Submission to the Productivity Commission into the Social and Economic Benefits of Improving Mental Health

This inquiry will examine the effect of mental health on people's ability to participate and prosper in the community and workplace, and the effects it has more generally on the economy and productivity.

Black Dog Institute

5 April 2019

Creating a mentally healthier world

Black Dog Institute

Table of Contents

Submission Summary

Introduction

The Black Dog Institute is pleased to offer a submission in response to the Productivity Commission's Inquiry to examine the effect of mental health on people's ability to participate in and prosper in the community and workplace, and the effects it has more generally on our economy and productivity.

Black Dog Institute's submission includes responses to the Issues Paper on the social and economic benefits of improving mental health (Recommendations 1-4).

We also respectfully introduce some new ideas which, while not raised directly within the Issues Paper, we feel lie at the heart of why more progress has not been made regarding the topics being addressed by the Productivity Commission (Recommendations 5-7).

Black Dog Institutes submission recommends the following:

Recommendation 1:

Improve the integration and operation of mental healthcare (p.13 of the Issues Paper) through better funding, better use of evidence and the development of new models of care.

Recommendation 2:

Establish new mental health prevention and early intervention services for children and adults (p. 14 of the Issues Paper).

Recommendation 3:

Continue systems-based suicide prevention trials and introduce oversight into commissioning of activities consistent with best policy and practice. Increase the role of ehealth technologies and improve data collection and integration (p.14 of the Issues Paper).

Recommendation 4:

Modify workplaces to improve mental health of the community (p. 26 of the Issues Paper).

Recommendation 5:

Federally fund innovation translational institutes.

Recommendation 6:

Federally fund at least two Australian mental health policy units.

Recommendation 7:

Develop a new Australian industry in ehealth and digital therapeutics.

Recommendation 1: Improve the integration and operation of mental healthcare through better funding, better use of evidence and the development of new models of care

In this section, following from the guidance provided in the Issues Paper (p.13), we discuss the structural issues that have impacted previously suggested reforms, and suggest ways to improve the integration and operation of mental through better funding, better use of evidence and the development of new models of care.

We agree with your discussion that there are limitations in mental health care, in particular: delays in primary health care and public health psychiatry; expensive treatment in private care and primary care; the use of non-evidence-based practices; long waiting lists; unacceptable delays in access, especially in times of distress and high need. There is also a lack of collaborative or integrated care.

The Fifth National Mental Health and Suicide Prevention Plan requires Primary Health Networks (PHNs) to deliver stepped care service options of varying intensity to match the level of need for people living with mental illness. Estimates of prevalence in the plans include people at risk (23.1% of the population), persons with mild illness (9.0% of the population) and persons with moderate mental illness (4.6% of the population). The current lack of early intervention, evidence-based approaches and services is a concern for PHNs.

Additional problems arise from a current lack of data available to track an individual's pathway through the health care system. These include very limited ehealth record data; lack of services in many areas; an inability to assess comorbidity, physical health and mental health concurrently at sufficient levels of expertise.

At present in Australia, many individuals with a mental disorder get sub-optimal levels of care. The main reasons for this are a lack of funding for public mental health services and a lack of integration in the available systems which mean many individuals do not get best practice, evidenced based treatments. These deficiencies have a dramatic impact on the economic and social impacts of mental disorder in Australia.

In order to address these issues, we would argue that three different, but overlapping, patient groups need to be considered. Firstly, those with more severe and enduring mental health problems, whose care is primarily managed by publicly funded community mental health teams and inpatient units. These services are not adequately funded or have insufficient integration with other health and non-health services. As a direct result, these services are very stretched and spend much of their limited resources responding to crisis situations. This means that evidence-based interventions focused on longer term recovery, which could reduce the social and economic impact of severe and enduring mental health problems, tend to get used less often than would be optimal. For example, vocational rehabilitation programs such as Individual Placement and Support (IPS), which we and others have shown have overwhelming evidence of effectiveness [1], is yet to become a standard part of treatment in many Australian services [2].

The second group of patients who need consideration are those with common mental disorders, such as depression and anxiety. The vast majority of these are managed in primary care. However, general practitioners (GPs) frequently report feeling unsupported when managing these conditions and access to more specialised assistance. It is often dependent on geographical location and the ability of the patient to pay for private specialist care. This has resulted in a 'missing middle' of patients with depression and anxiety symptoms that are too complex for their GP to manage alone, but not severe or acute enough to justify the involvement of publicly funded community mental health services. From an economic point of view, addressing this 'missing middle' is essential. Importantly, the UK experience with Improved Access to Psychological Treatment (IAPT), has also shown that if evidence-based treatments can be provided at scale to those currently falling into the gap between primary and secondary care, then the economic benefits in terms of increased work participation and reduced disability benefit payments can be substantial [3]. International evidence, particularly from the USA, has also shown that models of collaborative care, in which systems are in place to allow seamless shared care between GPs and mental health specialists, are feasible, well-liked by both patients and GPs and result in improved outcomes [4]. The Black Dog Institute is currently piloting a version of collaborative care which we feel may be suitable for the Australian Health Care System. Further investment to establish how these better models of care can be implemented in the Australian healthcare system is urgently needed.

The final group of people for whom the suitability of the available healthcare system needs to be scrutinised, are those who have significant mental health symptoms, but do not access care. Estimates suggest that as many as half of those with significant depression or anxiety symptoms do not seek help from their GP or other mental health professionals. As noted in other areas of our submission, we feel new technology provides exciting new possibilities of how these individuals can be engaged and provided with evidence-based online or smartphone-based interventions.

To date, initiatives aimed at addressing the issues for these three groups have not had a sufficient level of integration and have often lacked an understanding of the international research evidence. Policy appears to be done on the fly. Some voices are louder than others and transparency around policy changes is not open. Lots of 'captains calls' are made in large scale policy decisions around mental health care and are often focused on one diagnostic group rather than mental health more broadly. We believe there is a need for integration and oversight at a national level. The role of national policy and scientific voices at the table when decisions are made to inform the views is essential. We would recommend the establishment of an oversight policy unit that helps government and mental health commissions make decisions through using available evidence and/or creating the evidence needed (See Recommendation 6).

Recommendation 1

Improve the integration and operation of mental healthcare through better funding, better use of evidence and the development of new models of care (p. 13 of Issues Paper)

Solutions

- Public mental health care systems in Australia need greater levels of funding. **Funding levels need to be increased to be in proportion to the level of disability** mental health conditions are generating in the Australian population;

- Evidence-based models of **collaborative care between primary care and specialised mental health services** need to be adapted for the Australian health care system; and

- **We recommend that the Productivity Commission consider the need for a National Policy Unit.** This unit should be modelled on the National Institute for Health Research (NIHR) Policy Research Unit in Mental Health at the University College London and King's College London. The aim of this unit is to bring all stakeholders responsible for national wide plans for mental health services together to ensure decisions are based on good evidence. This ensures expert views and evidence is available to policy makers in a timely way and research that is directly relevant to policy. This would include providing information regarding the economic value, interventions and assist with resource allocations.

Recommendation 2: Establish new mental health prevention and early intervention services for children and adults

In this section, following from the guidance provided in the Issues Paper (p.14), we outline the need to establish new mental health prevention and early intervention services for children through the development of (permanent) Centres of Excellence for School-Based Mental Health and, for adults through the integration of adult prevention services into primary care settings, and direct to consumer online programs.

It is widely recognised that our health care system cannot sustain the current approach to mental ill-health because the emphasis on treatment is too costly. In order to reduce future growth in health care costs associated with mental ill-health, "the pendulum needs to swing away from crises and acute care and towards wellbeing, prevention, early intervention and integrated primary and mental health care" [5, p. 39].

Indeed, it has been recognised for some time, that a prevention and early intervention approach is "the only sustainable method for reducing the burden caused by… [mental ill-health]" [6, p.153]. There is also evidence that prevention and early intervention programs represent good value for money and provide significant health care cost savings [7] . Despite this recognition, prevention is a low priority. Prevention and early intervention programs are massively under resourced and underfunded. Upstream prevention and early intervention programs compete with downstream clinical services for priority funding within the context of a limited health budget. However, the evidence is 'in' and shifting funding towards prevention will result in both cost savings and avert years of suffering.

Below we outline our recommendations in two populations: (1) children and adolescents and (2) adults and older adults.

Children and adolescents

It has been well documented that mental health challenges in childhood and adolescents result in poorer academic outcomes, risky behaviour, and poor relationship development [e.g., 8, 9, 10]. Suicide is also an outcome, with rates in adolescence, particularly with young women increasing. One in 10 young people engage in self harm [11, 12] . Up to 70% of people who experience mental illness in adolescence, will relapse within five years. In a recent study, 18.5% of young people screened for mental health problems required follow-up [13].

Specific school-based programs for anxiety, depression and self-harm are effective [14-16]. If implemented at scale, the right school-based prevention programs have the capacity to prevent up to 22% of new cases of clinical depression [17]. This equates to 44,317 young Australians.

This means that we must proactively prevent disorders before children and adults come into contact with health care services. Systematic reviews find that prevention is effective when delivered universally and in targeted forms [18-21]. Many of the effective programs utilise e-mental health, offered as websites, games, or mobile apps. These are effective and complementary to traditional options, with particular appeal to young people, and significant advantages for scalability (see also recommendation 7).

However, there are enormous gaps in our knowledge and impediments to successful implementation of proven programs. At the core of the problem is the failure to direct the interventions to each child and the lack of a systematic, curriculum-based approach to the delivery of evidence- based programs across primary and high schools (across the developmental trajectory of child development). Our current approaches to school-based prevention have focussed on making schools mentally healthy rather than focussing a set of programs across primary and secondary school which are directed at the individual child. We also see that our current school prevention programs are directed through school counsellors, who struggle with demand, and who essentially offer reactive rather than proactive approaches.

Associated problems include:

- Schools struggle with lack of clarity about which individual programs to use;
- There is lack of information about which programs work best in the Australian environment;
- Often programs which might be effective in high schools are expensive (or considered expensive). There are difficulties timetabling prevention programs; very little training available to teachers or others to implement programs; poor fidelity to potentially useful programs and teaching training may not be sustainable because of high staff turnover;
- Increasing demand on school counselling services (where they exist) are high, once issues have been identified; and
- Over-reliance on school wide approaches which do not target individual mental health prevention. It is known that specific programs that target individual mental health for anxiety, depression, acting out, suicide, stigma reduction managed across Kindergarten to Year 12 are effective [22-25], but not put into practice.

While this section has focused on school students, it is also worth noting that many of the same issues and solutions apply to higher-education institutions and university students. Ultimately up to 85% of this group experience some form of psychological distress [26] and a reduction in this rate is expected to lead to higher levels of demotivation, disengagement, and dropout [27]. Student distress has been reported as one of the strongest predictors (if not the strongest predictor) of student attrition [e.g., 28]. Improvements in this area are expected to provide flow-on financial benefits (e.g., two-million dollars of extra income for every 40 students prevented from attrition; [29]). Likewise, a diverse body of educational and organisational-psychology research provides initial evidence that improvements to university-student wellbeing may lead to productivity improvements in the workforce (i.e., for our future employees), thus further demonstrating the value of optimising mental health within the education system.

Recommendation 2a

Establish new mental health prevention and early intervention services for children through the development of (permanent) Centres of Excellence for School-Based Mental Health (p. 14 of Issues Paper)

Solutions

- A body– which determines and provides information to all schools about the "mental health" curriculum and assists in decision making about best approaches taking into account diversity and equity (Department of Education State and Federal). We recommend a curriculum of prevention programs staggered across primary and secondary schools;
- A Centre of Excellence in School Based Mental Health/Drug Education that develops: evidence-based programs for implementation; support to develop teachers or trainers; implementation of the best programs; help in the design and advise the best follow up services, the latest material for use in decision making (i.e., this Centre would distribute successful evidence-based programs like Black Dog has distributed to all schools across Australia);
- Compulsory curriculum-embedded mental health promotion and prevention programs for primary and secondary school students, with a prioritisation of programs that are both evidence-based and scalable;
- Compulsory evidence-based mental health screening and follow-up procedures at every secondary school in Australia, facilitated by healthcare workers and telepsychiatry, if needed;
- Compulsory teacher training in basic identification and referral of mental health problems in students, with a focus on identifying age-appropriate/developmental risks; and
- Greater dialogue and communication between relevant school staff and parents about school-based mental health initiatives, and their child's mental health.

