EXECUTIVE SUMMARY

Background

Research into warlike service has often occurred after the actual conflict. The 2010 ADF Mental Health Prevalence and Wellbeing Study that forms the basis for this report was conducted at a time when Australia had been involved in warlike service for more than a decade and currently had soldiers deployed in combat. This means the findings are directly applicable not only to current ADF policy and programs but also to the service planning required to meet the future needs of currently serving ADF members after their military service ends.

As summarised in Table ES.1, the study had three goals – to establish the baseline prevalence of mental disorder, to refine current mental health detection methods and to investigate the specific occupational stressors that influence mental health.
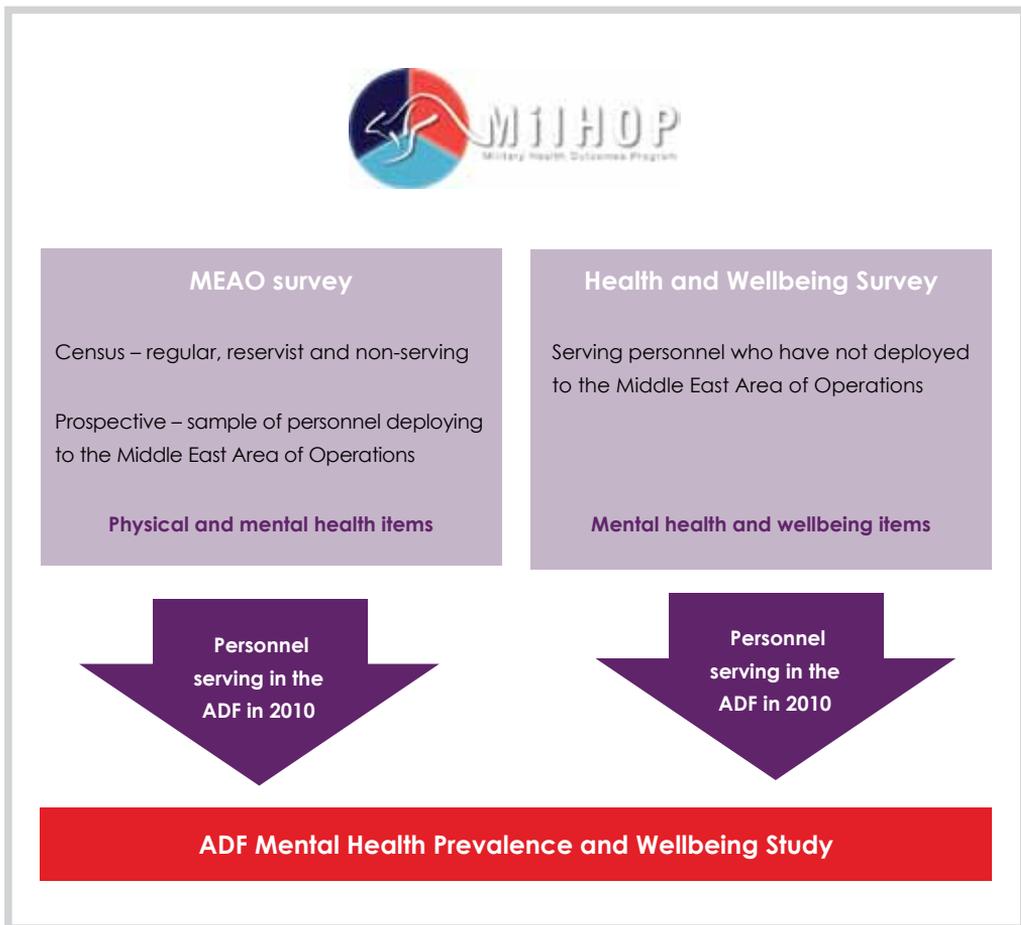
Table ES.1: *Study goals and report sections*

Study goals		Report sections	
Prevalence – Establish ADF baseline prevalence rates of mental disorders in order to target mental health services and identify high-risk groups		**Section 1** – Provides a summary of the 12-month prevalence of mental disorder in the ADF and identifies subgroups that warrant more investigation	
Detection – Refine methods for detecting mental disorders in ADF populations		**Section 2** – Examines the performance of mental health instruments currently used in the ADF	
Occupational issues – Explore the impact of occupational stressors on the mental health and wellbeing of the ADF population		**Section 3** – Explores selected occupational issues of relevance to the mental health strategy	
Predictive factors	**Wellbeing outcomes**	**Predictive factors**	**Wellbeing outcomes**
Deployment history	Help seeking	Deployment history	Help seeking
Trauma exposure	Resilience	Trauma exposure	
Level of social support	Physical health	Stigma and barriers to care	
Bullying	Mild traumatic brain injury		
Recognition of service	Sleep and anger		
Stigma and barriers to care	Family relationship		
Dietary supplements	Support networks		
Caffeine and tobacco use	Quality of life		

Methodology

Joint Health Command determined that the most efficient way to achieve the goals of the Mental Health Prevalence and Wellbeing Study was to combine it with the existing Deployment Health Surveillance Program studies into the impact of deployment to the Middle East Area of Operations (MEAO) to form the Military Health Outcomes Program (see Figure ES.1). The MEAO surveys were conducted by the Centre for Military and Veterans' Health, while the Health and Wellbeing Survey was a collaboration between the Directorate of Strategic and Operational Mental Health and the Centre for Traumatic Stress Studies at the University of Adelaide. The target population for the current study was all regular ADF personnel who were serving in 2010 (N=50,049).
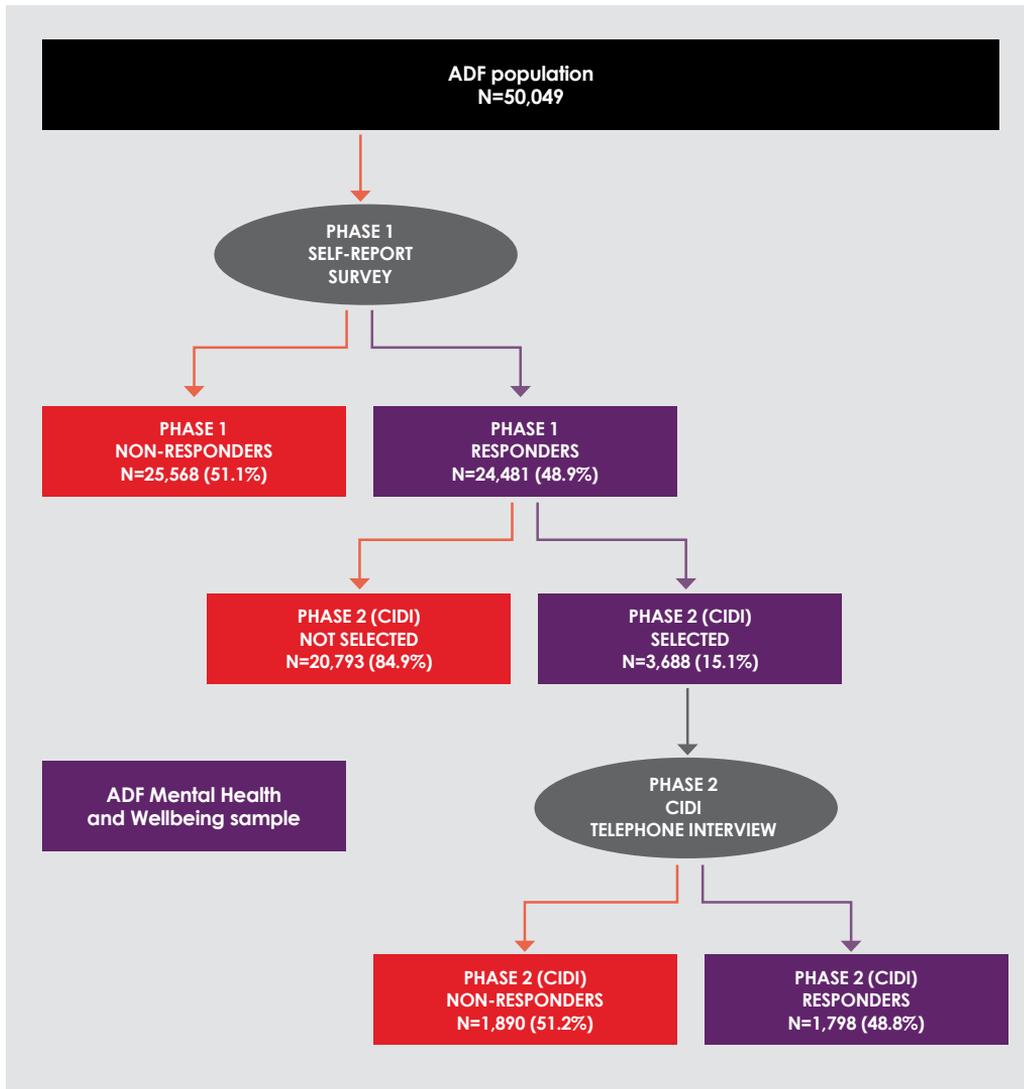
Figure ES.1: *Data sources for the Mental Health Prevalence and Wellbeing Study*

Mental disorder prevalence estimates were obtained using a two-phase design (see Figure ES.2). In the first phase, ADF personnel were surveyed using a self-report screening questionnaire. In the second phase, a subset of these respondents were interviewed, with priority given to ADF members who were identified as being more likely to have a mental health problem based on their Phase 1 screening questionnaire. As the ADF population characteristics are known (that is, sex, Service, medical employment

classification status and deployment history), it was possible to compare personnel who responded to the survey with personnel who did not. This allowed weighting of the data to provide estimates of prevalence that are representative of the entire serving regular ADF.

