3. Literature Review

3.1 Prevalence of alcohol use and harm

The following literature review addresses two main issues: (i) international literature on the prevalence of alcohol use and harm in military populations; and (ii) international literature on approaches to preventing and reducing harm associated with alcohol use within workplaces and other organisations, including the military.

Summary highlights of the literature review on the prevalence of alcohol use and harm in military populations are provided below.

Highlights of the literature review:

- Alcohol use and related problems within military populations is not a new phenomenon.

- Large proportions of military populations in many countries consume alcohol at hazardous levels and several studies have found that military personnel are heavier drinkers than civilians, with associated higher levels of problems.

- Some studies show that recruits drink more than civilians of the same age before commencing in defence forces, and that their drinking does not decrease after commencing.

- The prevalence of risky drinking is highest among younger, lower ranked and male personnel.

- Several studies have found deployment to be a risk factor for hazardous consumption.

- Separation from home, family and friends while on deployment might contribute to this risk factor, while the risk of hazardous drinking is heightened among personnel who perceive that they might be killed or who experienced hostility from civilians during deployment.

- Length of deployment and frequency of deployment may be a risk factor for risky drinking, but there are inconsistent findings among the studies.

- A major contributor to risky drinking is alcohol availability: in a physical (accessibility), economic (affordability) and social (perception of organisational and peer norms) sense.

- There are likely to be significant costs to defence forces as a result of alcohol use by military personnel, including productivity costs due to absenteeism and reduced capability.

- There is a range of interventions discussed in the international literature that are known to be effective or hold promise for reducing alcohol related problems in organisations, both in civilian and military environments. The provision of information and education alone is relatively ineffective.
• Substantial proportions of the estimated costs of hazardous and harmful alcohol use are attributable to low-risk drinkers and people who ‘infrequently drink heavily’ rather than the contribution from the small proportion of dependent drinkers in an organisation. It is the large number of people who occasionally drink in a risky manner (putting themselves at risk of injury from violence and/or vehicle accidents) who are likely to be a larger public health and safety concern, by virtue of their larger number.

• Studies of the negative impact of a person’s drinking on others, especially family members and work colleagues, suggest that costing studies significantly underestimate this element.

• There are minimal studies assessing the extent and costs of alcohol-related safety or disciplinary matters in defence forces; though it is suggested that alcohol is a significant contributor to assaults.

Alcohol use in military populations: an historical and international perspective

The use of alcohol, and related problems within military services, is not a new phenomenon. As noted in a recent review:

“Soldiers about to go over the top during World War One were issued a drink of rum. Indeed, the very term ‘Dutch Courage’ derives from gin taken by English troops in the Low Countries to stiffen their resolve during the Thirty Years War” (Jones and Fear, 2011, p. 166).

Similarly, these reviewers noted the use of alcohol as a treatment for shell shock and anxiety, sleep aid and fortification before and during continuous combat during WW1 and before. The authors noted the propensity for commentators around WW2 to observe that properly selected, trained and led troops would resist alcohol problems, and that those who succumbed probably had a predisposition (eg parental alcohol dependence).

By the time of the Vietnam war, illicit drug use was perceived by many to be the key concern, despite observations that nearly 20% of psychiatric patients in one study were diagnosed with alcohol dependence compared to just under 1% who were diagnosed with ‘drug abuse’ (Huffman 1970, cf Jones and Fear 2011). As noted by Ikin and colleagues (2004) in a study involving over 1400 Australian veterans of the 1991 Gulf War ten years after the event, ‘alcohol abuse’ was the most common psychological disorder.

Hooper et al 2008 examined alcohol consumption in UK forces among a random sample of service personnel in 2002, of whom 61.5% responded via a questionnaire about drinking and smoking. Follow up approximately 3 years later involved a 69.2% response rate of the 1382 who originally responded. The study found that alcohol consumption and binge-drinking increased over the follow up period, with increase being associated with deployment, and highest in those who thought they might be killed or experienced hostility.

A study by Debon et al (2011) of a large military cohort (31,000 men and women) found that 38% of all active duty recruits reported ‘binge drinking’ (i.e., defined as 5 or more drinks on a single occasion) at least one time in the previous 30 days. They also identified some adverse outcomes, noting that 3% of those who drank reported driving after consuming five or more drinks, and 9% had been a passenger with a driver who had been drinking heavily. In the US, Stahre and colleagues (2009) reported that more than 40% of their sample reported past-month ‘binge drinking’, most commonly among 17-25 year old recruits (noting the higher legal alcohol purchase age in the U.S). Those who reported such drinking were more likely to
report poorer job performance, including presenting at work intoxicated. US forces tend to
drink more than civilians (heavy drinkers: 20% and 14% respectively) even when adjusting
for socio-demographic differences (eg Bray et al 2009).

