Black Dog Institute

Submission by the

Black Dog Institute

Inquiry into the role of Commonwealth, state and territory Governments in addressing the high rates of mental health conditions experienced by first responders, emergency service workers and volunteers

Senate Education and Employment Committee

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Black Dog Institute

The Black Dog Institute is a global leader in mental health research and one of only two Medical Research Institutes in Australia to focus on mental health and suicide prevention. Uniquely, the Institute has a strategic objective to use the latest technology and other tools to quickly turn its world-class research findings into clinical services, education and e-health products that improve the lives of people with mental illness. Crucially, everything we do is informed by the voice of lived experience.

There are currently over 70 active research studies underway at the Institute in the areas of workplace mental health (including a focus on first-responders), suicide prevention, e-mental health, novel treatments, and prevention in young people. 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.

Since 2012, the Black Dog Institute, in partnership with the University of New South Wales (UNSW) has hosted Australia's largest research program focused on the mental health of first responders, emergency service workers and volunteers. Over the last six years, this multi-million dollar program of research, with core funding from the icare foundation and the Mental Health Branch of NSW Health, has produced a range of world-leading research on first responder mental health. These research outputs have led to the creation of six new mental health training packages for emergency service workers in NSW, the world's first expert guidelines on the diagnosis and treatment of post-traumatic stress disorder (PTSD) amongst emergency service workers and Australia's first Mental Health and Wellbeing Strategy for first responder organisations.

The Black Dog Institute is also a global pioneer in e-mental health, having built a body of evidence for the efficacy of online and mobile-based treatments for mental illness over the last decade. In recent years, the Institute has utilised this expertise to begin developing and testing a range of online tools and mobile phone apps to help ensure that the latest programs can be delivered without logistic or geographical constraints.

To maximise its effectiveness and reach, the Institute partners with a range of organisations including the Mental Health Branch of the NSW Government, the NSW Mental Health Commission, icare foundation, Phoenix Australia and the Royal Australian and New Zealand College of Psychiatrists. The Institute also works very closely with each of the first responder agencies in NSW and has a formal advisory role with several agencies including Fire and Rescue NSW and the Ambulance Service of NSW . Black Dog is proud to be a trusted partner of government, universities, health services, workplaces, clinicians, industry, philanthropists, and schools across the country.

Many of the research projects undertaken by the Black Dog Institute are directly relevant to the Terms of Reference of the Senate Education and Employment Committees' current inquiry in to the high rates of mental health conditions experienced by first responders, emergency service workers and volunteers. The Institute welcomes the opportunity to contribute to the Committee's important work.

The types of mental health conditions experienced by first responders

Emergency services, sometimes also called first responder organisations, are services that ensure public health and safety by responding to and preventing various emergency situations. Within Australia there are three main emergency services; police, fire and rescue and ambulance, with a range of additional voluntary emergency organisations including: State Emergency Services (SES), Marine Rescue, Rural Fire Service (RFS) and other state equivalents, life savers and other volunteer rescue associations. Workers within each of these organisations will be exposed to potentially traumatic events as part of their daily work or volunteer activities. For some first responders or emergency service workers, there is a mental health consequence to their regular exposure to trauma and human suffering. There are a range of potential mental health problems which may occur in the aftermath of a traumatic event, including depression, anxiety, acute stress disorder, PTSD, adjustment disorder, increased physical complaints and substance misuse.[1-6]

PTSD is a relatively new diagnosis but has rapidly become the signature mental health problem amongst trauma-exposed groups. While the psychological consequences of trauma have been known about for many years, PTSD was only formally recognised as a diagnostic label in the 1980s.[7] Over the last 30 years there has been considerable debate regarding the frequency of PTSD following trauma and how the psychological consequences of trauma should be managed.

PTSD describes severe and persistent stress reactions after exposure to a traumatic event. A prerequisite to the symptoms of PTSD is that an individual must be exposed to threatened or actual death or serious injury to self or others, including repeated or extreme exposure to the adverse details of traumatic events, as typically occurs with emergency workers. PTSD typically comprises four additional major clusters of symptoms:

- Re-experiencing symptoms, including intrusive memories, flashbacks, nightmares, and distress to reminders of the trauma;
- Avoidance symptoms, including active avoidance of thoughts and situational reminders of the trauma;
- Negative cognitions and mood associated with the traumatic event, such as an inability to remember important details about the event or persistent unusual ideas about the cause of consequence of the traumatic experience; and
- Arousal symptoms, including exaggerated startle response, insomnia, irritability, sleeping and concentration difficulties.