Figure ES.2: *Flowchart of participation in the Mental Health Prevalence and Wellbeing Study*

As at 31 January 2011, 52.5% (26,281) of ADF personnel had agreed to participate in Phase 1 of the study, 8.6% (4,293) had declined, and 38.9% (19,475) had not responded. The breakdown of individuals with enough data to be included in the report is summarised in Table ES.2. The data in the study do not include reservists or ex-serving personnel – information on the mental health of these groups will only become available with the publication of the MEAO Census Study in mid-2012.

In the second phase, a sample of 1,798 ADF personnel who had completed the self-report questionnaire and agreed to further follow-up were telephoned and asked to take part in a structured diagnostic interview, specifically, the World Mental Health Survey Initiative version of the World Health Organization's Composite International Diagnostic Interview (CIDI), version 3.0. This sample of personnel was selected on the basis of their sex, Service and scores on the self-report measures, including low, medium and high scores, which allowed weighting in proportion to the entire ADF population.

Table ES.2: Response rates by Service for the Mental Health Prevalence and Wellbeing Study

	Population	Respondents	Rate
Total ADF	50,049	24,481	48.9%
Navy	11,612	5,392	46.4%
Army	25,356	11,429	45.1%
Air Force	13,081	7,660	58.6%

Note: 52.5% of the ADF consented to participate but only 48.9% provided usable data.

The characteristics of respondents in Phase 1 included:

• Sex – consistent with the ADF population, the sample was predominantly male (84.1%, versus 15.9% for females), although ADF females were more likely to respond than ADF males.

• Service – 22% of survey respondents were Navy, 46.7% were Army and 31.3% were Air Force. When the different Services were compared, Air Force personnel were most likely to respond and Army personnel were least likely.

• Age – the response rates were lower in the younger age groups. This was particularly notable among those aged between 18 and 27.

• Marital status – ADF personnel who were married were more likely to respond: 77.1% of the respondents were married in contrast to 62.9% of the overall ADF who were married.

• Medical employment classification (MEC) – ADF personnel who were classified as MEC 1 were slightly under-represented in the respondent group (61.1%) compared to the total ADF population (65.6%) classified as MEC 1. ADF personnel who were MEC 2 and MEC 3 were slightly over-represented.

• Rank – ADF personnel in other ranks had a significantly lower response rate. Only 19.7% of other ranks responded, compared to 31.4% of other ranks across the ADF. In contrast, non-commissioned officers were more likely to respond.

• Deployment and education – neither had much impact on the response rates.

The weighting process allowed for differences in demographic characteristics to be adjusted for, allowing estimates to be calculated for the entire ADF population. The two stages in the weighting process, combined with the 48.9% response rate and oversampling of high scorers, enabled the study to provide valid estimates of prevalence that minimise the chance of random error and hence provide confidence that the estimates are accurate.

The CIDI is a best-practice tool for determining mental disorder prevalence rates and was used in the 2007 ABS National Survey of Mental Health and Wellbeing. A mental disorder is the existence of a clinically recognisable set of symptoms or behaviours associated, in most cases, with distress and with interference with personal functioning.

The World Health Organization's International Classification of Diseases system (ICD-10) was used for the definition and the study focused on the three most common types of mental disorder, specifically:

- affective disorders (depressive episodes, dysthymia and bipolar affective disorder)

- anxiety disorders (panic attacks, panic disorder, post-traumatic stress disorder, obsessive-compulsive disorder, generalised anxiety disorder, specific phobia, social phobia and agoraphobia)

- alcohol disorders (alcohol harmful use and alcohol dependence).

Prevalence of mental disorders in the ADF

Comparison with the Australian community

In order to interpret and fully understand the rates of mental disorders reported in the ADF, normative mental health data on the Australian community were obtained from the Australian Bureau of Statistics. These data, derived from the 2007 ABS National Survey of Mental Health and Wellbeing, were adjusted to match the demographic characteristics of the currently serving ADF population (for age, sex and employment status). This allowed a direct comparison to be made between the estimated prevalence of mental disorders in the serving ADF population and the Australian community sample.

Table ES.3 gives an overview of the lifetime and 12-month prevalence of mental disorders in the ADF compared to the Australian community. Lifetime prevalence is the estimated proportion of personnel to have experienced one or more mental disorders in their lifetime, whereas 12-month prevalence describes the estimated proportion of personnel to have experienced one or more mental disorders in the previous year.

Table ES.3: *Estimated prevalence of lifetime and 12-month mental disorders in the ADF, compared to ABS sample matched by age, sex and employment status*

	Lifetime prevalence		12-month prevalence	
	ABS %	**ADF %**	**ABS %**	**ADF %**
Any affective disorder	**14.0**	**20.8***	**5.9**	**9.5***
Any anxiety disorder	23.1	27.0	12.6	14.8
Any alcohol disorder	32.9	35.7	**8.3**	**5.2***
Any mental disorder	**49.3**	**54.1***	20.7	22.0

* Significantly different from the ABS study.

More than half of the ADF (54.1%) had experienced an anxiety, affective or alcohol disorder at some stage in their lifetime, which is a significantly higher rate than that among the Australian community (49.3%). This level of mental illness in the ADF suggests that, despite the fact that the ADF is a selected and trained population that generally has better access to health care (the 'healthy worker effect'), this population is affected by a range of stress factors caused by the nature of their work.

In the 12 months before the interview, one in five of the ADF population, or 22%, had experienced a mental disorder, a rate that is not significantly different from that of the Australian community. Anxiety disorders were the most common mental disorders in the ADF but were not significantly higher than in the Australian community. The prevalence of affective disorders was significantly greater in the ADF compared to the Australian community and the prevalence of alcohol disorders was significantly lower.

The study revealed that an estimated 11,016 ADF members met diagnostic criteria for any mental disorder in the previous 12 months. Of these individuals, 7,420 had an anxiety disorder, 4,757 had an affective disorder and 2,590 had an alcohol disorder, noting that some would have had co-morbid disorders.

Sex-related prevalence compared to the Australian community

Overall, males in the ADF showed the largest deviation from the Australian community. They had a significantly greater prevalence of affective disorders and significantly lower prevalence of alcohol disorders (Table ES.4). ADF females were not significantly different from females in the Australian community, other than having a lower prevalence of alcohol disorders.

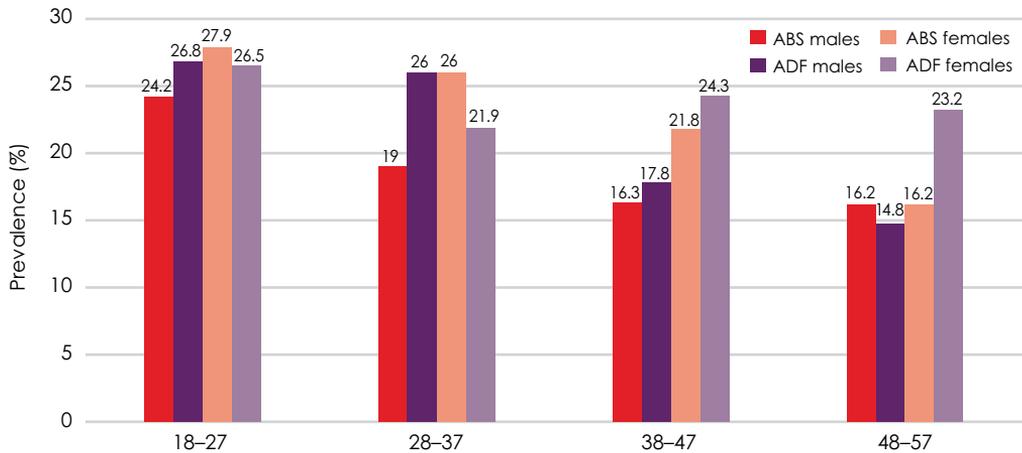*Table ES.4:* Estimated prevalence of 12-month mental disorders by sex, ADF and ABS data

	Males		Females	
	ABS %	**ADF %**	**ABS %**	**ADF %**
Any affective disorder	**5.7**	**9.4***	7.3	10.2
Any anxiety disorder	11.5	14.2	19.9	18.8
Any alcohol disorder	**8.8**	**5.6***	**5.1**	**2.2***
Any mental disorder	20.0	21.7	25.6	24.1

* Significantly different from the ABS study.