Examples of individual programs that have been successful globally, and within Australia, which have been developed by Black Dog Institute:

- The Good Behaviour Game in primary schools
- The Youth Aware of Mental Health (YAM) program for suicide harm and attempts in high school
- SPARX for prevention of depression in young people
- Headstrong for reduction of stigma and increased mental health literacy

Examples of training and research around supporting teachers and families:

- The Prevention Hub has a number of specific programs which aim to build the capacity of educators to prevent anxiety among children. This program of implementation research will develop, deliver and research professional development approaches which build the capacity of educators working in early childhood and middle school sectors. This will result in better understanding of prevention and the ability to apply the evidence-base for the prevention of anxiety in children. The research partners in this project seek to collaborate with the National Workforce Support in Child Mental Health and Mental Health in Education. The initiatives will undertake targeted research to support capability development of educators working with children and young people in Early Childhood and Primary School settings, with a particular focus on anxiety in children; and
- Conduct research to build the capability of educators working in early childhood and middle school sectors to understand prevention and apply the evidence-base programs for the prevention of anxiety in children.

Examples of systems approaches:

A number of research organisations are working to improve prevention in schools. Two examples include:

- Smooth Sailing for screening, mental health prevention and help-seeking
- Climate Schools for drug and alcohol education

Expected impacts:
- 22% reduction in anxiety and depression; and
- Catching depression before it manifests.

Adults and older adults

The prevention of mental health problems in adults can involve individualised interventions across primary health care environments, through work, and the internet. These individualised interventions are becoming more prominent though the community's recent focus on lifestyle interventions –diet, sleep and exercise which have proved to be effective in both prevention and early intervention settings [30-32]. We believe that a prevention and early intervention approach has the potential to reduce the incidence of mental ill-health, to prevent its progression, and reduce its impact, resulting in significant health care cost savings.

Prevention of depression and anxiety for adults is multifaced. We suggest three ways that depression it can be prevented:

- Through primary health care settings. The potential of ehealth models in general practice and Black Dog's StepCare Service (see Recommendation 2b example and Recommendation 7);
- Direct to consumer via the internet; and
- Prevention of mental health problems as discussed separately in our section on Workplace (see Recommendation 4).

Through primary health care settings

Approximately 55% of Australians with depression or anxiety do not receive any form of treatment. With 88% of the population seeing a GP annually. Detecting mental ill health in the primary health care setting is critical to offering prevention, early intervention or treatment to those who don't otherwise seek help. Data shows that around one in eight visits to GPs (12.4%) are mental-health related [33], translating to about one patient per GP per day. Depression accounts for 32% of all mental health problems managed by GPs, making it the most common mental health condition seen in practice [34]. Anxiety follows second (around 17%). Overall there has been an annual average increase of 7% in the estimated number of mental health-related GP encounters over the past six years.

Untreated mental illness has a huge economic impact. According to Medicare Benefits Schedule data, there were 2.7 million Medicare-subsidised mental health-related services provided by GPs in 2013–14. It has been claimed that the cost of potentially preventable hospital admissions (not just for mental health), sits at around AUD$2 billion per year. Improved GP-led primary health care could prevent more than 250,000 unnecessary hospital admissions annually [35].

Prominent national policy initiatives since 2001 have encouraged GPs to be more proactive in detecting and treating mental ill-health, and more recently, national and state investment has promoted the use of digital mental approaches in addressing common mental health issues [36, 37]. Given that depression and anxiety are among the most common illnesses in primary care, GPs are ideally placed to facilitate better mental health outcomes for patients with these disorders. Delivery of care in non-specialist community-based settings such as a general

practice and technology for self-guided, clinician-guided or remote treatment, helps overcome some barriers to access such as stigma and scarcity of affordable mental health services [38].

Recommendation 2b

Establish new mental health prevention and early intervention services for adults through the integration of adult prevention services into primary care settings (p. 14 of Issues Paper)

Solutions

- Recognition that primary care is a place for prevention as much as for treatment;
- Routine screening for early symptoms of mental health problems in general practice;
- Individual prevention programs being offered and supported for sleep, nutrition, exercise and early symptoms of mental health issues;
- A National Prevention (and early intervention) Strategy as a requirement of health care reform (i.e., monitor and incentivise the implementation of prevention programs);
- Increase funding for the implementation of prevention and early intervention programs in health care settings;
- Improve the integration of primary and mental health care and embed a prevention and early intervention approach within these systems; and
- Continue to invest in mental illness stigma reduction and education and awareness campaigns.

Examples:

- Black Dog Institute's Stepped Care Program (StepCare) is one of only three stepped care systems available in Australia that offer an evidence-based fully articulated step up/step down and integrated into primary care. The other two stepped care systems (Macquarie University's "Ports", incorporating MindSpot Clinic program and University of Melbourne's "LinkMe"), require additional clinical staff, generating greater cost. By comparison, StepCare provides a fully automated IT system and integrates into the existing workflows of GPs, general practices and PHNs. Furthermore, StepCare focuses on detection and early intervention, using online therapeutic programs. This ensures efficient use of health system resources, early identification and immediate follow-up of people assessed with symptoms of depression and anxiety.

Expected impacts
Cost effectiveness e.g. net monetary benefit of programs such as the online myCompass as a first-line treatment in a stepped care approach is AUD$1,170 compared to treatment as usual and AUD$522 for face-to-face therapy.

Directly to consumer via the internet
There is now an enormous literature which lists the effectiveness of a range of internet programs which, when delivered directly to consumers through the internet, result in reductions in symptoms of depression and anxiety. The most impressive study along these lines was conducted in 2013 in the UK using the Australian Moodgym program. There were 3,000 plus participants in a Randomised Controlled Trial (RCT) which demonstrated individuals directed to an internet program improved significantly more than those provided with information on government health sites [39].

Similarly, the GoodNight RCT Black Dog conducted to prevent depression in people with insomnia, recruited directly from the Internet, led to significant and long standing reductions in insomnia and depression [40]. Our experience was that it was not difficult to attract participants within Australia.

It is clear that these sorts of programs, often available freely with registration, are significantly effective as preventative interventions. This speaks even more strongly to our research work in Workplace (see Recommendation 4) and to the urgency to improve our “digital therapeutics” opportunity in Australia (see Recommendation 7).

Recommendation 2c

Establish new mental health prevention and early intervention services direct to consumer online programs (p. 14 of Issues Paper)

Solutions

- Promote effective ehealth evidence-based prevention apps and online programs; and
- Support organisations to deliver these more effectively through promotions and campaigns that use sophisticated marketing techniques to target those at risk for e.g. moodgym and myCompass

Recommendation 3: Continue systems-based suicide prevention trials, introduce oversight into commissioning of activities consistent with best policy and practice, increase the role of ehealth technologies and improve data collection and integration

In this section, in response to the matters highlighted in the Issues Paper (p. 14), we outline the changes needed to improve suicide prevention across Australia. In the first instance, this includes continuing to support and fund multi-layered sectorial responses, such as the Lifespan approach- an integrated evidence-based approach to suicide prevention. We also outline the need to fund personnel within PHNs to coordinate suicide prevention programs based on evidence driven best practice.

Large-scale, multi-layered interventions are considered best practice in the reduction of suicide. This conclusion is based on international research. The European Alliance Against Depression (a 4-level, 2-year community-based program delivered in 10 European countries), reduced suicidal acts (deaths and attempts combined) from: 30.1 per 100,000 at baseline, to 13.2 per 100,000 at 12-months post-baseline; 14.6 per 100,000 at 24-months post-baseline, and remained as low as 12.0 per 100,000 at one year after the trial finished. Where the trial was not implemented, annual suicide rates slightly increased in control regions during the same period. A UK study found that implementation of at least seven service recommendations (e.g. reducing access to lethal means of suicide; assertive outreach; 24 hour crisis team; treatment non-compliance policy; policy for dual diagnosis management; training of front line staff; information sharing across relevant sectors) by relevant service providers, was associated with a significant reduction in suicide rates, as compared to services who implemented fewer strategies [41]. In the US, a multimodal intervention in a 'closed community' (the defence force), showed a 33% relative reduction in suicide deaths [42], further supporting the move to a multilevel approach.

Reviews of specific suicide prevention strategies suggest many are effective, thus supporting the need to incorporate multiple components in any comprehensive strategy [43-45]. These reviews find that the strongest evidence is for:

- Restricting access to lethal means (re: suicide deaths), especially with regard to control of analgesics (overall decrease of 43% in the preceding decade) and hot-spots for suicide by jumping (reduction of 86% in the preceding decade);
- School-based awareness programs have been shown to reduce suicide attempts (SEYLE study: at the 12-month follow-up, Youth Aware of Mental Health (YAM) was associated with a significant reduction of incident suicide attempts (OR 0·45, p=0·014) and severe suicidal ideation (0·50; p=0·025), compared with the control group);
- The provision of 24-hour crisis care and coordinated aftercare has been shown to be associated with a 19.8% reduction in suicide attempt rates;
- There is evidence that effective pharmacological and psychological treatments for depression, and GP education in depression recognition, are important as part of the prevention of suicide deaths and attempts; and
- Approaches that need further investigation include suicide prevention 'gatekeeper training', and the emergence of ehealth interventions, particularly within specific populations (e.g., youth).

All of these components have been included in Black Dog's LifeSpan Research Trial.

There remains a paucity of gold-standard RCT evidence in the field of suicide prevention, which is a major limitation in the evaluation of preventive interventions. However, all the strongest evidence-based strategies and emerging evidence strategies form part of Black Dog's LifeSpan approach.

Findings from the LifeSpan stepped wedge research trial delivered in five sites across NSW and ACT, will be available from 2020 onwards. Current process outcomes include:

- Strength and structure of the local collaborative and its effective leadership are important success factors;
- Allowing enough time for meaningful change to take place, particularly those changes in health service systems;
- Delivering enough of the intervention (dose) across the population and delivering it with sufficient fidelity to the evidence; and
- Process outcomes currently include:
  - 5,075 gatekeepers including GPs trained in suicide prevention;
  - 76 schools, 433 programs delivered to 6,7000 young people;
  - 10 comprehensive suicide audits;
  - 8,000 responses to community surveys across nine sites; and
  - 34 workshops delivered to 403 health professionals in *advanced training in suicide prevention*.

Set reasonable limits for success

Black Dog has reviewed the suicide prevention literature for strategies which had the strongest evidence (RCT or meta-analysis) for reducing suicide attempts and/or deaths. To estimate the potential impact for LifeSpan, we calculated population preventable fractions (PPFs) for each of the nine strategies being:

1) Using evidence-based treatment for suicidality;
2) Improving emergency and follow-up care for suicidal crisis;
3) Equipping primary health care to identify and support people in distress;
4) Improving the competency and confidence of frontline workers to deal with suicidal crises;
5) Promoting help-seeking, mental health and resilience in schools;
6) Training the community to recognise and respond to suicidality;
7) Engaging the community and providing opportunities to be part of the change;
8) Encourage safe and purposeful media reporting; and
9) Improving safety and reducing access to means of suicide.

LifeSpan estimates give an indication of the extent to which suicide attempts and deaths might be decreased if the each of the proposed interventions was fully implemented. This includes examining effect sizes (how effective the intervention is) and the current and potential levels of coverage (the extent the intervention can be delivered).

Black Dog have estimated a **20% reduction in suicide deaths and 30% reduction in suicide attempts** is achievable [43] . These estimates were similar to those achieved in the European trials in the early 2000's.

We recommend the appointment of a Statutory Committee that is accountable and reports to the Prime Minister which has the role to determine whether evidence-based

population and clinical suicide prevention is adequately undertaken in all geographic areas across Australia.

Preventing suicide requires action at all levels of government (to plan, prioritise resources, and co-ordinate), services (to identify and target those most at risk), and communities (to drive 'grassroots' responses). Oversight is needed beyond commissioning to make sure the right resources are being directed in the right ways. This Statutory Committee needs to listen to the voices of those who understand the evidence base as much as the voices of lived experience and clinical practice.

The need to address growing suicide rates by utilising timely, detailed data and insights is now well recognised nationally. Governments, clinicians, researchers and the public recognise the importance of data in helping to understand *why* suicidal behaviour occurs (i.e., its root causes and its risk factors), and *what* can be done to prevent it.