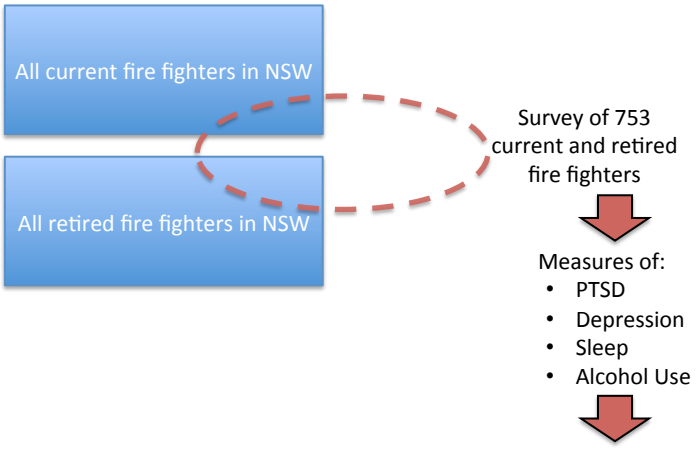
The latest version of the Diagnostic and Statistical Manual of Mental Disorders, DSM-V, requires that at least one symptom in each of these clusters be present for more than one month and be associated with significant distress or impairment in social, occupational, or other important areas of functioning.[8]

There is strong evidence that most people who are exposed to a traumatic experience commonly report post-traumatic stress reactions in the initial weeks after trauma, but that for most, these symptoms are transient.[9] For example, detailed studies of south Manhattan residents following the September 11 terrorist attacks, show rates of

probable PTSD one month after the attacks were around 7.5%, but that by six months after the incident, rates had decreased to more normal background rates of 0.6%.[10] A further study followed police responders who attended the World Trade Centre following the terrorist attacks over an eight year period.[11] Given the direct exposure to trauma, their rates PTSD were, as expected, higher than those seen in the previously mentioned studies of civilian residents. However, after eight years, 78% of police officers were classed as demonstrating a resistant/resilient trajectory of PTSD symptoms, with a further 8% classed as continuing to recover.[11]

Despite a general trend for symptoms to occur soon after a traumatic event, then gradually abate, it is also important to note that there are a number of different trajectories the emergence of mental health symptoms can follow. The most notable example of this is delayed-onset PTSD, where the initial symptoms present more than six months after a traumatic incident. In the eight year follow up of police officers attending the World Trade Centre attack described above, 9% of officers were described as having a delayed onset of PTSD symptoms.[11]

Emergency workers with PTSD may present in different ways. Individual emergency workers may experience a gradual build up of distress and symptoms over a prolonged period of time or alternatively they may present with an acute onset of symptoms after a single event.[12] Given the culture of first response work, many emergency workers will attempt to minimize post-trauma symptoms, so may present initially with more indirect symptoms, such as substance abuse, interpersonal conflict or violent outbursts.[13]



	Current	Retired	Total
	% [95% CI]	% [95% CI]	% [95% CI]
PTSD	7.7 [4.3–11.0]	17.9 [12.9–22.8]	12.7 [9.7–15.6]
Depression	4.9 [2.3–7.5]	18.1 [13.3–23.0]	11.3 [8.5–14.0]
Heavy drinking	4.1 [1.7–6.4]	7.2 [4.0–10.4]	5.6 [3.6–7.5]
Any disorder	13.1 [9.1–17.2]	27.2 [21.8–32.7]	20.0 [16.6–23.4]

Figure 1: Summary of the findings from the Black Dog Institute's study into the mental health of current and retired fire fighters in NSW

As a result of these complexities, there has been some debate regarding the exact prevalence of PTSD amongst emergency workers. However, a recently published systematic review and meta-regression examining the results of international studies of over 20,000 emergency workers, concluded that the prevalence of PTSD amongst current emergency service workers or first responders was 10%.[14] Until recently we didn't know whether these figures were relevant for emergency service workers living in Australia.

In 2016, our research team published a large survey of the mental health of emergency workers in NSW. This study (the results of which are summarised in Figure 1)[15] demonstrated that 8% of currently working emergency service workers had symptoms suggestive of PTSD, with similar numbers reporting significant depression. Rates of mental illness amongst retired emergency service workers were even higher, with more than one in six reporting symptoms of PTSD.[15] In response to suggestions that paramedics may be at particularly increased risk,[14] the Institute has also undertaken the largest and most comprehensive systematic review of the mental health of ambulance personnel. Our results demonstrated rates of 11% for PTSD, 15% for depression, 15% for anxiety, and 27% for general psychological distress amongst ambulance personnel.[16]

In addition to the high rates of distress and dysfunction caused by PTSD, depression, anxiety and substance misuse problems amongst first responders, there is also a tragic and unacceptably high number of emergency service workers who die by suicide each year.[17] While national coronial data is able to provide estimates of the number of currently serving Australian emergency service workers who die by suicide (more than 100 over the last decade), rates of suicide amongst retired first responders have been much harder to estimate.

Why do first responders have such high rates of mental ill health?

The most obvious cause of the elevated rates of mental ill health amongst first responders is their repeated exposure to trauma. Many emergency workers exposed to repeat traumas demonstrate sensitisation, with increasingly severe responses to each successive trauma exposure, or kindling, when lesser traumatic events that previously would not have caused them distress, begin to generate mental health problems.[18] As shown in Figure 2, research conducted at the Black Dog Institute has shown that amongst Australian emergency service workers there is a clear and steady increase in symptoms of PTSD, depression and sleep problems as the cumulative burden of trauma accumulates.