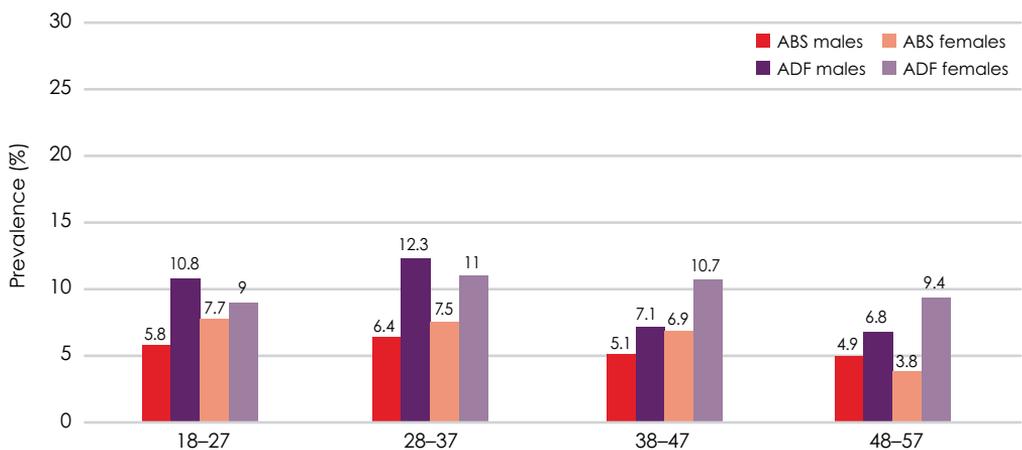## Age-related prevalence compared to the Australian community

A challenge for the broader community has been the rate of mental disorders among youth. An examination of the interrelationship between age and each of the mental disorder groups – for both the ABS and ADF data – revealed that, as in the general population, mental disorders in the ADF were most common in the 18–37 age range. (The ADF does not have sufficient numbers of males – and has even fewer females – in the 58 and over age brackets for accurate estimates of prevalence for this group to be provided.)

Figure ES.3: *Estimated prevalence of 12-month mental disorders by age and sex, ADF and ABS data*
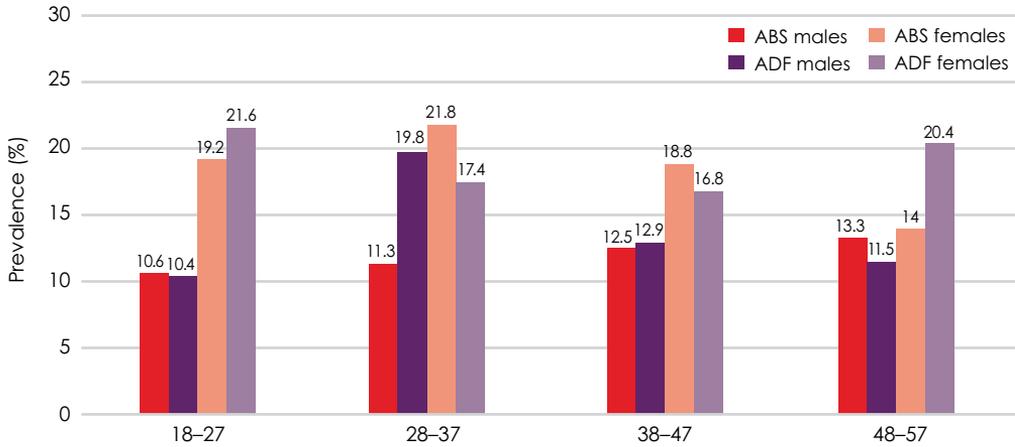

In both the ADF and the ABS data, there was a general trend for the rates of any 12-month mental disorder to be highest in the 18–27 age group (Figure ES.3) and then decline across the age bands in all groups. Noteworthy, however, is the fact that there was a steady decrease in mental disorders in males in the general community as people age, which was not reflected in the ADF population.

Figure ES.4: *Estimated prevalence of 12-month affective disorders by age and sex, ADF and ABS data*
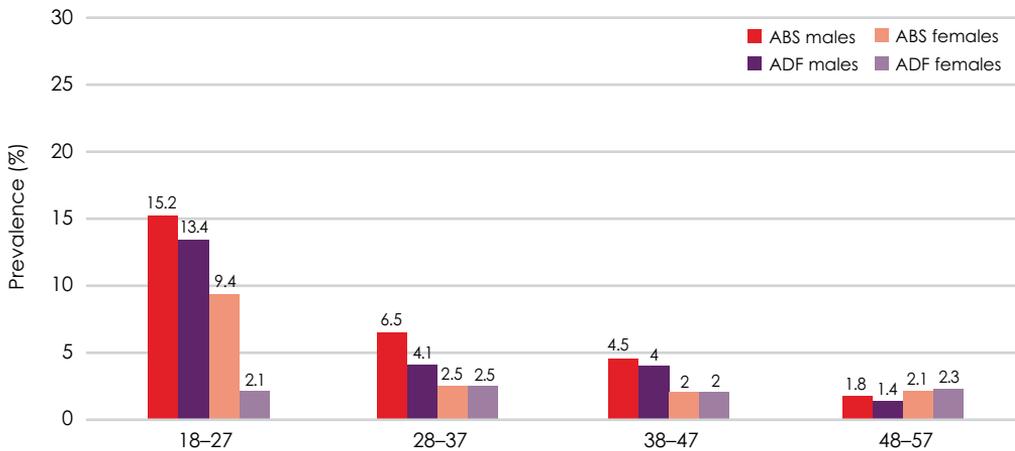

As was highlighted in Table ES.3, the ADF had significantly higher rates of affective disorders. These higher rates may be explained by the high ADF numbers in the 18–27 and 28–37 age groups, as shown in Figure ES.4. This effect was apparent for both males and females. These age-related trends indicate that interventions for affective disorders in the ADF need to take account of the relative youth of this group and recognise the needs of female ADF members throughout their careers.

Figure ES.5: *Estimated prevalence of 12-month anxiety disorders by age and sex, ADF and ABS data*

As summarised in Figure ES.5, the pattern for any anxiety disorder was similar to the pattern for affective disorders, especially for males, with the majority of disorders in males in the 28–37 age groups.
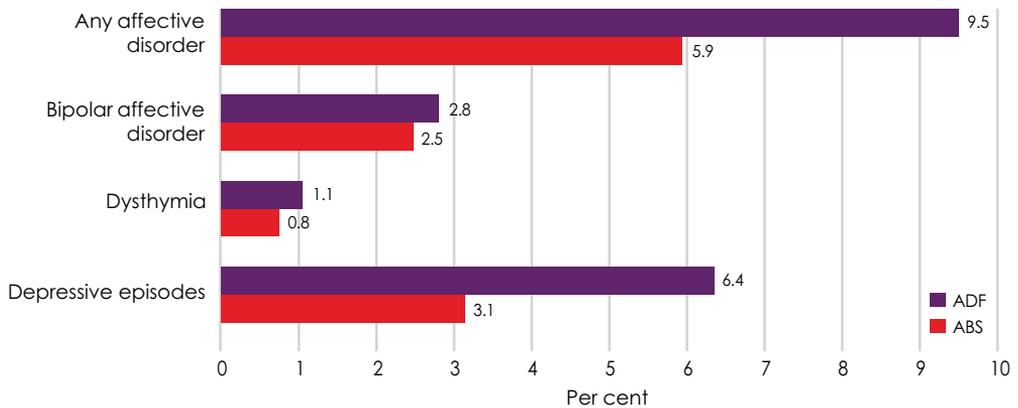
Figure ES.6: *Estimated prevalence of 12-month alcohol disorders by age and sex, ADF and ABS data*
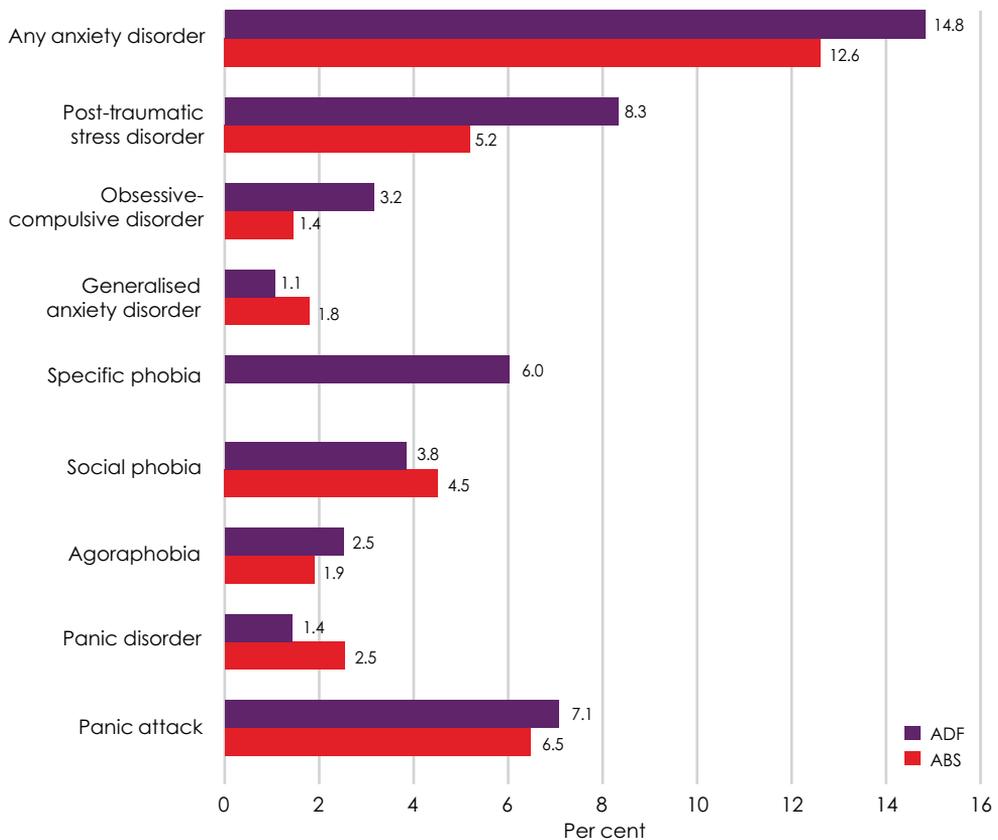

