

NATIONAL MENTAL HEALTH COMMISSION

National Mental Health Research Strategy

Appendices

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Australian Government
National Mental Health Commission

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Appendix A: Membership of National Mental Health Research Strategy Steering Committee and Expert Advisory Committee

National Mental Health Research Strategy Steering Committee members

Name	Position	Organisation
Christine Morgan (Co-chair)	CEO	National Mental Health Commission
Professor Maree Teesson (Co-chair)	Commissioner Director	National Mental Health Commissioner The Matilda Centre for Research in Mental Health and Substance Use, University of Sydney
Prue Torrance	Executive Director, Research Quality & Priorities Branch	National Health and Medical Research Council
Dr Tony Willis	Executive General Manager	Australian Research Council
Eileen McDonald	Carer Representative	National Mental Health Consumer and Carer Forum
Dr Darren Gibson	Director, Research Development Unit	WA Department of Health
Jason Leung	Principal Policy Adviser, Strategy and Legal Policy	Victorian Department of Health and Human Services
Dr John Reilly	Chief Psychiatrist, Mental Health, Alcohol and Other Drugs Branch	Queensland Health
Kay Anastassiadis	Principal Policy Adviser, Office of the Chief Psychiatrist	SA Department of Health and Ageing
Dr Elizabeth Moore	Coordinator-General of the Office of Mental Health and Wellbeing	Joint Mental Health Commissions
Associate Professor Nicola Newton	Director of Prevention Research	The Matilda Centre for Research in Mental Health and Substance Use, University of Sydney
Associate Professor Bruce Shadbolt	Executive Branch Manager—Research	ACT Health Directorate
Professor Frances Kay-Lambkin	NHMRC Senior Research Fellow, Director (Translation), NHMRC CRE in Mental Health & Substance Use, Deputy Director (Mental Health Hub),	Society for Mental Health Research

	Centre for Brain and Mental Health Priority Research Centre	
Professor Helen Milroy	Commissioner	National Mental Health Commission
Tanya Kretschman	Consumer Representative	National Mental Health Consumer and Carer Forum
Mark Roddam	First Assistant Secretary, Primary Care & Mental Health	Australian Government Department of Health
Dr Murray Wright	NSW Chief Psychiatrist	NSW Health
Professor Jane Gunn	Deputy Dean of the Faculty of Medicine, Dentistry and Health Sciences, University of Melbourne	University of Melbourne National Health and Medical Research Council Mental Health Research Advisory Council
Dr Aaron Groves	Chief Psychiatrist	Office of the Chief Psychiatrist, Tasmania

National Mental Health Research Strategy Expert Advisory Committee members

Name	Position	Organisation
Professor Maree Teesson (Chair)	NMHC Commissioner Co-chair NMRS Steering Committee, Director, the Matilda Centre	The Matilda Centre for Research in Mental Health and Substance Use, University of Sydney
Professor Frances Kay- Lambkin	Co-Director Mental Health Hub, Priority Research Centre in Brain and Mental Health	Society for Mental Health Research
Associate Professor Alison Calear	National Health and Medical Research Council Research Fellow	Centre for Mental Health Research, Australian National University
Associate Professor Philip Batterham	Deputy Head	Centre for Mental Health Research, Australian National University
Professor Ian Hickie	Co-Director, Health and Policy	Co-Director, Health and Policy, Brain and Mind Centre
Professor John McGrath	Professor, School of Clinical Medicine	School of Clinical Medicine, University of Queensland
Briana Lees	National Health and Medical Research Council Scholar	The Matilda Centre for Research in Mental Health and Substance Use, University of Sydney
Scientia Professor Helen Christensen	Director and Chief Scientist	Black Dog Institute
Professor Patrick McGorry	Director	Orygen Youth Health Research Centre

Appendix B: Summary of National Mental Health Research Strategy stakeholder workshop outcomes

The National Mental Health Commission (the Commission) hosted a National Mental Health Research Strategy (the Strategy) stakeholder workshop on 5-6 March 2020. The workshop brought together approximately 100 stakeholders in mental health research, including researchers, people with lived experience of mental ill health as a consumer or carer, clinicians, policy makers and research funders.

The aim of the workshop was to explore current gaps, challenges, and opportunities in mental health research. The Strategy Expert Advisory Group identified 20 topics (see Table B1.0 below) covering diverse domains of research, diagnostic areas and key population groups, which formed the focus of concurrent sessions within the workshop. Concurrent sessions included brief presentations led by relevant speakers but were primarily interactive discussions that used small group discussions and identification of key themes. Plenary sessions were also held to present general information about the mental health research landscape and bring together learnings from the concurrent sessions. The workshop was opened by the Minister for Health, The Hon Greg Hunt MP and guest plenary presenters included:

- Professor Dame Til Wykes, Professor of Clinical Psychology and Rehabilitation at King’s College, London
- Dr Louise Byrne, Vice Chancellor’s Postdoctoral Fellow, School of Management, RMIT University.

There were two tangible outputs from the workshop: background papers summarising key issues in each of the 20 topics, and a report on the feedback from the workshop. The background papers were written before the workshop to facilitate discussions, with 20 topics led by content area experts. In each of the sessions of the workshop, participants provided feedback using FunRetro, an interactive online tool for gathering written comments in real time. ORIMA Research was commissioned by the Commission to analyse the content of the feedback from the workshop, and provided a report summarising the outcomes.

Table B1.0: National Mental Health Commission stakeholder workshop topics and background papers

Broad research topic	Diagnostic topics	Key population topics
Basic research	Personality disorders	Children and young people
Treatment research	Eating disorders	Aboriginal and Torres Strait Islander peoples
Prevention research	Substance use disorders	
Comorbidities and trans-diagnostic research	Psychosis and psychotic disorders	
Epidemiological and population health research	Anxiety disorders	
Suicide prevention research	Neurodevelopmental disorders	
Lived experience-led research	Mood disorders	
Digital and e-health research	Trauma and stressor-related disorders	

Summary of findings

Themes and priorities were quite consistent across the different research topics. Consequently, a large focus of the workshop analysis was on identifying overarching themes related to improving and capitalising on mental health research in Australia, rather than identifying particular areas of research that represent gaps. The following presents the top five themes identified as highest priority.

1. Support collaborative approaches to research

Workshop participants highlighted the need for greater collaboration between researchers and research teams, as well as with people with lived experience and/or cultural knowledge, industry, government, and other key stakeholders e.g. education, health professionals. The benefits of improved collaboration include a greater alignment of research priorities (between researchers and with key stakeholders), improved consistency in research measures and approaches, larger sample and study sizes, less duplication and the sharing of resources and expertise. Some of the feasible actions that were identified by workshop participants to improve collaboration include the development of funding models that promote collaboration (between researchers and with stakeholders), the establishment of Clinical Trials Networks and the creation of research interest groups.

2. Encourage greater incorporation of lived-experience perspectives in all stages of research

The identified benefits of lived experience perspectives in research include improved treatment and recovery outcomes, and increased engagement with and personalisation of treatments and interventions. Lived-experience perspectives in research could be encouraged through the development of standards and best-practice guidelines for the involvement of people with a lived experience in research, creation of funding opportunities that promote lived-experience involvement in research and supporting people with a lived experience to pursue a career in research and disseminate the results of their research.

3. Enable data sharing, data linkage and routine data collection

Enabling data sharing, data linkage and routine data collection was another important theme identified across workshop sessions and closely related to the encouraging collaboration theme. Workshops participants highlighted the need for greater data sharing between research teams, improved data linkage with government and health services data and improved quality and completeness of datasets to increase the availability of representative population data, facilitate effective longitudinal research, increase the size of datasets and reduce time and cost burden (on researchers and research participants). Data sharing, linkage and collection could be improved through the establishment of routine data collection processes that are regular and consistent across sectors and jurisdictions, the use of consistent or harmonised measures, funding programs to

develop large linked datasets, facilitating national surveys of mental health, and encouraging data sharing through Clinical Trials Networks.

4. Support the development and enhancement of treatment and intervention approaches

This theme encapsulated the need for both new and novel treatments and the continued development and enhancement of current approaches to increase consumer choice and access, and to improve outcomes for current treatments. Workshop participants identified a range of ways to address this theme including conducting research with people with a lived experience to gain insight into their recovery needs, undertaking research into personalised and alternate treatment approaches (e.g. digital, social/lifestyle factors), improving understanding of pharmacological treatments, and increasing funding opportunities to support novel treatment research.

5. Reduce stigma and improve awareness and understanding of mental illness

Workshop participants identified that the reduction of stigma and improvement in mental illness awareness would encourage early intervention, facilitate treatment and recovery, improve community participation for people with mental health disorders, and reduce unhelpful language or discourse about mental health that can promote negative perceptions in the community. Research opportunities to address this theme include conducting research to better understand public attitudes to mental health and inform public communication campaigns, exploring the role of lived-experience champions to educate and reduce stigma and better understanding the role of language in the perpetuation of stigma and communication of mental health research.

Appendix C: Gaps, challenges and opportunities across mental health research domains

The 2020 National Mental Health Research Strategy (the Strategy) stakeholder workshop focused on 20 mental health research domains across broad research topics, diagnostic topics and key population topics. While not an exhaustive range of topics, the Steering Committee considered that the range of 20 topics outlined below provided good coverage of the key mental health research domains in Australia.

Each topic was informed by a background paper specifically written for the workshop. For each research topic information on the background paper, the current gaps and challenges, and opportunities for mental health research identified by stakeholders during the workshop is provided below.

Broad Research Topics

Basic Research

Dr John J. McGrath AM, Dr Karly M. Turner, Dr James P. Kesby

We know little about how the brain works. Basic research allows us to tackle how the brain performs specific functions and where problems may arise. The influential Australian-born psychiatrist, Sir Aubrey Lewis put this bluntly - psychiatry suffers from ‘too many theories balanced uncertainly on too few solid facts’. Therefore, it is vital that basic research continues to progress our understanding of fundamental brain function, alongside targeted mental health research. In order to facilitate this partnership, mental health needs to drive the agenda in basic neuroscience research.

Themes	Gaps and Challenges	Opportunities
Encourage collaboration	Basic research and clinical research are not well integrated.	<p>Establish research interest groups or bodies that are made up of researchers from different areas of mental health research and methodological backgrounds.</p> <p>Develop funding mechanisms that encourage collaborations and integration between basic research and other types of research, or additional funding for basic scientists to work with clinicians in clinical settings.</p>
Ensure the inclusion of lived-experience perspectives	Basic research can be difficult for people with lived experience to conceptualise and engage with.	Encourage partnerships between people with lived experience and basic research investigators to incorporate the voice of lived experience in basic research so as to co-produce basic research and a disease narrative that consumers and carers can respect.
Conduct research that aligns with community priorities	Disconnect between basic research and the broader mental health community including those with lived experience.	<p>Develop a shared research vision by:</p> <ul style="list-style-type: none"> encouraging basic researchers to work closely with communities, consumers, carers and clinicians

		<ul style="list-style-type: none"> developing training for basic researchers on the lived experience of mental health in communities.
Improve funding structures to support effective research	Current funding models and pressure to publish promote short-term goals.	<p>Provide seed funding for building partnerships, which could be assessed after one year and then extended if productive and promising.</p> <p>Increase funding duration to periods of five or ten years, especially in the case of translational research.</p> <p>Develop funding structures that facilitate discovery research and support outcome-motivated basic research.</p>

Treatment Research

Professor Michael Berk

While there are many effective therapies, with a reasonably good understanding of how to use them, there remains a need for ongoing research to clarify exactly how many of these therapies could or should be used. As well as to better delineate the disorders or phenotypes that might respond to the different therapies.