Although our research has highlighted the important role trauma plays in the mental health of emergency service workers, we have also looked at other types of workplace stressors. The importance of considering other non-trauma workplace risk factors is, unlike trauma exposure, that they may be modifiable, to increase first responders resilience to their inevitable trauma exposure. In 2017 we published the first ever meta-review of all the international literature linking different types of work situations to

mental ill health.[19] As demonstrated in Figure 3, this review allowed us to propose a new model of how various workplace risk factors may overlap and contribute to the overall risk of worker mental ill health.

Figure 2: Data from the Black Dog Institute's survey of NSW fire fighters showing the impact of cumulative trauma exposure on a variety of mental health outcomes.[15]

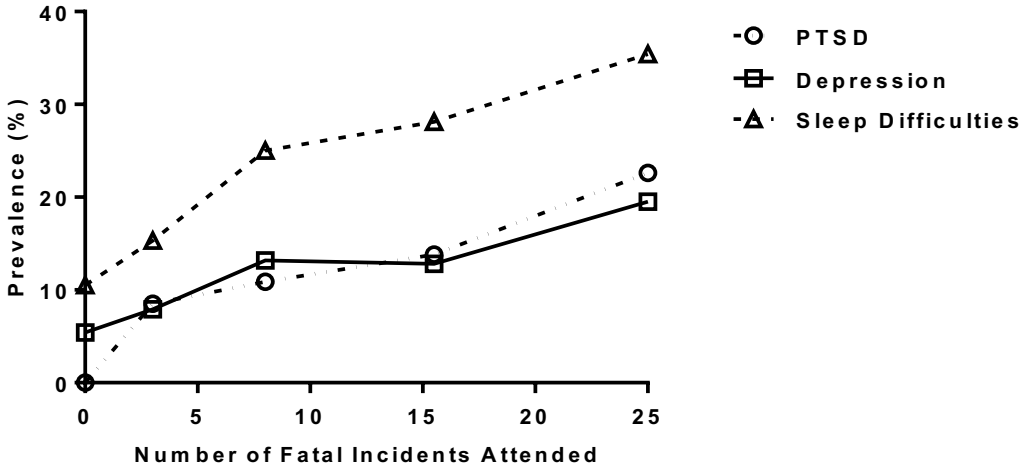
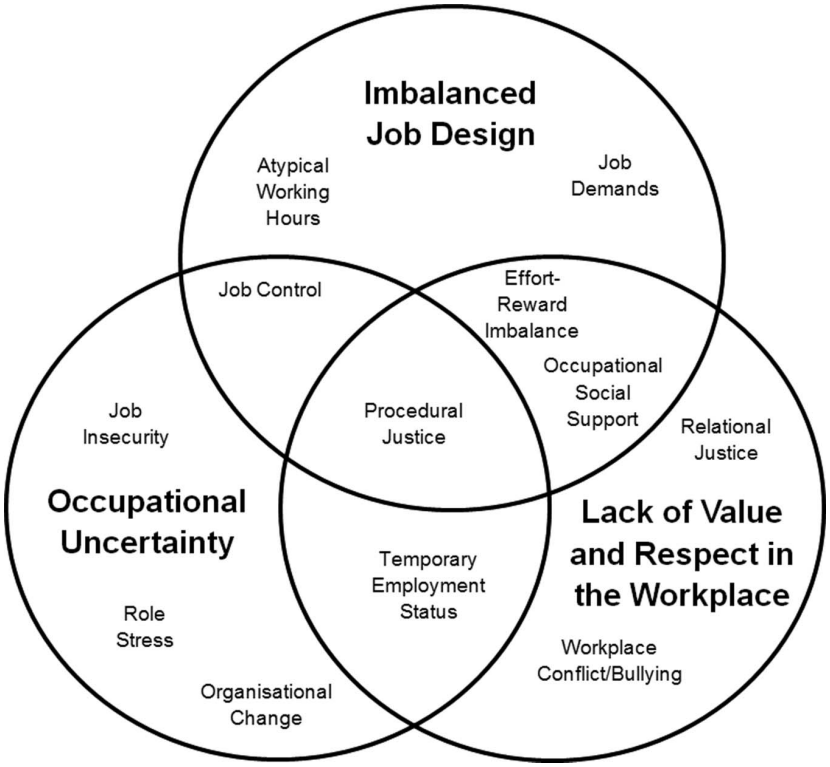
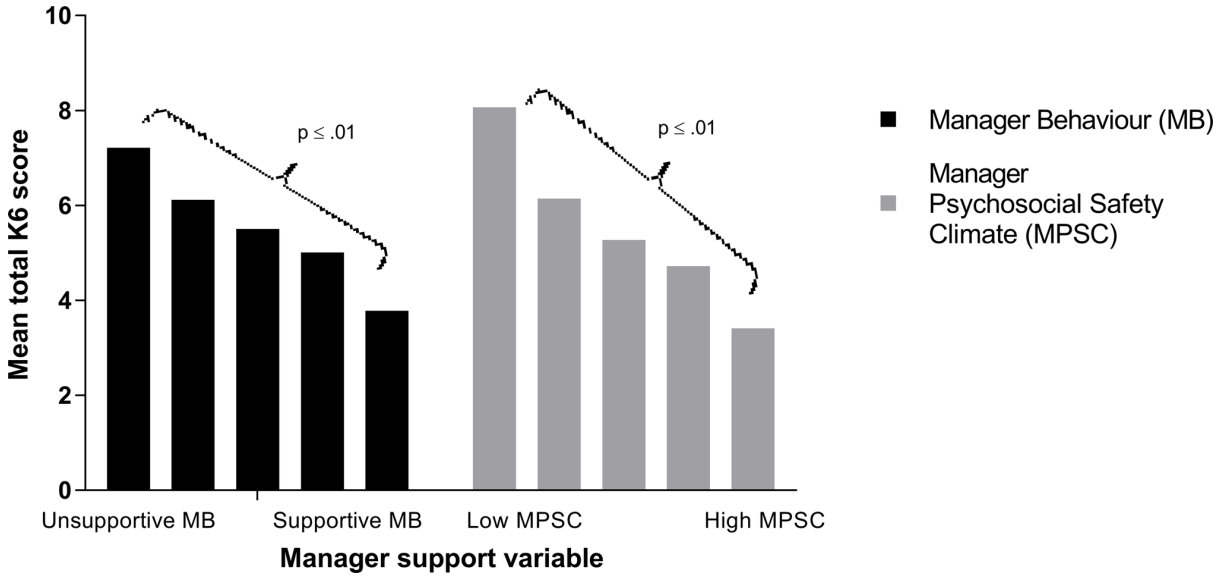