Alcohol disorders, by contrast, showed a unique pattern of prevalence across all age groups, with the highest prevalence of disorder in ADF males apparent in the 18–27 age group (Figure ES.6). Females had consistently lower disorder rates across all age groups.

Categories of mental disorder in the ADF population compared to the Australian community

While the overall rates of mental disorders in the ADF were similar to those in the ABS study, there was a significant difference in the profile of mental disorders.

Figure ES.7: *Estimated prevalence of 12-month affective disorders, ADF and ABS data*

As summarised in Figure ES.7, affective disorders in the ADF were associated with the largest deviation from the Australian community. Depressive episodes in both male and female ADF personnel (6.0% and 8.7% respectively) were significantly higher than the general community rates (2.9% and 4.4%). There were no significant differences, however, between ADF males and females in the prevalence of affective disorders.

Figure ES.8: *Estimated prevalence of 12-month anxiety disorders, ADF and ABS data*

The most common disorders in the ADF were anxiety disorders, and post-traumatic stress disorder was the most prevalent anxiety disorder (see Figure ES.8). The primary difference between the ADF and the general community was the significantly higher rates of post-traumatic stress disorder in ADF males (8.1% versus 4.6%) and significantly lower rates of panic disorder in the ADF (1.2% versus 2.5%). As in the general community, further analysis has shown that female ADF personnel rated higher than male ADF personnel on anxiety disorders and were significantly more likely to have panic attacks, panic disorder, social phobia or a specific phobia. (The ABS study did not ask about social phobia and this was not included in the calculation of any anxiety disorder.)

Figure ES.9: Estimated prevalence of 12-month alcohol disorders, ADF and ABS data

The prevalence of alcohol disorders in the ADF was significantly lower than for the community (see Figure ES.9). Further analysis has shown that both male and female personnel in the ADF had significantly lower rates of alcohol harmful use disorder compared to the general community (males 3.1% versus 5.5%, females 1.3% versus 3.7%). Furthermore, ADF females were significantly less likely to have an alcohol disorder, specifically alcohol dependence disorder, than ADF males.

Suicidality in the ADF compared to the Australian community

The issue of suicidal behaviour and completed suicide is one of major concern to command in the ADF and one that arouses considerable public concern as well. The ADF monitors the rate of completed suicides; the actual rate of suicide in the ADF is lower than in the general population when matched for age and sex.

There is a gradation of severity of suicidality in the ADF, ranging from those with suicidal ideation (3.9%) through to those making a plan (1.1%) and those actually attempting suicide (0.4%). The prevalence of suicidal ideation and making a suicide plan was significantly higher in the ADF compared to the Australian community, with the rate of suicidality in the ADF being more than double that in the general community (Table ES.5). This is possibly a function of the higher level of affective disorders and of post-traumatic stress disorder. These findings suggest that the comprehensive initiatives on literacy and suicide prevention currently being implemented in Defence may, in fact, be having a positive impact. That is, although ADF members are more symptomatic and more likely to express suicidal ideation than people in the general community, they are only equally likely to attempt suicide and less likely to complete the act.

Table ES.5: *Estimated prevalence of 12-month suicidality, by sex, ADF and ABS data*

	Males		Females		Total	
	ABS %	ADF %	ABS %	ADF %	ABS %	ADF %
Felt so low that you thought about committing suicide	1.5	3.7*	2.8	5.1*	1.7	3.9*
Made a suicide plan	0.3	1.1*	0.5	1.2*	0.4	1.1*
Attempted suicide	0.3	0.4	0.4	0.5	0.3	0.4
Any suicidality	1.6	3.8*	2.8	5.1*	1.8	4.0*

* Significantly different from the ABS study.

In the study, steps were taken to contact the participants who were reporting suicidal ideation to facilitate their access to care, in recognition of Defence's responsibility to them. A priority identified from the study is better characterisation of those individuals with mental disorders who are at risk of suicidal ideation so that intervention programs and risk assessments can be better targeted.

Impact on the ADF workforce compared to the Australian community

ADF personnel reported significantly more partial, rather than total, days out of role due to psychological distress than the general Australian community (see Table ES.6).

The data indicated that mental disorders had an impact on the ability of personnel to work, not only in terms of absenteeism but also in the number of days when they were unable to fully and adequately perform while at work. Individuals with affective disorders, for example, reported an average of 23 days off in a year due to the disorder. This loss not only reduces the member's wellbeing but is a significant drain on the capability and resources of the ADF.

The means reported in Table ES.6, however, did not take account of the prevalence of an individual disorder in the ADF and how this might modify the relative contribution to the days out of role for the ADF. In other words, a disorder with a high prevalence, even if it is associated with relatively minor disability, is likely to be of particular importance to the loss of productivity and preparedness in the Defence environment. Hence, major depressive disorder, which had a total prevalence of 6.4%, and panic attacks, which had a prevalence of 10%, are likely to be of particular importance as determinants of the number of days out of role.

On this basis, the percentage of days out of role in the previous four weeks when an individual was unable to work because of psychological distress was calculated for all of the affective, anxiety and alcohol disorders respectively. The burden of the affective disorders, 41.1%, was very similar to that of the anxiety disorders, 42.9%. In other words, the total days out of role in the previous four weeks were accounted for equally by depressive and anxiety disorders and were higher than the burden for any alcohol disorder (at 7.1%). The highest ranked disorders were panic attacks (32.7%), depressive episodes (32.4%), specific phobia (28.4) and post-traumatic stress disorder (24%).

When any mental disorder was considered, 61.8% of the total days unable to work due to psychological distress was attributable to a definable psychiatric disorder. Importantly, 38.2% represented days out of role for non-specific symptomatology.

This highlights the importance of acute distress in the absence of a diagnosis as a source of disability as well as diagnosable disorders.

The same issues arose when the total number of days of work cut-down and the prevalence of a disorder, as well as the severity of a disability in terms of days cut-down, were considered.

Any anxiety disorder was higher (at 33.4%) than any affective disorder (26%). This suggests that anxiety disorders have a more pervasive impact above and beyond days completely unable to function in the workplace. The three highest ranked disorders were panic attacks (21.9%), depressive episodes (20.2%) and post-traumatic stress disorder (19.6%). Again, alcohol disorders only accounted for 7.2% of total days cut-down due to psychological distress.

These findings also potentially indicate that there are a significant number of members in the ADF with a disabling disorder who are not known to command or are not receiving care. These figures highlight the need to address stigma and barriers to care, which create a major risk to the organisation. Further work will also be done to determine the economic cost to Defence and the impact on readiness and capability.

Table ES.6: Impact of mental disorders on work in the previous month, ADF and ABS data

ICD-10 disorder	Days totally unable to work		Days had to cut down on work	
	ABS mean	ADF mean	ABS mean	ADF mean
Any affective disorder	2.7	1.9	2.4	3.6
Any anxiety disorder	2.3	1.3	2.0	2.9
Any alcohol disorder	0.9	0.6	1.6	1.8
Any mental disorder	1.5	1.2	**1.7**	**2.6***

* Significantly different from the ABS study.