Themes	Gaps and Challenges	Opportunities
Improving collaboration and unifying approaches	Lack of collaboration and alignment of priorities across the health system including researchers, clinicians and people with lived experience.	<p>Establish national clinical trials (or multiple networks) to assist with the national coordination of biological and clinical data across trials.</p> <p>Coordinate shared ethical and governance structures to facilitate a clinical trial network and also reduce the burden on individual groups or studies.</p>
Adjust funding structures and assessment approaches	Limited funding to treatment research.	<p>Adjust assessment criteria for funding to allow for additional treatment research to occur including:</p> <ul style="list-style-type: none"> increasing openness of assessment panels to studies which rely on clinical judgment and participant feedback reward innovative research appointing quarantined funding for research to encourage the development of clinician researchers Allocate philanthropic research funding through competitive processes.
Promote inclusion of lived experience perspectives	<p>There is an underuse of patient reported experience measures in treatment research and a need for people with lived experience to be involved in defining these measures.</p> <p>Lack of research to support personalised approaches to care.</p>	<p>Collaborate with people with lived experience at every stage of the research.</p> <p>Ensure payment is provided for lived experience input into research collaborations.</p> <p>Ensure the use of patient reported outcome measures and patient reported experience measures in research designs.</p> <p>Embed guidelines and measures in research designs that promote treatment acceptability and lived experience involvement.</p> <p>Develop patient-preference studies.</p>

Prevention Research

Associate Professor Nicola C. Newton, Dr Katrina E. Champion, Associate Professor Cath Chapman

To prevent substance use and mental illness, a cohesive and integrated approach to is critical; one that: (1) increases the scientific evidence for knowledge of causes and risks of substance use and mental disorders; (2) improves the evidence base for effective prevention by addressing current gaps in knowledge (as outlined above); and (3) effectively and efficiently disseminates effective prevention into practice.

Themes	Gaps and Challenges	Opportunities
Define and measure multiple outcomes	It can be difficult to evaluate prevention programs as they must consider multiple outcomes.	Develop clear outcome and multi-outcome measures for prevention research and conduct long term follow-up.
Encourage collaboration	Competitive funding processes can impede collaboration.	Encourage groups conducting similar program development research to work together to increase sample size and power. Facilitate multidisciplinary prevention research teams, particularly given the importance of integration across sectors for directing people to services.
Improve understanding and communication about the importance of prevention research	Prevention trials are expensive compared to other forms of research due to the longer-term nature of outcomes and impacts.	Engage community stakeholders on the importance of evidence-based interventions. Undertake long-term economic modelling to estimate the potential future gains of prevention research.

Comorbidities and Trans-diagnostic Research

Professor Andrew Baillie

There is international consensus that co- and multi-morbidity is the norm and not the exception and that this is burdensome on individuals, their families and communities. Prevention, recognition and treatment is complicated by co- and multi-morbidity and there is limited research to provide the knowledge base to improve this situation.

Themes	Gaps and Challenges	Opportunities
Adjust funding approaches and priorities	Funding bodies often define focus areas and funding criteria by disorder types which does not facilitate funding of comorbidity research.	Open a funding stream through NMHRC for investigating common mental health mechanisms. Prioritise trans-diagnostic and comorbidity research through the Millions Minds funding scheme. Educate philanthropic funders about the existence and importance of trans-diagnostic research.
Facilitate collaboration	By its nature, trans-diagnostic research requires collaboration across diagnostic fields.	Prioritise research projects with multiple partners across disciplines and fields. Funding and recognition models should allow for recognition across investigators and institutions rather than just the research leads. Allocate funding across silos (i.e. for research projects with partners across multiple disciplines / fields). Develop trans-diagnostic / comorbidity hubs that provide research, as well as services. Establish clinical trials networks for comorbidity and trans-diagnostic research. Take multi-agency approaches – including collaborating outside of the health sector (e.g. prisons and child protection). Work with basic researchers to model and understand broader symptoms rather than specific disorders.
Encourage lived experience perspectives and person-centred approaches	A categorical diagnostic system does not accurately reflect the way that people experience mental health difficulties, and that lived experience is broader and more diverse than a diagnosis.	Prioritise person-centred approaches for understanding the unique and co-occurring mental, physical and social factors impacting individuals.

Inform improvements to inclusiveness and outcomes of services	<p>Need to ensure that people are not denied services when they do not fit a specific diagnostic category.</p> <p>The culture of services and research should support breadth as well as depth of services.</p>	<p>To support improved inclusion and outcomes from services, stakeholders suggested the following steps and actions:</p> <ul style="list-style-type: none"> • more intervention research designed and situated in the primary care setting focusing on effectiveness as well as efficacy • test of different treatment sequences and parallel treatment options • conduct more implementation study designs following established guidance • organise intervention trials around a ‘no wrong door’ approach.
Recognise links between physical and mental health	<p>It can be difficult to navigate the divide between physical and mental health as mental health is typically siloed from general health.</p>	<p>Reduce physical and mental health silos through professional networks spanning mental health and other medical disorders (e.g. linking with cardiovascular and cancer networks).</p> <p>Conduct more translation research to understand why guidelines around physical comorbidities are not implemented in practice.</p>
Improve understanding of how the concepts of comorbidity and trans-diagnostic are defined	<p>There is a lack of clarity in relation to how ‘comorbidity’ and ‘trans-diagnostic’ are defined.</p>	<p>Define comorbidity using high-quality data (including big data) and allow for multimodal assessment and machine learning approaches.</p> <p>Use terminology that incorporates the idea of underlying shared mechanisms and move away from use ‘trans-diagnostic’ and ‘comorbidity’ as descriptive terms.</p>

Epidemiological and Population Health Research

Associate Professor Tim Slade

Nationally representative surveys of the general population are a vital source of data to improve our understanding of the distribution and impact of mental disorders. Surveys of this kind are crucial because they provide data among the whole population, not just those who are seen by mental health professionals. For this reason, they allow us to determine which subgroups of the population are not receiving the mental health services they might need.

Themes	Gaps and Challenges	Opportunities
Harmonise data collection approaches	<p>There are inconsistencies in measures used in research, as well as differences in state jurisdictions and health services data platforms.</p>	<p>Improve harmonisation and use of administrative and clinical data.</p> <p>Develop a national mental health survey with reliable and timely links to other data sets.</p>

Improve the accessibility of data and data sharing	It is difficult, time-consuming and costly linking state and national administrative data, and there are ethical and custodial challenges.	
Increase support for longitudinal research	Lack of longitudinal research necessary for understanding risks and protective pathways. Current funding models do not support large, long duration studies. Underutilisation of current data is an issue.	Advocate for more funding for epidemiological research and cohort studies, including through the Medical Research Future Fund.
Improve translation and implementation of research findings	Translation and implementation of research to policy and service outcomes should be improved.	Ensure that questions included in national surveys answer questions relevant to policy. Improve understanding of the importance of epidemiology and evaluation. Strengthen translation and implementation links, to more rapidly transfer research findings to real-world solutions. Develop a phased research road map to ensure epidemiological research adds value.

Suicide Prevention Research

Professor Jane Pirkis

Suicide prevention research needs to be more coordinated, better prioritised and address the imbalance between epidemiological and intervention research. As a priority suicide prevention research needs to apply the knowledge of the epidemiology of suicide to test interventions for those at risk of suicide, and whether these are more effectively delivered universally, selectively or in an indicated fashion. There are many emerging and existing interventions that have not yet been well evaluated, researchers should work with organisations that are delivering these interventions to conduct research at the point of delivery.

Themes	Gaps and Challenges	Opportunities
Increase and improve effectiveness of intervention research	More intervention research is needed to understand effective approaches to preventing suicide. Intervention research is challenging because suicide is multifaceted and the impact of different interventions on different pathways may be unclear and difficult to detect. People at high-risk of suicide are often excluded from research, which means interventions are not being tested on those most in need.	Map the efficacy of existing interventions using data currently available wherever possible. Conduct trials of suicide prevention interventions during middle childhood (i.e. ages 3 to 9 years), involving families, which measure the intermediate outcomes of mental health in children and parents. Conduct multi-disciplinary collaborative research to address modifiable risk factors. Develop, evaluate, and disseminate digital interventions to increase the reach of services. Focus on age specific intervention research.

Conduct implementation and health services research	<p>Improve uptake of evidence-based interventions.</p> <p>Interventions need to be evaluated in real-world settings and not inappropriately generalised to cohorts and environments which have not been investigated.</p>	<p>Implement existing evidence-based programs and interventions into practice and policy.</p> <p>Improve funding for implementation and health services research, particularly in relation to aftercare services.</p> <p>Embed the importance of rigorous evaluation in policy and conducting high-quality evaluations of funded programs to ensure that funding is directed where it is most effective.</p> <p>Upskill the mental health and broader health and human services workforce in relation to working with people who may be suicidal.</p>
Encourage collaboration	<p>Competitive funding processes can impede collaboration.</p>	<p>Develop effective models of partnership between stakeholders and to create collaborative research investment opportunities across multiple funding streams.</p> <p>Develop a collaborative research network.</p> <p>Develop collaborative funding and investment programs through philanthropic engagement with government and other stakeholders.</p> <p>Develop incentives for effective collaboration between academics and service providers, particularly for implementation research.</p>
Improve identification and targeting of at-risk groups	<p>Improve understanding of the range of risk factors for suicide and targeting of at-risk cohorts.</p>	<p>Develop studies that demonstrate the effectiveness of programs and interventions for at-risk groups. Target at-risk cohorts in specific settings, for example, reaching men through sports, workplaces or hobbies and reaching children through school or sports.</p> <p>Improve identification of people at risk of suicide (e.g. suicidal ideation and suicide attempts) through administrative data sets.</p>

Lived Experience-led Research

Dr Michelle Banfield

Lived experience-led research is a crucial component of a National Mental Health Strategy. Lived experience researchers bring a unique perspective to mental health research, and represent a critical connection to the broader lived experience community.

