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Drug and Alcohol intoxication and Subsequent Harm in night-time Entertainment Districts (DASHED)

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Acronyms

ACTT	Alcohol Crime Targeting Team
AOD	alcohol and other drugs
AIHW	Australian Institute of Health and Welfare
AmED	alcohol mixed with energy drink
AOD	alcohol and other drugs
ARIMA	Autoregressive Integrated Moving Average
BAC	blood alcohol concentration
CBD	central business district
DANTE	Dealing with alcohol-related harm in the Night-Time Economy
DASHED	Drug and Alcohol intoxication and Subsequent Harm in night-time Entertainment Districts
ED	emergency department
ERP	estimated residential population
HAH	high alcohol hours
ICD	International Classification of Diseases
NDLERF	National Drug Law Enforcement Research Fund
NEP	night-time entertainment precinct
NTE	night-time economy
ORS	Office of Regulatory Services
PROMIS	Police Real-Time Online Management Information System
POINTED	Patron Offending and Intoxication in Night-Time Entertainment Districts
RBT	random breath test
RTT	Regional Targeting Team
RSA	responsible service of alcohol
S&T	injury codes

Acknowledgements

Introduction

The harm associated with consuming alcohol, particularly among young people, is of growing concern within the Australian community. It presents a major challenge to all levels of government. In 2004–05, alcohol use was estimated to cost the community approximately $15.3 billion through crime, violence, and treatment costs (Collins & Lapsley 2008), increasing to an estimated $36 billion by 2010 (Laslett et al. 2010). Developing policies that attempt to influence drinking behaviour is notoriously difficult, largely because consuming alcohol is both widely accepted as a significant part of Australian culture and at the same time responsible for a range of social and health related problems. Australia has a well-established drinking culture of 'drinking to get drunk'. Consuming alcohol, frequently at excessive and harmful levels, is associated with many forms of entertainment and participation in social events (Ministerial Council on Drug Strategy 2006).

Strong evidence shows the range of individual and social harms associated with alcohol misuse. In 2013, 22 percent of Australians were victims of alcohol-related verbal abuse, 13 percent were put in fear, and 8.7 percent of Australians aged 14 years or older had been physically abused by someone under the influence of alcohol (AIHW 2014). The rates of physical and verbal abuse by a person affected by alcohol are more than twice the rate for other drug types (Nicholas 2006). Alcohol-related crime and disorder can have a significant adverse impact on the perceptions of safety among the broader community. This concern and perception extends well beyond those who have been directly involved in an incident of alcohol-related antisocial behaviour or harm (Nicholas 2006).

The National Alcohol Strategy 2006–2011 reflects a greater recognition of the acute and chronic problems associated with alcohol and intoxication (Ministerial Council on Drug Strategy 2006). This strategy shows a significant shift in emphasis in defining and prioritising alcohol-related problems, with an increased focus on those associated with intoxication, particularly within the public domain (Nicholas 2008). The four main aims of the strategy are to:

- reduce the incidence of intoxication among drinkers;
- enhance public safety and amenity at times and in places where alcohol is served;
- improve health outcomes among all individuals and communities affected by alcohol consumption; and
- facilitate safer and healthier drinking cultures by developing community understanding about the special properties of alcohol and through regulating its availability (Ministerial Council on Drug Strategy 2006).

Three of the four aims clearly relate to operating and managing licensed premises and entertainment precincts, and the need to develop a safe drinking culture.

Australian policy directed towards reducing the incidence of alcohol-related victimisation has been primarily concerned with regulatory responses that target licensed premises and liquor outlets. Restricting closing times has been a recent focus (Kypri et al. 2011; Loxley et al. 2005). Licensed premises are a high-risk setting for alcohol-related violence, with a large proportion of assaults occurring in or near to hotels and nightclubs. Both patrons and staff of licensed premises are at a heightened risk of becoming involved in a violent incident compared with other locations (Graham & Homel 2008; Menéndez et al. 2015). Research demonstrates a strong correlation between liquor outlet density and the incidence of multiple forms of social disruption, including assault, injury and drink-driving (Chikritzhs et al. 2008). Research has also shown that in any given area, a relatively small number of outlets can be responsible for a disproportionate number of incidents of alcohol-related harm (Briscoe & Donnelly 2001a, 2001b).

The relationship between alcohol and violence, like many other complex social phenomena, is not simple or straightforward. Research suggests that the association between alcohol and aggression stems from a complex interaction of variables, including:

- pharmacological effects of alcohol on the cognitive, affective and behavioural functioning of the drinker which can lead to increased risk-taking, disinhibition, 'liquid courage', a distorted interpretation of events, and an inability to resolve incidents verbally;

- effects of the drinking environment including situational factors such as crowding, permissiveness of violent behaviour, the management of licensed premises and the behaviour of staff;

- individual characteristics, personality, attitudes and expectations of the drinker including younger age, predisposition to aggression, deviant attitudes and expectations of the drinker about the effects of alcohol; and

- societal attitudes and values, including a culture of drinking to deliberately become intoxicated ('determined drunkenness'), and using alcohol as an excuse for behaviour not normally condoned, holding individuals less responsible for their actions (Graham et al. 2006; Graham et al. 1998).

Preventing violence and aggression in and around licensed premises must be based on a clear understanding of these interacting processes and risk factors, drawing on the evidence base for the most effective interventions, and customising action to suit the specific circumstances of local communities (Graham & Homel 2008).

Also to be considered is the broader social and regulatory context in which licensed premises operate. Regulating the sale and supply of alcohol in Australia is the responsibility of state and territory governments. While most jurisdictions have adopted harm minimisation as a primary objective in their liquor licensing legislation, the National Competition Policy and the requirement for state and territory governments to ensure that there are no unfair restrictions on competition has, in recent years, resulted in considerable change to some liquor acts (Chikritzhs et al. 2008). As a result there has been, as in many other countries, a general trend towards liberalising liquor licensing legislation, deregulating the sale of alcohol, and growth in the night-time economy (Graham & Homel 2008). This has important implications for developing strategies that aim to reduce alcohol-related problems in and around entertainment precincts, influencing the specific types of premises that are established in these areas, the characteristics of the clientele, and the culture and community within which the intervention is delivered (Graham & Homel 2008).

The current study

This project—Drug and Alcohol intoxication and Subsequent Harm in night-time Entertainment Districts (DASHED)—used an innovative research design by collecting data within the night-time economy. As a mixed-methods cross-sectional study it used three techniques to collect data about consumers during an episode of alcohol and other drug use:

- short patron interviews with people entering or leaving licensed venues;

- sessions of structured observation within licensed venues; and

- using administrative data (police, ambulance, emergency department and licensing compliance data).

Little is also known about how behaviour and harms differ between location and types of venue. Without specific evidence—of rates of alcohol and other drug use, patterns of consumption, associated behaviour and harms—the efforts of police and licensees to address intoxication and offending in licensed venues will continue to be undermined by ineffective policy. This study attempted to address these important questions, using a research design that enabled researchers to capture data from consumers during an episode of alcohol and other drug use. This approach limited the potential for recall bias, and allowed first-hand observation of behaviour in and around licensed venues.

A core aim of DASHED was to research, evaluate and review drug law enforcement relating to licit and illicit drugs by examining alcohol-related harm and violent or offending behaviour around entertainment precincts. The study focused specifically on alcohol-related violence, investigating the factors and correlates associated with alcohol-related violence in the night-time economy. The results can be used to inform evidence-based practice in drug law enforcement. They can do this by informing strategies to both minimise and enforce behaviours including alcohol or other drug-related violence, offending, risky behaviour and experience of harm.

DASHED also provides a valuable evidence base to help in selecting and adapting appropriate responses to alcohol and drug-related intoxication and crime in Canberra and Hobart. It also provides a baseline against which to measure the impact of future responses. The study includes an estimate of the costs attributable to alcohol and drug-related crime within a particular entertainment precinct, including the costs to policing. This can be used to inform future decisions on the allocation of resources.

Such research will also improve the role of law enforcement and licensees in developing and evaluating innovative licit and illicit drug law enforcement practices. It will also enhance collaboration across law enforcement, licensees and research staff when working together to tackle problems associated with alcohol/drug-related behaviour in entertainment precincts.

Project objectives

The study had six specific objectives:

1. Determine the prevalence of alcohol and substance-related harms in Canberra and Hobart entertainment precincts and major trends over time.
2. Identify the main characteristics of alcohol and substance-related harms in Canberra and Hobart entertainment precincts and how these compare with other entertainment precincts elsewhere in Australia.
3. Examine the nature of the relationship between patron alcohol consumption, intoxication, substance use and associated harms in Canberra and Hobart entertainment precincts.
4. Determine the main drivers of alcohol and substance-related harm in Canberra and Hobart entertainment precincts and identify opportunities to implement responses to reduce the level of harm associated with alcohol.
5. Estimate the costs associated with alcohol and substance-related harms in Canberra and Hobart entertainment precincts.
6. Provide a valuable evidence base to help select and adapt appropriate responses to alcohol-related problems in Canberra and Hobart as well as providing a baseline against which to measure the impact of future responses.

Study areas

This study involved evaluating existing strategies to address alcohol-related harm in the entertainment precincts of two regional Australian cities: Canberra (Australian Capital Territory or ACT) and Hobart (Tasmania or Tas). These sites were chosen to investigate jurisdictional differences in alcohol and other drug consumption patterns and intoxication, and related harms. They were also chosen as they form a comprehensive national picture of Australia when combined and contrasted with past studies—Dealing with Alcohol-related harm and the Night-Time Economy or DANTE (Miller et al. 2012) and Patron Offending and Intoxication in Night-Time Entertainment Districts or POINTED (Miller et al. 2013).

Canberra, the capital of the Australian Capital Territory, and Hobart, the capital of the state of Tasmania, are two of the smallest capital cities in Australia, together contributing just 2.6 percent of the national population (ABS 2016). Both Canberra and Hobart have successful entertainment districts.

Canberra

In 2015, Canberra had a population of 392,264, with an annual growth rate of between 0.7 and 2.2 percent (Table 1). At the 2011 Census (ABS 2016), most of the population were aged 44 years or younger (65%), unemployment was at 3.6 percent, and of those employed, most were professionals (29.7%), administration workers (19.2%) or managers (15.9%).

Table 1 Canberra population, 2004–15		
Year	Population	% Annual Increase
2004	328,940	
2005	331,399	0.7
2006	335,170	1.1
2007	342,644	2.2
2008	348,368	1.6
2009	354,785	1.8
2010	361,766	1.9
2011	367,985	1.7
2012	375,183	1.9
2013	381,291	1.6
2014	385,996	1.2
2015	392,264	1.6

Canberra night-time economy

Canberra City (or Civic) and Braddon are the areas considered to be the Australian Capital Territory's primary entertainment precinct. They are characterised by a high concentration of licensed establishments and high levels of alcohol-related crime and violence (ACIL Allen Consulting 2014; Smith et al. 2011). Compared with Canberra overall and other local entertainment precincts (eg Kingston/Manuka), Civic entertainment precinct has higher rates of criminal offence types such as theft (excluding motor vehicles), property damage, traffic infringements (including drink-driving), assault and offences against the person (Smith et al. 2011).

These postcode areas contain venues that close at 1, 3 and 5 am, which means there are high numbers of people moving between venues at all times of the night. Classes of licences according to the *Liquor Licensing Act 1990* are defined as follows:

* general licence—authorises the sale of liquor between 5 am and midnight on any day on the premises specified in the licence for consumption on or off those premises; and the sale of liquor at any time to a resident of the premises specified in the licence and any premises of which those premises form a part;

* on-licence—authorises the sale of liquor between 5 am and midnight on any day on the premises specified in the licence for consumption on those premises; and the sale of liquor anytime to a resident of the venue specified in the licence for consumption on those premises or a resident of any premises of which the premises specified in the licence form a part for consumption on those premises;

* off-licence—authorises the sale of liquor between 5 am and midnight, on any day of on the premises specified in the licence, for consumption off those premises;

* club licence—authorises the sale of liquor between 5 am and midnight on any day on the premises of the club specified in the licence to prescribed individuals for consumption on or off those premises and is subject to any conditions relating to record-keeping of membership and visitors to the club as specified in the licence; and

* special licence—authorises the sale of liquor between time and on premises and subject to compliance with any condition specified in the licence.

Liquor licensing data indicates that during 2010 to 2015, 109 licensed venues were in the Canberra CBD (Figure 1). Most (83%) of these were on-premises licences, followed by off-premises (11%), clubs (3%), special (3%) and general (1%) licences. During the five-year period, 198 licensing breaches were recorded.

Figure 1 Clustering of bars, pubs, nightclubs, hotels and restaurants as identified by Google maps within the entertainment precincts of City and Braddon, Canberra
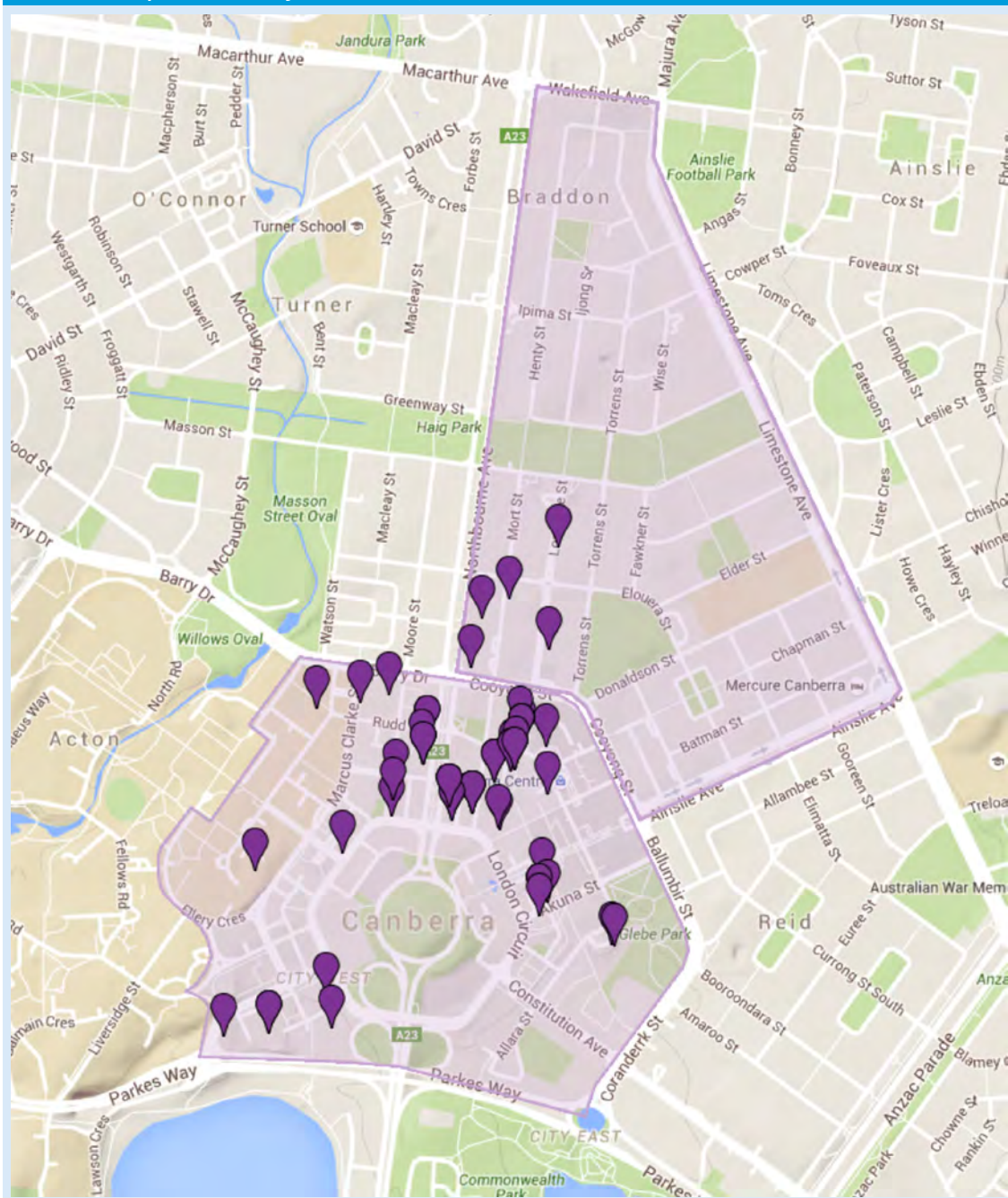
Canberra interventions

In Canberra, two major alcohol-related interventions were implemented during the reporting period and were examined as part of this project—the *Liquor Act 2010* and the Alcohol Crime Targeting Team (ACTT).

The *Liquor Act 2010* (the Act) and Liquor Regulation 2010 took effect on 1 December 2010. The Act focused on harm minimisation and introduced a range of changes to liquor licensing in the ACT, bringing the Australian Capital Territory in line with other jurisdictions. Among the more significant changes, the Act introduced:

- mandatory responsible service of alcohol (RSA) training for licensees, employees and crowd controllers working at a licensed premises;

- mandatory risk management plans for all liquor licences, along with a requirement for all licensees and permit holders to maintain an incident register;

- increased powers for the Commissioner for Fair Trading, including the ability to impose or vary conditions on a licence;

- new powers for ACT Policing to close a venue for up to 24 hours and for the Minister to introduce lockout regulations;

- new offences related to the sale and supply of alcohol, including supplying liquor to people who are intoxicated and promoting alcohol in a way that encourages excessive consumption; and

- new offences targeting patrons, including fines for failing to leave a venue when directed to do so by venue operators or staff, abusing staff for refusing to serve alcohol, and supplying alcohol to another patron who is intoxicated.

A recent review of the Australian Capital Territory's liquor laws and licensing fees concluded that, since the introduction of the *Liquor Act 2010*, the number of alcohol-related assaults had fallen, as had alcohol-related non-driving offences and drink-driving offences in the territory (ACIL Allen Consulting 2014). However, the review also concluded that there continued to be a peak in alcohol-related assaults in the Civic entertainment precinct during periods of high alcohol consumption (ie 12–6 am), an increase in assaults on licensed premises, and that Civic accounted for a greater proportion of alcohol-related assaults in the ACT. The number of ambulance attendances had also increased for alcohol-related incidents involving individuals under the age of 18 and acute alcohol problems, most notably in public spaces within Civic. The review identified a number of opportunities to improve the Act, with a particular emphasis on addressing the problems within Civic (ACIL Allen Consulting 2014).

The ACT Policing ACTT was also established in 2010 to coincide with the commencement of the *Liquor Act 2010*. The role of the 10-person team was to enforce the new legislation and to ensure the responsible sale and supply of alcohol through engagement, education and enforcement. The overall aim of the team's work was to reduce alcohol-related violence. Team members gave education sessions with both internal and external stakeholders, proactively targeted licensed premises that were continually coming to the attention of police for issues related to the responsible service of alcohol and crowd management, attended major festivals, concerts and exhibitions and were involved in high-visibility policing in and around licensed premises. Members worked closely with the Office of Regulatory Services (ORS) to educate licensees and venue staff on the requirements of the new legislation, and also worked with the City Beats police team in patrolling Canberra's main entertainment precinct.

The ACTT was also supported by the Multi-Agency Liquor Taskforce, which was established in mid-2011 and included representatives from the Australian Hotels Association, ClubsACT, licensees from various outlets, the ORS, ACT Policing, government agencies from the racing and gambling sector and transport representatives. Further, advertising campaigns were also launched to promote awareness of the legislation and, in particular, the new on-the-spot infringements related to the supply and consumption of alcohol.

In its first seven months of operation (1 December 2010—30 June 2011) the ACTT conducted 476 inspections of licensed premises, issuing 38 cautions to licensees and a further 90 criminal infringement notices to patrons (AFP 2011). In 2011–12 the ACTT conducted 782 inspections of licensed premises and issued 554 criminal infringement notices for offences such as consuming alcohol in a public place and refusing to leave licensed premises (AFP 2012). In 2012–13 inspections and enforcement activity appeared to decline, although exact numbers are unknown due to different reporting methods (AFP 2013).

In September 2013, the ACTT and City Beats Team were amalgamated to form the Regional Targeting Team, which is responsible for intelligence-led, high visibility policing. Following the start of the new team, ACT Policing reported an increase in the number of inspections and visits to licensed premises and a renewed focus on working with industry partners and the ORS (AFP 2014).

Hobart

Hobart population

In 2015, Hobart had a population of 220,282 with an annual growth rate of between 0.3 and 1.4 percent (Table 2). At the 2011 Census (ABS 2016), most of the population within the Hobart local government area were aged 64 years or younger (86%), unemployment was at 5.5 percent, and of those employed, most were professionals (36.8%), administration workers (13.8%) or managers (13.1%).

Table 2 Hobart population, 2004–15		
Year	Population	% Annual Increase
2004	201,771	
2005	203,288	0.7
2006	204,753	0.7
2007	206,649	0.9
2008	209,166	1.2
2009	212,085	1.4
2010	214,669	1.2
2011	216,273	0.7
2012	216,921	0.3
2013	217,996	0.5
2014	219,243	0.6
2015	220,282	0.5

Hobart night-time economy

Hobart has a concentration of licensed venues in the postcode areas of Hobart (suburb) and Battery Point, with venues generally closing at 1, 3 and 5 am. Similar to Canberra, this means that high numbers of people move between venues at all times of the night.

Within Hobart, 86 licensed venues were in the main entertainment district during the five-year period of liquor licence data that was obtained (Figure 2). Four venues closed down during this time: three restaurants and one special licensed venue. Most licences were categorised as a special licence (49%), with on-premises (33%) and general (19%) licences making up the remainder of venues types.

Figure 2 Clustering of bars, pubs, nightclubs, hotels, and restaurants as identified by Google maps within the entertainment precincts of Hobart and Battery Point, Tasmania
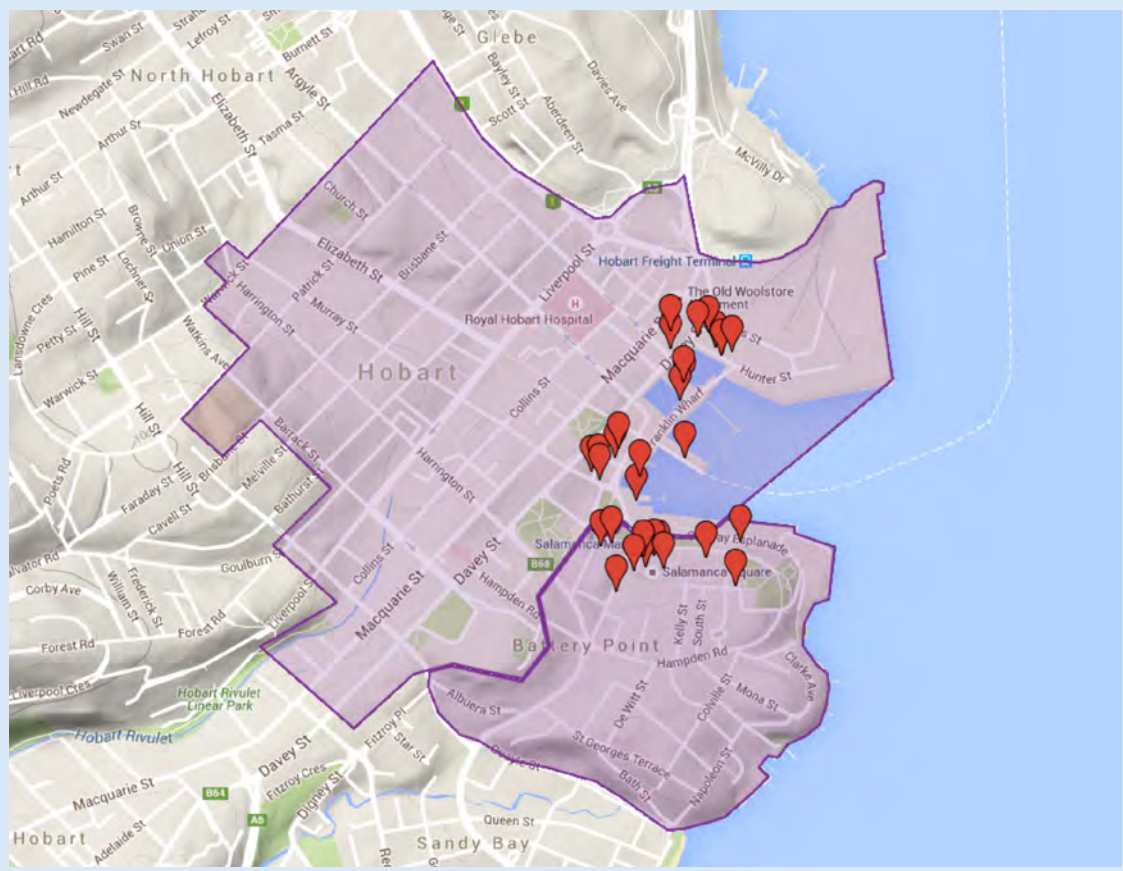
Hobart interventions

In 2015, after an initial six-month trial starting in 2014, the Street Team Initiative was launched to improve public safety. It was a collaborative effort between the Salvation Army, Tasmania Police and the City of Hobart (under the Safer Hobart Community Partnership). Volunteers in high visibility clothing were stationed in the Salamanca entertainment district to provide coffee, snacks and bottled water to individuals between 10 pm and 3 am every Friday and Saturday evening. Security staff were also posted at the Castray Esplanade taxi rank between 11 pm and 4 am on these evenings to reduce the number of incidents of antisocial behaviour, and to help individuals to use the service.

Tasmania state level interventions

In 2011, Tasmania Police and the Government of Tasmania launched The Good Mates Guide, a social marketing campaign aimed at reducing public place violence. Mate Minder, a mobile phone application, allowed patrons to securely track their friends via GPS, alert known individuals if they needed assistance, as well as update their whereabouts on any given night out. A corresponding Facebook page was also created to encourage patrons to share safety tips with one another. Mate Minder has not been supported since 2015.

Operation Unite, a statewide (Hobart, Launceston, Burnie and Devonport) joint initiative of the Australian Police Commissioners, was aimed at targeting antisocial behaviour, alcohol-fuelled violence and other crime. On a consecutive Friday and Saturday evening, large numbers of police officers were posted in popular night-time entertainment districts to target offences such as public alcohol consumption, driving while under the influence, and public annoyance. The initiative has run six times between 2010 and 2014.

Since 2012, Real Mates, a campaign launched by the Road Safety Advisory Council, has aimed to reduce alcohol-related road crashes, injuries and deaths. The campaign currently includes a Facebook page to prompt discussion, television and internet-based commercials and social media competitions, all focused on the central theme of drink-driving as a socially unacceptable behaviour.

For one week of each calendar year, Crime Stoppers Tasmania launches a media campaign focusing on three specific topics. One of the three topics each year has aimed at increasing drug awareness—the manufacture of illicit drugs in 2012; residential grow rooms in 2013; methamphetamines in 2014; and ice (crystalline methamphetamine) in 2015.

The Mandatory Alcohol Interlock Program came into effect across Tasmania in 2013, aimed at preventing repeat or severe drink-driving offenders from driving a vehicle while under the influence of alcohol. All the individuals required to participate in the program have an alcohol ignition interlock device fitted to their personal vehicle, preventing the vehicle from starting if the driver has consumed alcohol. Any individual is required to join the program if they have a recorded driving offence of >0.15 blood alcohol concentration (BAC); two or more driving offences in five years; driving under the influence of liquor; or failing to provide a breath/blood sample (IAWGD 2010). The program includes a minimum 15-month comply period.

Methods

The methodology for this project was based on those used as part of the two previous research projects: DANTE (Miller et al. 2012) and POINTED (Miller et al. 2013). These projects examined entertainment precincts in Newcastle and Geelong (DANTE) and Sydney, Melbourne, Perth, Wollongong, and Geelong (POINTED) (Miller et al. 2013).

Data collection for DASHED took place at two sites—Canberra and Hobart—and involved a number of related components to assess the level and drivers of alcohol- and substance-related harm at each site. Components of the DASHED study undertaken at each site included:

- patron interviews, including breath alcohol concentration analysis and drug swabs;
- patron and venue observations inside licensed premises;
- secondary data analysis (police, ambulance, emergency department and licensing compliance data); and
- economic analysis.

Place of last drink reporting was undertaken in Canberra only.

Patron interviews

Research exploring night-time economies (NTEs) around the world is increasingly using brief surveys with patrons inside or outside licensed venues (Forsyth 2008, 2010; Hughes et al. 2007; Voas et al. 2006). Voas and colleagues proposed that in order for such surveys (or 'portal studies') to be appropriate for measuring alcohol and other drug (AOD) use, the environment must present three components:

- at least theoretically, be a venue associated with an increased risk of AOD consumption;
- exist in a location that permits intercepting and assessing respondents before entry into, and on exit from, the setting; and
- have respondents who enter and exit during a sufficient span of time to permit brief interviews and testing.

They also highlight a number of advantages to the method over traditional telephone or household surveys, which include eliminated recall bias, allowing survey teams to collect more objective data, and the ability to collect observational data on the AOD consumption environment.

Data collection procedures

The patron interviews were designed to be a systematic random sample (selecting every third person) of all people attending night-time entertainment districts in Hobart and Canberra. Patron interviews were conducted in busy thoroughfares in each city, as well as with individuals surrounding venues and leaving venues (with consent from venue operators). Researchers worked in groups of six or more (Miller et al. 2011a) in these public thoroughfares and outside selected licensed venues (up to six venues each night). Each team had a team leader responsible for liaising with venue staff, carrying support equipment and overseeing team operations and safety. All interviewers wore easily identifiable clothing from their relevant institution.

Members of the research team interviewed patrons on Friday and Saturday nights between 10 pm and 2 am with target patrons both arriving and leaving the entertainment precinct at these times. Ideally interviews would have been conducted quarterly, due to the study timeframe (April to December, 2015) but due to pre-existing data collection commitments in Canberra, this was not possible. Instead, Canberra researchers undertook interviews in three phases in April, August and November/December, and Hobart carried out interviews in four phases in April/May, June/July, September and November. Researchers recruited at key transport locations including taxi ranks, bus stations and car parks. Patron interviews were not conducted inside licensed premises.

Once participants agreed to be interviewed they were given a business card with a web address (http://www.deakin.edu.au/dashed) and contact details of the study investigators and ethics committee if they wanted to know more about the study or be informed of study findings. The interview questions were developed using Tap Forms software and stored on iPod Touch or iPhone devices. All patrons were also asked to provide a BAC measure using a breathalyser.

A randomly selected sub-sample (about every fifth person) was asked if they were willing to undergo a swab for the presence of other drugs (all responses were recorded so that response rates could be calculated). Results from the drug tests were recorded in the interview file and used to understand the reliability of self-reported data. Drug tests were not able to provide a measure of impairment (as they only tested for the presence or absence of a drug). Testing required one non-invasive scrape of the tongue, and results were generally identified within two minutes. Immediately following the test, testing kits were placed into a bag with other swabs so that they could not be linked to an individual. Tests were not useful to police because the chain of evidence could not be guaranteed by the officer and tests required adhering strictly to formal procedures to guarantee valid results, which police would not be able to ensure. Further, interviewers were instructed to shake any drug tests (thereby invalidating results) if the results were requested by anyone other than members of the research team.

Interview schedule

The patron interview had four sections:

- Interviewee demographics—including gender, year of birth, postcode and occupation.
- Current night out—involving questions about the night so far, how many hours they had been 'going' for, where they had been, their reason for going out, the alcohol types and quantity they had consumed (in standard drinks, which is 10 g of ethanol in Australia), their energy drink consumption (with and without alcohol), their engagement in pre-drinking, their use of illicit drugs, and their perceived level of intoxication. Their blood alcohol concentration (BAC) reading was also recorded (at the end of the interview) using a breathalyser.
- Aggression/offending/alcohol-related consequences—involving questions about their witness of, or involvement in, verbal aggression, physical aggression or unwanted sexual attention in and around licensed venues during the three months prior to interview; the role that alcohol and other drug use played in these incidents of aggression; and engagement in other offending (ie property damage, driving when over the alcohol limit, driving while under the influence of drugs, being refused service/refused entry/ejected from a licensed premises) and experience of personal injury or accident during that time (participants were able to identify how recently and how often events had occurred). Participants were also asked about their perception of safety within the night-time economy (NTE) in general, currently, and at the last licensed venue they visited.

Intentions for the rest of the night—including how long they expected to be out, how many more drinks they intended to consume, how they planned to get home, their self-rated ability to drive and their plans for the rest of the evening.

In addition, interviewers noted signs of intoxication, as well as providing a rating of intoxication and general comments for each participant.

Brief interviews

Based on POINTED project protocol, researchers also developed a brief interview schedule to be used with people who were moving between venues, in queues to enter venues that were moving quickly, or who were not interested in doing the full interview. If people did not agree to a full five-minute interview, they were then asked if they would be able to answer seven questions instead (taking about three minutes). Only core questions were retained from the full interview schedule, along with breathalyser test and drug swabs. All of the key elements described above were covered in the brief interview. In addition, all interviewer information, such as intoxication rating, signs of intoxication and general comments were still recorded.

Limitations

Although portal or patron interviews have substantial benefits in terms of investigating people who visit NTE districts, they have limitations. Firstly, such surveys do not represent all people who attend licensed venues. Secondly, as potential participants are in the middle of a night out, interviews are necessarily kept short and are not suitable for in-depth questions. Thirdly, such interviews were conducted within a comparatively public environment, and therefore were not highly personal. Finally, the use of self-report data can be subject to biases (eg recall bias, self-presentation bias).

Observations in and around licensed establishments

In addition to conducting patron interviews, researchers collected observational data. Observations were conducted quarterly by members of the research team in two-week blocks (on Friday and Saturday nights) at specified locations in Canberra and Hobart, inside and within the immediate surrounding areas of selected licensed premises. Data was collected using a modified version of the observation protocol used by Miller et al. (2013).

The venue observations were aimed at:

- assessing the prevalence of strategies being evaluated in each site;
- assessing differences in adoption of strategies in two regional sites; and
- describing the prevalence of additional evidence-based practices that could contribute to reducing intoxication and/or alcohol-related violence.

Information collected as part of the observations included:

- number of patrons in the establishment and their characteristics;
- patron movement (entering and exiting licensed premises);
- crowding around alcohol service areas and service times;
- patron interactions (with one another, establishment staff and security personnel);
- patron level of intoxication (and whether intoxicated patrons were still served);
- patron consumption of energy drinks (with or without alcohol);
- use of promotions by establishments (eg $2 shots);
- occurrence and nature of aggressive/violent incidents; and
- presence of strategies designed to reduce alcohol-related offending (eg high visibility policing, security managers at taxi ranks).

Venues in each city were selected for observation sessions based on opening times and size. Three types of venues were chosen: large mainstream pub—closing time 1 to 3 am; bars—closing time 1 to 5 am; and nightclubs (DJ-focused)—closing time 3 am to 24-hour trading.

Design and setting

Pairs or groups of three researchers carried out sessions of structured observations. Where possible, male/female pairs were used to look like normal customers socialising. Researchers posed as typical customers and wore clothing consistent with the venue's dress code and usual patron attire. Both researchers completed observation checklists independently, without consulting each another about what they were recording. Each set of data was treated as an independent session of observation for the purpose of analysis.

Sample

The sample for the observations was made up of venues licensed to serve alcohol for consumption on their premises with either a hotel or nightclub licence, and located within the entertainment precinct of each city.

Each observation period lasted between four and five hours, varying from start times at 8 to 10 pm and finishing between 2 am in Hobart and 3 am in Canberra. Each team visited a variety of venues per night of observation (ie teams moved from venue to venue).

Observations were conducted as unobtrusively as possible. Researchers were given extensive safety training, as well as training on how to covertly complete the observation checklists while blending into the setting. Each hour, observers completed a number of observation checklists on their iPhones or iPod Touch devices. Thus, when using the iPod Touch researchers appeared as though they were using their mobile phone. Checklists were completed in 10 to 15 minutes, with the researchers putting their iPod Touch on the table or in their bag every few minutes, to ensure they did not appear uncharacteristically focused on their phone for a long period of time. Researchers carried an information card detailing the aims and scope of the research in the unlikely event that patrons or staff might approach them with anger or suspicion. However, these were not required during the project.

Each session of observation involved completing four separate forms (the first completed each hour; the latter three completed where relevant to events within the venue):

- standard hourly form—involving questions about entry practices, patron characteristics, venue capacity and density, patron alcohol consumption patterns, alcohol promotions, observations of patron intoxication, signs of patron drug use, patterns of patron energy drink use (with and without alcohol), serving practices of staff, rating of staff friendliness, and presence and activity of police inside and outside the venue;

- drug use form—involving questions about particular groups of people who were exhibiting signs of drug use such as how many people in the group, their gender and age, what signs of drug use were noticed, and what behaviours they were engaging in. This form was only completed if there were groups of drug users in the venue, and repeated hourly if these groups continued using drugs in the venue;

- energy drink form—involving questions about particular groups of people who were consuming energy drinks such as how many people in the group, their gender and age, what signs of energy drink use were noticed, and what behaviours they were engaging in. This form was only completed if there were groups of energy drink users in the venue, and repeated hourly if these groups continued their energy drink use in the venue; and

- aggressive incident form—involving questions about specific incidents of physical aggression, non-physical aggression such as arguments, and sexually aggressive incidents or unwanted sexual attention. This form was only completed if there were specific incidents of aggression, and was completed at the time of the incident. Questions were asked about the nature of the incident, the number and characteristics of people involved, where in the venue it occurred, signs of alcohol and/or drug involvement in the incident, and details of how the incident was resolved.

All forms had a number of fields where free text could be added. Observers were encouraged to use these forms as much as possible to identify behaviours that might not be captured by the structured checklist, for example, problems with gaining entry, specific incidents of intoxication or other behaviour, and security of staff practices.

Limitations

It is important to consider the limitations with using covert observations to measure venue patron behaviour. Each venue was typically observed for four or five hours, thus some practices may not have been observed because they occurred after observers had left the venue. These limitations were minimised by observing the venues on multiple occasions, and staggering the times of observation for each venue across the study period. Also, the best estimate of patron and venue characteristics was used, rather than an actual count.

Further, judgement of alcohol and drug intoxication is far from an exact science. While observers received extensive training on how to assess intoxication, not all patrons exhibit intoxication in the same way, and therefore the numbers represented are informed estimates. Despite the inherent subjectivities associated with observational research, such designs remain the best method for understanding the way social practices and environmental elements shift over the course of the evening in licensed venues (Lindgreen et al. 2009).

Administrative data

Administrative data refers to data that is collected for purposes other than the research being conducted. Using existing data is a cost effective way of determining trends within a community (Stoové & Dietze 2010). Using such sources does have inherent limitations, which will be discussed later in this section (Griffiths & Mounteney 2010; Miller et al. 2011b).

Measures for administrative data consist of unit record data relevant to the specific type of information. In addition, police data includes offender and victim data. This has been de-identified and accessed in aggregated form to protect privacy.

The following types of unit record data have been included, with a specific focus on the major entertainment precincts in Canberra and Hobart:

- ambulance attendance data from the ACT and Tasmania ambulance service for alcohol and substance-related ambulance attendances in Canberra and Hobart;
- alcohol-related presentations in emergency departments and hospital admissions from ACT Health and the Tasmanian Department of Health and Human Services;
- recorded alcohol-related offence data from ACT Policing and Tasmania Police, including assaults, property damage, street offences and drink-driving; and
- compliance data from the ACT Office of Regulatory Services (ORS) and Tasmania Liquor and Gaming relating to enforcement action targeting licensed premises.

The administrative data was used to identify trends in alcohol and substance-related harms and patterns of offending during high alcohol hours. Street and location information has also been used to identify alcohol and substance-related harm 'hot-spots'. The purpose of the hot-spot analysis was to identify those locations within the Canberra and Hobart entertainment precincts that accounted for the largest number of offences during high alcohol hours. The administrative data was also analysed to determine what impact key reforms and strategies have had on key indicators of alcohol-related crime and disorder in both entertainment precincts that were targeted over this period.

Ambulance attendances

Ambulance data were collected from 1 January 2010 to 31 July 2015 for the entertainment areas of Canberra (Civic), Braddon, Hobart and Battery Point. De-identified data were accessed for all alcohol and other drug-related cases attended by ambulance paramedics in both regions. Also collected were general demographic data (eg age, gender) relating directly to the research aims of identifying the nature of people experiencing harm in the night-time economy, and the situational factors involved. No reference is made to specific addresses or venues.

Relevant cases were categorised by using a set of keywords identified in collaboration with representatives of Ambulance Victoria. These included: alcohol, beer, vodka, liquor, intoxicated, intox, whiskey, wine, ETOH (ethanol), cannabis, marijuana, ecstasy, amphetamine, methamphetamine, heroin, hallucinogen, cocaine, LSD and narcotics.

Cases were identified using text-searching formulae in Microsoft Excel with a random selection of cases being double coded by at least two research assistants and checked by the lead investigator.

Emergency department attendances and hospital admissions

Following the methods outlined by Young and colleagues (2004) in their work from the International Collaborative Study of Alcohol and Injury (the Emergency Room Collaborative Alcohol Analysis Project or ERCAAP), cases selected were based on International Classification of Diseases (ICD) codes for all injuries and poisoning (ICD-10 S00-T98 or I-CD9 800-999) for the late-night period identified as having particularly high levels of alcohol involvement: a six-hour period between midnight and 5:59 am. Young et al. (2004) report that such injury presentations constitute 9.7 percent of all presentations, and include 56 percent of cases with prior alcohol involvement.

Police offence data

Police data were obtained from 1 January 2010 to 31 December 2014 for Canberra and from 1 January 2010 to 30 June 2015 for Hobart. Offence data for Canberra were extracted from the offences and victims Police Real-Time Online Management Information System (PROMIS); offender data could not be obtained. Custody data for Canberra was extracted from the Apprehensions and Incidents PROMIS databases. Offence data for Hobart was extracted from Tasmania Police databases. Custody data for Hobart could not be obtained.

Offences were categorised into four groups: assaults (excluding sexual assault), sexual offences, property damage, street offences and drink-driving (Canberra only). The offences types within these categories are shown in Table 3. Data for drug/drink-driving offences within Hobart were obtained from a separate database.

Data were filtered by the suburbs encompassing the target entertainment districts: City and Braddon for Canberra (Civic), and Battery Point and Hobart (suburb) for Hobart (Salamanca). Trends for each of these suburbs are presented separately. Incidents recorded within the reporting period, but that actually occurred before that period, were excluded from data analyses.

Alcohol- and drug-related offences were identified using existing flags within each dataset. For Canberra, alcohol consumption by either party (perpetrator or victim) at incidents has been recorded since approximately May 2010. Although ACT police collect data on whether drugs were seized at an incident, no information is collected on whether drugs were consumed either by those involved or those who witnessed the incident. For Hobart, alcohol and drug-involvement (listed as a contributing factor) has been a mandatory reporting field since 2012. Since drugs were seized at only 0.7 percent (n=36) of offences within City and Braddon and 3.9 percent (n=61) offences in Battery Point and Hobart, this variable was unable to be analysed in detail.

Data trends correspond to the raw number of offences occurring within the measurement period. To obtain the number of offences in the Canberra data, incidents were multiplied by 'offence count'. For Hobart, incidents where multiple offenders were involved were then multiplied by the number of offenders to ensure accurate representation. Victim and offender data was analysed where available. Only victim data was available for ACT police offences.

Table 3 Offence type		
	Offence type	
Offence Catagory	Canberra	Hobart
Assaults	Assault Common assault Grievous bodily harm Assault police	Assault [CC] Assault [POA] Aggravated assault [CC] Aggravated assault [POA] Assault a correctional officer Assault a police officer [CC] Assault a police officer [POA] Assault person assisting police Assault public officer Assault/resist/obstruct public officer Grievous bodily harm Wounding
Sexual offences	Incest Indecent act—person less than 16 years Indecent act no consent Indecent act/assault Indecent exposure/act Sexual assault—other Sexual assault 1st 2nd 3rd degree Sexual intercourse—no consent Sexual intercourse—person less than 16 years	Aggravated sexual assault Assault with indecent intent Indecent assault Rape
Property damage	Property damage—vehicle Property damage—other Property damage—graffiti Property damage—school Property damage—shop	Destroy/injure property (police offences) Injure property [criminal code]
Street offences	Offensive behaviour Offensive language Breach of the peace	Create a common nuisance Create/continue a common nuisance [CC] Obstruct a police officer [CC] Obstruct a police officer [POA] Offensive or indecent behaviour Resist a police officer [POA] Take part in an affray Threaten/abuse/intimidate police Threaten/abuse/intimidate public officer
Drink/drug-driving	Traffic incident (exceed the prescribed content of alcohol)	

Liquor licences 2010–15

De-identified liquor licensing data were obtained from liquor licensing authorities in the Australian Capital Territory and Tasmania for Canberra's central business district (CBD; postcode 2600 and 2601) and a defined entertainment district of Hobart (Figure 3 and Figure 4 (Google Maps, 2016)) from December 2010 to July 2015. This data included the number and type of licensing breaches, and number and type of complaints, across this time period for each venue. While the Hobart data provided the date of the breach or complaint, this was not available for Canberra. There are five types of liquor licences: on-premises, off-premises, club, general, and special.

Figure 3 Canberra postcodes 2600 (left) and 2601 (right) for which liquor licensing data were obtained
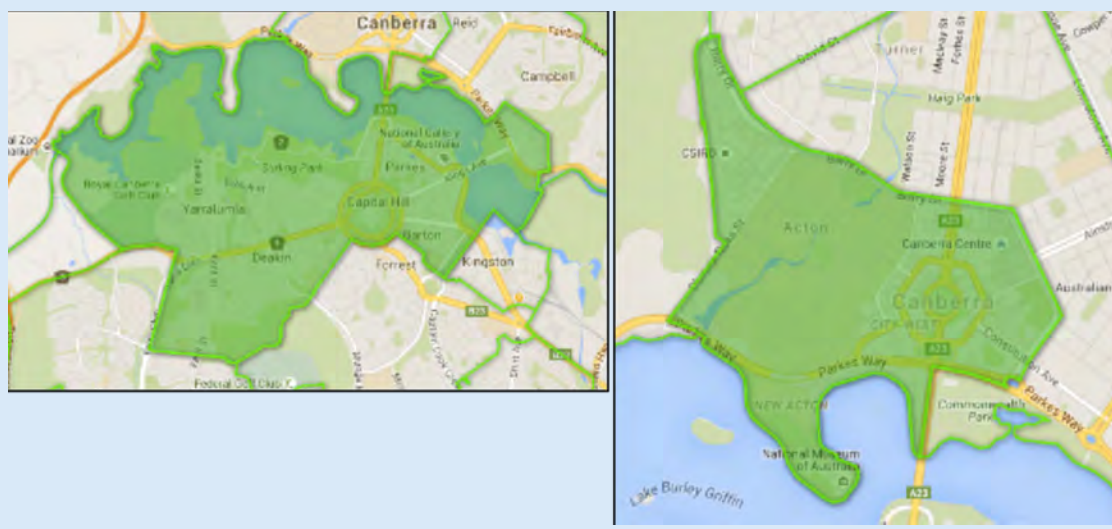
Figure 4 Entertainment district in Hobart for which liquor licensing data were obtained
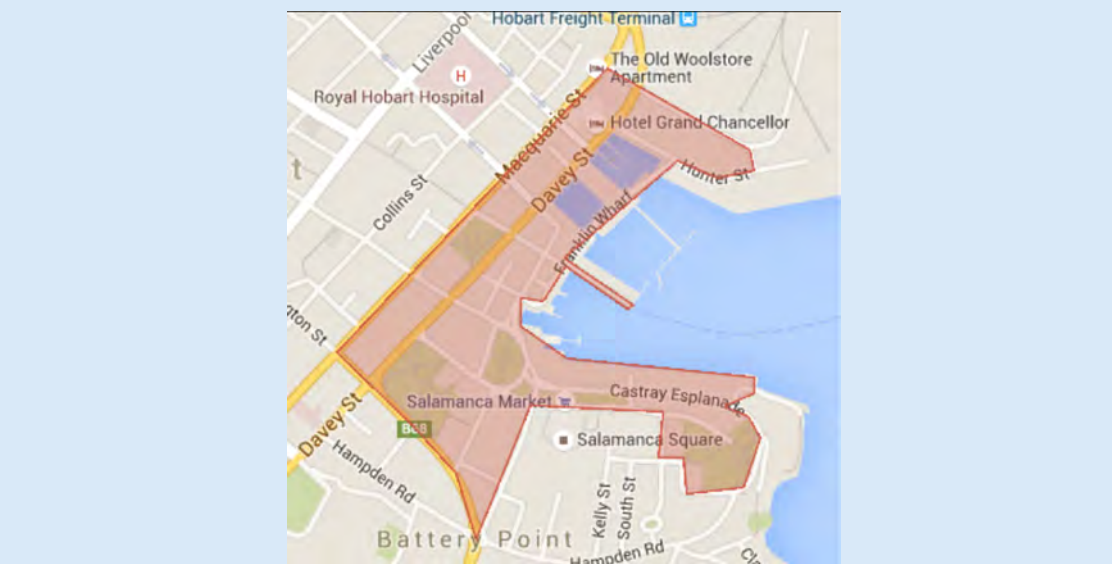
Hotspot analysis

For police assault data, streets where assaults took place were divided into percentiles and colour coded as red when they fell in the top 90th percentile (excluding streets where <5 assaults took place) for frequency of assaults, orange when they fell into the first to 89th percentile (excluding streets where <5 assaults took place) for frequency of assaults, and yellow when less than five assaults occurred on that street. The 90th percentile was chosen as the cut-off for the most-frequent group because it was clear that most assaults clustered on very few streets. In fact, about twice as many assaults occurred on the street with the lowest number of assaults in the red category (Northbourne Avenue, n=159), compared with the street with the highest number of assaults in the orange category (Alinga St, n=81) in Canberra. Using the 'My Maps' function on Google Maps each street was searched and marked with the relevant colour. Researcher found the location of licensed premises by searching the terms 'bars', 'hotels', 'restaurants' and 'nightclubs' ('in Canberra').

'Place of last drink' collection

Researchers worked closely with ACT Policing to develop and implement a brief 'place of last drink' form that was completed for alcohol-related incidents (including drink-driving offences) attended by police in which the person of interest or victim had consumed alcohol. This was designed to provide data on the patterns of alcohol consumption prior to each incident and was recommended in the review of ACT liquor laws and licensing fees (ACIL Allen Consulting 2014). The place-of-last-drink form was based on those used as part of the research into the impact of policing licensed premises in the ACT (Smith et al. 2011), which was similar to the data collection mechanisms that have been implemented by police in jurisdictions such as New South Wales, Western Australia and Queensland.

Information collected through the survey included:

- the type of incident attended;
- the venue at which the incident took place or nearby (if applicable);
- details of the person or people spoken to;
- whether the person of interest was intoxicated; and
- the location and time of the person of interest's last drink (including the venue, where applicable).

The place-of-last-drink forms were completed during each period of interview and observational fieldwork in high alcohol hours (HAH). Members of the ACTP Regional Crime Targeting Team were responsible for collecting the data on behalf of the research team. This component of the project was limited to the Canberra site.

While the results from the analysis of place of last drink data are presented in this report, officers did not routinely complete these forms. This resulted in a very low completion rate (n=154), compared with the number of incidents attended by police. While this problem is not unique to this project, it highlights the limitations of non-mandatory collections that have not been integrated into police information management systems, and is the reason other jurisdictions have elected to include relevant fields within a central database to record this important information.

Analysis

The data collected from both interviews and observations were analysed based on frequency counts. Group differences (such as different venues, time periods or differences between sites), and demographic differences (such as gender and age) were explored using bivariate statistical methods. Chi-square analysis was used to examine frequencies of groups. Pearson's product-moment correlation was also used to examine the relationship between variables. Non-parametric variables were compared using the Mann-Whitney test. The relationship between non-parametric variables was examined using Spearman's rank correlation.

The administration data collected from multiple sources was triangulated for cross-validation and interpretation purposes. Triangulation is a widely used method of data synthesis which is based on the venue that one can be more confident with a result if different methods lead to the same result (Denzin 1978, 1989; Miller 2010). If an investigator uses only one method, the temptation is strong to believe in the findings. If an investigator uses two methods, the results may well clash (Kellehear 1993). By using three methods to get the answer to one question, the hope is that two of the three will produce similar answers, or if three clashing answers are produced, the investigator knows that the question needs to be reframed, methods reconsidered, or both. The method has proved particularly popular in the monitoring of substance use and related trends (eg Fry & Miller 2001, 2002; Hando et al. 1998a, 1998b; Jenkinson et al. 2003; Topp et al. 1998, 2004a, 2004b). For data on experiences, attitudes and practices, simple frequency counts were tabulated.

All statistical analysis was conducted using appropriate software (eg Stata, SPSS v23).

Time series analysis

Time series analysis was chosen to investigate the potential impact of interventions in Canberra and Hobart on rates of injury-related presentations to the emergency department (ED), and police-attended assaults during high alcohol hours (HAH). Researchers also examined the impact of local and state interventions on the rate of alcohol-related ambulance attendances during HAH for Hobart. As the Liquor Act and Alcohol Crime Targeting team had been implemented at the end of 2010, prior to the earliest month of ambulance data for Canberra, the impact of these interventions on the rate of ambulance attendances could not be tested.

Researchers used a rate per 10,000 people. The estimated residential population for each year for the Hobart local government area was used as the denominator for Hobart whereas the estimated population for all of the Australian Capital Territory was used as the denominator for Canberra as this information was not available at the local government area level. The estimate was downloaded from the Australian Bureau of Statistics' ABS.Stat website (http://stat.abs.gov.au/).

A time series analysis approach allows testing of the effect of one or more interventions and is useful when data is collected repeatedly over more than 50 time periods (for example, 50 weeks, 50 months, or 50 years). The particular type of time series analysis chosen for this evaluation was autoregressive integrated moving average (ARIMA) analysis (Box et al. 2015; Pankratz 2012) and was conducted using Stata 14.0 (StataCorp 2013). ARIMA models account for the lingering effects preceding patterns in the data, overall trends in the data across time, and the presence of any preceding random shocks pattern over time (Box et al. 2015).

Emergency department data were aggregated by week, and separate analyses were conducted for each city. Due to the relatively low numbers of assaults and ambulance attendances per week, police and ambulance data were aggregated by month. All interventions were coded as dichotomous 'event' variables (0=pre-intervention, 1=during intervention, 0=post-intervention (if applicable)). Univariable ARIMA models were used to identify best-fitting transfer functions for each intervention included in the model; that is, researchers determined the number of weeks after the introduction of an intervention that displayed the biggest change in the outcome measure. This was based both on prior knowledge of the interventions and the statistical findings. These transfer functions are specified as lags. For example, a lag of one indicates that the largest impact of the intervention occurred one week after the intervention. The timing of the greatest impact from an intervention does not necessarily mean it will be a statistically significant impact, nor that the effect of an intervention will be to reduce rates of emergency department presentations, assaults or ambulance attendances.

Multivariable ARIMA modelling was then used to examine the influence of all interventions on the rate of injury-related emergency department presentations, rate of police-attended assaults, and the rate of ambulance attendances. The results of these models indicate the possible impact of each intervention in the context of other interventions that may be in place. This research used parameter p-values, Akaike information criterion, and the Portmanteau test for white noise (Q) to determine the final models (Burnham & Anderson 2003; Pankratz 2012).

Assessment of the economic costs of alcohol-related crime

The final component of the study involved an economic assessment of the direct and tangible costs associated with alcohol-related crime in the Canberra and Hobart entertainment precincts for police, the health sector, government and the wider community. Reliable estimates of the costs associated with substance misuse offer several benefits, including supporting arguments to prioritise preventative measures, guiding the allocation of finite resources, helping to identify information gaps and providing a baseline against which to measure the impact of future policy responses, particularly in terms of their return on investment (Collins & Lapsley 2008; McIntosh & Li 2012).

Several notable studies have attempted to estimate the costs associated with alcohol and illicit drugs. Collins and Lapsley (2008) estimated the tangible and intangible costs to individuals, households, business and government associated with alcohol and illicit drug use in 2004–05 at nearly $25 billion (equivalent to $30 billion in 2014–15 Australian dollars). This estimate included the costs associated with (among other things) lost productivity, health care, crime (including criminal justice system costs), road accidents and the intangible costs from loss of life, and pain and suffering. Laslett and Education (2010) attempted to extend on this earlier work and account for many of the costs not included by Collins and Lapsey. Specifically, while the latter estimated the costs to society and to the drinker, the former attempted to measure the cost to others around the drinker (around $13 billion), as well as further intangible costs of at least $6 billion. More recently, Manning, Smith, and Mazerolle (2013) updated the Collins and Lapsey estimates, concluding that the societal cost of alcohol misuse in 2010 was $14.35 billion (equivalent to $15.24 billion in 2014–15 Australian dollars).

While these studies have produced comprehensive estimates of the costs associated with alcohol-related harms, and provide a strong economic argument for investing in more effective alcohol policy, they have tended to adopt a national focus. The concentration of crime, including alcohol-related crime in entertainment precincts, and the potential benefits of targeted interventions (particularly by police), means there is good reason to develop more geographically focused cost estimates. Some attempt has been made to measure the cost of offending in certain communities, although these have tended to focus on particular offender cohorts or on specific cost items related to alcohol, for example the short-term cost to policing (Donnelly et al. 2007). Fewer studies, if any, have attempted to measure the wider costs of alcohol-related crime in entertainment precincts.

This study attempts to estimate the costs associated with alcohol-related crime incidents in the Canberra entertainment precinct (using the same geographic boundaries as for other components of the research). Drawing on the secondary analyses of administrative data, the following cost items were included in the economic assessment:

- cost of police time responding to alcohol-related offences and other alcohol-related incidents;

- proactive and associated costs related to alcohol incurred by police responsible for policing the CBD;

- health care costs of alcohol-related offences to victims, including hospitalisation, emergency department admissions, ambulance attendances and counselling;

- cost of alcohol-related offences to victims and the broader community, including lost output, intangible costs and damage to property; and

- criminal justice system costs for alcohol-related assault offences, including court proceedings and imprisonment costs.

This component of the research was limited to the Australian Capital Territory. Some data were not available for Tasmania, including police attendance data and suburb-level crime data, and these data were necessary to produce a more complete assessment of costs.

A bottom-up approach was used to calculate cost estimates. Unlike the breakdown method, which divides the total operating expenditure by the quantity of output produced, the bottom-up approach multiplies the known cost per activity by the volume of that activity (Moolenaar 2009). The basic formula for each estimate included in the assessment is:

$$TC = \sum (N_i \times V_{ai} \times UC_{ai})$$

For each incident category i, the number of incidents in 2014, was calculated using the administrative data analysed in other parts of the report (N_i). This was multiplied by the estimated volume of resources for each activity (a) involved in responding to each incident category, based on previously published studies (V_{ai}). Where there was a single unit of output for an activity, such as with emergency department presentations, V_{ai} was equal to 1. The number of incidents and volume of resources required to respond to an incident was then multiplied by the average unit cost UC_{ai} of each activity (or, in the case of costs of crime, the average estimated cost per offence). Where applicable, the total cost (TC), was then calculated by aggregating individual costs for each incident category.

Resource allocation and cost estimates were drawn from several sources, including estimates of the costs of crime (Smith et al. 2014), estimates of the mean time spent by police responding to criminal incidents (Donnelly et al. 2007) and estimates of the average costs associated with delivering government services (SCRGSP 2016). All financial data used in this assessment were adjusted to 2014–15 Australian dollars using the General Government Final Consumption Expenditure chain price deflator, which is consistent with the method used in the Report on Government Services (SCRGSP 2016).

This assessment uses different counting rules to other parts of the report. Whereas other sections report the number of alcohol-related *offences*, the economic assessment is based on the number of recorded incidents. This was to better align with methods used in other published studies from which financial data were drawn, including Smith et al. (2014) and Donnelly et al. (2007). Incident categories differ (slightly) from the major offence categories reported elsewhere in this report for the same reason. While consistent counting rules would have been preferred, this approach made it possible to account for a wider range of costs, and does not limit the relevance of the findings to the wider study.

Similarly, while the rest of the report measures both the crime and health impacts of alcohol, the economic assessment excludes costs associated with harms other than those related to crime and policing (ie alcohol-related accidental injury, illness and disease). Estimates of the cost associated with ambulance attendances, emergency department injury presentations and hospital admissions for reasons other than assault-related injury are therefore excluded. This was because it was impossible to restrict costs associated with these other harms to Canberra's main entertainment precinct, based on either the analysis of administrative data or published estimates, which was the main focus of the current assessment. Nevertheless, the costs associated with these other harms are significant and cost the community and ACT Government millions of dollars every year.

Limitations

Some important limitations with this economic analysis need to be acknowledged. Limitations specific to individual cost items are discussed as part of the results; however, some general issues apply to the analysis more broadly. Given the reliance on administrative data and published estimates, a number of assumptions have been made regarding certain cost inputs. Recognising that the more assumptions that need to be made in an economic analysis the less reliable the end results (Moolenaar 2009), the cost estimates included within this assessment are limited to the direct, measurable costs of alcohol-related crime. Cost items have only been included where there was a prevalence estimate and a valid cost estimate. This assessment has several notable exclusions.