**Risk factors**

As with studies of alcohol and the workplace, alcohol consumption is not randomly
distributed among personnel. A study of UK military personnel noted that heavier drinking
was associated with lower rank, younger age, being single and deployment in the first phase
(2003) of the war in Iraq (Fear et al., 2003) and more common among the Army and Navy
than among Air Force personnel (Fear et al. 2007). Rates of heavy drinking were higher than
within the general population, even when controlling for age and gender. Other studies of UK
troops deployed to Iraq have found that alcohol consumption and ‘binge drinking’ increased
over time, but increased the most among those who thought they might be killed or were
exposed to civilian hostility (Hooper et al., 2008).

Other related studies found that problems at home during and after deployment and poor unit
leadership also contributed to risk (Browne et al., 2008) as did being single (which included
never married, separated, divorced) being a member of lower ranks (eg McKenzie et al.,
2006) being deployed to a conflict zone (Bosnia), being a smoker (Fear et al., 2007;
McKenzie et al., 2006), having a depression diagnosis (McKenzie et al., 2006) and poorer
subjective physical and mental health (Iversen et al., 2007). On the other hand, as noted by
McKenzie and colleagues study of Australian naval personnel who had served in the 1991
Gulf War, being a non-smoker, being married and higher military rank were protective. Spera
et al 2011, using a large random sample (selected 135,225 active duty U.S. Air Force
personnel but only had a 52% response rate) found a relationship with deployment. Recency
of deployment was not related to drinking (using AUDIT) but total number of deployments
was related and cumulative time spent deployed was predictive of higher AUDIT scores. The
authors concluded:

“...we found that the aspect of deployment that had the biggest effect on the likelihood
of problem drinking, when controlling for the recency of deployment as well as the
deployment exposure variables, was the aggregate length of time deployed. This
suggests that, for some individuals, the deployment stress of being away from home
and family for long periods can lead to maladaptive ways of coping, such as turning to
alcohol use” (Spera et al. 2011: 13).

It is important to note deployment was not just to war zones. It included overseas postings (eg
Asia; Europe), suggesting that the impact was more likely related to general separation from
the normal environment and family. This is consistent with other reports of civilian
populations that have also indicated that being separated from home and family has been
identified as a risk factor (Allsop et al. 2001). Spera and colleagues pointed to a critical
finding in their sample, concluding that the evidence:

“… denotes a potential ‘additive’ impact of deployment as it relates to alcohol use,
indicating that, over time, increased length and frequency of deployments can
accumulate and therefore have an impact on problem behaviours such as drinking.
...for each increase in the deployment-frequency category, the odds that an Air Force
member was a problem drinker increased by 14% and for each additional year in
deployed time, the odds increased by 23%” (Spera et al. 2011) p.13).
Ames and Cunradi (2004/2005) also observed that some Defence personnel are more at risk than others. For example, they found that:

“Rates of heavy alcohol use among 18- to 25-yar old military personnel differ significantly by service branch and by gender ...” (p. 252)

Their study found that males in the U.S. Marines Corps have highest rate of heavy use (38.6%) compared to 24.5% among males in Air Force, while 12.9% of female Marine corps compared to 6.3% of female Air Force personnel reported heavy drinking. In their commentary about risk, the authors observed that a key risk factor was that alcohol sold in military stores is sold below prices in civilian stores. Other risk factors they identified included: cultural factors that might influence drinking (such as drinking rituals and celebrations); expectations about drinking norms after work and while on leave; drinking to cope and as a recreational activity; and the physical and social availability of alcohol.

Ames, Cunradi and Moore (2007) undertook detailed interviews with 81 staff and a survey of 2,922 (response rate of 61.7% from total of 4732 possible respondents/personnel who had service of at least 7 years in US Navy). Among current drinkers, 28.2% men and 15.1% women met DSM-IV criteria for past 12-month alcohol abuse. They noted that high risk drinking appeared to be a part of deployment liberty. They noted a barrier to effective prevention was that many senior personnel, medical staff and counsellors saw drinking problems:

“...in the context of individual personality, personal family circumstances, character weakness, or exuberance of youth rather than attributable to factors of the Navy work environment and traditions. Clearly, explanations that point to causes outside the realm of the work environment are convenient, because it is much easier to regard problem drinking as an individual choice issue than it is to rearrange normative behavioural patterns, including activities for a shipload of sailors in a foreign port (Ames et al. 2007: 344).