Themes	Gaps and Challenges	Opportunities
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<p>Support lived-experience research workforce development</p>	<p>We need to increase the number of lived experience researchers, and provide training and support to upskill lived experience researchers.</p>	<p>Support structured mentoring by other researchers with lived experience.</p> <p>Develop a national program of fellowships, PhD pathways and Higher Degree Research scholarships for lived experience researchers.</p> <p>Ensure that PhD pathways and scholarships can be undertaken part-time to allow time for self-care.</p> <p>Establish and disseminate research training models for lived experience researchers.</p> <p>Provide resources for universities to support lived experience models and adequate appointments of staff with support.</p> <p>Adopt the Yale Leadership Academy program.</p>
<p>Improve funding models to encourage lived experience-led research</p>	<p>There is no incentive or requirement for research to address lived experience research priorities or be led by lived experience researchers.</p>	<p>Provide specific lived experience-led research funding streams.</p> <p>Create a specific category in NHMRC funding applications for the inclusion of a lived experience researcher and / or making this a requirement.</p> <p>Encourage the inclusion of lived experience academics as members on funding and governance bodies to authorise and support lived experience research</p> <p>Develop an understanding of the research priorities of people with lived experience outside the dominant paradigms of illness and treatment, and creating funding opportunities in line with these priorities.</p> <p>Leverage links with philanthropic organisations to fund research outside of the dominant paradigms.</p>
<p>Provide advice, guidelines and standards for the inclusion of lived experience in research</p>	<p>We need to shift from models of representation in research to the concept of co-design.</p> <p>It can be challenging to implement the inclusion of lived experience perspectives in research in practice.</p> <p>Adequate timelines are required to allow for input from those with lived experience in research.</p>	<p>Provide funding for lived experience academics to develop guidelines, training and fidelity standards for academia in lived experience-led research and lived experience engagement.</p> <p>Publicise and showcase successful lived experience-led research by providing exemplars of high-quality lived experience-led research that has been impactful.</p> <p>Embed co-production and co-design models in research.</p> <p>Adopt useful models of effective lived experience engagement used in other countries.</p>

Address access barriers to funding for lived experience researchers	People with lived experience may have frequent short periods of career disruption which may impact their academic track record.	Provide avenues for publishing to help lived experience researchers to build their track record, for example, through special issues in higher impact journals. Add another investigator stream for NHMRC grant applications for lived experience researchers that enable lived experience researchers to be listed as Chief Investigators, without needing the same track record requirements.
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Digital and e-Health Research

Professor Frances Kay-Lambkin

Digital health is a fast-developing technology that will transform the way that health and social care is delivered. The majority of people experience barriers that prevent access to treatment, aggravated by a lack of mental health specialists. For digital technology to achieve its potential to transform the ways we detect, treat and prevent mental disorders, there is a clear need for continued research involving multiple stakeholders, and rigorous studies showing that these technologies can successfully drive measurable improvements in mental health outcomes.

Themes	Gaps and Challenges	Opportunities
Ensure safety and quality of services	<p>There are no national standards to regulate the safety and quality of digital mental health services and products.</p> <p>Non-validated apps developed by businesses are more widely available than validated apps developed by academics due to research proceeding slowly and having more limited funding than commercial app developers.</p> <p>Need to understand the potential adverse effects or harms associated with digital services and products (e.g. costs and data privacy).</p>	<p>Standards currently being developed by the Australian Commission on Safety and Quality in Health Care (ACSQHC) for quality and safety for digital mental health services should be accepted and implemented with ongoing funding for evaluation.</p> <p>Monitor digital health services and products for adverse events and conduct research to articulate the benefits and harms of these products and service in different contexts.</p>
Improve knowledge and understanding of digital service options	<p>Clinicians need awareness and understanding of digital service offerings, particularly given that their patients may be using these even if they have not specifically recommended them.</p> <p>There are currently myths about digital mental health tools that may prevent implementation of these tools in practice (for example, that digital services are not effective).</p>	<p>Provide all clinicians with basic training in provision of digital services.</p> <p>Develop an educational campaign about the utility of digital mental health tools and reduce scepticism about their effectiveness for people with lived experience, clinicians, service leaders, policy-makers and researchers.</p> <p>Include digital mental health in relevant tertiary curriculums to inform future clinicians of their value.</p> <p>Build digital literacy of mental health professionals, as well as people with lived experience and families and carers.</p> <p>Conduct research about strategies to enhance workforce capacity to deliver digital interventions, particularly implementation research.</p>

Create an integrated list of digital resources that health services and providers can provide to service users.

Implementation Science and Health Services Research

Associate Professor Meredith Harris

Broadly, health services research seeks to strengthen capacity to assess and improve health system performance. The implementation science field emerged later, through the recognition that efficacious interventions may not be effective when implemented in real-world health service settings and that there may be a significant time lags to their implementation. Implementation science, or implementation research as it is sometimes known, aims to bridge this research-to-practice gap.

Themes	Gaps and Challenges	Opportunities
Improve methodologies	Implementation research is a new and complex area of research. Current funding models create a compromise between choosing traditional methodologies that are typically funded (e.g. randomised controlled trials) and advocating for methods that better address implementation outcomes.	Create networks or communities of practice to encourage solidification of methods and testing of frameworks and models. Introduce better consumer and clinical outcome measures. Conduct comparative evaluations of implementation science projects to assist in determining the most effective measures.
Improve understanding and communication of research benefits	Lack of understanding from other disciplines about implementation and health services research that negatively impacts the engagement, commitment and resourcing needed for this type of research, particularly from the health sector.	Conduct consultation and establish agreed and clear messaging about the benefits of implementation science to increase support for this area of research.
Encourage collaboration and multidisciplinary approaches	Researchers need to be agile and ready to collaborate to address challenges presented by the complexity of multiple systems of health and social services in implementation and health services research.	Develop partnerships between researchers and people with lived experience. Create multidisciplinary teams, including those outside of the health sector (e.g. with businesses, political scientists, economists, insurers, and the technology sector). Develop models of care that operate outside traditional health services (e.g. mental health supports in community, digital spaces, schools and workplaces).

Public Health and Social Determinants Research

Scientia Professor Helen Christensen

Interest in the social determinants of mental health is linked to movements in global and low to middle income countries (LMIC) wellbeing, the strong voice of First Nations communities, and the rise of lived experience leadership in mental health. There is recognition of the need to develop more comprehensive psychosocial prevention, and treatment interventions capable of addressing the everyday impacts of social, economic, and political forces on individuals' mental health, though expansion of the social aspect of our global mental health efforts.

Themes	Gaps and Challenges	Opportunities
Inform policy development and evaluation	<p>Social determinants are difficult to influence within the mental health system alone.</p> <p>Public policy in relation to education, justice, welfare and other systems is required to have impact.</p> <p>People who end up in mental health services could be better supported by other services (e.g. women's services, family violence services etc).</p>	<p>Research should focus on the impacts of social policy on mental health and understanding how to change aspects of social institutions contributing to the structural factors associated with poor mental health.</p> <p>Research could contribute to advocacy and engagement to ensure that key performance indicators related to mental health are embedded in relevant sectors (e.g. education and employment) and draw on international policies to do comparative research and natural experiments.</p> <p>Improved integration of mental health, physical health and social services is required.</p> <p>Cost-benefit analysis / econometric analysis of addressing social determinants is required.</p>
Encourage collaborative research approaches and data sharing	<p>Social determinants are difficult to influence within the mental health system alone.</p> <p>There is a lack of lifespan data available.</p>	<p>Access to linked data that covers community, family and individuals should be a priority to enable quality social determinants research.</p> <p>Fund the establishment of large linked data sets (e.g. through universities).</p> <p>Fund and design of cross-disciplinary research.</p> <p>Simplify data access and approval processes across jurisdictions.</p> <p>Leverage opportunities through Commonwealth multi-agency data sets.</p> <p>Draw on expertise from researchers with knowledge in specific areas for framing data collection.</p>
Develop and leverage of conceptual frameworks / models	<p>Impact of trauma, community wide socioeconomic determinants, family environment and employment are important factors but not always well understood and taken into account. Understanding the relationships between these factors and which ones caused harm were also challenging.</p>	<p>Establish a framework / structure for understanding social determinants of mental health.</p> <p>Several existing models and frameworks could be leveraged in the development of a framework / structure. For example, the Power Threat Meaning Framework, the Conceptual Framework for Action on the Social</p>

Determinants of Health and research areas where extensive literature already exists (e.g. obesity prevention in public health literature).

Leverage frameworks from Aboriginal and Torres Strait Islander research centres to inform research amongst this specific cohort.

Diagnostic Research Topics

Personality Disorders

Professor Andrew M. Chanen

The personality disorder field has matured substantially over the past three decades, albeit from a small research base. However, it has largely done so in relative isolation from the rest of mental health research. With many of the challenges for personality disorder research shared with all mental health research, true transformation will occur when personality disorder is embedded in mental health research, policy and advocacy. Which can only happen by overcoming a deeply embedded culture of discrimination toward people with personality disorder and research related to them. If this can be achieved, this would be transformative for people living with personality disorder, their families and friends, clinicians and the community.

Themes	Gaps and Challenges	Opportunities
Reduce stigma and misperceptions	Stigma, prejudice and discrimination exist in relation to personality disorders and these can be barriers to government and community recognition of personality disorders as a legitimate diagnoses and not merely people behaving poorly.	Develop a campaign to improve understanding in relation to bad behaviour being an indication that someone is struggling and in need of help (as opposed to a bad person), as well as to address misconceptions about personality disorders being intractable, and the term 'personality disorders'. Research could be conducted to inform the development of effective messaging and communications approaches for reducing stigma and correcting misperceptions.
Improve prevention and intervention	More needs to be known about how personality disorders develop and how they impact peoples' quality of life.	Intervention research, particularly for early intervention, through youth services and schools. Trial holistic approaches that address factors beyond symptom improvement (e.g. employment).

Eating Disorders

Professor Tracey Wade, Dr Laura Hart, Dr Deborah Mitchison, Professor Phillipa Hay.

The most critical enabler of future research is an integrated transdisciplinary approach that provides revolutionary solutions. While we have the InsideOut Institute at the University of Sydney, which focuses on the clinical practice nexus, we require the funding of Centres of Research Excellence that integrate expertise across Australia. These centres would involve consortia of universities, research institutes, NGOs, people with lived experience and industries across the epidemiology, aetiology, prevention and clinical practice integration, with a focus on capacity building. These centres would capitalise on the overlap of concerns and interests of mental health and obesity researchers, such as shared risk and protective factors that can inform development of better interventions.

Themes	Gaps and Challenges	Opportunities
Improve early intervention and prevention	Limited research on evidence-based prevention.	<p>Research to better understand the evolution of symptomologies and the importance of early intervention studies.</p> <p>Prevention and early intervention studies that focus on specific settings such as workplaces, schools, universities, primary practice (general practitioners) and sporting groups.</p> <p>Research into the use of technological solutions and digital interventions.</p>
Develop novel treatment approaches	<p>Many people with eating disorders do not respond to treatments and there is a lack of second line treatment for eating disorders when first line treatments are not effective.</p> <p>Current treatment guidelines are not practical for primary care across metropolitan, regional and remote settings.</p>	<p>Research to utilise Sequential Multiple Assignment Randomized Trial methodologies to investigate adaptive interventions based on the evolving needs of the individual.</p> <p>Raise awareness of eating disorders research amongst philanthropic funders for opportunities to fund more novel work.</p>
Develop understanding of comorbidities	Eating disorders are complex and there is limited acknowledgement of the impacts of comorbidity.	<p>Collaborative research approaches could better understand comorbidities.</p> <p>Research on different pathologies emerging as result of other disorders, medications and medical procedures is required.</p>

Substance Use Disorders

Associate Professor Kirsten Morley

Substance use disorders are serious public health concerns, with negative consequences across health, economic and social domains. Substance use contributes to the development and perpetuation of most mental disorders including mood disorders, autism spectrum disorder, psychosis and particularly suicide. It is recommended that research be aimed at strengthening treatment of substance abuse, particularly harmful and chronic use of alcohol and opioid overdose.