Cost estimates have been calculated on the basis of criminal incidents that were flagged as being alcohol-related within ACT Policing's PROMIS database. Issues related to the subjective nature and accuracy of these flags have been widely acknowledged (Wiggers et al. 2016). While police have made significant improvements in collecting information about the involvement of alcohol in recorded offences, it is highly likely that offences that did involve an offender who was affected by alcohol may not have been accurately recorded as such, particularly for those incidents in which an offender has not been apprehended. While using HAH may help to overcome these limitations, it excludes offences that may be alcohol-related but which occurred at other times. Nevertheless, while relying on the alcohol-related flag results in more offences being included in the economic assessment, the findings from this assessment likely underestimate (potentially significantly) the true magnitude of costs to police, the health sector and wider community.

Many incidents involving alcohol that are attended by police are not subsequently recorded as an offence, but they can consume considerable police time and resources. While not focused on entertainment precincts, an as yet unpublished study of crime in social housing in the Australian Capital Territory found that police attended nearly ten times the number of disorder incidents (measured using computer aided dispatch data) than there were recorded offences (Morgan et al. forthcoming). Similarly, some alcohol-related crimes may never come to the attention of police. This study has attempted to address these issues, at least in part, by using police attendance data and relevant multipliers.

It is also likely that there are many offences that do not occur in the entertainment precinct that could be attributed to the excessive consumption of alcohol at licensed premises in the precinct, and which represent an important societal cost associated with the harms from alcohol misuse. This is particularly true for domestic violence offences involving offenders or victims who have consumed alcohol in the entertainment precinct and who are subsequently involved in an incident in the home. The absence of an integrated collection of place of last drink data meant that these costs could not be estimated.

Criminal justice estimates are limited to agency costs (police, courts and corrections) and to certain points in the system (eg police prosecutor time is not included in the estimate for court proceedings). Costs associated with custodial episodes in the watch house (including for offending and intoxication) are not included due to lack of data. Sentence costs (ie imprisonment or community corrections) for offences committed in the entertainment precinct, which represent a significant component of criminal justice costs (Manning et al. 2013), have been included, but wider costs (such as lost productivity) have been excluded. This was because the characteristics were unknown of offenders who were apprehended and successfully prosecuted for offences committed during the reference year.

Limitations are associated with using the cost of court finalisations, ambulance attendances, emergency department presentations and hospital admissions reported by the Steering Committee for the Review of Government Service Provision (SCRGSP). These costs represent the average cost per unit of output, rather than marginal cost. The marginal cost refers to the change in the cost of a program that occurs when a unit of output increases (Henrichson & Galgano 2013), which in this case would be the number of court matters finalised, incidents attended by ambulances, injury presentations to emergency departments and individuals admitted to hospital. Using marginal costs is preferred in economic analysis because it accounts for the fact that the cost of service delivery comprises variable costs (directly related to workload), fixed costs (remain unchanged when workload increases or decreases) and step-fixed costs (costs incurred when workload reaches a certain threshold), not all of which will be incurred for each unit of output (Henrichson & Galgano 2013). Using average costs is likely to overestimate the actual costs incurred by government for each additional court matter, ambulance attendance, emergency department presentation, and hospital admission. Finally, given the limitations associated with attributing certain incidents to drug use (such as the lack of a general flag in the Australian Capital Territory for drug-related offences, beyond drug seizures), the assessment is limited to alcohol-related harms.

In light of these limitations, rather than provide a comprehensive assessment of the total costs associated with alcohol-related harms in entertainment precincts, the cost estimates presented in this report may better serve as an indicator of some of the potential avoidable costs associated with alcohol misuse in entertainment precincts. They can be used a baseline against which to measure the impact of future policies and as a means of comparing the costs of alcohol-related harm in different geographic areas (ie different entertainment precincts).

Results

Patron interviews

Sample

In both cities, the sample was made up of patrons attending licensed venues (bars, pubs, and nightclubs) located within the main entertainment precincts of the cities. The interviewers approached 1,927 potential interviewees (Canberra, 1,121; Hobart, 806). Of those approached, 1,689 people agreed to be interviewed, a response rate of 88 percent (Canberra, 84%; Hobart, 93%).

Canberra

Patron demographics

Of the 1,121 individuals approached in Canberra to participate in the study, 939 (84%) agreed to be interviewed, with 915 (97%) completing the interview. Most (74.2%, n=679) participated in the full interview while 236 (25.8%) responded to the brief version. No significant difference was evident in the gender (X^2=2.93, p=0.087) of participants who completed the brief or full interview (total sample 63% male), however participants who completed the brief interview (*Mdn*=23) were significantly older than those who completed the full interview (*Mdn*=22; z=2.35 p=0.019, r=0.08; Table 4). Mann-Whitney U tests were conducted to assess differences in skewed variables.

Table 4 Participants' gender and age by interview type (brief/full)			
Variable	Total n=**915**	Brief n=**236**	Full n=**679**
Male, n (%)	578 (63)	160 (68)	418 (62)
	n=907	n=231	n=676
Median age (range)	22 (18–64)	23 (18–51)	22 (18–64)

Males were significantly older (*Mdn*=23) than female participants (*Mdn*=22) (z=-2.01, p=0.045, r=-0.07). Figure 5 shows the age distribution of interviewees.

Figure 5 Age distribution of participants
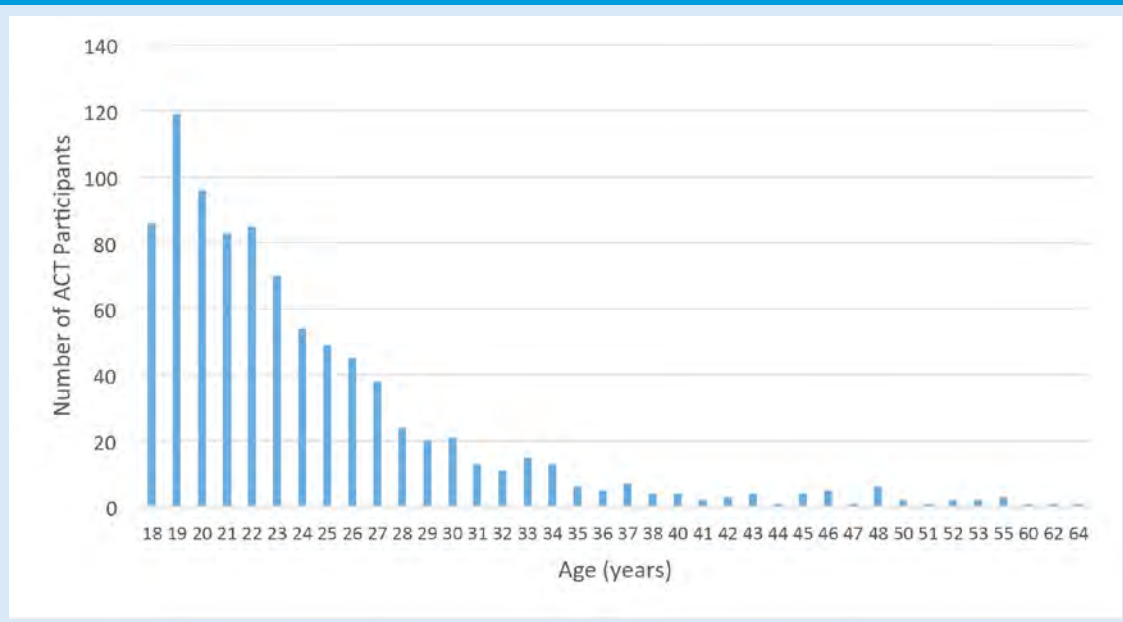
Current night out

The following reports on the behaviours of interviewees on the night they were interviewed.

Levels of intoxication (self-report and BAC reading)

Those who reported greater self-rated levels of intoxication were more likely to record a higher blood alcohol concentration (BAC; r=0.48, p<0.001; see Table 5). However, there was no statistically significant correlation between age and self-rated levels of intoxication (r=-0.05, p=0.144), or between BAC and age (r=0.05, p = 0.119; Table 6)

Table 5 BAC reading by self-reported level of intoxication

Self-rated level of intoxication		BAC reading* Median (range)	
0 ('Sober')	(*n*=161)	0.000	(0–0.217)
1	(*n*=46)	0.000	(0–0.077)
2	(*n*=71)	0.017	(0–0.138)
3	(*n*=80)	0.045	(0–0.196)
4	(*n*=101)	0.051	(0–0.245)
5	(*n*=139)	0.070	(0–0.176)
6	(*n*=127)	0.081	(0–0.218)
7	(*n*=105)	0.095	(0–0.217)
8	(*n*=33)	0.081	(0–0.224)
9	(*n*=7)	0.130	(0–0.169)
10 ('Seriously affected')	(*n*=7)	0.095	(0–0.207)

* BAC readings were missing for 39 cases

Table 6 Levels of intoxication among participants by age groups						
	Age groups*					
Variable	Total *n*=906	18–19 *n*=205	20–24 *n*=388	25–29 *n*=175	30–39 *n*=95	40+ *n*=43
How intoxicated do you feel right now? (0–10) median rating (range)	4 (0–10)	4 (0–10)	4 (0–10)	5 (0–10)	4 (0–10)	4 (0–10)
BAC reading, median (range)**	0.051 (0–0.254)	0.036 (0–167)	0.051 (0–0.254)	0.069 (0–0.217)	0.062 (0–0.217)	0.040 (0–0.224)

* Age groups could not account for eight cases

** BAC readings were missing for 39 cases

Overall 824 (90%) participants reported consuming alcohol in their current session, with 91 (10%) reporting not having drunk. For self-rated level of intoxication no significant difference was found between male and female participants who had consumed any alcohol prior to interview (z=-1.22, p=0.224; Table 7). Similarly, no significant difference was evident in median BAC among male participants compared with female participants (z=-1.30, p=0.193).

Table 7 Levels of intoxication among participants by gender			
Variable	Total *n*=914	Male *n*=577	Female *n*=337
How intoxicated do you feel right now? (0–10) median rating (range)	4 (0–10)	4 (0–10)	4 (0–10)
BAC reading, median (range)*	0.051 (0–0.25)	0.051 (0–0.254)	0.049 (0–0.195)

* Age groups could not account for eight cases

Figure 6 shows the mean BAC levels for Canberra throughout the night. These levels increased until 12 am at which point they levelled off at 0.068 before declining between 1 and 2 am, with a sharp rise between 3 and 4 am. Only four participants were interviewed between 3 and 4 am, therefore this spike in BAC may not indicate actual trends.

Figure 6 Mean BAC level by time of interview
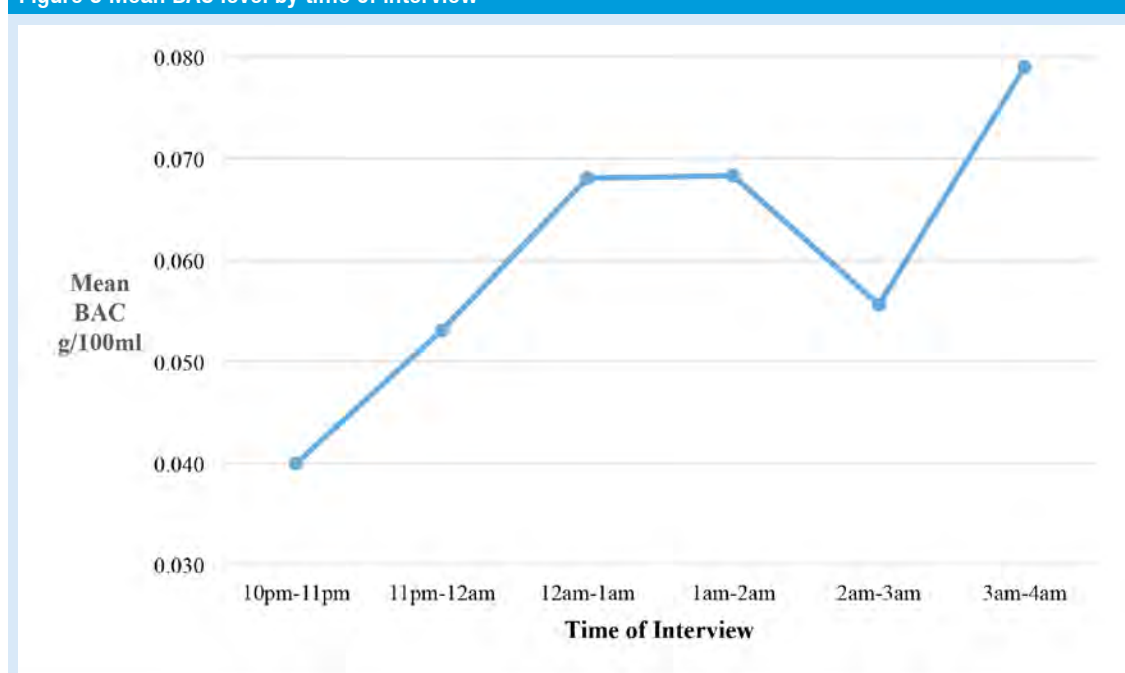
Drug and alcohol intoxication and subsequent harm in night-time entertainment districts (DASHED)

The BAC level was categorised into four BAC groups:

- 0.000 (no alcohol detected);
- 0.001 to 0.050 (low BAC)
- 0.051 to 0.100 (moderate BAC); and
- more than 0.100 (high BAC).

Female participants were significantly more likely obtain a moderate BAC reading than male participants (χ^2=5.71, p=0.017), while male participants were significantly more likely to obtain a high BAC reading compared with female participants (χ^2=13.42, p<0.001; Table 8). No other significant differences existed between genders.

Table 8 BAC readings grouped by level and sex					
	BAC groups*				
Sex	0.000	0.001–0.050	0.051–0.100	0.100+	Total
Male, n (%)	134 (24)	138 (25)	**154 (28)**	**129 (23)**	555 (100)
Female, n (%)	70 (22)	95 (30)	**114 (36)**	**42 (13)**	321 (100)
Total, n (%)	204 (23)	233 (27)	268 (31)	171 (20)	876 (100)

* BAC readings were missing for 39 cases.

Note: bolded values indicate statistical significant difference (p<0.05) between males and females for the percentage falling into the BAC group.

Figure 7 shows the trends by BAC level groups, with the percentage of participants with high and moderate BAC readings increasing steadily throughout the night followed by a decrease between 2 am and 3 am. The percentage of participants with no alcohol detected and a low BAC reading decreased throughout the night, with an increase later at night (>2am) for participants with no alcohol currently detected.

Figure 7 BAC levels per hour across the night
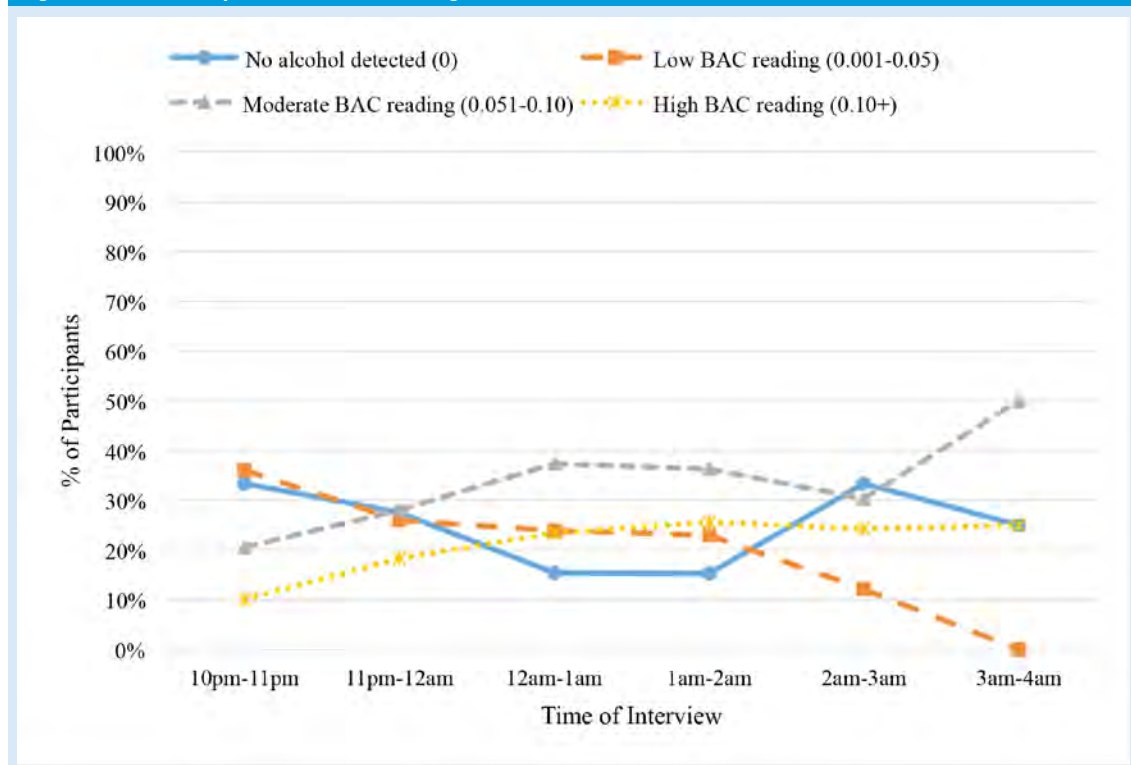
Past and planned movements on the night

Participants (*n*=915) reported that they had been drinking for a median of three and a half hours at the time of interview (range: 0–22 hours; Table 9). Males reported being out significantly longer than females (z = -2.58, p = 0.010, r=-0.09), and males who reported consuming alcohol also reported drinking a significantly greater number of standard drinks than females who had reported alcohol consumption (z=-7.80, p<0.001, r = -0.27; Table 9). However, male (89%) and female (92%) participants did not significantly differ in their likelihood of having consumed alcohol during their current night out (χ^2=1.60, p=0.207).

Table 9 Current night out behaviours by gender			
	Total *n*=915	Male *n*=578	Female *n*=337
Number of hours drinking, median (range)	3.5 (0–22)	**4 (0–22)**	**3 (0–15)**
Number of standard drinks of those that reported drinking, median (range)	7 (1–72)	**9 (1–72)**	**6 (1–42)**

a: Bolded values indicate statistical significant difference (p<0.05) between males and females in the characteristics listed

Older participants were significantly more likely to report drinking for a greater number of hours when interviewed (r=0.13, p<0.001), and a 5x2 chi-square found that alcohol consumption differed between age groups (χ^2=12.59, p=0.013; Table 10). The correlation between age and number of standard drinks consumed was not statistically significant (r= -0.02, p= 0.525), however, there was a significant moderate positive correlation between number of hours participants of the full interview reported drinking and their BAC reading (r=0.37, p<0.001).

Table 10 Current night out behaviours by age						
	Age groups					
Variable	Total *n*=907	18–19 *n*=205	20–24 *n*=388	25–29 *n*=176	30–39 *n*=95	40+ *n*=43
Number of hours drinking, median (range)	3.5 (0–22)	3 (0–15)	3 (0–16)	4 (0–19)	5 (0–22)	5 (0–12)
Number of standard drinks of those that reported drinking, median (range)	7 (1–72)	7 (1–40)	7 (1–72)	8 (1–34)	8 (1–50)	5 (1–24)

a: Age groups could not account for eight cases

Participants who completed the full interview were asked to report their main motivation for going out on the night they were surveyed (Figure 8). Of the responses (*n*=657), the most common reason was to catch-up with/socialise with friends (46%), followed by attending a special event or celebration (eg birthday party; 35%). 'Other' responses included 'dinner', 'going for a walk', and 'de-stressing.'

Figure 8 Self-reported main motivation for being out when interviewed (*n*=657)
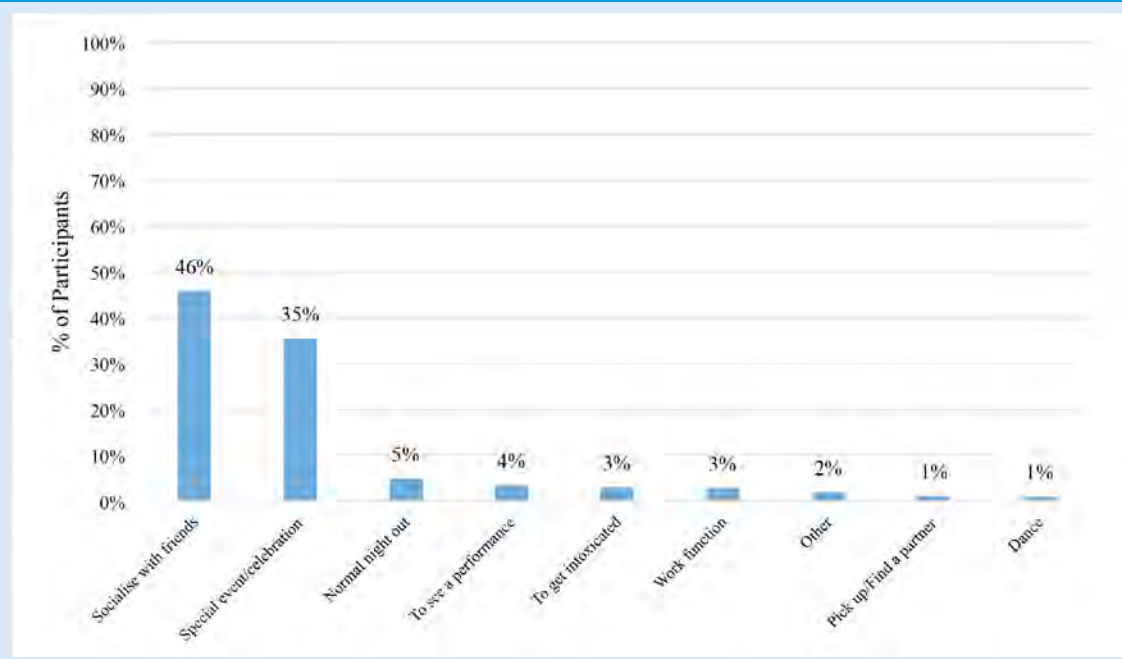
Table 11 shows participants' self-reported intended methods of getting home post-interview. Participants most commonly reported planning to catch a taxi (43%), or planned to get a lift (eg from family member or friend; 24%). A smaller percentage planned to walk (14%), or to drive themselves home (12%), while only three percent did not know how they would get home.

Table 11 Self-reported intended method of getting home

Intended method of getting home	N=895 n (%)
Taxi	386 (43)
Getting a lift	216 (24)
Walk	123 (14)
Drive a car or other vehicle	108 (12)
Don't know	29 (3)
Uber	21 (2)
Public transport	6 (1)
Bike	6 (1)

Participants of the full interview who reported planning to drive a car or other vehicle home post-interview (*n*=108) were asked to rate their driving ability on a scale from 0–10 (0=worst, 10=best); those who answered (*n*=79) reported a median driving ability of 10 (range: 0–10). Participants' scores of driving ability are presented in Table 12, along with current night out drinking, number of drinks consumed, illicit drug consumption behaviours, and BAC reading. The higher a participant's BAC reading, the better opinion they had of their driving capability ($rs=0.18$, $p<0.001$)—to assess the correlation in skewed variables, researchers conducted Spearman's rank correlation tests. Also, the more standard drinks a participant reported, the better they thought of their driving capability ($rs=0.24$, $p<0.001$). However, of those participants intending to drive home who obtained a valid BAC reading, only four (4.1%) were over the legal limit.

Table 12 Participants' self-rated driving ability by measures of intoxication					
Self-rated driving ability (0–10)		Consumed alcohol tonight n (%)	Number of drinks consumed Median (range)	Consumed illicit drugs tonight n (%)	BAC reading Median (range)
(0–10)	(n=0)				
1	(n=0)				
2	(n=1)	1 (100)	2	0 (0)	0
3	(n=1)	1 (100)	2	0 (0)	0.017
4	(n=0)				
5	(n=1)	1 (100)	3	0 (0)	0.010
6	(n=1)	1 (100)	2	1 (100)	0
7	(n=3)	2 (67)	4 (3–5)	1 (33)	0 (0–0.046)
8	(n=7)	5 (71)	2.5 (1–4)	0 (0)	0.007 (0–0.018)
9	(n=14)	11 (79)	3 (1–4)	0 (0)	0 (0–0.047)
10 ('Best')	(n=50)	26 (52)	2 (1–14)	2 (4)	0 (0–0.089)

Consumption patterns and consequences

Signs of intoxication

Interviewers recorded visible signs of intoxication for all participants based on both a standard checklist of intoxication signs and a list of signs that they were able to add to during their research. Just over half of all participants showed some sign of being intoxicated (n=502, 55%;). Intoxication signs included slurred speech, spilling drinks, staggering/falling over, and/or glassy/red eyes. Interviewer-recorded intoxications signs did not significantly vary across gender of respondent (χ^2=2.25, p=0.134).

Table 13 Interviewer recorded intoxications signs by gender			
	Total n=915	Male n=578	Female n=337
Intoxication signs	n (%)	n (%)	n (%)
Loss of coordination	115 (13)	77 (13)	38 (11)
Slurred speech	267 (29)	188 (33)	79 (23)
Spilling drinks	1 (0.1)	1 (0.2)	0 (0)
Staggering or falling over	91 (10)	55 (10)	36 (11)
Glassy or red eyes	265 (29)	187 (32)	78 (23)
Indicated illicit drug use	61 (7)	47 (8)	14 (4)
Other*	333 (36)	220 (38)	113 (34)
Any	502 (55)	328 (57)	174 (52)

* Includes boisterous/loud, giggly, smell, confused etc

Those showing intoxication signs were significantly more likely to: record a higher BAC (z= 14.45, p<0.001, r=0.49), report drinking for more hours (z=8.21, p<0.001, r=0.27), report consuming more standard drinks prior to interview (z=12.23, p<0.002, r=0.42), report consuming energy drinks (χ^2=8.95, p =0.003), and report consuming drugs pre-interview (χ^2 =8.22, p=0.004) than other participants (Table 14).

Table 14 Measures and self-reported indicators of intoxication by interviewer reported signs of intoxication

Variable	Total n=915	Yes n=502	No n=413
	Any interviewer signs of intoxication?		
Male, n(%)	578 (63)	328 (65)	250 (61)
BAC reading, median (range)	**0.051 (0–0.25)**	**0.077 (0–0.254)**	**0.017 (0–0.217)**
No. hours drinking, median (range)	**5 (0–22)**	**4 (0--22)**	**3 (0–15)**
No. standard drinks, median (range)	**8 (0–72)**	**9 (1–72)**	**5 (0–30)**
Consumed energy drinks, n(%)	**184 (20)**	**119 (24)**	**65 (16)**
Consumed illicit drugs, n(%)	**121 (13)**	**81 (16)**	**40 (10)**

a: Bolded values indicate statistical significant difference (p<0.05) between those participants for whom interviewers noted at least one sign of intoxication versus those who had no signs of intoxication noted for the characteristics listed

The median number of interviewer-recorded signs of intoxication was one (range: 1 to 3 signs). Male participants were significantly more likely than female participants to present with any of these indicators of intoxication (χ^2=4.54, p=0.033). Also, of the participants who presented with any of these signs of intoxication, males showed significantly more of these indicators (*Mdn*=1) than females (*Mdn*=1) (z=-2.37, p=0.018, r=-0.12).

Overall, there was a significant moderate positive correlation between BAC and number of signs of intoxication (r=0.31, p<0.001; Table 15). Further, there were significant weak positive correlations between the number of intoxication signs and the number of hours participants reported they had been drinking (r=0.17, p=0.002) and self-reported number of standard drinks consumed prior to interview (r=0.25, p < 0.001).

Table 15 BAC by number of interviewer-recorded signs of intoxication (only: slurred speech, spilling drinks, staggering/falling over and glassy/red eyes)

Number of interviewer-recorded signs of intoxication		BAC* Median (range)
0	(n=485)	0.025 (0–0.217)
1	(n=221)	0.064 (0–0.217)
2	(n=130)	0.094 (0–0.254)
3	(n=42)	0.115 (0–0.224)

* BAC was missing for 39 cases

Pre-drinking behaviour

More than half the sample (56%) reported pre-drinking during their current night out (ie consuming alcohol before attending licensed venues/'going out'; see Table 16). Of participants who reported pre-drinking, 81 percent reported that they would normally pre-drink. Among participants who reported no pre-drinking, 31 percent reported that they would usually pre-drink.

Male participants were significantly more likely to report pre-drinking than female participants (χ^2=5.72, p=0.017). Male participants also consumed significantly greater amounts of alcohol when pre-drinking compared with female participants (z=-5.09, p<0.001, r=-0.23). A 5x2 chi-square showed younger age groups were significantly more likely to report pre-drinking (χ^2=17.07, p=0.002). Older participants were more likely to report consuming a lower amount of alcohol when pre-drinking (r=-0.15, p<0.001).

Table 16 Pre-drinking behaviours by sex and age			
Variable		**Pre-drink n (%)**	**Pre-drinks consumed Median (range)**
Sex			
Male	(*n*=578)	**342 (59)**	**5 (1–36)**
Female	(*n*=337)	**172 (51)**	**3 (0.5–50)**
Age*			
18–19	(*n*=205)	124 (60)	4 (1–28)
20–24	(*n*=388)	228 (59)	4 (0.5–50)
25–29	(*n*=176)	100 (57)	3 (1–24)
30--9	(*n*=95)	41 (43)	2 (1–15)
40+	(*n*=43)	15 (35)	1 (1–10)
Total	(*n*=915)	514 (56)	4 (0.5–50)

* Age groups could not be accounted for in eight cases

a: Bolded values indicate statistical significant difference (p<0.05) between males and females in the characteristics listed

Participants who reported consuming alcohol were asked to nominate the location where they had consumed their previous alcoholic drink (Figure 9). Those who answered this question (*n*=811) most commonly reported drinking at licensed venues including hotels, pubs, bars and nightclubs (85.6%). A smaller percentage reported their last drink was at a private residence (7%), at a restaurant or cafe (3.7%), and at a private function (1.5%) or public place (1.1%). 'Other' locations (0.2%) included: car (*n*=2) and bus (*n*=1).

Figure 9 Location where participants (*n*=811) reported previous alcoholic drink
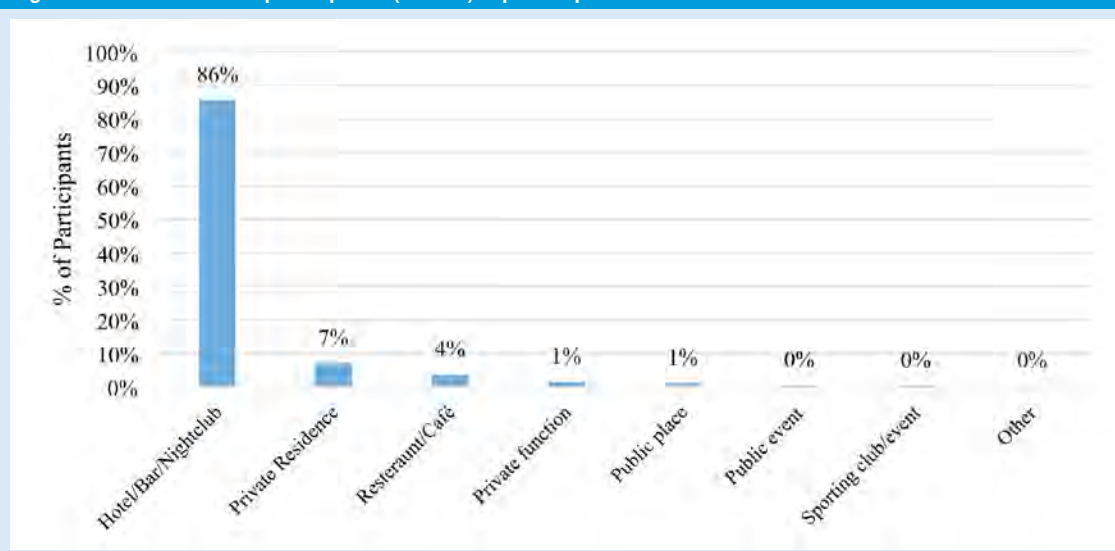
Overall, participants who reported pre-drinking before attending licensed venues/'going out' were more likely to engage in heavier alcohol consumption patterns and risk behaviours than those who did not pre-drink (Table 17). While they were not more likely to be involved in any form of aggression, or experience unwanted sexual attention (χ^2=0.03, p=0.873), those who pre-drank on the current night out versus those who had not:

• had consumed more standard drinks in their current session (z=11.15, p<0.001, r=0.39);

• recorded a higher BAC in their current session (z=10.79, p<0.001, r=0.36)

• had consumed energy drinks in their current session (χ^2=22.66, p<0.001) and of a greater quantity (z=3.19, p=0.001, r=0.23)

• had consumed illicit drugs in their current session (χ^2=3.89, p=0.049);

• had driven under the influence of alcohol during the past three months (χ^2=10.91, p=0.001); and

• had driven under the influence of drugs during the past three months (χ^2=4.80, p=0.029)

Table 17 Current night consumption patterns and risk behaviour according to whether reported pre-drinking on current night out		
	Pre-drink	
Variable	Yes n=514 n(%)	No n=401 n(%)
BAC reading*, median (range)	**0.069 (0–0.254)**	**0.018 (0–0.217)**
No. standard drinks consumed, median (range)	**9 (0–72)**	**5 (0–50)**
Consumed energy drinks	**132 (26)**	**52 (13)**
No. energy drinks consumed, median (range)	**2 (0.25–43)**	**1 (0–5)**
Consumed illicit drugs	**78 (15)**	**43 (11)**
Involved in aggression or experienced unwanted sexual attention in the previous three months	245 (48)	189 (47)
Alcohol-related injury in the previous three months	68 (13)	47 (12)
Full interview only	*n*=380	*n*=299
Committed property crime in the previous three months	20 (5)	7 (2)
Committed property crime while intoxicated in the previous three months	14 (70)	5 (71)
Driven under the influence of alcohol in the previous three months	**81 (21)**	**35 (12)**
Driven under the influence of drugs in the previous three months	**41 (11)**	**18 (6)**
Alcohol-related accident in the previous three months	50 (13)	32 (11)

* BAC readings were missing for 39 cases

a: Bolded values indicate statistically significant (p<0.05) differences between those who reported pre-drinking on the current night out than those who did not for the characteristics listed

Approximately half (48%) of self-reported pre-drinkers (*n*=380) reported price as a motivating factor (Figure 10). Social motivators, such as 'for fun' and 'chance to catch up with friends' accounted for another 32 percent of stated reasons for pre-drinking. Of the participants, 17 percent stated that they were motivated by convenience, while only 12 percent were motivated by intoxication.

Figure 10 Self-reported reasons for pre-drinking (N=380)
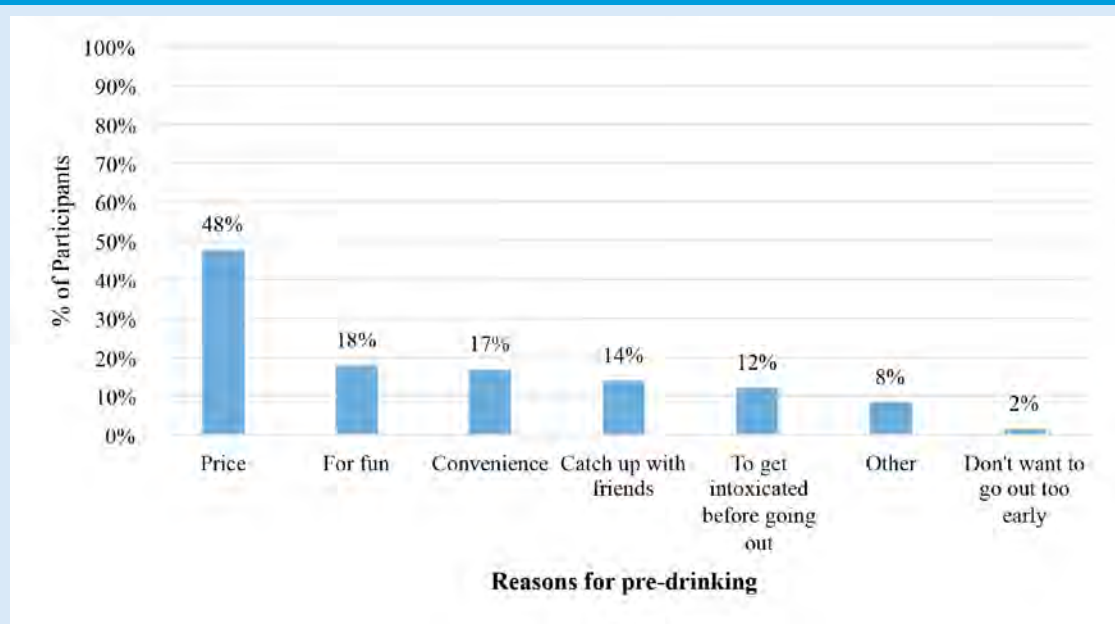
a: Participants could provide more than one reason for pre-drinking, therefore percentages will mot equal 100 percent

Energy drink consumption

Twenty percent (*n*=184) of participants said they had consumed energy drinks that night. Neither gender was more likely to report consuming energy drinks (χ^2=2.79, p=0.095). Of those who reported energy drink use, no significant difference existed between male and female participants in the amount of these consumed (z=-1.66, p=0.097; see Table 18). Younger participants generally reported consuming more energy drinks than older participants (r=-0.08, p=0.012). Most energy drink consumers also reported having consumed alcohol in their current session (*n*=176, 95.7%)

Table 18 Energy drink consumption by gender and age

Variable		Consumed energy drinks tonight, n (%)	No. energy drinks, median (range)*	Consumed alcohol, n (%)*	No. standard drinks consumed, median (range)*
Sex					
Male	(*n*=578)	128 (22)	2 (0.5–10)	118 (92)	11 (1–72)
Female	(*n*=337)	58 (17)	1 (0–43)	58 (100)	7 (1–43)
Age**					
18–19	(*n*=205)	52 (25)	1.5 (0–10)	51 (98)	10 (1–40)
20–24	(*n*=388)	92 (24)	2 (.5–43)	86 (93)	10 (2–72)
25–29	(*n*=176)	27 (15)	2 (0.5–5)	26 (96)	10 (4–30)
30–39	(*n*=95)	6 (6)	2 (0.5–5)	6 (100)	10.5 (2–50)
40+	(*n*=43)	5 (12)	1 (1–4)	5 (100)	12 (1–24)
Total	(*n*=915)	184 (20)	2 (0–43)	176 (96)	10 (1–72)

* of those who reported consuming energy drinks

** age groups could not account for eight cases

Those who consumed energy drinks were significantly more likely to report pre-drinking (72%) compared with those who had not consumed energy drinks (52%; χ^2=22.66, p<0.001) and significantly more likely to report illicit drug use (23%) compared with those who had not consumed energy drinks (11%; χ^2=18.51, p<0.001).

Table 19 presents BAC according to energy drink consumption behaviours. Participants who reported consuming energy drinks before the interview were significantly more likely to record a higher BAC than respondents who had not consumed energy drinks (z=3.50, p<0.001, r=0.12). Further, participants who reported consuming more energy drinks generally recorded higher BAC readings (r=0.09, p=0.007). People who had consumed energy drinks also self-reported higher levels of intoxication than those who did not (z = 5.061, p<0.001, r=0.17).

Table 19 Energy drink consumption patterns by BAC	
Variable	**BAC***
Consumed energy drinks	
Yes (*n*=177)	0.068 (0–0.218)
No (*n*=701)	0.047 (0–0.254)
Number of energy drinks consumed**	
≥1 (*n*=76)	0.068 (0–0.169)
1.5–2 (*n*=43)	0.062 (0–0.196)
2.5–3 (*n*=16)	0.069 (0–0.218)
3.5–4 (*n*=12)	0.089 (0.035–0.134)
5+ (*n*=29)	0.062 0–0.163)
Total (*n*=878)	0.051 (0–0.254)

* BAC readings were missing for 39 cases

** of those consuming energy drinks

Figure 11 shows the percentage of participants interviewed who report energy drink consumption throughout the night. As the night progressed the percentage of energy drink consumers increased from five percent of those interviewed between 10 and 11 pm, to 36 percent between 2 and 3 am. Three of the four people interviewed between 3 and 4 am had consumed energy drinks.

Figure 11 Percentage of interviewees consuming energy drinks by time of interview
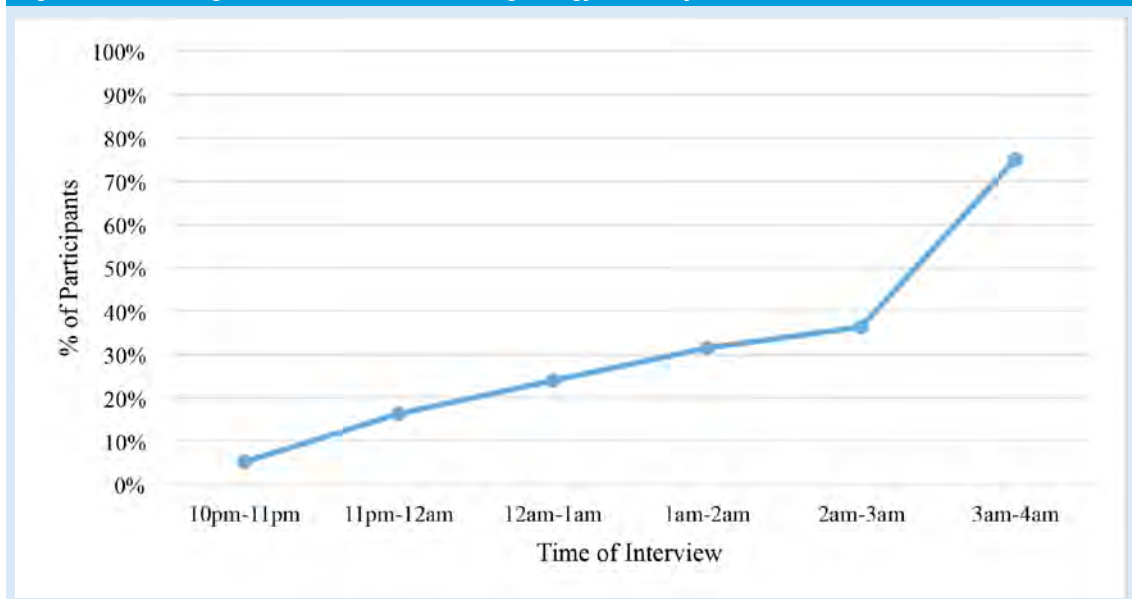
Figure 12 shows mean energy drink consumption across the night among those who reported any energy drink use. Between 11 pm and 12 am as well as 2 and 3 am average energy drink consumption reported by those interviewed within these hours increased substantially. Energy drink use also appeared to generally increase as the night progressed, with a slight decrease between 3 and 4 am (although only four participants were interviewed at this time).

Figure 12 Mean energy drink consumption by time of interview*
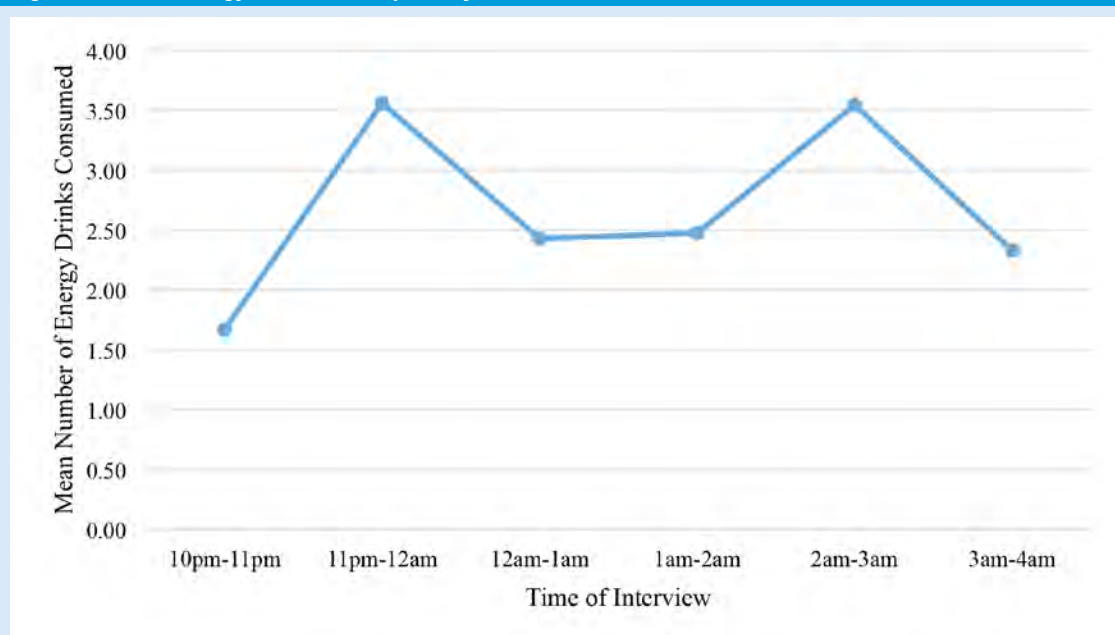
* of those reporting energy drink consumption

People who reported consuming energy drinks did not differ in experiences of any form of aggression or unwanted sexual attention in the past three months than those who had not consumed energy drinks, with the exception of greater involvement in physical aggression (Table 20).

Table 20 Aggression, harm and offending in the past three months according to energy drink use on the current night				
	Consumed energy drinks			
Variable	Yes n=184 n (%)	No n=731 n (%)	Chi-square	p
Any aggression or unwanted sexual attention in/around licensed venues in the last three months	94 (51)	340 (47)	1.23	0.267
Physical aggression	**42 (23)**	**118 (16)**	**4.55**	**0.033**
Verbal aggression	63 (34)	210 (29)	2.13	0.144
Unwanted sexual attention	58 (32)	194 (27)	1.83	0.176
Any alcohol-related injury in the past three months	28 (15)	87 (12)	1.47	0.225
Full interview only	*n=137*	*n=542*		
Any alcohol-related accident in/around licensed venues in the past three months	16 (12)	66 (12)	0.03	0.873
Refused entry to a licensed venue	30 (22)	68 (13)	7.96	0.005
Refused service in a licensed venue	18 (13)	25 (5)	13.35	<0.001
Kicked out of a licensed venue	17 (12)	45 (8)	2.20	0.138
Driven while intoxicated	22 (16)	94 (17)	0.13	0.721
Driven while under the influence of drugs	16 (12)	43 (9)	1.93	0.164
Any property crime in the past three months	7 (5)	20 (4)	0.58	0.447

a: Bolded values indicate statistically significant (p<0.05) differences between those who reported consuming energy drinks on the current night out than those who did not for the characteristics listed

People who had consumed energy drinks on the night of interview were also more likely to report having been refused entry to a venue, and refused service to a licensed venue in the past three months than those who had not consumed energy drinks. People who had consumed energy drinks on the night of interview were not more likely to report having driven while, having driven on drugs, or having committed property crime in the past three months compared with those who did not consume energy drinks.

Drug consumption patterns

Thirteen percent (*n=121*) of the overall sample reported using substances other than alcohol during their current night out (prior to interview). Table 21 lists by gender, the percentage of participants who reported using different drug types. A small number of participants (*n=3*, <1%) refused to answer interview questions about other substance use.

Table 21 Self-reported use of substances other than alcohol in Canberra during the night of the interview, by gender			
Variable	Total _n_=915 n(%)	Male _n_=578 n(%)	Female _n_=337 n(%)
Ecstasy	60 (7)	45 (8)	15 (4)
Cocaine	28 (3)	20 (3)	8 (2)
Methamphetamine	10 (1)	8 (1)	2 (1)
Pharmaceutical stimulants	3 (0.3)	1 (0.2)	2 (1)
Ketamine	0 (0)	0 (0)	0 (0)
LSD	1 (0.1)	1 (0.2)	0 (0)
GHB	0 (0)	0 (0)	0 (0)
Benzodiazepines	1 (0.1)	0 (0)	1 (0.3)
Opiates	0 (0)	0 (0)	0 (0)
Cannabis	26 (3)	21 (4)	5 (1)
Mephedrone	0 (0)	0 (0)	0 (0)
Other	16 (2)	6 (1)	10 (3)
Any	121 (13)	85 (15)	36 (11)

Table 22 shows reported use of illicit drugs on the night of interview, and reported aggressive incidents, experiences of unwanted sexual attention, harms and offending behaviour in and around licensed venues in the three months prior to interview. People who reported illicit drug use were significantly more likely to report having engaged in driving under the influence of drugs and alcohol.

Table 22 Aggression, harm, and offending in the previous three months according to use of illicit drugs during the night of the interview						
	Illicit drug use					
Variable	Yes _n_=121	%	No _n_=794	%	Chi-square	p
Any aggression or unwanted sexual attention around licensed venues	66	55	368	46	2.83	0.093
- physical	26	21	134	17	1.55	0.214
- verbal	42	35	231	29	1.58	0.208
- unwanted sexual attention	38	31	214	27	1.04	0.307
Any alcohol-related injuries	19	16	96	12	1.25	0.264
Full interview	_n_=92		_n_=587			
Property crime	6	7	21	4	1.81	0.179
Property crime while intoxicated	5	5	14	2	2.72	0.099
Driven under the influence of alcohol	26	28	90	15	9.39	0.002
Driven under the influence of drugs	27	29	32	5	57.24	<0.001
Any alcohol-related accidents	18	20	64	11	5.62	0.018

Drug swabs

In Canberra, 164 participants were invited to be tested for the use of methamphetamine, cocaine, opiates, and cannabis via drug swab. Most respondents (n=127, 77%) agreed to the test, with an additional three requesting to be tested (n=130 who completed drug swab). Table 23 lists the prevalence of positive drug test findings for these respondents according to gender. Male and female participants did not significantly differ in the detection of any drug type, although low cell counts should be noted.

Table 23 Positive drug swabs by gender						
	Total		Male		Female	
	n=130		n=81		n=49	
Variable	Positive	Negative	Positive	Negative	Positive	Negative
Drug	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)
Amphetamine*	11 (8)	119 (92)	10 (12)	71 (88)	1 (2)	48 (98)
Cocaine	5 (4)	125 (96)	5 (6)	76 (94)	0 (0)	49 (100)
Opiates	0 (0)	130 (100)	0 (0)	81 (100)	0 (0)	49 (100)
Cannabis	4 (3)	126 (97)	2 (2)	79 (98)	2 (4)	47 (96)
Any	19 (15)	111 (85)	16 (20)	65 (80)	3 (6)	46 (94)

Note: Mouth swabs do not identify MDMA as being distinct from other amphetamine-type substances without further testing

Table 24 presents the self-report responses of participants for using illicit drugs prior to interview, according to positive drug swab results. Overall, 21 instances of illicit drug use were self-reported among those who also had a positive drug test, with most participants reporting cocaine or cannabis use. Of the 21 who self-reported use, 11 received a positive drug swab result for their reported drug. Nine participants, who had denied drug use, tested positive, mostly for methamphetamine. Only six participants, who had reported substance use and were offered to take part in the drug swab, declined; the remaining 36 accepted and one more asked to take part.

Among participants who completed drug swabs, 15 percent returned a positive result. Of participants who were offered a drug swab, 23 percent refused. If the assumption is made that participants who refused had used illicit drugs, then an approximate maximum of 38 percent of the sample can be estimated to have used illicit substances. However, interviewer notes suggest that some refusals were due to participants being wanted by friends or let into a venue. Also this does not take false positives and negative into account.

Table 24 Self-report versus drug swab result for pre-interview illicit drug use		
Reported drug use	Self-report (Yes/No)	Drug Swab Positive result n (%)
Methamphetamine	Yes (n=5)	3 (60)
	No (n=125)	8 (6)
Cocaine	Yes (n=8)	5 (63)
	No (n=122)	0 (0)
Opiates	Yes (n=0)	–
	No (n=130)	0 (0)
Cannabis	Yes (n=8)	3 (38)
	No (n=122)	1 (1)

Experiences of aggression and harm

Almost half (*n*=434, 47%) of the full sample reported that they had been involved in any form of verbal aggression, physical aggression or experienced unwanted sexual attention in or around licensed venues in the three months before the interview.

Table 25 lists the prevalence of each type of aggression among the whole sample, according to gender. Verbal (30%) and sexual (28%) incidents were reported to be the most common types experienced by participants during the three months prior to interview, with 17 percent reporting being involved in physical aggression during that time. Female respondents were significantly more likely to report being involved in any type of incident than male participants (χ^2 =13.89, p<0.001). Females were significantly more likely to report having experienced unwanted sexual attention (χ^2=82.46, p<0.001); however, there were no significant differences between males and females relating to being involved in verbal aggression (χ^2=2.50, p=0.114). Males were significantly more likely to experience physical aggression than females (χ^2=5.44, p=0.020).

Table 25 also presents the percentages by age of participants who reported being involved in aggressive behaviours or having experienced unwanted sexual attention during the past three months. Age groups varied significantly in their involvement in any incidents (χ^2=31.64, p<0.001). This variation was seen in all measures of aggression: verbal aggression (χ^2=14.60, p=0.006); physical aggression (χ^2 =10.86, p=0.028); and unwanted sexual attention (χ^2=32.20, p<0.001) in the previous three months. In general, participants aged 18 to 19 years reported proportionally higher levels of involvement in these incidents than older participants; all types of incidents appear to decrease in frequency with age.

Table 25 Self-reported involvement in aggression in the last three months by gender and age					
		Aggression type			
Variable		Any n (%)	Physical n (%)	Verbal n (%)	Unwanted sexual attention n (%)
Sex					
Male	(*n*=578)	**247 (43)**	**114 (20)**	183 (32)	**100 (17)**
Female	(*n*=337)	**187 (55)**	**46 (14)**	90 (27)	**152 (45)**
Age*					
18–19	(*n*=205)	124 (60)	48 (23)	72 (35)	79 (39)
20–24	(*n*=388)	187 (48)	69 (18)	130 (34)	106 (27)
25–29	(*n*=176)	77 (44)	27 (15)	40 (23)	51 (29)
30–39	(*n*=95)	31 (33)	9 (9)	20 (21)	12 (13)
40+	(*n*=43)	11 (26)	5 (12)	9 (21)	3 (7)
Total	(*n*=915)	434 (47)	160 (17)	273 (30)	252 (28)

* Age groups could not account for eight cases

a: Bolded values indicate statistically significant (p<0.05) differences by age and gender in the characteristics listed

Participants were asked to estimate the number of times they had been involved in any aggressive behaviours or incidents where they had experienced any unwanted sexual attention in the previous three months; respondents that reported being involved in an incident had a median of four incidents during that time (range: 0–120) with four participants reporting having experienced more than 70 incidents in the past three months. Male (*Mdn*=3) and female (*Mdn*=4) participants who reported being involved in incidents did not differ significantly in the number of times they had been involved in incidents (z=1.72 p=0.086). There was no relationship between age and number of incidents experienced within the previous three months (r=-0.10, p=0.057) among those who reported experiencing any type of incident. Participants were asked to identify who (eg a friend or stranger) had been involved in their last aggressive incident in the previous three months (Figure 13). Most (*n*=282, 90%) reported last experiencing a negative incident with strangers. No significant difference was evident between male and female participants relating to prevalence of aggression with any 'type' of other person/s.

Figure 13 People with whom participants reported last experiencing aggression or unwanted sexual attention in the past three months*
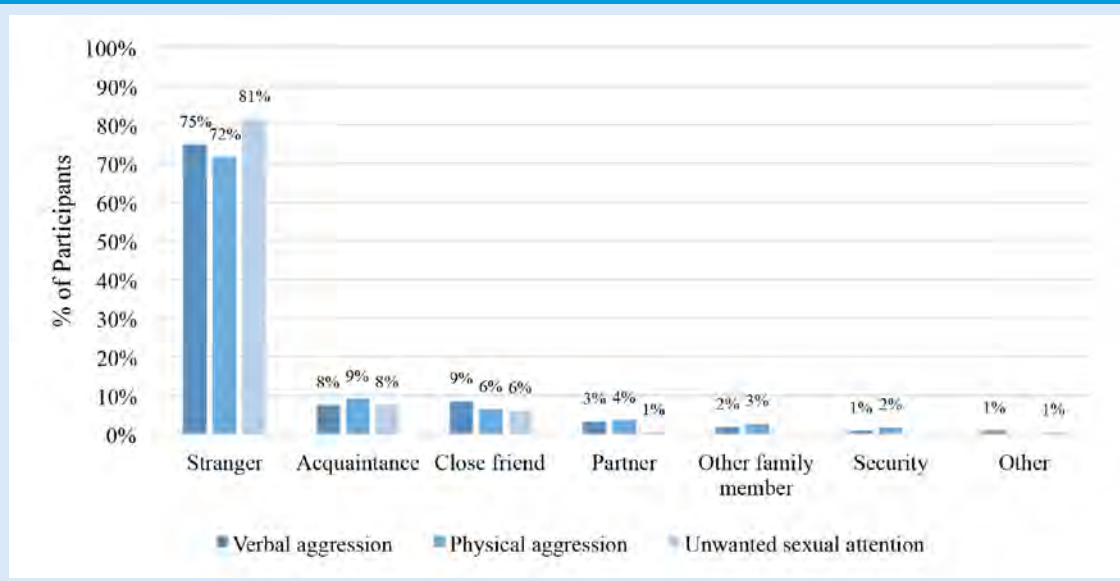
* Percentages do not add up to 100 as participants were able to select multiple people

Participants who completed the full interview and reported being involved in an aggressive incident or experienced unwanted sexual attention (*n*=332) commented on whether illicit drugs had been consumed the last time they had been involved in these behaviours. A small percentage (*n*=39, 12%) reported that this had occurred. Participants who reported illicit drug consumption on the night of interview did not significantly vary in their experience of these incidents during the previous three months compared with those who had not consumed any drugs (χ^2=2.83, p=0.093).

Table 26 lists participants' experience of alcohol-related harms and involvement in alcohol-related risk behaviours in the three months prior to interview. Of the entire sample, 13 percent reported incurring any alcohol-related injuries, and of those who completed the full interview, 12 percent reported having alcohol-related accidents during that time. Female participants were significantly more likely to report accidents than males (χ^2=5.27, p=0.022); however, they did not significantly differ in experience of injuries (χ^2=2.50, p = 0.114). In contrast, of the participants completing the full interview, male respondents were significantly more likely than female interviewees to report causing any property damage (χ^2=6.63, p=0.010), to report having driven under the influence of alcohol (χ^2=18.63, p<0.001), and to report having driven under the influence of drugs (χ^2=12.61, p<0.001) in the three months prior to interview. Male participants who completed the full interview were also significantly more likely than female participants to report having been refused entry (χ^2=30.80, p<0.001), refused service (χ^2=7.67, p=0.006), and kicked out (χ^2=12.41, p<0.000) of a licensed venue in the previous three months.

Table 26 Experience of alcohol-related harms and involvement of risk behaviours in the past three months by gender						
	Total n=915		Male n=578		Female n=337	
In the last three months have you been involved in:	n	(%)	n	(%)	n	(%)
Alcohol-related injury	115	13%	65	11%	50	15%
Median (range)	1	(1–20)	1	(1-20)	1	(1-11)
Full interview	*n=679*		*n=418*		*n=261*	
Driven under the influence of alcohol	116	17%	**92**	**22%**	**24**	**9%**
Median (range)	2	(0–60)	2	(0–60)	2	(1–60)
Driven under the influence of drugs	59	9%	**49**	**12%**	**10**	**4%**
Median (range)	3	(0–90)	3	(0–90)	1	(1–50)
Committed property damage	27	4%	**23**	**6%**	**4**	**2%**
Committed property damage while intoxicated	19	3%	15	4%	4	2%
Median (range)	1	(1–10)	1	(1–5)	1	(1–10)
Been refused entry to a licensed venue	98	14%	**85**	**20%**	**13**	**5%**
Median (range)	1	(1–15)	1	(1–15)	1	(1–2)
Been refused service in a licensed venue	43	6%	35	8%	8	3%
Median (range)	1	(1–15)	1	(1–5)	1	(1–15)
Been kicked out of a licensed venue	62	9%	**51**	**12%**	**11**	**4%**
Median (range)	1	(1–10)	1	(1–10)	1	(1–4)
Had an alcohol-related accident	82	12%	**41**	**10%**	**41**	**16%**
Median (range)	1	(1–25)	1	(1–25)	2	(1–10)

a: Bolded values represent significant group differences

Perceived levels of safety

Participants in the full interview were asked to rate their perceived safety levels for the following: how safe they normally feel, how safe they feel currently, and how safe they felt at the previous licensed. They did this by rating themselves on a scale from 0 (very unsafe) to 10 (very safe). Table 27 shows participants rated themselves as feeling less safe currently than they normally did during the night of the interview. Scores varied little between age groups. As Figure 14 shows, current safety ratings did not fluctuate throughout the night, and fluctuations in other levels of perceived safety still remained high, with the median score not dropping below eight.

