventions aiming to reduce alcohol-related harms



From left to right: Dr. Emma Barrett, Dr. Nicola Newton, Dr. Briony Laranoe, Dr. Monika Wedelowski

SIDE BY SIDE

STORIES OF COLLABORATION

MAREE TEESSON

Professor Maree Teesson established the NHMRC Centre of Research Excellence in Mental Health and Substance Use

Q WHY DID YOU BRING YOUR AREAS OF EXPERTISE TOGETHER?

A Substance use and mental disorders are the leading global causes of burden of disease in young people and share common risk factors. We shared a passion for improving early intervention and prevention. We were also both very focused about building the next generation of researchers and in using advances in technology to extend our reach.

Q WHAT DO YOU SEE AS YOUR MOST IMPORTANT WORK TOGETHER?

A The epidemiology to identify the problems and gaps, and the early intervention and treatment trials that change people's lives.

Q WHAT HAS YOUR WORK CONTRIBUTED TO THE FIELD?

A Our research has shown that effective prevention and early intervention can significantly reduce disease burden by halting, delaying, and interrupting the onset and progression of disorders. We have begun to fill the evidence vacuum with large world-first prevention and early intervention trials. We have shown that adolescence represents a critical focus. We have shown the importance of harnessing advances in technology and new models of causes aimed at individual, peer, and family targets.

Q WHAT DO YOU THINK REMAINS UNANSWERED?

A How do we ensure that world-class, innovative, evidence-based prevention and early intervention for substance use and mental disorders are available to all young Australians.

Q WHAT IS IT YOU LIKE BEST ABOUT WORKING WITH EACH OTHER?

A Helen is generous and creative. I always feel like anything is possible after a lunch with Helen.

Photo credit: Clay Watson Photography



MAREE TEESSON AND HELEN CHRISTENSEN ARE COLLABORATING ON MENTAL HEALTH AND SUBSTANCE USE DISORDERS WITH LARGE SCALE PREVENTION AND EARLY INTERVENTION TRIALS

HELEN CHRISTENSEN

Professor Helen Christensen established the NHMRC Centre of Research Excellence in Suicide Prevention

Q WHY DID YOU BRING YOUR AREAS OF EXPERTISE TOGETHER?

A We have synergies in our commitment to reducing mental health problems in young people. We want our research to have impact.

Q WHAT DO YOU SEE AS YOUR MOST IMPORTANT WORK TOGETHER?

A More and more I see our contributions as providing opportunities to PhDs and post-docs to become mental health researchers. If you think of the impact of 30 PhD students and support for 40 or more post-docs over 30 years from my side and an equivalent number from Maree's - it's huge.

Q WHAT HAS YOUR WORK CONTRIBUTED TO THE FIELD?

A I'd say the large-scale implementation of suicide prevention and comorbidity interventions, the pioneering of e-health interventions, with, hopefully, more to come in smartphone and social media, and the mapping of social networks.

Q WHAT DO YOU THINK REMAINS UNANSWERED?

A How long is a piece of string? In research there are gaps in workplace mental health, improving suicide prevention services, and the implementation of good, proven ideas into practice, particularly in prevention. We still do not understand well what causes people to develop depression or take up drugs. We need to understand how science and health reform can work together and how a mess of scattergun non-evidence based services can integrate coherently. How do we change the public's and politicians' view of mental illness as a first-world problem? How do we measure impact and translational outcomes?

Q WHAT IS IT YOU LIKE BEST ABOUT WORKING WITH EACH OTHER?

A We share synergies and aspirations. We support each other to push through traditional thinking which undervalues population health contributions, and prioritise treatment rather than prevention. We aspire to help more women succeed at the senior level in universities.

APPENDIX

INDEX OF PROJECT INVESTIGATORS

10 PROJECTS THAT SHAPED THE 1990s

- 1991: Quality Assurance Project**
NDARC: Richard Mattick, Andrew Bello, Wayne Hall, Tracy Jarvis
- 1992: Key issues in methadone maintenance treatment**
NDARC: Richard Mattick, Jeff Ward, Wayne Hall
- 1992: Brief Interventions Unit**
NDARC: Robyn Richmond, Alex Wodak
- 1992: Fetal heroin overdose**
NDARC: Shona Derka, Joanne Ross
- 1993: Cannabis and mental health**
NDARC: Wayne Hall, Nadia Solowij, Jen Lemon
- 1993: Patterns and correlates of cannabis dependence**
NDARC: Wendy Swift, Wayne Hall, Jen Copeland
- 1995: Running the Risk: Heroin, Health and Harm in South West Sydney**
NDARC: Lisa Maher, Wayne Hall, Ian Wubster
- 1996: Trial of methadone in prison**
NDARC: Keta Dolan, Alex Wodak, Richard Mattick, Wayne Hall
- 1997: First National Survey of Mental Health and Wellbeing**
NDARC: Wayne Hall, Marise Teesson, Michael Lynskey, Louise Degenhardt, Wendy Swift
Other investigators: Gavin Andrews
- 1998: Development of the illicit Drug Reporting System (EDRS)**
Wayne Hall, Julia Herd, Shona Derka, Lisa Maher, Susannah O'Brien