Themes	Gaps and Challenges	Opportunities
Reduce stigma and increase recognition of substance use disorders as part of mental health	Substance use disorders are often not perceived to be mental health disorders, contributing to a separation between treatment services and research programs for substance use disorders and those addressing mental health. This results in a devaluing of research in this area and discrimination against service users, clinicians and researchers in the field.	<p>Substance use disorders should be emphasised as a priority area for mental health research.</p> <p>Stigma around substance use disorders should be addressed and take a human rights approach.</p> <p>Encourage leaders to talk about substance use disorders as a mental health issue that can be treated.</p> <p>Develop an education campaign targeting the public and social services sector.</p> <p>Champions with lived experience could play a role in decreasing stigma and educating the public about the availability of evidence-based treatments.</p> <p>Research could be conducted to inform communications approaches and messaging about this issue.</p>

Account for comorbidities including through a trans-diagnostic approach	<p>Substance use disorders should be addressed through multi-morbidity research, to reflect the underlying prevalence of multi-morbidities.</p> <p>A need to understand the trauma history of individuals who use substances was also identified as a challenge.</p>	<p>Adopt interdisciplinary approaches, including with neuroscience.</p> <p>Include a range of presentations of substance use disorders, particularly among young people.</p> <p>Employ research designs that incorporate the complexity of co-occurring conditions, rather than excluding these experiences from their scope.</p>
Improve methodological and data collection approaches	<p>Research methodologies need to be reassessed.</p>	<p>Encourage collaborative data collection across sites within existing small clinical networks using purpose-built data platforms to administer consistent assessment tools.</p> <p>Embed the routine collection of agreed patient reported outcome measures (prom) and patient reported experience measures (prem) in electronic medical records.</p> <p>Include common anchor items in data collection mechanisms, to allow for statistical linkages between scales while maintaining flexibility in measurement approaches.</p> <p>Implement policies to govern the collection of mortality and morbidity information.</p>
Build the capacity of the research workforce	<p>Researchers need to be attracted and retained to the field of substance use disorder research. A lack of possible pathways for combining research with clinical work discourages clinical psychologists from pursuing research.</p> <p>People working in Child and Adolescent Mental Health Services tend to see themselves as lacking the capacity to deal with Alcohol and Other Drug (AOD) issues, and this perception presents a barrier to research.</p>	<p>Increase the number of specialist addiction physicians.</p> <p>Support researchers who have both clinical and research appointments to build their capacity, as well as the provision of seed funding for new research and clinical fellowships.</p> <p>Build the capacity of the AOD workforce through the provision of a minimum qualification framework, with research as a core competency, and through engaging AOD workers in training about evidence-based interventions.</p>
Expand evidence base for treatments	<p>Very little service-oriented research is conducted in this area due to capacity and funding issues, as the majority of service providers are non-government organisations.</p> <p>There are not enough novel treatments for substance use disorders and treatments are not getting to the people that need them.</p> <p>There is a need to improve the evidence base and implement evidence based treatments.</p>	<p>Invest in health services research, and emphasise research innovation with respect to both traditional therapies (such as pharmacotherapy and psychotherapy) and alternative therapies.</p>

Psychosis and Psychotic Disorders

Professor Alison R Yung

Research to improve the health, well-being and quality of life of people with psychotic disorders should be a national priority. A lot of evidence already exists about how to improve some key areas identified by service users. The gap in knowledge is how to ensure such evidence is translated into practice and policy change. Examples include improving physical health, access to psychological therapies and vocational support. Major evidence gaps remain in our understanding of the causes of psychotic disorders, treatment for negative symptoms and refractory positive symptoms and stigma reduction. Reduction of stigma would improve social isolation and social and economic participation. Access to large routinely collected data sets would provide opportunity to increase the productivity of research. Funding for the development of networks of researchers, clinicians, service users and carers would drive psychosis research forward.

Themes	Gaps and Challenges	Opportunities
Reduce stigma and correct misperceptions	<p>Stigma and misperceptions about psychosis, held by both the community and clinicians, is a key challenge.</p> <p>Clinicians hold negative attitudes and low levels of hope in relation to the capacity and potential for people with psychosis, including a belief that people with psychosis cannot successfully participate in therapy.</p> <p>Stigma and discrimination in the community towards people with psychosis, driven by perceptions that people with psychosis are violent and dangerous, impacts their relationships, employment and housing outcomes.</p>	<p>Fund research into public attitudes about psychosis and violence, and trialling education campaigns to change attitudes and reduce stigma.</p> <p>Fund research into consumer delivered education for psychiatrists, focused on improving hope and best-practice for services for people with psychosis.</p> <p>Improve treatments, noting that improved treatments had reduced stigma in other areas of health (e.g. leprosy and AIDS).</p> <p>Effectively communicate science related to psychosis to the public.</p>
Develop and improve treatment and support services	<p>Many people do not respond to anti-psychotic medications and these people have few alternatives available.</p> <p>The government does not recognise the need for psychosocial support for people with severe mental illness, including psychosis.</p>	<p>Develop a shared clinical trials platform / clinical trials network.</p> <p>Provide funding to support the transition from basic to clinical translational research.</p> <p>Conduct research about the hearing voices approach.</p> <p>Develop more diverse types of talking therapy for people with psychosis.</p> <p>Conduct research to inform evidence-based recommendations for support services.</p> <p>Improve understanding of the causes and mechanisms for psychotic disorders.</p>
Develop trauma informed approaches	<p>Consumers are rarely screened for trauma or provided trauma support or therapy. This is a key service gap, particularly given that there is evidence of a close relationship between trauma and psychosis, as well as findings that the content of voices can be meaningfully related to trauma.</p>	<p>Trauma counselling for people with psychosis and adapt existing trauma therapies for people with psychosis.</p> <p>Collaborative research into trauma and psychosis that includes consumers, clinicians and trauma specialist services</p> <p>Identify the most supportive methods to screen for trauma in psychosis – including methods for taking trauma history, and exploring voices for trauma content and character.</p>

Anxiety Disorders

Professor Ron Rapee

Anxiety disorders affect around 6-8% of youth and adults, making them the most common group of mental disorders across the lifespan. Impact from anxiety disorders is pervasive, affecting relationships, career, and physical health and above all, producing extensive personal distress. While the intensity of their impairment is, on average, less than for several other disorders, its pervasiveness and the high prevalence of anxiety disorders makes them one of the higher sources of mental health disease burden. Focus areas for research include: classification / assessment, causes and maintenance of anxiety, treatment efficacy, treatment mechanisms and treatment implementation.

Themes	Gaps and Challenges	Opportunities
Enable personalised treatment approaches	Enable the needs of the individual to drive chosen interventions, as well as the development of whole-of-person models that incorporate tailored pharmacological and non-pharmacological treatment options.	Conduct research with larger sample size, including multi-site trials, to identify treatment predictors, subtypes of trajectories and develop more tailored interventions – this may include exploration of genetics, epigenetics and clinical phenotypes as predictors. Establish clinical networks. Conduct research examining shared decision making and developing tools for clinicians and patients to explore and choose treatment options together.
Conduct implementation and health services research	There is little examination and understanding of how treatment is delivered in primary healthcare, especially in general practice and fidelity of delivery is hard to assess.	Study variations in practice to identify how well treatments have been adapted in implementation. Improve the information available to people accessing services about safe and effective treatment for anxiety.

Neurodevelopmental Disorders

Professor Andrew Whitehouse

The current categories of neurodevelopmental disorders listed in the DSM-5 include autism spectrum disorders (autism), attention deficit/hyperactivity disorders (ADHD), intellectual disorders (ID), language disorders, specific learning disorders, and motor disorders. Recent reviews have highlighted a number of key gaps in our understanding of neurodevelopmental disorders.

Themes	Gaps and Challenges	Opportunities
Take a trans-diagnostic approach and consider comorbidity	Diagnostic boundaries are arbitrary and artificially group people into categories. People are looking for alternative therapies for comorbid developmental disorders.	Encourage collaborative projects across health systems to allow for greater stratification to manage the intricacies of comorbidities Offer NHMRC Synergy grants for research in neurodevelopmental comorbid disorders. Prioritising research based on functional need instead of diagnosis.
Improve understanding of disorders across the lifespan	There is a lack of expertise in neurodevelopment disorders in the youth and adult age ranges, compared to the early stages where expertise is more well-developed. There is also lack of focus on neurodevelopmental disorders in the youth and adult age ranges in forensic mental health.	Clinical epidemiology research should be conducted, particularly in youth and adult forensic settings. Further studies of models of care for youth and adults with neurodevelopmental disorders.

Conduct health services research	The current service system is underdeveloped and there are silos between paediatric and youth-focused mental health systems and structures.	Conduct research to underpin evidence-based training of clinicians to work effectively with people across the lifespans.
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Mood Disorders

Professor Ian Hickie

Many people live with persistent or recurrent mood disorders and the consequent functional impairment and secondary comorbidity. If more effective treatments for depression and other mood disorders were implemented there would likely be a reduced rate of suicidal thoughts and behaviours, as well as a reduction of premature mortality. However, the evidence base for new or even existing treatments, especially for young persons with mood disorders, is limited. Additionally, the evidence for how to institute such treatment approaches or provide the most cost-effective treatments at scale is sparse.

Themes	Gaps and Challenges	Opportunities
Focus on early intervention and prevention	There is a need for more relevant and valid pre-clinical models of mood disorders.	Use prognostic modelling approaches in primary health care to assist in predicting outcomes and intervening earlier in mood disorders. Research should assist in the development of improved tests for depression-like symptoms in pre-clinical models. Anxiety reduction as a target for interventions, given that anxiety is a predictor of depression and suicide. Other targets identified included social factors and rumination. Develop a health campaign to encourage cultural change in relation to everyday lifestyle improvements (e.g. promoting sleep and physical activity) as a broad preventative approach. Research could be used to inform the approach of such a campaign.
Develop novel treatment approaches	There is a need for novel and improved treatments for mood disorders.	Test the feasibility and effectiveness of social prescribing, for example, prescriptions for social inclusion activities and access to housing.
Develop personalised treatment approaches	Targeting treatments is difficult given the heterogeneous nature of mood disorders, and there is poor understanding of treatment non-responders.	Larger research sample sizes are needed to enable precision medicine and improve understanding of predictors of treatment response. Conduct research to improve understanding of mechanisms and causal pathways, including epigenetic factors, to improve understanding of how to tailor treatments.

Trauma and Stressor-related Disorders

Professor Richard Bryant

Trauma and adversity is a common trigger for many psychiatric disorders. However, trauma-related disorders can be limited to those whose specific symptoms can be tied to the event, such as PTSD and prolonged grief disorder. These disorders contribute to major disability worldwide, and because of Australia's unfortunate history with natural disasters, wars, institutional abuse and maltreatment of Indigenous Australians, we have a strong interest in the mental health effects of trauma and adversity. There are many possible research priorities in this domain. This list is not exhaustive but should be regarded as indicative of some of the key areas requiring attention: indigenous social and emotional

wellbeing, refugee and multicultural studies, treatment resistant populations with trauma-related stress disorders, complex PTSD, disadvantaged populations (homeless, prisoners, juvenile justice), implementation research and child developmental trauma.

Themes	Gaps and Challenges	Opportunities
Develop novel interventions	Current evidence-based treatments do not work for all consumers. Additionally, in relation to treatments for post-traumatic stress disorder, many people do not tolerate or persist with these treatments and clinicians are often uncomfortable implementing them.	Build evidence for new treatments and ensure they are effective relative to current practice. Future research to use embodied treatments provided through clinicians professionally registered in these therapies (e.g. using music, dance, drama and other creative therapies).
Consider comorbidities and trans-diagnostic approaches	There is a need to reduce silos in trauma research as well as the focus on disorder-specific research. There is a need for more inclusive research that does not exclude people with comorbid conditions, particularly as this can contribute to exclusion from services for this cohort.	Fund research which encompasses common comorbidities.
	There is a need to prioritise trauma and stressor-related research with Aboriginal and Torres Strait Islander populations and culturally and linguistically diverse populations.	Develop improved research methods for informing mental health interventions and treatments for people from a range of different cultural backgrounds.
	Address cultural background in research and treatment.	Embed trauma informed care and training into all generalist clinician education, as well as modifying mental health service planning to facilitate trauma informed support. Better educate ethics committees about trauma to ensure that the risks of undertaking research are fairly balanced with the risks of not undertaking research. Research could contribute to understanding current knowledge gaps, information needs and informing the development of education and training about trauma and trauma informed practice.
Improve education about trauma and trauma informed care.		