Table 27 Self-reported safety rating by gender and age				
Variable		How safe do you feel normally? Median (range)	How safe do you feel currently? Median (range)	How safe did you feel at the previous venue? Median (range)
Sex				
Male	(*n*=578)	9 (0–10)	10 (0–10)	10 (0–10)
Female	(*n*=337)	8 (0–10)	10 (0–10)	9 (0–10)
Age*				
18–19	(*n*=205)	8 (0–10)	10 (0–10)	9 (0–10)
20–24	(*n*=388)	8 (0–10)	10 (0–10)	9 (0–10)
25–29	(*n*=176)	9 (0–10)	10 (0–10)	10 (0–10)
30–39	(*n*=95)	9 (0–10)	10 (0–10)	10 (0–10)
40+	(*n*=43)	9 (0–10)	10 (0–10)	10 (0–10)
Total	(*n*=915)	9 (0–10)	10 (0–10)	10 (0–10)

* Age groups could not account for eight cases

Figure 14 Self-reported safety rating according to time of interview
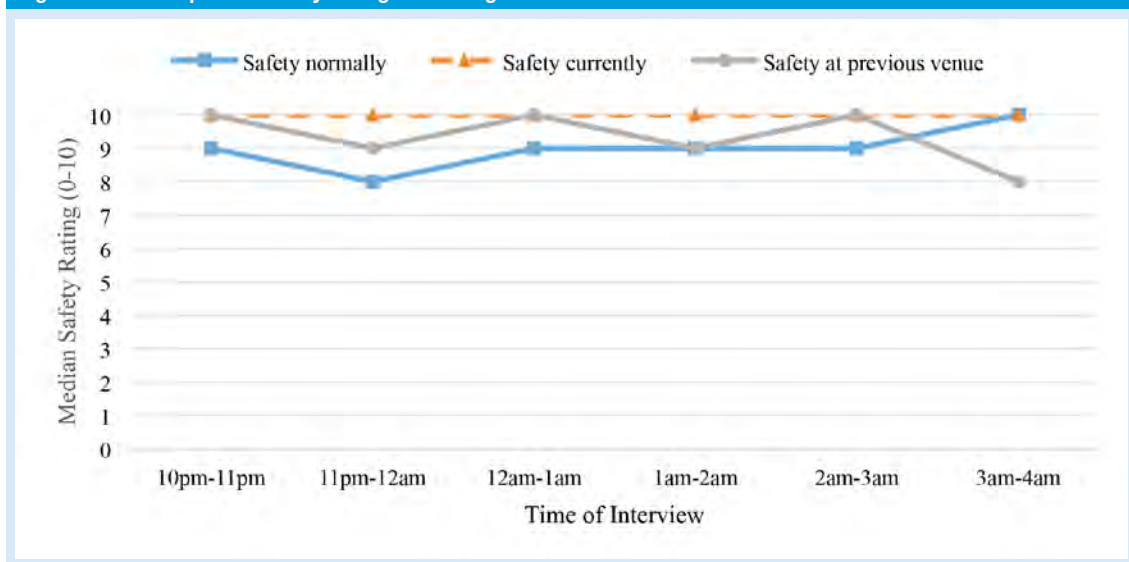
Hobart

Patron demographics

Of the 806 individuals approached in Hobart to participate in the study, 750 (93%) agreed to be interviewed, with 738 (98%) completing the interview. Most (73.7%, *n*=544) participated in the full interview, while 194 (26.3%) responded to the brief interview. No significant difference was evident in gender (χ^2 =1.10, p=0.295) of participants who completed the brief or full interview. However, participants who completed the brief interview were significantly younger than those who completed the full interview (*Mdn*=21 versus *Mdn* = 22) (z=-3.70 p<0.001, r=-0.14; Table 28). Researchers conducted Mann-Whitney U tests to assess the differences in skewed variables.

Table 28 Participant gender and age by interview type (brief/full)			
Variable	Total *n*=738	Brief *n*=194	Full *n*=544
Male, n (%)	410 (56)	114 (59)	296 (54)
	n=737	*n*=194	*n*=543
Median age (range)	22 (18–77)	**21 (18–52)**	**22 (18–77)**

a: Bolded values indicate statistically significant (p<0.05) differences between those who completed the brief and full interviews for the characteristics listed

More than half (56%) the overall sample was male, with a median age of 22 years (range 18–77). Male and female participants' age did not vary significantly (*Mdn*=22 versus *Mdn*=21, z=-1.13, p=0.259). Figure 15 shows the frequency of age distribution of interviewees.

Figure 15 Age distribution of participants
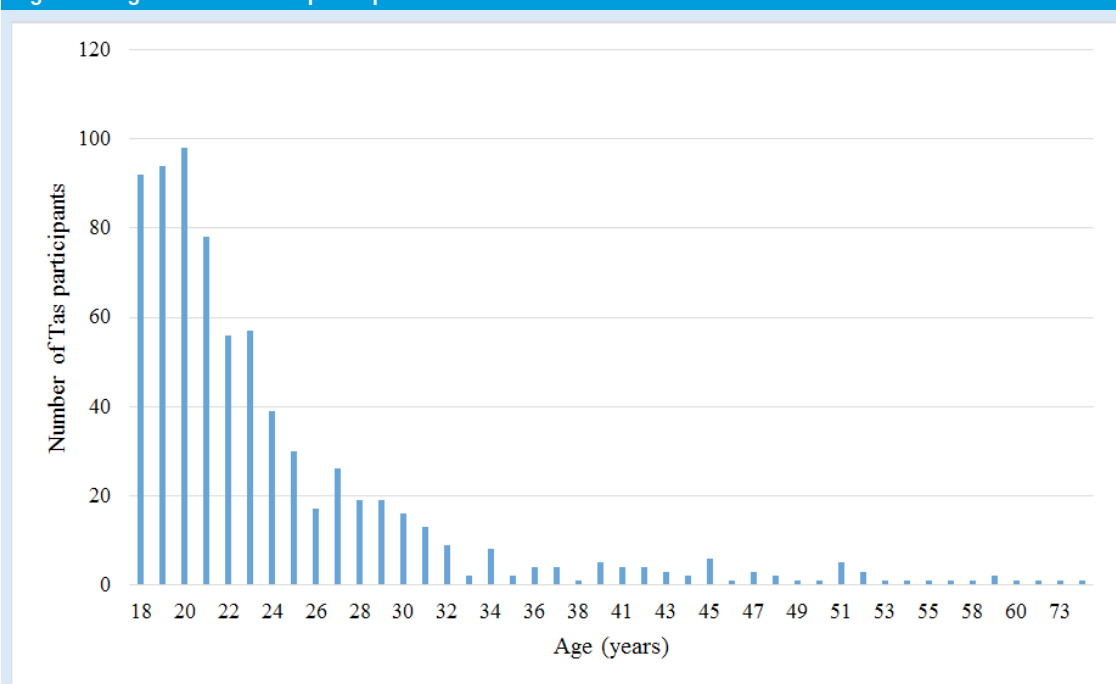
Current night out

This section reports on the behaviours of interviewees on the night they were interviewed.

Levels of intoxication (self-report and BAC reading)

Those who reported greater subjective levels of intoxication recorded a higher BAC (*r*=0.53, p<0.001; Table 29), and BAC significantly increased with age (*r*=0.18, p<0.001; Table 30). However, there was no significant correlation between age and self-rated levels of intoxication (*r*=0.00, p=0.919).

Table 29 BAC by self-reported level of intoxication

Self-rated level of intoxication		BAC* Median	(range)
0 ('Sober')	(n=91)	0	(0–0.148)
1	(n=30)	0.022	(0–0.120)
2	(n=58)	0.046	(0–0.204)
3	(n=86)	0.057	(0–0.194)
4	(n=108)	0.067	(0–0.186)
5	(n=105)	0.078	(0–0.229)
6	(n=113)	0.084	(0–0.289)
7	(n=91)	0.082	(0–0.256)
8	(n=29)	0.084	(0–0.158)
9	(n=5)	0.123	(0.083–0.299)
10 ('Seriously affected')	(n=5)	0.101	(0.051—0.207)

* BAC readings were missing for 19 cases

Table 30 Levels of intoxication among participants by age groups

Variable	Age groups*					
	Total n=735	18–19 n=186	20–24 n=328	25–29 n=111	30–39 n=59	40+ n=51
How intoxicated do you feel right now? (0–10) median rating (range)	4 (0–10)	4 (0–10)	5 (0–10)	4 (0–10)	4 (0–10)	5 (0–10)
BAC, median (range)**	0.064	0.053	0.065	0.058	0.096	0.079
	(0–0.299)	(0–0.229)	(0–0.256)	(0–0.289)	(0–0.204)	(0–0.399)

* Age groups could not account for three cases

** BAC readings were missing for 19 cases

A total of 713 participants (97%) reported consuming alcohol in their current session. Male participants self-reported significantly higher levels of intoxication than female participants (*Mdn*=5 versus *Mdn*=4) (z = -2.01, p=0.045, r=-0.07; Table 31). However, there was no significant difference in median BAC between male and female participants (z=-1.84, p=0.065).

Table 31 Levels of intoxication among participants by gender

Variable	Total n=738	Male n=410	Female n=328
How intoxicated do you feel right now? (0–10) median rating (range)	4 (0–10)	5 (0–10)	4 (0–10)
BAC median (range)*	0.064 (0–0.30)	0.066 (0–0.299)	0.058 (0–0.219)

* BACs were missing for 19 cases

a: Bolded values indicate statistically significant (p<0.05) differences between males and females in relation to the characteristics listed

Figure 16 shows the mean BAC levels for Hobart throughout the night. These levels peak at 0.071 between 11 pm and 12 am before declining for the rest of the night.

Figure 16 Mean BAC level by time of interview
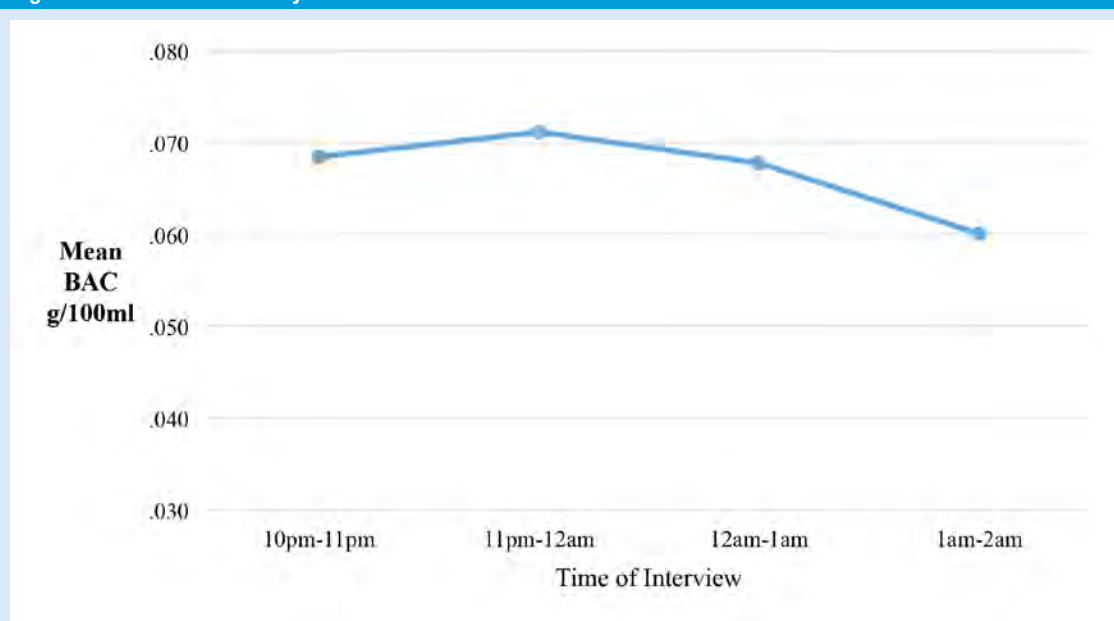
The BAC level was categorised into four BAC groups:

- 0.000 (no alcohol detected);
- 0.001 to 0.050 (low BAC);
- 0.051 to 0.100 (moderate BAC); and
- more than 0.100 (high BAC).

Female participants were significantly more likely to obtain a BAC of 0.00 compared with male participants ($\chi^2 = 5.93$, p=0.015). No other significant differences were found between genders.

Table 32 BAC grouped by level and sex

Sex	BAC groups*				
	0	0.001–0.050	0.051–0.100	0.100+	Total
Male, n (%)	**43 (11)**	103 (26)	161 (40)	94 (23)	401 (100)
Female, n (%)	**54 (17)**	83 (26)	110 (35)	71 (22)	318 (100)
Total n (%)	97 (13)	186 (26)	271 (38)	165 (23)	719 (100)

* BAC readings were missing for 19 cases

a: Bolded values indicate statistically significant (p<0.05) differences between males and females for the characteristics listed

Figure 17 shows the trends by BAC level groups, with moderately intoxicated participants consistently the most frequently surveyed across the night. Participants interviewed with a low BAC, increased their BAC steadily over the night, while participants interviewed with a high BAC reading and participants that had no alcohol detected, had a BAC reading that declined throughout the night (with a slight increase from 1–2 am).

Figure 17 BAC levels per hour of interview
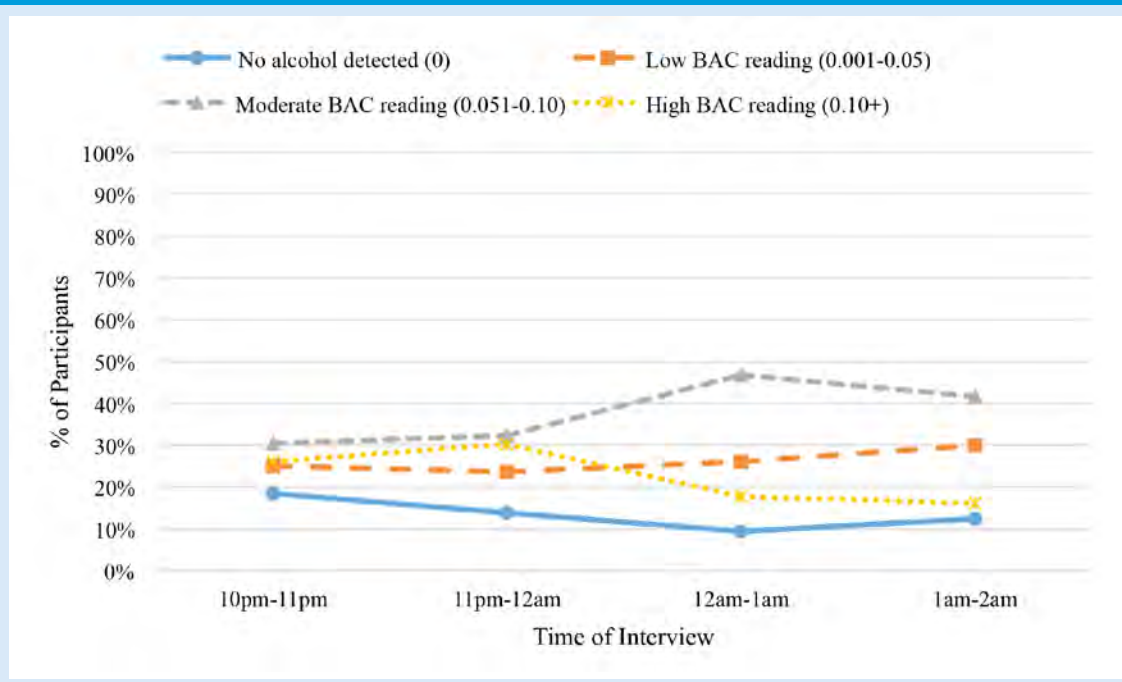
Past and planned movements on the night

Participants (*n*=738) reported that they had been drinking for a median of thee hours when surveyed (range: 0–17 hours; Table 33). Overall, male respondents reported being out significantly longer than female respondents (z=-3.95, p<0.001, r=-0.15). Males who reported alcohol consumption recounted drinking a significantly greater number of standard drinks than females (z=-7.93, p<0.001, r=-0.30). Male participants (98%) were significantly more likely to report having consumed alcohol during their current night out than female participants (95%; χ²=4.01, p=0.045).

Table 33 Current night out behaviours by gender

	Total *n*=737	Male *n*=410	Female *n*=327
Number of hours drinking, median (range)	**3 (0–17)**	4 (0–17)	3 (0–14)
Number of standard drinks of those that reported drinking, median (range)	**7 (0–40)**	9 (0–40)	6 (0–30)

a: Bolded values indicate statistically significant (p<0.05) differences between males and females for the characteristics listed

Older participants were significantly more likely to report drinking for a greater number of hours when interviewed (*r*=0.26, p<0.001; Table 34). However, a 5x2 chi-square found that there were no significant differences between age groups regarding prevalence of alcohol consumption (χ²=2.36, p=0.670). Also, there was no significant correlation between age and number of standard drinks consumed (*r*=0.03, p=0.381). Nevertheless, a significant weak positive correlation remained between the number of hours participants of the full interview reported drinking and their BAC (*r*=0.15, p<0.001).

Table 34 Current night out behaviours by age						
	Age groups*					
Variable	**Total** *n*=734	**18–19** *n*=186	**20–24** *n*=327	**25–29** *n*=111	**30–39** *n*=59	**40+** *n*=51
Number of hours drinking, median (range)	3 (0–17	2 (0–12)	3 (0–14)	4 (0–17)	3.5 (0.1–14.5)	4 (0.5–15)
Number of standard drinks of those who reported drinking, median (range)	7 (0–40)	6.5 (0.1–30)	8 (0–36)	7 (1–40)	9 (1–30)	7.5 (1–25)

* Age groups could not account for three cases

Participants of the full interview were asked to report their main motivation for going out on the night they were surveyed (Figure 18). Of the respondents who answered this question (*n*=541), the most common reported reason for being out was to catch-up with/socialise with friends (54%), followed by attending a special event or celebration (eg birthday party; 31%). 'Other' responses included responses such as 'boy's trip', 'dinner', and 'relaxing'.

Figure 18 Self-reported main motivation for being out when interviewed (*n*=541)
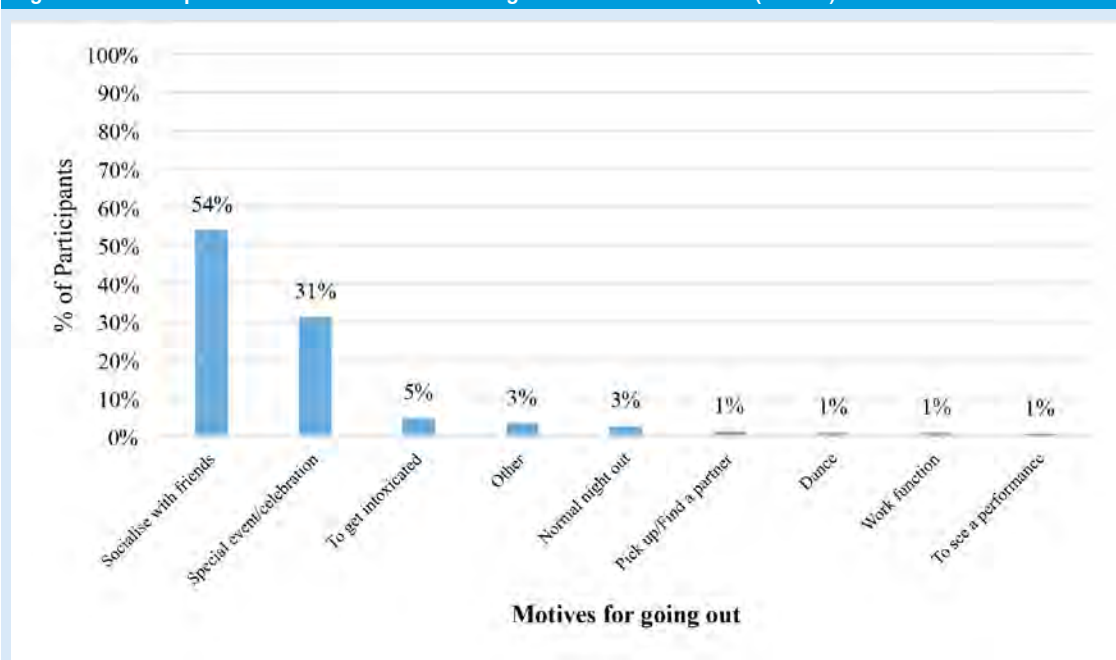
Table 35 lists participants' self-reported intended method of getting home post-interview. Participants most commonly reported planning to catch a taxi (57%). A smaller percentage reported plans to get a lift (eg from family member or friend; 18%), to walk (16%), or to drive home (5%).

Table 35 Self-reported intended method of getting home	
Intended method of getting home	N=733 n (%)
Taxi	417 (57)
Getting a lift	128 (18)
Walk	114 (16)
Drive a car or other vehicle	40 (5)
Don't know	16 (2)
Public transport	13 (2)
Don't plan to go home	1 (0.1)
Bike	1 (0.1)

Participants of the full interview who reported planning to drive a car or other vehicle home post-interview (n=40) were asked to rate their driving ability on a scale from 0–10 (0='worst', 10='best'). Participants who answered (n=32) reported a median driving ability of 10 (range: 0–10). Participants' scores of driving ability are presented in Table 36 according to current night out drinking, illicit drug consumption, and BAC. There was no significant correlation between BAC and self-rated driving ability (r_s=0.02, p=0.582—Spearman's rank correlation tests were conducted to assess correlation in skewed variables), or between self-rated driving ability and self-reported number of drinks consumed prior to interview (r_s=0.06, p=0.159). Of those participants intending to drive home and who obtained a valid BAC reading, six (15.4%) were over the legal limit.

Table 36 Participants' self-rated driving ability by measures of intoxication					
Self-rated driving ability (0–10)		Consumed alcohol tonight n (%)	Number of drinks consumed Median (range)	Consumed illicit drugs tonight n (%)	BAC Median (range)
0 ('Worst')	(n=0)				
1	(n=0)				
2	(n=0)				
3	(n=0)				
4	(n=0)				
5	(n=0)				
6	(n=0)				
7	(n=2)	2 (100)	3 (2–4)	0 (0)	0.033 (0.016–0.050)
8	(n=4)	3 (75)	3 (1–5)	0 (0)	0 (0–0.094)
9	(n=4)	4 (100)	2.5 (1–8)	0 (0)	0.019 (0–0.044)
10 ('Best')	(n=22)	16 (73)	2 (0.5–13)	1 (5)	0 (0–0.299)

Consumption patterns and consequences

Signs of intoxication

Interviewers recorded visible signs of intoxication for all participants based on both a standard checklist of intoxication signs and a list of signs to which they could add. Based on these ratings, more than two-thirds of all participants showed some sign of being intoxicated (n=527, 71%; Table 37). Male participants were significantly more likely to be reported as displaying intoxication signs than female participants (χ^2=0.96, p=0.327).

Table 37 Interviewer recorded signs of intoxication by gender			
Intoxication sign	Total n=738 n (%)	Male n=410 n (%)	Female n=328 n (%)
Loss of coordination	113 (15)	69 (17)	44 (13)
Slurred speech	216 (29)	131 (32)	85 (26)
Spilling drinks	5 (1)	4 (1)	1 (.3)
Staggering or falling over	82 (11)	43 (10)	39 (12)
Glassy or red eyes	428 (58)	251 (61)	177 (54)
Indicated illicit drug use	42 (6)	29 (7)	13 (4)
Other*	368 (50)	201 (49)	167 (51)
Any	527 (71)	305 (74)	222 (68)

* Includes boisterous/loud, giggly, smell, confused etc

Those showing any intoxication signs were significantly more likely to: record a higher BAC (z=10.64, p<0.001, r=0.40), report drinking for more hours (*Mdn*=3) (z=3.11, p=0.002, r=0.11), report consuming more standard drinks prior to interview (z=7.55, p<0.001, r=0.28), and report consuming drugs pre-interview (χ^2=4.84, p=0.028) than other participants (Table 38). There was no significant difference between groups on their likelihood to report consuming energy drinks (χ^2=2.97, p=0.085).

Table 38 Measures and self-reported indicators of intoxication by interviewer reported signs of intoxication			
	Any interviewer signs of intoxication?		
Variable	Total n=738	Yes n=527	No n=211
Male, n(%)	410 (56)	305 (58)	105 (50)
BAC reading, median (range)	0.064 (0–0.30)	**0.075 (0–0.299)**	**0.030 (0–0.174)**
No. hours drinking, median (range)	3.5 (0–17)	**3 (0–17)**	**3 (0–14)**
No. standard drinks, median (range)	9 (0–40)	**8 (0–40)**	**5 (0–22)**
Consumed energy drinks, n(%)	141 (19)	**109 (21)**	**32 (15)**
Consumed illicit drugs, n(%)	78 (11)	**64 (12)**	**14 (7)**

a: Bolded values indicate statistically significant (p<0.05) differences between males and females in the characteristics listed

More than half (64%, n=476) of the participants were reported to show signs of intoxication including slurred speech, spilling drinks, staggering/falling over, and/or glassy/red eyes. Of these participants, the median number of interviewer-recorded signs of intoxication was one (range: 1 to 4 signs). Male participants were significantly more likely than female participants to present with any of these indicators of intoxication (X^2 = 5.08, p=0.024). However, of the participants who presented with any of these signs of intoxication, there was no significant difference between males (*Mdn*=1) and females (*Mdn*=1) in the number of indicators reported (z=0.09, p=0.927).

Overall, there was a significant moderate positive correlation between BAC and the number of signs of a participant's intoxication (r=0.35, p<0.001; Table 39). Further, significant weak positive correlations existed between the number of intoxication signs and the number of hours participants reported drinking (r=0.17, p < 0.001) and self-reported number of standard drinks consumed prior to interview (r=0.21, p<0.001).

Table 39 BAC by number of interviewer-recorded signs of intoxication (only: slurred speech, spilling drinks, staggering/falling over and glassy/red eyes)	
Number of interviewer-recorded signs of intoxication	BAC* Median (range)
Male, n(%)	410 (56)
BAC reading, median (range)	0.064 (0–0.30)
No. hours drinking, median (range)	3.5 (0–17)
No. standard drinks, median (range)	9 (0–40)
Consumed energy drinks, n(%)	141 (19)
Consumed illicit drugs, n(%)	78 (11)

* BAC readings were missing for 19 cases

Pre-drinking behaviour

More than two-thirds of the sample (68%) reported pre-drinking during their current night out (ie consuming alcohol before attending licensed venues/'going out') (see Table 40). No statistically significant difference was evident in the reporting of pre-drinking between male and female participants (χ^2=0.31, p=0.860). However, male participants did consume significantly greater amounts of alcohol pre-drinking compared with female participants (z=-2.33, p=0.020, r=-0.10). A 5x2 chi-square showed younger age groups were significantly more likely to report pre-drinking (χ^2=34.08, p<0.001). The older the participants, the less alcohol they reported pre-drinking (r=-0.12, p=0.006).

Table 40 Pre-drinking behaviours by gender and age		Pre-drink n (%)	Pre-drinks consumed Median (range)
Variable			
Sex			
Male	(*n*=410)	280 (68)	**5 (1–21)**
Female	(*n*=328)	222 (68)	**4 (0.75–20)**
Age*			
18–19	(*n*=186)	141 (76)	5 (1–21)
20–24	(*n*=328)	240 (73)	4 (0.75–20)
25–29	(*n*=111)	67 (60)	4 (1–20)
30–39	(*n*=59)	27 (46)	4 (1–14)
40+	(*n*=51)	25 (49)	3 (1–11)
Total	(*n*=738)	502 (68)	4 (0.75–21)

* Age groups could not account for three cases

a: Bolded values indicate statistically significant (p<0.05) differences between males and females in the characteristics listed

Participants who reported pre-drinking were asked to nominate the location where they had consumed their previous drink (Figure 19). Those who answered this question (*n*=708) most commonly reported licensed venues including hotels, pubs, bars and nightclubs (89.3%). Smaller proportions reported their last drink was at a private residence (7.3%), at a private function (1.1%), and at a public place (1%) or restaurant or cafe (.8%). 'Other' locations (0.3%) included: car (*n*=2).

Figure 19 Locations where participants (*n*=708) reported previous drink
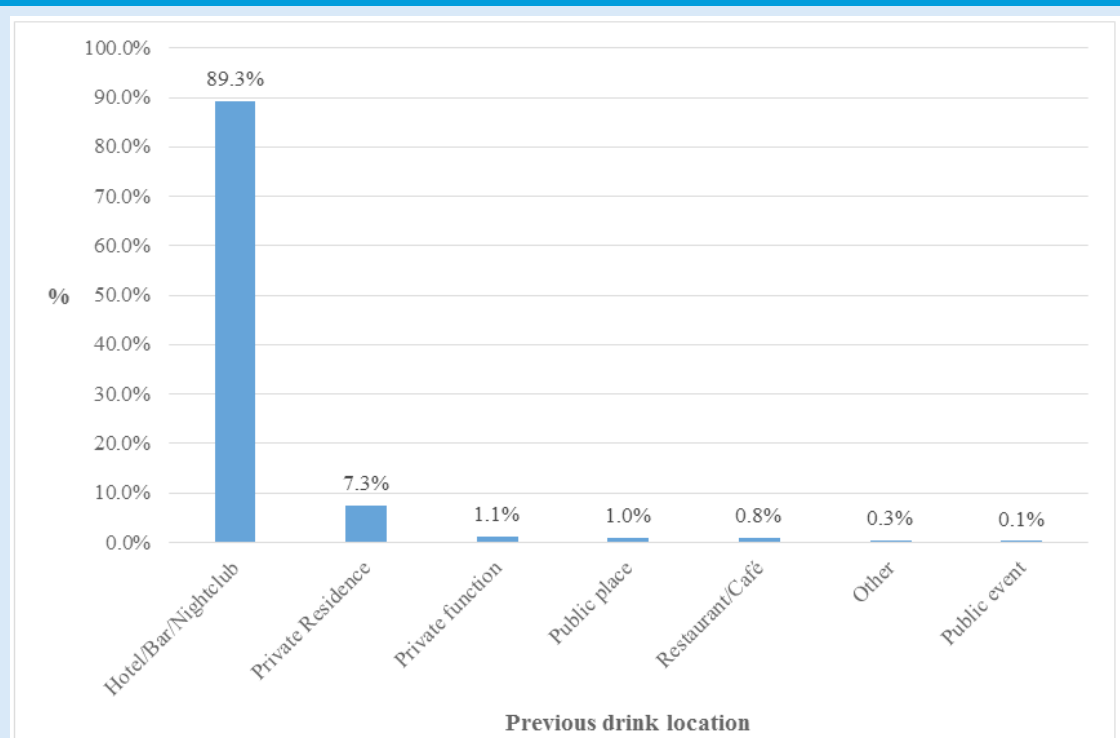
Overall, participants who reported pre-drinking before attending licensed venues/'going out' were more likely to engage in heavier alcohol consumption patterns and risk behaviours (Table 41). Specifically, those who reported pre-drinking versus those who had not reported:

- more standard drinks in their current session (z=4.86, p<.001, r=0.18);
- a higher BAC (z=5.39, p<0.001, r=.20)
- consuming energy drinks pre-interview (χ^2=6.91, p=0.009)
- consuming illicit drugs pre-interview (χ^2=7.89, p=0.005)
- being involved in any aggressive behaviours or experiencing unwanted sexual attention in and around licensed venues in the last three months (χ^2=16.54, p<0.001); and
- having an alcohol-related injury in the last three months (χ^2=5.47, p=0.019)

Table 41 Pre-drinking behaviours by current night consumption patterns and risk behaviour		
	Pre-drink	
Variable	**Yes** *n*=502 **n(%)**	**No** *n*=236 **n(%)**
BAC reading, median (range)*	**0.069 (0–0.289)**	**0.044 (0–0.299)**
No. standard drinks consumed	**8 (0–40)**	**6 (0–30)**
Consumed energy drinks	**109 (22)**	**32 (14)**
No. energy drinks consumed	1 (0–10)	1 (0.25–4)
Consumed illicit drugs	**64 (13)**	**14 (6)**
Involved in aggression or experienced unwanted sexual attention in the previous three months	**272 (54)**	**90 (38)**
Alcohol-related injury in the previous three months	**104 (21)**	**32 (14)**
Full interview only	*n*=360	*n*=184
Committed property crime in the previous three months	23 (6)	6 (3)
Committed property crime while intoxicated in the previous three months	17 (5)	3 (2)
Driven under the influence of alcohol in the previous three months	57 (16)	24 (13)
Driven under the influence of drugs in the previous three months	22 (6)	7 (4)
Alcohol-related accident in the previous three months	50 (14)	21 (11)

* BAC readings were missing for 19 cases

a: Bolded values indicate statistically significant (p<0.05) differences between those who reported pre-drinking versus those who did not for the characteristics listed

Just over half (53%) those who reported motivations for pre-drinking (*n*=360) listed price as an important motivator (Figure 20). Social motivators, such as 'for fun' and 'chance to catch up with friends' accounted for another 31 percent of stated reasons for pre-drinking. Of the participants, 14 percent stated that they were motivated by convenience, while only 12 percent were motivated by intoxication.

Of those who reported pre-drinking, 84 percent of participants reported that they normally pre-drink. Of the participants who reported no pre-drinking, 40 percent of participants reported that they usually pre-drink.

Results

Figure 20 Self-reported motivation for pre-drinking (N=360)*
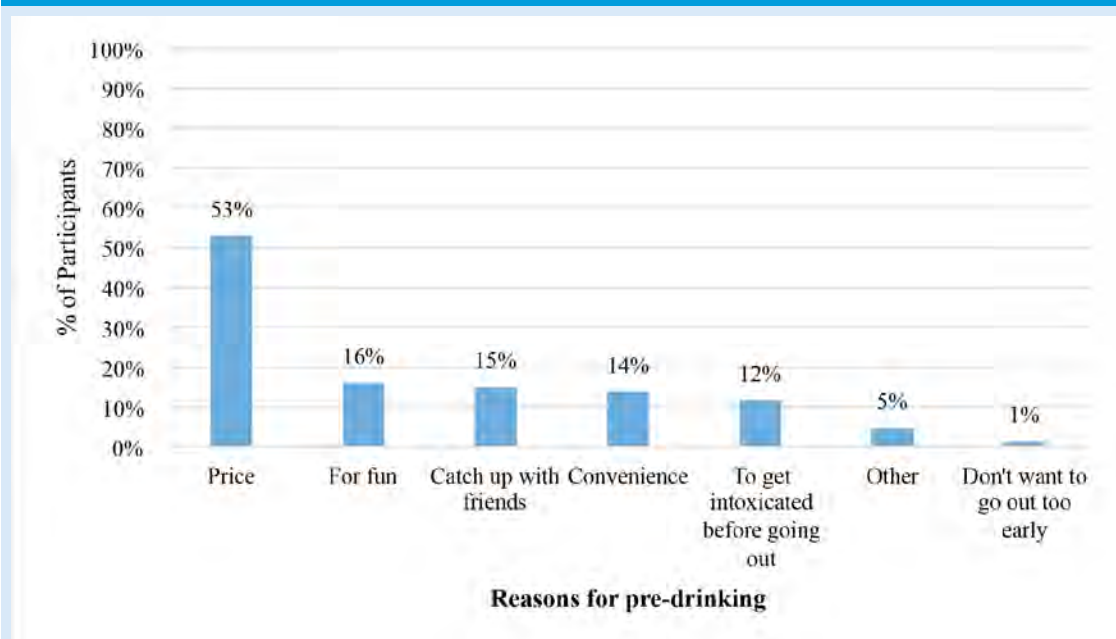
* Percentages do not add up to 100 as participants could give more than one reason

Energy drink consumption

Nineteen percent of participants said they consumed energy drinks that night (*n*=141). Neither gender was more likely to report consuming energy drinks (χ^2=3.32, p=0.069). Of those who reported consuming energy drinks, no significant difference existed between male and female consumption (z=-0.99, p=0.320; see Table 42). Younger participants generally reported consuming more energy drinks than older participants (*r*=-0.08, p=0.034). Most energy drink consumers also reported having consumed alcohol in their current session (*n*=138, 97.9%)

Table 42 Energy drink consumption by gender and age

Variable		Consumed energy drinks tonight, n (%)	No. energy drinks, median (range)*	Consumed alcohol, n (%)*	No. standard drinks consumed, median (range)*
Sex					
Male	(*n*=410)	88 (21)	1 (0–10)	86 (98)	10 (0.2–40)
Female	(*n*=328)	53 (16)	1 (0–10)	52 (98)	7.5 (1–30)
Age**					
18–19	(*n*=186)	42 (23)	1 (0–4)	42 (100)	8 (0.2–18)
20–24	(*n*=328)	75 (23)	1 (0–10)	72 (96)	10 (2–30)
25–29	(*n*=111)	12 (11)	2 (0–10)	12 (100)	7 (1–40)
30–39	(*n*=59)	6 (10)	1 (1–2)	6 (100)	9.5 (6–20)
40+	(*n*=51)	5 (10)	1 (1–2)	5 (100)	8 (5–25)
Total	(*n*=738)	141 (19)	1 (0–10)	138 (98)	9 (0.2–40)

* Of those that reported consuming energy drinks

** Age groups could not account for three cases

Those who consumed energy drinks were significantly more likely to report pre-drinking (77%) compared with those who had not (66%)(χ^2=6.91, p=0.009) and were significantly more likely to report illicit drug use (22%) compared with those who had not consumed energy drinks (8%)(χ^2=24.04, p<0.001).

Table 43 presents BAC according to energy drink consumption behaviours. The BAC readings from participants who reported consuming energy drinks prior to interview (*Mdn*=0.066) did not significantly differ from those who had not (*Mdn*=0.063) (z=1.17, p=0.242). However, a significant weak positive correlation between the number of energy drinks consumed and BAC readings was observed (r=0.15, p<0.001). People who had consumed energy drinks also self-reported higher mean levels of intoxication than those who did not (z=3.92, p<0.001, r=0.14).

Table 43 Energy drink consumption patterns by BAC reading		
Variable		**BAC***
Consumed energy drinks		
Yes	(*n*=139)	0.066 (0–0.256)
No	(*n*=582)	0.063 (0–0.299)
Number of energy drinks consumed		
≥1	(*n*=75)	0.060 (0–0.178)
1.5–2	(*n*=34)	0.082 (0–0.239)
2.5–3	(*n*=10)	0.055 (0–0.114)
3.5–4	(*n*=8)	0.101 (0.020–0.189)
5+	(*n*=9)	0.107 (0.083–0.256)
TOTAL	(*n*=721)	0.064 (0–0.299)

* BAC readings were missing for 19 cases

** Of those who consumed energy drinks

Figure 21 shows that as the night progressed, the percentage of participants interviewed who reported energy drink use increased from 12 percent between 10 and 11 pm, to 27 percent between 1 and 2 am.

Figure 21 Percentage of interviewees consuming energy drinks by hour
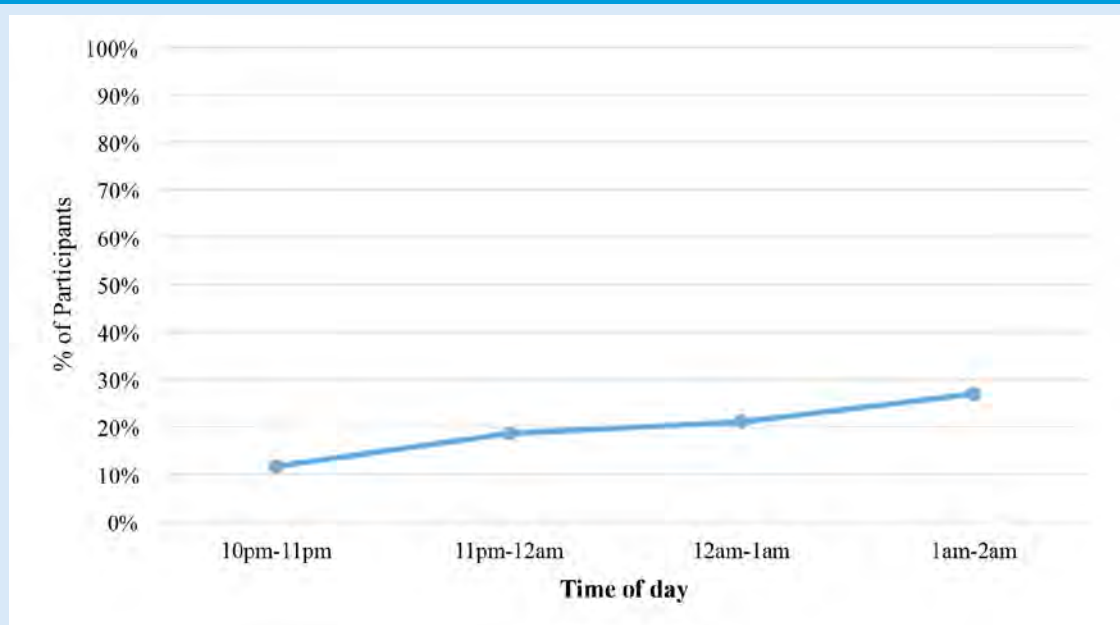
Figure 22 shows the mean consumption of energy drinks among energy drink users. Participants reported that prior to interview average energy drink consumption increased from 1.34 to 2.4 drinks consumed as the night progressed.

Figure 22 Mean energy drink consumption reported consumed prior to interview by time of interview*
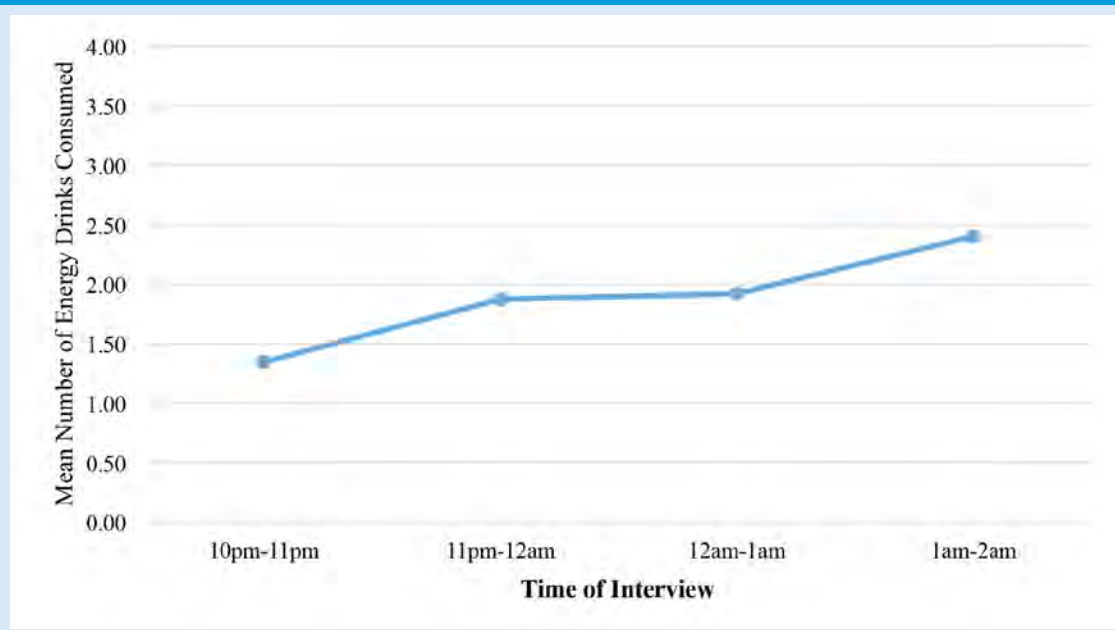
*Of those who reported energy drink consumption

People who reported consuming energy drinks were also more likely to experience any form of aggression or experience unwanted sexual attention in and around licensed venues in the past three months than those who had not (χ^2 =8.80, p=0.003). Table 44 reports the number of people who experienced different types of aggression and their energy drink use. People who reported energy drink use on the night of interview were significantly more likely to report experiencing verbal or physical aggression over the past three months. However, there was no significant difference for unwanted sexual attention.

Table 44 Aggression, harm and offending in past three months by energy drink consumption				
	Consumed energy drinks, n (%)			
Variable	Yes *n*=141	No *n*=597	Chi-square	p
Any aggression or unwanted sexual attention around licensed venues in the last three months	85 (60)	277 (46)	8.80	0.003
—physical aggression	37 (26)	80 (13)	14.10	0
—verbal aggression	60 (43)	187 (31)	6.46	0.011
—unwanted sexual attention	37 (26)	156 (26)	0.001	0.979
Any alcohol-related injury in the past three months	38 (27)	98 (16)	8.42	0.004
Full interview only	*n*=96	*n*=448		
Any alcohol-related accident in the past three months	14 (15)	57 (13)	0.24	0.623
Refused entry to a licensed venue in the past three months	25 (26)	47 (10)	16.65	<0.001
Refused service in a licensed venue in the past three months	11 (11)	22 (5)	5.95	0.015
Kicked out of a licensed venue in the past three months	11 (11)	31 (7)	2.27	0.132
Driven while over legal limit in the past three months	13 (14)	68 (15)	0.17	0.683
Driven while under influence of drugs in the past three months	7 (7)	22 (5)	0.89	0.346
Property damage in the past three months	6 (6)	23 (5)	0.20	0.659

Table 44 also shows that people who reported consuming energy drinks on the night of interview were more likely to report having experienced an alcohol-related injury in the previous three months, but were not more likely to report alcohol-related accidents.

People who had consumed energy drinks on the night of interview were also more likely to report having been refused entry to a venue in the past three months and refused service than those who had not reported pre-drinking. Finally, people who had consumed energy drinks on the night of interview were not more likely than those who did not consume energy drinks to report: having driven while drunk, having driven while on drugs, or having committed property crime in the past three months.

Drug consumption patterns

Just more than one in 10 (*n*=78, 11 %) of the overall sample reported using substances other than alcohol during their current night out (prior to interview). Table 45 lists by gender, the percentage of participants who reported using different drug types. All participants who were approached, completed the interview.

Table 45 Self-reported use of substances other than alcohol during the current night out by gender			
Drug	Total *n*=738	Male *n*=410	Female *n*=328
Ecstasy	43 (6)	31 (8)	12 (4)
Cocaine	4 (1)	4 (1)	0 (0)
Methamphetamine	4 (1)	4 (1)	0 (0)
Pharmaceutical stimulants	3 (0.4)	2 (0.5)	1 (0.3)
Ketamine	0 (0)	0 (0)	0 (0)
LSD	1 (0.1)	1 (0.2)	0 (0)
GHB	0 (0)	0 (0)	0 (0)
Benzodiazepines	0 (0)	0 (0)	0 (0)
Opiates	0 (0)	0 (0)	0 (0)
Cannabis	34 (5)	24 (6)	10 (3)
Mephedrone	0 (0)	0 (0)	0 (0)
Other	6 (1)	4 (1)	2 (1)
Any	78 (11)	56 (14)	22 (7)

Table 46 shows reported use of illicit drugs on the night of interview, and reported aggression, harm and offending in the three months prior to interview. Those who reported illicit drug use were significantly more likely to report having engaged in physically and verbally aggressive behaviour, property crimes, and to have sustained alcohol-related injuries.

Table 46 Use of illicit drugs during the night of the interview and aggressive and offending behaviours in the previous three months						
	Illicit drug use					
	Yes		No			
Variable	*n*=78	%	*n*=660	%	Chi-square	%
Any aggression or unwanted sexual attention around licensed venues	**57**	**73**	**305**	**46**	**20.15**	**<0.001**
–physical	**27**	**35**	**90**	**14**	**23.01**	**<0.001**
–verbal	**43**	**55**	**204**	**31**	**18.38**	**<0.001**
–unwanted sexual attention	27	35	166	25	3.24	0072
Any alcohol-related injuries	**23**	**29**	**113**	**17**	**7.1**	**0.008**
Full interview	*n*=55		*n*=489			
Property crime	**8**	**15**	**21**	**4**	**10.29**	**0.001**
Property crime while intoxicated	**6**	**11**	**14**	**3**	**9.04**	**0.003**
Driven under the influence of alcohol	12	22	69	14	2.32	0.128
Driven under the influence of drugs	**17**	**31**	**12**	**2**	**79.32**	**<0.001**
Any alcohol-related accidents	7	13	64	13	0.006	0.940

a: Bolded values indicate statistically significant (p<0.05) differences between those who reported illicit drug use prior to interview versus those who did not for the characteristics listed

Drug swabs

One hundred and ten participants in Hobart were invited to be tested by drug swab for using methamphetamine, cocaine, opiates and cannabis. Most respondents (*n*=82, 75%) agreed to the test, with an additional nine asking to be tested (total sample tested *n*=91). Table 47 lists the prevalence of positive drug test findings for these respondents according to gender. Male and female participants did not significantly differ in the detection of any drug type, although low cell counts should be noted.

Table 47 Positive drugs swabs by gender						
	Total *n*=91		**Male** *n*=60		**Female** *n*=31	
Drug	**Positive n (%)**	**Negative n (%)**	**Positive n (%)**	**Negative n (%)**	**Positive n (%)**	**Negative n (%)**
Amphetamine*	17 (19)	74 (81)	10 (17)	50 (83)	7 (23)	24 (77)
Cocaine	2 (2)	89 (98)	2 (3)	58 (97)	0 (0)	31 (100)
Opiates	0 (0)	91 (100)	0 (0)	60 (100)	0 (0)	31 (100)
Cannabis	3 (3)	88 (97)	3 (5)	57 (95)	0 (0)	31 (100)
Any	20 (22)	71 (78)	11 (22)	49 (78)	7 (23)	24 (77)

* Mouth swabs do not identify MDMA as being distinct from other amphetamine-type substances without further testing

Table 48 presents the self-report responses of participants regarding use of illicit drugs prior to interview according to positive drug swab results. Overall, 20 (22%) instances of illicit drug use were self-reported, with most participants reporting using cannabis (*n*=14, 70%). Of the 20 who reported use, six (30%) received a positive drug swab result for their reported drug. Also, 16 participants, who had denied drug use, tested positive (22.5%), with most testing positive for methamphetamine (93.8%). Only seven participants (17.9%) who had reported substance use and were invited to take part in the drug swab declined, the remaining 32 (82.1%) accepted and two more asked to take part.

Among participants who completed drug swabs, 20 percent returned a positive result. Of participants who were offered a drug swab, 25 percent refused. If the assumption is made that participants who refused had used illicit drugs, then an approximate maximum of 45 percent of the sample could be estimated to have used illicit substances. However, the interviewer notes suggest that some refusals were due to participants being wanted by friends or let into a venue. This does not take false positives and negatives into account.

Table 48 Self-report versus drug swab for pre-interview drug use		
Reported drug use	**Self-report (Yes/No)**	**Drug swab: positive result n (%)**
Methamphetamine	Yes (*n*=4)	2 (50)
	No (*n*=87)	15 (17)
Cocaine	Yes (*n*=2)	1 (50)
	No (*n*=89)	1 (1)
Opiates	Yes (*n*=0)	0 (0)
	No (*n*=91)	0 (0)
Cannabis	Yes (*n*=14)	3 (21)
	No (*n*=77)	0 (0)

Experiences of aggression and harm

Almost half (*n*=362, 49%) the sample reported having been involved in any form of verbal aggression, physical aggression or unwanted sexual attention in or around licensed venues, in the three months prior to interview.

Table 49 lists the prevalence of each type of aggression among the whole sample, according to gender and age. Verbal (33%) and unwanted sexual (26%) attention were reported to be the most common types experienced by participants during the three months prior to interview, with 16 percent reporting being involved in physical aggression during that time. The gender of the participant was not significantly associated with reporting an incident within the previous three months (χ^2 =1.11, p=0.292). However, females were significantly more likely to report experiencing unwanted sexual attention (χ^2=27.70, p<0.001), and males were more likely to experience physical aggression (χ^2=4.98, p=0.026).

Table 49 also presents the percentage of participants by age who reported being involved in aggressive behaviours and experiences of unwanted sexual attention during the past three months. Age groups varied significantly in their involvement in any incidents (χ^2=48.70, p<0.001). This variation was seen across all types of incidents in the previous three months: verbal aggression (χ^2=28.98, p<0.000), physical aggression (χ^2=35.80, p<0.001), and unwanted sexual attention (χ^2=27.00, p<0.001). In general, participants aged 18 to 19 years reported proportionally higher levels of involvement in aggressive behaviours and experiences of unwanted sexual attention than older participants. All types of incidents appear to decrease in frequency with age. However, there was no significant correlation between age and number of incidents experienced within the previous three months (r=-0.61, p=0.256), among those who reported experiencing any incident type.

Table 49 Self-reported involvement in aggression in the last three months by gender and age					
		Aggression type			
Variable		Any n (%)	Physical n (%)	Verbal n (%)	Unwanted sexual attention n (%)
Sex					
Female	(*n*=328)	168 (51)	41 (13)	99 (30)	117 (36)
Male	(*n*=410)	194 (47)	76 (19)	148 (36)	76 (19)
Age*					
18–19	(*n*=186)	110 (59)	52 (28)	78 (42)	63 (34)
20–24	(*n*=328)	178 (54)	47 (14)	120 (37)	96 (29)
25–29	(*n*=111)	49 (44)	13 (12)	33 (30)	23 (21)
30–39	(*n*=59)	18 (31)	4 (7)	11 (19)	8 (14)
40+	(*n*=51)	6 (12)	0 (0)	4 (8)	2 (4)
Total	(*n*=738)	362 (49)	117 (16)	247 (33)	193 (26)

* Age groups could not account for three cases

a: Bolded values indicate statistically significant (p<0.05) differences between males and females and by age for the characteristics listed

Participants were asked to estimate the number of times they had been involved in any incident in the previous three months. Respondents who reported being involved in an incident had a median of four incidents during that time (range: 1–180). Four participants experienced more than 70 incidents in the past three months. Female participants who reported being involved in these incidents were involved in significantly more of them than male participants (*Mdn*=4.5 versus *Mdn*=3, respectively; z=2.33, p=0.020, r=0.13). Participants were asked who had been involved in their last incident in the previous three months (Figure 23). Most reported last experiencing a negative incident with strangers. No significant difference existed between male and female participants relating to prevalence of incidents with any 'type' of other person/s.

Figure 23 People participants reported last experiencing aggression or unwanted sexual attention from, within the past three months*
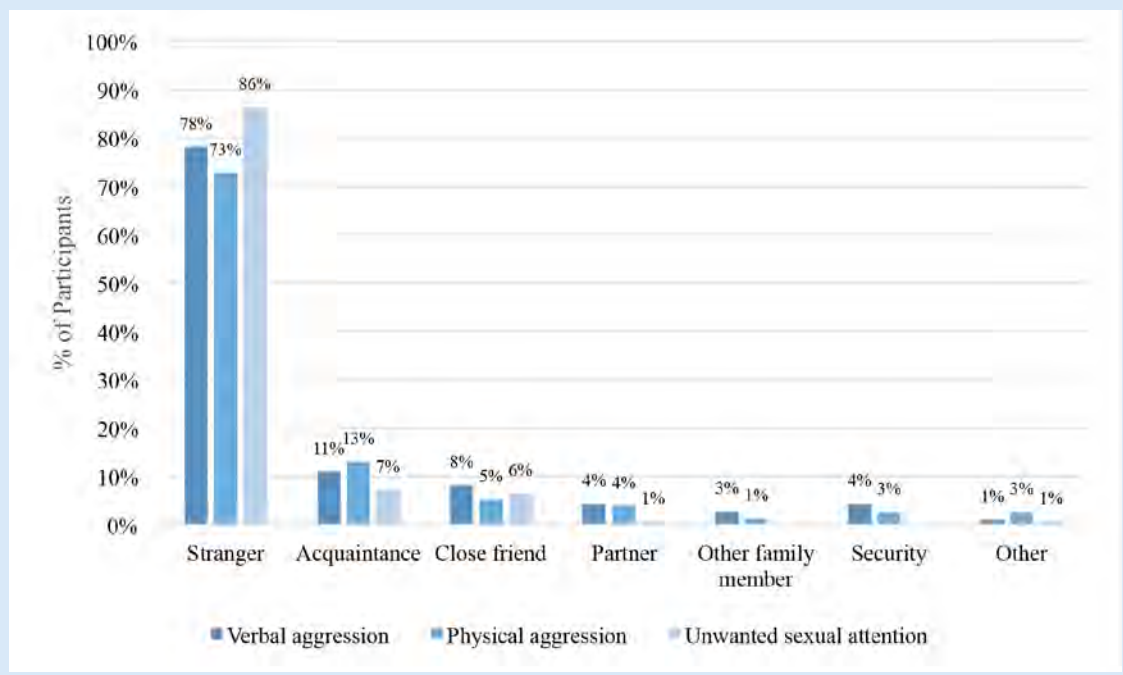
* Percentages do not add up to 100 as participants were able to select multiple people

Participants who completed the full interview and reported being involved in any incident (*n*=266) commented on whether illicit drugs had been consumed the last time they had been involved in that incident. Almost a fifth (*n*=46, 17%) reported that this had occurred. Participants who reported illicit drug consumption on the night of interview were more likely to report being involved in any incident during the previous three months compared with participants who had not consumed any drugs (χ^2=20.145, p<0.001).

Table 50 lists participants' experiences of alcohol-related harms and involvement in alcohol-related risk behaviours in the three months prior to interview. Of the entire sample, 18 percent reported incurring any alcohol-related injuries in the previous three months and, of those completing the full interview, 13 percent reported having alcohol-related accidents during that time. Female participants were significantly more likely to report more alcohol-related injuries than male participants (χ^2=6.71, p=0.010), however, they did not vary in the percentage of alcohol-related accidents reported (χ^2=-2.07, p=0.150). In contrast, of the participants completing the full interview, male respondents were significantly more likely than female interviewees to report causing any property damage (χ^2=5.68, p=0.017), to report having driven under the influence of alcohol (χ^2=9.77, p=0.002), and to report having driven under the influence of drugs (χ^2=7.66, p=0.006) in the three months prior to interview. Male participants who completed the full interview were also significantly more likely than female participants to report having been: refused entry (χ^2=18.27, p<0.001,), refused service (χ^2 = 6.45, p=0.011,), and kicked out (χ^2=3.88, p=0.049) of a licensed venue in the previous three months.

Table 50 Experience of alcohol-related harms and involvement of risk behaviours in the past three months by gender

In the last 3 months have you been involved in:	Total n=738		Male n=410		Female n=328	
	n	%	n	%	n	%
Alcohol-related injury	136	18%	62	15%	74	23%
Median (range)	1	(1–45)	1	(1–45)	1	1 (1–45)
Full interview	n=544		n=296		n=248	
Driven under the influence of alcohol	81	15%	**57**	**19%**	**24**	**10%**
Median (range)	2	(0–82)	2	(0–82)	2	(0–5)
Driven under the influence of drugs	29	5%	**23**	**8%**	**6**	**2%**
Median (range)	6	(1–90)	6	(1–60)	9.5	(1–90)
Committed property damage	29	5%	**22**	**7%**	**7**	**3%**
Committed property damage while intoxicated	20	4%	15	5%	5	2%
Median (range)	1	(0–20)	1	(0–20)	2	(1–5)
Been refused entry to a licensed venue	72	13%	**56**	**19%**	**16**	**6%**
Median (range)	1	(1–12)	1	(1–12)	1	(1–4)
Been refused service in a licensed venue	33	6%	25	8%	8	3%
Median (range)	2	(1–10)	1	(1–10)	2	(1–4)
Been kicked out of a licensed venue	42	8%	**29**	**10%**	**13**	**5%**
Median (range)	1	(1–5)	1	(1–5)	1	(1–2)
Had an alcohol-related accident	71	13%	33	11%	38	15%
Median (range)	1	(1–10)	1	(1–10)	2	(1–10)

a: Bolded values represent significant group differences

Perceived levels of safety

Participants in the full interview were asked to rate their perceived safety levels for how safe they normally feel, how safe they feel currently, and how safe they felt at the previous licensed venue on a scale of 0 to 10 (0 'very unsafe' to 10 'very safe'). Table 51 shows that participants tended to rate their normal feelings of safety lower than that of their current night out. Younger participants reported feeling slightly less safe than older participants across all measures of safety. Figure 24 shows that levels of safety remained stable throughout the night, with ratings of safety at the previous venue decreasing for those interviewed from 12 to 2 am.