A study by Bray et al 2005 involved a sample of over 17,000 (US) personnel in different services and different regions (Asia, Europe, Hawaii and mainland US) Heavy use was defined as five or more drinks a day at least once a week in the 30 days before the survey. These authors found regional influences on drinking; for example, being based in Asia was associated with heavier drinking:

“Differences in military culture may also help explain our findings. Our post hoc analyses showed that personnel based in Asia were more likely to perceive a strong connection between their installation’s culture and drinking and were more likely than personnel in the other regions to report drinking more now that before entering the military. …military norms were more favourable toward drinking in Asia than in the other regions. ... These findings suggest that the military culture in Asia has become more accepting of heavy alcohol use and may tolerate and even encourage it” (page 237).

“At a minimum, our findings suggest that military alcohol use prevention and early intervention programs need to be tailored, to take account of regional differences that exist among locations of military personnel. These may include local culture, military culture, norms and specific environmental influences...” (page 237).
Recruitment and Early Training

In 2009/10 the Australian Defence Force Academy (ADFA, 2010) conducted surveys with cadets and graduates. It was found that:

- 24.5% reported having had problems or arguments with friends/peers after drinking too much (13.9% for ADFA graduates)
- 29.5% reported not remembering or feeling unwell the morning after drinking alcohol (46.6% for ADFA graduates)
- 15.6% reported having trouble resisting the influence of friends/peers to continue drinking alcohol on social outings or social events (28.8% for ADFA graduates)

Similarly, in a study of ‘alcohol abuse’ among U.S. Navy recruits, Trent et al (2007) reported that 85% of new recruits consumed alcohol and 69% reported consuming alcohol in the 30 days prior to entry. Almost 49% reported that they usually consumed until intoxication, and reported an average of 3 ‘binge drinking’ episodes (5+ drinks) in the 2 weeks prior to the survey. Thirty-three per cent of drinkers were classified as ‘alcoholics’ and a further 8% were possible ‘alcoholics’ (as measured by MAST). Debon et al (2011) reported that, from a cohort of over 38000 US Air Force recruits, 53% reported alcohol use in the month before starting basic military training, including 45% that were under the legal minimum age for drinking (21yrs). In addition 38% of all active duty recruits reported binge drinking at least once in the 30 days prior to the survey, with 23% reporting 1 to 3 episodes of binge drinking.

A U.S. study by Ames et al (2002) tracked high school students into the military, and found that those who entered the military were more likely to be heavy drinkers. Another study of U.S. Navy recruits found that 26% reported heavy drinking prior to entering the Navy and this remained relatively unchanged at 2 years follow-up (23%) (Ames et al 2002).

The results of a Canadian Forces survey indicated that the proportion of personnel exceeding the weekly Low-Risk Drinking Guideline was highest amongst the 18 to 29 year olds (24.5%), NCMs (19.5%) and singles (29.1%). In addition, 28.2% of 18 to 29 year olds exceeded the AUDIT cut-off for hazardous/ harmful drinking. It was also reported that 27% reported drinking more since joining the force (Canadian Forces, 2010). In 2004, a similar survey of reservists was conducted in which 34% reported consuming alcohol 2 to 3 times a week, 51% exceeded the guidelines, 46% had engaged in binge drinking in the last month and 25% scored above 8 on the AUDIT (CF, 2006).

Generally the evidence suggests that in other countries, a significant proportion of new recruits drink at risky levels.

Access to alcohol

There is limited literature available outlining the locations and contexts of alcohol consumption in the military, however, it is clear that alcohol is readily available.
Moore et al (2007) conducted 50 semi-structured interviews and 713 surveys with U.S. Navy personnel to shed light on alcohol availability. It was found that 63% of underage personnel reported that obtaining alcohol after work on the military base was easy (81% for personnel aged over 21 years). Further to this, 80% reported that alcohol was easy to obtain off-base. The factors commonly associated with increased physical and social availability of alcohol include low alcohol prices in military stores, frequent barrack parties, drink promotions in bars surrounding bases, and multiple opportunities for underage drinking. Respondents found that alcohol and opportunities to drink were overwhelmingly available in both on-base and off-base settings (Moore 2007).

Similarly, Ames et al (2007) reported that a major risk factor of consumption and harm is alcohol availability. It was found that Navy personnel reported easy access in both foreign ports and U.S. naval bases. Underage personnel reported easy access to alcohol in bars, barracks or hotel rooms near bases.

**Pre-deployment preparation**

Very few studies have looked at alcohol consumption in the immediate lead up to deployment; however there is some evidence to suggest that consumption increases in the two weeks prior to deployment. Blume et al (2010) found that 20.5% of US soldiers surveyed reported episodes of binge drinking in the 2 weeks prior to deployment. The proportion of personnel reporting binge drinking prior to deployment was slightly higher than that at the end of deployment (16.6%). There was no significant difference between pre-deployment and end of deployment reports of drinking frequency and total drinks within a 14 day period; however the mean number of drinks per day was significantly higher at pre-deployment.