In the last two years, the Black Dog Institute has focused on acquiring a range of datasets which bring together national data on suicide deaths, along with data on attempts, and ambulance callouts for the first time. With our partners, SAS and the National Centre for Geographic Resources & Analysis in Primary Health Care (Australian National University), Black Dog recognises that better data, analytics, and systems to manage the data, are needed to support our efforts to understand, evaluate, and improve suicide prevention efforts in Australia. Our *Suicide Prevention Intelligence System (SPIS)* developed to support the LifeSpan Research Trial already collects, curates and analyses data that is required to implement many of the data elements of Fifth Mental Health and Suicide Prevention plan. This is the first data system of its type. It provides:

- National data on suicide deaths (Coronial Data). The Coronial data has a time lag of approximately two years, although discussions are in progress for earlier capture. SPIS is the first collection of suicide specific data compiled in Australia with precision geocoding to accurately map where suicide incidents occur;
- Geo-analyse the data in small-area geographical regions ('suicide audits') to understand where and what suicide prevention efforts are most urgently needed;
- Inform what strategies require prioritising within a defined region and assist with resource distribution (within agreed ethical approvals);
- Map data to identify changes in patterns of suicide behaviours over time, at a jurisdictional or regional level, and identify emerging suicide clusters;
- Provide information on whether suicide deaths occurred at home or away from home (deaths away from home can indicate particular geographical areas where deaths frequently occur) to confirm or identify new clusters in communities;
- Provide expertise to analyse the data on behalf of services, community groups, governments and others who may not have the expertise to answer key questions of interest (e.g., Is the new Suicide Prevention Strategy lowering suicide behaviour in Australia?);
- Examine and assess the incoming data to develop the highest quality suicide data currently available in Australia; and
- Provide individual-level data on hospitals, general practices, and psychological services that can be used to identify the types and number of services available within any geographical level. While this data is acquired via data scraping, and does not constitute an authoritative source, it nevertheless demonstrates SPIS's capability to ingest and map service level data.

Recommendation 3

Continue systems-based suicide prevention trials, introduce oversight into commissioning of activities consistent with best policy and practice, increase the role of ehealth technologies and improve data collection and integration (p.14 of Issues Paper)

Solutions

- Continue to support multi layered sectorial responses such as the Lifespan approach through the funding of suicide prevention funds and personnel within PHNs;
- Set reasonable limits for success;
- Appoint and make accountable a Statutory Committee that reports to the Prime Minister which has the role to determine whether evidence-based population and clinical suicide prevention is adequately undertaken in all geographic areas across Australia;
- Establish data capability to be able to measure, monitor, act in a timely fashion and get information on the ground to those who need it;
- Extend data systems to health services, transport, Medicare Benefits Schedule/Pharmaceutical Benefits Schedule, and national ambulance and national police data sets; and
- Scale up Black Dog's data platform to a National Suicide Prevention Intelligence System.

Examples of successful multi-layered suicide prevention programs:

- The European Alliance Against Depression (EAAD) and Lifespan

Examples of good individual school-based programs in practice:

- YAM and Sources of Strength

Examples of good use of data:

- Black Dog's National Suicide Prevention Intelligence System (refer Attachment 1 SPIS).

Expected impacts

- Significant reduction in deaths (20%); and
- Significant reduction in attempts (30%)

Recommendation 4: Modify workplaces to improve mental health of the community

In this section, we outline what our research has shown about the economic impacts of mental ill health in the workplace, and how this may address the matters highlighted in the Issues Paper (p.26).

Since 2012, the Black Dog Institute has hosted Australia's largest program of research focused on the links between work and common mental disorders. In 2017, we published a paper in the *Medical Journal of Australia* that showed mental disorders were now the leading cause of long term sickness absence and disability benefits in Australia, with rates of long-term disability support pension (DSP) for mental disorders rising by 51% over the last decade [46].

Our researchers and collaborators have also been able to show that depression and anxiety have a particularly potent impact on work performance and are some of the most powerful predictors of future sickness absence [47-49].

Within Australia it is estimated that depression alone costs society $12.6 billion each year, of which $12.3 billion is due to lost work productivity [50].

The role that work and workplaces can play in understanding an individual's mental health

In 2017, the Black Dog Institute published a paper demonstrating that aside from trauma exposure, there were three broad types of work situations that could contribute to the onset of mental disorder; an imbalanced job design (for example, inadequate control given the job demands), occupational uncertainty and lack of value and respect in the workplace [51]. This model is demonstrated in the figure below. In subsequent publications, we have estimated that addressing these work-based risk factors could help prevent as many as many as 14% of new cases of common mental disorders amongst working adults [52].

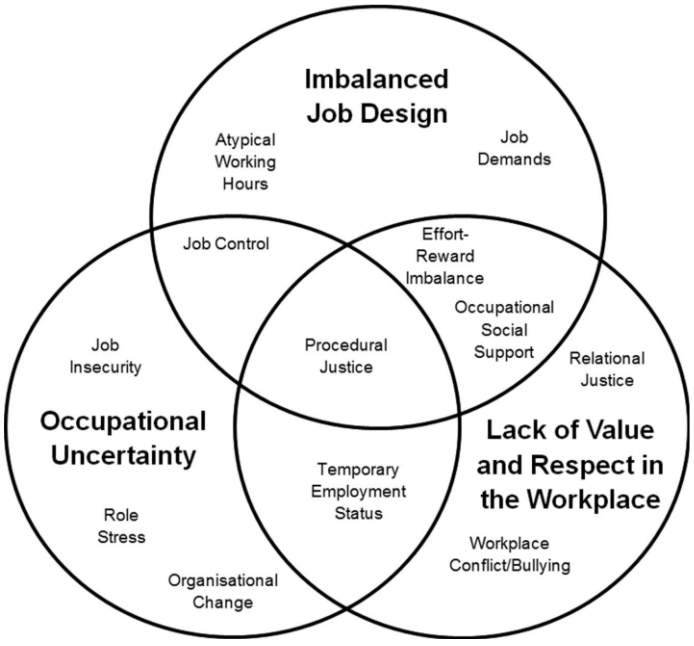


Figure 1: Our model demonstrating the various workplace risk factors for mental ill health

A framework for creating more mentally healthy workplaces

Having established the importance of work to mental health, our attention has turned to understanding what types of interventions or changes should be made in workplaces. Figure 2 outlines a framework for the creation of mentally healthy workplaces published by the Black Dog Institute and our collaborators [53, 54]. Since its publication, this framework has guided local and international policy developments and has facilitated substantial advancement in the field. It has formed the basis of advice given by the National Mental Health Commission, guided the *NSW Mentally Healthy Workplaces Strategy 2018-2022* and was recommended by the UK's Chief Medical Officer in her report on how UK organisations should aim to tackle mental illness in the workplace.

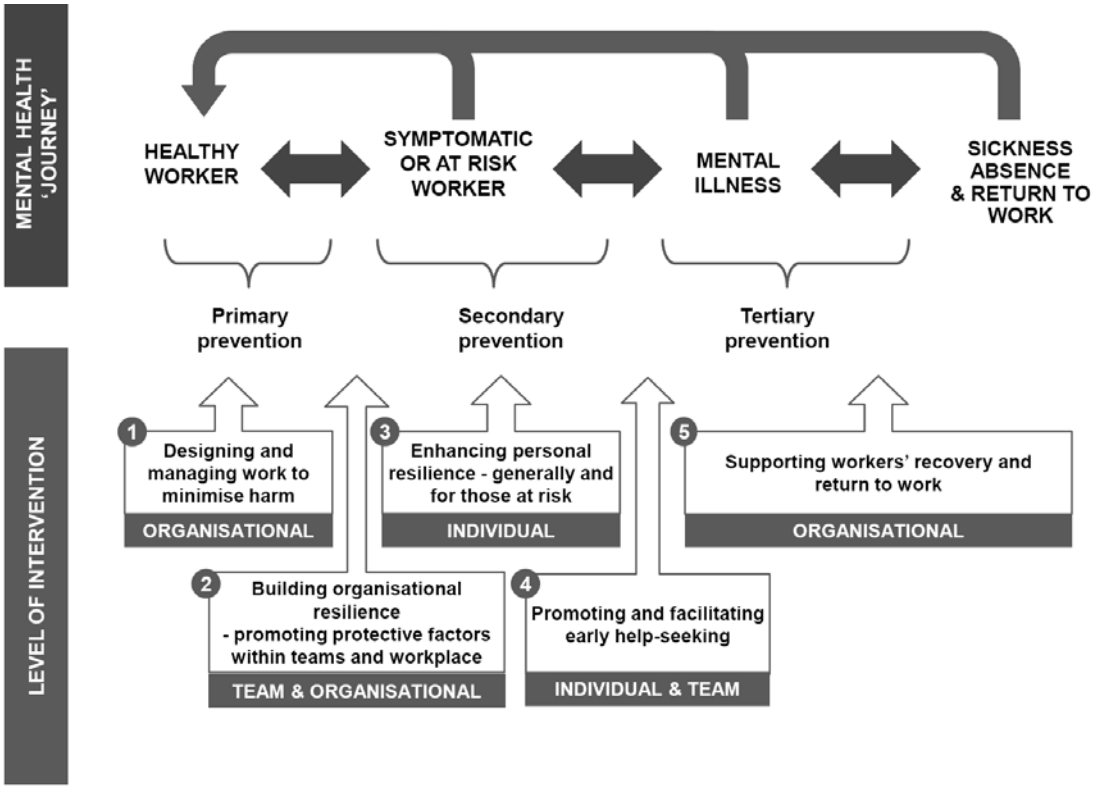


Figure 2: Our evidence-informed framework on what factors are required to create a mentally healthy workplace.

We have begun to demonstrate, through a series of linked studies, that interventions in the five strategy areas outlined in this model can help improve workers' mental health. However, the optimal type of intervention for each category and understanding how such interventions can be delivered to the working population in an integrated way at scale remains unknown [55]. In spite of the evidence-base we and others have been building, the vast majority of mental health promotion activities undertaken in Australian workplaces are not evidence-based and a huge opportunity to improve the populations' mental health remains unrealised.

What we know works

As noted above, our model of the five types of interventions needed to create a mentally healthy workplace was recently used by the NSW Government to guide their *NSW Mentally Healthy Workplaces Strategy 2018-2022*. As part of the background work to develop this strategy, the Black Dog Institute worked in partnership with Professor Glozier from the University of Sydney to produce an updated list of the interventions that had adequate evidence to be recommended for workplaces. The following interventions were found to have moderate or strong levels of research evidence:

Strategy 1: Designing and managing work to minimise harm

Employee participation strategies designed to improve employee control

Flexible working conditions

Strategy 2: Building organisational resilience

Manager and leadership training

Mental health education and anti-stigma programs

Anti-bullying programs

Strategy 3. Enhancing personal resilience

Cognitive Behavioural Therapy (CBT) based stress management programs

Mindfulness and/or CBT based resilience training for high risk occupations

Workplace physical activity programs

Strategy 4. Promoting and facilitating early help-seeking

Well-being checks

Mental Health First Aid (MHFA)

Workplace counselling

Strategy 5. Supporting recovery and return to work

Work focussed psychological therapy

Good quality clinical treatment

Just as importantly we have also been able to demonstrate a variety of popular interventions that don't work, for example debriefing after a traumatic event.

The key role of managers

Over the last few years, research conducted at the Black Dog Institute has demonstrated that training managers is a key component of creating more mentally healthy workplaces [56, 57]. We have shown that the most important thing is to train managers to have the skills and confidence to discuss mental health matters with their workers [58]. We have demonstrated

that we can achieve this with a four hour face-to-face training program and that this training has a return on investment of $10 for every dollar spent through reduced rates of sickness absence [57]. More recently we have been able to show similar results using online versions of manager training [59]. More than 3,000 managers in NSW have now received our evidence-based manager mental health training. Based on the economic evaluation from our research trials, we estimate that this equates to a saving of over $27 million due to reduced sickness absence of workers in NSW.

Recommendation 4

Modify workplaces to improve mental health of the community (p. 26 of Issues Paper)

Solutions

- Australian workplaces can be made to be more mentally healthy. We now have an evidence-based framework outlining what workplaces should be doing to achieve this;
- Australian workplaces need to be provided with clear, evidence-based information. The proposal from the Mentally Healthy Workplace Alliance (of which Black Dog Institute is a founding member) for a National Mental Health Workplace Initiative, would provide practical tools and guides for employers based on the latest research. This type of initiative is an essential step towards ensuring that the research evidence is translated into better workplace practices;
- The Productivity Commission should consider ways in which employers can be incentivised to roll out evidence-based manager mental health training; and
- There is an urgent need for large scale research projects to answer some of the key questions relating to mental health and work. Specifically, whether popular workplace interventions, such as mental health education and mental health screening are beneficial or harmful and how the occupational and economic outcomes of those with depression and anxiety can be improved.

Recommendation 5: Federally fund innovation translational institutes

In the following sections, we introduce new ideas which of why more progress has not been made regarding the topics being addressed by the Productivity Commission.

The Black Dog Institute is the only independent Medical Research Institute in Australia focussed on mental health across the lifespan. It aims to translate medical research into practice. Hence, its role is primarily as an innovator – to take good ideas and test them in the real world – in schools, workplaces, healthcare and community environments where new services are needed.