Variable		How safe do you feel normally? Median (range)	How safe do you feel currently? Median (range)	How safe did you feel at the previous venue? Median (range)
Table 51 Self-reported safety rating by gender and age				
Sex				
Male	(*n*=410)	8 (0–10)	10 (0–10)	10 (0–10)
Female	(*n*=328)	8 (0–10)	10 (0–10)	9 (0–10)
Age*				
18–19	(*n*=186)	8 (0–10)	9 (0–10)	9 (0–10)
20–24	(*n*=328)	8 (0–10)	9 (0–10)	9 (0–10)
25–29	(*n*=111)	8 (0–10)	10 (0–10)	10 (0–10)
30–39	(*n*=59)	9 (0–10)	10 (0–10)	10 (0–10)
40+	(*n*=51)	9 (0–10)	10 (0–10)	10 (0–10)
Total	(*n*=738)	8 (0–10)	10 (0–10)	10 (0–10)

* Age groups could not account for three cases

Figure 24 Self-reported safety rating by time of interview

Results
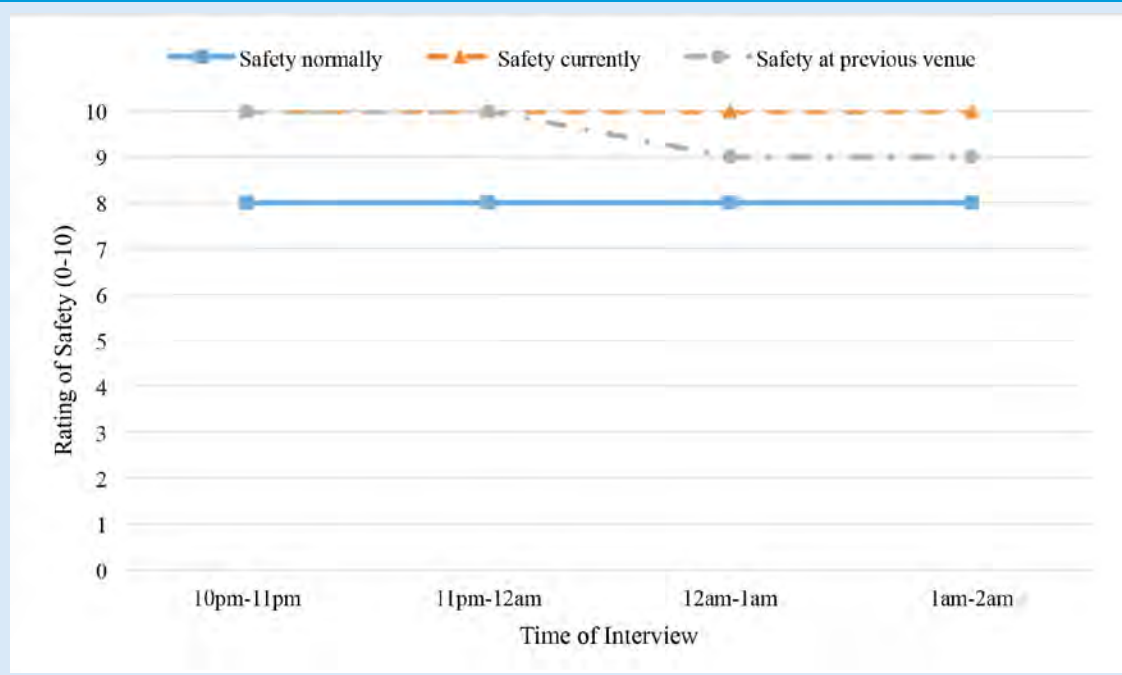
Summary of trends

Participant demographics

In Canberra, participants who completed the brief interview were significantly older than those who completed the full interview. More than half (63%) of the overall sample was male, with a median age of 22 years (range 18–64). Males reported being out significantly longer than females. The most common reason for going out was to catchup with/socialise with friends, followed by attending a special event or celebration. Participants most commonly reported planning to catch a taxi, or to get a lift home.

In Hobart, participants who completed the brief interview were significantly younger than those who completed the full interview. More than half (56%) the overall sample was male, with a median age of 22 years (range 18–77). As in Canberra, males reported being out significantly longer than females and participants listed socialising with friends and special celebrations as the main reasons for going out. Participants most commonly reported planning to catch a taxi home, or to get a lift.

Alcohol consumption

In Canberra, self-rated level of intoxication was associated with higher BAC reading. Mean BAC levels increased until 12 am at which point they levelled off at 0.068 before declining between 1 and 2 am, with a sharp rise between 3 and 4 am. However, there were only four interviews at this time. Males reported drinking a significantly greater number of standard drinks than females. Older participants were significantly more likely to report drinking for a greater number of hours when interviewed, and the higher a participant's BAC reading or the more standard drinks they had consumed, the better they thought of their driving capability.

Just over half of all participants showed some sign of being intoxicated, with the most common sign being slurred speech or glassy/red eyes. Males showed significantly more of these indicators than females. Those showing intoxication signs were significantly more likely to record a higher BAC, report drinking for more hours, report consuming more standard drinks, report consuming energy drinks, and report consuming drugs pre-interview.

In Hobart, self-rated level of intoxication was associated with higher BAC; older participants were more likely to have a higher BAC; and male participants' self-reported higher intoxication than females. The BAC levels peaked at 0.071 between 11 pm and 12 am before declining for the rest of the night. Males reported being out significantly longer and drinking a greater number of standard drinks than females.

More than half the participants were reported to show signs of intoxication, the most common being slurred speech or glassy/red eyes. Those showing any intoxication signs were significantly more likely to record a higher BAC, report drinking for more hours, report consuming more standard drinks, and report consuming drugs pre-interview.

Pre-drinking behaviours

In Canberra, more than half the sample reported pre-drinking during their current night out, and males were more likely to pre-drink than females. Males also consumed more alcohol when pre-drinking than females. Those who reported pre-drinking were more likely to engage in heavier alcohol consumption patterns and more risk behaviours than those who did not pre-drink. The main motivation for pre-drinking in Canberra was the price of drinks.

In Hobart, more than two thirds of the sample reported pre-drinking during their current night out, males consumed greater amounts of alcohol when pre-drinking than females, and older participants were less likely to pre-drink. Those who reported pre-drinking were more likely to engage in heavier alcohol consumption patterns and more risk behaviours than those who did not pre-drink. The main motivation for pre-drinking in Hobart was the price of drinks.

Energy drink consumption

In Canberra, 20 percent of participants said they had consumed energy drinks that night. As the evening progressed, the percentage of energy drink consumers interviewed increased from five percent between 10 and 11 pm, to 36 percent between 2 and 3 am. Younger participants consumed more energy drinks than those who were older. Those who consumed these drinks were significantly more likely to report pre-drinking and illicit drug use, to record a higher BAC, to self-report higher intoxication, and to report experiencing physical aggression over the past three months. They were also more likely to report having been refused entry to a venue, and refused service in a licensed venue, as well as having driven while drunk or on drugs, or having committed property crime.

In Hobart, 19 percent of participants reported consuming energy drinks that night. As the night progressed, the percentage of energy drink consumers interviewed increased from 12 percent between 10 and 11 pm, to 27 percent between 1 and 2 am. Younger participants consumed more energy drinks than those who were older. Individuals who consumed energy drinks were significantly more likely to report pre-drinking, illicit drug use, had higher BAC, higher self-report intoxication, any form of aggression in the past three months (specifically verbal or physical aggression), and alcohol-related injury in the past three months. They were also more likely to report having been refused entry to a venue, and refused service to a licensed venue.

Drug consumption

In Canberra, 16 percent of participants reported using substances other than alcohol during their current night out, with male participants more likely to report consuming ecstasy, and females more likely to report consuming 'other' drugs. Those who reported illicit drug use were more likely to have driven under the influence of drugs and alcohol. Of the 21 participants who reported illicit drug use, 11 received a positive drug swab result for their reported drug. Nine participants who had denied using drugs, tested positive, with most of those testing positive for methamphetamine.

In Hobart, 30 percent reported using substances other than alcohol during their current night out. Male participants were significantly more likely to report consuming ecstasy than females. Those who reported illicit drug use were more likely to report having engaged in physically and verbally aggressive behaviour, property crimes, and to have sustained alcohol-related injuries. Of the 20 participants who reported use, six received a positive drug swab result for their reported drug. Also, 16 participants who had denied drug use tested positive, with most those testing positive for methamphetamine.

Aggressive incidents and safety

In Canberra, 47 percent of participants reported being involved in verbal or physical aggression, or unwanted sexual attention in or around licensed venues in the three months prior to interview, with a median of four incidents. The most common types of aggression were verbal (30%), sexual (28%) and physical (17%). Females were significantly more likely to report being involved in any type of aggression than male participants, and were more likely to receive unwanted sexual attention, while males were involved in more physical aggression. Participants rated themselves as feeling safer during the night of the interview than they did normally; this did not fluctuate throughout the night.

In Hobart, 49 percent of the sample reported that they had been involved in any form of verbal aggression, physical aggression or unwanted sexual attention in or around licensed venues in the three months prior to interview, with a median of four incidents. The most common types of aggression were verbal (33%), sexual (26%) and physical (16%). Females were significantly more likely to report receiving unwanted sexual attention, and males more likely to experience physical aggression. Perceived levels of safety remained stable throughout the night, with safety at the previous venue decreasing from 12 am.

Venue observations

Canberra

Observations conducted

Table 52 shows the frequency of hourly observations recorded and the types of venues targeted for observation. In total, 237 hourly venue observations were held in Canberra, the largest percentage being conducted in 'bar' type venues (40%). The remainder were held in 'nightclub' (33%) and 'large mainstream pub' (27%) type venues.

Table 52 Number of hourly observations by venue classification				
	Large mainstream pub	Bar	Nightclub	Total
Hourly observation, n (%)	64 (27)	95 (40)	78 (33)	237 (100)

Data collection period

Figure 25 shows the observation period for data collection. All observations were held between 9 April 2015 and 6 December 2015. Observations in Canberra were held during April, May, August, November and December, 2015.

Figure 25 Percentage of observation records per month, Canberra 2015
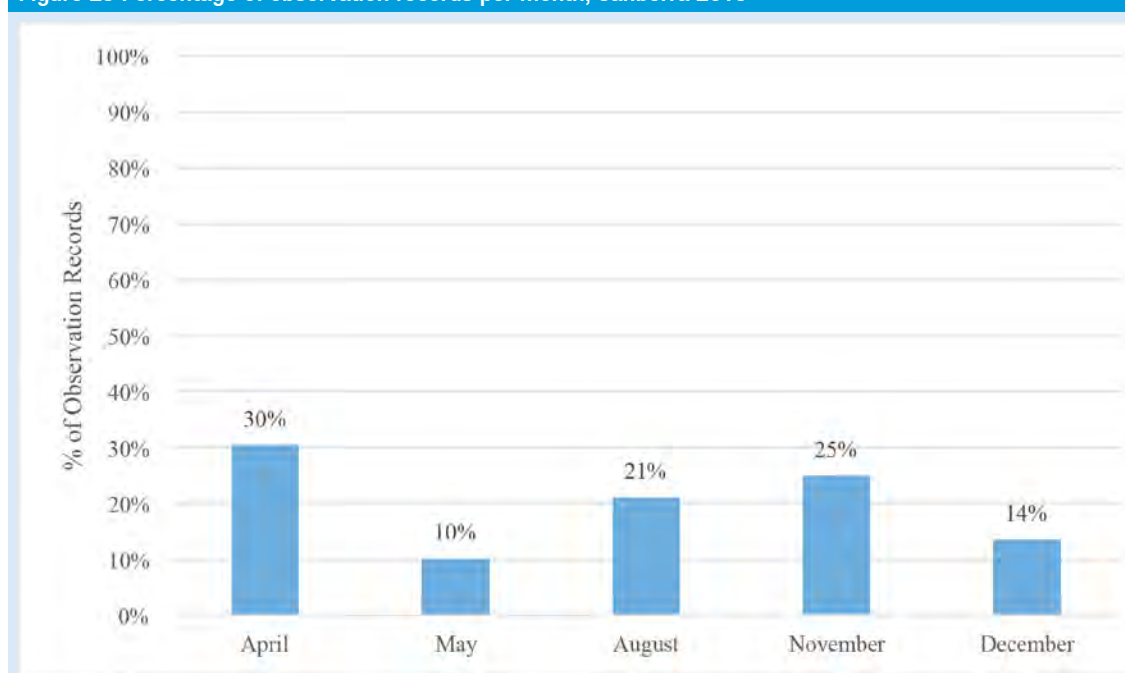
Figure 26 shows the distribution of hourly observations, separated by hour. All observations were conducted between 10 pm and 3 am. Reports were most frequent between 1 and 2 am (25%).

Figure 26 Percentage of observation record per hour of day
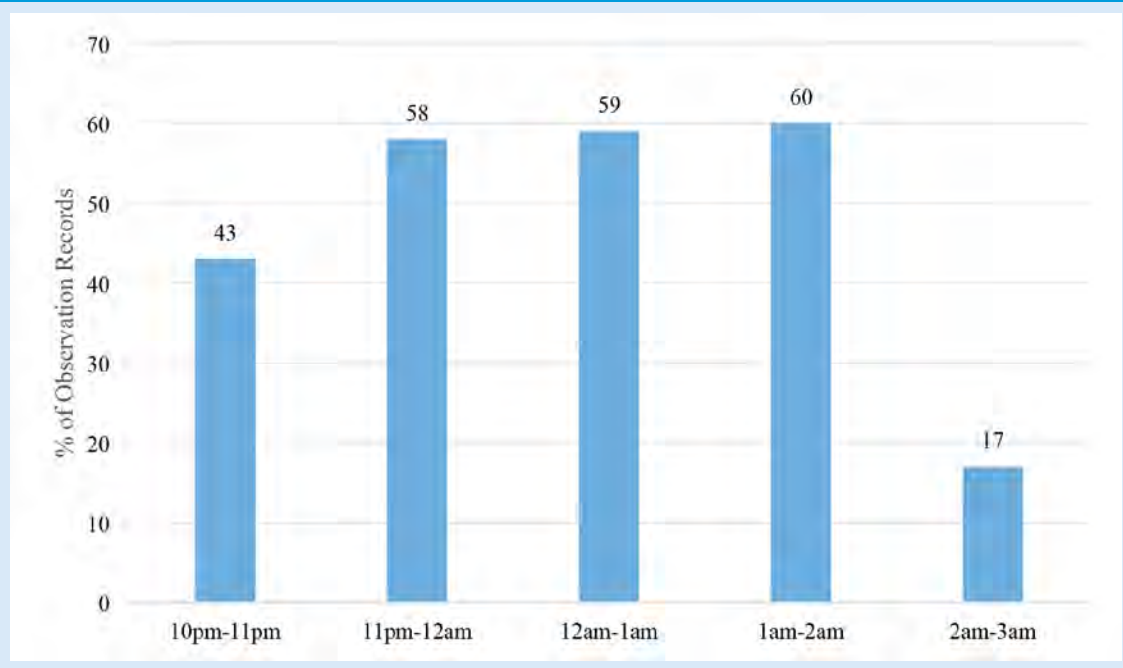
Table 53 presents the number of observations by hour of day for each venue type.

Table 53 Number of observations by hour and venue classification			
	Large mainstream pub	Bar	Nightclub
10–11 pm	8	20	15
11 pm–12 am	16	24	18
12–1 am	18	22	19
1–2 am	15	27	18
2–3 am	7	2	8

Venue breakdown

Patron information

Each hour observers collected summary information about patron demographics and density within each licensed venue. Data included total numbers of patrons in each venue at the observation time, the estimated percentage of venue patron capacity, estimated percentage of patrons who were male, and estimated percentage of patrons who appeared to be under 25 years of age. Data are provided in Table 54 below.

Table 54 Patron descriptions by hour and venue classification				
	Large mainstream pub	Bar	Nightclub	Total
Mean number of estimated total venue patrons				
10–11 pm	49	94	39	67
11 pm–12 am	73	73	76	74
12–1 am	96	86	107	96
1–2 am	97	73	128	96
2–3 am	81	63	76	76
Mean percentage of estimated venue capacity (%)				
10–11 pm	31	58	19	40
11 pm–12 am	37	54	41	45
12–1 am	51	52	59	54
1–2 am	53	54	64	57
2–3 am	59	80	39	52
Mean estimated percentage of male patrons (%)				
10–11 pm	56	50	43	49
11 pm–12 am	68	56	57	60
12–1 am	65	59	60	61
1–2 am	62	58	60	60
2–3 am	71	55	63	66
Mean percentage of patrons estimated <25yrs (%)				
10–11 pm	56	47	58	53
11 pm–12 am	44	45	62	50
12–1 am	56	43	57	51
1–2 am	50	43	64	51
2–3 am	44	58	47	47

Mainstream pubs (n=97) and nightclubs (n=128) experienced peak patronage toward the end of the night between 1 and 2 am whereas bars (n=94) experienced peak patronage at the beginning of the night between 10 and 11 pm. Venue capacity increased over the course of the night in mainstream pubs, peaking at 59 percent between 2 and 3 am. Nightclubs also increased over the course of the night, peaking at 64 percent between 1 and 2 am, and decreasing subsequently. Bars decreased in capacity until the hour between 1 and 2 am, with peak capacity of 80 percent reached between 2 and 3 am.

Most patrons were male for all venue types and all hours of venue observation, with the exception of nightclubs at the beginning of the night. For each venue type, the percentage of male patrons continued to increase over the course of the night. However, the percentage of males in bars decreased slightly from 2 to 3 am.

The estimated percentage of young adult patrons remained relatively stable across the night. Figures 27 to 30 offer a visual representation of this information.

Figure 27 Average number of patrons by time of night
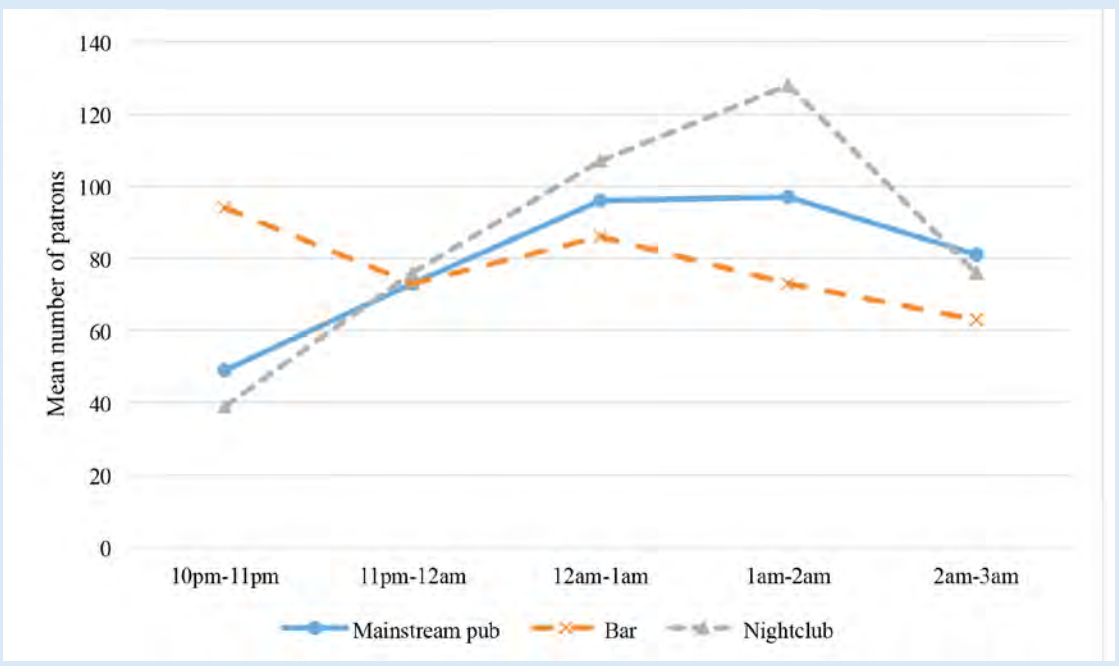
Figure 28 Average percent of venue capacity filled by time of night
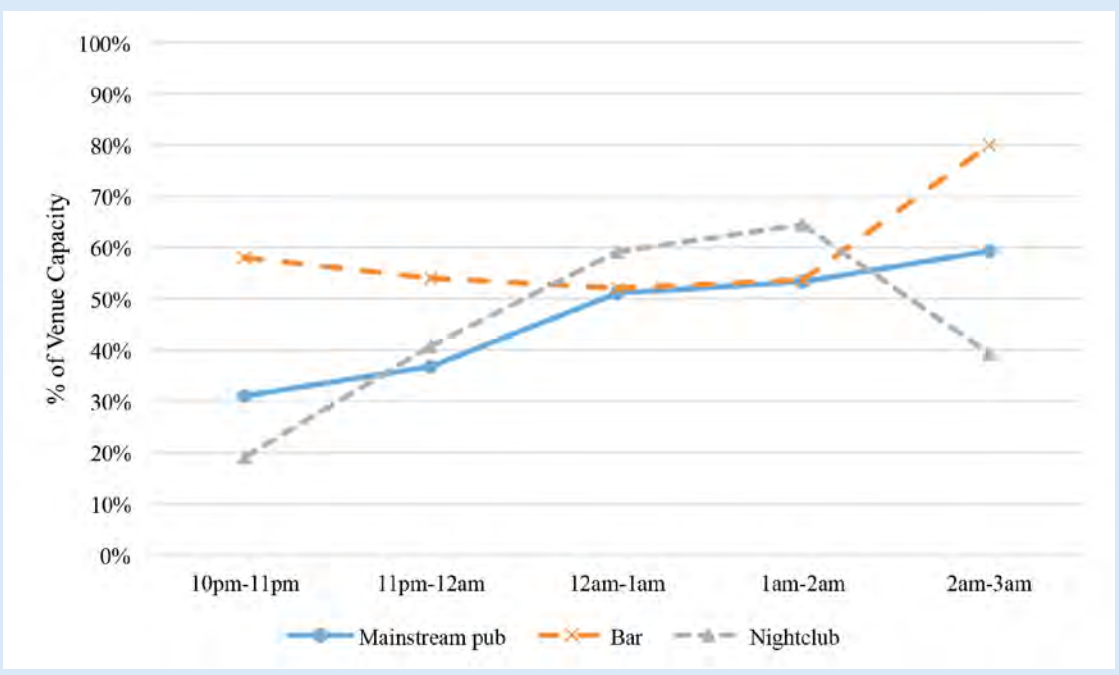
Figure 29 Average percentage of male patrons by time of night
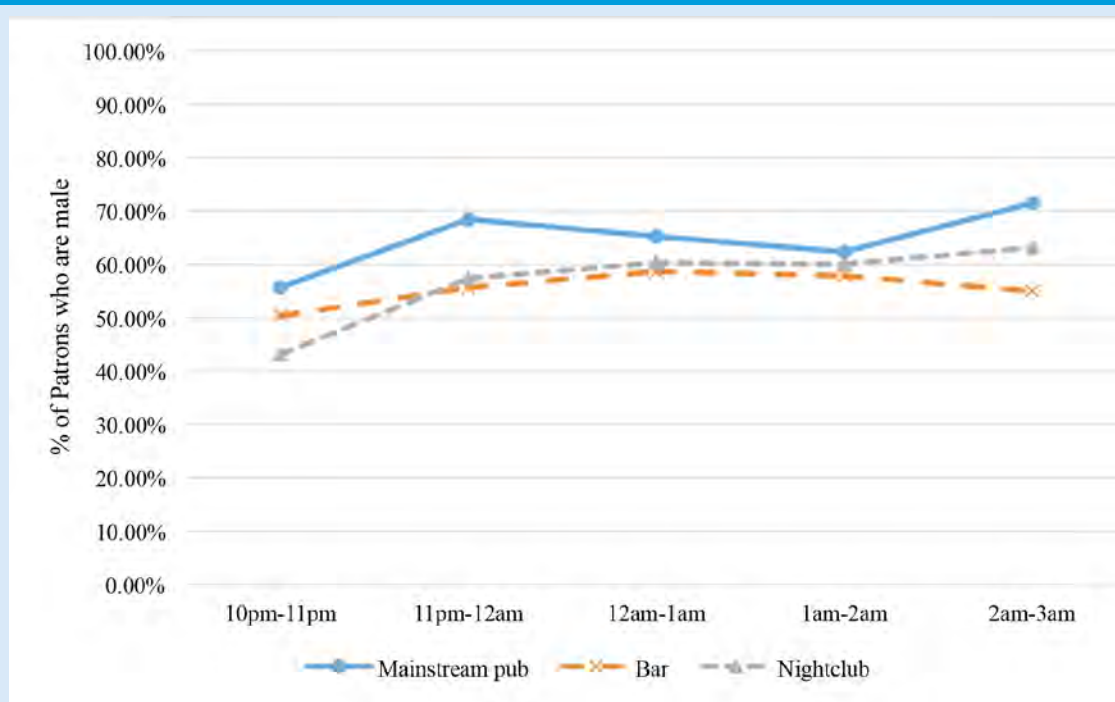
Figure 30 Average percentage of patrons under 25 years of age by time of night
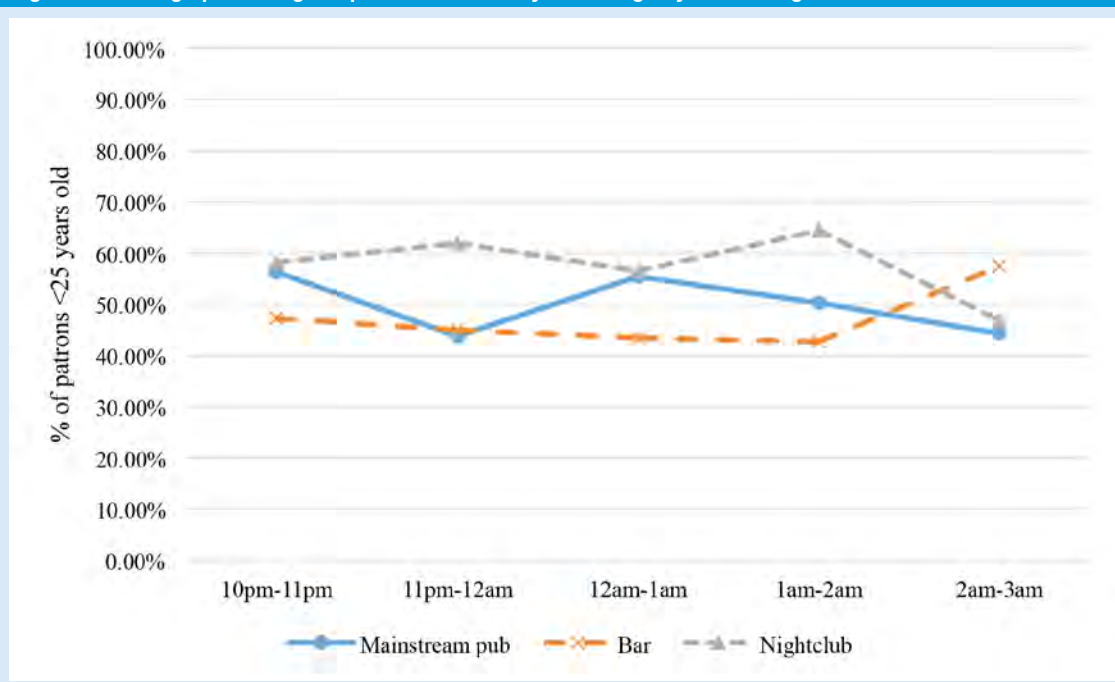
Patron intoxication

Figure 31 presents observers' ratings of patron intoxication over time. Observers were asked to allocate an overall rating of patron intoxication within venues during observations: low, medium, high, or no visible signs of intoxication. Patrons exhibiting no signs of intoxication and 'low' intoxication signs decreased throughout the course of the night. The percentage of patrons showing moderate signs of intoxication, demonstrated an initial rise from the start of the night until 1 am, after which there was a decline. Patrons exhibiting signs of 'high' intoxication increased throughout the night after first being recorded at 12 am.

Figure 31 Patron intoxication trends by hour*
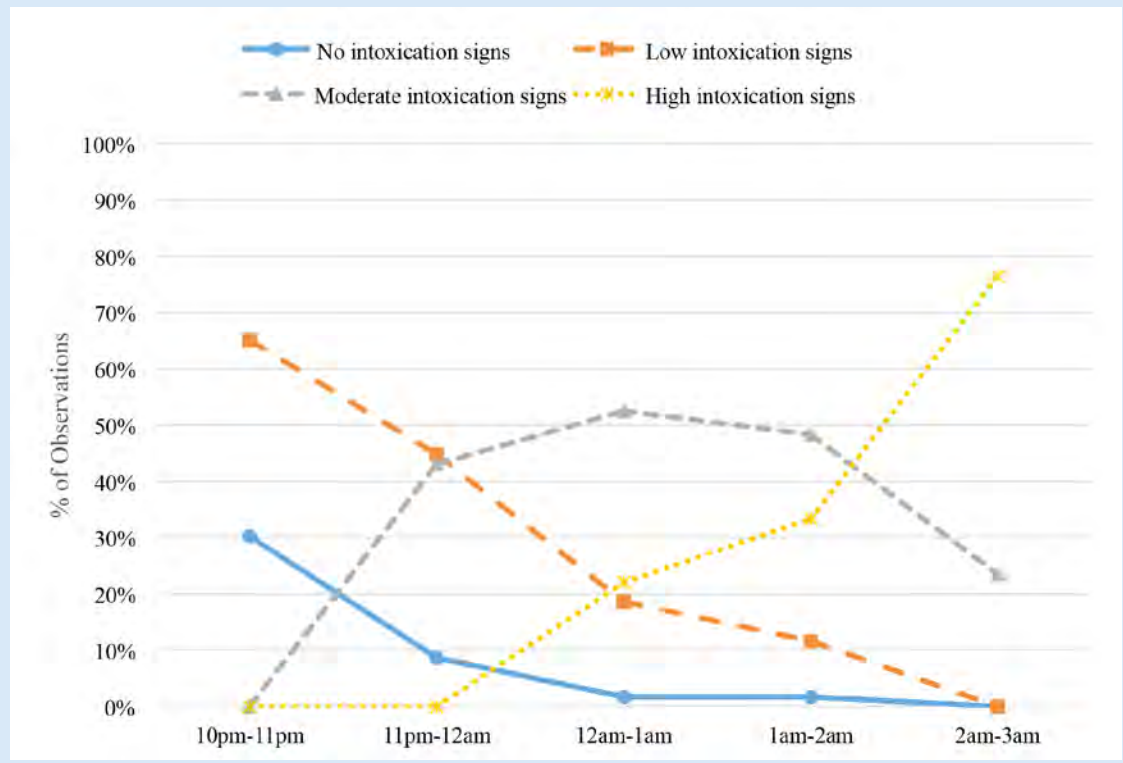
* Ten hourly observations failed to record intoxication levels

Figure 32 shows the proportion of observed patron intoxication ratings by type of venue.

Figure 32 Frequency of intoxication rating per venue classification*
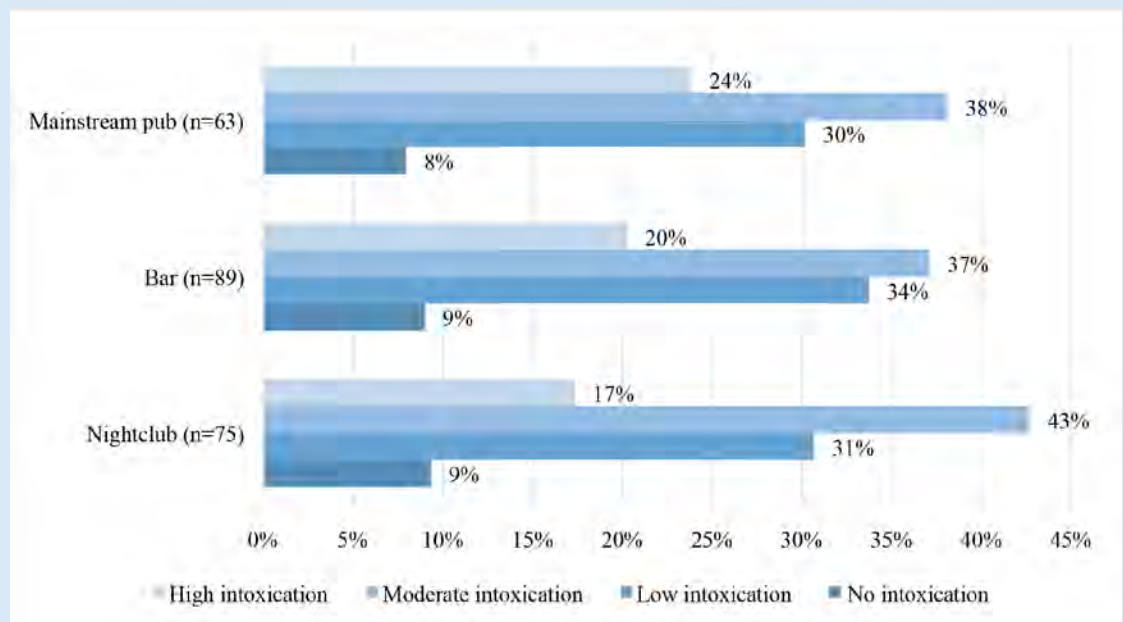
* Ten hourly observations failed to record intoxication levels

Several key markers of overall patron intoxication were noted during all hourly venue observations, as shown in Table 55. In addition to an overall categorical rating of intoxication, observers noted the overall percentage of patrons demonstrating any intoxication signs. They also noted the percentage of patrons who appeared too intoxicated to remain in the venue, and the percentage of patrons showing signs of illicit substance use or intoxication from substances other than alcohol.

Measures of alcohol-related intoxication generally increased over time across all venue types. By 2 am, the average percentage of patrons exhibiting any intoxication sign based on observer report was between 76 and 93 percent, while between 15 and 30 percent were rated as appearing too intoxicated to remain in the venue.

Table 55 Venue classification versus patron intoxication per hour				
	Large mainstream pub	Bar	Nightclub	Total
Mean percentage of patrons showing any intoxication (%)				
10–11 pm	17	18	11	15
11 pm–12 am	41	36	33	36
12–1 am	49	51	61	53
1–2 am	71	53	56	58
2–3 am	76	93	91	84
Mean percentage of patrons that appear too intoxicated to remain in the venue (%)				
10–11 pm	0.1	0.	0.4	0
11 pm–12 am	0.4	3	4	3
12–1 am	8	6	4	6
1–2 am	15	11	7	11
2–3 am	15	30	14	16

Observers were also required to monitor the drinking behaviour of highly intoxicated patrons. They recorded n=56 incidents of highly intoxicated patrons ordering drinks from a bar service area, as well as the response from the venue. Figure 33 shows the distribution of venue responses to highly intoxicated patrons attempting to buy drinks. In most instances, highly intoxicated patrons were served alcohol as usual.

Figure 33 Distribution of venues responses to intoxicated patrons ordering drinks
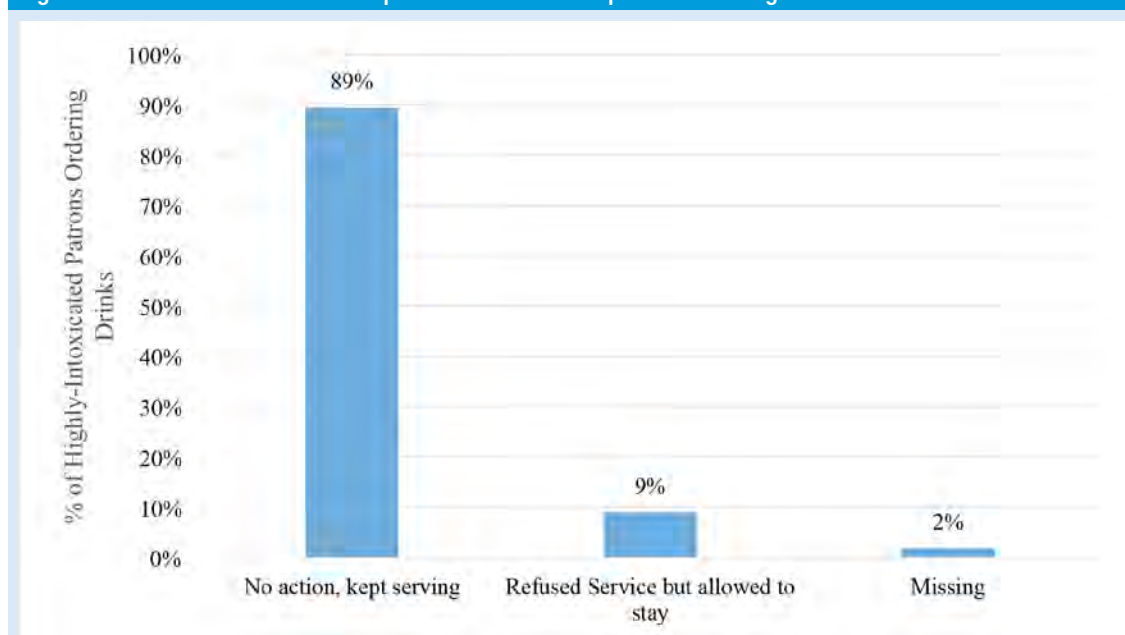
Alcohol use behaviours and promotion

Figure 34 displays frequency data for observed hourly ratings of the popularity of different types of drinks. Patrons most frequently consumed beer.

Figure 34 Frequency of drink type observed as main choices
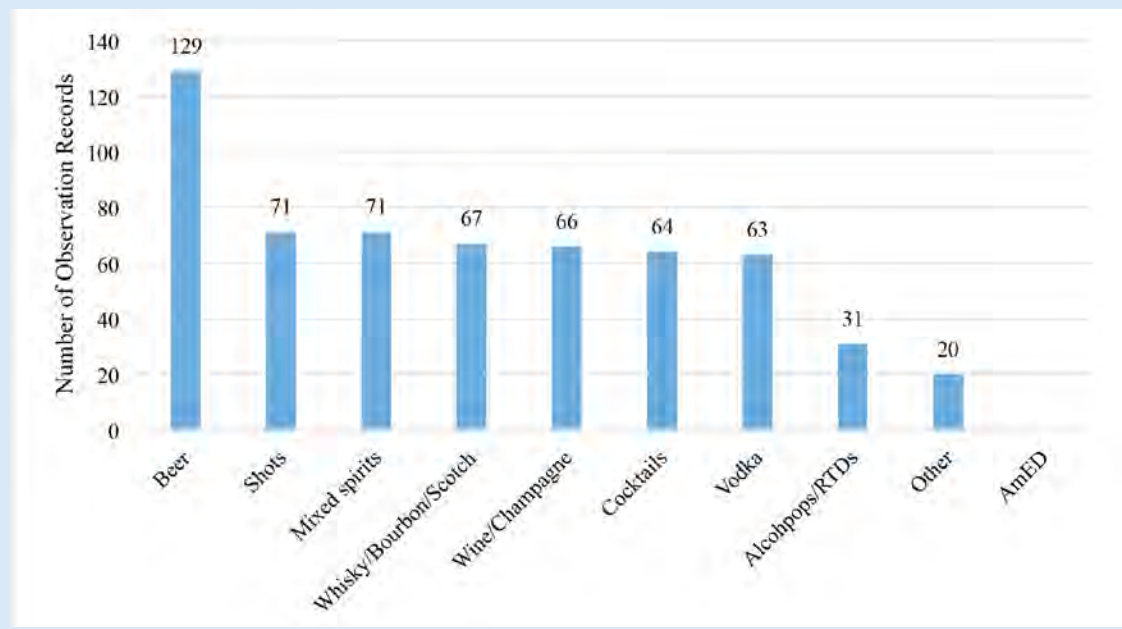
Observers were also instructed to note any drink promotions or advertising in the venue. They observed advertised drink promotions on 56 hourly occasions (24% of all observations). Promotions included advertisements on signs and televisions, discounts, featured drinks, promotions/discounts during certain hours, and meal deals with drinks.

As shown in Table 56, drink promotions were more common during observations when no, and slight, levels of intoxication were reported. Drink promotions appear to be more readily available when less patrons are intoxicated and decrease when patrons show signs of greater intoxication. A chi square analysis indicates that patrons were significantly more likely to demonstrate no (χ^2=5.53, p=0.019), low (χ^2=7.05, p=0.008), or high (χ^2=11.76, p=0.001) levels of intoxication if drink promotions were not available. Patrons were not significantly more likely to show signs of moderate intoxication (χ^2=0.41, p=0.522) whether or not drink promotions were available.

Table 56 Distribution of patron intoxication across availability of drink promotions (_n_=227)

	Drinks promoted (%)	
Patron intoxication rating*	No promotions (_n_=172)	Promotions (_n_=55)
Overall, no sign of intoxication	55	45
Slight signs of intoxication	65	35
Moderate signs of intoxication	79	21
High levels of intoxication	96	4

* Intoxication rating missing for 10 cases

Energy drink use

Observers recorded the prevalence of (non-alcoholic) energy drink brands observed throughout all licensed venues. Red Bull was the most common energy drink available, present in 67 percent of all observed venues (*n*=10), followed by Mother (*n*=3, 20%), Pink (*n*=1, 7%) and V (*n*=1, 7%). Other energy drink brands were identified in 27 percent of venues (*n*=4).

Observers reported witnessing patrons consuming alcohol mixed with energy drinks (AmEDs) during 26 hourly observations (11% of all observations). AmEDs were not reported as a popular/main drink of choice across all of the hourly observations. Table 57 (*n*= 227) shows levels of observed patron intoxication according to whether AmED consumption was witnessed. Chi square analysis found patrons were no more likely to present at any level of intoxication regardless of the presence of AmED use.

Table 57 Distribution of observed patron intoxication across AmED use		
	Was AmED use observed? (%)	
Patron intoxication rating*	No (*n*=203)	Yes (*n*=24)
Overall, no sign of intoxication	95	5
Slight signs of intoxication	94	6
Moderate signs of intoxication	85	15
High levels of intoxication	89	11

* Intoxication rating missing for 10 cases

Illicit substance use

Observers were asked to record suspected illicit substance use during each hourly observation record (Table 58). In total, 22 hourly records (9% of all observations) indicated some patron intoxication from illicit substances. It is worth noting the limitations of observational recording of illicit substance use, which relies on subjective interpretation of behavioural signs by observers and, therefore, carries inherent flaws and bias and can only be considered indicative.

During the recording period, 10 percent of venue patrons were suspected to have consumed illicit drugs. The most common reason for observers suspecting illicit drug use stemmed from patrons exhibiting intoxicated behaviour atypical of alcohol consumption (*n*=15). Other observations included visible ingestion/smoking of substances (*n*=1), suspicious behaviour (*n*=3), and visible paraphernalia associated with drug use, such as pipes and baggies (*n*=3).

Rates of patrons showing signs of illicit drug use reflected no clear trend in any venue type. However, nightclubs and bars saw drug use across all but one hour in the night, while mainstream pubs only recorded drug use between 1 and 2 am. The percentage of drug users in nightclubs was highest between 11 pm and 12 am, decreasing as the night progressed. Drug use in bars peaked between 2 and 3 am; however, earlier hours did not indicate that drug use was increasing with the passing of time.

Table 58 Patron illicit drug use by venue classification			
	Large mainstream pub	Bar	Nightclub	Total
Mean percentage of patrons showing signs of illicit drug use (%)			
10–11 pm	n/a	5	0	3
11 pm–12 am	0	0	23	11
12–1 am	n/a	3	11	9
1–2 am	4	2	6	4
2–3 am	n/a	50	6	21

Figure 35 shows the frequency of specific illicit substances suspected of being used in observed venues. Ecstasy was the most frequently suspected substance used in licensed venues, followed by cocaine. On occasions observers also suspected illicit substance use was occurring, but due to the non-specific nature of the intoxicated behaviour, the suspected substance was recorded as 'unknown'.

Figure 35 Suspected illicit substance used during hours where illicit substance use was observed
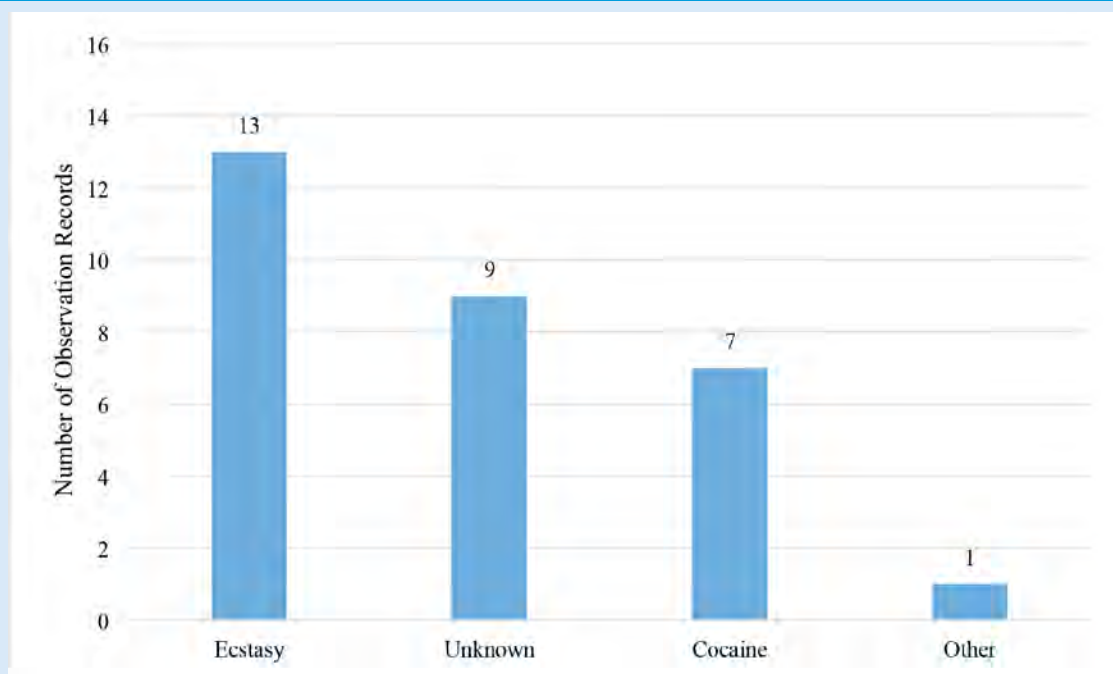
Police presence

Observers recorded police activity on the streets, at or around venues, upon entry of the venue. Police were observed on the street during 18 hourly observations, and inside venues for 20 (8%) observations. Police were seen responding to one incident (0.4%) on the street, and patrolling and involved in other activities in the area for the remaining 17 (7%). Similarly, police were recorded as having responded to only one incident within venues (0.4%), and simply walking through for 18 observations (8%). Outside venues, groups of police officers ranged from two to six officers with a median of three. Inside venues, groups of police ranged from two to four officers with a median of three.

Police were seen mainly around bars (n=9 hourly observations), with fewer seen around pubs (n=5) nightclubs (n=4). Most police activity inside venues occurred inside bars (n= 9 hourly observations), with a lower amount appearing inside pubs (n= 6) and nightclubs (n= 5). Figure 36 shows the percentage of observations where police activity was noted over the course of the night; police activity inside venues increased until 1 am, after which it declined.

Results

Figure 36 Percentage of police activity during total observation hours
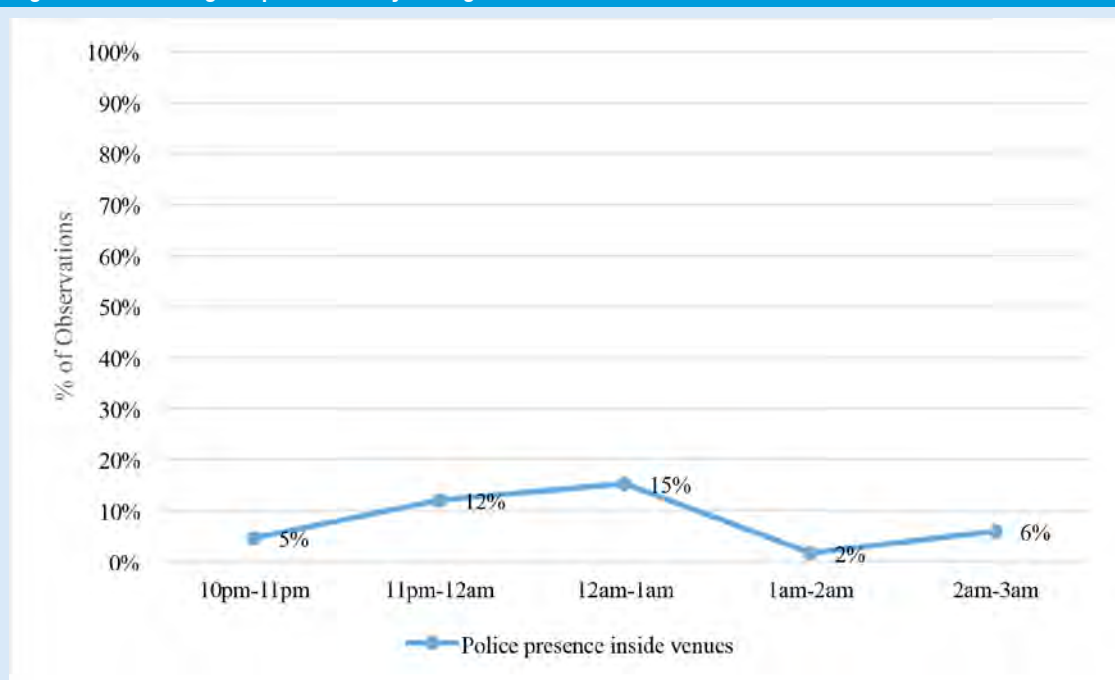
Venue characteristics

Observers were also asked to note the characteristics of the particular venue they were visiting. These included the signage of the bar, crowding, entertainment, and the atmosphere of the venue.

On entering, observers assessed if it appeared to be hostile and macho. No observers reported a venue as being hostile. Overall, 25 hourly observations characterised venues as 'macho' on arrival.

Observers were asked to report on the signage at the main bar after entering the venue. Signage was reported in 97 hourly observations (41%). As Figure 37 shows the most common signage present at the bar service areas in venues were those warning that they would not serve underage patrons (n=56 of hourly observations, 58%), followed by signs on serving information (n=48, 49%). Observers failed to observe any clear signage around bar service areas during 24 percent of the hourly observations.

Figure 37 Signage around bars on entry
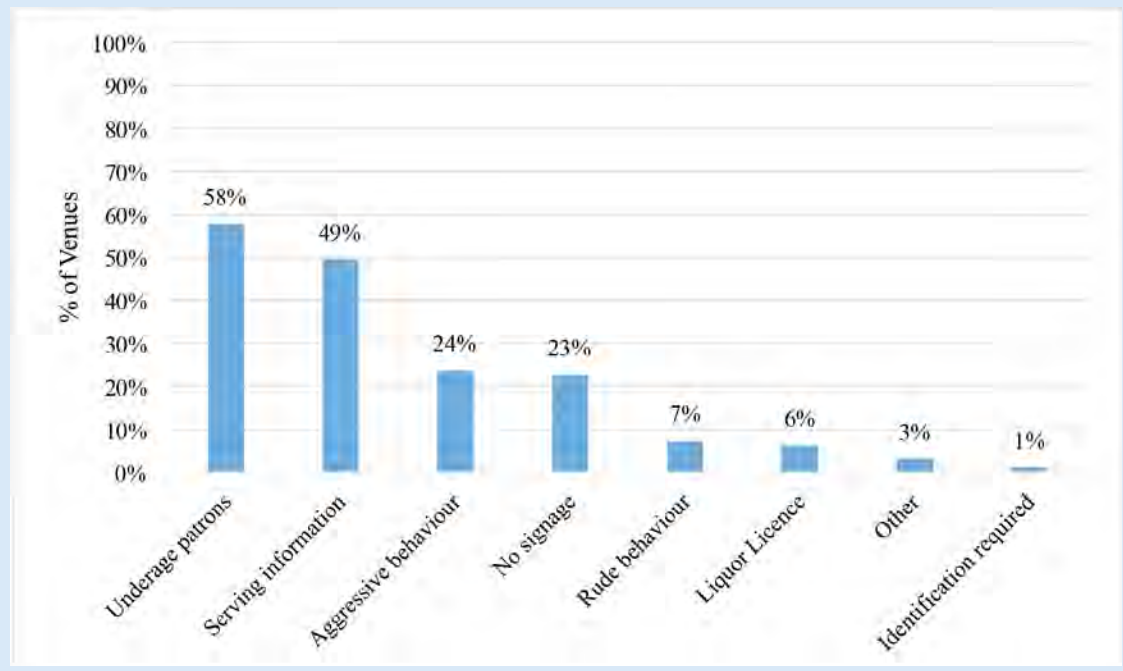
Observers were asked to judge the level of crowding by how many people were around the bar service area. Table 59 shows crowding according to each venue type. Bars and nightclubs were most likely to have one to two patrons at the bar service area, while pubs were more likely to not have any bar crowding or only one patron.

Table 59 Crowding around bar across venue type

Number of patrons crowding bar	Mainstream pubs n (%)	Bar n (%)	Nightclub n (%)
0	23 (36)	21 (22)	21 (27)
1	19 (30)	35 (37)	26 (34)
2	9 (14)	22 (23)	14 (18)
3	8 (13)	7 (7)	13 (17)
4	4 (6)	7 (7)	3 (4)
5+	1 (6)	2 (7)	0 (4)

Figure 38 shows crowding across the course of the night. Venue crowding did not vary greatly during the night. It was more likely that one patron would present at the bar service area during the course of the night, except for the start and end when it was more likely there would be nobody crowding the bar. On average it took observers 1.8 minutes to get served at the bar.

Figure 38 Crowding around bar by time of night
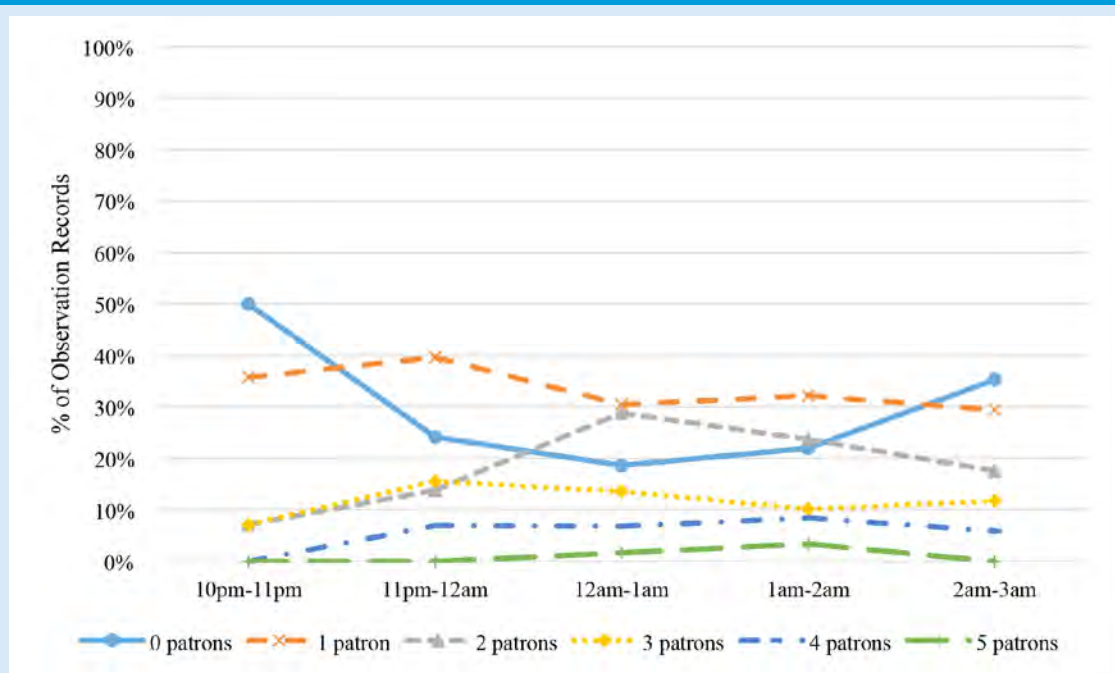
Figure 39 shows observers' rating of patron traffic flow in the venue. Observers assessed the flow based on how difficult it was to move throughout the venue. Ratings ranged from 'very poor' to 'good'; a rating of very poor meant that observers were unable to move throughout the venue, whereas a rating of good indicated that observers encountered no problems moving through the venue. Hourly observations showed that venues were most likely to have 'fair' traffic flow, except for pubs, which were more likely to have a 'good' traffic flow.

Figure 39 Traffic flow of venue
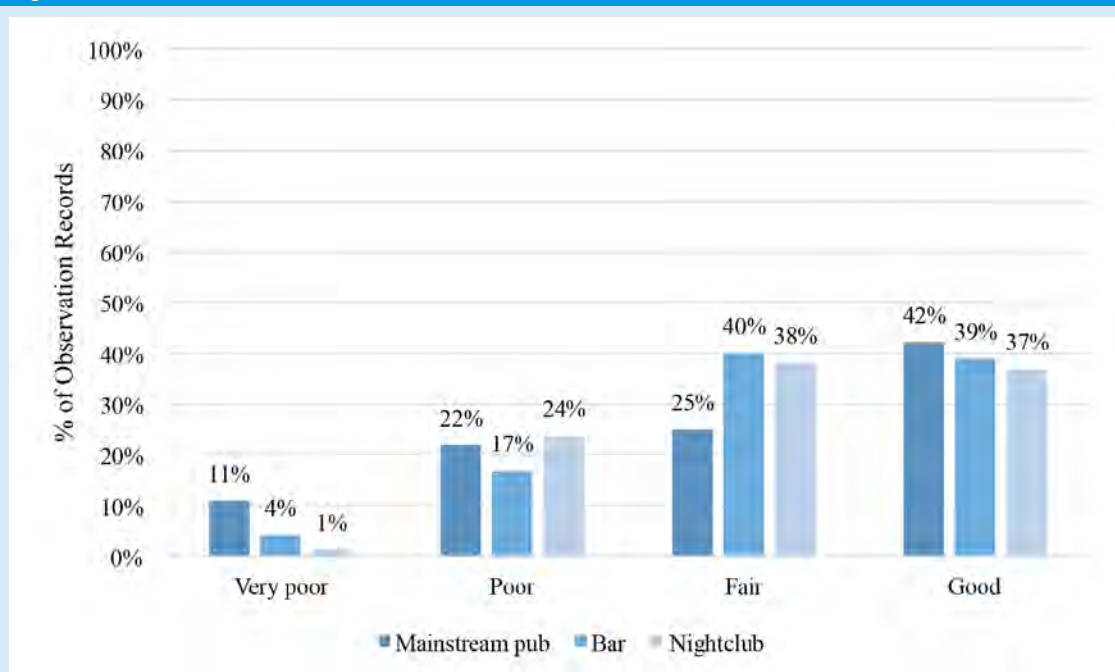
On entering the venue observers assessed whether or not the seating provided in the venue was adequate for patrons to seat themselves comfortably or if it was inadequate due to too few seats. One hundred and ninety-eight hourly observations reported on seating; most of these observations reported seating in venues was adequate (*n*=148, 75%).

Observers also recorded the forms of entertainment provided by the venue. Table 60 shows the different forms of entertainment provided across venue types. In bars and nightclubs, DJs were the most common form of entertainment, whereas for mainstream pubs, dancing and video games were more common.

Figure 40 shows observers' rating of the noise level in the venue. Observers assessed noise based on how difficult it was to converse. Ratings ranged from 'intimate conversation possible' to 'impossible to converse'. Venues were most likely to be considered 'difficult to converse'.

Figure 40 Noise level of venue
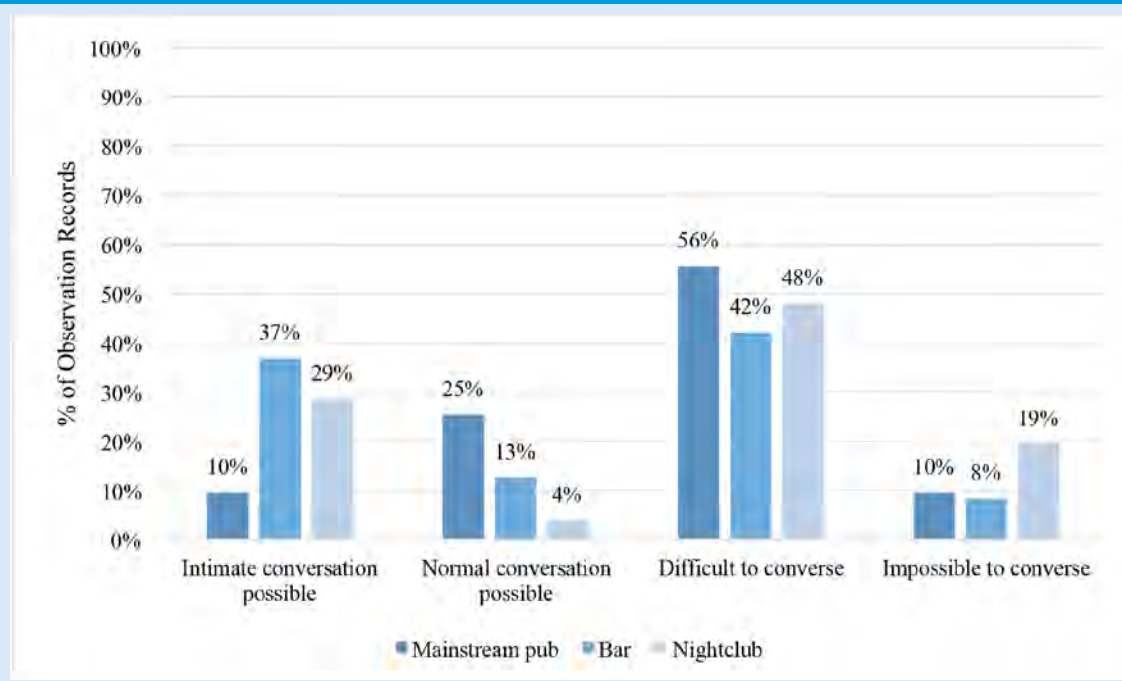
Observers were also asked to rate the lighting of venues. Ratings ranged from 'dim' to 'very bright'. Figure 41 shows that most hourly observations recorded moderately low levels of lighting, with no hourly observations recording very bright lighting.