Population Research Topics

Children and young people

Professor Patrick McGorry AO, Professor Alison R Yung, Dr Cristina Mei

The youth mental health field has emerged and matured over the last two decades. To capitalise on this growth, it is critical that the sector develops a strategy that addresses critical research gaps and explores effective methods to implement findings that deliver improved outcomes for young people. Australia has been an international leader in youth mental health (and early psychosis) research and service reform. To continue this leadership, youth mental health research requires adequate coordination, planning and funding.

Themes	Gaps and Challenges	Opportunities
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Enable collaboration	There are a range of sectors with a role in children and young people's mental health. Working across sectors creates challenges and currently there is a lack of interdisciplinary and inter-sectoral research. There is an identified need to prioritise collaboration between sectors, in particular integrating education systems in research.	Adopt funding approaches that facilitate inter-sectoral research.
Improve understanding of development and disorder progression	There is currently a lack of understanding of risk and protective factors for prevention of mental health conditions. There is a need to develop an understanding of typical patterns of development and how deviations in development may occur over time. There is also a need for identifying high-risk individuals for early intervention and examining gender differences in how neurodevelopmental problems manifest.	Conduct longitudinal studies investigating how mental health disorders unfold including which disorders proceed others. Conduct research to determine norms for emotional responses and behaviours in infants and children.
Include lived experience and youth perspectives	There is a need to consult with young people about mental health research and for youth peer workforce development in youth mental health research. Prioritising the inclusion of young people with lived experience as well as parents, carers and educators in co-design and production of research.	Offer paid opportunities for young people, families and caregivers to collaborate and co-design research projects. Engage young people in systematic research priority setting. Advocate for flexibility of funding to allow for the required timelines and budget for the inclusion of young people in the research process.
Improve data collection and sharing	Expanding mental health surveys conducted with children in relation to the range of disorders investigated, age groups and number of repetitions. There is currently a lack of long-term follow-up data as well as a lack of data on learning disability available from education departments for linking data. There is a need to improve survey and administrative data collection and sharing.	Conduct national surveys about children and youth mental health and wellbeing and increase consistency of methods across national surveys. Conduct data linkage studies, preferable supported by qualitative research. Invest in national networks to harmonise data collection across sites, link routine education, health and welfare data to track high-risk and low-risk children. Improve integration of research in schools to encourage large cohort studies.
Encourage trans-diagnostic approaches	Trans-diagnostic approaches in research and services reduces stigma and barriers to accessing treatments. There is a need to assess the relationship between developmental disorders and mental health conditions.	Encourage collaborative approaches to trans-diagnostic studies which aim to understand the whole of the child.
Focus on family and social context	There is a need to ensure youth mental health research also considers the role of parents and their impact on children. Research on families and broader systems impact on children is a priority.	Developing prevention and early interventions aimed at families. Conducting evaluations of parenting programs. Conducting research with children aged 0-5 years with a focus on understanding how family structures, relationships, attachments, resilience and parenting styles and attitudes influence development. Focus research on intergenerational issues and how these contribute to the development of mental health problems. Conduct randomised controlled trials of family-based interventions for infants and children. Conduct research with the children of people with mental health disorders. Develop understanding of how the dynamics between families and friends impact on mental health. Conduct studies on youth as parents.

Reduce burden of ethics processes where possible	There are differences between jurisdictions in ethical, consent, privacy and risk requirements There is a need to find a balance between risk and benefit in ethical and project considerations.	Educate ethics committees and develop a shared understanding and partnership models with researchers and ethics committee. Further develop safety frameworks specific to children and young people, as well as digital topics.
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Aboriginal and Torres Strait Islander Peoples

Professor Pat Dudgeon

The Centre of Best Practice for Aboriginal and Torres Strait Islander Suicide Prevention builds upon the substantial work of the national Aboriginal and Torres Strait Islander Suicide Prevention Evaluation Project. The Centre of Best Practice aims to reduce Indigenous suicide by identifying, translating and promoting the adoption of best practice in Indigenous-specific suicide prevention activity, including that which is found in emerging national and international research. The Centre of Best Practice operates from a strengths-based, holistic approach, informed by the social and emotional wellbeing framework.

Themes	Gaps and Challenges	Opportunities
Recognise Aboriginal and Torres Strait Islander knowledge and approaches in research	There is a need to ensure flexibility within academic structures to include and recognise Aboriginal and Torres Strait Islander knowledge and approaches in mental health research.	Give Aboriginal and Torres Strait Islander approaches to, and views about social and emotional wellbeing a prominent position at key events and in decision making processes. Use Aboriginal and Torres Strait Islander methods and knowledge to complement traditional research methods. Integrate Aboriginal and Torres Strait Islander leadership and perspectives into other mainstream research structures. Collaboratively develop a conceptual framework for Aboriginal and Torres Strait Islander lived experience research.
Build relationships with Aboriginal and Torres Strait Islander communities	There is a need to foster long-term relationships between Aboriginal and Torres Strait Islander communities and researchers to prove researcher commitment and investment. There can be a lack of connection between Aboriginal controlled and non-Aboriginal controlled organisations in research. There is a need for prioritising authentic and appropriate engagement with Aboriginal and Torres Strait Islander communities.	Researchers to partner with people who have existing authentic relationships with communities, to foster new relationships between researchers and communities.
Build capacity of Aboriginal and Torres Strait Islander researchers	Commonly a small group of people are taxed with providing their expertise across many projects. Building Aboriginal and Torres Strait Islander researcher capacity at all levels should be a focus as well as ensuring Aboriginal and Torres Strait Islander research is led by Aboriginal and Torres Strait Islander peoples.	Proactively build Aboriginal and Torres Strait Islander research capability in research-based institutions.

Appendix D: Overview of the mental health research system in Australia

This section provides an overview of the current state of Australian mental health research, including achievements and known mental health research gaps. The discussion draws on previous reviews, and published literature to identify the mental health sector's research needs and concerns. A detailed analysis of mental health research publications and stakeholder views from the Strategy Workshop further highlights gaps and opportunities to strengthen mental health research in Australia.

Overview of the mental health research landscape

Defining mental health research

There is currently no nationally agreed definition of mental health research, but it is generally acknowledged that the diverse and complex field of mental health research encompasses a variety of domains including basic science research into biological causes of mental illness, clinical treatment research, models of system design and service delivery, evaluation of existing services, and consumer experiences of treatments and services.^{1,2} These different categories of mental health research provide diverse evidence to inform policy development, service implementation, delivery and improvements.

Roles and responsibilities in Australian mental health research

The mental health research sector mirrors the complexities of the broader mental health system. There are many players with different priorities, roles and responsibilities. Academics, clinicians, government and non-government organisations conduct research. Governments, non-government and private sector organisations, universities and philanthropy fund research, with the bulk of investment from funding bodies set up by the Australian Government (such as the National Health and Medical Research Council [NHMRC], the Medical Research Futures Fund [MRFF], and the Australian Research Council [ARC]).²

While there is a mutual aim to improve mental health, the research goals and drivers vary for different stakeholders.² Goals for non-government and philanthropic organisations or research institutes may be targeted to particular topics, expertise, translation, or innovations in treatment and delivery. Government research funding bodies may be driven by policy priorities for research and / or peer-review processes across the broad theme of mental health. Policy makers may have a particular interest in research or evidence that can inform more effective and efficient service delivery.

Current achievements in Australian mental health research

Australian researchers are world leaders in mental health research. For example, the analysis conducted to develop the Strategy shows Australia publishes a volume of mental health research that is higher than would be expected given funding and population size and is consistently above the world average for highly cited publications. In terms of international publication and citation rankings, Australian mental health research performs better than medical research in other health areas including cancer and oncology, endocrinology and diabetes, cardiovascular and cardiovascular health, and immunology. See *Appendix E* for a detailed analysis of Australian mental health research publications.

Government investment in mental health research is growing. According to a report by the International Alliance of Mental Health Research Funders, Australia and New Zealand were the only global regions with a significant increase (27%) in mental health research funding between 2015 and 2019.³ The Productivity Commission also reported that NHMRC expenditure on mental health research increased from approximately 8% to 12% between 2000 and 2019.² The Australian Government has demonstrated an increasing commitment to mental health research through a number of initiatives including the Million Minds Mental Health Research Mission and NHMRC Targeted Calls for Research in mental health.

There has also been a shift towards innovation and increasing collaboration. Innovation plays an important role in the development of new treatments and approaches to service delivery. Innovation and translation have the capacity to drive transformative practices and technologies to improve outcomes for people with lived experience of mental health. As innovations continue, we must ensure that offerings are evidence-based, effective, safe and targeted appropriately through ongoing testing, monitoring and evaluation.⁴

Identified concerns of the mental health research sector

Previous and recent reviews into mental health and suicide prevention have highlighted the critical enabling role of mental health research in a well-functioning system that improves mental health outcomes.^{1,2,5} Realising the benefits of mental health research requires governments and other key stakeholder to build on current achievements to address systemic gaps and challenges identified by the sector. Previous literature and commentary from the sector have highlighted the need for increasing investment, efforts to build the capacity of the workforce and collaboration and coordination to strengthen the impact of mental health research.

Funding is a key area of concern in the mental health research sector. Although investment has increased, mental health research continues to be significantly under-funded compared to research in other areas of health and despite its impact on medical disease and associated burden and costs.⁶ For example, NHMRC funding for cancer research was approximately 2.5 times that of mental health between 2013 and 2018. However, the share of the burden of disease for cancer is only 1.5 times larger than that for mental health and substance use disorders.² Similarly, the \$125 million investment in the Million Minds Mental Health Research Mission was:

- a quarter of the investment in the Genomics Health Futures Mission (\$500 million)
- almost half that of the Cardiovascular Health Mission (\$220 million)
- less than the Dementia, Aging and Aged Care Mission (\$185 million).⁷

According to some commentators, this underinvestment is inhibiting research impact and growth of the sector, and has led to an undersupply of researchers, divisive competition, and lack of collaboration between the research and service sectors.⁷ Universities and medical research institutes also face significant funding and research workforce pressures. The Association of Australian Medical Research Institutes estimates that Australian Government grants only cover around 70% of direct medical research costs, with research institutes required to cover the gap.⁸ Additionally, research institutes incur substantial indirect costs, with only around 40 per cent of these covered by a range of grant schemes.⁸ To date, universities and medical research institutes have covered funding gap costs using untied philanthropic, commercial, international student, and endowment revenue streams.