Black Dog currently runs large scale implementation projects, such as Lifespan and StepCare, which aim to determine how to make models for suicide prevention or early intervention for depression in ehealth "work". We need to ask the following questions:

- How do you get evidence-based ideas to operate in our currently complex health care systems, communities or workplaces?
- How do you determine the success of evidence-based systems and what impact they have?

These large projects are predominantly funded by research grants and philanthropy. They are rarely funded as services by government and thus are often by necessity, short lived. Black Dog offers innovations in research, education, clinical and community care, policy and advice.

Across a broad range of activities, the work of the Institute is about providing evidence-based and proven initiatives, that can feasibly be put into place by healthcare providers and commissioning bodies for example PHNs, schools, hospitals or workplaces.

In the highly complex area of health reform and the call for evidence-based practice, we see the need for further investment in these innovative translational Institutes. New ideas need to be tested at scale, current services need to be evaluated (and sometimes dismantled) and the contribution of solid research and implementation science to inform solutions to problems around health care delivery. This work needs to be supported and considered by government. These Institutes and the roles they can play, must be considered as key players in this complex environment. Their contribution needs to be long term and cannot rely entirely on competitive grants initiated by individual researchers, or through short term funding opportunities offered via philanthropy. Although we may sound self-serving in our request for support, there are only two medical research institutes dedicated to mental health in Australia-Orygen (which focuses on youth mental health) and Black Dog Institute. This should be compared with more than 20 in Neuroscience Institutes in Australia. There is a major gap in funding mental health research and its translation.

Recommendation 5

Federally fund innovation translational institutes

Solutions

- There needs to be better interplay between the Medical Research Future Fund (MRFF), the National Health and Medical Research Council (NHMRC), philanthropy, healthcare services and industry, to increase efficiencies, offer effective care and faster discovery.
- Understanding the causes, best treatments and cost efficiencies through research, and translational science, **is a gap in the Productivity Commission Issues Paper**. **Support for innovation is critical to improvements in health reform and improving mental health disorders in our community.** Translational institutes, such as the Black Dog, need to be supported to provide data and evidence-based information to governments and health care services.

Recommendation 6: Federally fund at least two Australian mental health policy units

We would recommend the establishment of an oversight policy unit that helps government and mental health commissions to make decisions through either using available evidence and/or by creating the evidence needed. We believe that Australian policy is often dictated by 'captain calls' and 'loudest voices'.

Recommendation 6

We recommend that the Productivity Commission consider a National Mental Health Policy Unit

Solutions

- This unit should be modelled on the National Institute for Health Research (NIHR) Policy Research Unit in Mental Health at the University College London and King's College London. The aim of this unit would be to bring all stakeholders responsible for development and delivery of national wide plans for mental health services together, to ensure decisions are based on good evidence. The unit would also aim to ensure expert views and evidence is available to policy makers in a timely way and to undertake research that is directly relevant to policy. This would include providing information regarding the economic value, and interventions and assist with resource allocations.

Recommendation 7: Develop a new Australian industry in ehealth and digital therapeutics

In Australia, the growing health innovation landscape now includes at least 50 start-ups in digital health. Stand-out examples include digital sensing, person-centred care, precision medicine, artificial intelligence (AI), e-mental health, telehealth and research productivity.

Since 2010, almost AUD$530 million has been invested in health tech companies in Australia, with the majority of this (AUD$512.18 million) in the last three years. Despite these developments, overall investment in digital health lags substantially behind other developed economies. The USA where modelling suggests a 12 times greater per-capita investment in digital health, equates to an annual investment of AUD$6.38 per person compared to AUD$0.54 in Australia in 2017 [60].

Australia has unique capabilities in neuroscience, psychology, statistics/applied mathematics and eHealth research. *Australia was an early developer of* ehealth self-care tools which through rigorous testing using RCTs, have been demonstrated they are both clinically beneficial and cost-effective. For example Black Dog's, 'myCompass' – our flagship online cognitive behavioural therapy program – has demonstrated significant improvement in managing symptoms of depression, anxiety and stress, and found to result in a net monetary benefit of AUD$1,170 per person, compared to treatment as usual [61, 62]. The Black Dog Institute has also just completed the largest ever controlled trial of a mental health app, involving 2,271 at risk workers, in which we showed that the new HeadGear app could halve the rate of new onset case-level depression [63, 64].

There is a window of opportunity for Australia to build leadership in this area. Multinationals (such as Microsoft, Google, Apple and Fitbit), are moving quickly to capitalise on what they perceive to be a favourable environment for cloud-based technologies and health innovation. In February 2019, Microsoft announced its intention to expand their AI-based healthcare business into Australia. Apple is iteratively expanding the range of health sensors incorporated into wearable devices such as the Apple Watch and AirPods. There is a timely opportunity for public sector-led initiatives that can address questions concerning trust and safety, equality of access, integration of data and ensuring data is accessible rather than within the control of tech giants. We have research studies around the effectiveness of apps and online interventions, which make them attractive to industry and able to be commercialised.

The advantages of ehealth programs and apps are well known. They are effective, cost effective and can be scaled up cheaply. Apps and online programs deliver the same therapy as clinicians, and their delivery can be automated. With approximately AUD$9 billion being spent on mental health care in Australia (2016), AI applications at scale could represent a saving of AUD$450-$810 million annually to the costs of mental healthcare in Australia.

Although these products are effective, they are underused even when the need is high. At this stage we have not translated effective digital services into practice. Government will pay for some digital services through its TeleWeb Measure, such as Black Dog Institute's myCompass and BiteBack online programs. There are many more specialised digital services that have been created but do not receive Government funding for scale up or roll out. These include new Indigenous apps such as ibobbly and suicide prevention programs such as Living with Deadly Thoughts.

The barriers to the uptake of ehealth services and digital therapeutics include:

- Poor drivers for industry involvement (no incentives for industry to be involved, no flagship programs in mental health tech);
- Development of ehealth platforms and digital products largely driven by university research institutes and small-scale research grants. Universities are mostly poorly skilled in engaging with industry and driving sustainable and scalable solutions. Further, small-scale research grants do not allow for comprehensive co-design or user-centred principles to be applied, nor design thinking functionality that increase engagement and adherence;
- Governments in Australia and users are not yet willing to "pay" for digital therapeutics (this is not the case in the UK or the USA);
- Attempts to provide portals for ehealth products that do not receive huge traffic and do not instil public confidence, e.g. Head to Health;
- Despite programs to support health professionals e.g. eMental Health in Practice Program, there has been a failure to engage clinicians and give them something that helps guide ehealth selection and use. This results in mismatched expectations about what digital therapeutics can do in general practice;
- Lack of confidence in service and product types or confusion about what works; too many products with little signposting about quality, safety and evidence;
- Consumers cannot easily assess which apps are based on good scientific evidence e.g. consumers do not know what app is effective app and what is not; and
- Perceived medico legal issues by clinicians.

Given the complexity of the environment, a number of solutions which would increase the use of digital therapeutics need to be introduced:

Support the development of an Australian AI and digital therapeutics industry:

- Undertake economic review of the potential impact of digital therapeutics in mental health for Australia and globally; and
- Use MRFF to promote a Digital Therapeutics Agenda including a "therapeutics mission" similar to the genomics mission (which received AUD$500 million over 10 years). The Frontiers MRFF encourages big ideas that could drive digital health development in Australia. The Productivity Commission could go one step further and insist that Digital Therapeutics have "ready to go projects" that could be supported by the MRFF.

An alternative proposal is to focus on European models that aim to understand the difficulties associated with the implementation of ehealth solutions. Black Dog Institute and the Australian National University are associated with one such large-scale implementation project in mental health, known as ImpleMentAll. This is a European-led collaboration towards faster and more effective implementation of ehealth interventions. The initiative is founded on the notion that implementation of new services and technologies is time-consuming and costly and often fails completely – not least in the health care domain. The initiative builds its research on experiences and results from former international projects (e.g. Renewing Health, E-COMPARED, and MasterMind), as well as a theoretical foundation mainly consisting of Normalisation Process Theory, Normalisation MeAsure Development (NoMAD), and Model for Assessment of Telemedicine. We would argue that an ImpleMentAll-style project that sought to engage ehealth services across each of the Australian states, could build new models and breakdown national barriers.

Change policy to require PHNs to offer and deliver ehealth and digital therapeutics and measure their use against funding KPIs. The UK insisted that ehealth therapies be available as a choice for patients in National Health Services (NHS) Trusts from early 2000s and this spurred action and uptake. The use of ehealth in Improving Access to Psychological Therapies (IAPT) is progressing well. The National Institute for Health Care and Excellence (NICE) guidelines are assisting in determining the correct frameworks and assessing which services and products meet criteria.

We suggest that the Productivity Commission and the Commonwealth Department of Health could drive the use of ehealth services into general practice by using the requirement that PHNs commission ehealth based Stepped Care Models as a priority (see Australian Government, Portfolio budget statements 2017-18: budget related paper no. 1.10: Health Portfolio, p. 63; DoH, PHN Primary Mental Health Care Flexible Funding Pool Implementation Guidance: Stepped Care, p. 6). An example of this is Black Dog's StepCare Service which uses an ehealth platform to screen for symptoms, support clinical-decision making and actively monitors patient response to treatment. This service is currently being rolled out in general practice clinics across Australia (see Figure 3. below).

Remove perceived or real medico legal barriers and engage practitioners. These services and products must be supported by clinicians and actively promoted.

Support a streamlined process to implement national guidelines and standards to improve the quality of ehealth, provide a pathway for accreditation and incentives to support commercialisation. In mental health alone, there are over 10,000 apps commercially available that purport to improve wellbeing, prevent and treat or monitor common mental health conditions. Yet the safety and effectiveness of these products is uncertain. Whilst some of these ehealth products meet the legislated definition of a medical device under the Therapeutic Goods Act 1989, few have been registered on the Australian Register of Therapeutic Goods to date. Amongst those that fall outside of the existing regulatory framework, there are few resources available to help end users (patients, clinicians and health care organisations) evaluate the quality and suitability of these products.

There is an urgent need for agreement about appropriate standards, principles and practices in research, evaluation and dissemination of these tools. Australia is developing a certification framework and national standards through the Australian Commission on Safety and Quality in Health Care. This should be facilitated and result in strong recommendations and the possible creation of a certification body. We argue that ehealth products must be satisfactory to patients, the public and clinicians [65]. The standards of all ehealth products and services must be supported by rigorous research processes and frameworks to guide quality, safety and effectiveness, similar to those of registered medical devices [66].

Currently, the lack of financial support, reimbursement incentives and overall return on investment prevents industry from entering the ehealth market. The Productivity Commission could consider Medicare rebates for accredited ehealth programs, since they are effective relative to face to face consultation, and this would stimulate industry interest. Commercialisation of ehealth products is now progressing in the UK and USA (some in Australia) and the nature of the regulatory environment is also changing. This may make it more likely for technology and product developers to build business plans. How this will develop is unclear. However, there is a need for incentives to GPs and eligible allied health professionals (e.g. psychologists) to refer patients to eMental Health services, along with reimbursement options through public (e.g. Medicare) and private (e.g. health insurance)

health funds to drive return on investment where quality, safety, comparative effectiveness, clinical effectiveness and cost effectiveness can be met.

Provide the community with up to date information about useful apps using a registry such as the Beacon online portal. This needs to be extended to provide these resources directly into the hands of doctors, clinicians and schools. Continue and expand training programs that are directed at GPs such as e-Mental Health in Practice. Consider the development of an ehealth app hotline that provides support to patients using ehealth apps as part of a stepped care approach.

Continue and expand the support for organisations which has the capacity to afford the sustainability and promotion costs. Only fund organisations with capacity for dissemination and maturity to determine quality, such as those forming part of the eMental Health Alliance.

Figure 3. shows the work flow for Black Dog's Stepped Care Program.

Recommendation 7

Develop a new Australian industry in ehealth and digital therapeutics (p.16 of Issues Paper)

Solutions

Develop a new Australian industry in ehealth and digital therapeutics by considering the following actions:

- Support the development of an Australian AI and digital therapeutics industry;
- Undertake economic review of the potential impact of digital therapeutics in mental health for Australia and globally;
- Use MRFF to promote a Digital Therapeutics Agenda including a "therapeutics mission", similar to the genomics mission (which received AUD$500 million over 10 years);
- Change policy to require PHNs to offer and deliver evidence-based ehealth and digital therapeutics and measure their use against funding KPIs;
- Remove perceived or real medico legal barriers and engage practitioners;
- **Support a streamlined process to implement national guidelines and standards to improve the quality, safety and effectiveness of ehealth, and an independent certification body to provide accreditation for ehealth products;**
- **Provide a pathway and incentives to support commercialisation**. Consider public (e.g. Medicare) and private health rebates for accredited ehealth programs, since they are effective relative to face to face consultations and lower cost, which would stimulate industry interest;
- Provide the community with up to date information about useful apps using a registry;
- Continue and expand training programs that are directed at GPs; and
- Through the current TeleWeb measure, continue and expand support for organisations which have the capacity to afford the sustainability and promotion costs to develop and deliver apps and online programs.