**Deployment**

There is a wealth of research studying the relationship of deployment and combat to mental health issues, including excessive alcohol consumption. According to Jacobson et al (2008), personnel reporting combat exposures where their life was threatened were at higher risk for heavy weekly drinking (OR 1.12)\(^4\), binge drinking (OR 1.13) and other alcohol-related problems (OR 1.03).

Browne et al (2008) found that personnel who reported 4 or more occasions where they thought they might be killed were at higher risk of being classified as heavy drinkers, as measured by the Alcohol AUDIT even after adjusting for all other combat experiences, psychological distress, comradeship, leadership and demographic characteristics (OR 1.35). Killing in combat has also been identified as a significant predictor of alcohol abuse, after controlling for combat deployment, number of deployments, mental health issues and demographic characteristics (Maguen et al, 2010).

Studies of UK troops deployed to Iraq have found that alcohol consumption and ‘binge drinking’ increased over time, but increased the most amongst those who thought they might be killed or were exposed to civilian hostility (Hooper et al. 2008). Other related studies found that problems at home during and after deployment and poor unit leadership also contributed to the risk (Browne et al. 2008) as did being single, being a member of lower ranks (McKenzie et al., 2006), being deployed to a conflict zone (Bosnia), isolation of assignments (Bray 2005), stress associated with relocation to unfamiliar countries (Bray 2005), being a smoker (Fear et al. 2007; McKenzie et al. 2006), having a diagnosis of

\(^4\) OR: Odds ratio
depression (McKenzie et al. 2006) and poorer subjective physical and mental health (Iversen et al. 2007). In addition, it has been reported that alcohol consumption patterns of deployed Defence personnel is often influenced by the culture of the deployment location (Bray 2005).

Research has reported that the length of deployment is associated with increases in frequency and quantity of alcohol consumption. Allison-Aipa et al (2010) reported that the more time personnel are deployed in combat situations, the greater the levels of mental health issues including excessive alcohol consumption. Deployments of 12 months or more are associated with an increase in distress scores and alcohol consumption (Allison-Aipa et al 2010). In addition, Spera et al 2011 found that the total number of deployments was related of excessive consumption (as measured by the AUDIT), and cumulative time spent deployed was predictive of higher AUDIT scores.

However, recent studies have contradicted these findings. The Canadian Forces (2010) found that personnel exceeding the AUDIT cut-off (8) didn’t vary between personnel who had been recently deployed and those that hadn’t. Likewise, the prevalence of binge drinking (6 or more drinks on one occasion) did not vary significantly between those that had been deployed and those that hadn’t. This study, did however report high levels of alcohol consumption amongst personnel on home-leave following deployment. Amongst personnel who had been on home-leave in the previous 3 years, 8.7% consumed 5 or more drinks on a daily basis, 5.4% consumed at this level ‘every other day’ and 24.4% did so 3 to 4 times during their leave. It was, however, reported that 50.2% of personnel thought that there drinking hadn’t changed since pre-deployment, 33.2% said that their drinking was similar, and 16.6 said that it was different. Of those who reported a change, 26.9% were aged 18 to 29 years, 18.3% were NCMs and 22.1% were in the Army.

A survey of ADF families found that, over time, increased length and frequency of deployments can accumulate and have an impact on problem behaviours such as drinking. In fact, for each increase in the deployment-frequency category, the odds that a member was a problem drinker increased by 14%, and for each additional year in deployed time, the odds increased by 23%. It was also found that the aspect of deployment that had the biggest effect on the likelihood of problem drinking, when controlling for the recency of deployment as well as the deployment exposure variables, was the aggregated length of time deployed. This suggests that, for some individuals, the deployment stress of being away from home and family for long periods can lead to maladaptive ways of coping, such as turning to alcohol use (ADF 2009).

**Decompression**

A decompression period immediately following a deployment operation is standard practice in many armed forces, where combat troops are given a short period of leave and psychological support following deployment. However, it is well known that alcohol continues to play a significant role in this process (Fossey 2010).

The Australian Defence Force is in the process of trialling Third Location Decompression (TLD), thus the impact on alcohol consumption is unclear at this stage. It has, however, been part of the US military end-of-deployment policies since the Vietnam War and it is viewed as a stress management exercise to transition personnel back into their home life and ensure they are prepared for their next deployment. In Canada and the UK third location decompression (or normalisation as it is referred to in the UK) is an optional exercise at the end of deployment activities, and aims to reintroduce personnel to drinking in a responsible manner (ADF 2011).
Minimal evaluation of the impact of TLD on alcohol consumption has been undertaken. However, a study by Hacker-Hughes et al (2008) that involved post hoc analysis of data on personnel who spent one week or less in decompression were 1.13 times more likely [adjusted Odds Ratio] to drink heavily than those that went straight home; those that spent 1 to 2 weeks in decompression were 1.2 times more likely to drink heavily; and those that spent more than 2 weeks in decompression were 1.17 times more likely to consume heavily. Thus, personnel involved in decompression were more likely to drink heavily compared to those that returned home immediately following deployment.