Figure 3: Our proposed model of how various non-trauma workplace risk factors for mental health may overlap and interact with each other.[19]



As noted in Figure 3, the level of value and respect in the workplace can be an important predictor of the mental health of workers. Studies of military veterans returning from deployment in the 2003 Iraq War, demonstrated that the overall morale and senior support in units was a strong predictor of the likelihood of later PTSD.[20] The Black Dog Institute has recently completed a study examining paramedics experience of leadership and the influence that this has on their mental health and wellbeing.[21] As shown in Figure 4, the results from this are clear, those paramedics who report more supportive manager behaviour and managers with a high regard for their wellbeing and safety (termed psychosocial safety climate), reported substantially few mental health problems. As discussed in the sections below, such findings have important implications for possible interventions and training programs within emergency service organisations.

Figure 4: Data from a Black Dog Institute study of ambulance personnel showing the links between manager behaviour and the psychosocial safety climate of the workplace and mental health symptoms (as measured by the K6 questionnaire).[21]



What can be done to improve the mental health and wellbeing of first responders?

The need for an evidence-based approach

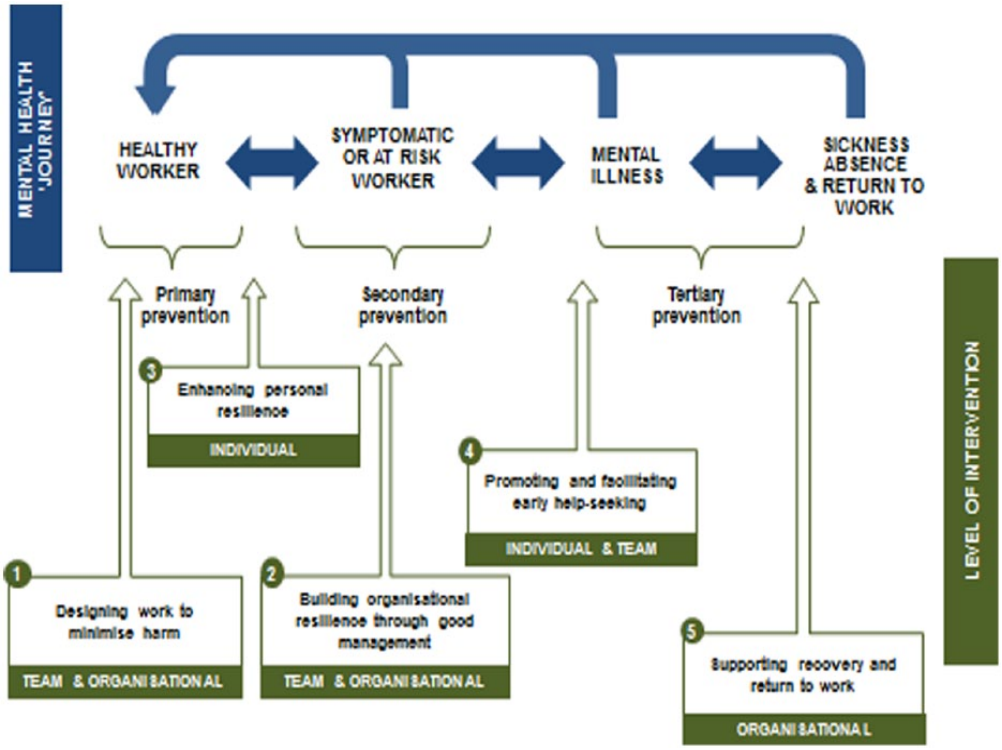
Emergency service organisations are by their nature, proactive responsive agencies who like to solve problems quickly. In my contact with each of the emergency service organisations, I have been struck by the overwhelming desire amongst senior leaders to want to do the right thing to protect their staff. While both attributes are undoubtedly positive, in the past they may have contributed to large scale implementation of mental