About Black Dog Institute

Black Dog Institute is dedicated to understanding, preventing and treating mental illness.

Vision - A mentally healthier world.

Mission - Enabling mentally healthier lives through innovations in science, medicine, education, public policy and knowledge translation.

The Black Dog Institute is a global leader in mental health research and is NSW's only independent medical research institute with a focus on mental health- one of only two in Australia.

Established in 2002, the Institute's unique strategic objective is to use the latest technology and early intervention tools to quickly turn its world-class evidence-based research findings into clinical services, education and e-health products that improve the lives of people with mental illness.

Research and Translation

Clinical services

Black Dog provides a range of clinical services via our face-to-face clinics and through telehealth to people of all ages across Australia. These services include:

- Depression and Bipolar Clinic;
- Child and Adolescent Clinic;
- Sydney TMS Treatment and Neurostimulation Centre; and
- Rural and Regional Telepsychiatry Clinic.

We are now expanding our Depression Clinic to pioneer a new wholistic integrated approach to shared care between specialists and GPs, to treat the "missing middle"- the 360,000 adults in NSW who live with a mental disorder but cannot see a psychiatrist because of access and cost. The Institute currently sees 2,300 people a year in its face-to-face clinics.

Workplace, health professional and community services

Workplace and Health Professional education: Black Dog's consultant psychiatrists and GPs deliver specialised accredited training on mental health for healthcare professionals, school counsellors, teachers, carers and workplaces across Australia via face-to-face workshops and online. Over the last 12 months Black Dog has been commissioned to deliver training by 14 Primary Health Networks. Black Dog has delivered training to 2725 health professionals face to face and 1480 online, 1000 school counsellors and 11,000 employees.

Community Services: In the last year, our dedicated and highly trained team of 101 lived experience presenters delivered mental health awareness presentations to 35,000 people in organisations, schools and towns across Australia.

Community and school presentations are delivered free of charge thanks to the support of our major funding partners such as HSBC, CBH Group and the Goodman Foundation.

Suicide Prevention Trials in NSW

Australia's first integrated suicide prevention program- LifeSpan, funded by a $14.7m donation from the Paul Ramsay Foundation, is being trialed in Newcastle, Central Coast, Illawarra/Shoalhaven and Murrumbidgee. LifeSpan, which consists of nine evidence-based preventative strategies, aims to reduce deaths by 20% and attempts by 30%.

The trials are underpinned by multi-level data collection and sophisticated data analytics, pulling together data from the Coroner, police, ambulance and hospitals, to identify existing and emerging suicide clusters in NSW and allow better planning, implementation and deployment of services and means restrictions.

Black Dog's LifeSpan initiative also provides suicide prevention training for the community in our four NSW sites. One training program, *QPR* ('Question Persuade Refer'), builds skills to help with a suicidal crisis in friends, colleagues and family members. The *'Roses in the Ocean'* program, builds the capacity of people with lived experience of suicide to participate in local suicide prevention action. Our '*Advanced Training in Suicide Prevention*' program, builds capacity of GPs and psychologists to identify and manage patients at risk of suicide and self-harm. The *'Youth Aware of Mental Health'* program promotes help-seeking, mental health and resilience in high school students. Since August 2017, more than 1,900 community members and professionals have been trained, building up a network of 'helpers' that strengthen and sustain our communities to deal with suicide in the future. More than 5,000 students across 46 schools have completed school-based suicide prevention programs.

Black Dog is also providing implementation expertise to National Suicide Prevention Trials across 12 Commonwealth government funded sites, the current Victorian government funded place-based trials and the ACT government trial which commenced in July 2018.

e-mental Health

Black Dog has developed a suite of evidence-based online services to treat and prevent mental illness. Once they have been shown to be effective, they are delivered through the internet or smartphones at no cost to the community. Examples of these include:

- *myCompass.org.au* - an interactive online self-help program, clinically proven to effectively address mild to-moderate symptoms of stress, anxiety, and depression; reaching more than 20,000 users;
- *Biteback.org,au* - an online positive psychology program designed to improve the overall wellbeing of young Australians between 13 and 16 years old (4,000 users in Australia in the last three months); and
- *Snapshot* - an app which measures, monitors and helps manage factors (e.g work stress, sleep, alcohol, anxiety, social supports), that may influence depression and anxiety.

In addition, Black Dog has developed programs to be used to facilitate the identification and treatment of mental health programs in general practice, one of these is:

StepCare - an online mental health service, accessible in selected primary health care practices, enabling GPs to provide timely, cost-effective early intervention and treatment for Australians with anxiety or depression. Regardless of the reason for their GP visit, all patients are screened via a mobile tablet in the practice waiting room, then assessed by their GP. Depending on their need, patients are recommended evidence-based prevention, early

intervention and treatment and monitored for 18 weeks. Trialled across 1,339 patients and 59 GPs in NSW, StepCare is now being implemented and evaluated in six Primary Health Networks across NSW, QLD, VIC and ACT. Results have been positive, of the 33% of patients with some mental health issues, 38% were new cases which would not have been previously identified.

Collaboration and Lived Experience

Working together

Black Dog works collaboratively with governments, organisations, academics and the community. Black Dog is a member of the Mindgardens Neuroscience Network, an alliance that involves the University of NSW (UNSW), South East Sydney Local Health District (SESLHD), Neuroscience Research Australia (NeuRA) with the aim of finding causes and treatments for neurological, mental and addictive problems. The Mindgardens initiative, brings together a network of internationally-recognised researchers and clinicians to address the greatest medical challenge of the 21st century – the growing burden of psychiatric and neurological disorders, ageing, drugs and alcohol and related disorders.

Lived Experience

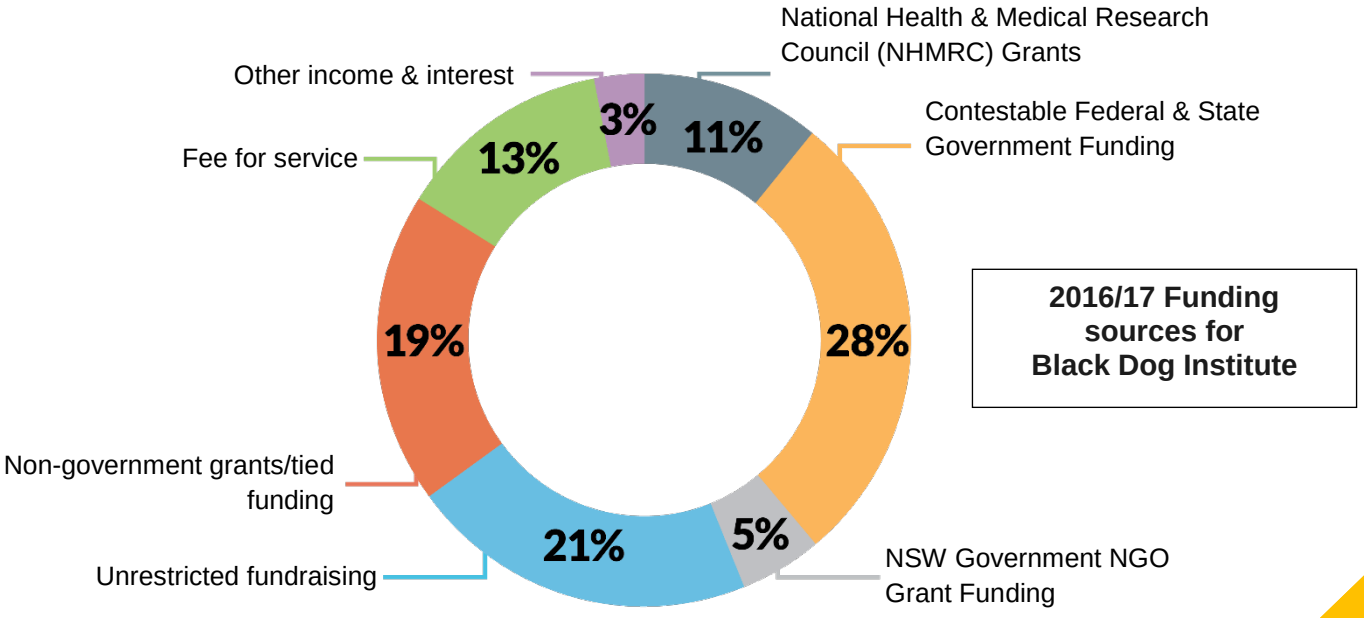
Everything Black Dog does is informed by the voice of lived experience. We support:

- 101 dedicated and highly trained lived experience presenters;
- Lived Experience Advisory Panels to improve the quality, relevance and use of Black Dog research and clinical services; and
- Thousands of consumers participating in our research trials.

Black Dog is guided by an evidence-based Lived Experience Framework we commissioned for development through the Australian National University's (ANU) Centre for Mental Health in 2017. [14]

Overall Funding

Our research and other activity is funded by competitive peer-reviewed and government grants, fee for service training, philanthropy and donations from our committed community of supporters.



Australian Government Funding for Black Dog

The Australian Government currently funds the following research and implementation programs at Black Dog. Black Dog's operational costs, for example, IT, building maintenance and wages are predominantly supported by philanthropic donations and our community fundraising.

Name of grant	Funding Period	Total grant	Funding 2018/19
Federal Department of Health			
National Suicide Prevention Trial	2017 - 2019	2,995,119	895,119
Prevention Hub Health Research Program	2018 - 2020	2,500,000	1,250,000
e-mental health in practice	2012 - 2019	3,083,804	563,757
Health workforce grant	2017 - 2019	500,000	250,000
National Health and Medical Research Council / Medical Research Future Fund			
The Centre of Research Excellence in Suicide Prevention (CRESP I)	2012 - 2018	2,490,060	-
The Centre of Research Excellence in Suicide Prevention (CRESP II)	2019 - 2023	2,466,910	199,819
Prevention of depression using e-health technologies - John Cade Fellowship	2014 - 2018	3,750,000	375,000
A Randomised Control Trial (RCT) of depression prevention in adolescents: Future Proofing Trial	2018 - 2022	2,183,737	498,353
Self-help for depression and diabetes-related distress in people with Type-2 diabetes	2015- 2018	857,251	109,557
A developmental approach to suicide prevention and related harm among Australian youth	2018 - 2021	322,952	80,738
Catch them when they fall: providing the best evidence care after a suicide attempt	2018 - 2019	179,118	82,097
Using an app for suicide prevention amongst young Indigenous people: a randomised controlled trial	2014 - 2019	918,809	40,547
Landmark population trials in suicide prevention	2019 - 2023	963,270	103,827
Australian Research Council			
Automatic speech-based assessment of mental state via mobile device	2017 - 2020	303,000	99,000
Total		**$23,931,177**	**$4,547,814**

Some of Black Dog's Activities in 2017

A list of other Black Dog's activities are outlined in our interactive Annual report for 2018 at:

https://www.blackdoginstitute.org.au/docs/default-source/annual-reports/black-dog-institute-annual-report-2018.pdf?sfvrsn=12

Mental Health – Key Statistics

By 2030 mental health disorders will be the leading cause of disease in high income countries world-wide [67].

Almost half of Australians (45%) will have a common mental health disorder in their lifetime [68].

Suicide is the leading cause of death of young Australians aged 15-44 years [69].

Every day, 8 Australians die from a mental health disorder [69].

89% of Australians know someone who has attempted suicide and 85% know someone who has died by suicide [70].

65% of people with mental illness do not access any treatment [33].

Mental health disorders, suicide and self-harm currently accounts for 14.6% of the burden of disease- the third highest cause of death in Australia (cancer 19% and cardiovascular 15%) [71].

People living with severe mental health die 14-23 years earlier than the general population [72].

Youth

75% of all cases of mental illness will occur by the time Australians reach 25 years [73].

14% or 560,000 Australians aged 4-17 years currently experience mental health issues [73].

Financial Costs vs Funding

Mental health issues currently cost Australia $70 billion per year [37].

By 2030, the total global economic cost of mental health disorders will be greater than heart disease and more than cancer, diabetes and respiratory diseases combined [74].

Yet 11 times more money is donated from the private and corporate sectors to cancer research than to mental health research, with governments doubling cancer funding [75].