Mental disorder prevalence in targeted subgroups of ADF personnel

Demographic subgroups in the ADF that might require tailored or targeted mental illness prevention and treatment programs were identified in the study for further investigation. The categories analysed for this report were Service, rank and deployment status.

Rank

Military ranks were grouped into three categories: other ranks (private to corporal equivalents), non-commissioned officers (sergeant to warrant officer equivalents) and officers (lieutenant to general equivalents). The prevalence of any mental disorder in other ranks was 29.5%, non-commissioned officers 19.7% and officers 16.6% (see Table ES.7).

Table ES.7: *Estimated prevalence of 12-month mental disorders in the ADF, by rank*

	Other ranks	Non-commissioned officers	Officers
Any affective disorder	2,082 (13.3%)	1,847 (8.3%)	828 (6.9%)
Any anxiety disorder	2,846 (18.1%)	3,332 (14.9%)	1,242 (10.3%)
Any alcohol disorder	1,266 (8.1%)	849 (3.8%)	475 (3.9%)
Any mental disorder*	4,624 (29.5%)	4,400 (19.7%)	1,993 (16.6%)

* 'Any mental disorder' is not a total, as a person can have more than one estimated disorder.

There was no difference in rank in relation to affective or alcohol disorders. Anxiety disorders, however, were significantly less prevalent among officers than all other ranks. Further analysis indicated that there was very little difference between ranks on specific affective disorders, other than for bipolar affective disorder, with other ranks seven times more likely to meet criteria for these disorders than officers. Both non-commissioned officers and other ranks were significantly more likely to be diagnosed with an anxiety disorder when compared to officers and had significantly higher rates of panic attacks and agoraphobia. Non-commissioned officers were also twice as likely as officers to be diagnosed with social phobia. Other ranks were twice as likely as officers to have post-traumatic stress disorder.

Single Services

The prevalence figures in this report represent a significant burden of disorder that needs to be addressed. This burden affects not only the operational capability of the ADF but also the wellbeing of Service personnel and their families. As summarised in Table ES.8, there was a significant incidence of disorder across all three single Services.

Table ES.8: *Estimated prevalence of 12-month mental disorders in the ADF, by single Service*

	Navy	Army	Air Force
Any affective disorder	1,224 (10.5%)	2,693 (10.6%)	840 (6.4%)
Any anxiety disorder	1,638 (14.1%)	4,377 (17.3%)	1,405 (10.7%)
Any alcohol disorder	886 (7.6%)	1,417 (5.6%)	287 (2.2%)
Any mental disorder*	2,845 (24.5%)	6,196 (24.4%)	1,975 (15.1%)

* 'Any mental disorder' is not a total, a person can have more than one estimated disorder.

Further analysis revealed that Army personnel were significantly more likely than Air Force personnel to have an affective disorder but no single category of disorder was more prevalent. The significant deviation for affective disorders from the general community was for depressive episodes, with each Service statistically as likely to report a disorder (Navy 7.7%, Army 6.4%, Air Force 5%).

The Army was significantly more likely to report anxiety disorders than the Air Force, but the only specific disorder that was significantly higher in the Army compared to the Air Force was agoraphobia. The most prevalent anxiety disorder in the ADF was post-traumatic stress disorder, with each Service statistically as likely to report it (Navy 7.7%, Army 9.7%, Air Force 6.2%).

Navy members tended to have higher rates of alcohol disorders, followed by Army and then Air Force. Navy personnel were five times more likely and Army more than three times more likely to meet the criteria for alcohol harmful use than Air Force (Navy 4.6%, Army 3%, Air Force 0.9%).

Deployed versus non-deployed

Forty-three per cent of ADF members reported multiple deployments, 19% reported only one deployment, and the remaining 39% of personnel had never been deployed. Overall, there was very little difference in the prevalence of mental disorders between personnel who had been on deployment and those who had never been deployed. The only significant difference was that personnel who had been deployed were four times more likely to have had obsessive-compulsive disorder in the previous year.

As this was an unexpected finding, a further analysis – where deployment type was categorised as warlike or non-warlike – was conducted, which again did not reveal any difference. This may be due to the fact that the initial analysis of the impact of deployment was only possible at the ADF population level, which may mask risk groups that have a higher rate of mental disorders. For example, combat engineers and aviation personnel deployed to the Middle East Area of Operations may have had high trauma exposure and therefore be at greater risk of developing mental disorders.

Due to the potential level of trauma exposure on deployment, it was anticipated that the deployed sample would have higher rates of mental disorders. The fact that they were the same in the study is an issue that needs to be explored further. It may be that the ADF personnel who have been deployed are a healthier population or it may be that disorders do not emerge until personnel leave the Services. Initial results suggest, however, that the significant resources invested by the ADF in a comprehensive operational mental health support system may be effective in prevention and early intervention for mental disorders resulting from exposure to occupational stressors on operations.

Mental health co-morbidity and treatment in the ADF

Co-morbidity

Among the 22% of ADF members with a mental disorder, 15.2% had only one class of disorder (that is, anxiety, affective or alcohol), 6.1% had two and 0.7% had three.
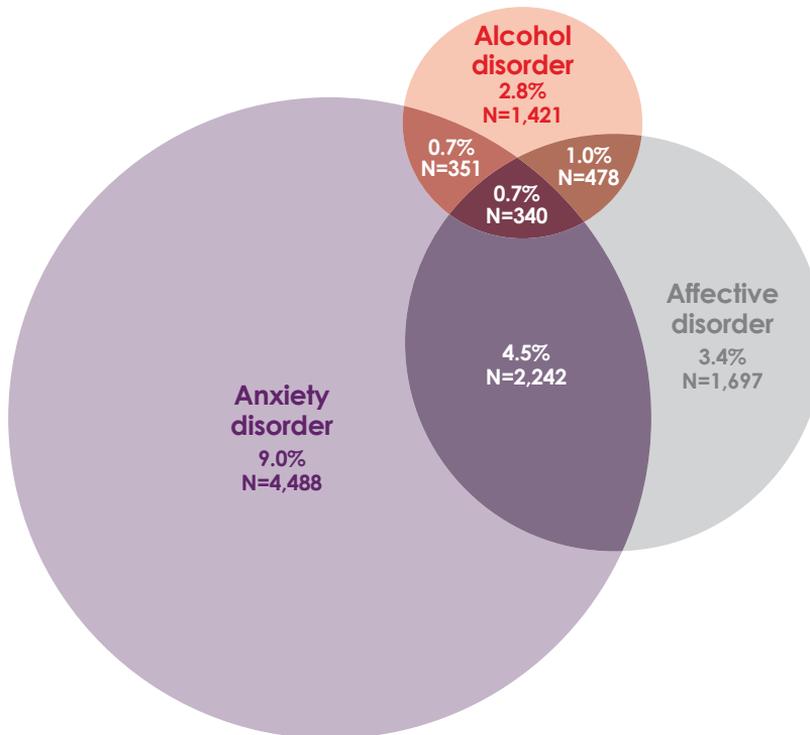
Figure ES.10: *Co-morbidity of affective, anxiety and alcohol disorders in the ADF*

Figure ES.10 shows the overlap among members with one or more mental disorders. For example, of the estimated 2,590 personnel with an alcohol disorder, 1,169 or 45% also had an anxiety and/or affective disorder. Thus, a member presenting with one disorder had a high likelihood of having other disorders. All individuals should therefore be comprehensively assessed by a mental health professional, regardless of their reason for presentation.

Treatment of mental disorders

For those with a diagnosed mental disorder in the ADF, treatment rates varied across disorders. For example, half of those with the most prevalent anxiety disorders – post-traumatic stress disorder and panic disorder – reported receiving any form of treatment in the previous 12 months, and 15% of members with an alcohol disorder received professional treatment (see Table ES.9).

Table ES.9: *Percentage of ADF members receiving professional treatment*

ICD-10 disorder	Received professional treatment in previous 12 months		
	Yes (%)	No (%)	Don't know/refused (%)
Generalised anxiety	75.6	24.4	0
Depressive episodes	65.2	34.8	0
Post-traumatic stress	50.2	48.9	0.8
Panic disorder	48.3	51.7	0
Agoraphobia	46.3	53.7	0
Social phobia	25.2	74.8	0
Any alcohol disorder	14.8	85.2	0
Specific phobia	12.3	87.7	0
Obsessive-compulsive	11.7	85.3	3.0

Detecting mental disorders in the ADF

There are three instruments used both in the clinical setting and in screening to detect mental health issues, as well as to monitor mental health trends in the ADF:

- **Kessler Psychological Distress Scale 10 (K10)**, used to assess and monitor depressive and anxiety symptomatology

- **Posttraumatic Stress Disorder Checklist (PCL)**, used to provide an assessment of self-reported post-traumatic stress symptomatology

- **Alcohol Use Disorders Identification Test (AUDIT)**, used to assess and monitor alcohol consumption.