health interventions that did not yet have an adequate evidence base. While often driven by a desire to help, these types of interventions can have unintended consequences.

Perhaps the most pertinent example of this is the case of psychological debriefing. The provision of psychological debriefing in the aftermath of trauma exposure became very common amongst emergency service organisations during the 1980s and 1990s. There were various types of debriefings used during this period, but they all tended to involve promoting some form of emotional processing, ventilation or re-working of a potentially traumatic event. The aim of debriefing was usually to reduce the level of distress after a traumatic event and to prevent the development of psychiatric disorders. While debriefing was very popular, concerns about the lack of research evidence supporting its use began to be raised in the late 1990s, by which time it was almost ubiquitous amongst first responder agencies. In 1998, a landmark systematic review and meta-analysis was published by the Cochrane Library, which was subsequently updated in 2002.[22,23] It brought together all published trials examining the impact of brief psychological debriefing following exposure to a traumatic event. The 15 trials that this review included told a clear story; debriefing did not prevent the onset of PTSD, depression or anxiety. In fact, some trials reported an increased risk of PTSD amongst those who received debriefing. As a result of this finding, it was recommended that compulsory debriefing after traumatic events should cease.[24] It is likely that forcing individuals to undergo a debriefing immediately after a traumatic incident got in the way of their usual coping mechanisms and made them less resilient.

Having learned from what occurred with debriefing in the 1980s and 1990s, the Black Dog Institute has strongly advocated that emergency service organisations should only use mental health interventions that have been properly evaluated, ideally via a randomized control trial. As outlined below, we have shown that these types of controlled studies can be performed amongst working first responders and can provide clear guidance on what interventions should be used. In order to help organisations navigate their way towards evidence-based workplace mental health solutions, in 2017 we published a framework on what a mentally healthy workplace should look like.[25] As outlined in Figure 5, this framework showed how a mentally healthy workplace should have a range of initiatives to help prevent mental health problems as well as separate programs to ensure a rapid, evidence based approach when someone becomes unwell. Our framework also highlighted how interventions need to be directed at individual workers, team leaders and the whole organisation in order to have the greatest chance of success. We have worked with the NSW Mental Health Commission on how this framework and the evidence-base could be used to create specific guidance for emergency service organisations. This joint work led to the NSW Government launching the first ever Mental Health and Wellbeing Strategy for First Responder Organisations in 2016, which is now able to help each of the emergency service agencies in NSW structure their interventions.

Figure 5: Our published evidence-based framework for how any organisations, including emergency service agencies, can create a mentally healthy workplace.



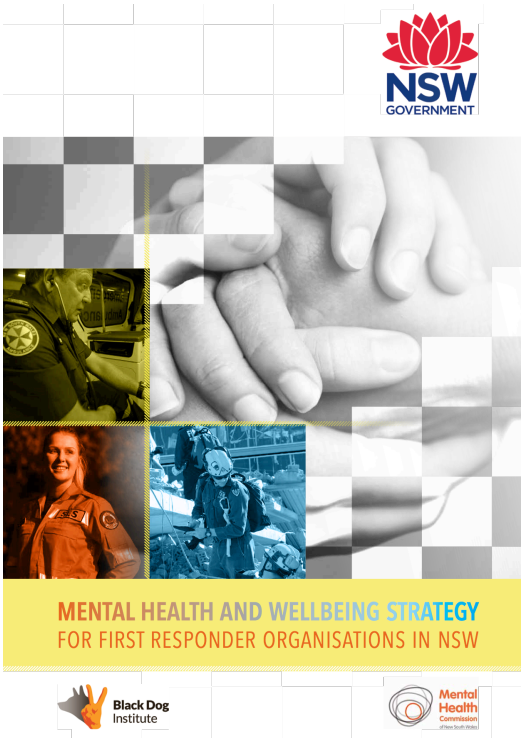


Figure 6: Mental Health and Wellbeing Strategy for First Responder Organisations, which was published jointly by the NSW Government, the Black Dog Institute and the NSW Mental Health Commission in 2016. (nswmentalhealthcommission.com.au/mental-health-and-wellbeing-strategy-for-first-responder-organisations-in-nsw)

Preventing mental health problems before they occur

Over the last decade we have realised that a significant number of cases of mental illness in the community may be preventable, either through modifying risk factors or by teaching mental health resilience skills.[26] This is a very exciting development, although translating this research into practical and effective public health campaigns has proved difficult.