A briefing from the ADF Joint Health Command (5 April 2011) reported some satisfaction data from the UK and Canada. In the UK study on decompression in Cyprus, it was found that approximately 80% of personnel did not want to participate in TLD or were ambivalent about participation prior to their arrival. However, the majority (91%) reported having found TLD useful upon completion and 80% of TLD activities were seen as being generally helpful. About 70% of decompressing troops thought that the briefings would be helpful in easing their transition home and the three groups of personnel least likely to perceive TLD as being helpful were NCOs/SNCOs, troops serving in the Combat Arms and those who reported low levels of adjustment concerns.

The UK decompression program currently limits personnel to five cans of beer per person, per day, after Day 1 (ACDMH 2009). Anecdotally, there is evidence that following controlled drinking during decompression, there was a drop in alcohol-fuelled assaults/injuries on return to the UK, though it was stated that there were incidents during decompression. A study of the program found that 5.1% of respondents commented on alcohol consumption: 44% of these responses were requests for greater alcohol availability both in quantity and choice, and 22% were requests for less alcohol.

In the Canadian study on decompression (also in Cyprus), it was reported that the majority of respondents (96%) reported that they “Agree” or “Strongly Agree” that some form of TLD was a good idea; 86% of respondents reported that they “Agree” or “Strongly Agree” that the TLD experience was valuable; and 90% of respondents recommended it for future rotations to Afghanistan. At 6 months post-decompression, 86% agreed that TLD was valuable and 83% felt that the program made the reintegration process easier for them. In addition, in an evaluation of a Canadian decompression program in Guam, it was reported that many participants reported appreciation of the extra effort and expense which the Canadian Forces invested in order to ensure that they were properly cared for and followed-up. Many participants commented about the need for downtime, and how much they had enjoyed the chance just to have a beer and unwind in a North American type of atmosphere. Their spouses also noted the positive effect a few days of down time before the troops got home had on their readiness to rejoin their families, and many participants had positive comments about the lectures that were provided during the TLD.

The Canadian Forces reported a small number of alcohol-related medical problems during the early stages of TLD (seven trauma incidents, mostly involving fights, and three cases of alcohol poisoning). Recurring events were successfully remedied by introducing a number of counter measures, including an orientation brief and a buffet lunch.
Post-deployment

The U.S. Military conduct a Post-Deployment Health Assessment (PDHA) upon return and a Post-Deployment Health Re-Assessment (PDHRA) approximately six months post-deployment, with alcohol use being measured in the PDHRA only. This self-administered assessment includes the TICS screen for alcohol misuse (Two-Item Conjoint Screen). A study by Milliken (2007) reported the mental health outcomes of 88,235 U.S. soldiers who completed both the PDHA and PDHRA. Almost 12% of ‘active’ soldiers and 15% of ‘National Guard and reservists’ reported alcohol misuse via the PDHRA, with only 0.4 subsequently being referred for specialty care.

Santiago et al (2010), in studying 6527 U.S. Army soldiers returning from Iraq reported that 27% screened positive for alcohol misuse using the TICS. Those who screened positive were more likely to have recently engaged in: drink driving (OR 4.99); riding with a driver who had been drinking (OR 5.87); reported being late or missing work because of a hangover (OR 9.24), using illicit drugs (OR 4.97); and being convicted of driving under the influence (OR 4.84)(Santiago et al, 2010). Santiago et al also reported that 27% of the soldiers reported hazardous/harmful consumption (AUDIT >=8).

A study by Maguen (2010) assessed the mental health impact of reported exposure to direct and indirect killing amongst 2,797 U.S. Operation Iraqi Freedom soldiers during routine post-deployment mental health screening. Based on the AUDIT, 25% reported hazardous or harmful consumption (AUDIT >=8). In contrast, Duma (2010) reported that only 8% of US soldiers after returning from deployment and again before the next deployment (Iraq and Afghanistan) reported hazardous or harmful alcohol consumption (AUDIT >=8).

Similarly, a recent UK study of troops returning from Afghanistan and Iraq noted that ‘alcohol misuse’ was high among UK service personnel (13% of a sample of almost 10,000), more common than among non-deployed colleagues (Fear et al 2010). A study of US marines also noted high rates of ‘intense drinking’ (Schuckit et al. 2001), and a study by Wilk et al 2010 reported that deployment to combat zones was associated with higher alcohol related risk (Wilk et al., 2010). A study of nearly 1600 Royal Navy personnel reported that almost all (92%) were identified as hazardous drinkers (using AUDIT-C) with 40% meeting the criteria for ‘heavy drinking’ and 15% were classified as problem drinkers (Henderson et al., 2009).