The COVID-19 pandemic has led to a significant drop in these revenue streams for Australia's universities and research institutes. Resulting budget cuts have reduced the ability to meet research

funding gaps and has placed significant pressure on Australia's broader research workforce, with an estimated loss of 7,000 research-related academic staff in 2020. This reduces the research workforce capacity, and is most likely to impact recent graduates, early and mid-career researchers and women, with a flow-on negative impact on research output and quality.⁹

One way to expand the pool of research investment is through increasing contributions from the non-government sector. Australia's philanthropic sector is underdeveloped compared with other countries.¹⁰ Australia receives nearly all of its mental health research funding (97%) from government. In contrast, the United Kingdom draws 22% of its research investment from philanthropy and 4% from charity fundraising.³

The sparsity of viable research funding alternatives to government in the mental health sector is in contrast to other main health areas in Australia. Data from the Australian Charities and Not-for-Profits Commission shows that cancer charities receive five times what mental health charities receive from philanthropic and charitable giving.¹¹ This low level of philanthropic support for mental health research in Australia may be a reflection of the lower priority of mental health research generally.¹²

Collaboration and coordination can be strengthened through appropriate research infrastructure and networks.² Such approaches must engage lived experience, multidisciplinary research, clinicians, and policy makers to better inform policy, practice and service delivery. A range of initiatives already exist that seek to boost coordination and collaboration in mental health research (see *Appendix F*). Continuing to build on these initiatives is key to strengthening the impact of the mental health research sector.

Grant funding for mental health research

NHMRC distributes approximately \$800-850M per year, while MRFF is now at full capitalisation and providing approximately \$650M per year. There have been multiple analyses of NHMRC grant funding for mental health research. Classification of research as 'mental health research' is fraught. NHMRC categorises mental health research as any research with a component that is relevant to mental health, suicide, psychological wellbeing, neuroscience that is applicable to mental illness, or addiction.^{6,13} Independent analyses based on publicly available titles, keywords, and summaries of NHMRC grant outcomes typically report lower estimates of mental health research funding than the official estimates that use non-public data and cannot be directly replicated. Nevertheless, funding in official estimates has varied between 8-12% of the total Medical Research Endowment Account.² In contrast, the disability and mortality attributed to mental illness, addiction, self-harm and suicide is approximately 17% and increasing,¹⁴ representing approximately double the proportion of research funding received for this area.

It may be the case that mental health research may cost less than other areas of medical or health research.¹⁵ However, analyses have previously shown that the proportion of grants going to mental health research is comparable to the proportion of expenditure on mental health research.¹³ This suggests there is both less volume and less expenditure on mental health research relative to disability and mortality attributed to mental illness. Previous analysis suggests that the success rate for mental health research projects is not substantially lower than other areas,¹³ suggesting the issue may be related to systemic capacity and workforce challenges, rather than systematic bias among reviewers against the topic of mental health. As noted above, previous research has reported that in country ranking, Australia ranks higher in mental health research outputs and citations than all other

key areas of health and medical research, suggesting the funding gap is also not a reflection of the quality of research conducted.

Researchers have also investigated whether funding gaps are confined to specific areas of mental health research. Christensen and colleagues¹³ reported that the largest gaps were in funding for suicide prevention and eating disorders research, while addiction and autism research tended to receive a more equitable level of funding. Robinson and colleagues have examined suicide prevention research funding and concluded that levels of funding are not commensurate with the high individual, societal, and economic burden of suicide and suicidal behaviours and more suicide prevention research is needed.¹⁶

The funding gap in mental health research is not confined to Australia. Woelbert and colleagues¹⁷ have recently used data on grants and automated classification tools to present a worldwide view of the state of mental health research funding. They found that in comparison with other disease areas, mental health research remains relatively underfunded. Mental health research received only 4% (approximately \$18.5 billion) of the total research funding spent globally during 2015-2019. Substance use and dependence received the most mental health funding, while self-harm and personality disorders received the least. The basic end of the research spectrum also received more of the available mental health funding, with prevention, detection, and new treatment research the most poorly funded. Most global mental health funding comes from the public sector, with philanthropic sources very low in all other countries except the United Kingdom. This difference may reflect the establishment of mental health research foundations, such as MQ: Mental Health Research, in the UK in recent years.¹⁸

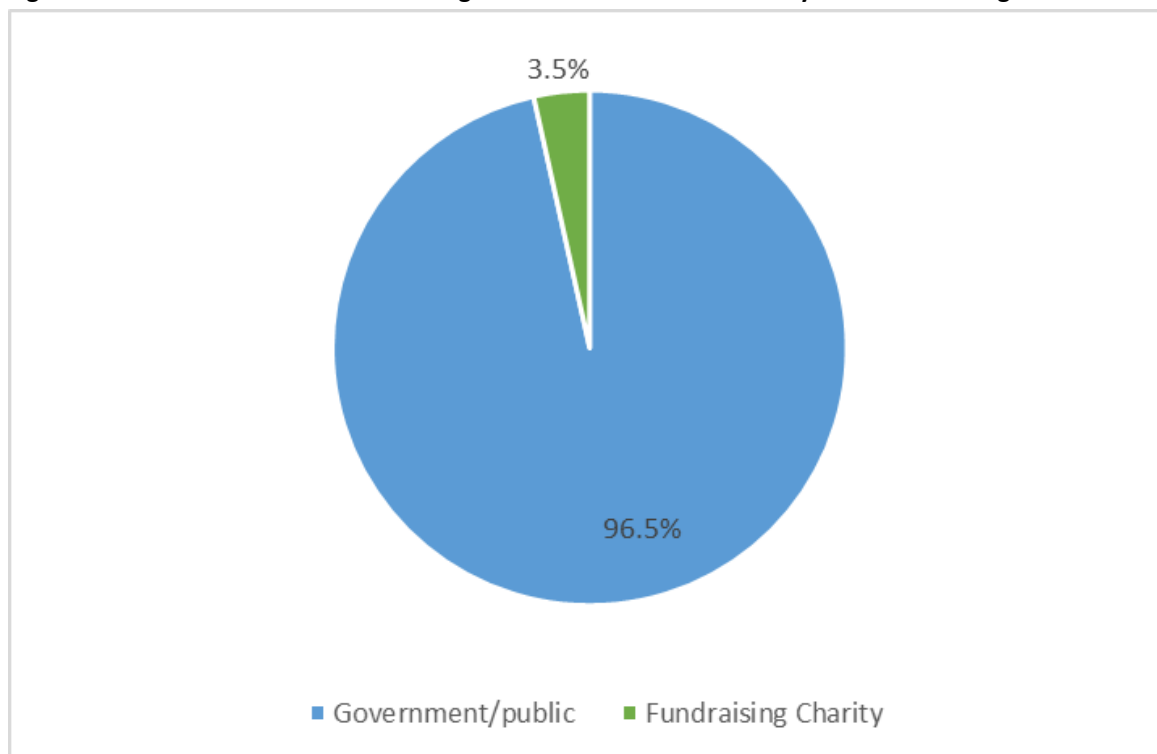
Appendix E: Analysis of mental health research

The following analysis was commissioned by the National Mental Health Commission (the Commission) and conducted by researchers at the Australian National University. The analysis characterises the current state of mental health research in Australia. It identifies strengths and gaps and provides directions for future research activity in mental health. It consolidates findings from analyses of National Health and Medical Research Council (NHMRC) and Medical Research Future Fund (MRFF) funding for mental health research and Australian mental health research publication activity together with mental health research priorities identified by stakeholders attending the 2020 National Mental Health Research Strategy (the Strategy) stakeholder workshop.

Mental health research funding activity

The majority of investment in mental health research in Australia comes from government or public sources (Figure E1). Primary funding sources are the NHMRC, Australian Research Council (ARC) and the Australian Government Department of Health, although charities and state and territory governments also have a role in funding research.²

Figure E1: Mental health research funding in Australia & New Zealand by source of funding



Source: International Alliance of Mental Health Research. 2020. Inequities of mental health research funding

Government funding for mental health appears to be growing. Australia and New Zealand region was the only global region with a significant increase (27%) in mental health research funding between 2015 and 2019.³ The Productivity Commission also reported that NHMRC expenditure on mental health research increased from approximately 8-12% between 2000 and 2019.² Table E1 presents a summary of recent Australian Government announcements for mental health research funding.

Table E1: Recent Australian Government investment in mental health research

Initiative	Description
Support for mental health research	\$15 million announced in 2017-18 Budget

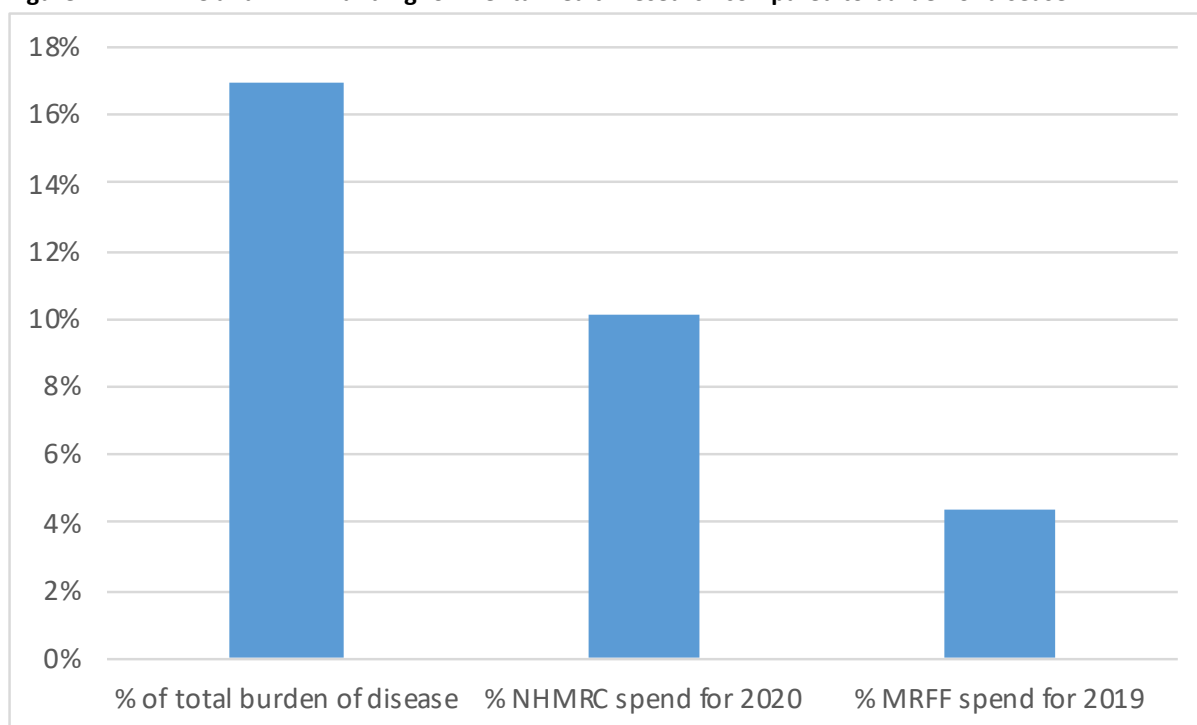
National Suicide Prevention Research Fund (managed by Suicide Prevention Australia)	\$12 million announced in June 2017
Medical Research Future Fund Million Minds Mental Health Research Mission (administered by the NHMRC)	\$125 million over 10 years announced in 2018-19 Budget
NHMRC Special Initiative in Mental Health to support a multidisciplinary team to develop and extend collaborative networks	\$10 million over 5 years announced in 2020

Recent NHMRC and MRFF funding for mental health research

NHMRC and MRFF data was analysed to get an indication of current government investment for different areas of mental health research. See *Appendix F* for description of methodology.

. Around 10% of NHMRC funding in 2020 and 4% of MRFF funding in 2019 was for mental health research. This funding is equivalent to approximately half of what would be expected relative to the disability and mortality impact of mental ill health (see Figure E2). It is estimated that if funding were aligned to the proportion of disability and mortality attributable to mental ill health, an additional \$125 million would have been awarded to mental health research across the identified funding streams over the past two years.