Analysis of these measures in the Mental Health Prevalence and Wellbeing Study indicated similar trends between the self-report data and the diagnostic clinical interviews. The ADF reported significantly higher levels of moderate to very high psychological distress in comparison to the general community. Personnel who had been deployed were less likely to report psychological distress, more likely to report post-traumatic symptoms and as likely to report alcohol use as personnel who had not been deployed.

Analysis was conducted to determine ADF-specific clinical cut-offs for the self-report screening instruments used by the ADF so that the maximum number of personnel could be identified for early intervention and levels of disorders could be accurately monitored. As a result of this analysis, two sets of cut-offs were determined:

- the optimal screening cut-off, which is the value that maximises the sum of the sensitivity and specificity (the proportion of those with and without the disease who are correctly classified), and should be used to identify individuals who might need care

- the optimal epidemiological cut-off, which is the value that brings the number of false positives and false negatives closest together, thereby counterbalancing these sources of error most accurately. This cut-off would therefore give the closest estimate of the true prevalence of 30-day ICD-10 disorder as measured by the CIDI and should be used to monitor disorder trends.

On the standard K10 cut-off of 20 that is currently used in Defence for clinical screens, the K10 performs better at predicting 30-day affective disorder than 30-day anxiety disorder. Psychometric analysis of the K10 indicates that the optimal screening cut-off for affective disorder is 19 and for anxiety disorder 17. Therefore, in order to most effectively capture both disorders, the conservative cut-off of 17 should be used.

To determine epidemiological 'caseness' or an indicator of the level of diagnosable disorders in the population, a more stringent cut-off needs to be applied in order to reduce the incidence of false diagnosis. For this purpose, in the ADF population a cut-off of 25 needs to be applied. This would provide the most accurate estimate of the number of personnel with either a current anxiety or affective disorder.

The original recommended cut-off for the PCL was 50 but, as a result of both ADF and US research, this has been modified to 30 in the ADF operational screening environment. This cut-off indicates the requirement for referral to a psychologist. Psychometric analysis of the PCL indicates that the optimal screening cut-off for clinical assessment of potential post-traumatic stress disorder is 29, while 53 provides the most accurate estimate of the number of personnel with diagnosable post-traumatic stress disorder.

The analysis for the AUDIT found that the optimal cut-off for detecting any alcohol disorder is 8, which matches the World Health Organization recommendation. Psychometric analysis of the AUDIT indicates that the optimal screening cut-off for alcohol harmful use is 8 and for alcohol dependence 9. Therefore, in order to most effectively capture both disorders, the conservative cut-off of 8 should be used, while a cut-off of 20 provides the most accurate estimate of the number of personnel with either alcohol harmful use or alcohol dependence.

Table ES.10: *Recommended cut-offs to detect current mental health trends in the ADF*

	Outcome	Optimal screening cut-off	Optimal epidemiological cut-off
K10	Current anxiety or depression	17	25
PCL	Current post-traumatic stress disorder	29	53
AUDIT	Current alcohol harmful use and dependence	8	20

The psychometric cut-offs summarised in Table ES.10 provide a basis for the development of mental health policy and screening guidelines in Defence. A number of factors need to be taken into account when determining the final cut-offs that will be used by the ADF, including what is socially, financially and ethically acceptable to the ADF. The psychometrically determined cut-offs, for example, have been calculated from a sample where the respondents were completing de-identified surveys and may need to be lowered to deal with the impact of potential under-reporting when surveys are used in a health care setting.

Exploring occupational mental health issues

Help seeking in the ADF

Considering the rates of disorder identified in the ADF population, it is important to understand the patterns of care utilisation and what individuals experience as barriers to seeking care. Typically, individuals will not seek care due to either negative perceptions or organisational barriers. The findings in this report in relation to help seeking, stigma and barriers to care are derived from a weighted subpopulation of ADF personnel who only completed the Health and Wellbeing Survey, that is, those individuals who had not been deployed to the MEAO (N=30,848, non-MEAO sample).

Almost one in five members of this group (17.9%) reported having sought help for a stress-related, emotional, mental health or family problem in the previous 12 months. Female personnel were more likely to have sought help than males. Non-commissioned officers and other ranks were significantly more likely to have sought help than officers.

Deployment history was also a significant predictor of help seeking. Those who had been deployed were 10% more likely to have sought help than those who had never been deployed. In relation to Service differences, there was no difference for men, but Air Force females were more like to have sought help than their Army and Navy counterparts.

The relationship between help seeking and psychological distress was the strongest finding. ADF members with high levels of psychological distress (measured using the K10) were more than 10 times more likely to have sought help in the previous 12 months than those with low levels of psychological distress.
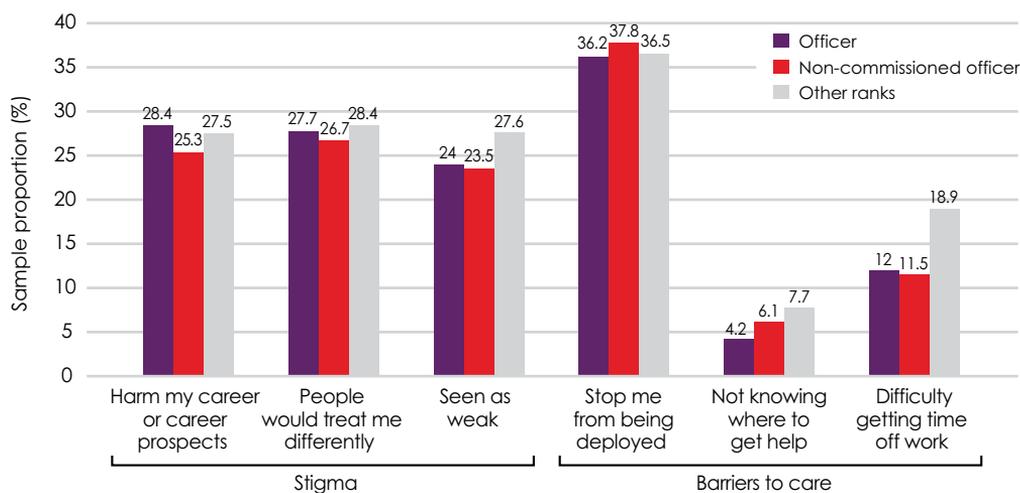
Stigma and barriers to care

Research indicates that two main factors contribute to the low uptake of mental health care: the fear of stigma and perceived barriers to care. Stigma is a negative attitude resulting from the acceptance and internalisation of 'prejudice or negative stereotyping', while barriers to care are the organisational, procedural or administrative aspects of access to mental health care that may preclude or reduce access to mental health treatment and support. Barriers may include issues associated with confidentiality, anonymity and confidence in mental health service providers. These are influenced to varying degrees by internalised stigmas about access to care and the consequences of asking for help.

Among the respondents, the highest rated barrier to personnel seeking help for a stress-related, emotional, mental health or family problem in the ADF was the concern that seeking help would reduce their deployability (36.9%), whereas the highest perceived stigma was that people would treat them differently (27.6%) and that seeking care would harm their careers (26.9%) (see Table ES.11).

Table ES.11: Estimated prevalence of stigma and barriers to care

	ADF (%)	Males (%)	Females (%)
Stop me from being deployed	36.9	37.0	36.0
People would treat me differently	27.6	27.6	27.8
Harm my career or career prospects	26.9	26.9	27.2
Would be seen as weak	25.3	25.2	25.6
Difficulty getting time off work	14.7	14.7	14.5
Not knowing where to get help	6.3	6.5	5.4

When significant differences on the demographic variables were explored, the only significant difference for sex was that ADF females were 21% more likely than males to know where to get help.

Figure ES.11: Estimated prevalence of stigma and barriers to care, by rank

As summarised in Figure ES.11, most personnel indicated that they knew where to seek care, while other ranks were the most likely to indicate barriers, including not knowing where to seek care or being concerned that they would not be able to get time off work. Officers, on the other hand, were significantly more likely to indicate stigma, because it would harm their career and people would treat them differently. Other ranks were the most likely to indicate they would be seen as weak.

Army was consistently more likely to record both stigma and barriers to care items compared to the Air Force. When compared to Air Force personnel, Army personnel were:

- 40% more likely to indicate concerns that help seeking would stop them being deployed
- 29% less likely to know where to seek care
- 21% more likely to be concerned about getting time off work
- 16% more likely to have concerns about help seeking harming their career
- 14% more likely to be concerned that people would treat them differently
- 30% more likely to indicate they would be seen as weak.

When compared to Air Force personnel, Navy personnel were:

- 21% more likely to indicate that seeking care would stop them being deployed
- 32% more likely to indicate they would have difficulty getting time off work
- 21% more likely to be concerned about help seeking harming their career.