In 2019 mental health research received only 1.76% of funding ($196,973) from the National Mental Health and Medical Research Council's Grant Application Round ($11.2m) [76].

In December 2017, the Commonwealth Government through the National Health and Medical Research Council (NHMRC), committed $640m to support Australia's medical research. Of this Cancer research received $109m (17%) while mental health received just $53m (8%) [77].

In the recent 2019/2020 Commonwealth Budget, mental health received only 7% ($736.6m) of the $104 billion from the Department of Health for aged care, sport and health [78].

Conclusion

Mental Health is the greatest medical challenge of the 21st century.

The evidence is in. By 2030 mental health disorders will be the leading cause of disease in high-income countries world-wide.

Suicide is now the leading cause of death of young Australians aged 15-44 years. Almost half of us will have a common mental disorder in our lifetime costing Australia $70 billion per year.

The cost is huge. The focus needs to change from cure to prevention.

A recent Australian study showed if all people living with mental illness received evidence-based treatment, 34% of this disease burden could be averted [67].

This would amount to $23.8 billion savings per year.

However, mental health research into prevention and early intervention treatments and support remains underfunded in Australia.

Mental Health disorders, suicide and self-harm accounts for **14.6%** of the burden of disease-the third highest cause of death in Australia (cancer 19% and cardiovascular 15%).

We hope Black Dog Institute's submission to the Productivity Commission Inquiry into mental health, provides insights into this major and increasing disease in Australia.

Thank you for this opportunity to participate in the inquiry. We wish you all the best in your deliberations and look forward to reading the final report.

Please do not hesitate to contact us if you require further information.

Thank you.

Scientia Professor Helen Christensen

BA (Hons)(Syd), MPsych, PhD (UNSW), FASSA, FAHMS
Director & Chief Scientist
Black Dog Institute

NHMRC Elizabeth Blackburn Fellowship - Public Health
NHMRC John Cade Fellow, NHMRC Digital Dog
NHMRC Centre for Research Excellence In Suicide Prevention

T: 02 9382 9288 E: h.christensen@blackdog.org.au
Executive Assistant │Linda Wood │ linda.wood@blackdog.org.au

Mandy Gibbens
Government & Stakholder Relations Adviser
Black Dog Institute
T: 02 9382 8502 E: m.gibbens@blackdog.org.au M: 0438 421 971

References

1. Modini, M., et al., *Supported employment for people with severe mental illness: Systematic review and meta-analysis of the international evidence.* The British Journal of Psychiatry : The Journal of Mental Science, 2016. **209**(1): p. 14-22.
2. Harvey, S.B., et al., *Severe mental illness and work: What can we do to maximise the employment opportunities for individuals with psychosis?* The Australian and New Zealand Journal of Psychiatry, 2013. **47**(5): p. 421-4.
3. Clark, D.M., *Realizing the Mass Public Benefit of Evidence-Based Psychological Therapies: The IAPT Program.* Annual Review of Clinical Psychology, 2018. **14**(1): p. 159-183.
4. Gilbody, S., et al., *Collaborative care for depression: A cumulative meta-analysis and review of longer-term outcomes.* Archives of Internal Medicine, 2006. **166**(21): p. 2314-21.
5. National Mental Health Commission, *The National Review of Mental Health Programmes and Services*. 2014, NMHC: Sydney.
6. The Senate Select Committee on Mental Health, *A national approach to mental health - from crisis to community* in *First Report*. 2006, Parliament of Australia: Canberra, Australia.
7. Mihalopoulos, C., et al., *The economic analysis of prevention in mental health programs.* Annual Review of Clinical Psychology, 2011. **7**(1): p. 169-201.
8. Bennett, D.L. and A. Bauman, *Adolescent mental health and risky sexual behaviour.* BMJ, 2000. **321**(7256): p. 251.
9. Hoagwood, K.E., et al., *Empirically based school interventions targeted at academic and mental health functioning.* Journal of Emotional and Behavioral Disorders, 2007. **15**(2): p. 66-92.
10. Jaycox, L.H., et al., *Impact of teen depression on academic, social, and physical functioning.* Pediatrics, 2009. **124**(4): p. e596.
11. Evans, E., et al., *The prevalence of suicidal phenomena in adolescents: A systematic review of population-based studies.* Suicide & life-threatening behavior, 2005. **35**(3): p. 239-50.
12. Lawrence, D., et al., *The Mental Health of Children and Adolescents. Report on the second Australian Child and Adolescent Survey of Mental Health and Wellbeing.* . 2015, Department of Health: Canberra.
13. O'Dea, B., et al., *School counselors' perspectives of a web-based stepped care mental health service for schools: Cross-sectional online survey.* JMIR Mental Health, 2017. **4**(4): p. e55-e55.
14. Neil, A.L. and H. Christensen, *Efficacy and effectiveness of school-based prevention and early intervention programs for anxiety.* Clinical Psychology Review, 2009. **29**(3): p. 208-15.
15. Perry, Y., et al., *Preventing Depression in Final Year Secondary Students: School-Based Randomized Controlled Trial.* Journal of Medical Internet Research, 2017. **19**(11): p. e369.
16. Werner-Seidler, A., et al., *School-based depression and anxiety prevention programs for young people: A systematic review and meta-analysis.* Clinical Psychology Review, 2017. **51**: p. 30-47.

17. Cuijpers, P., et al., *Preventing the onset of depressive disorders: A meta-analytic review of psychological Interventions.* American Journal of Psychiatry, 2008. **165**(10): p. 1272-1280.
18. Calear, A.L., et al., *A systematic review of psychosocial suicide prevention interventions for youth.* European child & adolescent psychiatry, 2016. **25**(5): p. 467-82.
19. Joyce, S., et al., *Workplace interventions for common mental disorders: A systematic meta-review.* Psychological Medicine, 2015. **46**(4): p. 683-697.
20. Merry, S.N., et al., *Psychological and educational interventions for preventing depression in children and adolescents.* The Cochrane Database of Systematic Reviews, 2011(12): p. Cd003380.
21. Robinson, J., et al., *What works in youth suicide prevention? A systematic review and meta-analysis.* EClinicalMedicine, 2018. **4**: p. 52-91.
22. Calear, A.L. and H. Christensen, *Review of internet-based prevention and treatment programs for anxiety and depression in children and adolescents.* Med J Aust, 2010. **192**(11 Suppl): p. S12-4.
23. Ebert, D.D., et al., *Internet and computer-based cognitive behavioral therapy for anxiety and depression in youth: a meta-analysis of randomized controlled outcome trials.* PLoS One, 2015. **10**(3): p. e0119895.
24. Perry, Y., et al., *Web-Based and Mobile Suicide Prevention Interventions for Young People: A Systematic Review.* Journal of the Canadian Academy of Child and Adolescent Psychiatry = Journal de l'Academie canadienne de psychiatrie de l'enfant et de l'adolescent, 2016. **25**(2): p. 73-79.
25. Schomerus, G., et al., *An online intervention using information on the mental health-mental illness continuum to reduce stigma.* European Psychiatry, 2016. **32**: p. 21-27.
26. Stallman, H.M., *Psychological distress in university students: A comparison with general population data.* Australian Psychologist, 2010. **45**(4): p. 249-257.
27. Williams, C.J., S. Dziurawiec, and B. Heritage, *More pain than gain: Effort–reward imbalance, burnout, and withdrawal intentions within a university student population.* Journal of Educational Psychology, 2018. **110**(3): p. 378-394.
28. Naylor, R., C. Baik, and S. Arkoudis, *Identifying attrition risk based on the first year experience.* Higher Education Research & Development, 2018. **37**(2): p. 328-342.
29. de Freitas, S.I., J. Morgan, and D. Gibson, *Will MOOCs transform learning and teaching in higher education? Engagement and course retention in online learning provision.* British Journal of Educational Technology, 2015. **46**(3): p. 455-471.
30. Harvey, S.B., et al., *Exercise and the prevention of depression: Results of the HUNT cohort study.* American Journal of Psychiatry, 2017. **175**(1): p. 28-36.
31. Most, E.I.S., P. Scheltens, and E.J.W. Van Someren, *Prevention of depression and sleep disturbances in elderly with memory-problems by activation of the biological clock with light - a randomized clinical trial.* Trials, 2010. **11**(1): p. 19.
32. O'Neil, A., et al., *Preventing mental health problems in offspring by targeting dietary intake of pregnant women.* BMC Medicine, 2014. **12**(1): p. 208.
33. Australian Institute of Health and Welfare, *Mental health services—in brief 2018*. 2018, AIHW: Cat. no. HSE 211. Canberra.
34. The Royal Australian College of General Practitioners, *General Practice: Health of the Nation 2018*. 2018, RACGP: East Melbourne, Vic.
35. Swerissen, H., S. Duckett, and J. Wright, *Chronic failure in primary medical care*. 2016, Grattan Institute: Carlton, Victoria.
36. Australian Government Department of Health, *Better Outcomes in Mental Health Care (Better Outcomes)*. 2011, Department of Health: Canberra.

37. National Mental Health Commission, *The 2017 National Report on Mental Health and Suicide Prevention*. 2017, National Mental Health Commission: Sydney.
38. Parslow, R.A., V. Lewis, and G. Marsh, *The general practitioner's role in providing mental health services to Australians, 1997 and 2007: Findings from the national surveys of mental health and wellbeing.* The Medical Journal of Australia, 2011. **195**(4): p. 205-209.
39. Powell, J., et al., *Effectiveness of a web-based cognitive-behavioral tool to improve mental well-being in the general population: randomized controlled trial.* Journal of Medical Internet Research, 2013. **15**(1): p. e2-e2.
40. Christensen, H., et al., *Effectiveness of an online insomnia program (SHUTi) for prevention of depressive episodes (the GoodNight Study): a randomised controlled trial.* The Lancet Psychiatry, 2016. **3**(4): p. 333-341.
41. While, D., et al., *Implementation of mental health service recommendations in England and Wales and suicide rates, 1997-2006: A cross-sectional and before-and-after observational study.* The Lancet, 2012. **379**(9820): p. 1005-1012.
42. Knox, K.L., et al., *Risk of suicide and related adverse outcomes after exposure to a suicide prevention programme in the US Air Force: cohort study.* BMJ, 2003. **327**(7428): p. 1376.
43. Krysinska, K., et al., *Best strategies for reducing the suicide rate in Australia.* The Australian and New Zealand Journal of Psychiatry, 2016. **50**(2): p. 115-8.
44. Mann, J.J., et al., *Suicide prevention strategies: A systematic review.* JAMA, 2005. **294**(16): p. 2064-2074.
45. Zalsman, G., et al., *Suicide prevention strategies revisited: 10-year systematic review.* Lancet Psychiatry, 2016. **3**(7): p. 646-59.
46. Harvey, S.B., et al., *Is the prevalence of mental illness increasing in Australia? Evidence from national health surveys and administrative data, 2001-2014.* Med J Aust, 2017. **206**(11): p. 490-493.
47. Harvey, S.B., et al., *Depression and work performance: an ecological study using web-based screening.* Occup Med (Lond), 2011. **61**(3): p. 209-11.
48. Knudsen, A.K., et al., *Common mental disorders and long-term sickness absence in a general working population. The Hordaland Health Study.* Acta Psychiatr Scand, 2013. **127**(4): p. 287-97.
49. Knudsen, A.K., et al., *Common mental disorders and disability pension award: seven year follow-up of the HUSK study.* J Psychosom Res, 2010. **69**(1): p. 59-67.
50. LaMontagne, A., K. Sanderson, and F. Cocker, *Estimating the economic benefits of eliminating job strain as a risk factor for depression.* Occupational and Environmental Medicine, 2011. **68**: p. A3.
51. Harvey, S.B., et al., *Can work make you mentally ill? A systematic meta-review of work-related risk factors for common mental health problems.* Occup Environ Med, 2017.
52. Harvey, S.B., et al., *The role of job strain in understanding midlife common mental disorder: a national birth cohort study.* Lancet Psychiatry, 2018. **5**(6): p. 498-506.
53. Henderson, M., et al., *Work and common psychiatric disorders.* Journal of the Royal Society of Medicine, 2011. **104**(5): p. 198-207.
54. Petrie, K., et al., *A framework to create more mentally healthy workplaces: A viewpoint.* Aust N Z J Psychiatry, 2017: p. 4867417726174.
55. Joyce, S., et al., *Workplace interventions for common mental disorders: a systematic meta-review.* Psychol Med, 2016. **46**(4): p. 683-97.