Figure 41 Lighting level of venues
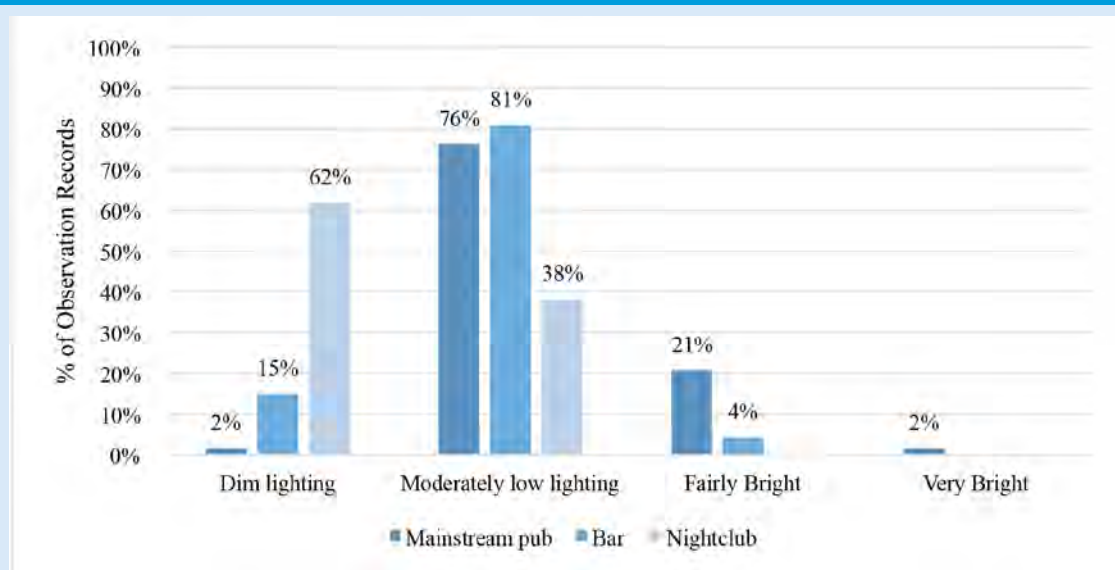
In addition, observers were asked to rate the décor of venues as part of their hourly observations, with these judgments primarily focusing on the cleanliness of the venue during the previous hour. Answers ranged from 'always cleared immediately' to 'sticky surfaces'. Figure 42 shows that most venues are kept clean, with 10 percent of observation records noting hygiene problems.

Figure 42 Venue hygiene
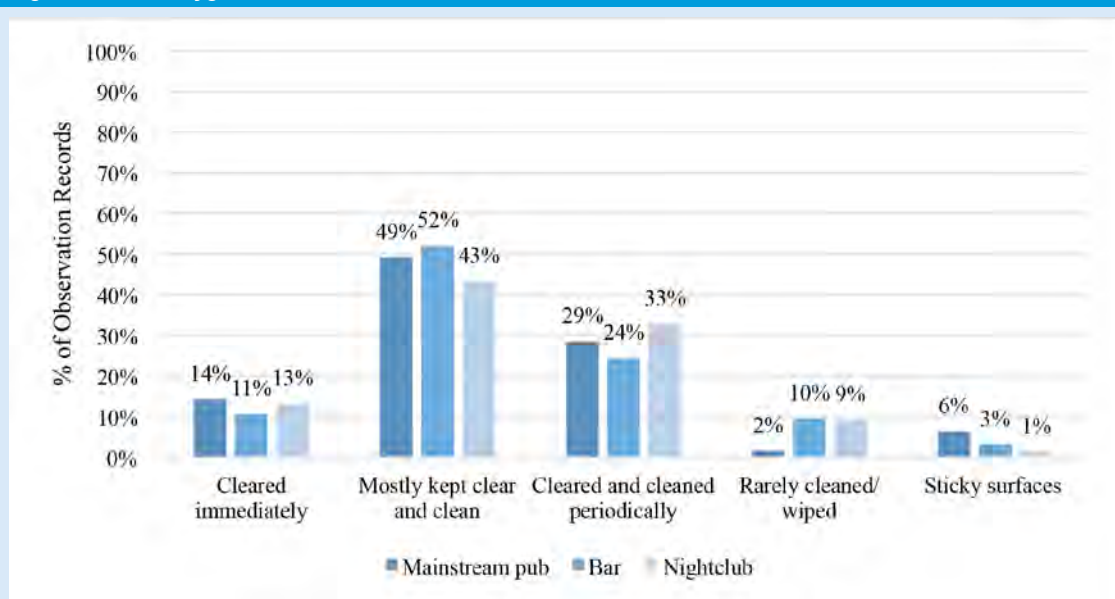
Table 60 Forms of entertainment by venue type			
Form of entertainment	Mainstream pubs n (%)	Bar n (%)	Nightclub n (%)
DJ	38 (60)	79 (95)	70 (93)
Dancing	45 (71)	38 (46)	66 (88)
Live music	18 (29)	1 (1)	1 (1)
Video games and pinball	45 (71)	38 (46)	66 (88)
Bar games (eg pool, darts)	25 (40)	0 (0)	0 (0)
Other	2 (3)	5 (6)	3 (4)

Observers were asked to judge the percentage of patrons who appeared to be bored. Figure 43 shows the trend for all venue types across the course of the night. Trends in perceived boredom were similar for all venue types, decreasing over the course of the night.

Figure 43 Perceived boredom by venue type and time of day
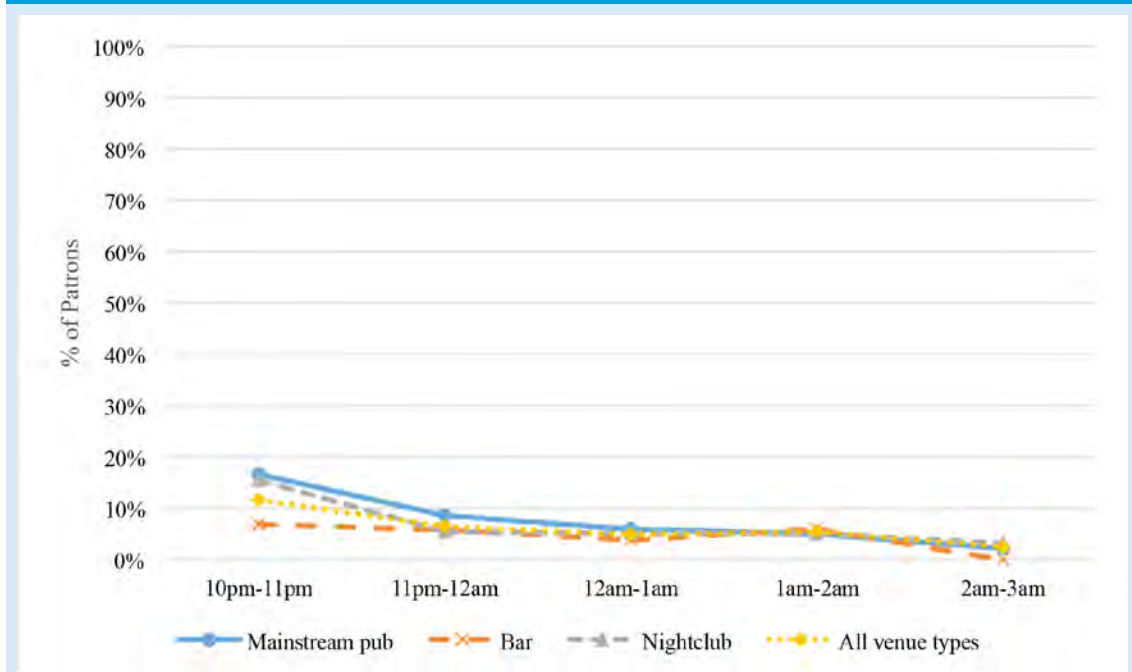
Drink purchase

Observers were able to purchase drinks during their time inside venues. When observers purchased a drink they recorded in their hourly observation what type of drink they purchased and its price. Table 61 shows the different types of drinks purchased by observers and the average price of each drink type. Observers purchased drinks during 117 hourly observations (49%), the most common beverage purchased by observers was soft drinks (n=67, 57%) followed by beer (n=16, 14%), energy drinks (n=13, 11%) and house wine (n=8, 7%). Of the most common beverages, beer was the most expensive with an average price of $7.49, with soft drinks being the cheapest at an average price of $3.62.

Table 61 Drink type by frequency and price		
Drink type	Observations where drink purchased n (%)	Average price Mean (range)
Beer	16 (14)	$7.49 ($4–$11)
Cider	4 (3)	$8.00 ($8–$8)
Energy drink	13 (11)	$5.94 ($3.25–$8)
House wine	8 (7)	$6.69 ($5–$8)
Juice	1 (1)	$9
Mocktail	2 (2)	$5.50 ($4–$7)
Soft drink	67 (57)	$3.62 ($2.30–$6)
Water	6 (5)	0 (0–0)
Total	117 (100)	$4.70 (0–$11)

Figure 44 shows the trends for drink prices throughout the night. Beer prices appeared to increase slightly from the start to the end of the night, and energy drink prices appeared to decline. Generally drink prices did not vary greatly over the course of the night.

Figure 44 Drink prices by time
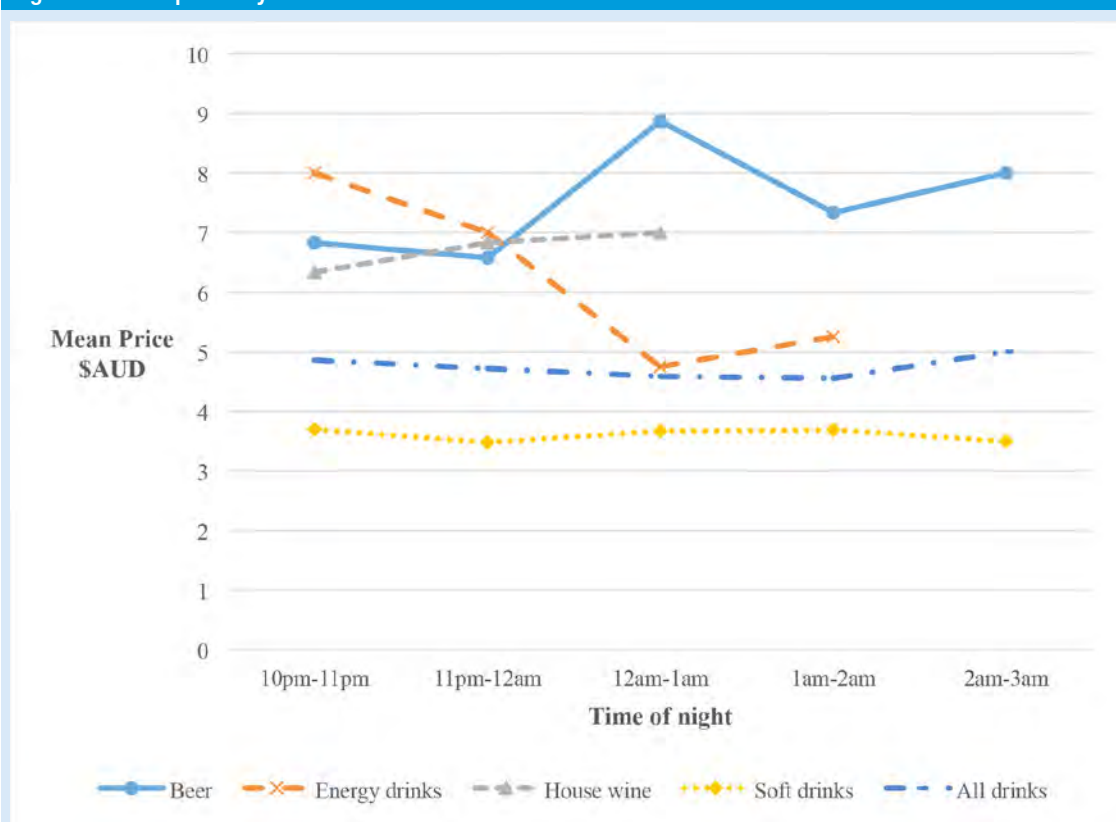
Entry practices

Observers recorded the entry practices of each of the venues they entered. Observers were required to wait in a line during five of the hourly observations; two were at a pub and three were at a nightclub. On average it took 2.5 minutes to enter pub-type venues and 1.3 minutes to enter nightclubs. Observers noted during one observation only that a patron was turned away from the door, but did not explain the reason. Thirteen hourly observations recorded that a fee was required to enter the venue; the entry fee was always $10 and was required at three different nightclubs. Sixty-two hourly observations recorded that staff monitored entrances.

Staff characteristics

Observers also recorded staff characteristics, behaviours and attitudes towards toward themselves and other patrons. Table 62 shows the average number of staff observers recorded across venue types and over the course of the night. Bars generally had less staff than other venues, with the exception of nightclubs, which had less staff on average between 10 and 11 pm.

Table 62 Average number of staff by venue type and time of night			
	Mainstream pubs	Bar	Nightclub
10–11 pm	6	5	3
11 pm–12 am	5	5	6
12–1 am	6	5	6
1–2 am	6	4	6
2–3 am	5	4	5

Figure 45 (below) shows observers' perceptions of staff's attitude toward observers and other patrons; in most hourly observations, staff members were rated as friendly ($n=107$, 46%) or polite ($n=107$, 46%).

Figure 45 Staff manner to patrons
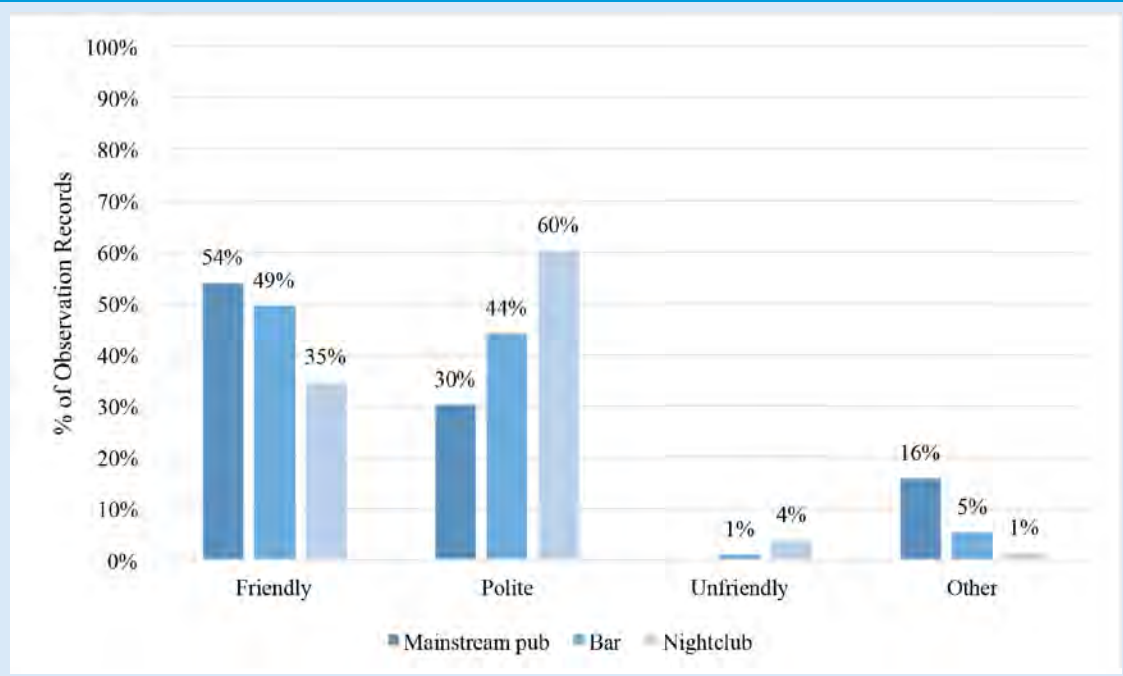
Observers did not report seeing a Responsible Service of Alcohol (RSA) marshal. They recorded staff members drinking on site during 14 hourly observations; they witnessed this twice per hour on average. Observers also witnessed staff members selling alcohol at closing time during four hourly observations. Observers also focused on the presence and manner of security guards as distinct from other staff. Table 63 shows the average security guard presence in different venue types across the course of the night. Mainstream pubs tended to increase in security over the course of the night, while bars decreased in security, and nightclubs did not vary in the average level of security.

Table 63 Average number security staff by venue type and time of night based on hourly observations			
	Mainstream pubs	Bar	Nightclub
10–11 pm	2	2	2
11 pm–12 am	2	2	2
12–1 am	3	1	2
1–2 am	3	1	2
2–3 am	4	0	2

Figure 46 shows hourly observation ratings of the manner in which security staff treated observers and other patrons. For most observation records, security staff members were rated as polite (n=91, 50%) or friendly (n=49, 27%). Observers reported staff being hostile and/or tense to patrons in four hourly observations.

Figure 46 Security staff manner toward patrons
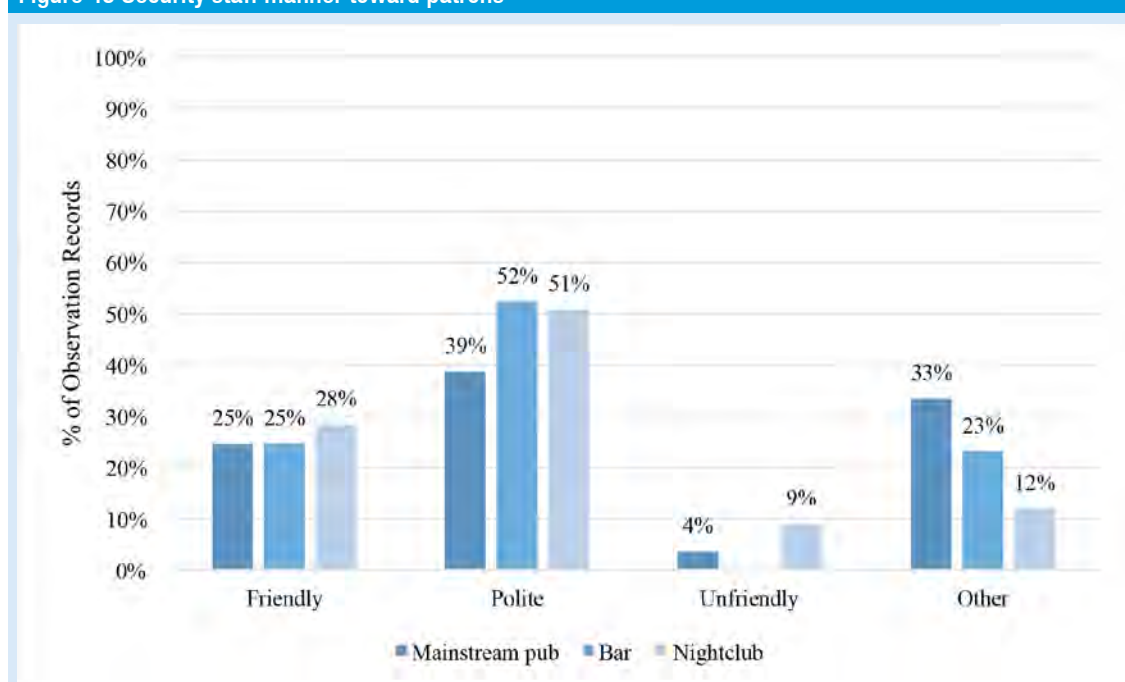
Single observation records

To complement data gathered through hourly observations, researchers recorded information about particular consumption practices and behaviours, including energy drink use (alone and mixed with alcohol), visible signs of illicit drug use, and aggressive incidents. These data were captured qualitatively to contextualise findings gathered in the hourly observational checklist and provide more information about particular practices of interest. For occasions where AmED use, illicit drug use, or aggressive incidents were witnessed, researchers completed a short checklist and then described in more detail the behaviours of patrons and staff.

Energy drink consumption

During the study, 25 different groups of people were witnessed consuming energy drinks. Twenty-eight percent (*n*=7) of these were observed consuming energy drinks alone and 72 percent (*n*=18) were seen consuming AmED. Groups of energy drink users varied between one and eight people, with a median of four people per group. These groups were much more likely to be observed in bars (54%), and less frequently in nightclubs (38%) and pubs (8%). The groups were observed most frequently between 12 to 2 am (see Table 64).

Table 64 Groups of energy drink users observed by time*				
	10–11 pm n (%)	11 pm–12 am n (%)	12–1 am n (%)	1–2 am n (%)
Groups of energy drink users	3 (12)	7 (28)	11 (44)	11 (44)

* Percentages do not add up to 100 as some groups were recorded across multiple hours

People who consumed energy drinks alone (*n*=3) were more likely to be male (67%) and, based on estimations of age by appearance, had a mean age of 25.7 years (range 21–28). People consuming alcohol with energy drinks alone (*n*=25) were more likely to be male (79%) and had a mean age of 28.1 years (range 18–45).

'Bomb' drinks are a type of beverage where a shot of alcohol is dropped into an energy drink and 'scalled' (rapidly consumed). During observations where AmED use (*n*=22) was observed, the most frequent types of these drinks consumed were 'Jägerbombs' (ie Jägermeister and energy drink) or other types of bomb drinks (54.5%), followed by white spirits and brown spirits (see Table 65). No pre-mixed alcohol/energy drinks were identified. Four groups included at least one person who bought a 'chaser' (a different type of alcoholic drink) to consume after their energy drink.

Table 65 Types of alcohol mixed with energy drinks			
	Bombs n (%)	White spirits n (%)	Brown spirits n (%)
Observations where AmED use was observed	12 (55)	8 (36)	5 (23)

Some groups drank AmED while others drank only energy drinks. In both cases the most commonly identified energy drink was Red Bull. Most groups of energy drink users were observed dancing or talking. White spirits were the most frequently observed type of alcohol to be mixed with energy drinks. Bombs were observed more frequently but the type of alcohol they included may have been inconsistent and was not recorded.

Illicit drug use

Researchers recorded visible signs of illicit drug use among patrons by:

- witnessing the ingestion of drugs;
- witnessing the exchange of small items;
- observing drug paraphernalia; or
- detecting behavioural signs of drug use.

The latter often involved an informed guess as to what drugs the patron had used based on training of observers by senior members of the project team prior to fieldwork. As such, the data should be interpreted as informed estimations rather than direct observation of drug-related behaviour.

Researchers observed 16 groups of illicit drug users during the study. Three drug users were alone. Groups of drug users varied between one and five people, with a mean of 2.7 people per group. Most drug use observed was in nightclubs (50%), followed by bars (38%) and pubs (13%). Groups of drug users were more likely to be observed between 1 and 2 am (see Table 66).

Table 66 Groups of drug users observed by time				
	11 pm–12 am n (%)	12–1 am n (%)	1–2 am n (%)	2–3 am n (%)
Groups of drug users	1 (6)	6 (38)	9 (56)	3 (19)

As a whole, researchers most commonly observed that the drugs consumed among groups were stimulants—such as ecstasy and cocaine (see Table 67). Groups of stimulant users (*n*=7) were more likely to be male (56%) and their mean age (based on estimations of age by appearance) was 23.6 years. The average estimated age of non-stimulant drug users was 24.3 years.

Table 67 Groups of drug users observed by suspected drug type					
	Cocaine n (%)	Ecstasy n (%)	Cannabis n (%)	Other n (%)	Unknown n (%)
Groups of drug users	3 (19)	4 (25)	0 (0)	2 (13)	7 (44)

Most signs of drug use were reported in the separate drug use form. They involved witnessing visible intoxication from something other than alcohol (*n*=7; 44%); other signs included seeing drug-related paraphernalia (*n*=2, 13%), seeing unusual group bathroom behaviour (*n*=2, 13%), and witnessing the exchange of money for small items (*n*=2, 13%). The drugs associated with obvious intoxication other than from alcohol were stimulants—ecstasy and cocaine. Commonly observed signs of drug use among stimulant users included: erratic behaviour, passing out, and sneaking into bathrooms. Where researchers indirectly observed the ingestion of drugs, this included witnessing people sneak into bathrooms, talk about pushing drugs, and erratic behaviour with no clear alcohol use.

Researchers noted the practices and behaviours of groups of drug users. The most common behaviour observed by groups of people suspected to be consuming the stimulant drugs was dancing. Words to describe the dancing of drug users included; 'sweating', 'erratic', 'crazy', 'eccentric' and 'limp'. Groups of stimulant users were generally described as being unable to stand still, and fidgeting.

Only one group of drug users was asked to leave by staff; one group was talked to by staff but allowed to stay; and other groups were observed by staff; however, most drug use was followed by no action. In two incidents observers believed staff were involved in (either supplying or using) drugs.

Physical incidents

Over the course of the fieldwork period survey teams observed eight separate aggressive physical incidents. This type of incident was considered distinct from sexual and verbal incidents, which were recorded separately. Most physical incidents witnessed were in nightclubs (*n*=4; 50%), with three in pubs (38%), and one in a bar (13%). Physical incidents were split between 11 pm and 12 am (*n*=4) and 1 and 2 am (*n*=4). All physical incidents occurred between two to four individuals, with an average of 2.8 individuals. Males were involved in all physical incidents, with women being involved in three (38%). Observers also rated patrons' intoxication on a scale of 0 to 10; patrons involved in physical incident ranged from an intoxication rating of five to nine with an average intoxication rating of 7.4. All individuals involved in physical incidents appeared to be aged between 20 and 30 years.

Although only three incidents involved women, data suggest that physical altercations between men tended to be more violent than those between women or those between women and men; that is, security only removed patrons after physical altercations between men became violent. The main reasons for incidents involving male aggressors were intoxicated individuals accidentally bumping into others leading to a physical altercation, seat stealing, and fights between people who had an unknown history together. Incidents with female aggressors generally involved women hitting men (whom they appeared to know).

Sexual incidents

Researchers observed 13 sexual incidents during the data collection period. Most occurred in pubs (*n*=8), followed by nightclubs (*n*=4), and only one took place in a bar. Sexual incidents had no visible trend across the course of the night (see Table 68).

Table 68 Observed sexual incidents by time of day				
	11 pm–12 am n (%)	12–1 am n (%)	1–2 am n (%)	2–3 am n (%)
Observed sexual incidents	2 (15)	5 (38)	2 (15)	4 (31)

All sexual incidents occurred between two to five individuals, with an average of 2.3 individuals. Male and female patrons were involved in all incidents except two: one between a group of men and another between a group of women. Observers rated patrons' intoxication on a scale of 0 to 10; patrons involved in sexual incidents ranged from an intoxication rating of four to 10 with an average intoxication rating of 7.2. Individuals involved in sexual incidents appeared to range in age from their twenties to late thirties.

Sexual incidents occurred among diverse groups with a wide range of victims and perpetrators. Incidents involved women being approached by older men, men being approached by older women, men approaching older women, men approaching women of a similar age, and homosexual incidents among both genders. Most (*n*=11) sexual incidents occurred near the bar or on the dance floor, with two happening near or in the toilets. Sexual incidents were settled among patrons (*n*=10), not settled (*n*=2) or settled by venue staff (*n*=1).

Most sexual incidents involved: men groping women (*n*= 4), with one incident of men groping men; unwanted grinding or other physical contact on the dance floor (*n*=4); general pursuits of unwanted sexual attention from men to women (*n*=3); one incident where a group appeared to have consensual intercourse in the female bathroom; and one incident where a man physically forced two other men to kiss each other.

Verbal incidents

Only one verbal incident was recorded over the fieldwork period; it was observed in a bar between 2 and 3 am. The incident involved two males; the perpetrator of the verbal aggression appeared to be in his late twenties. The incident appeared to be a racial confrontation that de-escalated within three minutes. Observers rated the patrons' intoxication on a scale of 0 to 10 (10 being 'heavily affected'); the observer's intoxication rating of these patrons was nine.

Hobart

Observations conducted

Table 69 shows the number of hourly observations recorded and the types of venues targeted for observation. In total, 148 hourly venue observations were conducted, with the largest percentage of carried out in 'large mainstream pub' type venues (49%). The remainder were held in 'nightclub' (37%) and 'bar' (14%) type venues.

Table 69 Number of hourly observations by venue classification				
	Large mainstream pub	Bar	Nightclub	Total
Hourly observations, n (%)	73 (49)	21 (14)	54 (37)	148 (100)

Data collection period

Figure 47 shows the observation period for data collection. All observations were held between 9 April 2015 and 9 November 2015. Observations in Hobart were held during April, July, August and November, 2015.

Figure 47 Percentage of observation records per month, Hobart 2015
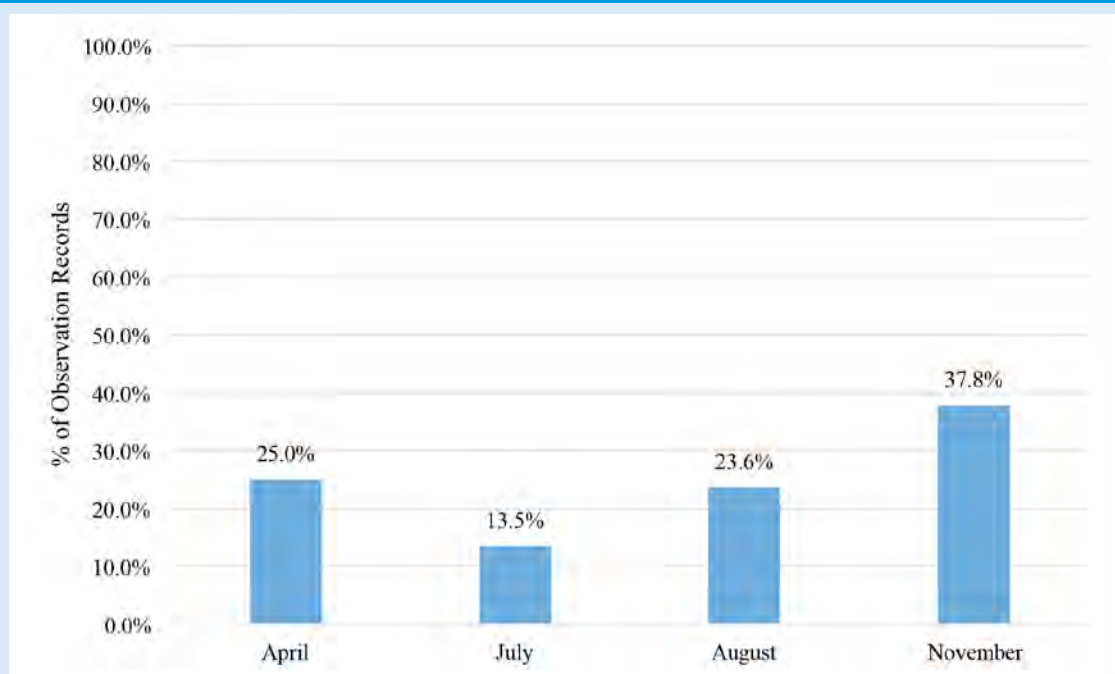
Figure 48 shows the frequency of hourly observations, separated by hour. In Hobart, all observations were conducted between 10 pm and 3 am. Reports were made most frequently between 1 and 2 am (28.4%).

Figure 48 Number of observations per hour of day
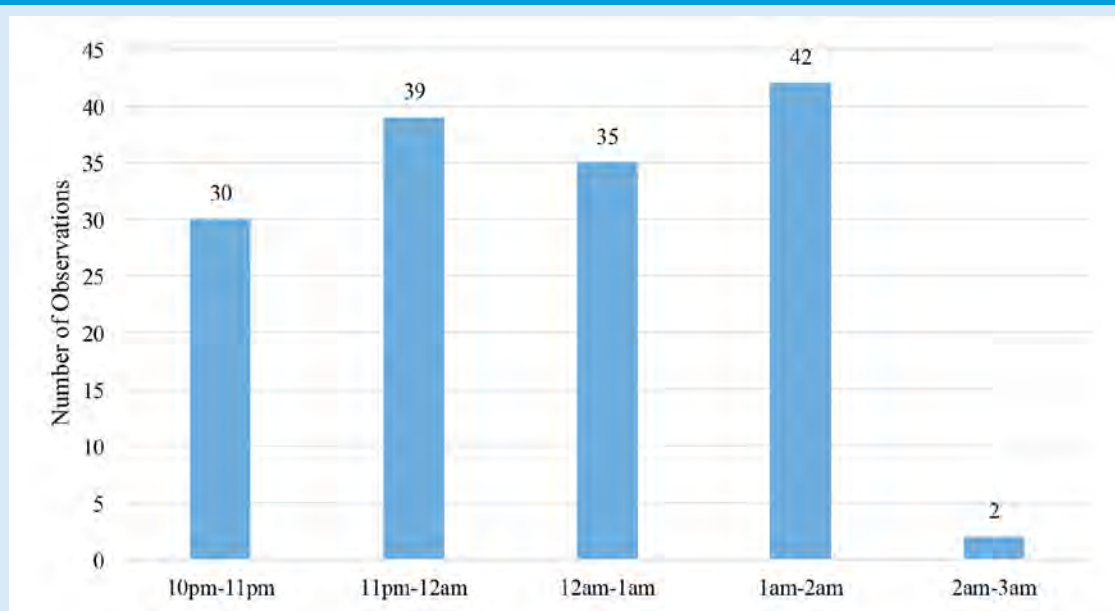
Table 70 presents the number of observations by hour of day for each venue type.

Table 70 Number and percentage of observations by hour and venue classification						
	Large mainstream pub		Bar		Nightclub	
	n	%	n	%	n	%
10–11 pm	21	28.8	6	28.6	3	5.6
11 pm–12 am	25	34.2	6	28.6	8	14.8
12–1 am	14	19.2	6	28.6	15	27.8
1–2 am	13	17.8	3	14.3	26	48.1
2–3 am	0	0	0	0	2	3.7

Venue breakdown

Patron information

Every hour observers collected summary information about patron demographics and density within each licensed venue. Data included estimated total numbers of patrons in each venue at observation time, estimated percentage of venue patron capacity, estimated percentage of patrons who were male, and estimated percentage of patrons who appeared to be under 25 years. Data are provided in Table 71.

Table 71 Patron descriptions by hour and venue classification				
	Large mainstream pub	Bar	Nightclub	Total
Mean estimated number of total venue patrons				
10–11 pm	140	65	128	124
11 pm–12 am	150	91	137	138
12–1 am	148	108	151	142
1–2 am	123	148	151	142
2–3 am	n/a	n/a	165	165
Mean estimated percentage of venue capacity (%)				
10–11 pm	62	41	37	55
11 pm–12 am	60	58	35	54
12–1 am	64	47	45	53
1–2 am	47	78	52	52
2–3 am	n/a	n/a	88	88
Mean estimated percentage of male patrons (%)				
10–11 pm	55	48	45	52
11 pm–12 am	57	63	59	59
12–1 am	68	60	55	61
1–2 am	72	55	58	62
2–3 am	n/a	n/a	58	58
Mean estimated percentage of patrons <25yrs (%)				
10–11 pm	55	54	70	56
11 pm–12 am	49	57	70	54
12–1 am	48	83	63	60
1–2 am	39	55	68	58
2–3 am	n/a	n/a	40	40

Mainstream pubs typically experienced peak patronage earlier than bars and nightclubs. Pubs experienced peak patronage between 11 pm and 1 am, with the highest average number of patrons (mean 150 patrons) occurring between 11 pm and 12 am. Bar patrons increased as the night went on, with the highest average (*n*=149) occurring during the final hour of observations (1 and 2 am). Nightclubs experienced peak patronage between 2 and 3 am (*n*=165). This illustrates the trend of pubs serving as 'feeder' venues in which patrons consume alcohol prior to attending late-night, club-style venues. The capacity of mainstream pubs fluctuated little over the course of the night, except for a drop between 1 and 2 am, with peak capacity being reached between 12 and 1 am (64%). Bars and nightclubs generally increased in capacity over the course of the night with deviations throughout the night, bars reached their peak between 1 and 2 am (78%), while nightclubs reached their peak capacity between 2 and 3 am (88%).

For pubs and bars, there were more males than females across the night, while nightclubs started the evening with more female patrons. Pubs saw an increase in the percentage of male patrons as the night went on, while bars and nightclubs did not fluctuate greatly.

For the percentage of patrons aged under 25, nightclubs consistently had a higher proportion of younger patrons than pubs and bars (with the exception of between 12 and 1am). While the percentage of patrons under 25 years remained relatively stable within pubs, there was a marked increase in young patrons at midnight in bars, followed by a decline. Within nightclubs, patrons under 25 years made up most of the patrons at the start of the night, but decreased to the minority by the end of the evening. Figure 49 to Figure 52 visually represent this information.

Figure 49 Average number of patrons by time of night
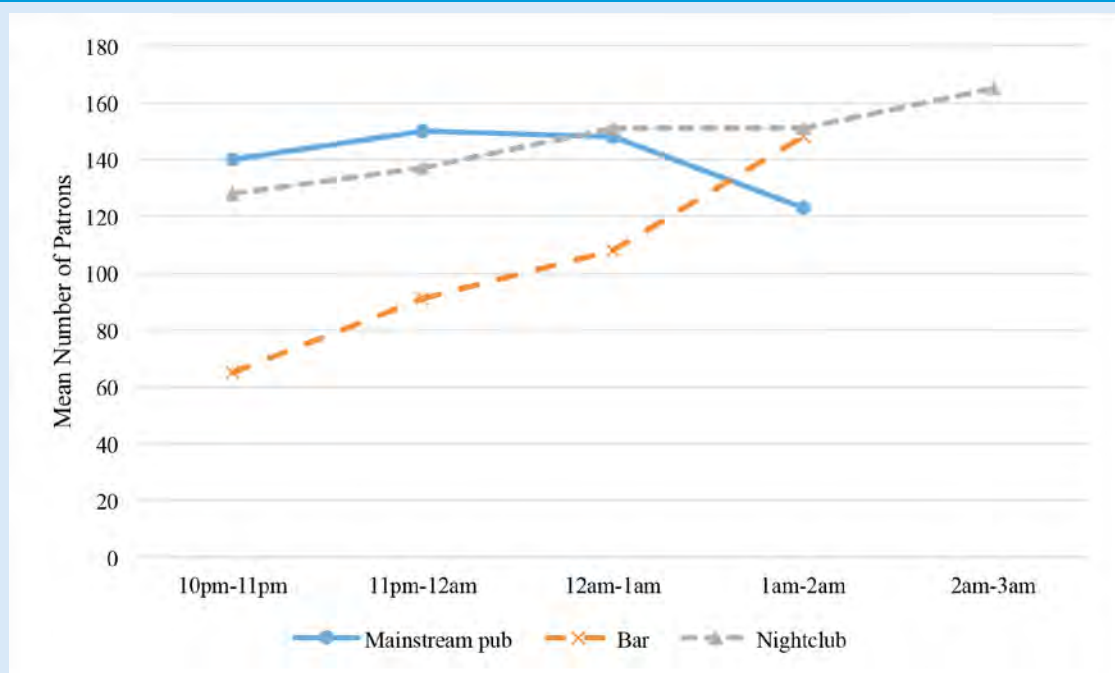
Figure 50 Average percentage of capacity filled by time of night
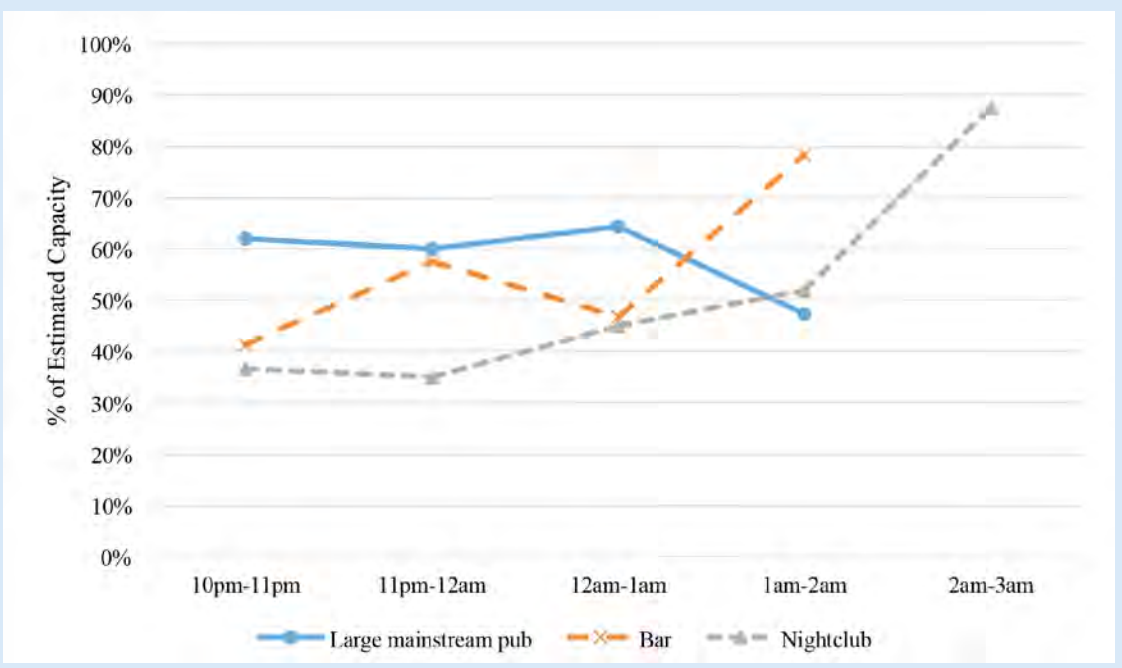
Figure 51 Average percentage of male patrons by time of night
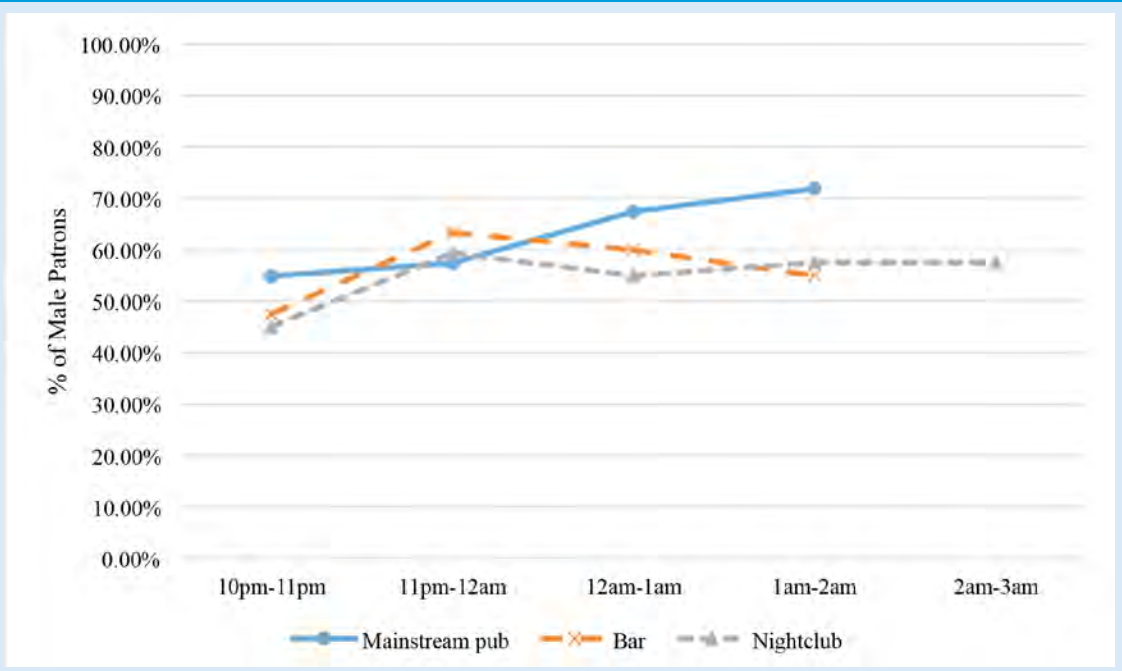
Figure 52 Average percentage of patrons under 25 years of age by time of night
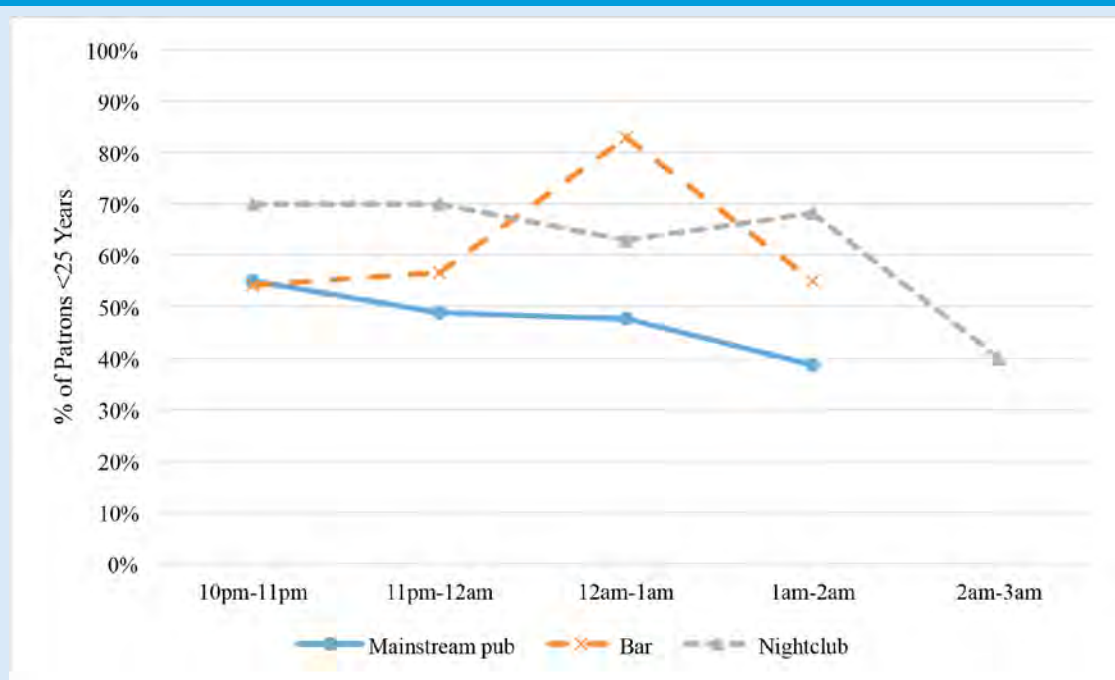
Patron intoxication

Figure 53 shows observers' ratings of patron intoxication over time. Observers were asked to designate an overall rating of patron intoxication within venues hourly during observation, rating overall as either: low, medium, high, or no visible signs of intoxication. In Hobart there were no observations where venues were rated as 'no visible signs of intoxication'. The percentage of observations where overall intoxication within a venue was described as 'low' decreased throughout the course of the night, as did the number of observations where venues were coded as showing moderate signs of intoxication after an initial rise between 11 pm and 12 am. Percentage of observations where venues were rated as having overall 'high' levels of intoxication increased throughout the night.

Figure 52 Average percentage of patrons under 25 years of age by time of night*

*Two observations failed to record intoxication levels

Drug and alcohol intoxication and subsequent harm in night-time entertainment districts (DASHED)
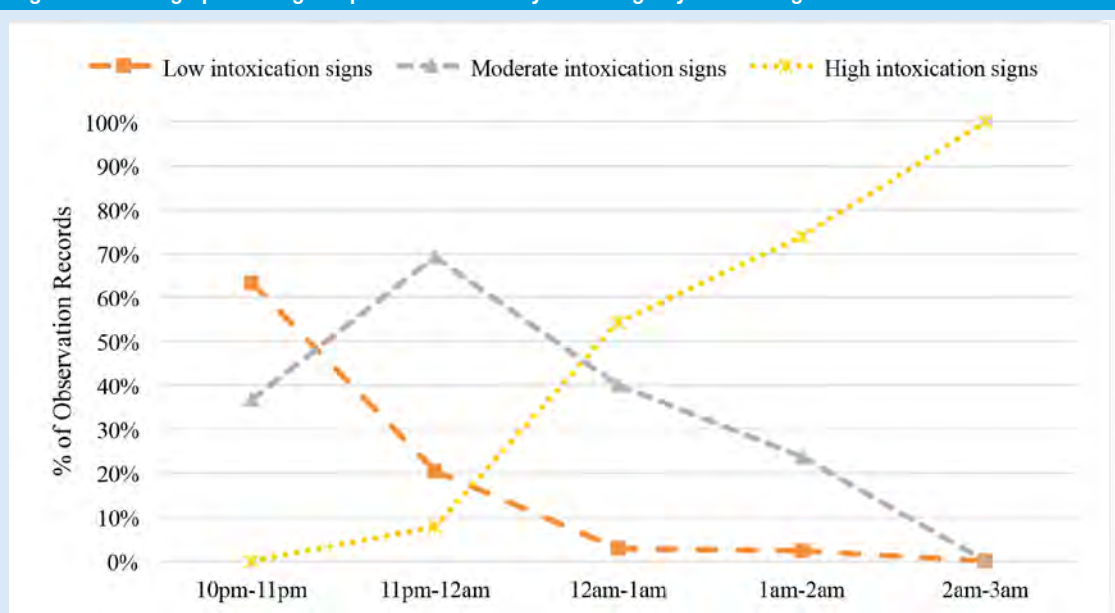
Figure 54 Frequency of intoxication rating per venue classification*
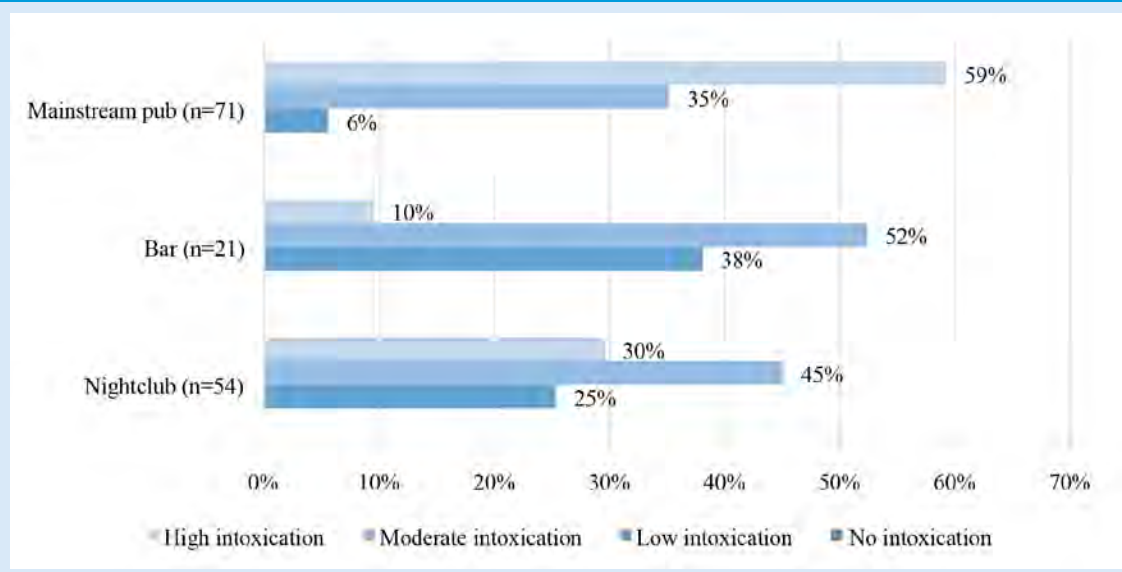
*Two observations failed to record intoxication levels

Several key markers of overall patron intoxication were noted during all hourly venue observations. In addition to an overall categorical rating of intoxication, observers noted the overall percentage of patrons demonstrating any intoxication signs. They also noted the percentage of patrons who appeared too intoxicated to remain in the venue, and the percentage of patrons showing signs of illicit substance use or intoxication from substances other than alcohol.

Measures of alcohol-related intoxication (Table 72) increased over time across all venue types, with the exception of nightclubs, which had a higher percentage of intoxicated patrons between 10 and 11 pm, however from 11 pm onward the trend matched that of other venue types. Between 1 and 2 am the average percentage of patrons exhibiting any sign of intoxication was between 88 and 93 percent, while between nine and 20 percent appeared too intoxicated to remain in the venue.

Table 72 Patron intoxication per hour by venue classification				
	Large mainstream pub	Bar	Nightclub	Total
Mean percentage of patrons showing any intoxication (%)				
10–11 pm	57	48	82	58
11 pm–12 am	74	66	70	72
12–1 am	80	90	80	82
1–2 am	88	93	87	88
2–3 am	n/a	n/a	98	98
Mean percentage of patrons that appear too intoxicated to remain in the venue (%)				
10–11 pm	2	0	3	2
11 pm–12 am	4	3	4	4
12–1 am	9	6	15	11
1–2 am	20	9	14	16
2–3 am	n/a	n/a	38	38

Observers were also required to monitor drink purchases by highly intoxicated patrons. They recorded *n*=52 incidents of a highly intoxicated patron ordering drinks from a bar service area and recorded the venue response. Figure 55 below shows the distribution of venue responses to highly intoxicated patrons attempting to buy drinks. In most instances, highly intoxicated patrons were served alcohol as usual.

Figure 55 Distribution of venues responses to intoxicated patrons ordering drinks
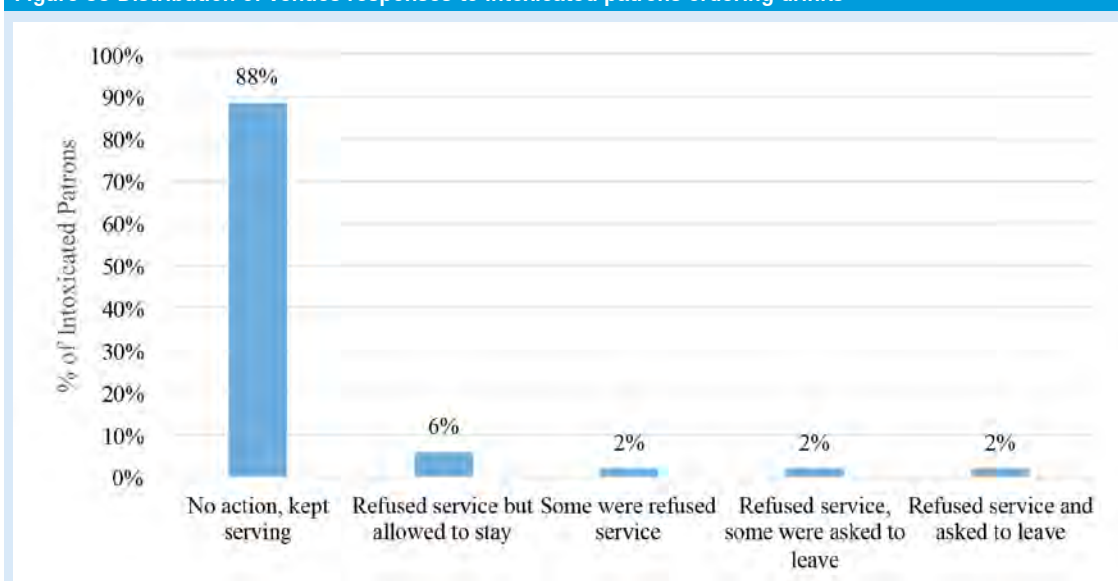
Alcohol use behaviours and promotion

Figure 56 displays frequency data for observed hourly ratings of the popularity of different types of drinks. Patrons most frequently consumed beer.

Figure 56 Frequency of drink type observed as main choices
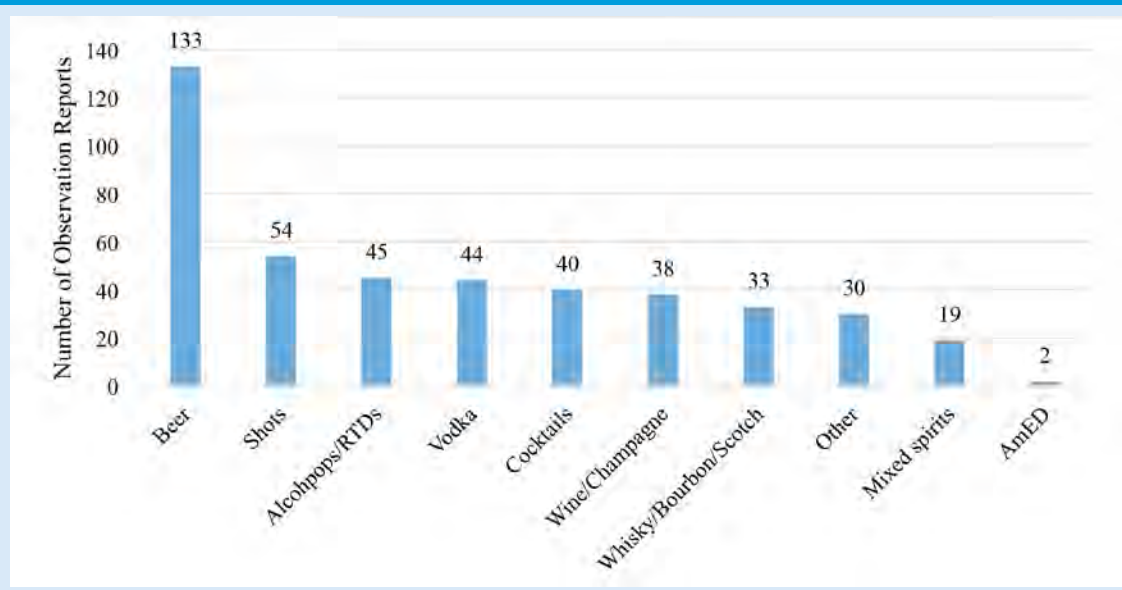
Observers were instructed to note any drink promotion or advertising in the venue. They noted advertised drink promotions on 64 hourly observations (44 of all observations). Promotions included: female staff walking around with trays of shots; discounts; drinks in non-standard measures; featured drinks; promotions/ discounts during certain hours; and 'buy one get one free'.

A chi square analysis indicated that venue patrons were not significantly more likely to demonstrate low (χ^2=0.37, p=0.542), moderate (χ^2=0.16, p=0.689), or high (χ^2=0.38, p=0.540) levels of intoxication if drink promotions were available. As shown in Table 73, drink promotions appear to be fairly stable across all levels of patron intoxication, with a slight increase as patrons' intoxication levels increased.

Table 73 Distribution of patron intoxication across availability of drink promotions (*n*=146)		
	Drinks promoted? (%)	
Patron intoxication rating*	No (*n*=82)	Yes (*n*=64)
Overall, no sign of intoxication	0	0
Slight signs of intoxication	52	48
Moderate signs of intoxication	55	45
High levels of intoxication	60	40

*intoxication rating missing for two cases

Energy drink use

Observers recorded the prevalence of (non-alcoholic) energy drink brands observed throughout all licensed venues. Red Bull was the most common energy drink available, present in 77 percent of all observed venues (*n*=10) while other brands only appeared in eight percent of all venues (*n*=1).

Observers reported witnessing patrons consuming alcohol mixed with energy drinks (AmED) during 48 hourly observations (33%). These drinks were reported as a popular/main drink of choice during two hourly observations. Table 74 (*n*=146) shows levels of observed patron intoxication according to whether AmED consumption was witnessed. Chi square analysis found patrons were no more likely to present at any level of intoxication regardless of the presence of AmED use.

Table 74 Distribution of observed patron intoxication across AmED use		
	Was AmED use observed? (%)	
Patron intoxication rating*	No (*n*=98)	Yes (*n*=48)
Overall, no sign of intoxication	0	0
Slight signs of intoxication	76	24
Moderate signs of intoxication	66	34
High levels of intoxication	64	36

*Intoxication rating missing for two cases

Illicit substance use

Observers were asked to record suspected illicit substance use during each hourly observation record. In total, *n*=21 hourly records (14% of all observations) indicated some patron intoxication from illicit substances. As shown in Table 75, the percentage of patrons showing illicit substance intoxication increased over the course of the night, and was higher overall in nightclubs. However, it is worth noting the limitations of observational recording of illicit substance use, which relies on subjective interpretation of behavioural signs by observers and, therefore, carries inherent flaws and biases, and can only be considered indicative.

An estimated 27 percent (on average) of venue patrons were consuming illicit drugs during the observation when illicit drug use was suspected. The most common reason for observers suspecting illicit drug use stemmed from patrons exhibiting intoxicated behaviour atypical of alcohol consumption (*n*=18). Other observations included visible ingestion/smoking of substances (*n*=3), exchange of money for small items (*n*=3), and visible paraphernalia associated with drug use, such as pipes and baggies (*n*=2).

Generally the percentage of patrons showing signs of illicit substance use also increased by the hour across all types of venue. However, mainstream pubs showed no signs of use between 1 and 2 am and nightclubs showed higher levels of use between 11 pm and 12 am than for most of the night. Nightclubs showed a considerably higher percentage of patrons with signs of illicit drug use than the other two venue types, with the lowest average proportion recorded in the hours when drug use was recorded, being higher than the highest proportions recorded in mainstream pubs or bars.

Table 75 Illicit drug use per hour by venue classification				
	Mean percentage of patrons showing signs of illicit drug use (%)			
	Large mainstream pub	Bar	Nightclub	Total
10–11 pm	1	0	n/a	0.3
11 pm–12 am	2	2	55	15
12–1 am	3	5	12	7
1–2 am	0	8	31	25
2–3 am	n/a	n/a	95	95

Figure 57 shows the frequency of specific illicit substances suspected of being used in observed venues. As a whole, stimulant drugs such as ecstasy, methamphetamine and cocaine were the most frequently suspected substances. On several occasions, observers also suspected illicit substance use was occurring, but due to the non-specific nature of the intoxicated behaviour, the suspected substance was recorded as 'unknown'.