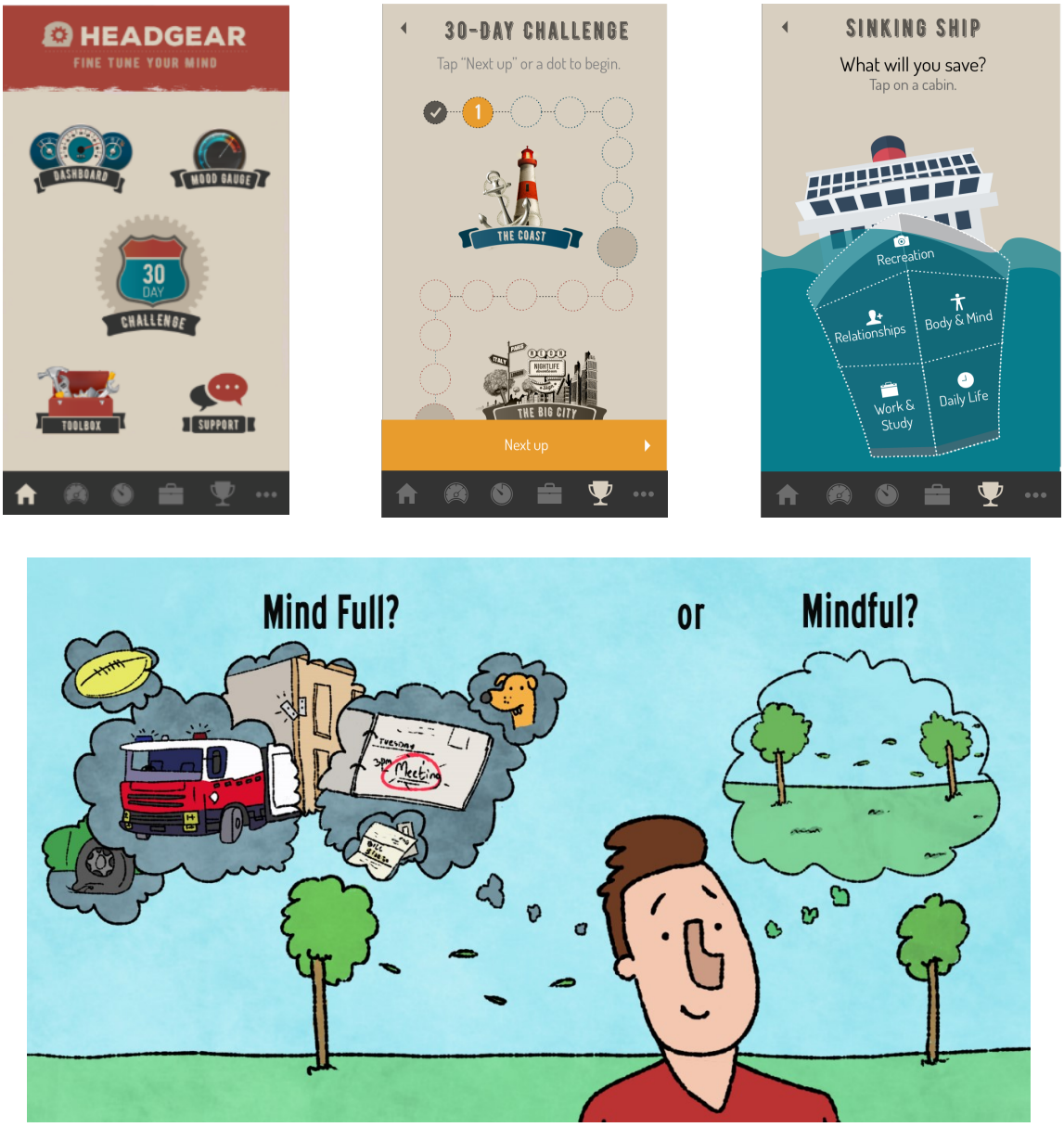
Our research team has worked closely with each of the emergency services in NSW to examine how this emerging research regarding the prevention of mental illness could be utilised amongst first responder organisations. These discussions have resulted in two parallel programs of research; firstly a closer examination of whether pre-employment screening is able to help prevent the development of mental health problems, and secondly the development of a new online or smartphone based resilience training programs.

In 2017, we published the first ever systematic review of pre-employment or pre-duty mental health screening amongst emergency service workers. We were surprised to discover that there is very little evidence to support the use of many of the most commonly used screening instruments. We have been working together with some of the emergency services in NSW to try and link 'real world' pre-employment screening data to mental health outcomes. The results of this research should be available in late 2018.