Personnel who had been deployed were 25% more likely to indicate that seeking care would stop them being deployed, 15% more likely to indicate that it would harm their career and 12% more likely to indicate that they would be seen as weak.

As well as these barriers to care, initial analysis of the data showed a strong positive relationship between perceived psychological distress and willingness to seek help. There also appeared to be a relationship between impact on functioning and whether a member had had treatment in the previous 12 months. This relationship suggests that, as well as barriers to care, the member needs to be able to recognise that they have a problem and be willing to admit it is detrimental to their functioning before they will seek care.

Within the study, 932 of the 11,018 ADF personnel estimated to have a mental disorder received a CIDI interview (both as part of the prevalence estimation and duty-of-care interviews). A cohort of personnel who have experienced a mental disorder has therefore been identified. This provides Defence with a unique opportunity to conduct a specific research program on pathways to care. This research would investigate issues of barriers to care and utilisation of treatment services.

Mental health and multiple deployments

Among all ADF members, an estimated 43% reported having been deployed multiple times, 19% reported having been deployed only once, and the remaining 39% had never been deployed. Army had the highest incidence of multiple deployments at 46%, followed by Navy with 41%. Air Force had the lowest frequency of multiple deployments at 36%. Navy, at 11%, had the highest proportion of personnel reporting six or more deployments.

Analysis of the data has not revealed a significant relationship between the number of deployments and mental health symptoms. There is a trend, however, that indicates greater levels of traumatic symptomatology with each deployment. The data show a strong direct relationship between lifetime trauma exposure and mental health symptoms. While more detailed analysis will be needed, it is likely that – consistent with the international literature – the number of deployments is not as predictive as the level of trauma or combat exposure for the level of negative mental health outcomes.

Mental health reform in the ADF

One in five of the ADF population had experienced a mental disorder in the previous 12 months, which was similar to the rate in the Australian community. Over half of the ADF had experienced an anxiety, affective or alcohol disorder at some stage in their lifetime, which was significantly higher than the Australian community rate. The incidence and prevalence of mental disorders suggests that any healthy worker effects in Defence appear to be counterbalanced by the impact of occupational stressors.

In terms of affective, anxiety and alcohol disorders, the ADF and the Australian community face similar challenges. The most common disorders in the ADF were anxiety disorders; as in the general community, post-traumatic stress disorder was the most prevalent of these. Affective disorders were associated with the largest deviation from the Australian community, with the prevalence of affective disorders in males in the ADF significantly higher than in the community. Although the rates of anxiety disorders were similar in the ADF to those in the community, the incidence of alcohol disorders was significantly lower across both sexes.

The study's data indicated specific cultural differences between the Services that need to be explored further. Army personnel were significantly more likely to have had an affective, anxiety or alcohol disorder than Air Force personnel, and were also significantly more likely to endorse stigma and barriers to care items. Navy members were more likely than Air Force to have an alcohol disorder and were more likely to report concerns about getting time off work, their career or deployability.

Overall, there was very little difference in the prevalence of mental disorders between personnel who had been on operational deployment and those who had never been deployed. This result suggests that the significant resources invested by the ADF in a comprehensive operational mental health support system may be effective in prevention and early intervention for mental disorders resulting from exposure to occupational stressors on operations. This conclusion is further supported by the fact that personnel who had been deployed were more likely to seek care than personnel who had never been deployed.

The data from the study provide a comprehensive baseline for future monitoring of mental health trends and have important implications for the further development of the ADF mental health and wellbeing strategy and service delivery model.

The ADF Mental Health Reform Program

Mental health and wellbeing in a military environment is unique. The military is an occupation where personnel are selected, trained and prepared to face adverse, stressful and potentially traumatising situations. To meet these demands, an approach that focuses on strengthening resilience and enabling recovery is essential.

A military occupational mental health and wellbeing approach has been adopted by the Mental Health, Psychology and Rehabilitation Branch within Joint Health Command. This approach provides a framework for developing interventions and research programs to meet the demands of military service. In order to meet the aims of strengthening resilience and enabling recovery in this approach, all those involved – command, the individual and the health care system – need to share responsibility.

In July 2009, Defence introduced a comprehensive four-year Mental Health Reform Program to implement the occupational military mental health and wellbeing model in Defence. The program addresses the recommendations of the Dunt Review (*Mental health in the ADF and transition to discharge*, February 2009). The 52 recommendations of the review are being implemented through the achievement of 10 goals:

1   Enhancing the mental health workforce
2   Improving mental health governance and service delivery
3   Improving mental health policy
4   Improving mental health training

5   Prevention strategies

6   Enhanced research and surveillance

7   Address mental health rehabilitation

8   Improve transition services

9   Support family engagement in the mental health care of ADF members

10 Improve facilities.

The results of the Mental Health Prevalence and Wellbeing Study will assist senior leaders in the departments of Defence, Veterans' Affairs, and Health and Ageing to target further work, especially in the areas of surveillance, detection, prevention, early intervention and treatment.

Implications for prevention in the ADF

Strong leadership behaviours are essential to destigmatise mental health problems and break down barriers to care. The current mental health peer program, which is being developed within the ADF, needs to be expanded into a **comprehensive peer support network**, including a leaders' version for the promotional training continuum. This would ensure that leaders at all levels are able to identify and manage occupational stressors that affect mental health and wellbeing and be advocates for members with disorders.

The fact that 3.9% of the ADF had contemplated suicide within the previous year, with 1.1% having made a plan, is indicative of the significance of this issue to the ADF. However, the finding that this did not translate into significantly higher rates of suicide needs to be explored and supports the investment Defence is making by evaluating the current **ADF Suicide Prevention Program**.

The finding that rates of alcohol disorder in the ADF were no higher than in the general community reinforces the investment Defence has made in the ADF Alcohol, Tobacco and Other Drug Program, as well as the recent development of the **ADF Alcohol Management Strategy**.

The BattleSMART and **resilience-building programs** need to be further refined to meet the type of occupation stress identified, especially trauma exposure, and to better address the more prevalent mental health outcomes. Cognitive and behavioural strategies to address depressive and post-traumatic symptoms should be a priority.

Analysis of the data did not reveal a significant relationship between the number of deployments and mental health symptoms. There is, however, a trend indicating greater levels of traumatic symptomatology with each deployment. The data show a strong direct relationship between lifetime trauma exposure and mental health symptoms. While more detailed analysis will be needed, these initial findings suggest that, while the risk of post-trauma symptomatology increases with the number of deployments, the most significant risk factor is the level of actual combat or trauma exposure, which supports the requirement for additional **interventions for high-risk groups**.

Post-traumatic stress disorder is the most prevalent of the anxiety disorders observed in the ADF and is an issue for all three Services. The rollout of Army's *Dents in the Soul* DVD on the disorder, which aims to demystify it and encourage help seeking to secure early intervention, should continue and consideration should be given to **mental health literacy initiatives** for the other two Services and for other disorders.

Implications for early intervention

It is estimated that one in five ADF members has a mental disorder. As in the general community, the workload and health services required to meet this need are substantial. One strategy for early intervention would be to **upskill general duties medical officers** in detection and brief intervention, as they are likely to have routine contact with ADF personnel.

Analysis of the data has allowed psychometric determination of the optimal clinical cut-offs for ADF mental health screening instruments. Work now needs to be done to determine the **most ethical and cost-efficient cut-offs** for the ADF environment so that policy and processes can be updated.

The current **ADF screening programs** designed to detect personnel for early intervention could be further strengthened by ensuring that they provide an opportunity for early and single-session brief interventions. The ADF conducts mental health screening for all personnel in the deployment cycle. However, to ensure that personnel who are not deploying are regularly assessed, it is proposed that an annual mental health screen be considered.

The majority of personnel indicated they knew where to seek care and that they would be able to get time off work. This provides support for the range of current **mental health literacy programs**. The data indicate, however, that further work could be done in targeting specific messages to the different ranks in the ADF in relation to both stigma and barriers to care.

Junior ranks would benefit from greater reinforcement of the fact they will be supported to seek care, while messages to officers need to address stigma. Officers were the least likely to seek help for a mental health condition but the most likely to report negative stigma associated with seeking care – they felt that help seeking would harm their career or that others would treat them differently. These findings suggest that any **communications strategy** to encourage help seeking among officers needs to target this population through specific messages.

Defence should continue to develop and implement **options for e-mental health training** as a strategy to address concerns about stigma and barriers to care that is targeted to the ADF population. Such approaches have been demonstrated to be effective in delivering mental health information and improving access to care.

Co-morbidity outcomes, especially in relation to alcohol, suggest that commanders need more training to understand the relationship between mental disorders and antisocial behaviours – such as acts of aggression, disinhibition and drink driving – that may indicate underlying problems. **Revised policy** should therefore ensure that personnel in the disciplinary system are considered for a mental health assessment.