Figure 57 Suspected illicit substance during hours where illicit substance use was observed
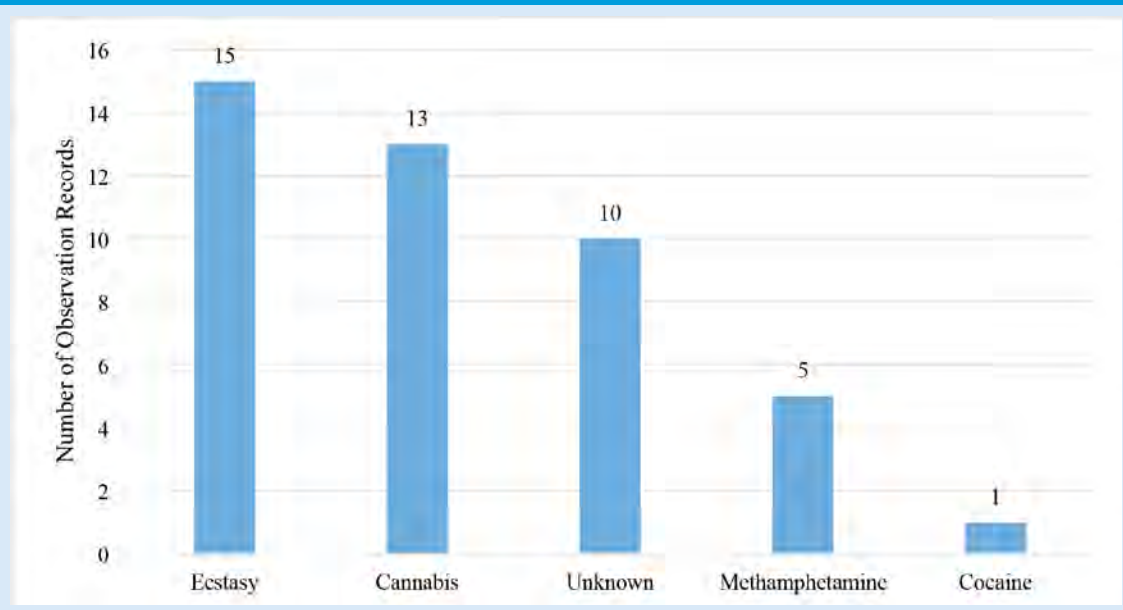
Police presence

Upon entering the venue, observers recorded any noted police activity on the streets surrounding the venue. Police were observed on the street during nine observations (6% of all observations), and were not observed inside venues during any observations. Police were seen responding to one incident on the street, and were reported to be patrolling and involved in other activities in the area for seven of the observations (5%). Groups of police officers ranged from two to four officers with a median of two. Police were mainly seen around pubs (*n*=6), with fewer seen around bars (*n*=2) and nightclubs (*n*=1).

Venue characteristics

Observers were also asked to observe characteristics of the particular venue they were attending. Characteristics related to the signage of the bar, crowding, entertainment, and the venue's atmosphere.

When entering the venue observers assessed if it appeared hostile and macho. Three hourly observations reported a venue as being hostile; all three venues were nightclubs, two were between 12 and 1 am, while the other was between 1 am and 2 am. Overall, 11 hourly observations characterised venues as 'macho' upon arrival.

Observers were asked to report on the signage at the main bar after entering the venue (*n*=64 hourly observations, 43%). As Figure 58 shows, the most common signage present at the bars of venues were those warning that they would not serve underage patrons (*n*=35, 55%), followed by signs on serving information (*n*=33, 52%). Observers failed to note any clear signage around bars during 23 percent of these hourly observations.

Figure 58 Signage around bars upon entry
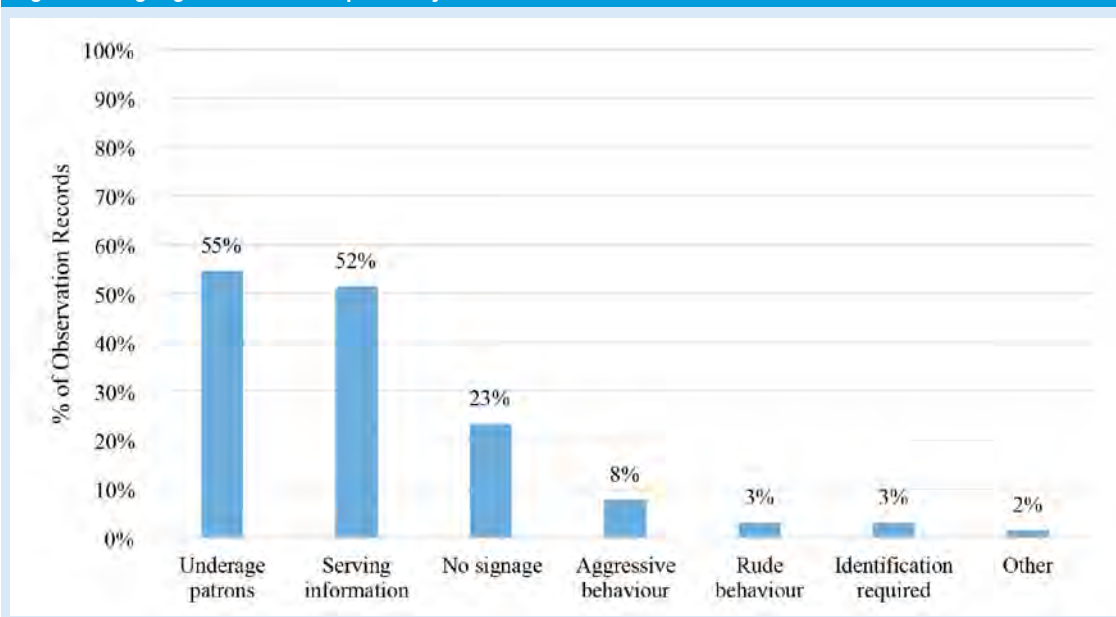
Observers also noted the degree of crowding of the bar service area—how many people were around the area. Table 76 shows crowding according to each venue type. Hourly observations in pubs and bars typically noted zero to one patron, with nightclubs more likely to have zero to two patrons.

Table 76 Crowding around bar across venue type

Patrons crowding bar	Mainstream pubs n (%)	Bar n (%)	Nightclub n (%)
0	16 (22)	7 (33)	19 (36)
1	31 (43)	11 (52)	12 (23)
2	13 (18)	2 (10)	12 (23)
3	6 (8)	1 (5)	6 (11)
4	5 (7)	0 (0)	3 (6)
5+	1 (1)	0 (0)	1 (2)

Figure 59 shows crowding across the course of the night. Venue crowding did not vary greatly during the night, until 2 to 3 am when there were only two observations. It was more likely that one patron would be at the bar service area over the course of the night, except for between 1 and 2 am where it was more likely the bar would not be crowded. On average it took an observer 1.5 minutes to get served at the bar.

Figure 59 Crowding around bar across time of night
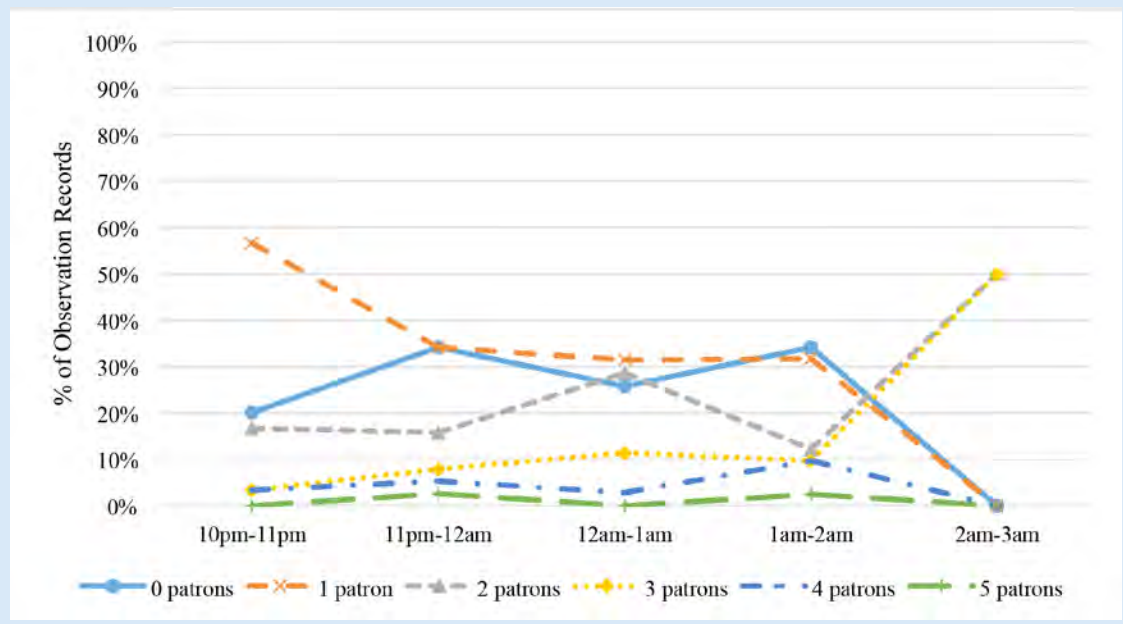
Figure 60 shows observers' rating of traffic flow in the venue. They assessed traffic flow in each hourly observation based on how difficult it was to move throughout the venue. Ratings ranged from 'very poor' to 'good'; a rating of 'very poor' meant that observers were unable to move throughout the venue, whereas a rating of 'good' indicated that observers encountered no problems moving through the venue. Venues were generally rated as having 'good' traffic flow.

Figure 60 Traffic flow of venue
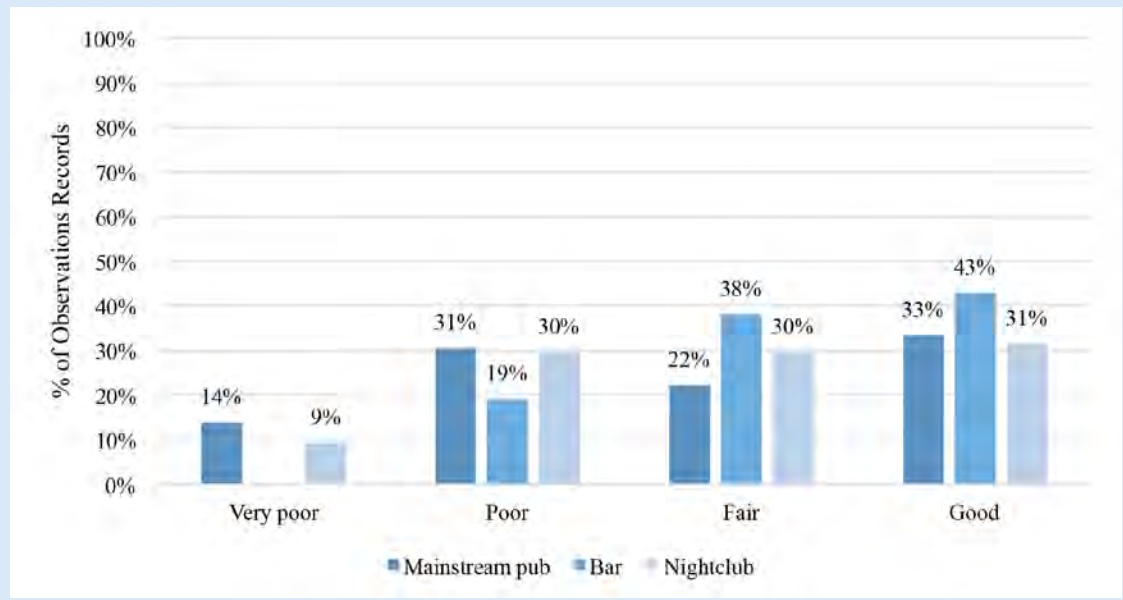
On entering the venue, observers assessed whether or not the seating provided in the venue was adequate for patrons to seat themselves comfortably or if it was inadequate due to too few seats. One hundred and five hourly observations reported on seating; most reported that seating in venues was adequate (*n*=79, 75%).

Figure 61 shows observers' rating of the noise level in the venue; they assessed noise based on how difficult it was to converse. Ratings ranged from 'intimate conversation possible' to 'impossible to converse'. Most hourly observations considered venues 'difficult to converse' in, with the exception of bars where intimate conversation was more likely.

Figure 61 Noise level of venue
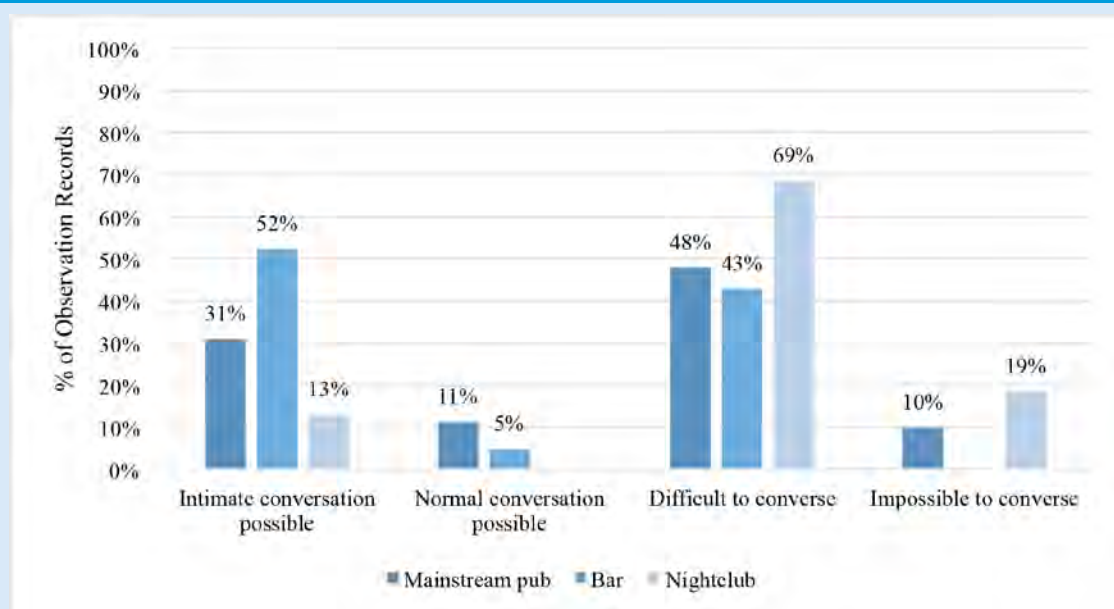
Observers were asked to rate the lighting of venues as part of their hourly observations. Ratings ranged from 'dim' to 'very bright'. Figure 62 shows that venues were more likely to have dim lighting (no venue was recorded as having very bright lighting); pubs were more likely to have moderately low lighting and bars were fairly even across all levels of lighting.

Figure 62 Lighting levels of venues
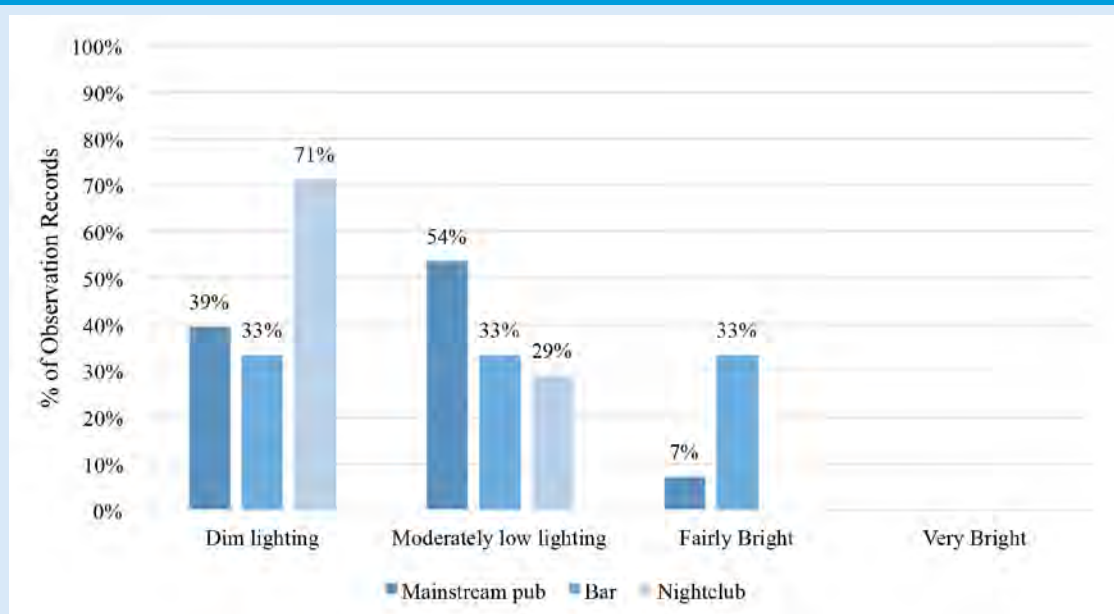
Observers were asked to rate the décor of venues as part of their hourly observations; these judgments primarily focused on cleanliness during the previous hour. Answers ranged from 'always cleared immediately' to 'sticky surfaces'. Figure 63 shows that most venues were rated as clean, however more than a quarter (29%) of hourly observations reported hygiene issues within the venue.

Drug and alcohol intoxication and subsequent harm in night-time entertainment districts (DASHED)

Figure 63 Venue hygiene
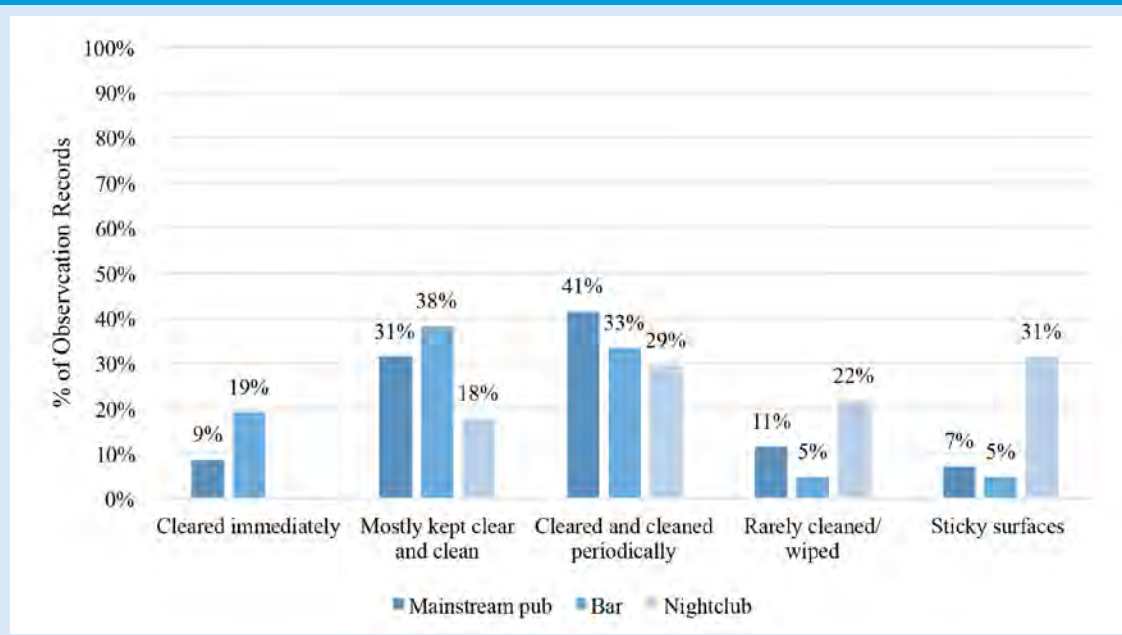
Observers also recorded the forms of entertainment provided by the venue. Table 77 shows different forms provided across venue types. In all venue types DJs were the most common form of entertainment reported in the hourly observations.

Table 77 Forms of entertainment by venue type

Form of entertainment	Mainstream pubs n (%)	Bar n (%)	Nightclub n (%)
DJ	31 (46)	16 (84)	54 (100)
Dancing	24 (36)	12 (63)	43 (80)
Live music	28 (42)	2 (11)	0 (0)
Video games and pinball	24 (36)	12 (63)	43 (80)
Bar games (eg pool, darts)	15 (22)	0 (0)	2 (4)
Other	6 (9)	1 (5)	0 (0)

Observers were asked to judge the percentage of patrons who appeared to be bored. Figure 64 shows the trends for all venue types across the course of the night. The percentage of participants perceived as bored increased in nightclubs and bars until 1 am, at which point it began declining. In mainstream pubs however, the percentage of participants perceived as bored varied very little until between 1 and 2 am, where it rose to the highest percentage of any venue type.

Figure 64 Perceived boredom by venue type and time of day
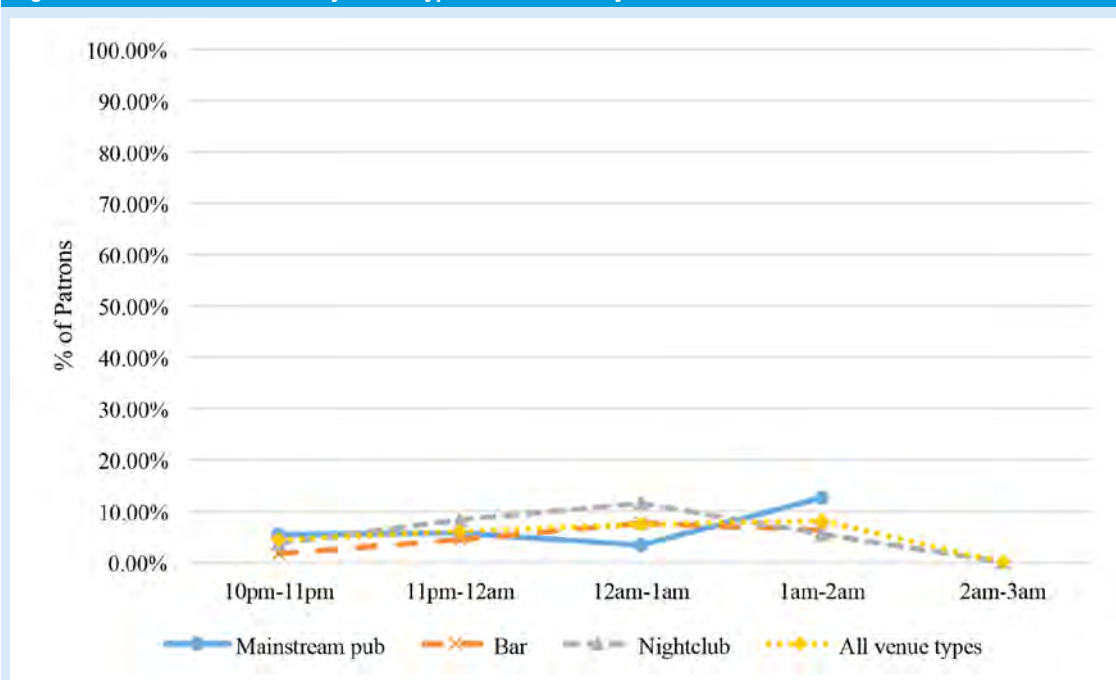
Drink purchase

Observers were able to purchase drinks during their time inside venues. When observers bought a drink, they recorded what type of drink they purchased and its price in their hourly observation. Table 78 shows the different types of drinks bought by observers and the average price of each drink type. Observers purchased drinks during 58 hourly observations (39%). The most common beverage was soft drinks (n=23, 40%) followed by house wine (n=17, 29%), and beer (n=12, 21%). Of the most common beverages, house wine was the most expensive, with an average price of $8.26, with soft drinks being the cheapest beverage at an average price of $4.03.

Table 78 Drink type by frequency and price

Drink type	Frequency n (%)	Average price mean (range)
Beer	12 (21)	$5.73 ($3–$10)
Cider	3 (5)	$7.67 ($6.50–$9.50)
House wine	17 (29)	$8.26 ($6–$11)
Premixed drinks	2 (3)	$7 ($4–$10)
Soft drink	23 (40)	$4.03 ($3–$5)
Spirits	1 (2)	$8.50
Total	58 (100)	$5.99 ($3–$11)

Figure 65 shows the trend for drink prices throughout the night. Drink prices did not appear to vary greatly during the evening.

Figure 65 Drink prices by time of night
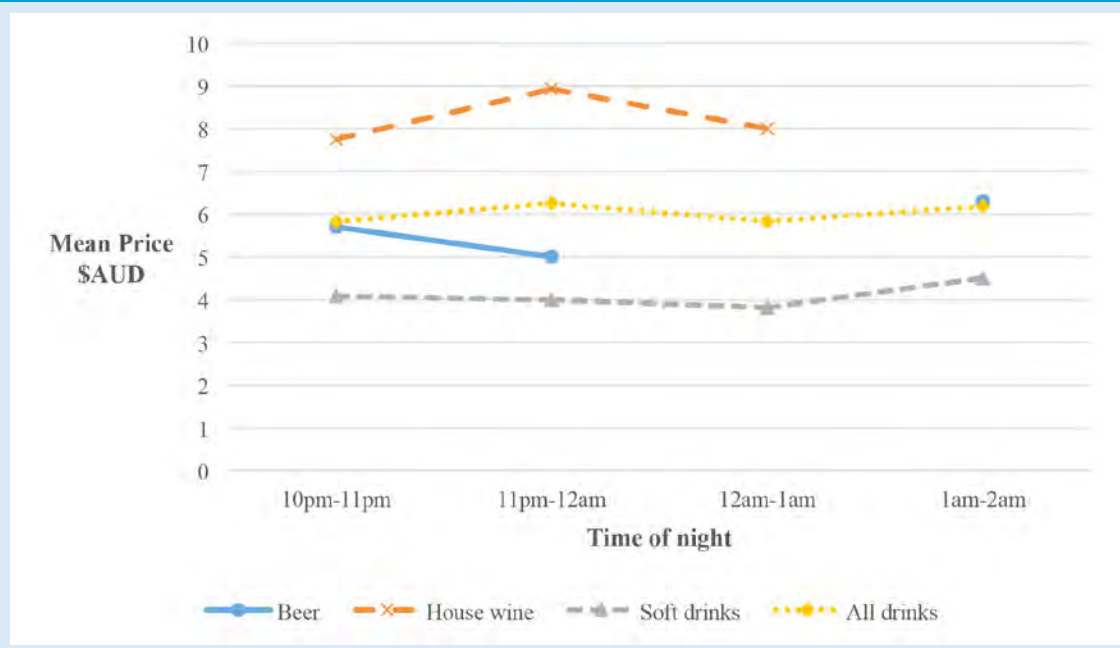
Entry practices

Observers recorded the entry practices of each of the venues they entered. They were required to wait in a line during nine of the hourly observations; five of these were at pubs while the other four were at nightclubs. On average, observers waited 2.4 minutes to enter a pub and 0.7 to enter a nightclub. They noted in one observation only that a patron was turned away from the door due to intoxication. Eight hourly observations recorded an entry fee was required to enter the venue (equating to two nightclub venues); the average entry fee was $11 (range $5 to $20). Fifty-one hourly observations recorded that staff were monitoring all entrances.

Staff characteristics

Hourly observations recorded staff characteristics, behaviours and attitudes to the observers and other patrons. Table 79 shows the average number of staff observers recorded across venue types and over the course of the night. Nightclubs started with the highest average amount of staff for the night, before decreasing as the night went on; other venues fluctuated but within a restricted range (4–6 staff).

Table 79 Average number of staff by venue type and time of night			
Drink type	Mainstream pub n	Bar n	Nightclub n
10–11 pm	5	5	8
11 pm–12 am	5	6	6
12–1 am	6	5	4
1–2 am	6	4	4
2–3 am	n/a	n/a	4

Observers recorded the ratio of male to female staff in each venue. It was more likely for male staff to outnumber female staff (*n*=55, 38%), however, a large proportion of venue staff were female (*n*=47, 32%) or an equal proportion of both sexes (*n*=44, 30%) accounted for almost two thirds of the hourly reports. Figure 66 shows observers' perceptions of staff attitudes toward observers and other patrons. Most hourly observations cited that staff were either friendly (*n*=79, 54%) or polite (*n*=66, 45%).

Figure 66 Staff manner toward patrons
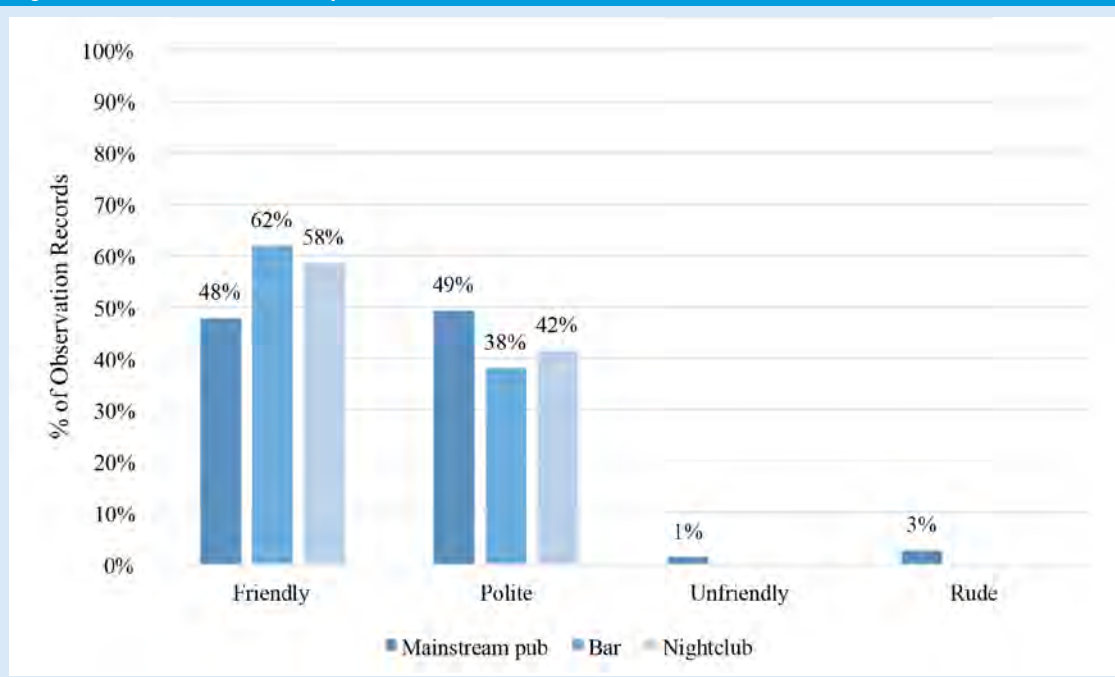
Observers did not report seeing an RSA marshal. They recorded staff members drinking on site during two hourly observations; they witnessed this twice per hour on average. Observers also witnessed staff members selling alcohol at closing time during two hourly observations. Table 80 shows the average security guard presence in different venue types across the course of the night. Venues did not vary greatly between each other or over the course of the night.

Table 80 Average number of security staff by venue type and time of night

Drink type	Mainstream pub n	Bar n	Nightclub n
10–11 pm	3	3	5
11 pm–12 am	3	2	3
12–1 am	3	3	3
1–2 am	3	3	3
2–3 am	n/a	n/a	3

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Figure 67 shows the manner in which security staff treated observers and other patrons. Most security staff members were polite (*n*=92, 75%). Observers reported staff being hostile and/or tense to patrons in four hourly observations.

Figure 67 Security staff manner toward patrons
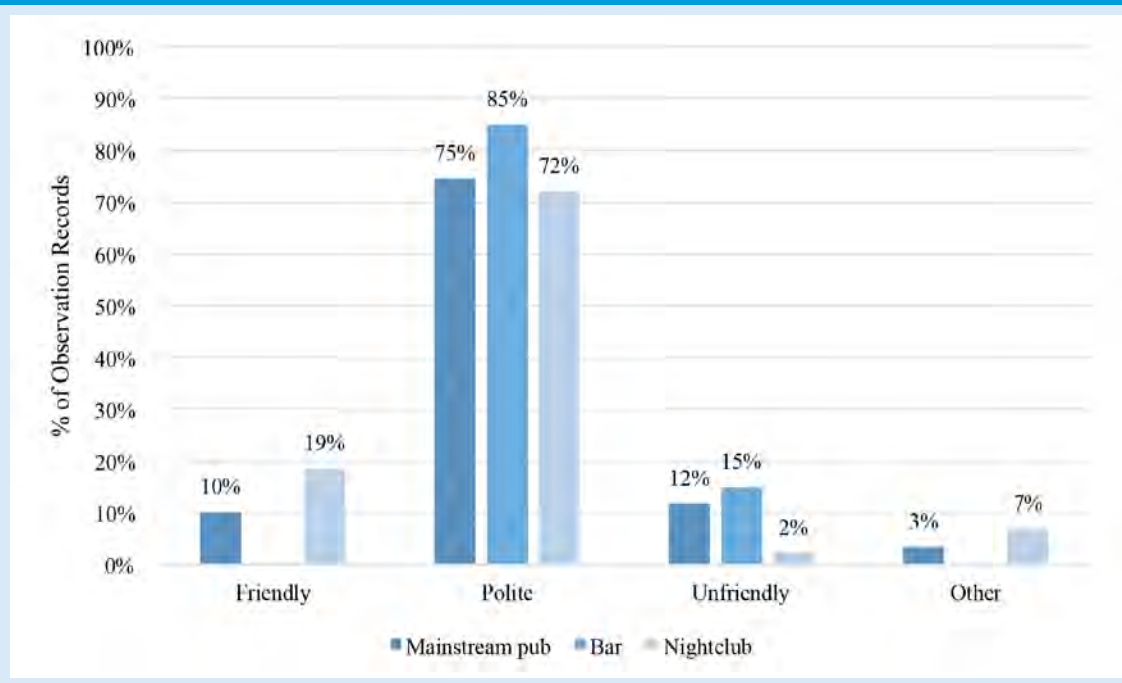
Single observation records

To complement data gathered through hourly observations, researchers recorded information about particular consumption practices and behaviours, including energy drink use (alone and mixed with alcohol), visible signs of illicit drug use, and aggressive incidents. These data were captured qualitatively to contextualise findings gathered in the hourly observational checklist. They provide more information about particular practices of interest. For occasions where observers witnessed AmED use, illicit drug use, or aggressive incidents, they completed a short checklist and then described in more detail the behaviours of patrons and staff.

Energy drink consumption

During the study, 49 different groups of people were witnessed consuming energy drinks. Ten percent (*n*=5) of these were observed consuming energy drinks alone and 90 percent (*n*=44) were seen using AmED. Groups of energy drink users varied from one to 12 people, with a median of three members in a group. These groups were much more likely to be observed in pubs (39%), and slightly less frequently in bars (31%), and nightclubs (31%). Groups were observed more frequently later in the night (see Table 81).

Table 81 Groups of energy drink users observed by time*

Drink type	10–11 pm n (%)	11 pm–12 am n (%)	12–1 am n (%)	1–2 am n (%)
Groups of energy drink users	6 (12)	17 (35)	17 (35)	20 (20)

*percentages will not add up to 100 as some groups were recorded across multiple hours

People who consumed energy drinks alone (*n*=11) were more likely to be male (91%) and, based on estimations of age by appearance, had a mean age of 22.5 years (range 19–25). People consuming alcohol with energy drinks alone (*n*=39) were also more likely to be male (59%) and had an estimated mean age of 23.1 years (range 18–30).

During hours where AmED use (*n*=46) was observed, the most frequent types of alcohol mixed with energy drinks were white spirits (78.3%), followed by 'Jägerbombs' or other types of bombs and brown spirits (see Table 82). No pre-mixed alcohol/energy drink use was identified. One group included at least one person who bought a 'chaser' (a different type of alcoholic drink) to consume after their energy drink.

Table 82 Types of alcohol mixed with energy drinks				
Drink type	Bombs n (%)	White spirits n (%)	Brown spirits n (%)	Liquor n (%)
Hours where AmED use was observed	6 (13)	36 (78)	3 (7)	1 (2)

Some groups drank AmED beverages while others drank energy drinks alone; for both cases the most commonly identified energy drink was Red Bull. Most groups of energy drink users were observed displaying energetic behaviours, including dancing, singing, play fighting, and other 'rowdy'/'boisterous' activities. Groups were observed buying large amounts of alcohol at a single time; these were often in the form of 'shots' and 'bombs'. White spirits were the most frequently observed type of alcohol to be mixed with energy drinks.

Illicit drug use

Researchers recorded visible signs of illicit drug use among patrons by:

- witnessing the ingestion of drugs;
- witnessing the exchange of small items;
- observing drug paraphernalia; or
- detecting behavioural signs of drug use.

The latter often involved an informed guess as to what drugs the patron had used based on training by senior members of the project team prior to fieldwork. As such, the data should be interpreted as informed estimations rather than direct observation of drug-related behaviour.

Researchers observed 11 groups of illicit drug users during the study. One drug user was alone. Groups of drug users varied from one to five people, with a mean of 2.9 people per group. Most drug use was observed in nightclubs (91.7%), followed by bars (8.3%), with no use recorded in pubs. Groups of drug users were more likely to be observed between 12 and 1 am (see Table 83).

Table 83 Groups of drug users observed by time				
Drink type	11 pm–12 am n (%)	12–1 am n (%)	1–2 am n (%)	2–3 am n (%)
Group of drug users	2 (18)	5 (45)	4 (26)	1 (9)

Overall, observers most commonly identified that the drugs consumed among groups were stimulants such as ecstasy and cocaine (see Table 84). Groups of stimulant users (*n*=3) were more likely to be male (78%) and their mean age (based on estimations of age by appearance) was 23.7 years. Groups of cannabis users (*n*=2) were almost all female (75%) and their mean age was older, at 31 years.

Table 84 Groups of drug users observed by suspected drug type					
Drink type	Cocaine n (%)	Ecstasy n (%)	Cannabis n (%)	Other n (%)	Could not tell n (%)
Groups of drug users	1 (9)	2 (18)	2 (18)	1 (9)	5 (45)

Most signs of drug use, reported in the separate drug use form, involved witnessing visible intoxication from something other than alcohol (*n*=4; 36%) and witnessing the ingestion of drugs (*n*=4; 36%). Where researchers indirectly observed the ingestion of drugs, this included witnessing people sneak into bathrooms, talk about putting drugs into their drinks, people exchanging drugs for money, and people talking about drugs they had on them.

Researchers took notes about the practices and behaviours of groups of drug users. The most common behaviour observed by groups of people suspected to be consuming was dancing (*n*=5). Words to describe the dancing of drug users included: 'constant', 'unusual', 'fast' and 'animated'. Other common signs related to unusual movement patterns.

Only one incident of drug use was met with action by a staff member; however, this group of drug users was only spoken to and allowed to stay. Other than this, staff took no action toward drug users. Notably, one of the 11 groups was a staff member consuming drugs.

Physical incidents

Over the course of the fieldwork period, survey teams observed two separate aggressive physical incidents. This type of incident was considered distinct from sexual and verbal incidents, which were recorded separately. Both incidents took place in nightclubs, one incident was between 11 pm and 12 am while the other was between 1 and 2 am.

The first incident occurred between two females in their mid-twenties on the dance floor; they were physically shoving each other back and forth until security separated the two women. Observers rated patrons' intoxication levels during incident from 0 to 10 (10 being 'highly affected'); they rated these patrons as a six. The second incident occurred in a group of three males and one woman, all of them appeared to be in their late thirties and were seated in an area across from the bar. The men appeared to being huddled together, locked in each other's embrace while other patrons tried to separate them; eventually the female patron talked one of the men out of the fight and the group separated. The observer's intoxication rating of patrons was eight.

Sexual incidents

Researchers observed four sexual incidents in Hobart. Two of the incidents occurred in a pub between 11 pm and 12 am while the other two incidents occurred in a nightclub between 1 and 2 am. Both incidents in pubs involved individuals in their 30s or 40s. One incident involved a man repeatedly trying to engage with the observers despite being told they were not interested; specifically, he repeatedly tried to touch the observers before striking one's head and being taken away by friends. Observers rated the patron's intoxication levels during such incidents from 0 to 10 (10 being 'highly affected'); they rated this patron as a 10. The other incident involved women in their 30s flirting with men in their 40s; after the men bought the women drinks they left, and one of these men was being physically intimate with one of the women and had to be pushed away. The observer's intoxication rating of patrons was seven.

Incidents inside nightclubs involved individuals in their 20s. Both incidents took place between a man and woman. Both incidents involved men groping women as they walked by; one man tried to engage the woman, however she kept walking, and neither women appeared to report the incident. The observer's intoxication rating of patrons was eight and six, respectively.

Verbal incidents

No verbal incidents were observed in Hobart during the collection period.

Summary

Patron demographics and intoxication

Within Canberra, most patrons observed were male, and the estimated percentage of male patrons increased over the course of the night (from 55% to 71%). A similar percentage of males were in each venue type. The percentage of patrons under the age of 25 years remained relatively stable over the night in each venue type. Nightclubs had the highest estimated percentage of younger patrons (up to 64%), while pubs and bars tended to have around 45 to 50 percent of patrons under 25 years.

Patrons in Canberra showed increasing levels of intoxication throughout the night; the percentage of those classified as highly intoxicated increased from zero percent early in the evening to 76 percent by 2 to 3 am. There were corresponding declines in the no, low, and moderate intoxication categories. Similarly, the percentage of patrons showing any signs of intoxication increased throughout the night in all venue types, with 91 percent of nightclub and 93 percent of bar patrons showing signs of alcohol intoxication at 2 to 3 am. Fewer patrons showed signs of intoxication within pubs; 76 percent were showing signs of intoxication at 2 to 3 am. Across all venue types the percentage of patrons too intoxicated to remain in the venue also increased over the night to 14 percent in nightclubs, 15 percent in pubs, and 30 percent in bars. Of the highly intoxicated patrons who attempted to purchase more alcohol, 89 percent were served alcohol.

Within Hobart, there were typically more males than female patrons in each venue type (ranging from 55 percent to 72 percent male patronage), with more males in bars than other venue types. The proportion of patrons under the age of 25 tended to be higher in nightclubs than pubs or bars. The percentage of patrons under 25 years increased substantially (to 83%) in bars at midnight to 1 am, after which it declined to 55 percent.

Patrons in Hobart demonstrated increasing levels of intoxication throughout the night, with no patrons showing signs of no intoxication for any observation. The proportion of those classified as highly intoxicated increased from zero percent early in the evening to 100 percent by 2 to 3 am. There were corresponding declines in the low, and moderate intoxication categories. Similarly, the percentage of patrons showing any signs of intoxication increased throughout the night in all venue types, with 98 percent of nightclub patrons showing high intoxication at 2 to 3 am, and 93 percent of bar and 88 percent of pub patrons showing signs of alcohol intoxication at 1 to 2 am. Across all venue types the percentage of patrons too intoxicated to remain in the venue also increased over the night, however, the percentage in bars remained relatively low (up to 9% at 1 to 2 am). The proportion too intoxicated to remain in the venue increased to 20 percent in pubs and 38 percent nightclubs. Of the highly intoxicated patrons who attempted to purchase more alcohol, 88 percent were served alcohol.

Alcohol use behaviours

In Canberra, beer was the most commonly consumed alcoholic beverage type, followed by shots, mixed spirits, and whisky. For most observations (76%), there were no alcohol promotions present. When promotions were not present, patrons were significantly more likely to display no, low, and high levels of intoxication.

For Hobart observations, beer was the most frequently consumed alcoholic beverage, followed by shots, alcopops and vodka. For most observations (57%), no alcohol promotions were present. When promotions were present there were no significant differences in the level of patron intoxication as compared with instances where there were no promotions.

Energy drink use

In Canberra venues, Red Bull was the most frequently available brand of energy drink (67% of all observed venues); this was more than all other brands combined. Few (11%) patrons were consuming AmED, with the use of this drink the same across patron intoxication levels. Groups of patrons consuming energy drinks were

more common in bars (54%) than nightclubs (38%) and pubs (8%). 'Jägerbombs' or other types of bombs were the most frequently consumed type of AmED.

In Hobart, Red Bull was the most frequently available brand of energy drink within venues (77% of all observed venues). Approximately a third (32%) of patrons consumed AmED, with the drink's use being the same across patron intoxication levels. Groups of patrons drinking energy drinks were most often observed in pubs (39%) and slightly less frequently in bars and nightclubs (both at 31%). Energy drinks were most commonly mixed with white spirits, followed by 'Jägerbombs' or other types of bombs.

Illicit substance use

Less than one-tenth of observations within Canberra recorded illicit substance use within venues (9% of all observations). Illicit substance use was more common within nightclubs than pubs and bars, with peak use around 11 pm to 1 am. There was marked jump in the percentage of patrons showing signs of illicit substance use in bars to 50 percent at 2 to 3 am. The most frequent suspected drug used was ecstasy.

In Hobart, 21 (14%) observations recorded illicit substance use within venues. This was more common in nightclubs than pubs and bars, with peak use around 1 to 3 am. The percentage of patrons showing signs of illicit substance use in nightclubs jumped markedly to 31 percent at 1 to 2 am and 95 percent at 2 to 3 am. Illicit substance remained below 10 percent for all observations within pubs and bars. The most frequent suspected drug used was ecstasy, followed by cannabis.

Police presence and activity

In Canberra, fewer than one-tenth of observations recorded the presence of police on the street (8%) and inside the venue (8%). Most police activity consisted of officers walking through the venue. Police presence was slightly higher at bars than at pubs and nightclubs, with police presence decreasing over the course of the night.

In Hobart, six percent of observations reported a police presence outside venues, with no reported police activity in the venues. Most activity consisted of officers patrolling the streets, with a marked decline in activity over the night.

Venue characteristics

For venues in Canberra, 41 percent displayed signage at the main bar; most of these signs featured a warning that they would not serve underage patrons. Signage also included information on general service. The bar service area showed very little crowding in all venue types, with most observations recording zero to two patrons at the bar. Traffic flow within venues was generally fair (35%) to good (39%). The noise level within venues was such that it was difficult to converse for 48 percent of venues, with adequate seating for most venues (75%). Most venues had moderately low lighting (66%), and most were kept clean (88%). The average cost of a beer was $7.49, wine was $6.69, and soft drinks were $3.62. Service staff members were typically friendly (46%) and polite (46%), as were security staff members (friendly=27%; polite=50%).

For venues in Hobart, 43 percent of venues displayed signage at the main bar—most warned that they would not serve underage patrons. A sign also gave general service information. All venue types had very little crowding at the bar service area for, with most observations recording zero to one patrons at the bar. Traffic flow within venues was generally fair (27%) to good (34%). The noise level within venues was such that it was difficult to converse for 55 percent of venues, with adequate seating for most (75%). Half had dim lighting (50%), and most were kept clean (70%). The average cost of a beer was $5.73, wine was $8.26, and soft drinks were $4.03. Service staff members were typically friendly (54%) and polite (45%), as were security staff (polite=75%).

Aggressive incidents

In Canberra, researchers observed eight physical incidents. Half of these occurred at a nightclub, with three in a pub, and one at a bar. Males were involved in all of these incidents, with females involved in three. Four incidents occurred between 11 pm and 12 am and four took place between 1 and 2 am. Only one verbal incident was recorded for Canberra, between 2 and 3 am within a bar. This incident involved two male patrons. Thirteen sexual incidents were recorded; eight in pubs, four in nightclubs, and one in a bar. Each incident involved two to five male and female patrons. The intoxication level of patrons involved in a physical, verbal or sexual incident was estimated at seven to nine out of 10.

Within Hobart, two physical incidents were observed; both of which were in a nightclub. Females were involved in both, with males involved in one. No verbal incidents were recorded for Hobart. Four sexual incidents were recorded. Two occurred in a pub and two occurred in a nightclub. Each incident involved male and female patrons. The intoxication level of patrons involved in a physical, verbal or sexual incident was estimated at six to 10 out of 10.

Administrative data

Ambulance attendances

Canberra

Data on ambulance attendances for alcohol and drug-related events were available for entertainment districts within Civic and Braddon. Between 1 April 2011 and 31 July 2015 there were 1,182 ambulance attendances involving alcohol across Canberra entertainment districts (Civic: n=896, and Braddon: n=286) and 175 drug-related attendances (Civic: n=91, and Braddon: n=84). The rate of alcohol-related ambulance attendance per 10,000 people ranged from 3.9 in 2011 to 7.2 in 2014.

Given the low numbers of alcohol- and, particularly, drug-related incidents, the following trends may not be able to be generalised and should be interpreted cautiously. Further, since both interventions being tested in this study (*Liquor Act 2010*; Alcohol Crime Targeting Team) were implemented before the date captured by this data, no time-series analysis could be run to test their impact.

Demographics

The age range of those involved in alcohol-related attendances (during any time of day) ranged from zero to 90 years, with a mean age of 34 years (Civic: M=30.1, SD=13.1; Braddon: M=37.87, SD=14.23). The ages of those involved in drug-related attendances ranged from 14 to 60 years, with a mean age of 33 years (Civic: M=30.8, SD=9.6; Braddon: M=36, SD=11).

Figure 68 shows the percentage of alcohol-related attendances by each age group across entertainment districts. In Civic, for alcohol-related attendances, the age group of 18 to 24 years was the largest and comprised 42.7 percent (n=383) of all cases, whereas in Braddon, the age group 25 to 34 years was the largest and comprised 25.5 percent (n=73) of the sample.

Figure 68 Alcohol-related ambulance attendances by age group, Civic and Braddon (ACT)
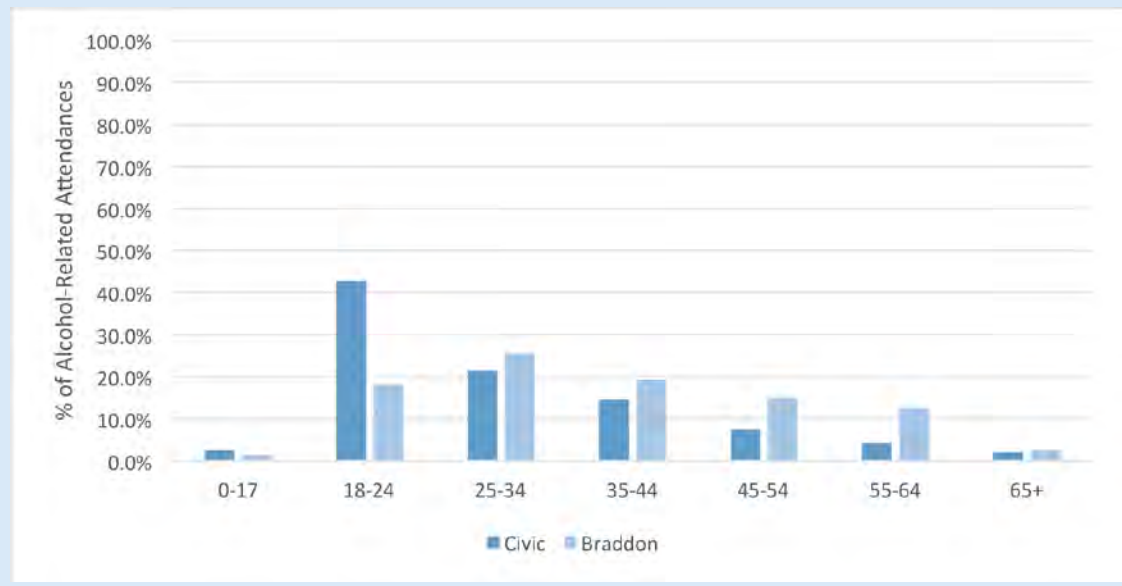
Figure 69 shows the percentage of ambulance attendances within high alcohol hours for each age group. Half the attendances in Civic (50.9%, *n*=471) and almost a quarter in Braddon (23.5%, *n*=58) were for individuals aged between 18 and 24 years.

Figure 69 Ambulance attendances within high alcohol hours by age group, Civic and Braddon (ACT)
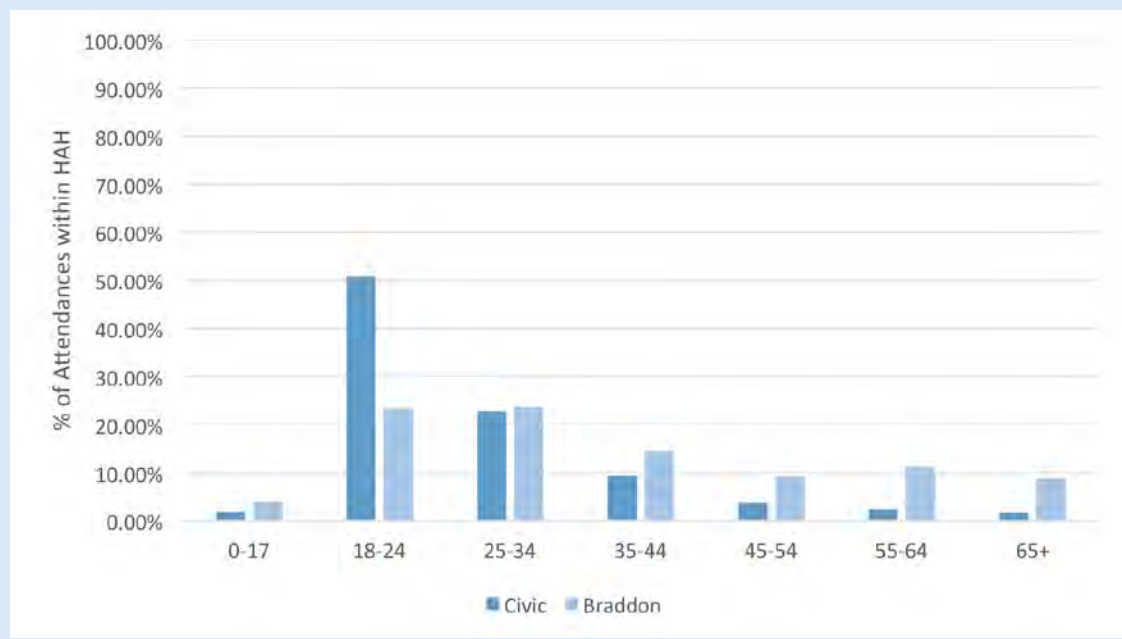
Figure 70 shows the percentage of drug-related attendances by age group. In Civic, the age group 25 to 34 years was the largest and comprised 44.2 percent (*n*=38) of the sample. In Braddon, age groups 25 to 34 years and 35 to 44 years were equally more likely to be involved in a drug-related attendance compared with the other age groups (34.7%, *n*=25).

Figure 70 Drug-related ambulance attendances by age group, Civic and Braddon (ACT)
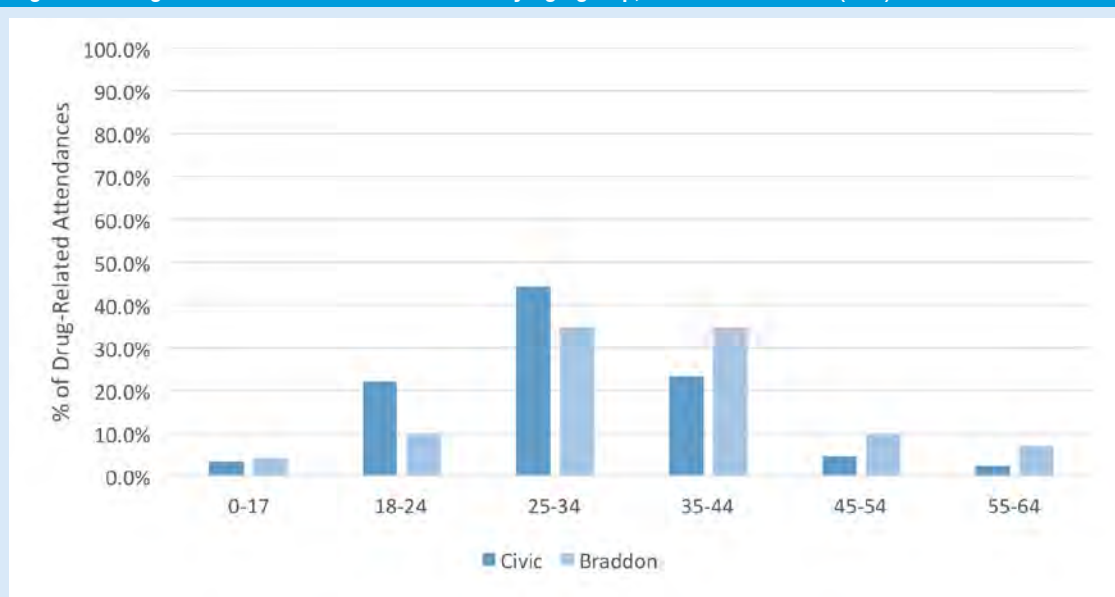
Table 85 shows the number and percentage of alcohol and drug-related ambulance attendances by area and gender. In Civic, males were significantly more likely than females to be involved in alcohol- ($p<0.001$) or drug-related ($p<0.001$) attendances. In Braddon, males were significantly more likely to be involved in alcohol-related ($p<0.001$) and drug-related ($p<0.05$) attendances.

Table 85 Alcohol- and drug-related ambulance attendances by gender, Civic and Braddon (ACT)

	Civic				Braddon			
	Male		Female		Male		Female	
	n	%	n	%	n	%	n	%
Alcohol-related	576	64.3	320	35.7	199	69.6	87	30.4
Drug-related	67	73.6	24	26.4	52	62.7	31	37.3

Time and day of incident

Of all ambulance attendances in Civic, 23.3 percent (*n*=926) took place during HAH. In Braddon, 13.4 percent (*n*=249) occurred during HAH. Most alcohol-related attendances took place on the weekends (Civic: 50.3%, *n*=451; Braddon: 42.6%, *n*=122). Almost half the alcohol-related attendances in Civic (45.6%, *n*=409) and more than a quarter of alcohol-related attendances in Braddon (28.7%, *n*=82) took place during HAH. Figure 72 shows the attendances that occurred within HAH. In Civic, alcohol-related attendances were most frequent at 2 am on Sunday and in Braddon attendances were most frequent at 9 pm on Saturday. In Civic, 40.7 percent (*n*=37) of drug-related attendances took place on weekends, whereas in Braddon, 27.4 percent (*n*=23) of cases occurred on weekends.

Figure 73 shows seasonal trends of quarterly ambulance attendances, including all alcohol-related attendances and overall attendances within HAH. Generally, the number of alcohol-related attendances overall and attendances during HAH gradually increased over the measurement period.

Figure 71 shows the top 20 attendance classifications during high alcohol hours (8 pm–6 am Friday and Saturday) for both Civic and Braddon. Alcohol intoxication was the most common reason for attendance, accounting for 17.6 percent of all attendances within HAH in Civic and Braddon.