Hooper et al 2008 examined alcohol consumption in UK forces (random sample of 2246 service personnel with 61.5% responding to a questionnaire about drinking and smoking). This provided baseline data in 2002 and was followed-up approximately 3 year’s later (69.2% response rate of the 1382 who originally responded). It was reported that both alcohol consumption and binge-drinking in the UK Armed Forces increased during the study period. It was found that the change in drinking was associated with deployment, highest in those who thought they might be killed or experienced hostility from civilians. The latter added an average of 6.1 units a week to alcohol consumption on exiting theatre, but with each year that passed this was reduced by 2.8 units a week. Thus, it was concluded that alcohol use in the UK military increased following traumatic exposures, though this increase was not maintained over time.

The ADF Annual Mental Health Surveillance Report (ADF, 2009) reported that 20% of Army personnel, 12.6% of Navy personnel and 7.3% of Air Force personnel consumed alcohol at risky levels (AUDIT score >=8). The study also demonstrated significant differences between operations in 2009, with operation Krugar and Astute showing the highest proportion of post-operational personnel reporting drinking at risky levels (19.4% and 18.9% respectively).
Thus, in reviewing the evidence, it appears that separation from home and family increases the risk of subsequent hazardous drinking and perceived threat and exposure to traumatic events on deployment also increases this risk. Increasing deployments may be associated with increasing risk. The period immediately post deployment may be a particularly risky time for adverse outcomes of drinking.

**Impact on individual and organisational health and safety**

There are limited systematic analyses of how alcohol contributes to risk in the ADF. However, some insight may be gained from evidence accumulated in the broad community. It is pertinent to note that costs can arise from a number of sources eg costs from the acute effects of alcohol misuse such as injury, intoxication and hangover, costs from regular use, and costs associated with dependence. Collins and Lapsely (2008) calculated the costs that arise from alcohol use in Australia overall, including health costs, costs to policing, and costs to workplace productivity to be A$3.5 billion. Alcohol-attributable reductions in the male labour force accounted for approximately 77% of this total, indicating the potential scale of negative impact for workplaces such as the ADF.

Pidd *et al* (2006b), estimated that alcohol-related absenteeism cost Australia between A$437 million (calculated on the basis of 2.5 million work days missed) and A$1.2 billion (calculated on the basis of 7.5 million work days missed) annually. Alcohol-attributable fractions correspond to the proportion of a population’s chronic and acute medical conditions as well as deaths that can be attributed, either wholly (as in the case of alcoholic liver cirrhosis) or in part (eg liver cancer or injuries) to a particular drinking level (eg low-risk, risky, high-risk). Pidd *et al* (2006) observed that a substantial proportion of estimated costs were attributable to low-risk drinkers and people who ‘infrequently drink heavily’. In contrast, many people focus their attention on the harm that arises from the small proportion of very heavy drinkers in a community or organisation. However, the large number of people who occasionally drink in a risky manner (putting themselves at risk of injury from violence and/or vehicle accidents) can be a larger public health and safety concern by virtue of their larger number.

Many of the estimates above do not include the effect of consumption on others. In a recent study, seventy per cent of Australians report having been affected by strangers’ drinking (Laslett *et al*, 2010: xviii). These harms range from minor annoyances, such as, those who report being kept awake, to more severe harms such as physical violence. Just over 40% of respondents reported that they had been threatened, physically assaulted, or had their property or belongings damaged as the result of a stranger’s drinking (Laslett *et al*. 2010: xviii). Another cent study by Dale and Livingston (2010) investigated the impact that an individual’s alcohol consumption imparts on co-workers. They found that just under one-third of all respondents reported working with co-workers who drank heavily, 8 per cent reported being negatively affected by a co-worker’s drinking, and 3.5 per cent reported having to work extra hours as a consequence of the alcohol-consumption habits of co-workers. Further, they estimated that the annual cost of additional hours worked as a consequence of having a heavy-drinking colleague was A$453 million.

In terms of research assessing the extent of alcohol-related safety or disciplinary concerns in defence forces, minimal studies were located. Scheckel (2005), however, reported that alcohol contributes to 50% of alleged assaults in the U.S. military, and that the U.S. Department of Defence estimated that in 2002/3, the loss in personnel readiness due to alcohol-related incidents was 1764 members. The Canadian Force (2010) found that 7% of males and 3% of females reported they had been a passenger in a vehicle with a driver who had consumed too
much alcohol; 6% of males and 2% of females reported driving a vehicle after consuming too much alcohol; and 3% of males and 1% of females had driven or been a passenger in a water vehicle after the operator had consumed too much alcohol.