Figure E2: NHMRC and MRFF funding for mental health research compared to burden of disease



Source: Batterham & Calear. 2021. Report prepared for NMHC. Unpublished.

Table 2 presents areas of research within mental health that were supported by NHMRC funding for 2020. Results show that research in the areas of suicide prevention, eating disorders and anxiety disorders have received the least mental health research funding from NHMRC.

Table E2: Mental health research funding (\$) to specific research areas from major NHMRC schemes in 2020

Area	Ideas	Investigator	CRE	Total (\$)	%
Multiple	690,124	17,517,066	5,000,000	23,207,189	32.4%
Addiction	6,578,180	4,092,962	2,500,000	13,171,142	18.4%
Mood disorders	2,497,931	6,058,672	-	8,556,604	12.0%

Developmental disorders	2,073,345	6,274,735	-	8,348,080	11.7%
Psychosis	4,117,825	3,394,370	-	7,512,195	10.5%
Anxiety	4,957,327	645,205	-	5,602,532	7.8%
Sleep disorders	803,672	2,414,215	-	3,217,887	4.5%
Eating disorders	773,142	632,429	-	1,405,571	2.0%
Suicide & self-harm	-	501,205	-	501,205	0.7%
Total	22,491,546	41,530,858	7,500,000	71,522,404	100.0%

Source: Batterham & Calear. 2021. Report prepared for NMHC. Unpublished.

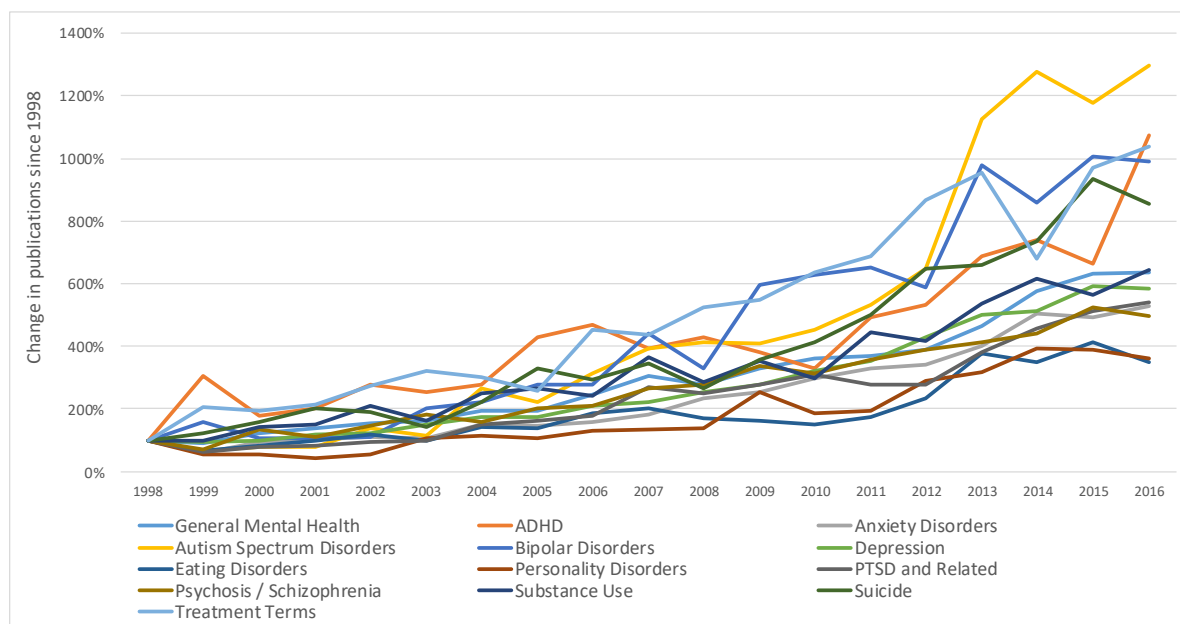
Mental health research publication activity

Digital Science Dimensions data was used to characterise changes in mental health research publication patterns, and performance of Australian researchers within specific research areas relative to their international counterparts. See *Appendix F* for description of methodology.

The quantity of Australian publications in mental health research

The volume of Australian publications in mental health has increased over the past 20 years. All areas of research have demonstrated considerable increases, with each area having at least a four-fold increase from 1998-2017 (Figure E3). The areas with least proportional increase were personality disorders, psychosis / schizophrenia and eating disorders. Those with the most growth over the period were autism spectrum disorders, bipolar disorders, ADHD, treatments, and suicide.

Figure E3: Change in Australian mental health publications by area of research relative to 1998 levels, 1998-2017

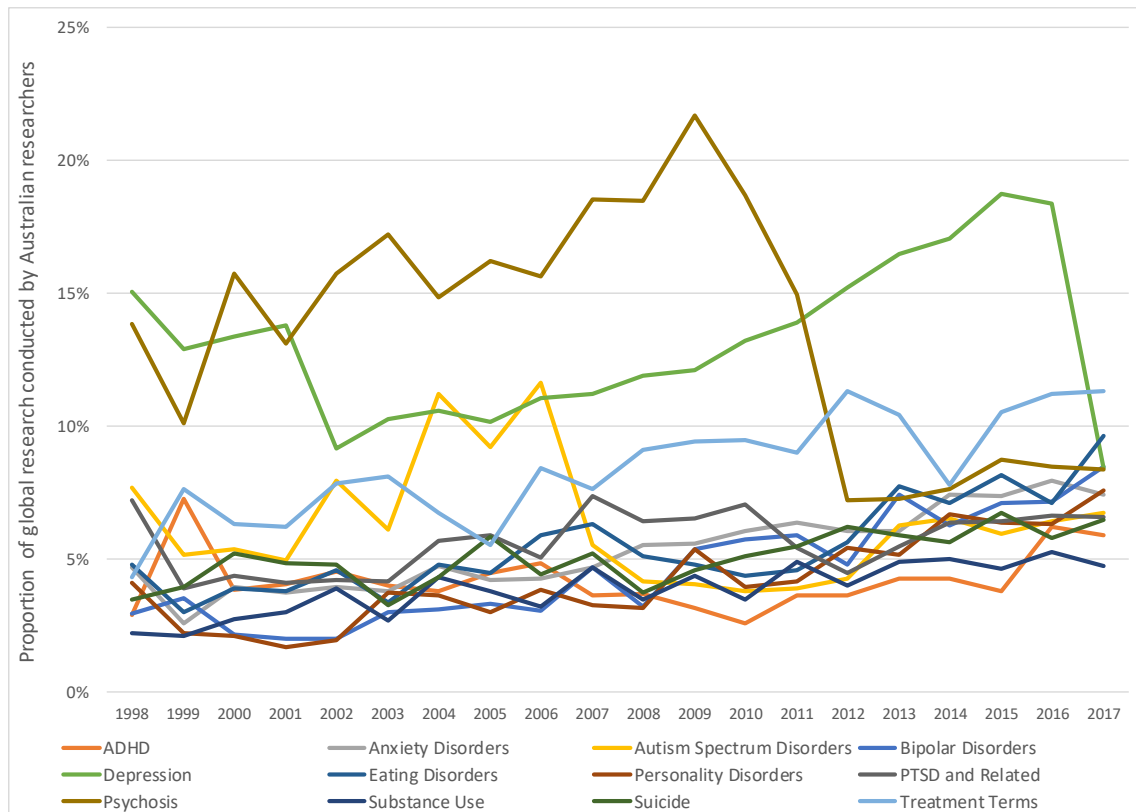


Notes: 1) Percentage is the percentage change in the number of peer-reviewed publications by Australian authors, relative to 1998 levels
2) Given the volatility of publications, areas with fewer than 1000 publications over the 20 years are excluded (Basic: Cognitive Systems, Basic: Negative Valence, Basic: Positive Valence, Basic: Social Processes, Conduct Disorder, OCD, Other Mental Conditions, Other Neurodevelopment Disorder, Self-harm, Transdiagnostic, Social Determinants and Comorbidity). Publications in the areas of Psychosis and Schizophrenia were combined, given the considerable overlap of these topics.

Source: Digital Science Dimensions data; Batterham & Calear. 2021. Report prepared for NMHC. Unpublished.

Between 2-8% of global research in mental health has an Australian research affiliation, with an upwards trend in many areas in the period 2011-2017 (Figure E4). The results for depression and psychosis publications may reflect data anomalies but suggest that Australian researchers contribute substantially to global publications in depression and psychosis, along with treatment research.

Figure E4: Proportion of global papers published by Australian authors, 1998-2017



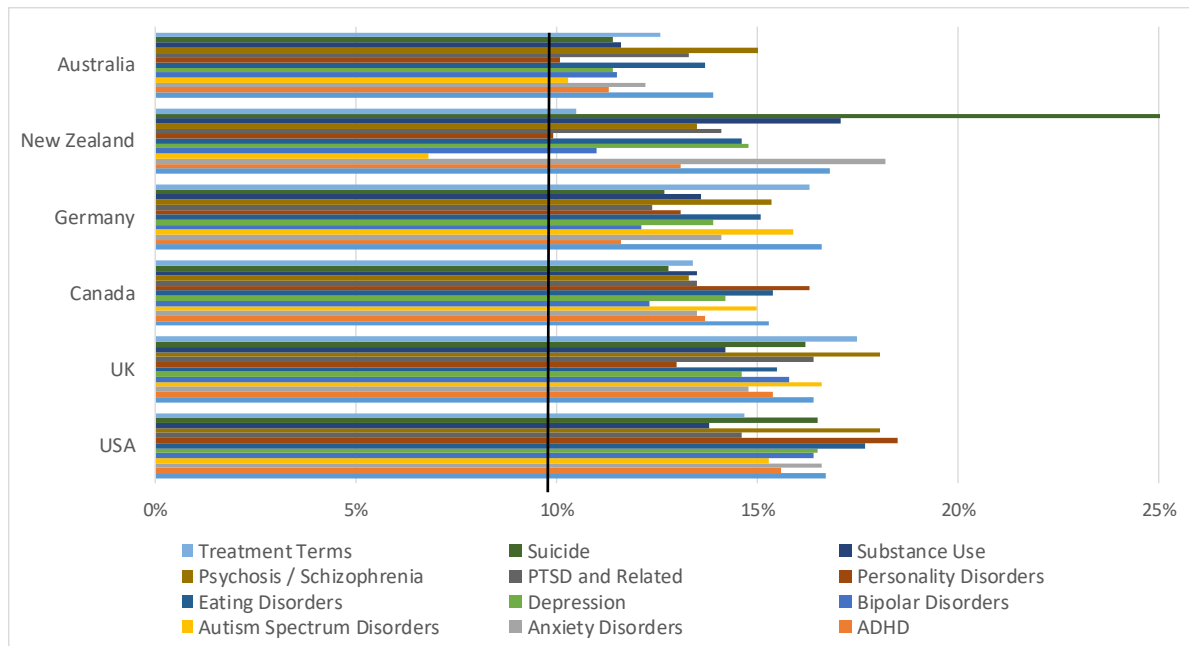
Note: The category "general mental health" was excluded as it was volatile ranging from 10-35%.

Source: Digital Science Dimensions data; Batterham & Calear. 2021. Report prepared for NMHC. Unpublished.

The quality of Australian mental health research publications

Figure E5 displays the percentage of articles in the top 10% of cited articles for selected nations: Australia, New Zealand, Germany, Canada, UK and USA. Overall, Australian mental health research is of good quality across all areas. Citations for research on autism spectrum disorders (10.3%) and personality disorders (10.1%) are consistent with the world average. Performing best is psychosis/schizophrenia research (15.0%) followed by general mental health research (13.9%) and eating disorders research (13.7%).