Figure 71 Number of ambulance attendances by classification, Civic and Braddon (ACT)
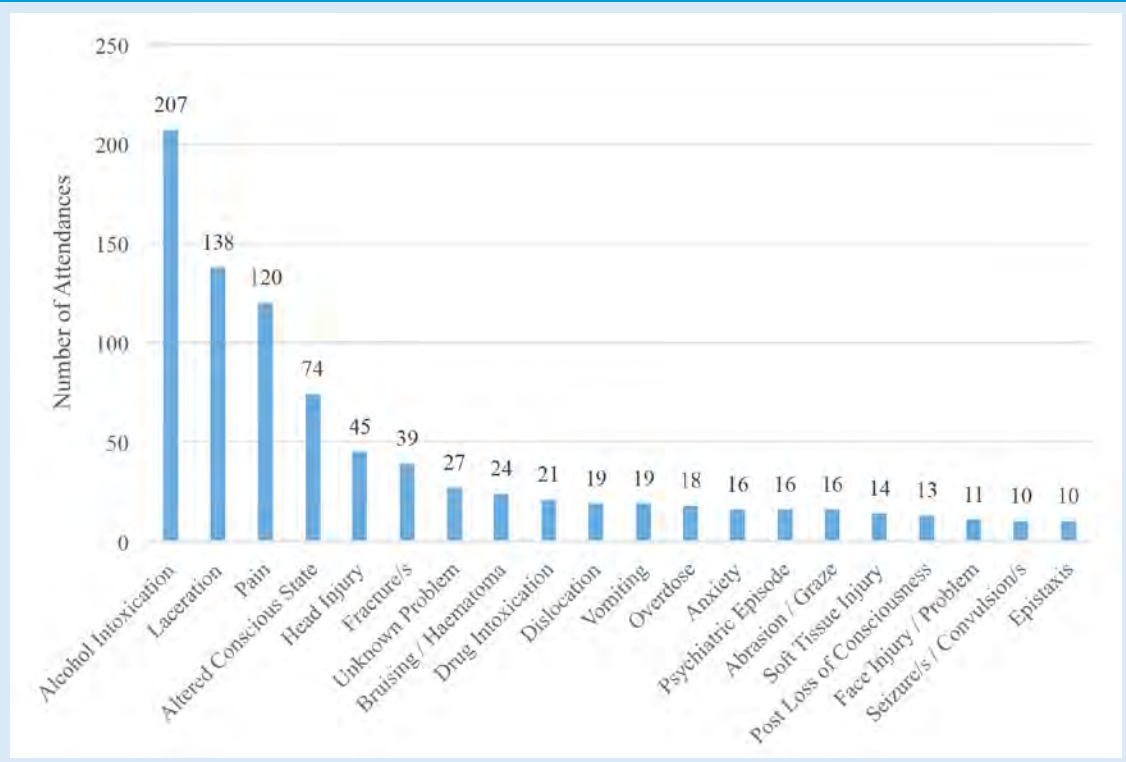
Figure 72 Number of ambulance attendances within HAH (by time and day) Civic and Braddon (ACT)
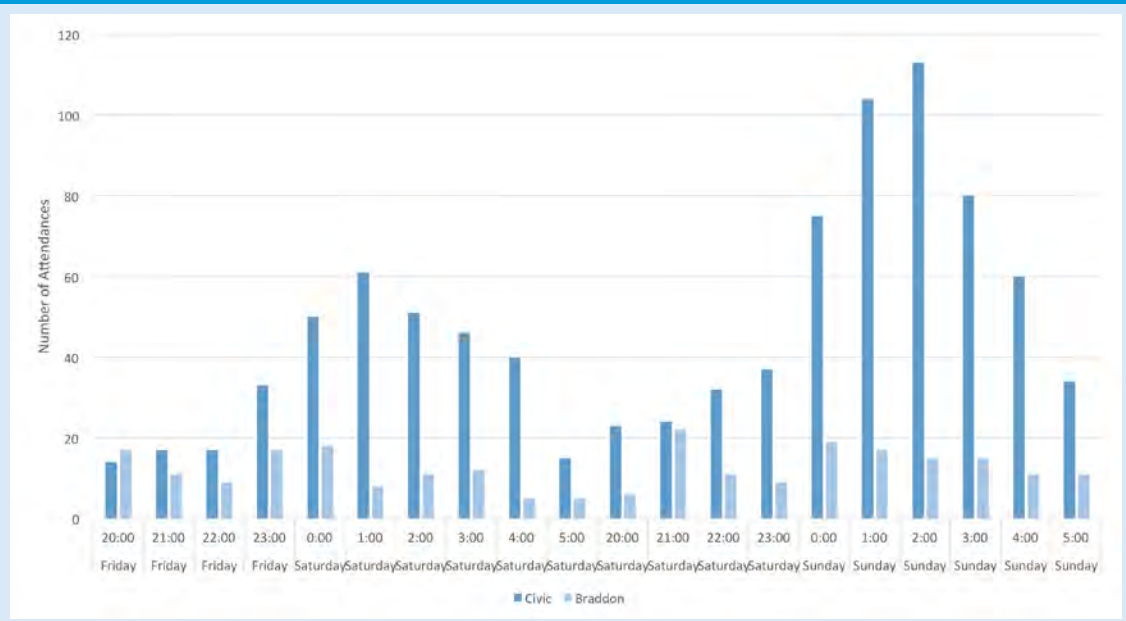
Figure 73 Number of alcohol-related ambulance attendances and attendances within HAH by year quarter, Civic and Braddon (ACT)
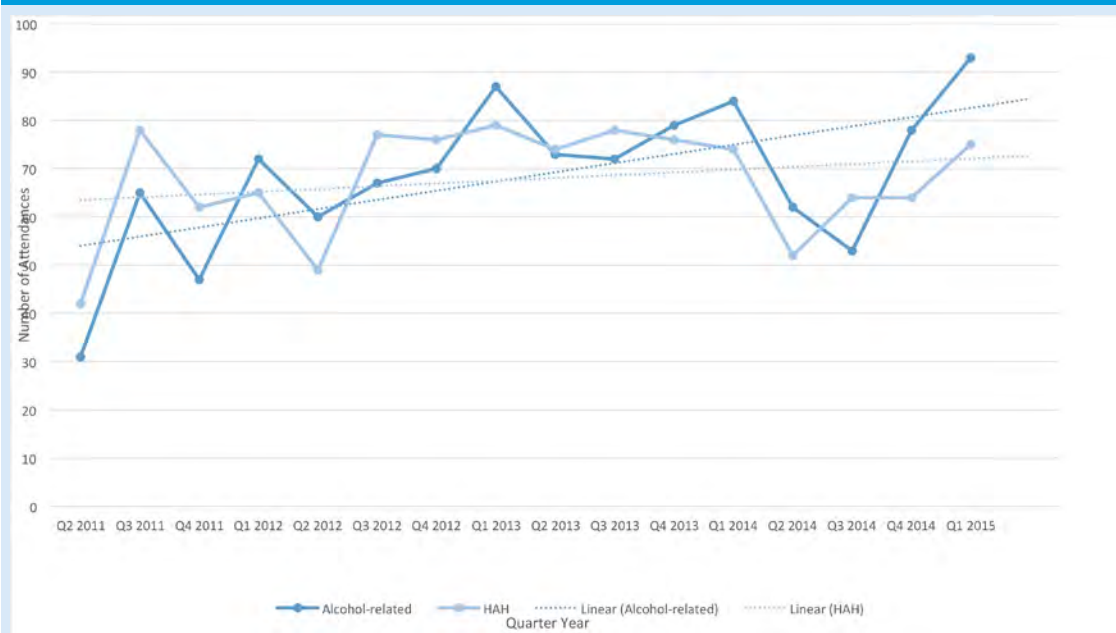
'Hotspots' for HAH ambulance attendances

Figure 74 maps out the streets where ambulance attendances occurred in Civic and Braddon during HAH. Streets in the 90th percentile for attendances (excluding streets where less than 5 attendances occurred) are marked in red, streets in the first to 89th percentile for attendances (excluding streets where less than 5 attendances occurred) are marked in orange, and streets where less than five attendances occurred are marked in yellow. Rather than quartiles, the cut-off of the 90th percentile was chosen because it was clear that most attendances clustered on very few streets.

All three streets that were in the 90th percentile for attendances (London Circuit, Northbourne Avenue, and East Row) are all near each other. Together the streets in the 90th percentile for ambulance attendances accounted for 40 percent of attendances during HAH (London Circuit: 21.6%; Northbourne Avenue: 10.3%; East Row: 8.1%).

Figure 74 Streets in Civic and Braddon (Canberra) where ambulance attendances occurred during HAH
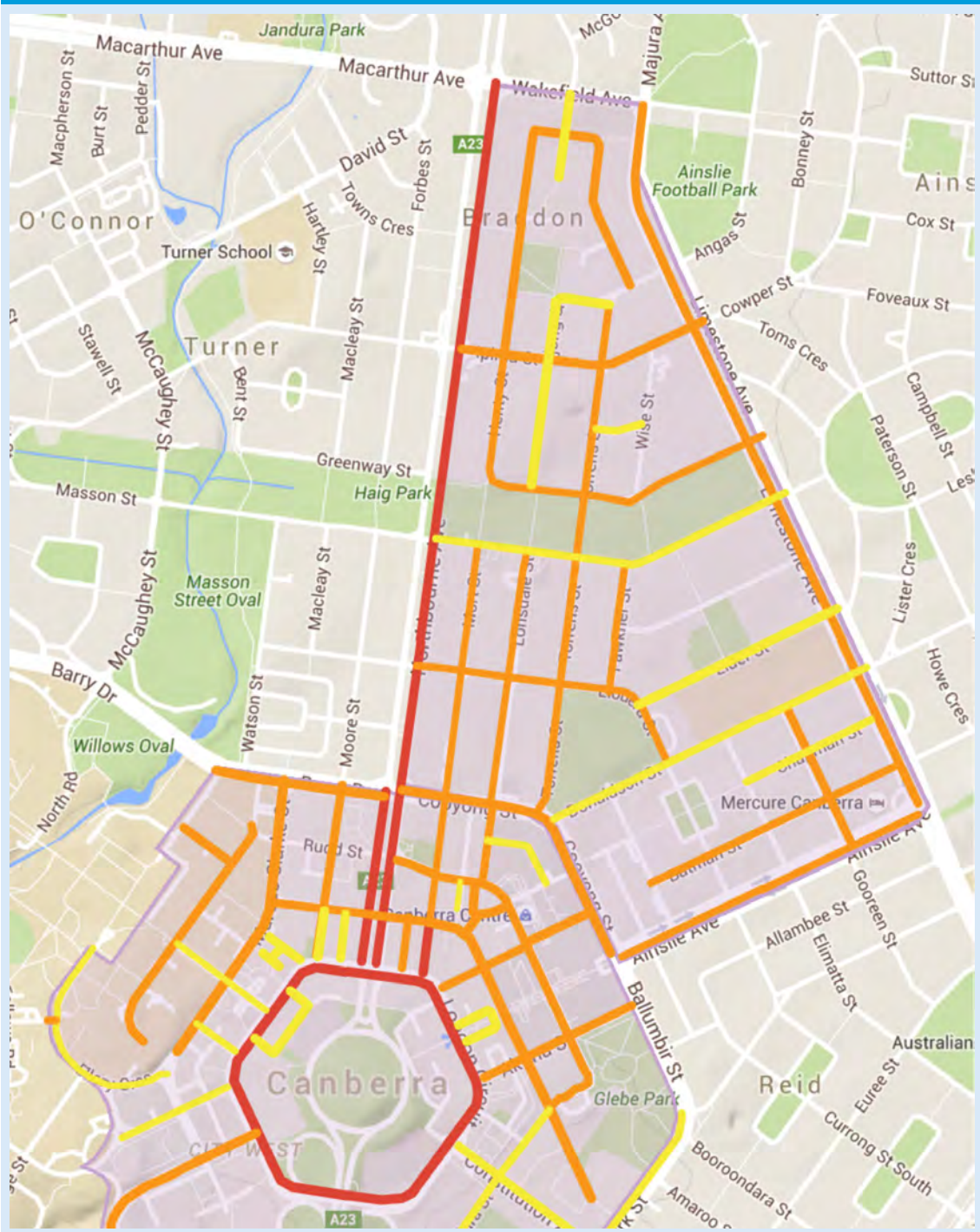
Source: Google Maps, 2016

Hobart

Data on ambulance attendances for alcohol and drug-related events was available for entertainment districts in Hobart and Battery Point. Between 1 January 2010 and 31 July 2015 there were 1,396 ambulance attendances involving alcohol (Hobart: *n*=1,270, Battery Point: *n*=126) and 96 drug-related attendances (Hobart: *n*=94, Battery Point: *n*=2). The rate of alcohol-related ambulance attendances per 10,000 people ranged from 8.5 in 2010 to 13.2 in 2014.

Given the low numbers of alcohol- and particularly, drug-related attendances, it may not be possible to generalise the following trends and these should be interpreted cautiously.

Demographics

The ages of those involved in alcohol-related attendances (during any time of day) ranged from zero to 88 years, with a mean of 36 years (Hobart: *M*=33.3, SD=15.4; Battery Point: *M*=39.6, SD=19.5). Ages of those involved in drug-related attendances ranged from 14 to 88 years, with a mean of 27 years (Hobart: *M* = 28.9, SD=12.9; Battery Point: *M*=25, SD=8.5).

Figure 75 shows the percentage of alcohol-related attendances for each age group across the entertainment district. The age group of 18 to 24 years was the largest for both suburbs, and comprised 35 percent (*n*=444) of cases for Hobart and 31 percent (*n*=39) of all cases for Battery Point. This was followed by the 25 to 34 year age group, which accounted for 20.6 percent (*n*=261) of the sample for Hobart and 19 percent (*n*=24) of that for Battery Point.

Figure 75 Alcohol-related ambulance attendances by age group, Hobart and Battery Point (Tas)
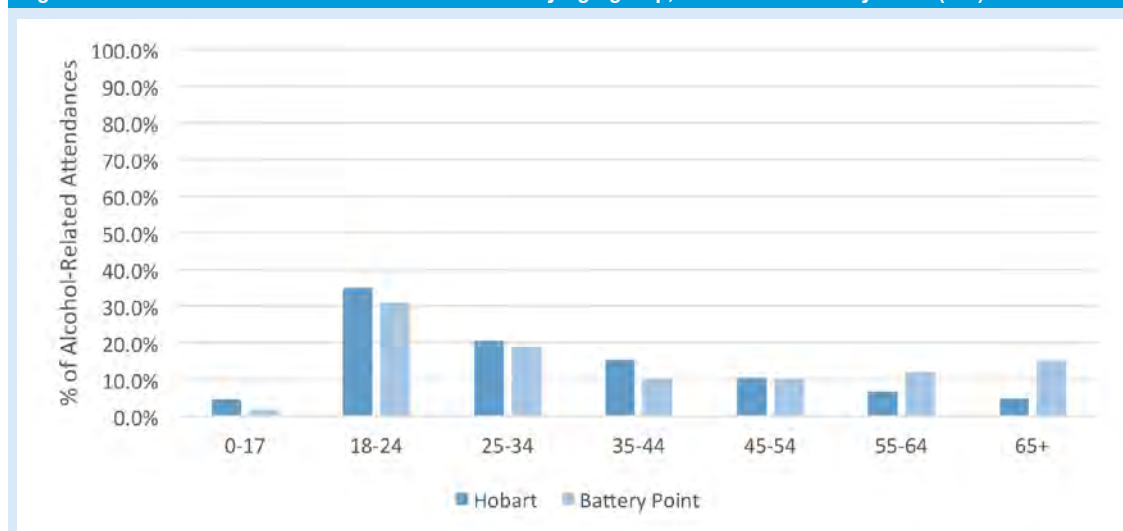
Figure 76 shows the percentage of ambulance attendances within HAH for each age group. During HAH, 18 to 24 year olds were more likely to be involved in an attendance compared with the other age groups (Hobart: 41.9%, *n*=508; Battery Point: 30.1%, *n*=41).

Figure 76 Ambulance attendances within HAH by age group, Hobart and Battery Point (Tas)
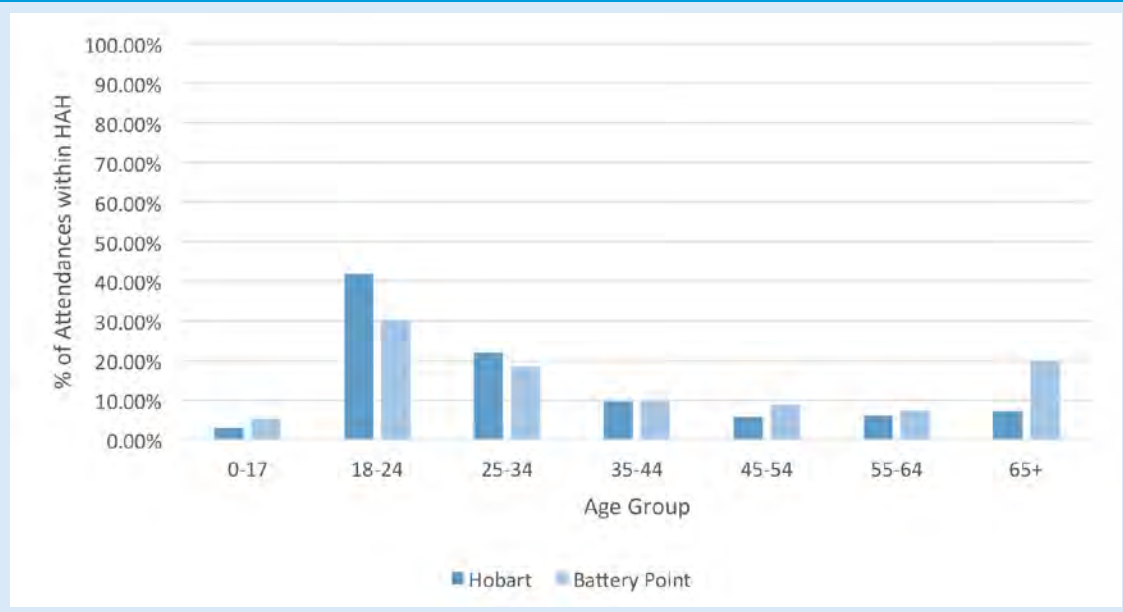
Figure 77 shows drug-related attendances by age group within Hobart. For drug-related attendances in Hobart, the age group of 18 to 24 years was the largest and comprised 34 percent (n=32) of the sample. This was closely followed by the 25 to 34 age group, which comprised 31.9 percent of the sample (n=30). Only two drug-related attendances were within HAH for Battery Point, and are therefore not presented.

Figure 77 Drug-related attendances by age group, Hobart (Tas)
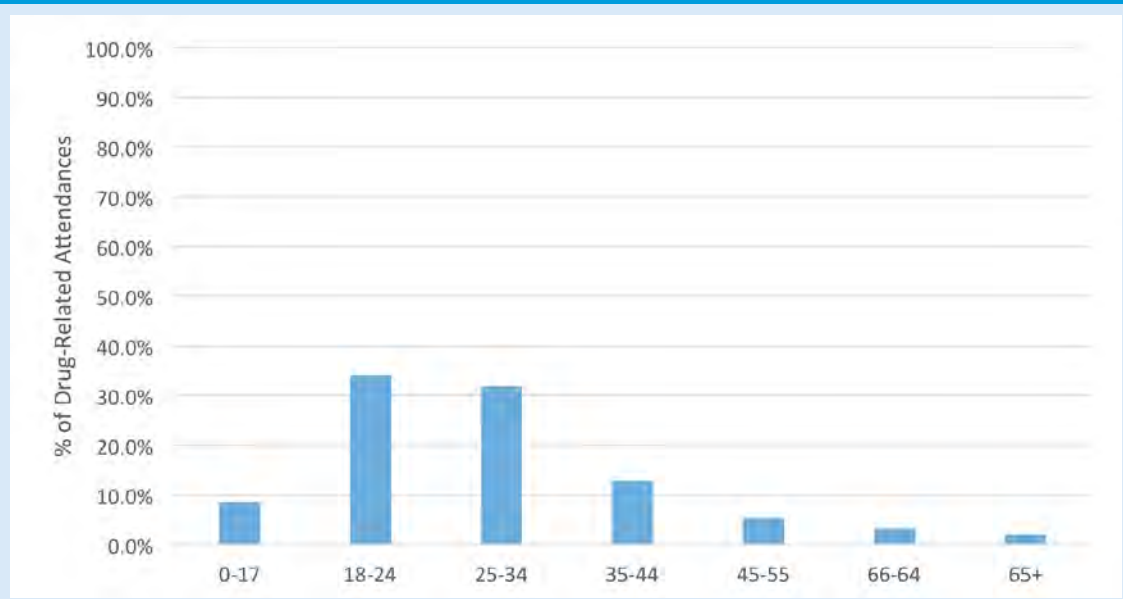
Table 86 shows the number and percentage of alcohol and drug-related ambulance attendances by area and gender. In Hobart, males were significantly more likely than females to be involved in alcohol- ($p<0.001$) and drug-related ($p<0.05$) attendances. In Battery Point, although a higher percentage of males were involved in alcohol-related attendances, it was not significantly higher than the percentage of females ($p>0.05$).

Table 86 Alcohol-related ambulance attendances by gender, Hobart and Battery Point (Tas)							
	Hobart				Battery Point		
	Male		Female		Male		Female	
	n	%	n	%	n	%	n	%
Alcohol-related	754	59.4	514	40.5	70	55.6	56	44.4
Drug-related	57	60.6	37	39.4	<5	50	<5	50

Time and day of incident

Of all ambulance attendances in Hobart, 17.4 percent (*n*=1,213) took place during HAH, and in Battery Point, 16.3 percent (*n*=136) occurred during HAH. Most alcohol-related incidents took place on the weekends (Hobart: 49.7%, *n*=631; Battery Point: 46.8%, *n*=59). In Hobart, 42 percent (*n*=534) of alcohol-related incidents took place during HAH, with 41.3 percent (*n*=52) in Battery Point. Figure 79 shows attendances that occurred within HAH. As shown in Figure 79 ambulance attendances appeared to be more frequent on Saturday nights/Sunday mornings than on Friday nights/Saturday mornings. In Hobart, 30.8 percent (*n*=29) of drug-related attendances took place on weekends.

Figure 80 (on the following page) shows seasonal trends of quarterly ambulance attendances, including all alcohol-related attendances and overall attendances within HAH. The number of alcohol-related attendances increased over the measurement period.

Figure 78 shows the top 20 attendance classifications during high alcohol hours (8 pm–6 am Friday and Saturday) for both Hobart and Battery Point. Alcohol intoxication was the second most common cause for attendance, accounting for 12 percent of all incidents within HAH in Hobart and Battery Point.

Figure 78 Number of ambulance attendances by classification, Hobart and Battery Point (Tas)

Drug and alcohol intoxication and subsequent harm in night-time entertainment districts (DASHED)
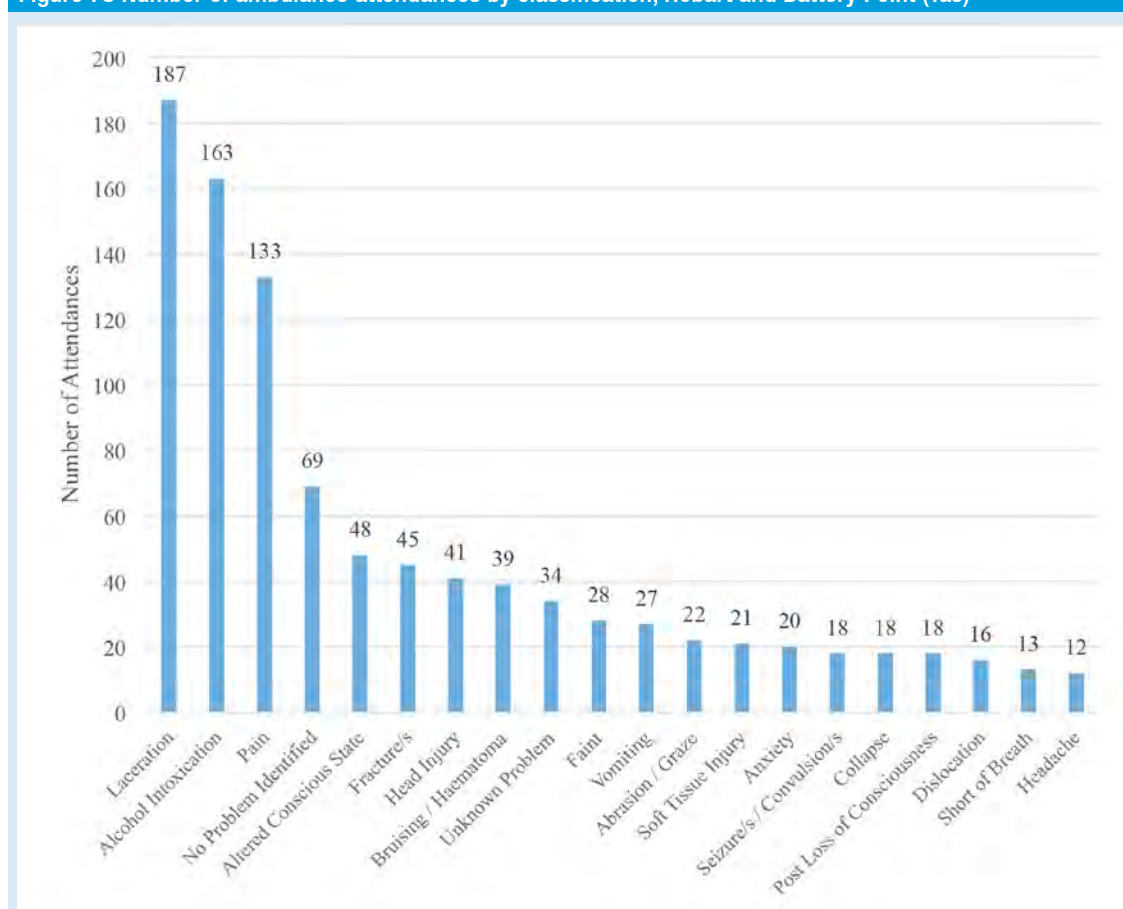
Figure 79 Number of ambulance attendances within HAH by time and day, Hobart and Battery Point (Tas)
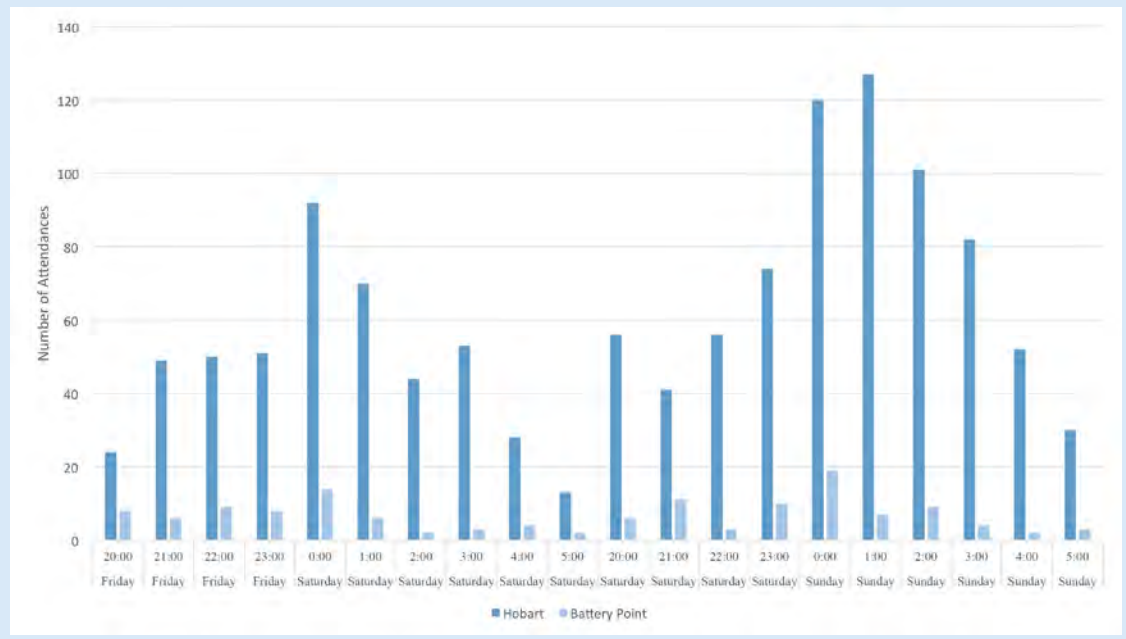
Figure 80 Frequency of alcohol-related ambulance attendances, and attendances during HAH by year quarter, Hobart and Battery Point (Tas)
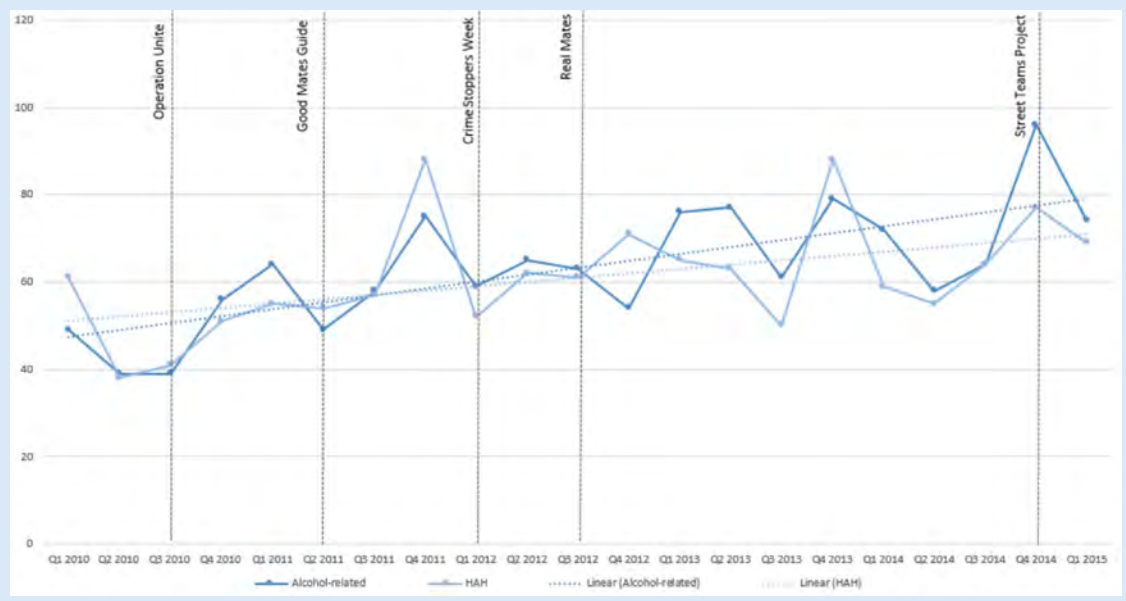
'Hotspots' for HAH ambulance attendances

Figure 81 maps out the streets where ambulance attendances took place during HAH in Hobart (suburb) and Battery Point. Streets in the 90th percentile for attendances (excluding streets where less than 5 attendances occurred) are marked in red, streets in the one to 89th percentile for attendances (excluding streets where less than 5 attendances occurred) are marked in orange, and streets where less than five attendances occurred are marked in yellow. Rather than quartiles, the cut-off of the 90th percentile was chosen because it was clear that most attendances clustered on very few streets.

The three streets within the 90th percentile for attendances (Murray Street, Liverpool Street, Salamanca Place) are all located within Hobart (suburb), although Salamanca Place crosses between Hobart and Battery Point. Together the streets in the 90th percentile for ambulance attendances accounted for 34.8 percent of attendances during HAH (Murray Street: 15.2%; Liverpool Street: 10.5%; Salamanca Place: 9.1%). Most streets in Hobart and Battery Point had an ambulance attendance during HAH in the measurement period with almost all streets in Hobart having at least five attendances.

Figure 6 Mean BAC level by time of interview
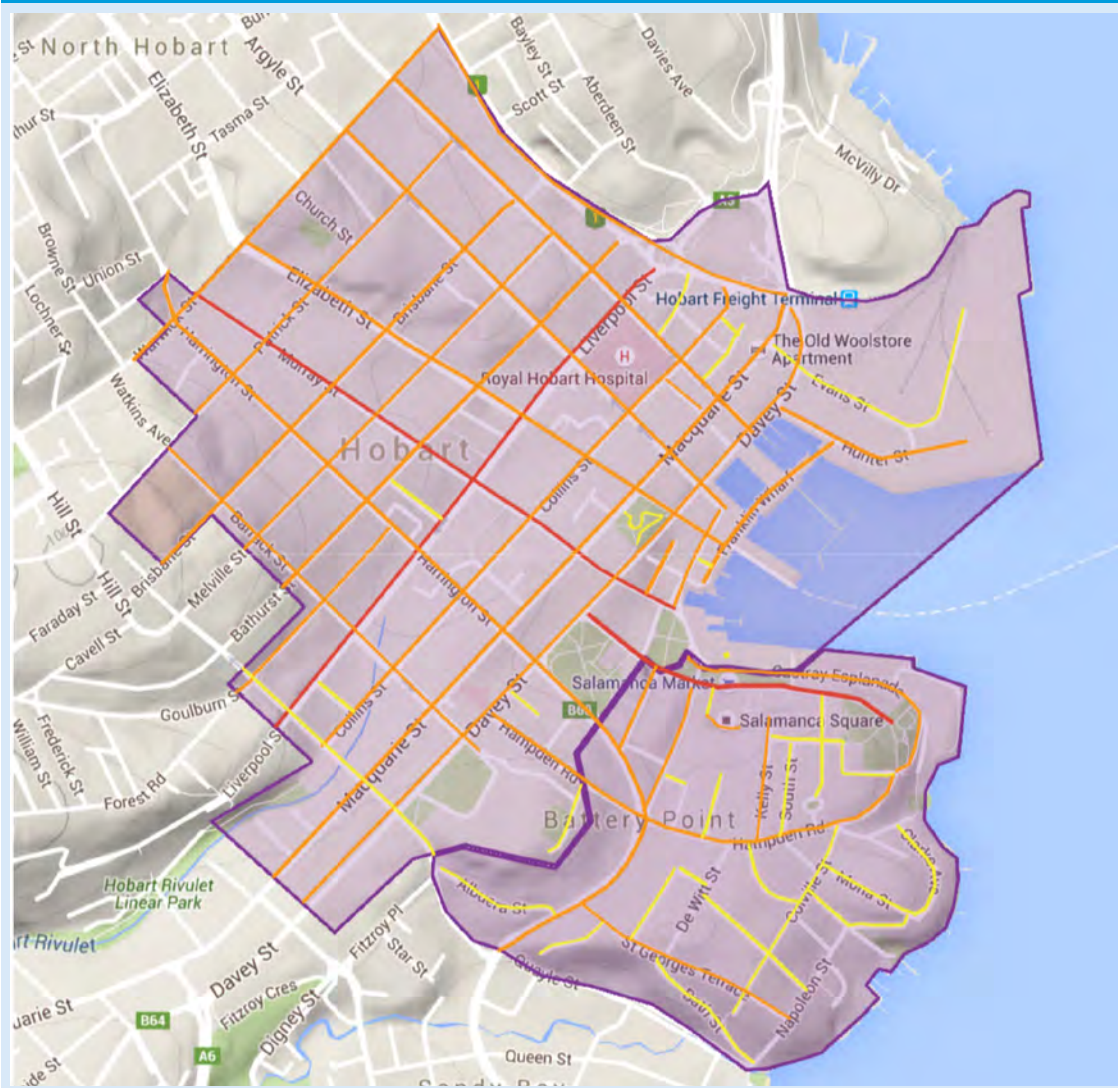
Source: Google Maps, 2016

Time series analysis

The monthly rate of alcohol-related ambulance attendances during high alcohol hours per 10,000 people from January 2010 to June 2015 for Hobart is set out in Figure 82. As shown, the rate of ambulance attendances increased over the study period.

Figure 82 Rate of alcohol-related ambulance attendances during HAH from 2010–15, Hobart (Tas)
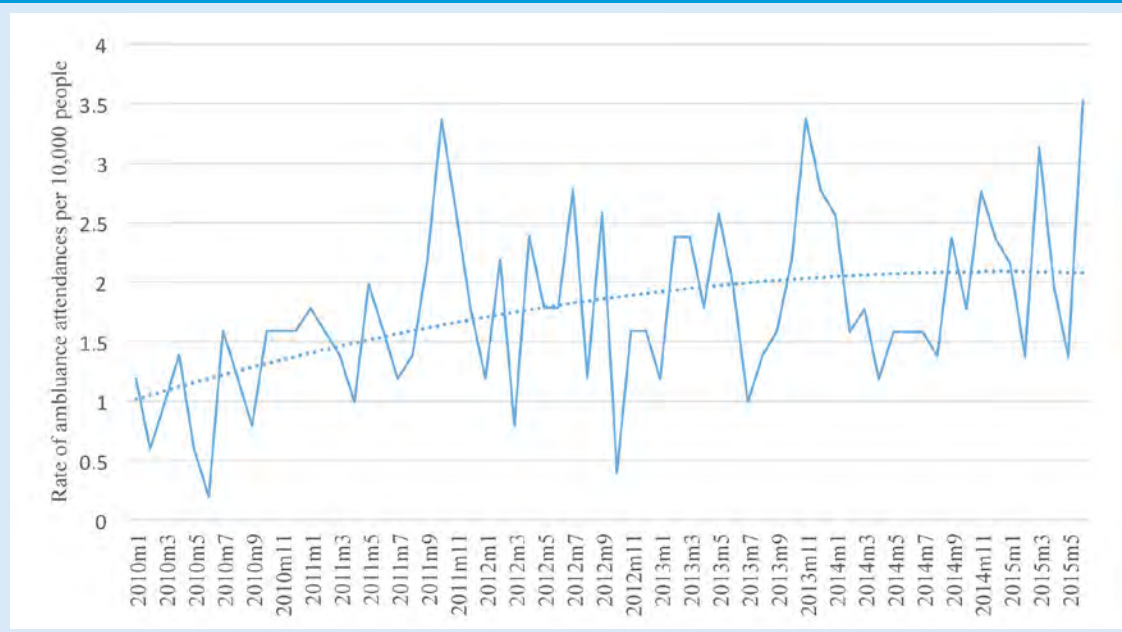
Researchers examined the effect of five interventions on the rate of alcohol-related ambulance attendances in Hobart during HAH using an ARIMA model. First order differencing was used to transform the rate of ED injury presentations into a stationary series. The best-fitting model identified included one autoregressive term; ARIMA(1,1,0). The model fitted the data well, with a non-significant Portmanteau test for white noise (Q=33.92, p=0.28). The multivariable ARIMA model indicated that none of the interventions had a significant effect on the rate of ambulance attendances during HAH in Hobart (see Table 87).

Table 87 The effect of interventions implemented in Hobart on the rate of alcohol-related ambulance attendances per month

Intervention	Coefficient (95% CI)	p-value
Operation Unite (lag 0)	0.04 (-0.59, 0.68)	0.891
Real Mates (lag 0)	-0.45 (-1.16, 0.26)	0.214
Good Mates (lag 1)	-0.46 (-0.36, 1.27)	0.276
Crime Stoppers Week (lag 0)	-0.25 (-0.72, 0.22)	0.301
Street Teams (lag 0)	0.55 (-6.26, 7.36)	0.874
Model parameters autoregression (lag 1)	-0.49 (-0.75, -0.23)	<0.001

Summary of trends for ambulance attendances

Alcohol-related ambulance attendances in the entertainment areas of Canberra most frequently occurred among young individuals aged from 18 to 34 years. During HAH, more than half alcohol-related ambulance attendances in Civic (59%) and almost a third of those in Braddon (32%) were for individuals aged 18 to 24 years. Drug-related attendances most frequently involved 25 to 34 year olds in Civic and 25 to 44 year olds in Battery Point. Males were involved in about two-thirds (63–74%) of alcohol-related and drug-related ambulance attendances. Almost half alcohol-related attendances in Civic (46%) and more than a quarter of alcohol-related incidents in Braddon (29%) took place during HAH. Further, alcohol intoxication was the most common incident-type during HAH, accounting for 18 percent of all incidents that occurred during HAH in Civic and Braddon. In Civic, 41 percent of drug-related incidents took place on weekends, whereas in Braddon, 27 percent of cases occurred on weekends. Generally, although there appeared to be some seasonal variation, the number of alcohol-related ambulance attendances gradually increased over the measurement period.

Alcohol-related ambulance attendances in the entertainment areas of Hobart were most frequently for young people aged between 18 and 24 years, making up 35 percent of alcohol-related attendances in Hobart and 31 percent in Battery Point. During HAH, about half the attendances were for individuals aged 18 to 24 years (Hobart: 53%; Battery Point: 46%). Drug-related attendances in Hobart were also most frequent for those aged 18 to 24 years (34%), closely followed by 23 to 34 years (32%). Males were more likely to be involved in alcohol- and drug-related ambulance attendances, comprising 50 to 61 percent of cases across Hobart and Battery Point. In Hobart during HAH, 42 percent of ambulance attendances were for alcohol-related incidents, with 41 percent of attendances for these incidents in Battery Point. Further, alcohol intoxication was the second-most common cause for attendance (behind laceration) during HAH, accounting for 12 percent of attendances that occurred during HAH. In Hobart, 31 percent of drug-related attendances took place on weekends. Generally, although there was some seasonal variation, alcohol-related ambulance attendances gradually increased over the measurement period. A time-series analysis indicated that none of the interventions in place during the measurement period impacted on the rate of alcohol-related ambulance attendances during HAH in Hobart. Figure 83 shows the rate of police attending street offences in high alcohol hours within Canberra and Hobart. Rates appear to be increasing in Canberra, and decreasing in Hobart between 2010 and 2014.

Figure 83 Rate per 10,000 of police attended sexual assault offences during HAH in surrounding night-time entertainment precincts (NEPs) by year, Canberra and Hobart
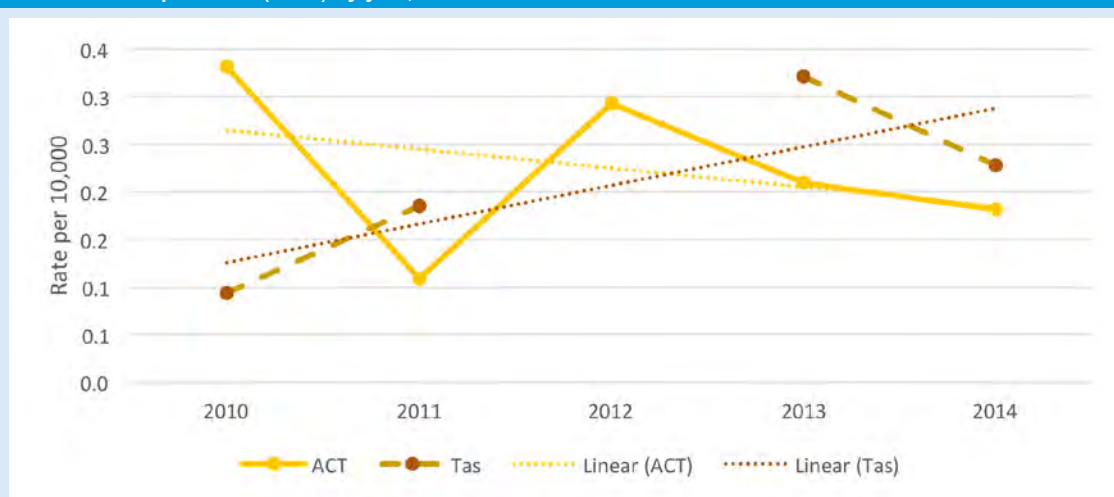
Monthly rates of ambulance attendances per 10,000 population in HAH between 2010 and 2015 show an increasing trend for Canberra, and steady rates for Hobart (Figure 84).

Figure 84 Monthly rates per 10,000 population of ambulance attendances during HAH by year, Canberra and Hobart
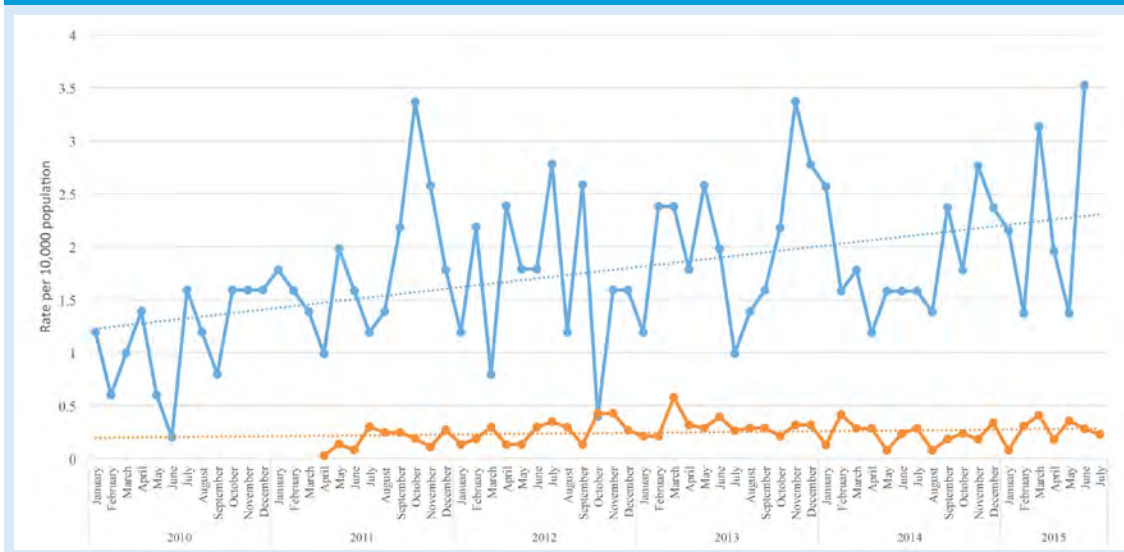
Emergency department admissions

Canberra

Between 1 January 2010 and 31 December 2014, 143,593 injury (ICD–10 S&T codes – codes representing the type of injury patient presents at emergency for) cases presented at the Canberra Hospital and the Calvary Public Hospital emergency department (EDs). Of these, 10,338 (7.2%) occurred during the HAH of 8 pm to 6 am Friday to Sunday. Overall injury rate trends for Canberra are presented in Figure 16, along with rates for HAH. Triage notes were not available for Canberra data, therefore injury ICD codes (S&T), HAH and F10.0 (acute intoxication) codes are reported below.

Injury codes (S&T) cases

Males were significantly more likely than females to be involved in injury-related attendances at any time of day, making up 58 percent (*n*=83,213) of presentations, with 42 percent (*n*=60,376) being female (p<0.001). During HAH, 59 percent (*n*=6,114) of attendees were male and 40.9 percent (*n*=4,224) were female (p<0.001). The mean age of people attending ED for all injuries was 32 years, whereas during HAH the mean age of people attending ED with injuries was 31 years. Figure 85 shows the distribution of age for all ED attendances during HAH, highlighting the over-representation of the 18 to 24 year old age group. Those in the 18 to 24 year group were most likely to be an injury-related attendee during HAH (see Figure 86).

Figure 85 Number of attendances at Canberra EDs during HAH per age (1 January to 31 December 2014)
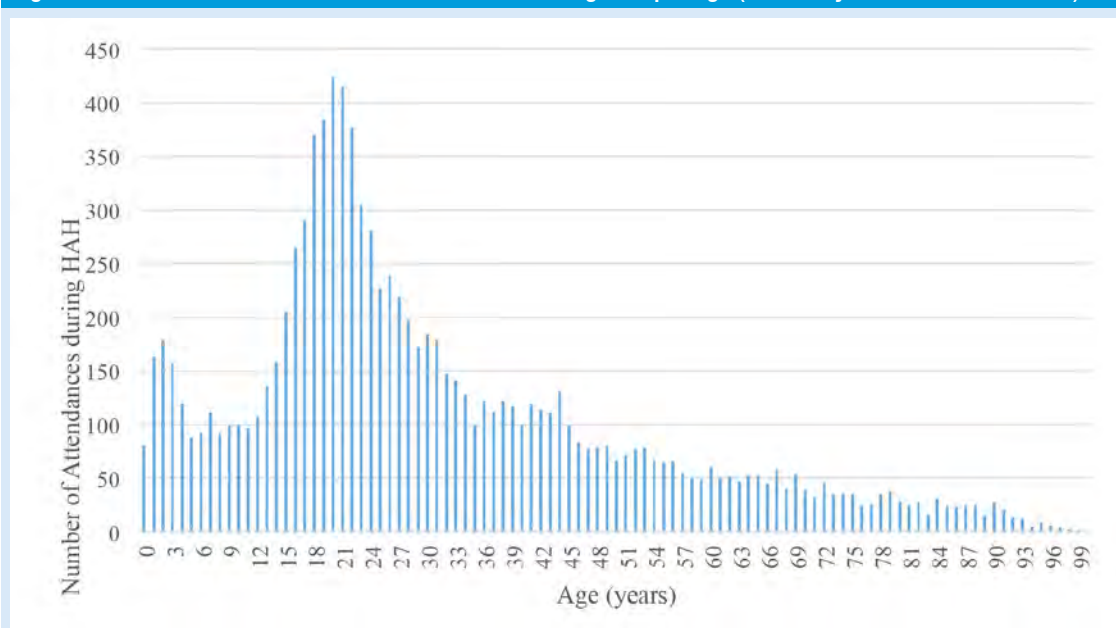
Figure 86 Percentage of injuries occurring within HAH by age group, Canberra (ACT)
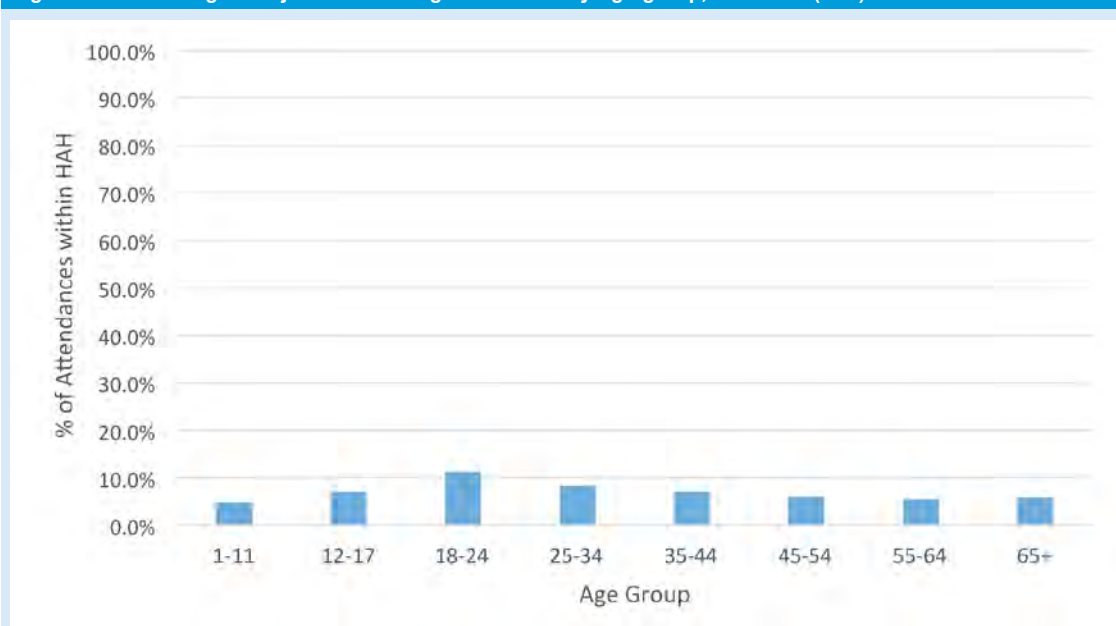
Acute intoxication cases (F10.0)

As well as the injury cases reported above, acute intoxication (F10.0) cases were analysed for Canberra. While this variable is interesting, the classification is seen as being fairly unreliable, resting on the subjective judgment of medical staff and their recording of this code in the face of other injuries or diseases. However, assuming that these biases remain the same over time, following these trends may show a different dynamic to injuries. Between 1 January 2010 and 31 December 2014, there were 2,886 F10.0 cases. Within HAH, 795 cases of F10.0 were recorded over the study period.

The mean age of all F10.0 cases was 35 years, with a mode of 18 years. The mean age for F10.0 cases during HAH was 28 years, with a mode of 19 years. A significantly higher percentage of males attended the ED for acute intoxication overall (57.7%, n=1,666; female: 42.3%, n=1,220, p<0.001), however, this difference was not statistically significant (p>0.05). During HAH, a similar percentage of females (51.7%, n=411) and males were involved in an F10.0 incident (48%, n=384, p>0.05). Figure 87 shows the percentage of F10.0 cases that occurred each month in Canberra, with the highest proportion taking place in November and December.

Figure 87 F10.0 cases by month for Canberra (ACT)
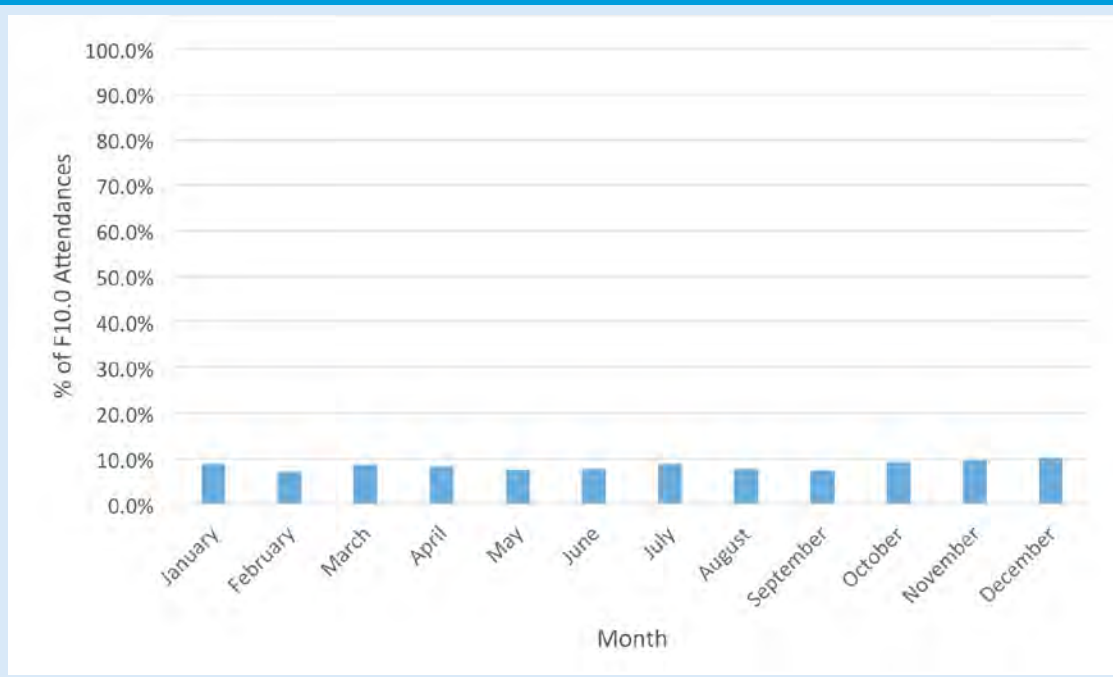
Injury rates during high alcohol hours

The following reports on injury rates over time. The most reliable method identified to track changes over time is by using specific injury codes during HAH. This study will also set out trends in alcohol-related intoxication as reported through the F10.0 code. Figure 88 and Figure 89 report these trends over time for both high alcohol hours and all injury presentations. Furthermore, the dates at which various interventions were implemented are shown using vertical lines. Trend lines have been inserted for each data series.

The percentage of ICD–10 S&T injury cases during HAH ranged between 5.8 percent in the third quarter of 2014 and 8.2 percent in the fourth quarter of 2010. Overall, the proportion of injury cases accounted for during HAH showed a decline over the study period (see Figure 90).

Figure 88 ED attendances during HAH for S&T codes per 10,000 attendances over time for Canberra (ACT)

Figure 89 ED attendance (all injuries, and injuries during HAH) for F10.0 codes per 10,000 attendances over time for Canberra (quarterly)

Drug and alcohol intoxication and subsequent harm in night-time entertainment districts (DASHED)
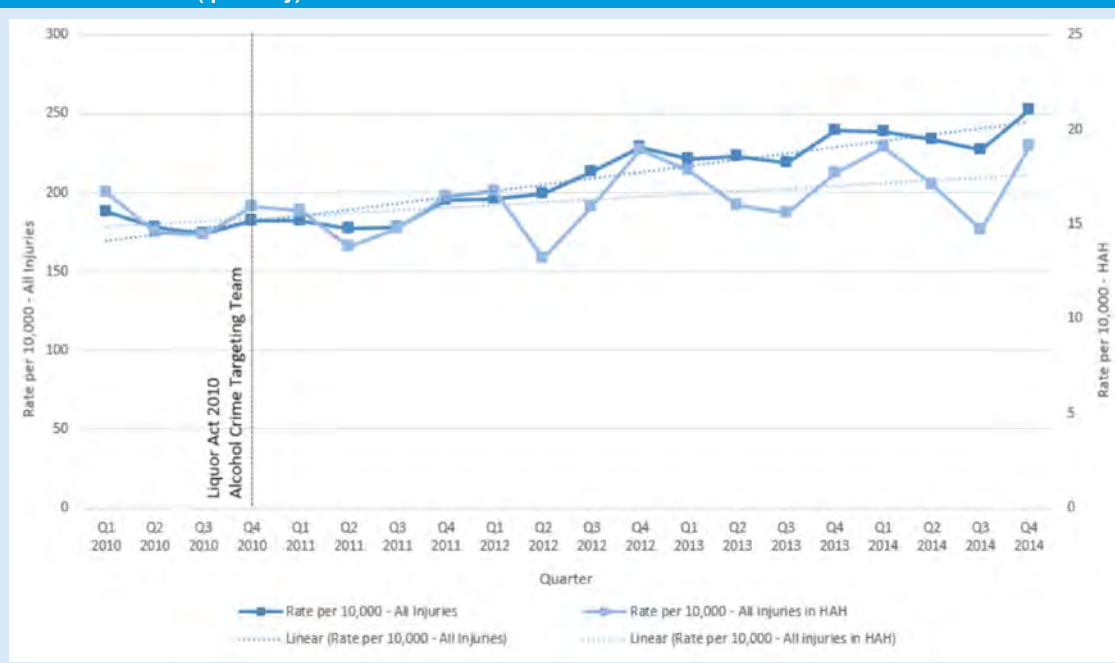
Figure 90 Percentage of S&T cases (in HAH) relative to all injuries at any time of day in Canberra (ACT)
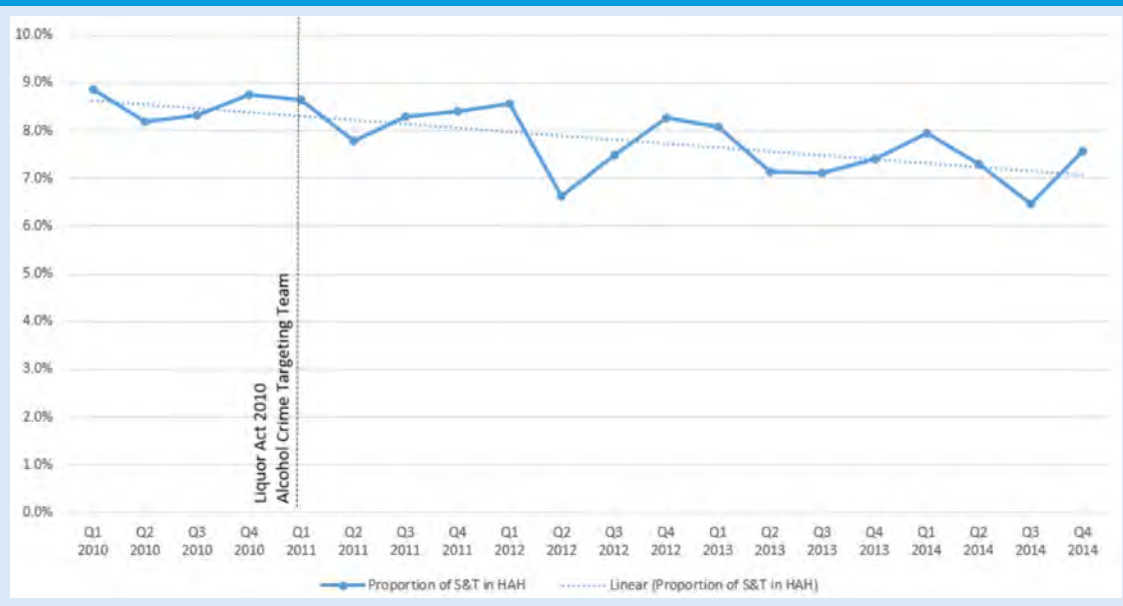
Injury-related ED attendances by time of day on the weekends

When only looking at injuries occurring on a Friday, Saturday or Sunday, as indicated in Figure 91, most of the emergency department attendances for injuries occurred during the day/early evening (9 am to 10 pm) with 8,733 attendances for injury taking place between 10 pm and 6 am. Figure 92 shows the percentage of S&T injuries (within HAH) per month over the measurement period by month, showing a slight annual peak over November/December and declining in the cooler months (April to October).

Figure 91 Number of attendees at Canberra EDs during each hour of the day, Friday to Sunday (1 January 2010 to 31 December 2014)

Figure 91 Number of attendees at Canberra EDs during each hour of the day, Friday to Sunday (1 January 2010 to 31 December 2014)
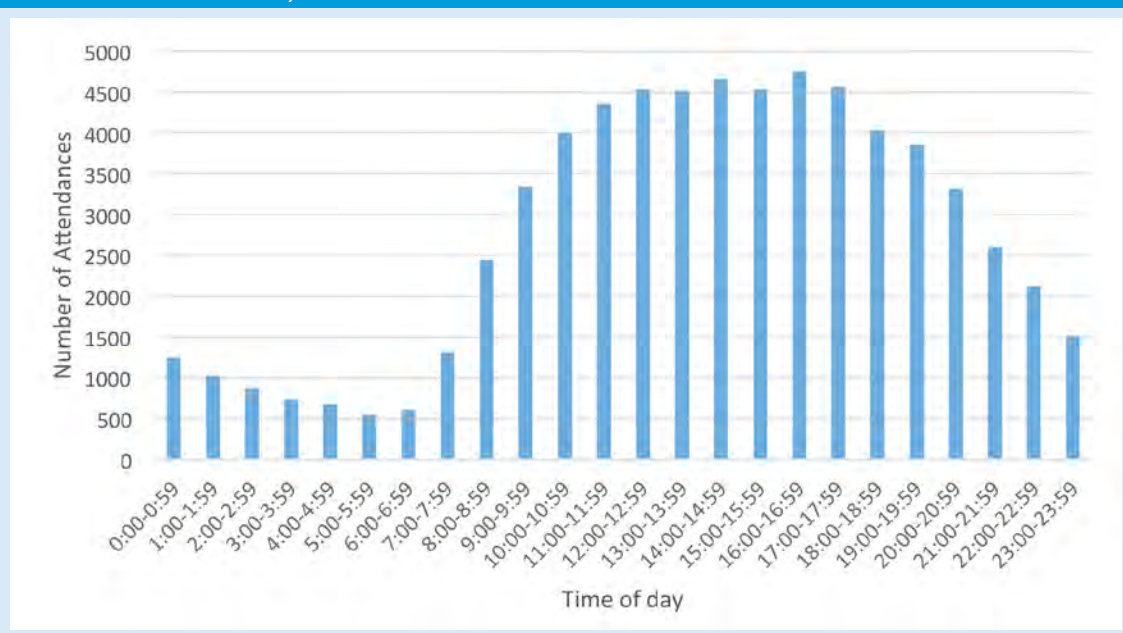
Figure 92 Percentage of ED attendances (S&T codes) within HAH by month, Canberra (ACT)

Drug-related emergency department attendance

Drug-related attendances were identified using drug-related F and T codes from the ICD-9 and ICD-10 (codes use to classify and identify the nature of an emergency department attendance; specifically drug related attendances). Between 1 January 2010 and 31 December 2014, there were 3,576 drug related ED attendances. The mean age for all drug cases (at any time of day) was 31 years, with a mode of 17 years. Females were significantly more likely than males to be involved in a drug-related incident at any time of day (61.3%, n=2,193; male: 38.7%, n=1,383; p<0.001).