Analysis of self-reported psychological distress and post-traumatic symptomatology highlight the spectrum of severity of symptoms in the ADF, including high levels of mild and moderate symptomatology. Research indicates the significant risk of progression from a mild to a more severe disorder. So there is potential benefit in the development of **early intervention treatment programs** for ADF members who are experiencing only moderate symptoms. The study also found that there is significant work impairment even at a moderate level of distress in the ADF population. This issue is of particular relevance in those returning from deployment, where there is a risk of delayed onset disorders, particularly post-traumatic stress disorder.

Implications for service delivery and treatment

The estimate that one in five ADF members has a mental health disorder indicates the requirement for Defence to prioritise **enhancement of the ADF mental health service delivery model** within the mental health reform process. As in the general community, the workload and health services required to meet this need are substantial.

Forty-one per cent of those with an affective disorder reported severe or very severe impact associated with their symptoms. For the ADF, this means that **enhanced treatment within the employment setting** would be beneficial in terms of the productivity gained.

One strategy to improve services is investment in **e-mental health approaches to treatment**, especially to address the needs among the young adult ADF population and those with affective disorders. These approaches are cost-effective and have the potential to provide far more flexible access to care at times that would better suit ADF personnel.

The patterns of prevalence across sex, rank and Service for alcohol disorder are different to the patterns observed for affective and anxiety disorders (that is, alcohol is a particular issue for younger personnel, whereas depression and anxiety occur in a number of age ranges). This indicates that alcohol consumption is not simply a measure of psychological disturbance and that intervention strategies for alcohol problems need to target binge drinking as well as long-term alcohol disorders. It gives support to the investment Defence has made in **regionally based outpatient treatment programs**.

There is a requirement for further **upskilling of health providers**, as all Defence health personnel need to have the skills to deal with mental health problems and illness. For example, there is a significant rate of suicidal ideation in the ADF, which has the potential to lead to more serious suicidal behaviour. The ADF needs to continue to develop programs to ensure comprehensive suicide risk assessment protocols and upskilling of health personnel.

Additionally **co-morbidity** of mental disorders is common in the ADF. It needs to be accounted for in any individual or group treatment program and clinicians need to be trained to routinely assess for management of more complex presentations.

Implications for surveillance and detection

The levels of mental disorders in the ADF population indicate the importance of monitoring of mental health trends through responsive and comprehensive **electronic health surveillance systems**.

The **youngest cohort** of ADF members is particularly at risk of having a mental disorder. Many of these individuals will leave after five years of service without their disorder being diagnosed or treated. The LASER study should assist in identifying risk and resilience factors during this period of service. These young members are at particular risk in the community of not receiving adequate care and the link to military service may go unrecognised. Systems are required to ensure that the Department of Veterans' Affairs has visibility of this group, especially those with veteran entitlements.

This study found that a number of **typically rare disorders** like bipolar affective disorder exist in the ADF. It is therefore important that clinicians are trained to recognise and conduct effective differential diagnoses to ensure that treatment services are targeted effectively.

Analysis of the data has allowed psychometric determination of the **optimal epidemiological cut-offs** for ADF mental screening instruments. Consideration needs to be given to their effective use in an ADF environment.

A **significant number of personnel with mental disorders had received no care** in the previous 12 months. This may have been due to stigma, or barriers to care, or because they did not recognise that they had a problem. Despite the fact that 5.2% met diagnostic criteria for an alcohol disorder in the previous 12 months, only 2.1% indicated that they had a problem with drinking. This supports the inclusion of validated mental health screening in periodic health assessments.

ADF females were not significantly different from females in the community other than having a **lower prevalence of alcohol disorders**. Comparison of data in this study with the LASER study should allow the ADF to determine whether females who join the ADF are more resilient than those in the community and what the protective and risk factors are for both sexes.

Comparisons with major allies

The literature that most resembles the current findings is a study conducted of the Canadian Forces, where a stratified sample was interviewed using an earlier version of the same diagnostic interview used in this study. The study revealed that 14.9% of the Canadian Forces had a mental disorder. Although the prevalence of disorders in the Canadian Forces is apparently lower than in the ADF, the two studies used different diagnostic criteria to analyse the data, with the Canadians using the Diagnostic and Statistical Manual of Mental Disorders – 4th edition (DSM-IV) diagnostic criteria. For the present study, ICD-10 criteria were used to allow comparison with national rates. The ICD-10 criteria appear to use slightly lower thresholds; this may explain at least some of the higher apparent prevalence of mental disorders in the ADF.

Neither the United Kingdom nor the United States has yet conducted an interview-based study of the prevalence of mental disorders in their defence forces. Studies of the UK forces using self-reports (for example, the General Health Questionnaire) estimate that 19.7% of that population has a mental disorder, which is similar to ADF rates. In the US forces, disorder rates are higher in deployed samples, but the overall rate of disorder is estimated at 18.3% of the forces' population, which is again similar to the ADF rate.

Future work

The dataset this study has produced for the future monitoring of the health of ADF personnel is invaluable. There are still a range of occupational issues that have not been examined, including the impact of social support, family relationships, quality of life, recognition of service, bullying, health risk behaviours, physical issues and mild traumatic brain injury. The study provides a baseline for further monitoring of the quality and effectiveness of mental health services offered to both ADF members and veterans. Joint Health Command, in consultation with key stakeholders, will determine the priorities for the next level of analysis.

The end of each section in this report provides a summary of proposed further analyses that could be conducted using the study's dataset. As the ADF is currently involved in deployments involving conflict, exploration of the data that would enhance the mental health and wellbeing of currently deployed personnel should be a priority.

However, as the greatest need appears to be in those who have not been deployed, this needs to be balanced with exploration of the factors that will enhance service delivery for the entire ADF population.

The data from this study will provide an important benchmark for current research into the ADF population. In particular, they will provide comparison points for deployment health studies and for the detailed investigation of personnel who have been deployed to the Middle East Area of Operations.

The data also provide ADF-specific normative data that will provide a context for understanding the LASER findings and for other initiatives like the ADF Alcohol Management Strategy and the third-country decompression trial.

The two-phase design, which included the CIDI, means that Defence has a cohort of personnel identified as having a mental disorder in 2010. Those ADF members in the cohort who have consented to be contacted could be followed up to determine if they have care, or need it, with a focus in the research on determining the pathways to care that better address stigma and break down barriers to care.

The findings that suggest the preventive systems in the operational mental health support system are having a positive impact on the mental health status of the ADF need to be further evaluated to determine which of their components are important. Data from this study could be utilised as a benchmark in this evaluation process. Furthermore, the data provide a baseline against which key components of the ADF mental health reform process can be evaluated.

Now that comprehensive mental health prevalence rates have been established for the ADF, consideration needs to be given to the most effective mechanism to monitor mental health trends over time. This report has established cut-offs that will allow more effective monitoring of mental health trends using self-report data and the new Joint electronic Health Data Information system, or JeHDI. Work has also begun in Australia on the next national mental health prevalence study by the ABS. Consideration needs to be given to the most effective method for Defence, in collaboration with the Department of Veterans' Affairs, to leverage off this national program.

Conclusion

The 2010 ADF Mental Health Prevalence and Wellbeing Study is a major deliverable of the ADF Mental Health Reform Program, as it has provided the foundation for the 2011 ADF Mental Health and Wellbeing Strategy and the future evaluation of mental health interventions and services.

It is an important overview of the status of mental health and wellbeing in the ADF which demonstrates that, as in the Australian community, the identification and treatment of mental disorders must be a priority. However, due to the unique demands of military service, the ADF has a different mental disorder profile to that of the community and there are subgroups within it that warrant further detailed investigation and targeted prevention and treatment programs.

The findings summarised in this report suggest that the comprehensive ADF operational mental health support program is assisting to reduce the levels of disorder in deployed populations. Despite this, there are still significant barriers to seeking care and untreated mental disorders are affecting capability. Dealing with the burden of mental disorder

in personnel who have never been deployed and therefore are not involved in the operational mental health support continuum will be a particular challenge to be addressed through the mental health reform process. The ADF has robust tools to detect mental disorders and there is a wealth of data yet to be analysed that will provide significant insight into the range of occupational issues and potential interventions.

The initial summary of the data in this report provides a strong foundation for the prioritisation of programs in the development of the 2012–2015 ADF Mental Health and Wellbeing Action Plan. In particular, it highlights the need for continued programs to address stigma and break down barriers to care. These include a command-led communications strategy, consolidating and enhancing current ADF mental health treatment services, comprehensive upskilling of health providers, and establishing an informed ADF peer network. Most importantly, the data provide a baseline against which to benchmark the ADF Mental Health Reform Program and inform the development of its initiatives, policies and performance indicators.