In terms of resilience or other prevention programs, we have been developing and testing two products; an online resilience program, termed *Resilience at Work (RAW) mindfulness* and a smartphone-based application termed *HeadGear*. RAW mindfulness is an on line training program based on evidence-based principles such as mindfulness-based cognitive therapy (mb-CBT) and Acceptance and Commitment Therapy (ACT).[27] The overall effectiveness of the RAW program is being evaluated by a world-first randomised controlled trial (RCT) involving one of the first responder agencies in NSW. The early indications from this trial are that online programs such as RAW can indeed increase resilience, though the flow on effects of this in terms of any reduction in later mental health problems is yet to be known.

HeadGear is a smartphone application which has been developed using funds obtained from *Beyondblue* and the *Movember Foundation.* This app allows workers to screen themselves for symptoms and baseline risk of mental health problems and to undertake a '30-day mental health challenge', which is customised to try and reduce their risk of new mental health problems. The RCT of HeadGear involved participants from several emergency service agencies. It will be completed in 2018 and will be the largest ever controlled trial of a mental health smartphone application. Some screenshots from the HeadGear application are shown in Figure 7.

Figure 7: Screenshots from the *HeadGear* smartphone application and *RAW* online resilience training, both of which are currently being trialled amongst first responders in NSW.



Ensuring first responders get appropriate help when needed

Emergency workers are often slow to ask for help, especially when it comes to their mental health. Based on our consultations with first responders, we identified three factors that appeared to be contributing to delays in emergency service workers getting appropriate help for mental health problems:

1. The stigma associated with mental illness;
2. Emergency workers being unaware of their own need for help; and
3. Those in positions of responsibility not knowing how to respond when one of their staff asks for help.

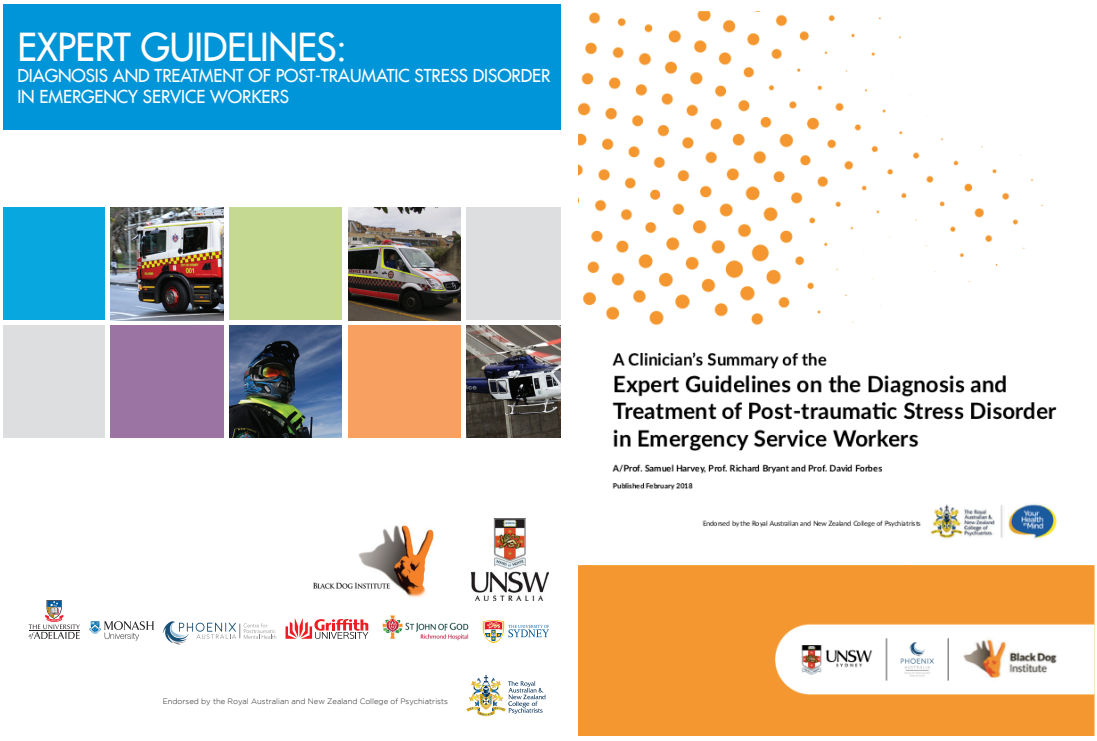
We have worked with each of the emergency services in NSW to develop new initiatives to address each of these factors.