56. Gayed, A., et al., *Effectiveness of training workplace managers to understand and support the mental health needs of employees: a systematic review and meta-analysis.* Occup Environ Med, 2018. **75**(6): p. 462-470.
57. Milligan-Saville, J.S., et al., *Workplace mental health training for managers and its effect on sick leave in employees: a cluster randomised controlled trial.* Lancet Psychiatry, 2017. **4**(11): p. 850-858.
58. Bryan, B.T., et al., *Managers' response to mental health issues among their staff.* Occup Med (Lond), 2018. **68**(7): p. 464-468.
59. Gayed, A., et al., *A New Online Mental Health Training Program for Workplace Managers: Pre-Post Pilot Study Assessing Feasibility, Usability, and Possible Effectiveness.* JMIR Ment Health, 2018. **5**(3): p. e10517.
60. ANDHealth, *Digital health: Creating a new growth industry for Australia*. 2018, ANDHealth: Melbourne, Australia.
61. Proudfoot, J., et al., *Impact of a mobile phone and web program on symptom and functional outcomes for people with mild-to-moderate depression, anxiety and stress: A randomised controlled trial.* BMC Psychiatry, 2013. **13**(1): p. 312.
62. Solomon, D., et al., *e-CBT (myCompass), Antidepressant Medication, and Face-to-Face Psychological Treatment for Depression in Australia: A Cost-Effectiveness Comparison.* J Med Internet Res, 2015. **17**(11): p. e255.
63. Deady, M., Glozier, N., Calvo, R.A., Johnston, D.A., Mackinnon, A., Milne, D., Choi, I., Gayed, A., Peters, D., Bryant, R., Christensen, H., Harvey, S.B. , *Reducing depression in the workplace using a smartphone app: A randomised clinical trial.* Submitted 01 April 2019.
64. Deady, M., et al., *A smartphone application for treating depressive symptoms: study protocol for a randomised controlled trial.* BMC Psychiatry, 2018. **18**(1): p. 166.
65. Christensen, H., et al., *E-mental health services in Australia 2014: Current and future*. 2014, e-Mental Health Alliance, 2014.
66. Torous, J., et al., *Towards a consensus around standards for smartphone apps and digital mental health.* World Psychiatry, 2019. **18**(1): p. 97-98.
67. Global Consortium for the Prevention of Depression. *Why Depression Prevention*. 2018; Available from: https://preventionofdepression.org/portfolio/why-depression-prevention-2/.
68. Australian Institute of Health and Welfare, *Mental health services—in brief 2017*. 2017, AIHW: Cat. no. HSE 192. Canberra.
69. Australian Bureau of Statistics, *Causes of Death, Australia*. 2016, Australian Bureau of Statistics: Canberra, Australia.
70. Maple, M., et al., *The Ripple Effect: Understanding the Exposure and Impact of Suicide in Australia*. 2016, Suicide Prevention Australia: Sydney.
71. Australian Institute of Health and Welfare 2016, *Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011*, in *Australian Burden of Disease Study series no. 3. BOD 4*. 2016, AIHW: Canberra.
72. National Mental Health Commission, *Equally Well: The national consensus statement for improving the physical health and wellbeing of people living with mental illness*. 2016, NMHC: Sydney.
73. Australian Research Alliance for Children and Youth (ARACY), *Report Card 2018: The Wellbeing of Young People*. 2018, ARACY: Canberra.
74. Insel, T., P. Collins, and S. Hyman, *Darkness Invisible The Hidden Global Costs of Mental Illness*. Vol. 94. 2015. 127-135.

75. Batterham, P.J., et al., *NHMRC funding of mental health research.* The Medical Journal of Australia, 2016. **205**(8): p. 350-351.
76. National Health and Medical Research Council (NHMRC). *Outcomes of funding rounds*. 29 March 2019]; Available from: https://www.nhmrc.gov.au/funding/data-research/outcomes-funding-rounds.
77. National Health and Medical Research Council (NHMRC). *Major $640 million investment in Australia's world-leading medical research*. 2017; Available from: https://www.nhmrc.gov.au/about-us/news-centre/major-640-million-investment-australias-world-leading-medical-research.
78. Department of Health, *Budget 2019-20*. 2019, Australian Government: Canberra.

Contact Us

Get in touch:

Phone +61 2 9382 4530
Mail Black Dog Institute
Hospital Road
Randwick NSW 2031
Australia
ABN 12 115 954 197

www.blackdoginstitute.org.au

Find us on:

www.facebook.com
/blackdoginst

www.twitter.com
/blackdoginst

www.youtube.com/user
/BlackDogInst

www.linkedin.com/company
/black-dog-institute

Discover our online tools and resources:

Fact sheets, toolkits, self-tests www.blackdoginstitute.org.au

mycompass	Biteback	Digital Dog	CRESP
www.mycompass.org.au	www.biteback.org.au	www.digitaldog.org.au	www.cresp.edu.au

National Suicide Prevention Intelligence System - A detailed brief

15 February 2019

Creating a mentally healthier world

Black Dog Institute

Table of Contents

National Suicide Prevention Intelligence Overview

Towards a National Suicide Prevention Intelligence System

The need to address growing suicide rates by utilising timely, detailed data and insights is now well recognised nationally. Governments, clinicians, researchers and the public recognise the importance of data in helping to understand *why* suicidal behaviour occurs (i.e., its root causes and its risk factors), and *what* can be done to prevent it.

In the last two years, the Black Dog Institute has focused on acquiring a range of datasets which bring together national data on suicide deaths, attempts, and ambulance callouts for the first time. With our partners, SAS and the National Centre for Geographic Resources & Analysis in Primary Health Care (Australian National University), Black Dog recognises that better data, analytics, and systems to manage the data are needed to support our efforts to understand, evaluate, and improve suicide prevention efforts in Australia.

Our *Suicide Prevention Intelligence System (SPIS)* already collects, curates and analyses data that is required to implement many of the data elements of Fifth Mental Health and Suicide Prevention plan (*see Table 1 Appendix*). Black Dog Institute is requesting $15.3 million over three years to expand our system to include data from all States and Territories and extend our capability to inform health planning, treatment delivery and prevention / early intervention at the national level.

What data collections are available to assist in suicide prevention?

Currently, routinely collected suicide data sits across multiple national, state, and local data sets (see Table 2 Appendix). For those who want to use this data, it is unclear what, and where data can be accessed. Our *Suicide Prevention Intelligence System* pulls these datasets together, maintains them in a single location, and in doing so, transforms routinely collected data into a powerful resource for research, policy, community planning and evaluation. Table 2 outlines which data sets are already part of *SPIS*.

Why has it been so hard to bring together data sets for suicide prevention?

- Intensive efforts are required to identify datasets, to undertake intensive negotiations with data custodians, and to obtain ethics committee approvals from a range of agencies.
- Duplication of efforts across agencies and researchers has not been consolidated.
- Data gaps exist including:
  - a time lag issue (time to record data).
  - lack of data on the prevalence of suicide attempts. Data is not available on those who either present within general practice, or those who do not seek help after an attempt.
  - very little information on the health services people receive information leading up to, and after, a suicide attempt. Medicare data is too general and cannot be provided at a level which would make it informative for research or clinical care purposes.
  - no use of patient health records or other systems to track patients across health systems.
  - very little data on workforce skills and training as a basis for services mapping and planning.

What have we achieved with SPIS to date?

SPIS is now able to:

- Provide national data on suicide deaths (Coronial Data), with the exception of WA where we are awaiting the outcomes of our ethics application. The Coronial data has a time lag of approximately two years, although discussions are in progress for earlier capture. SPIS is the first collection of suicide specific data compiled in Australia with precision geocoding to accurately map where suicide incidents occur (see **Figure 1**).

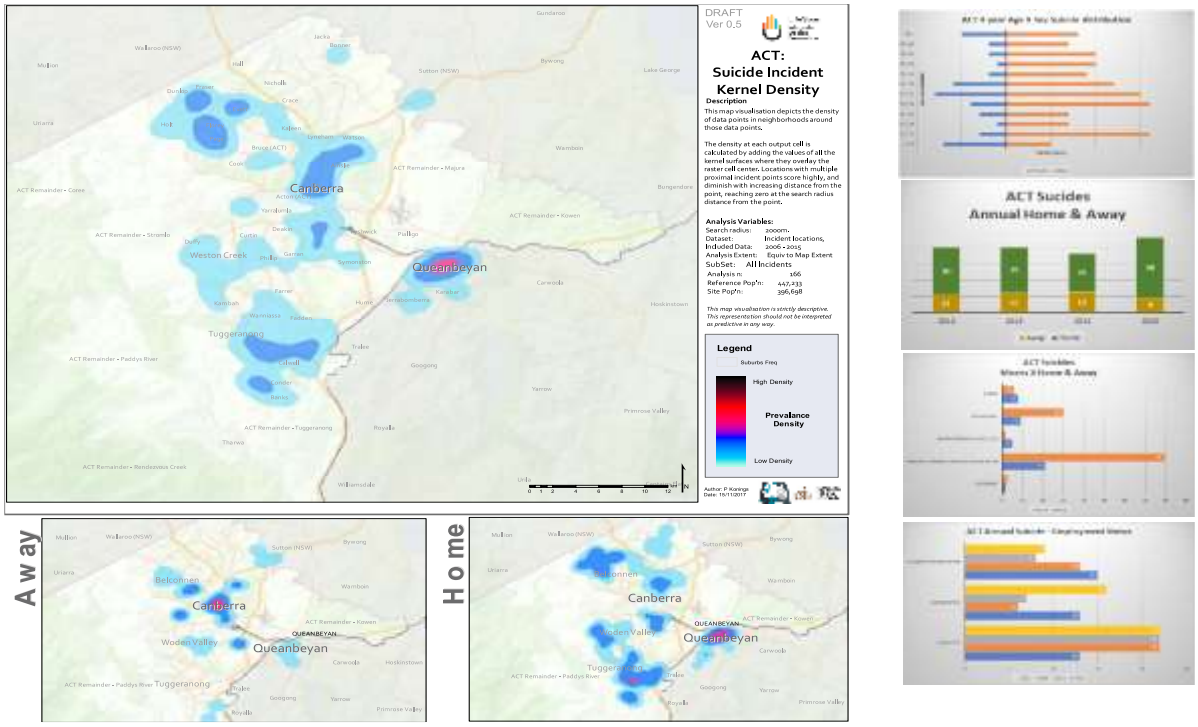


Figure 1 Shows that there is a higher density of people (non-residents) travelling to Canberra central to die by suicide, while there is a greater density of 'at home' (residents) deaths in outer suburbs.

SPIS can also:

- Geo-analyse the data in small-area geographical regions ('suicide audits') to understand where and what suicide prevention efforts are most urgently needed;
- Inform what strategies require prioritising within a defined region and assist with resource distribution (within agreed ethical approvals);
- Map data to identify changes in patterns of suicide behaviours over time, at a jurisdictional or regional level, and identify emerging suicide clusters;
- Provide information on whether suicide deaths occurred at home or away from home (deaths away from home can indicate particular geographical areas where deaths frequently occur; **Figure 1**) to confirm, or identify new, clusters in communities;
- Provide expertise to analyse the data on behalf of services, community groups, governments and others who may not have the expertise to answer key questions of interest (e.g., Is the new Suicide Prevention Strategy lowering suicide behaviour in Australia?)
- Examine and assess the incoming data to develop the highest quality suicide data currently available in Australia; and
- Provide individual-level data on hospitals, general practices, and psychological services that can be used to identify the types and number of services available within any geographical level. (see **Figure 2**). While this data is acquired via data scraping, and does not constitute an authoritative source, it nevertheless demonstrates SPIS's capability to ingest and map service level data.