Figure E5: Percentage of articles in the top 10% of citations for each topic, across six nations, 1998-2017



Note: The quality of Australian mental health research was benchmarked by identifying the percentage of publications that were in the top 10% of cited articles for each topic. If a country is at the average for quality based on citations, it would be expected that 10% of the papers from that country would be in the top 10%. Higher rates would suggest higher than average quality, and lower rates would indicate lower quality than average, noting that citations is not a perfect indicator of quality. The 10% benchmark is indicated by the black line. Any value over 10% is above world average.

Source: Digital Science Dimensions data. Batterham & Callear. 2021. Report prepared for NMHC. Unpublished.

However, this analysis suggests that a smaller proportion of Australian research publications are in the top 10% of cited articles than competing nations. Across all of the studied areas, 12.4% of Australian publications are in the top 10%, compared to 15.1% in New Zealand, 14.0% in Germany, 13.9% in Canada, 15.8% in UK and 16.0% in USA. Reasons for this discrepancy are unclear, although may relate to the disciplines with research strength in Australia compared to other nations.

Fields of research

The top disciplines for mental health research output in Australia were public health and health services, psychology and clinical services (Table E3). These varied considerably across areas of research, for example, 73% of suicide research was in public health compared to 25% of schizophrenia research. Of the 26 areas of research examined, the leading discipline was Psychology for 12 (46.2%), Public Health and Health Services for nine (35%) and Clinical Sciences for five (19.2%). There may be a trend suggesting that areas where Psychology is predominant (e.g., anxiety disorders, eating disorders) have had less increase in activity than other areas, although there were exceptions to this relationship (autism spectrum disorder).

Table E3: Mental health research output, by field of research

Discipline	Per cent
Public Health and Health Services	34.4
Psychology	25.1
Clinical Sciences	22.6
Neurosciences	5.8
Cognitive Sciences	1.9
Nursing	1.2
Genetics	1.2

Source: Digital Science Dimensions data. Batterham & Callear. 2021. Report prepared for NMHC. Unpublished.

Type of research activity

Research activity codes were analysed to get an indication of the type of research being undertaken. See *Appendix E* for additional information on research activity codes.

Publications for prevention of disease and conditions, and promotion of well-being accounted for a notably small proportion of mental health research publications (Table E4). Similarly, publications for research on detection, screening and diagnosis, underpinning research and research on development of treatments and therapeutic interventions accounted for less than five percent of mental health research publications.

Table E4: Proportion of publications by research activity code for mental health. 1998-2017

Discipline	Per cent
Management of diseases and conditions	42.6
Health and social care services research	32.1
Aetiology	26.0
Evaluation of treatments and therapeutic interventions	15.7
Prevention of disease and conditions, and promotion of well-being	6.4
Detection, screening and diagnosis	2.3
Underpinning research	2.3
Development of treatments and therapeutic interventions	0.4

Source: Digital Science Dimensions data.

Findings from the 2020 Strategy workshop

Stakeholders in mental health research have identified several areas of high priority to help improve and grow mental health research in Australia (see *Appendix D*). At the core of these priorities is the need for more targeted funding to support and promote collaboration and the inclusion of lived experience perspectives in research, as well as the opportunity to establish large linked datasets, novel treatment research, and a better understanding of stigma. Stakeholders reported that collaboration in particular, will reduce research burden on participants and researchers through reduced research duplication and costs, larger datasets, shared expertise, and consistent measurement. Drawing on lived experience expertise will also improve the impact and targeting of research to the areas most in need of further research and investment.

Summary of strengths and gaps

Funding in areas of mental health research

- Government funding has increased, but the proportion of funding to mental health has remained relatively stable and equivalent to approximately half of what would be expected relative to the disability and mortality impact of mental ill health.
- There has been limited funding for suicide prevention, eating disorders and anxiety disorders from NHMRC in recent years. It is not yet clear whether short-term funding injections from the Suicide Prevention Research Fund and the Million Minds funding for suicide and eating disorders will be sufficient to build sustainable research capacity in these areas.

Areas mental health research

- Australian mental health researchers are highly successful on the basis of the quantity and quality of their output and fare very well in comparison to their international counterparts and in comparison to other areas of research in Australia.
- Australian publications in the areas of personality disorders, conduct disorder, and eating disorders have demonstrated the least increase over the past 20 years, which may suggest limited research capacity or collaborative networks in these areas.
- Conversely, Australia has demonstrated global publication strength in the areas of depression, psychosis, and treatment research.

Types of mental health research activity

- The proportion of publications for prevention of disease and conditions, and promotion of well-being is a notably small proportion of publications.
- Similarly, the proportion of publications for the development of treatments and therapeutic interventions is less than 1% of all publications.

Appendix F: Key activities and initiatives in mental health research

Initiative	Description
National Health and Medical Research Council (NMHRC) Targeted Calls for Research (TCR)	In 2018, the NMHRC reformed its grants program to enable greater creativity and innovation, expand the opportunities for talented researchers at all career stages, and to reduce the burden of applications on researchers. This included an enhanced process for better identifying and prioritising TCR to address significant research knowledge gaps or unmet need, with two TCRs in mental health established in 2018.
Medical Research Future Fund (MRFF) Million Minds Mental Health Research Mission	In the 2018-19 Budget, the Australian Government announced a 10-year, \$125 million investment in mental health research through the MRFF Million Minds Mental Health Research Mission (Million Minds Mission). The Million Minds Mission is intended to complement ongoing funding through the NHMRC and is a priority-driven program. There is dedicated mental health research funding within the MRFF allocated through the Million Minds Mental Health Mission. A Mission Advisory Panel engages broadly and provides advice on strategic priorities for research investment. To date, priorities in the Million Minds Mission have focussed on eating disorders, child and youth mental health, Aboriginal and Torres Strait Islander mental health, suicide prevention, and clinical trials networks.
NHMRC Centres of Research Excellence (CRE)	NHMRC-funded CRE support innovative, high quality, collaborative research with a focus on research translation, research workforce capacity building and expanding collaborations between research teams. A range of mental health focussed CREs already exist in areas including suicide prevention, mental health and substance abuse, predictive mental health and prevention, childhood adversity and mental health, and mental health systems improvement.
Clinical trials networks	Clinical trial networks establish networks and shared infrastructure to boost coordination and collaboration and overcome duplication and inefficiencies in research. They are a key to successful clinical trials and provide a better return on investment. Clinical trials networks better align consumer needs and translation (PC, Vol 3, pp. 1246-1249). The Productivity Commission and mental health researchers have called for funding to establish mental health clinical trials networks. In 2020, the Million Minds Mission announced a \$24 million grant round to establish two mental health clinical trial networks in children and youth, and adults. The clinical trial networks aim to ensure effective engagement with clinicians, national collaboration and coordination, and rapid implementation into clinical practice.
NHMRC Special Initiative in Mental Health	In 2020 the NHMRC announced a Special Initiative in Mental Health (\$10 million over 5 years) to support a multidisciplinary team to develop and extend collaborative networks with researchers, health care services, carers and consumers to translate research findings into improved outcomes for people with mental illness in defined areas of need.
Victorian Collaborative Centre for Mental Health and Wellbeing (VCCMH)	In November 2020, the Victorian Government announced the design of the VCCMH in response to a recommendation in the Royal Commission into Victoria's Mental Health System Interim Report. The VCCMH will address the disconnect between the research sector and mental health services by placing people with lived experience at the centre of service design, delivery, research and evaluation. It will conduct interdisciplinary research with a focus on translation from discovery to practice and will inform service delivery and policy.
National Suicide Prevention Research Fund	\$12 million supporting and disseminating research on suicide prevention (\$12M from 2017-2021)
Nationally-representative Mental Health Surveys	Results and data from the National Study of Mental Health and Wellbeing will become available in mid-2022. The Australian Government has also committed \$30.5 million for a national survey to measure, for the first time, the prevalence of mental health in the Aboriginal and Torres Strait Islander population and \$18.8 million over four years (2022-23 to 2025-26) to conduct a longitudinal child and youth mental health and wellbeing study.

Appendix G: Methodology for mental health research activity analyses

Method for National Health and Medical Research Council (NMHRC) and Medical Research Future Fund (MRFF) funding analysis

The outcomes of five of the primary NHMRC schemes were released in December 2019 and December, 2020: Ideas Grants, Clinical Trials & Cohort Studies (CTCS, 2019 only), Investigator Grants, Synergy Grants (2019 only) and Centres of Research Excellence. To examine the contribution to mental health research, a review of studies funded by NHMRC was conducted using keyword and hand searches of the title, summary, and key words of each funded grant, based on publicly available data.

Note: this funding snapshot only covers the two largest funding sources for health and medical research in Australia. Additional funding for researcher-initiated (or co-led) research is received from NHMRC Partnership Grants and smaller NHMRC grant schemes, the one-off NHMRC Special Initiative in Mental Health, the Australian Government's Suicide Prevention Research Fund, Australian Rotary Health grants and fellowships, and international funding agencies. Additional funding for mental health research that is not typically researcher-initiated is received from State and Federal Health Departments, non-government organisations and private industry.

Method for Digital Science Dimensions data analysis for mental health research activity

Digital Science was commissioned by the National Mental Health Commission to assess mental health research output in Australia. Keyword searches were conducted to identify peer-reviewed publications across 26 areas of mental health. Publications were included if they were published between 1998 and 2017 and classified as being Australian if at least one author had an Australian affiliation. The data provided by Digital Science was used to characterise change in publication patterns, and performance of Australian researchers within specific areas relative to their international counterparts.

Research Activity Codes

The Dimensions database links research publications to the United Kingdom's Research Collaboration Health Research Classification System (UKHRCS). One of the dimensions of this system is the Research Activity Codes of which there are eight overarching code groups that encompass all aspects of health-related research activity ranging from basic to applied research. In addition to information on research topics, the linking of Australian mental health research publications with the UKHRCS Research Activity Codes enables us to get an indication about the type of research being undertaken.

UK Clinical Research Collaboration Health Research Classification System (HRCS)

The Research Activity Codes dimensions of the HRCS classify types of research activity. There are eight overarching code groups that encompass all aspects of health-related research activity ranging from basic to applied research. The 8 research activity code groups are:

1. **Underpinning research:** Research that underpins investigations into the cause, development, detection, treatment and management of diseases, conditions and ill health.
2. **Aetiology:** Identification of determinants that are involved in the cause, risk or development of disease, conditions and ill health.

3. **Prevention of disease and conditions, and promotion of wellbeing:** Research aimed at the primary prevention of disease, conditions or ill health, or promotion of well-being.
4. **Detection, screening and diagnosis:** Discovery, development and evaluation of diagnostic, prognostic and predictive markers and technologies.
5. **Development of treatments and therapeutic interventions:** Discovery and development of therapeutic interventions and testing in model systems and preclinical settings.
6. **Evaluation of treatments and therapeutic interventions:** Testing and evaluation of therapeutic interventions in clinical, community or applied settings.
7. **Management of diseases and conditions:** Research into individual care needs and management of disease, conditions or ill health.
8. **Health and social care services research:** Research into the provision and delivery of health and social care services, health policy and studies of research design, measurements and methodologies.

The interactive findings can be accessed [here](#) or on <https://hrcsonline.net/research-activities/>

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