Firstly, together with Prof Richard Bryant's team from the School of Psychology at UNSW, we developed a new program of mental health education and stigma reduction, called 'Fit Mind'. This education program is now given to new fire fighter recruits in NSW and is part of an ongoing controlled trial to evaluate its effectiveness at improving help-seeking behaviour. Undertaking this trial is critical as so far there has been significant doubt about whether educating trauma exposed workers about the risk is a helpful or harmful intervention.[28]

Secondly, we collaborated with Fire and Rescue NSW and Employers Mutual Ltd to create a new half-day program of manager mental health training, which aimed to teach Duty Commanders how to have conversations about mental health with their staff. The development of this intervention was partly guided by the new research data we were collecting regarding the importance of senior support (described above) and our increasing understanding of what types of workplace mental health training for Managers is most effective.[29] The effectiveness of this program was evaluated via a randomised controlled trial (RCT). The results showed that managers who received this training remained significantly more confident in discussing mental health matters with their staff over a 6-month follow up period and reported substantial changes in their behaviour. We were also able to show that teams in which the manager received this type of mental health training had a 15% reduction in work-related sickness absence, resulting in a return of investment for the emergency service agency of $10 for each dollar spent on this training. The results of this world-first study were published in the Lancet Psychiatry and received significant press interest.[30] We are now working together with beyondblue, the Movember Foundation and ambulance organisations in two states to develop and test an online version of this manager mental health training program, called *HeadCoach*.[31]

In spite of all of the initiatives outlined above, some emergency service workers will still develop mental illness. We now have effective treatment for most of the mental health problems first responders develop. As a result, when an emergency worker becomes unwell, they should be able to hope for a good recovery, both in terms of reduced symptoms and improved day-to-day functioning. However, sadly not all first responders receive the most up to date evidence-based treatment when they seek help. There are many possible reasons for this; emergency workers may present with different types or onset of symptoms compared to the general population and may also need modified treatment plans that take account of their unique work situation. To help ensure emergency workers receive the best possible treatment, Black Dog Institute in conjunction with Employers Mutual Ltd, Phoenix Australia, UNSW and other bodies, developed the first ever expert guidelines on the diagnosis and treatment of post-traumatic stress disorder amongst emergency service workers. These guidelines were launched by the NSW Minister for Mental Health at Parliament House in October 2015. Since their launch these guidelines have created substantial international interest and have been officially endorsed by the Australian and New Zealand Royal College of Psychiatrists.

Figure 8: The world-first expert guidelines for how PTSD should be diagnosed and treated amongst emergency service workers, published in 2015, and the brief clinician guide to these, published in 2018 (https://www.blackdoginstitute.org.au/news/news-detail/2018/05/22/helping-clinicians-diagnose-and-treat-ptsd-in-emergency-service-workers)



Conclusions and recommendations

Mental ill health is a major issue amongst first responders. We thank the Senate Education and Employment Committee for taking an interest in this problem and hope that the information contained in our submission is useful.

As outlined in our submission, Australia is now leading the world in developing evidence-based solutions to how first responders can be better protected against mental illness while undertaking their essential work and how to ensure that those who do develop mental health symptoms are able to get early, high quality assistance. The results of research being conducted at the Black Dog Institute in partnership with a range of other academic bodies and emergency service organisations provides hope that there are a range of interventions that can help. In particular, we now have: a truly evidence-based manager mental health training program for first responder organisations; very promising results from the first trials of online and smartphone-based prevention programs and there are a suite of evidence-based treatment options now available.

However, in spite of this optimism it needs to be acknowledged that much more needs to be done and there are some key questions that remain unanswered. There is still

a very limited understanding of how mental health symptoms and the associated neurobiological changes evolve over time amongst first responders. As a result, the key question of whether regular screening and monitoring of first responders can reduce the impact of mental illness remains unknown. While some advocate for regular mental health screening of all first responders, the fact is that large trials of mental health screening amongst other trauma-exposed groups, such as the military, have so far failed to show any positive effect.[32] As noted above, the example of debriefing in the 1980s and 1990s provides a cautionary tale of the dangers of a wide scale roll out of unproven mental health interventions.

The Black Dog Institute has the ability to undertake the next step in prevention and early intervention of Post-traumatic Stress Disorders in emergency service workers. A controlled trial focusing on mental health screening and active monitoring by utilising advanced research and psychological and biological testing could be undertaken. Funding such research would, for the first time anywhere in the world, provide emergency service sectors with much needed evidence-based mental health monitoring and screening..

Another major gap in the available research is retired or retiring first responders. There is increasing anecdotal and survey-based evidence that retired emergency workers may be at particularly high risk of mental health problems such as PTSD. However, to date there have not been any prospective studies of this group nor controlled testing of any interventions.

We highlight these two gaps in the evidence not to suggest that they are the only limits to our knowledge. If required, we could provide a much longer list of key questions that need to be answered. However, we feel these two are particularly pertinent as they are without doubt major issues that must be addressed, but to date we have been unable to secure competitive research funding to study these problems.

We hope this submission is helpful to the Committee's work. We would be very happy to provide further details on any of our research or opinions if needed.

Funding acknowledgement

The Black Dog Institute's program of research focused on the mental health of first responders is jointly funded by the icare foundation and the Mental Health Branch of the NSW Department of Health. Additional funding for some of the studies mentioned in this submission has come from beyondblue, the Movember Foundation and Employers Mutual Ltd.

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