10 PROJECTS THAT SHAPED THE 2000s

- 2000: National launch of the Illicit Drug Reporting System (EDRS) and Gateway and Related Drugs Reporting System (EDRS)**
EDRS: NDARC: Wayne Hall, Shona Derka, Libby Topp, Sharlene Kaye
Participating institutions: Australian Institute of Criminology, Drug and Alcohol Services Council SA, National Drug Research Institute, Northern Territory University, Queensland Alcohol and Drug Research and Education Centre, Turning Point Alcohol and Drug Centre, University of Tasmania
EDRS: NDARC: Jen Copeland, Paul Dillon, Michael Gascoigne
- 2001: Australian Treatment Outcome Study (ATOS)**
NDARC: Joanne Ross, Marise Teesson, Richard Mattick, Shona Derka, Nicky Henderson
Other investigators: Michael Lynskey, Wayne Hall
- 2002: Buprenorphine versus methadone maintenance therapy: a randomised double-blind trial with 406 opioid-dependent patients**
NDARC: Richard Mattick, Erol Digiusto (seconded from Westmead Hospital), Wayne Hall, Jo Kimber, Susannah O'Brien

Other investigators: Robert AS, DASC, SA Health Department; Gabriela Bammer, NCEPH, ANU; James Ball, Langton Centre, SESAMS; J Currie, Westmead Hospital, WSAHS; L Hewison, ATODS, Gold Coast District Health; Nick Litzman, Turning Point; N Glasgow, Calvary Hospital, ACT; Alison Ritter, Turning Point; John B Saunders, Centre for Drug & Alcohol Studies, Royal Brisbane Hospital; J White, University of Adelaide; Deborah Zador, Drug & Alcohol Services, CSAHS

2004: Australian National Evaluation of Pharmacotherapies for Opioid Dependence (NEPOD)

NDARC: Richard P Mattick, Erol Digiusto, Chris Doran, Susannah O'Brien, Marian Shanahan, Jo Kimber, Nicole Henderson, Courtney Brown, James Shiner, Jerry Deane, Anthony Shalashafit

2004: Report on heroin shortage

NDARC: Louise Degenhardt, Carolyn Day, Rebecca McKetin, Linette Collins, Elisabeth Conroy, Amy Gibson

Other investigators: Paul Dietze, Craig Fry and Peter Miller, Turning Point; Paul Christie and Adam Harrison, DASC

2005: Climate Schools: Online universal school-based prevention for alcohol and other drug use

NDARC: Laura Vogl, Marise Teesson, Nicole Newton

Other investigators: Hulan Van Vleet, Gavin Andrews, Mark Dadds, John McCormack

2005: The Cannabis Cohorts Research Consortium (CCRC)

NDARC: Delyne Hutchinson, Richard Mattick, Edmund Sims, Jennifer McLaren, Louise Degenhardt, Wendy Swift, Jen Copeland and Marise Teesson. Other NDARC staff affiliated with the consortium include Marian Shanahan, Greg Martin, Laura Vogl, Lucy Burns, John Howard and Tim Slade.

Other investigators: Steve Allop, National Drug Research Institute; David Fergusson, Christchurch School of Medicine and Health Sciences, NZ; Richie Poulton, Dunedin Multidisciplinary Health and Development Research Unit, NZ; Wayne Hall, School of Population Health, University of Queensland; Jula Neijzen, Queensland Alcohol and Drug Research and Education Centre; George Patton, Centre for Adolescent Health, University of Melbourne; Bryan Rodgers, National Centre for Epidemiology and Population Health; John Toumbourou, School of Psychology, Deakin University

2006: The Methylphenidate Treatment Evaluation Study (MATES)

NDARC: Richard Mattick, Rebecca McKetin, Joanne Ross, Erin Kelly

Other investigators: Robert AS, DASSA and the University of Adelaide; Dan Lubman, University of Melbourne

Associates: Jula Neijzen, QADRCD; Amanda Balar, University of Newcastle; Nicola Lee, Turning Point Alcohol and Drug Centre; Sharon Dews, Griffith University; Matthew Law, National Centre for HIV Epidemiology and Clinical Research, UNSW

2007: National Surveys of Mental Health and Wellbeing

Investigators: Tim Slade, Amy Johnston, Marise Teesson, Harvey Whitford, Philip Burgess, Jana Pirkin, Suzy Saw