In December 2010, Lieutenant General Gillespie (Chief of Army) stated that:

“As part of my daily briefing process, I am advised of incidents involving non-operational casualties, safety and irresponsible behaviour. For example, in the period January to September 2010 there was a total of 372 alcohol-related incidents reported to Army Headquarters. Be aware that these were only the reported incidents and many of them involved multiple individuals. In one 72 hour period there were 12 incidents involving alcohol. These incidents often impact adversely on careers, and can result in injury and even death. As you might imagine these incidents can keep me awake at night. In my view they are NOT accidents, they are people-made incidents. Our most alarming statistic is that in 2009, we lost more people in alcohol-related incidents than to war”.

and

“In 2009, we had 140 driving under the influence charges around the country and over 80 injuries to my people where alcohol was a contributing factor — and these are just the more serious ones, those that are caught and then lead to some sort of report! Some of the injuries will be life lasting and will affect families and the individual for the whole of their lives. When you start to tally the cost to the people, to their families and the organisation, it’s a cost that we can no longer ignore”.

3.2 Approaches to alcohol within workplaces and other organisations

It takes more than a person to produce alcohol related trouble. The substance itself, one of Australia’s most popular psychoactive drugs, and the environments in which it is consumed plays an important part in the mix. If an individual works in a setting where alcohol is readily available, where work is stressful and/or boring and there is a cultural norm of heavy drinking, there may be an increased prevalence of alcohol related harm. To simply focus on the individual (eg education strategies urging individuals to resist temptation; treatment programs to help those with problems to cut down/stop; discipline for those whose drinking interferes with work performance) and not address the environmental conditions and availability of alcohol that contribute to harm, is likely to have limited impact.

The traditional focus of responses to alcohol problems in the workplace, including armed forces, has been on providing treatment for staff who develop problems. Preventive effort has largely relied on regulations about alcohol use while on duty and identification of affected individuals.

The evidence regarding alcohol problems in the workplace indicates a range of internal and external factors that influence alcohol use. These factors include (Cercarelli 2011):

- workplace alcohol availability and availability in the broad community (more easily available alcohol associated with increased use and harm);
- clarity of regulations about alcohol use and related harm — this includes ensuring regulations are understood and supported by all segments of personnel;
- quality of supervision — low or unsupervised occupations carry higher risk than others;
• work culture - cultures that tolerate or encourage risky alcohol use are associated with increased risks;
• occupational safety and health culture — work cultures that strongly support safety are likely to have lower risk;
• separation from family and social networks; and
• experience of stress and alienation.

3.2.1 Approaches in civilian contexts

It is apparent that alcohol use and related harm in the workplace are not randomly distributed among workplaces, with some workplaces being associated with higher rates of use and harm than others. This may be influenced by workplace factors, such as recruitment practices and working conditions, and factors that drive consumption and harm in the broad community.

A variety of views were expressed to the Panel regarding the existence of alcohol problems in the ADF. While many acknowledged the ADF had such problems, others did not, or indicated that if they existed, they were no different to the broader community. For some, the problems were defined in public health or safety terms, whilst for others, they were expressed in terms of impact on operations and capability. This diversity of views will have an impact on the response of the organisation to this report and its recommendations, and hence on the strategies adopted for implementation.

An example of different perspectives can be seen in the types of views expressed to the Panel across a range of rank levels. The following is representation of comments and views:

“Restricting availability of alcohol will make no difference here. It will only drive our members outwards. It will be resented”:

While the views of others included:

“Get rid of all boozers”

**Tailored responses**

Individual, community and workplace factors can increase and decrease alcohol risk. Responses to alcohol problems in the workplace will therefore need to be tailored and multifaceted. For example, approaches to prevent intoxication may be distinct from, but complement, those that aim to reduce absenteeism related to regular heavy use. Responding to problems in remote or specific areas where work is safety-sensitive, where the workforce is dominated by young males who regularly celebrate the end of the working day by drinking, may have different characteristics to strategies used for lower risk office environment with an older age group who are more regular heavy drinkers

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5 This summary of good practice approaches to the management of alcohol issues in the workplace is derived from a forthcoming report by the Victorian Health Promotion Foundation (see Cercarelli et al. 2011).
Multifaceted strategies

The multifaceted nature of alcohol use and related harm and evidence from outside and within the workplace suggest that diverse and multifaceted interventions will be needed. A focus on a single approach, such as relying on educational approaches or peer support programmes will be insufficient. If the risk of alcohol-related harm is increased by a context where alcohol is easily available, where work is stressful and boring, where supervision is poor and there is a cultural norm of heavy use, an effective response requires all of these issues to be addressed.