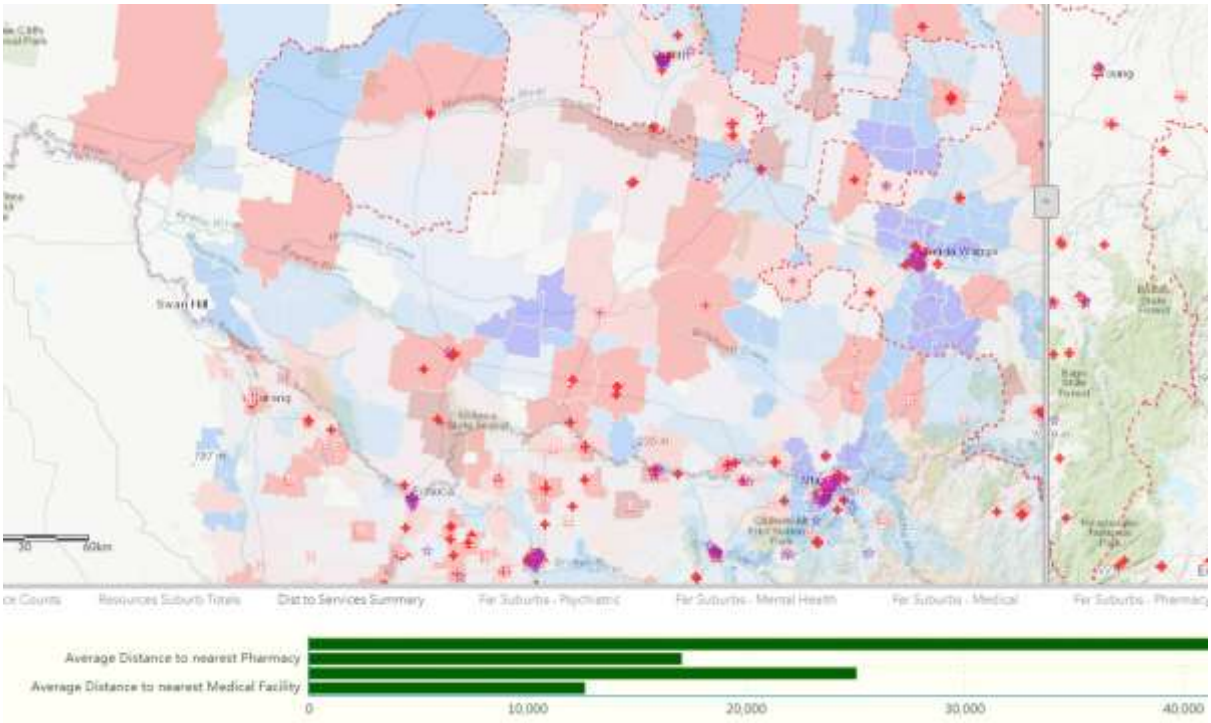


Figure 2 shows the nature and density of health services in particular locations and is able to map and locate areas where health services are absent.

What is SPIS doing now?

- Acquiring and cleaning unit level data for suicide-related ambulance call-outs, police attendances, and suicide-related hospitalisations for NSW. These require extensive cleaning and recording to make the data usable. However, when linked with other health data including coronial data, they will create a comprehensive integrated data set. Hospital data in NSW currently has a lag of approximately four months but requires a significant amount of analysis and recalibration for accuracy. The ambulance and police data can, in theory, be uploaded in relatively short periods of time, once data procedures have been streamlined. This would provide timely information on rising geographic or demographic areas of risk; and
- To ensure the accuracy of the reporting of suicide incidents, we are feeding back our cleaned data to police and working with them to develop new recording procedures to identify and resolve gaps in their current data capture.

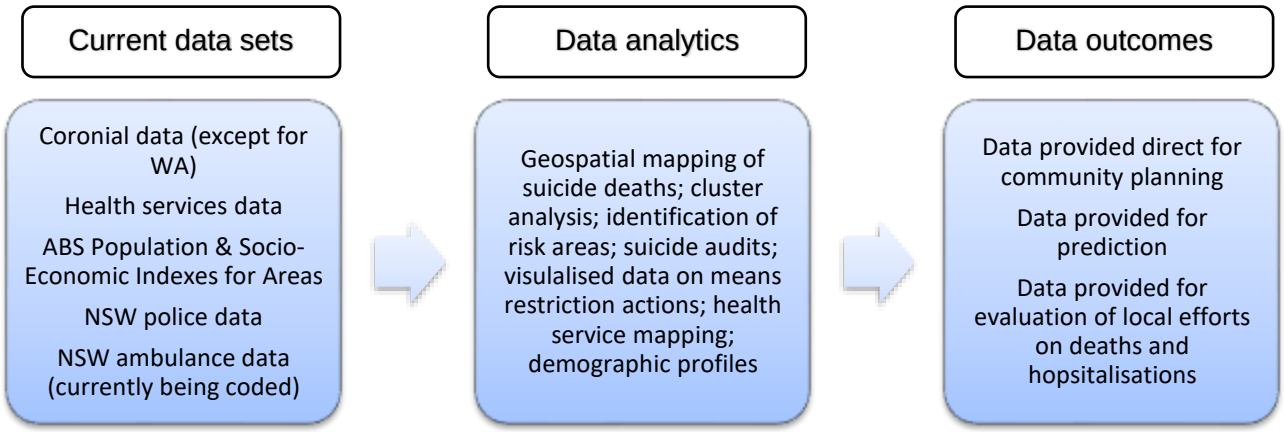
Staged Plans for SPIS National Rollout

Though much has been achieved, we need to consider what is needed to transform suicide prevention with further data capture and analysis. We have identified three stages in order to scale up our system nationally.

Stage A: Establish complete de-identified data sets for deaths and attempts (NSW): Expected completion date: April 2019

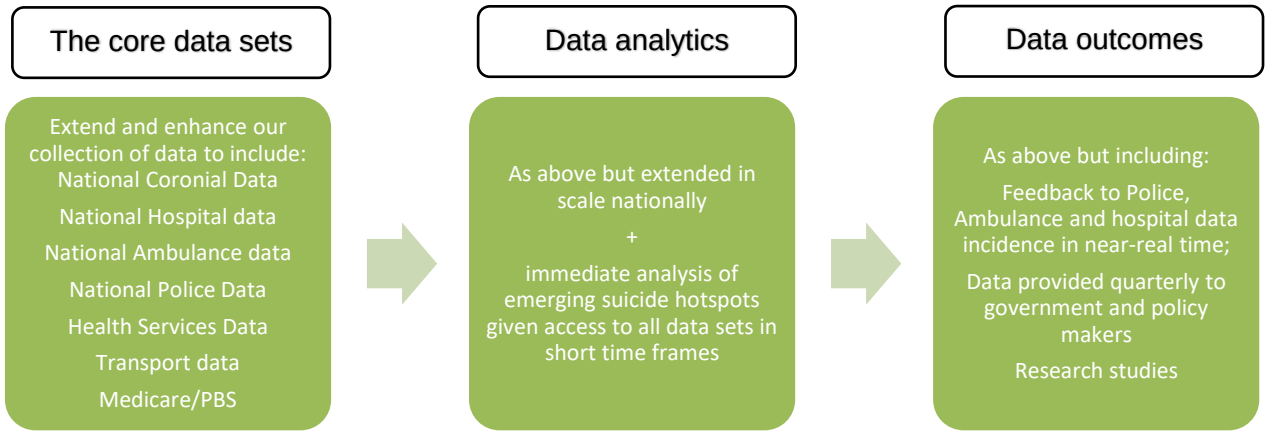
SPIS currently encapsulates the data sources and services shown in the diagram below. Data is largely complete at a national level for suicide mortality. Currently, NSW is the jurisdiction with the most complete data when taking suicide mortality, attempts and other relevant sources into account.

The diagram below shows the data sets that we currently hold in a cleaned and recoded format, the in- house capability and the purposes for which the data is currently used. The data is currently available to us in a de-identified format and can be provided at a regional level to understand local needs. Given the volume of data, we are establishing automated processes for cleaning and coding of data in order to speed up processing and reduce labour-intensive coding.



Stage B: Extend our collection of de-identified data (deaths and attempts) to encompass all relevant data sets from all States and Territories. Expected completion: December 2020.

We are seeking to establish permissions with data custodians across all States and Territories to acquire unit level, de-identified data that relate to suicide attempt (hospital admission data, emergency department data, ambulance data, police data). This will be first time these data sets will have been brought together into a single collection to provide a comprehensive picture of suicidality in Australia. Ultimately it will improve ease of access to such data to relevant stakeholders. Given the scale and importance of this task, the needs of end-users will be mapped to ensure appropriate access and governance arrangements.



Stage C: Formulation and acquisition of identifiable data sets to inform health planning, treatment and intervention. If appropriately resourced, framing and development of this stage could run in parallel with Stage B.

The acquisition of this data is a major piece of work that will require many agencies to be involved, as well as input from end users and consumers, clinicians and patients. Nevertheless, SPIS is able to curate data sets and to advise on data analyses and visualisations. This provides the opportunity to advance our understanding of individual's trajectories and care pathways, including by drawing causal inferences.

Conclusion

In collaboration with our partners, Black Dog has found intelligent and innovative ways to use multiple sources of data to save lives. The government has an opportunity to capitalise on this expertise, coupled with our strong reputation and track record, in order to fulfil its commitment to for a national suicide and self-harm monitoring system.

APPENDIX

Table 1: Data Goals of the Fifth Mental Health and Suicide Prevention Plan

GOAL of Plan	REFERENCE to action in the plan	Availability in SPIS
DEIDENTIFIED DATA		
Make "available key national data to inform regional-level understanding of service gaps, duplication and areas of need"	p.21, see also 1.5 in the implementation plan	Available Nationally in SPIS (except WA)
Increase "the quality and timeliness of data on suicide and suicide attempts"	p. 24	In progress in SPIS (NSW)
Improve data collections and combined evaluation efforts in order to build the evidence base on 'what works' in relation to preventing suicide and suicide attempts	p.25, Implementation plan 4.	Available in SPIS (National (except WA) and NSW
IDENTIFIED		
Support the development of better identification of suicide attempts in routine health collections"	p 26	Unavailable
Better measure "integrated care and follow-up after suicide attempts" with priority given to using linkage to report rates of suicide after discharge from hospital	p 26	Unavailable
Developing stronger referral pathways by mapping providers across regional areas.	Implementation 5.	Available via SPIS

SPIS Data includes:

- National Coronial Information System: NCIS BDI Access 2001 – 2019 (Nationally excluding WA)
- NSW admitted patient records (NSW, 2006-2019)
  NSW Ambulance records (4 trial sites, Jan 2013 – June 2017):
  40,733 ambulance records that are mental health related
- NSW Police records (NSW, 2009-2018):
  20,082 records for suicide deaths and attempts
  Health service mapping
- ABS Census and Socio-Economic Index datasets

Table 2: Routinely Collected Data Sets for Suicide Prevention

State	Admitted Patients	Acronym
NSW	NSW Admitted Patient Data Collection	APDC
ACT	ACT Admitted Patient Care	APC
NT	NT government public hospital	
VIC	Victorian Admitted Episodes Dataset	VAED
SA	Integrated South Australian Activity Collection	ISAAC
QLD	Queensland Hospital Admitted Patient Data Collection	QHAPDC
TAS	Tas Public Hospital Admitted Patient	
WA	Hospital Morbidity Data System	HMDS

State	Emergency Department	Acronym
NSW	NSW Emergency Department Data Collection	EDDC
ACT	Emergency Department Information System	EDIS
NT	Emergency Department Activity Collection	EDAC
VIC	Victorian Emergency Minimum Dataset	VEMD
SA	South Australia Emergency Department Data Collection	EDDC
QLD	Queensland Health Non-Admitted Patient Data Collection	QHNAPDC
TAS	Tas Public Hospital Emergency Department Presentations	
WA	Emergency Department Data Collection	EDDC

State	Ambulance	Acronym
NSW	NSW Ambulance Data Collections	CAD, PHCR, eMR
ACT	ACT Ambulance Service	ACTAS
NT	St John Ambulance Australia	
VIC	Ambulance Victoria	
SA	SA Ambulance Service	SAAS
QLD	Queensland Ambulance Service	QAS
TAS	Ambulance Tasmania	
WA	St John Ambulance Australia	

State	Police	Acronym
NSW	Computerised Operational Policing System	COPS
ACT	Australian Federal Police	AFP
NT	Police Real-time Online Management Information System	PROMIS
VIC	Law Enforcement Assistance Program	LEAP
SA	South Australia Police	SAPOL
QLD	Queensland Police Service	QPS
TAS	Tasmania Police Offence Reporting System	ORS
WA	Incident Management System	IMS

Scientia Professor Helen Christensen AO

BA (Hons)(Syd), MPsych, PhD (UNSW), FASSA, FAHMS
Director & Chief Scientist
Black Dog Institute

NHMRC Centre for Research Excellence In Suicide Prevention Hospital Road, Randwick NSW 2031
T: 02 9382 9288
Executive Assistant | Linda Wood |

Mandy Gibbens
Government & Stakholder Relations Adviser
Black Dog Institute

Contact Us

Get in touch:

Phone +61 2 9382 4530
Mail Black Dog Institute
Hospital Road
Randwick NSW 2031
Australia
ABN 12 115 954 197

www.blackdoginstitute.org.au

Find us on:

www.facebook.com/blackdoginst

www.twitter.com/blackdoginst

www.youtube.com/user/BlackDogInst

www.linkedin.com/company/black-dog-institute

Discover our online tools and resources:

Fact sheets, toolkits, self-tests www.blackdoginstitute.org.au

mycompass	Biteback	Digital Dog	CRESP
www.mycompass.org.au	www.biteback.org.au	www.digitaldog.org.au	www.cresp.edu.au

Black Dog Institute