Accessible interventions

Sometimes people will resist seeking help, especially if they perceive there will be negative consequences of doing so. Web-based interventions are increasingly being adopted as an effective response to this barrier. They can be disseminated to any location at low cost. Stigmatisation concerns are reduced through the use of such programs because there is no need for face-to-face contact and in many cases the recipient retains anonymity. Automation assures the treatment is consistently delivered as intended.

Good practice in policy

Alcohol policies can help clarify procedures related to alcohol consumption in the workplace as well as the management of such a practice, and in these terms can be useful to workplaces. Allsop and colleagues (2001) suggest that the process of developing effective policies is critical, requiring consultation with the workforce and other key stakeholders, with policies purchased ‘off-the-shelf’ less likely to be effective. The requirements for an effective alcohol policy are suggested to include:

• being written in explicit terms, describing the procedures to be followed in responding to hazardous use;
• identifying the responsibilities of the broad workforce and individual officers;
• ensuring that the workforce is informed about and supportive of the rationale for the policy and implementation procedures;
• ensuring universal and equitable application;
• ensuring that the consequences of any breach are agreed, reasonably graduated (i.e. consistent with the seriousness of the breach), explicit and clearly communicated;
• being consistent with relevant legislation; and
• including evaluation and review.

Implementing and embedding policy

Effective implementation is likely to involve an approach that attracts employees to change, not simply having to accept an unpopular imposition. This means explaining, providing a rationale for action and responding to concerns expressed by staff. It may be useful, or more attractive, to integrate an alcohol policy into an overall approach to manage other safety and health issues, such as sedentary behaviour, stress management and workplace safety. Social marketing approaches can help create a context for policy development and program implementation.
Individual, structural, community focus

As described previously, while interventions focussed on individuals have a place (such as health education and rehabilitation responses) it is important to address the structural factors (actual and perceived availability; degree of management and peer acceptability of drinking and alcohol affected behaviour; working conditions; visibility and quality of supervision) that might contribute to low and high-risk drinking.

Finally, it is arguable that an effective response will not just focus on an organisation such as the ADF. If community alcohol consumption and related harms increase (as indeed they appear to be in Australia (see Chikritzhs et al. 2010), it is reasonable to propose that this could translate to increased costs. Employer and employee organisations have previously brought influence to bear on governments to address alcohol availability, use and harm in the broad community. Such considerations in the UK during the First World War resulted in action to reduce the hours of sale of alcohol (see, for example, Higgs 1984).

3.2.2 Approaches in military contexts

The following section examines the more limited literature relating to alcohol interventions in defence forces. Moore et al 2007 reported, in a study of 50 U.S. Navy personnel and a mail survey of over 700 enlisted males and females, the influence of the physical and economic availability of alcohol on drinking risks (eg price of alcohol at Navy Exchange base stores, parties at barracks and the promotion of alcohol in surrounding, off-base bars). They suggested that it was important to raise alcohol prices in base stores and also to enforce policies regarding underage drinking, particularly in relation to secondary supply (ie the provision of alcohol to underage drinkers by people who have attained the legal purchase age, and by bars in and around bases [noting mostly 21 years in USA]. They observed that as the Navy tried to address concerns about alcohol, for example by strengthening controls on the base, off-base provision grew in prominence. This influenced their conclusion that prevention strategies should not just target bases, but the surrounding suppliers. One suggestion was to focus on meaningful changes in alcohol availability in base surrounds, for example by liaising with external suppliers, and using as a motivator the threat to declare off-limits those venues that do not comply with the spirit and letter of liquor licensing.

Interestingly Spera et al (2010) reported on the effectiveness of such an intervention to reduce drinking among young Air Force personnel. The intervention consisted of enforcement of legal purchase/drinking age, related compliance checks at local, off-base outlets (including controlled underage purchases) enforcement of DUI legislation, community education and peer intervention (referred to as a “shoulder tap” for risky drinking). The intervention was associated with a greater decline in drinking relative to control sites.

While physical and economic availability (eg hours of sale, number of outlets; price; age restrictions) of alcohol clearly affect consumption, as already noted, so too does social availability (eg the perception that ones peers drink and/or drink heavily). Ames et al. 2002 noted that normative beliefs about drinking (eg believing your peers are drinkers/heavy drinkers) was associated with drinking levels at pre-enlistment. They noted that pre-enlistment ‘underage’ drinking was also a predictor of risk.
Such beliefs, or social norms, are amenable to influence and may mediate changes in drinking behaviour. For example, Williams and colleagues (2008) reported on a web-based intervention in a sample of U.S. military personnel. Participants either received the Drinker’s Check-Up (N= 1483), Alcohol Savvy (N= 688), or served as controls (N= 919). Participants were followed up at one and six months. The researchers noted that web-based interventions were effective in lowering perceived norms about the frequency and quantity of drinking and this was associated with declines in the individual’s own drinking.