Figure 93 shows the percentage of drug-related ED attendances per month over the measurement period, with highest number of attendances in September and November, whereas Figure 94 shows the proportion of drug-related incidents per quarter across each year.

Figure 93 Percentage of drug-related ED attendances by month for Canberra (ACT)

Figure 94 Percentage of drug-related attendances relative to all ED injuries in Canberra, by quarter and year
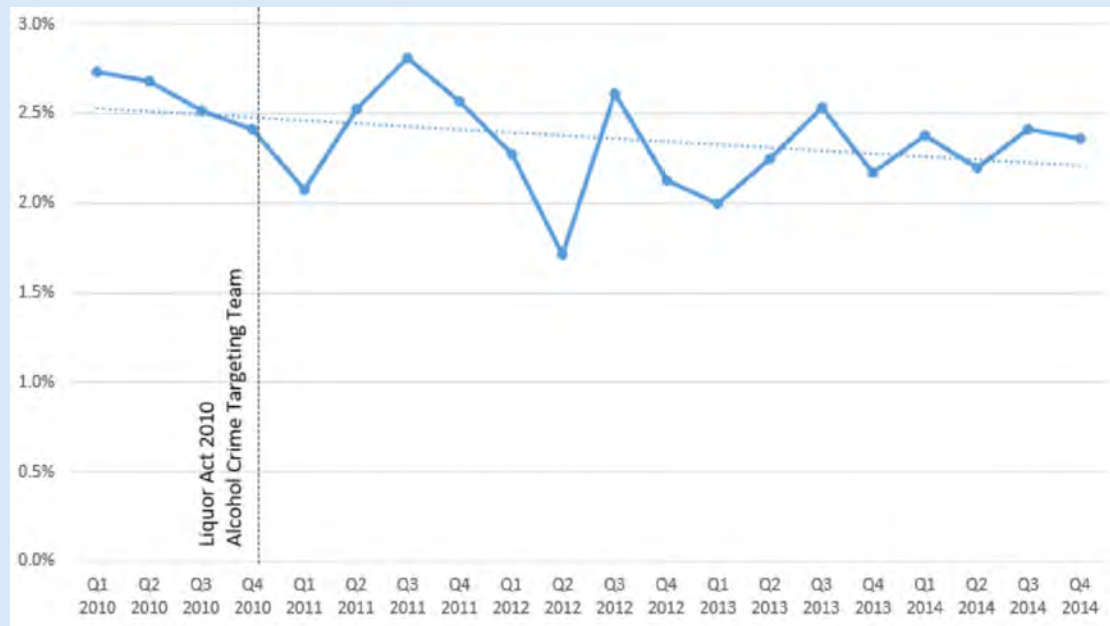
Time series analyses

The weekly rate of injury presentations to the ED per 10,000 people from January 2010 to December 2014 for Canberra is shown in Figure 95. It reflects a steady increase in ED presentations from 2012 onwards.

Figure 95 Rate of injury-related ED presentations during high-alcohol hours from 2010–14, Canberra (ACT)
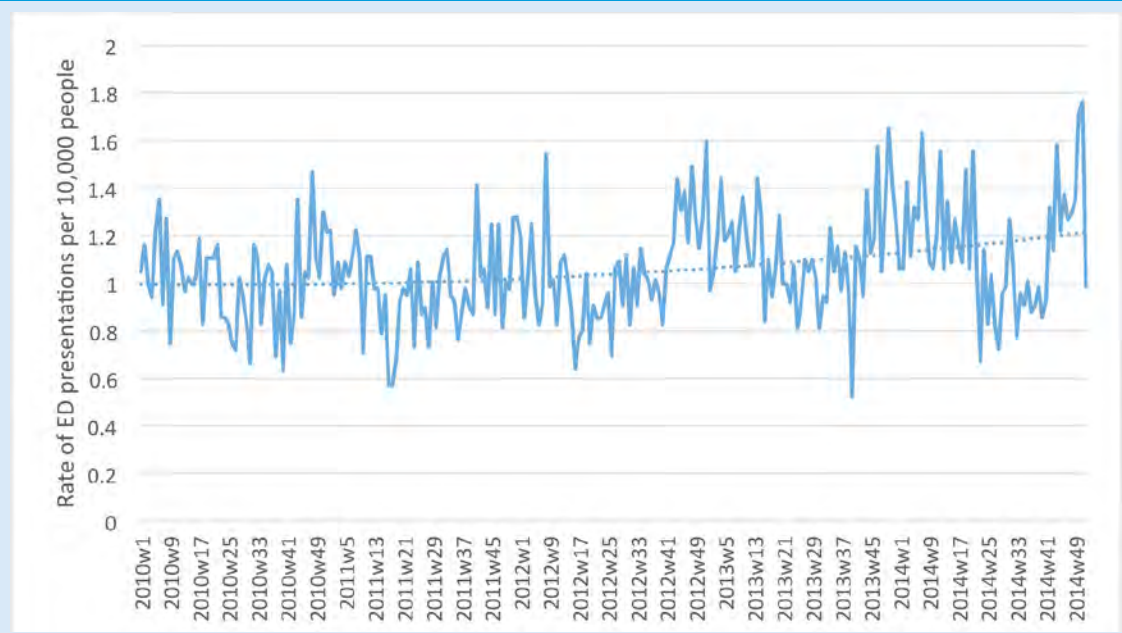
Using an ARIMA model, researchers examined the effect of two interventions on the rate of emergency department injury presentations in Canberra during HAH. First order differencing was used to transform the rate of ED injury presentations into a stationary series. The best-fitting model identified included one moving average term; ARIMA(0,1,1). The model fitted the data well, with a non-significant Portmanteau test for white noise (Q=45.90, p=0.24). The multivariable ARIMA model indicated that neither of the interventions had a significant effect on the rate of ED injury presentations during HAH in Canberra (see Table 88).

Table 88 The effect of interventions implemented in Canberra on the rate of emergency department injury presentations per week		
Intervention	Coefficient (95% CI)	p-value
Liquor Act (lag 2)	0.06 (-0.31, 0.42)	0.759
ACTT (lag 2)	-0.10 (-0.34, 0.14)	0.435
Model parameters moving average (lag 1)	-0.77 (-0.84, -0.70)	<0.001

Hobart

Overall, 75,096 injury (S&T codes ICD-10) cases presented at the Royal Hobart Hospital emergency department between 31 December 2009 and 30 June 2015. Of these, 6,544 (8.7%) occurred during the HAH of Saturday and Sunday morning (00:00 to 05:59). Overall injury rate trends for Hobart are presented in Figure 99 along with rates for HAH.

Based on data derived from the triage notes, between 31 December 2009 and 30 June 2015 there were 4,725 triage presentations involving alcohol. The mean age of people attending for all injuries was 33 years, whereas the mean age of people attending ED with injuries during HAH was 32 years.

Injury codes (S&T) cases

Males (58%, n=43,760) were significantly more likely than females (41.7%, n=31,315) to be involved in injury-related attendances (p<0.001). Similarly, during high alcohol hours (HAH), males (61.3%, n=4,009) were also significantly more likely than females (38.7%, n=2,530) to be injury-related attendees (p<0.001).

Figure 96 shows the distribution of age for all HAH attendances, highlighting the over-representation of the 18–24 year old age group. Those in the 18–24 year and 25–34 year age groups were most likely to be injury-related attendees during HAH (see Figure 97).

Figure 96 Number of attendances at Hobart EDs during HAH per age (31 December 2009 to 30 June 2015)

*Drug and alcohol intoxication and subsequent harm in night-time entertainment districts (DASHED)*
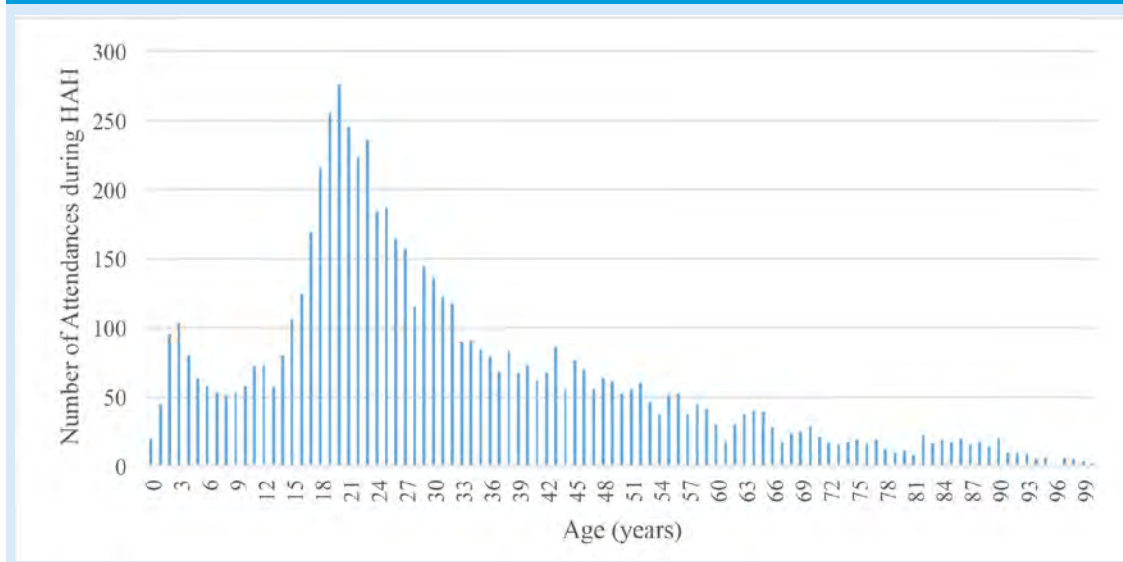
Figure 97 Percentage of injuries occurring within HAH by age group Hobart (Tas)
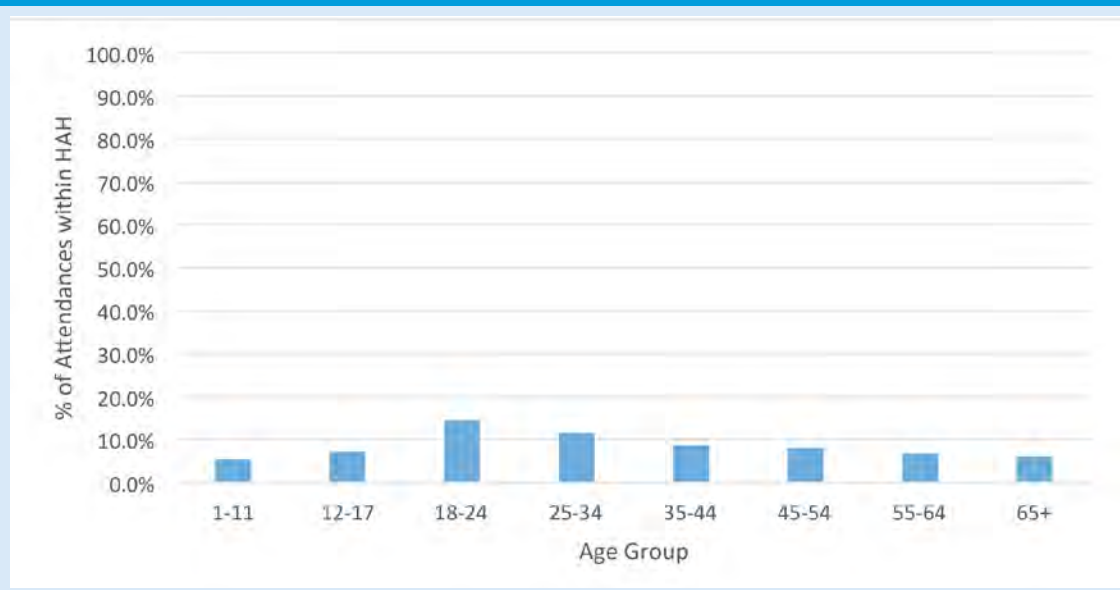
F10.0 (acute intoxication) cases

As well as the injury cases reported above, acute intoxication (F10.0) cases were also analysed for Tasmania. Between 31 December 2009 and 30 June 2015, there were 1,989 F10.0 cases. When filtering for HAH, 477 cases were recorded over the study period.

The mean age of all F10.0 cases was 38 years, with a mode of 19 years. The mean age for F10.0 cases during HAH was 31 years, with a mode of 19 years. Males were significantly more likely to attend ED for acute intoxication overall (60.2%, n=1,198; female: 39.8%, n=791, p<0.001). Although a higher percentage of males attended the ED for acute intoxication during HAH compared with females (53.9%, n=257, female: 46.1%, n=220), this difference was not statistically significant (p>0.05). Figure 98 shows the percentage of F10.0 cases by month in Hobart from 2010–14, with cases occurring most frequently in October and December.

Figure 98 F10.0 cases by month for Hobart (1 January 2010 to 31 December 2014)
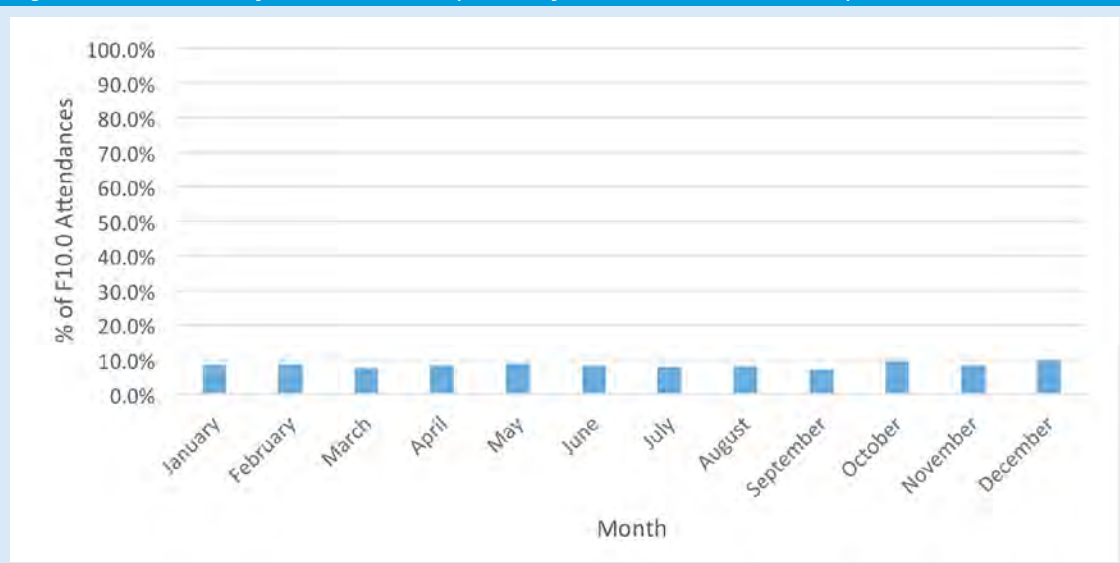
Injury rates during high alcohol hours over time

The following reports on injury rates over time. The most reliable method identified to track changes over a period is by using specific injury codes during HAH. It also indicates trends in alcohol-related intoxication as reported through the F10.0 code. Figure 26 and Figure 27 report these trends over time for both high alcohol hours and all injury presentations.

The percentage of ICD-10 S&T injury cases during HAH ranged from 7.4 percent in the second quarter of 2014 to 10.5 percent in the fourth quarter of 2011. Overall, the percentage of injury cases accounted for during HAH showed a decline over the study period (see Figure 101).

Figure 99 ED attendances during HAH for S&T codes per 10,000 attendances over time for Hobart (Tas)
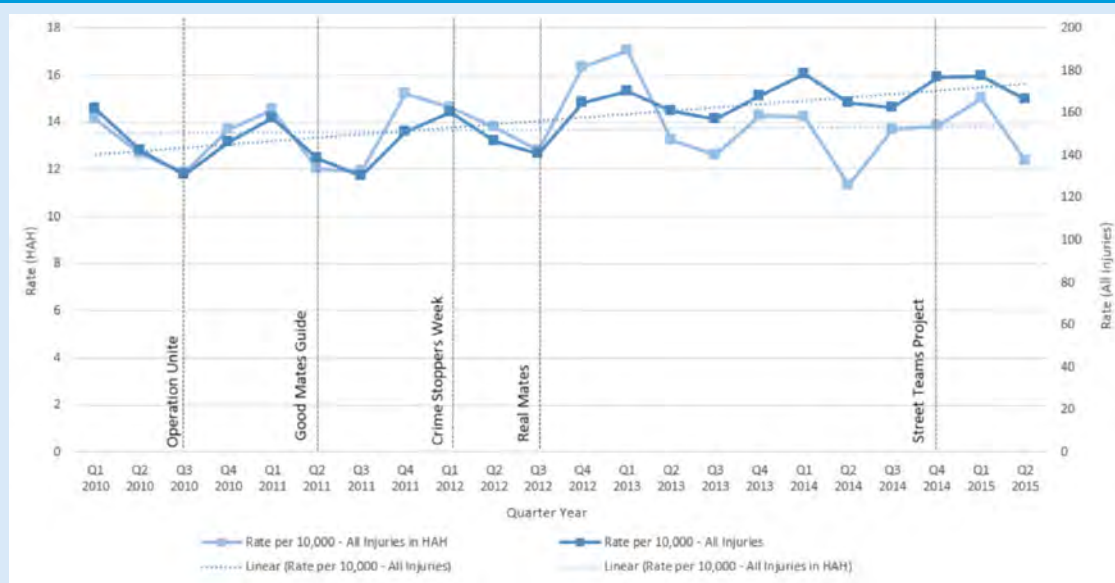
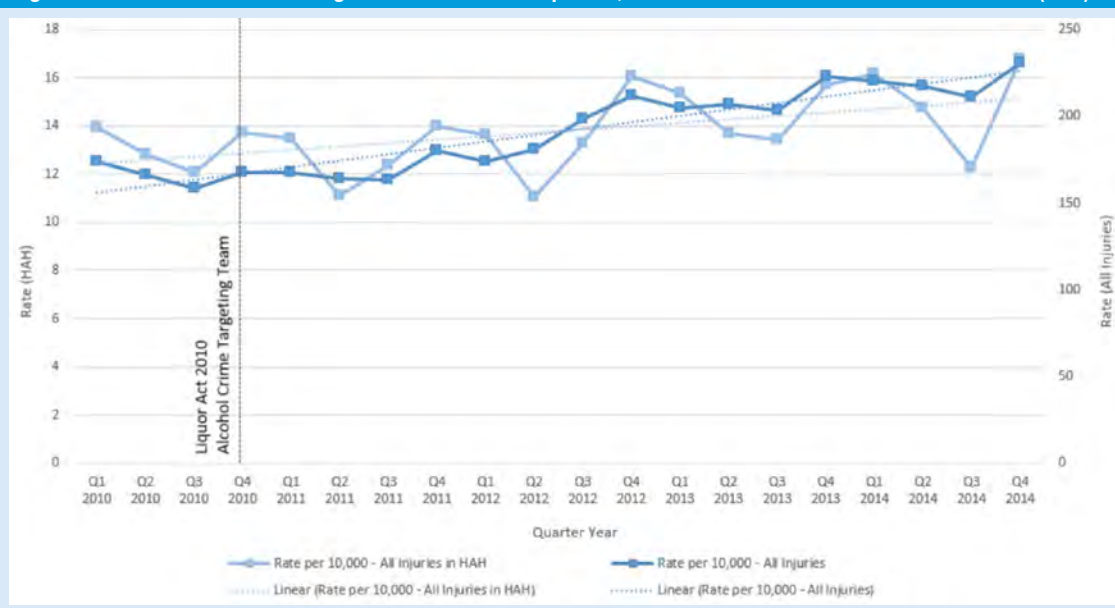
Figure 100 ED attendances (all injuries and injuries during HAH) for F10.0 codes per 10,000 attendances quarterly over time for Hobart (Tas)

Drug and alcohol intoxication and subsequent harm in night-time entertainment districts (DASHED)
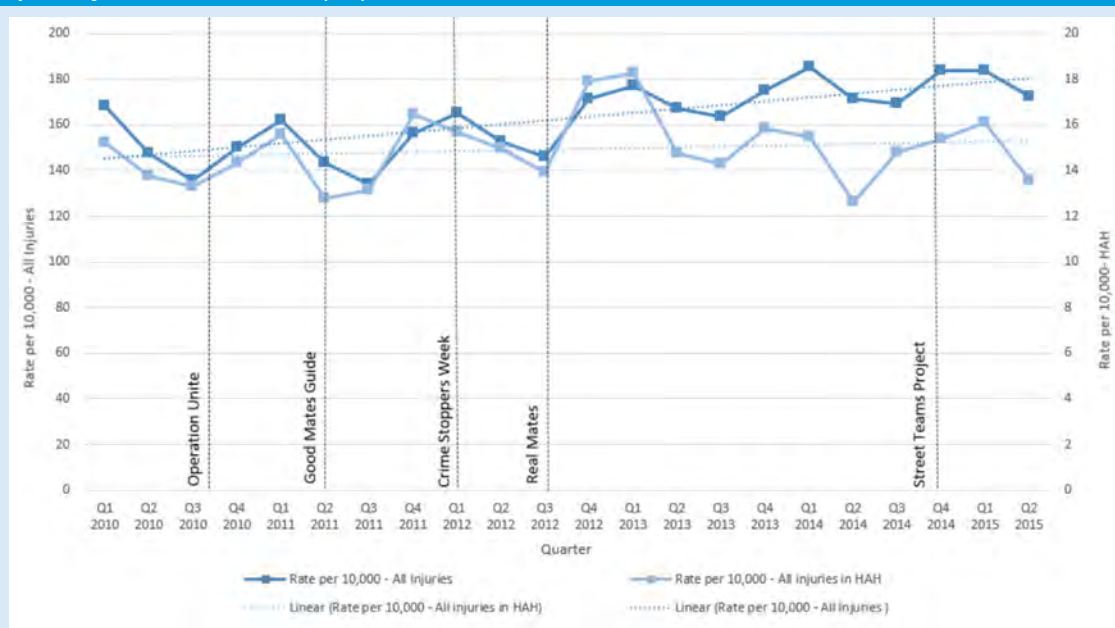
Figure 101 Percentage of S&T cases (in HAH) relative to all injuries at any time of day in Hobart (Tas)
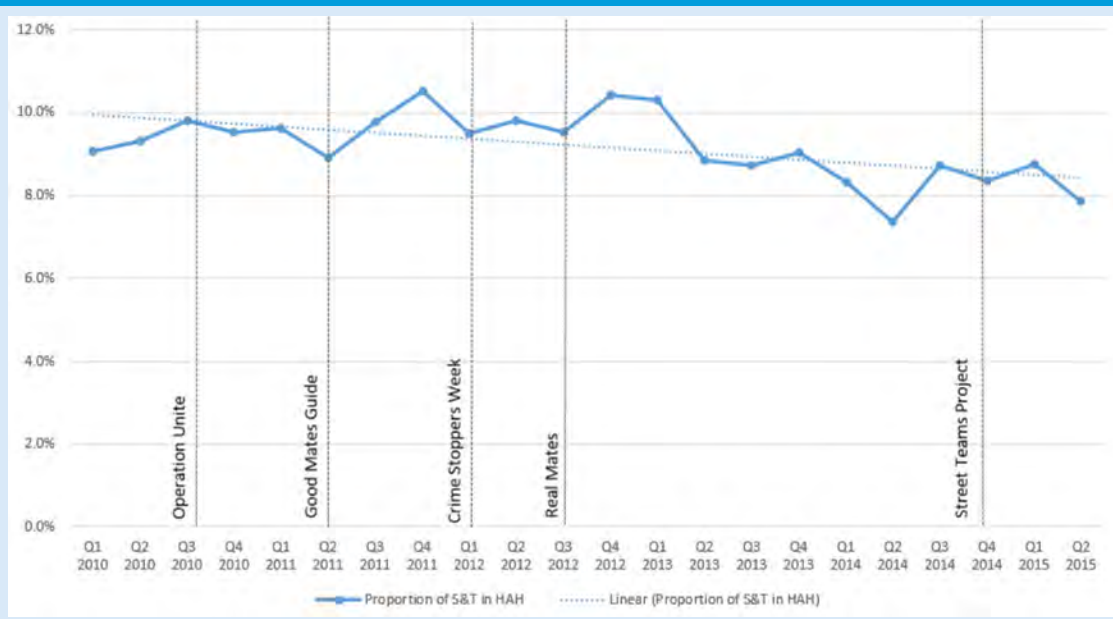
Triage presentations

Based on data obtained from triage notes, 4,725 triage presentations involved alcohol between 31 December 2009 and 30 June 2015. Age of those presenting ranged from zero to 92, with a mean age of 37, and a mode of 19. The age group 18 to 24 years was the largest, and comprised 23.1 percent (*n*=1,092) of all cases. The age group of 25 to 34 years were the next largest group, and comprised 21.5 percent (*n*=1,016) of cases. Almost two-thirds of triage presentations during HAH involved males (65.8%, *n*=939).

Injury-related ED attendances by time of day, and day of week

As indicated in Figure 102, most of the attendances for injuries occurred during the day/early evening (9 am to 10 pm). The 5,662 attendances for injury, occurred between 10 pm and 6 am. Figure 103 shows the percentage of S&T injuries (within HAH) by month, showing a slight annual peak over summer (November to January), and declining in the cooler months.

Figure 102 Number of attendees at Hobart EDs during each hour of the day, Friday to Sunday (31 December 2009 and 30 June 2015)
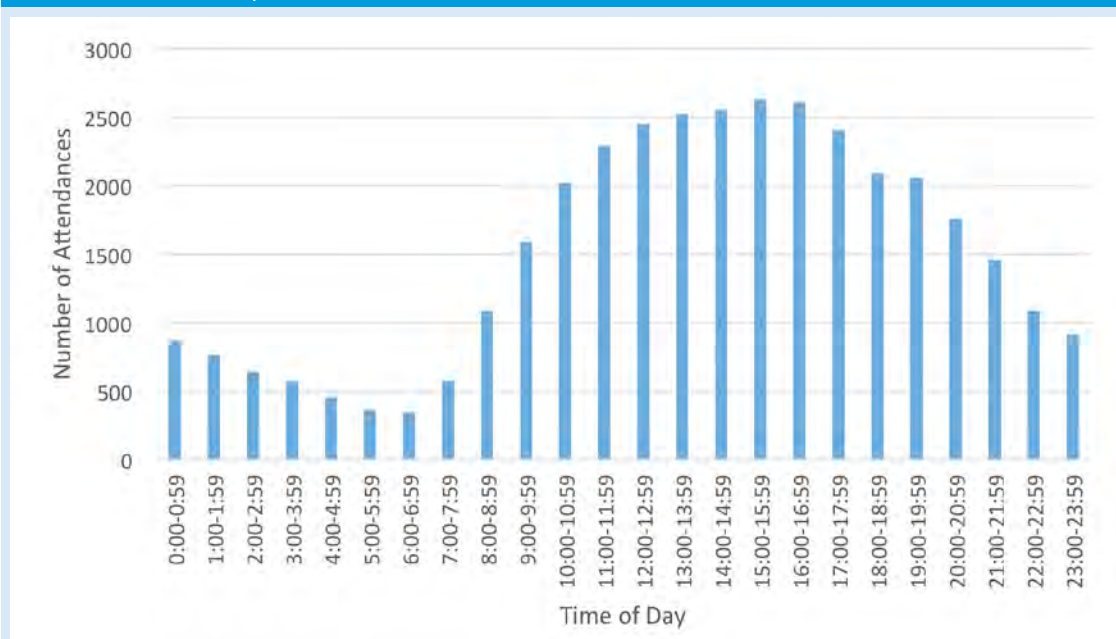
Figure 103 ED attendees for injury (S&T codes) within HAH in Hobart EDs per month (1 January 2010 to 31 December 2014)
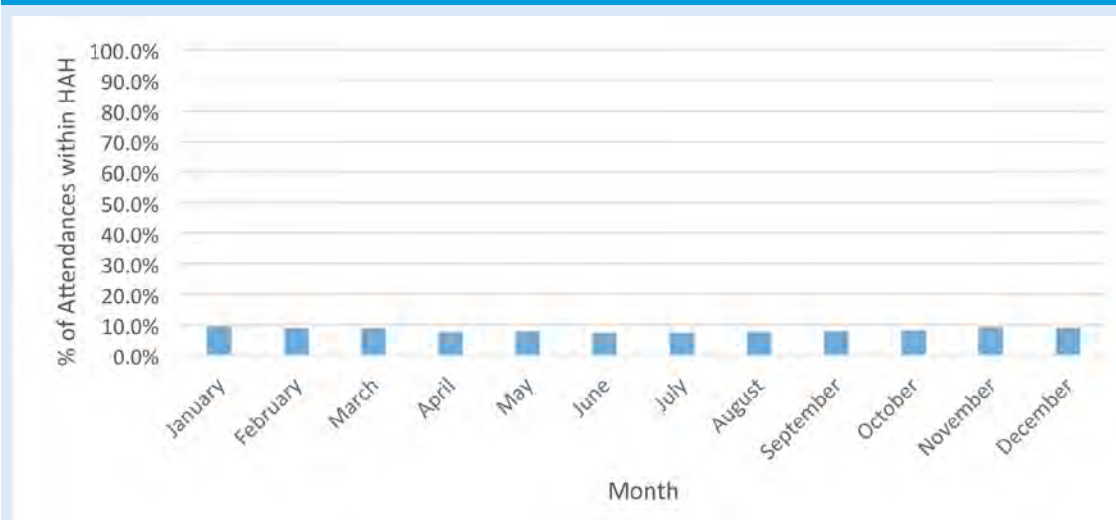
Drug-related ED attendances

Between 31 December 2009 and 30 June 2015, there were 2,327 drug-related cases. During HAH, 288 drug-related cases were recorded over this period. The mean age for all drug cases (at any time of day) was 37 years, with a mode of 18 years. Females were significantly more likely than males to have a drug-related attendance at any time of day (65.4%, n=1,522; male: 34.6%, n=805, p<0.001). Figure 104 shows the percentage of drug-related ED attendances per month over the measurement period, with the number of attendances highest in October and November, whereas Figure 105 shows the percentage of drug-related attendances per quarter across each year.

Figure 104 Drug-related ED cases by month for Hobart (1 January 2010 to 31 December 2014)
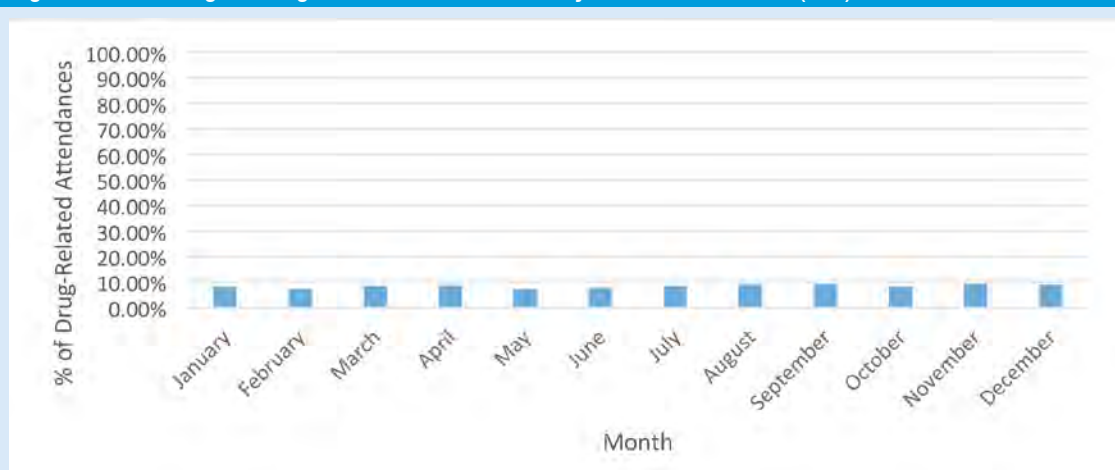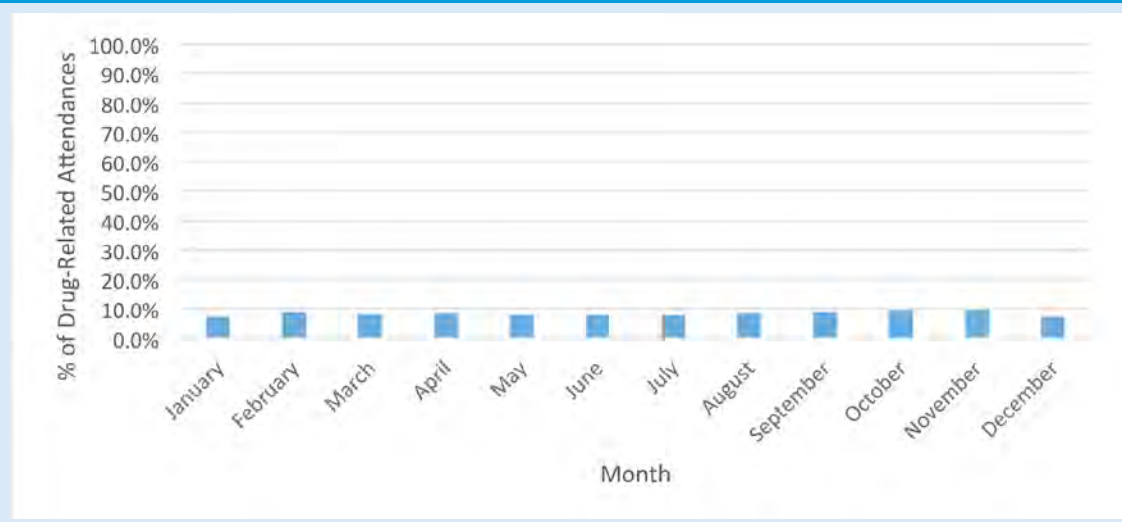

Figure 105 Percentage of drug-related incidents relative to all ED injuries in Hobart, by quarter and year
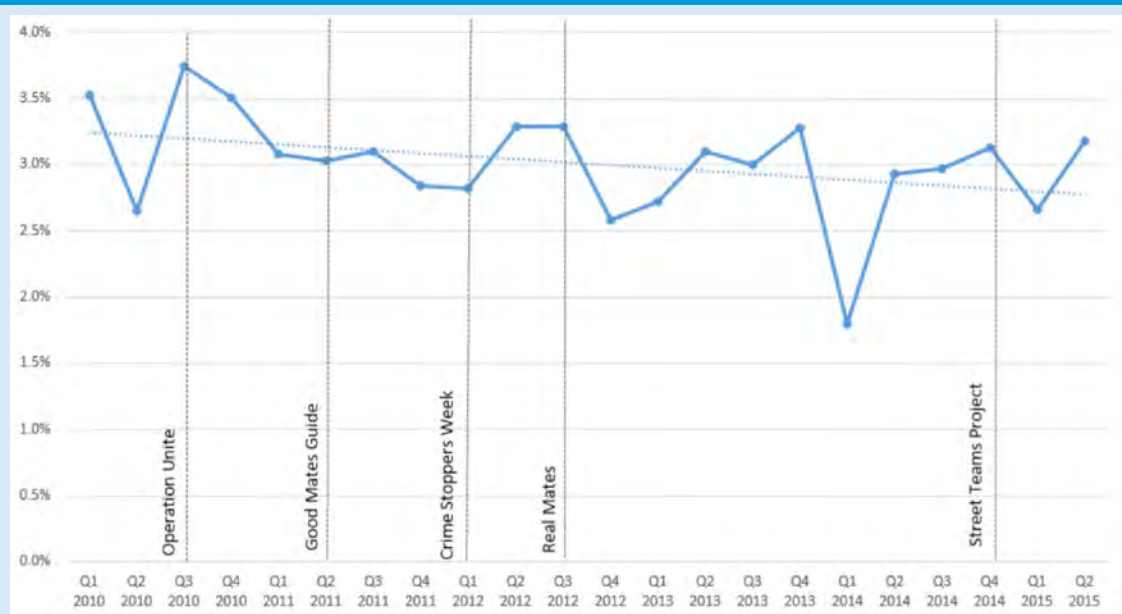
Time series analysis

The weekly rate of injury presentations to the ED per 10,000 people from January 2010 to December 2014 for Hobart is set out in Figure 106. As shown, the rate of injury-related ED presentations remained relatively steady over the study period.

Figure 106 Rate of injury-related ED presentations during high-alcohol hours from 2010–15, Hobart (Tas)
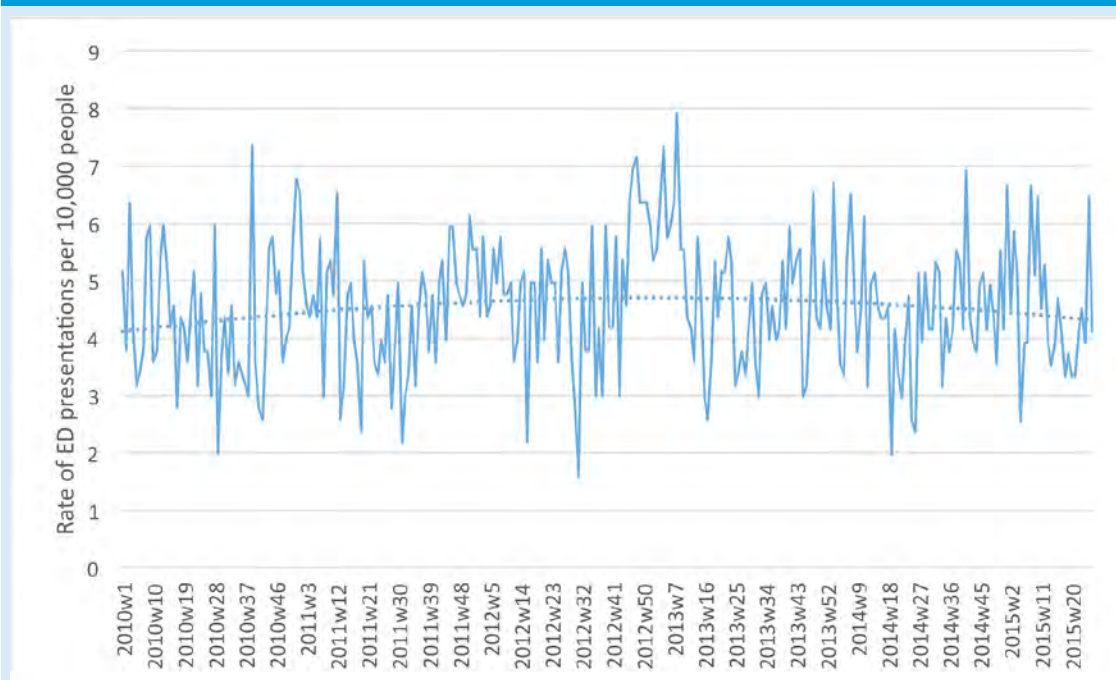
The effect of five interventions on the rate of emergency department injury presentations in Hobart during HAH was examined using an ARIMA model. The best-fitting model identified included one autoregressive term and one moving average term; ARIMA(1,0,1). The model fitted the data well, with a non-significant Portmanteau test for white noise (Q=50.72, p=0.12). The multivariable ARIMA model indicated that none of the interventions had a significant effect on the rate of ED injury presentations during HAH in Hobart (see Table 89).

Table 89 The effect of interventions implemented in Hobart on the rate of emergency department injury presentations per week		
Intervention	Coefficient (95% CI)	p-value
Operation Unite (lag 0)	-0.20 (-0.92, 0.53)	0.592
Real Mates (lag 1)	-0.43 (-6.78, 5.89)	0.893
Good Mates (lag 1)	-0.65 (-1.70, 0.40)	0.224
Crime Stoppers Week (lag 2)	-0.37 (-1.17, 0.43)	0.363
Street Teams (lag 2)	-0.21 (-1.02, 0.59)	0.607
Model parameters		
Autoregression (lag 1)	0.88 (0.74, 1.02)	<0.001
Moving average (lag 1)	-0.74 (-0.93, -0.54)	<0.001

Summary of trends for emergency department admissions

In Canberra, most injury-related ED attendees overall (58%) and during HAH (59%) were male. Those aged between 18 and 24 years were most likely to attend the ED during HAH for an injury-related cause. Those attending the ED for acute intoxication (F10.0 cases) during HAH were also young, with a mean age of 28 and a modal age of 19 years. The mean age of those attending the ED for drug-related causes was 31 years with a mode of age of 17. Most drug-related attendees were female (61%).

For injuries occurring on a Friday, Saturday or Sunday, most attendances occurred during the day (9 am to 10 pm). Monthly averages of S&T injuries (within HAH) showed a slight annual peak over November/December and a decline in the cooler months (April to October). Overall, there was a steady increase in injury-related ED presentations during HAH over the measurement period, particularly from 2012 onwards. A time-series analysis indicated that neither of the interventions implemented during the measurement period had a significant impact on the rate of ED injury presentations during HAH in Canberra.

In Hobart, most injury-related ED attendees overall (58%) and during HAH (61%) were male. Those aged between 18 and 24 years and from 25 to 34 years were most likely to attend the ED during HAH for an injury-related cause. Those attending the ED for acute intoxication (F10.0 cases) during HAH had a mean age of 31 years and a modal age of 19 years. The mean age of drug-related attendees was somewhat older at 37 years; however, the modal age was much lower at 18 years. Most drug-related attendees were female (65%).

Figure 107 and Figure 108 show the rate per 10,000 of drug-related emergency department attendances between 2010 and 2014 for Canberra and Hobart. In Canberra, rates have increased from 17.9 in 2012 to 21.7 in 2014. In Hobart, rates have fluctuated between 17.9 in 2011 to 20.6 in 2013, with a reduction again in 2014.

Figure 107 Rate per 10,000 of drugs-related emergency department attendances by year, Canberra (ACT)
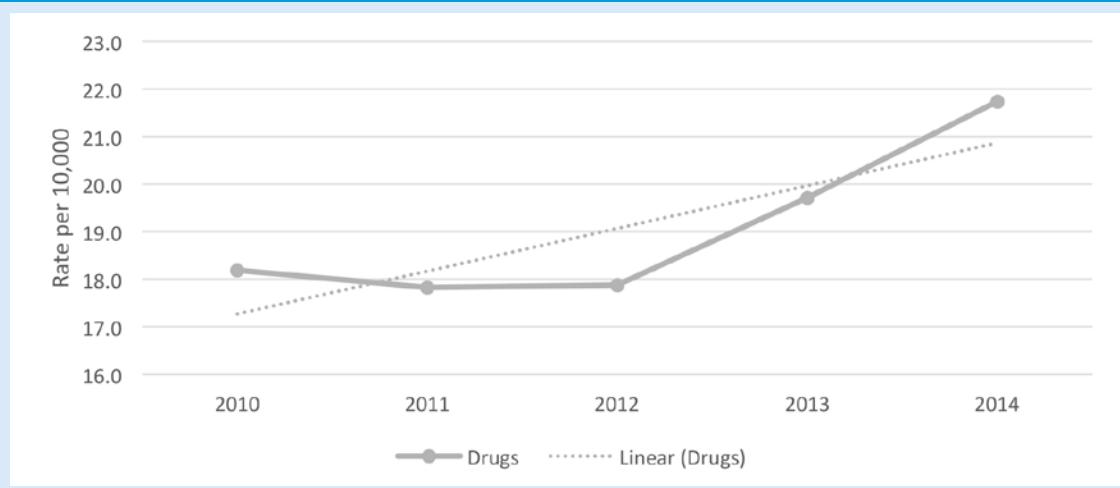
Figure 108 Rate per 10,000 of drugs-related emergency department attendances by year, Hobart (Tas)
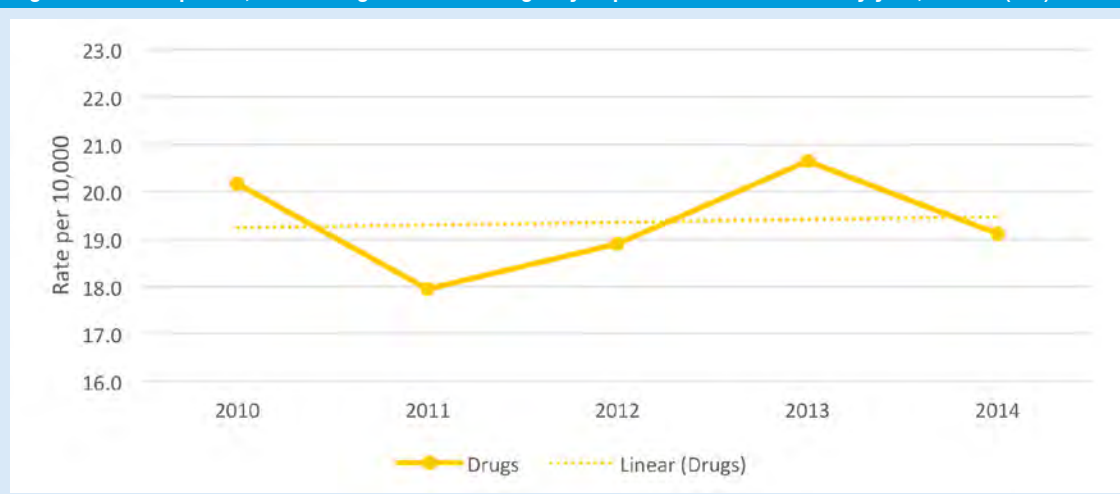
When only looking at injuries occurring on Friday, Saturday or Sunday, most ED attendances occurred during the day (9 am to 10 pm). Monthly averages of S&T injuries (within HAH) by month showed a slight annual peak over summer (November to January), with a decline in the cooler months. Overall, the rate of injury-related ED presentations remained steady over the study period. A time-series analysis indicated that none of the five interventions implemented during the measurement period had a significant effect on the rate of ED injury presentations during HAH in Hobart.

Admitted patient data

Admitted patient data was only provided for Hobart. No time series analysis was performed for this data due to low numbers.

Hobart

Admitted patient data was obtained from the Royal Hobart Hospital in Hobart, Tasmania. Between 12 June 2009 and 30 June 2015, 50,286 cases were analysed. Overall, there were 1,982 S&T admissions involving alcohol, and 510 cases involving drugs. The mean age of all admitted patients was 56, with a mode of 69. More males than females were admitted (male: 56.6%, n=28,438; female: 43.4%, n=21,848).

Alcohol-related cases

More males than females were admitted for alcohol-related incidents (male: 65.3%, n=1,295; female: 34.7%, n=687). The age of those involved in alcohol-related incidents (within S&T code) ranged from 15 to 98 years, with a mean age of 47.1 years.

Figure 109 shows number of alcohol-related cases of admitted patient data by age group. The group of 25 to 34 years was the largest (19%, n=362), closely followed by the 45 to 54 year group (18.3%, n=362).

Figure 109 Number of alcohol-related admissions by age group
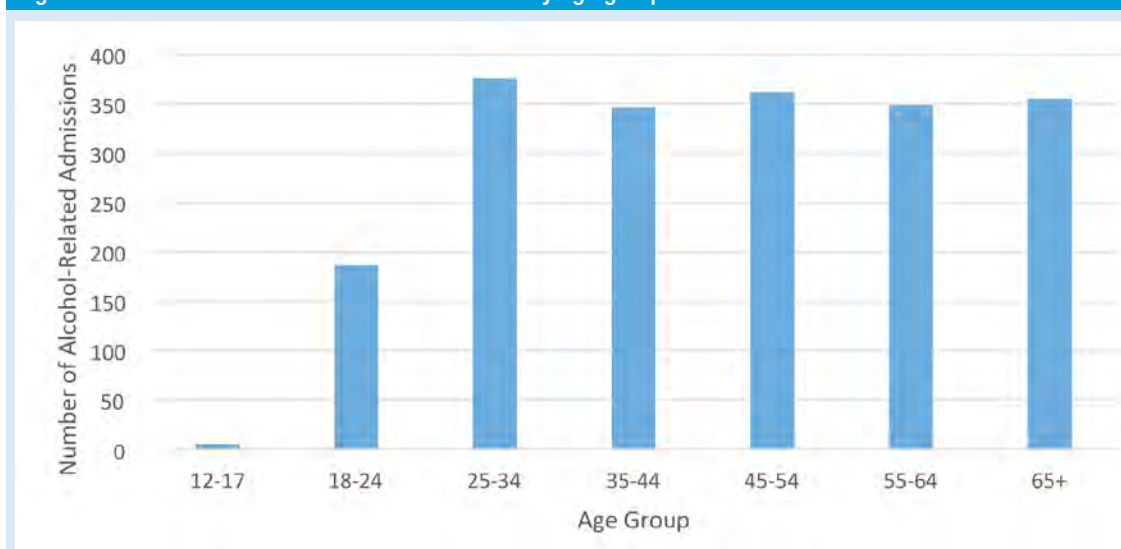
Figure 111 shows the number of alcohol-related cases by month (totalled across the years) and shows frequency of alcohol-related cases by quarter year.

Figure 110 Number of alcohol-related admissions by month totalled over the years of observation, Hobart (Tas)
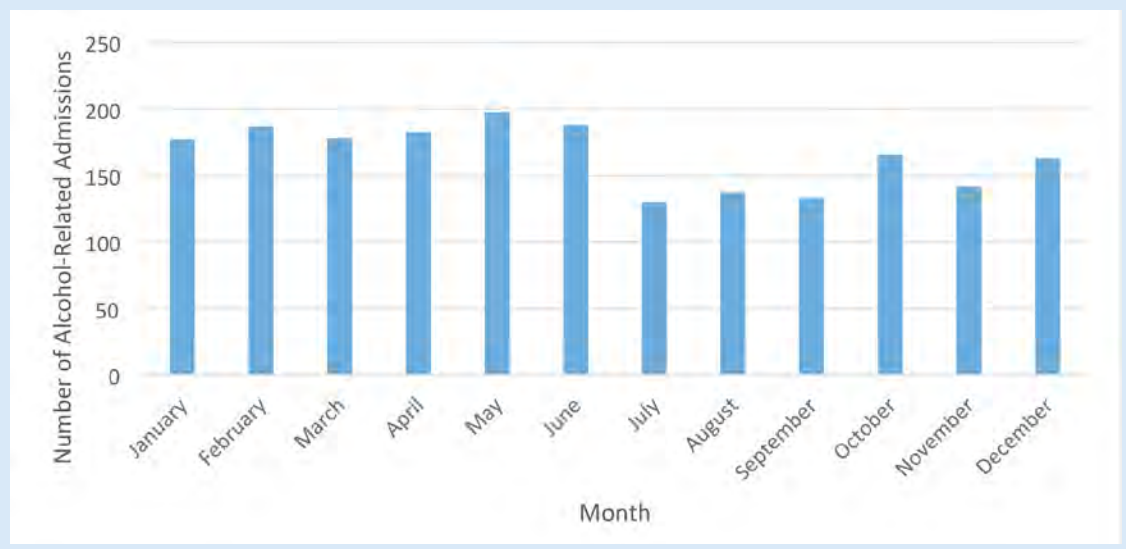
As shown in Figure 110 there was a general trend for a greater number of alcohol-related cases in the first half of the year (January–June) compared with the second half of the year (July–December). Figure 111 shows that the number of alcohol-related cases gradually increased over the measurement period.

Figure 111 Number of alcohol-related admissions by quarter year in Hobart (Tas)
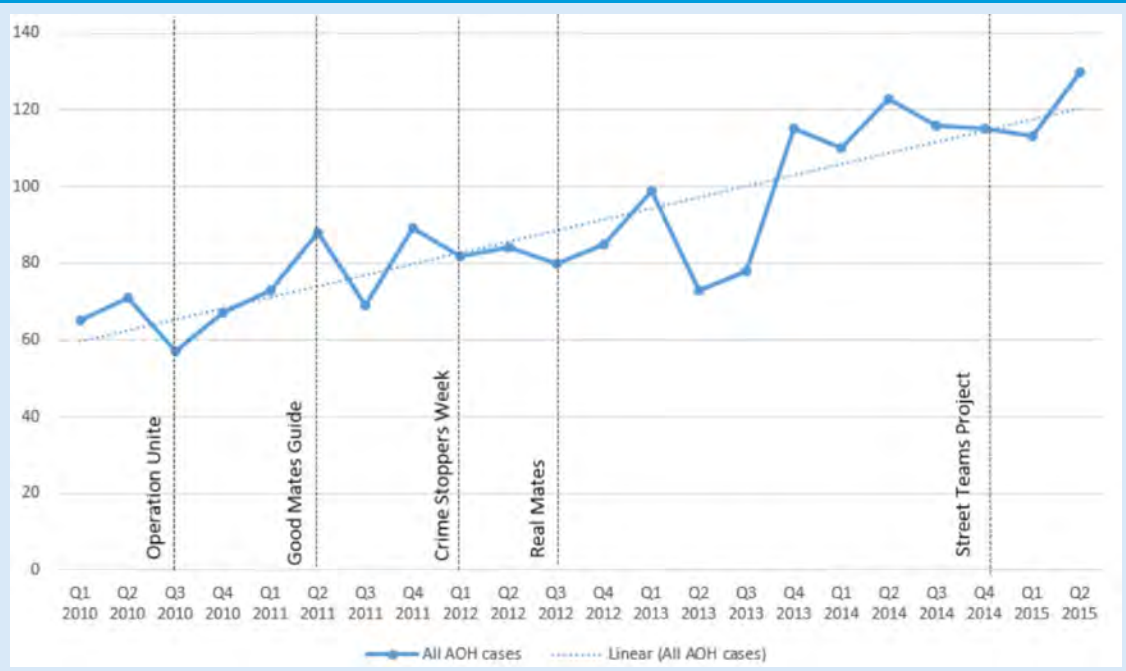
Drug-related cases

More females than males had a drug-related admission (female: 53.9%, n=275; male: 46.1%, n=235). The age range of those involved in drug-related admissions ranged from nine to 94 years, with a mean age of 43.6 years.

Figure 112 shows the number of drug-related admissions by age group. The greatest number of admissions was for those aged between 45 and 54 (21.1%, n=108), closely followed by those aged between 35 and 44 years (20.8%, n=104).

Figure 112 Number of drug-related admissions by age group
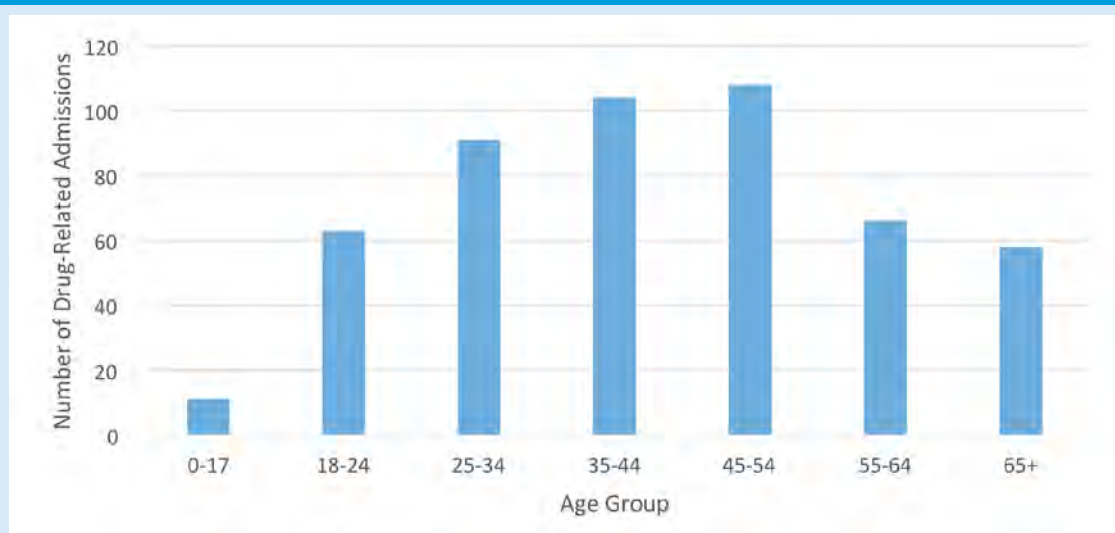
Figure 113 shows the monthly average number of drug-related admissions over the years and Figure 114 shows number of drug-related cases by quarter year.

Figure 113 Monthly number of drug-related admissions totalled over the years of observation, Hobart (Tas)
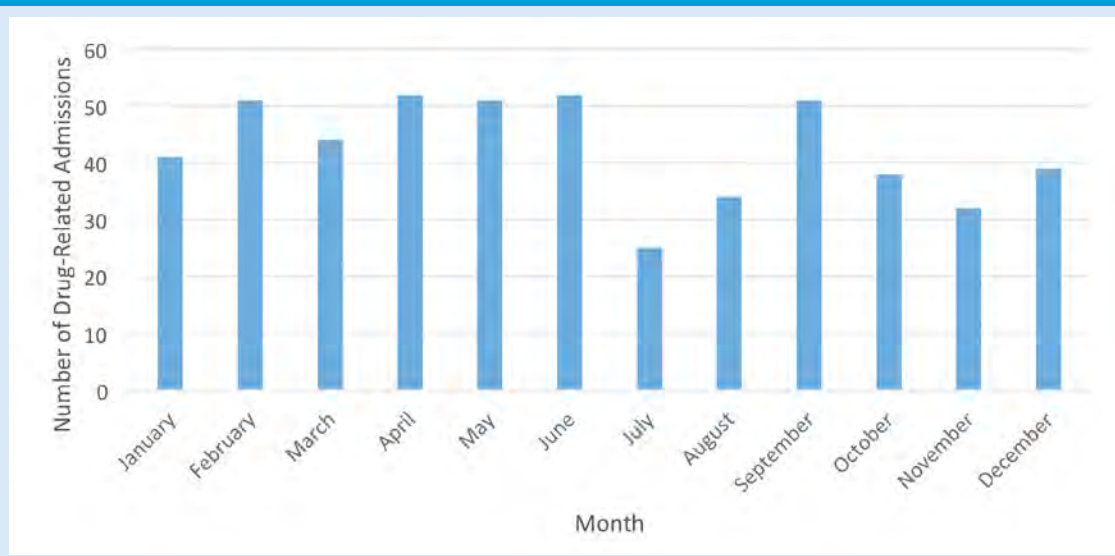
Figure 113 shows a general trend for a greater frequency of drug-related cases in the first half of the year (January–June) compared with the second half (July–December) with the exception of September. Figure 114 shows that the number of drug-related cases gradually increased over the measurement period.

Figure 114 Number of drug-related admissions by quarter year in Hobart (Tas)
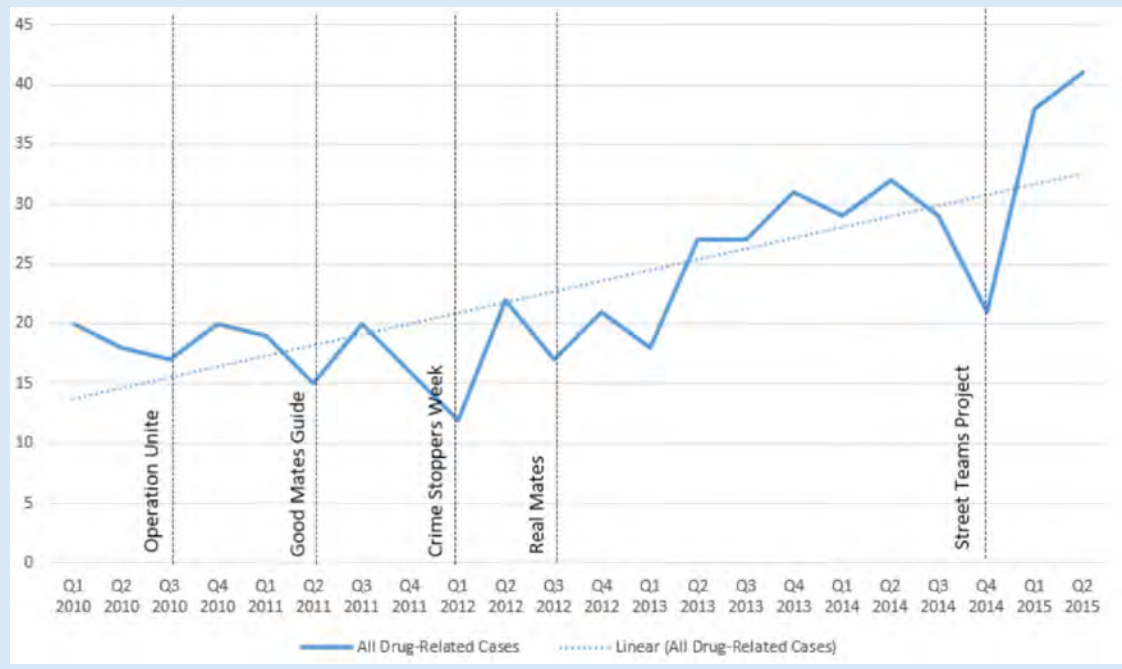
Offence data

Canberra

This section presents assault, property damage, street offence, and drink-driving data occurring in the Canberra suburbs City and Braddon (which encompass the main entertainment precincts of Canberra).

Assaults

Between 1 January 2010 and 30 December 2014, there were 2,296 assaults in the entertainment areas of Canberra (City: n=1957; Braddon: n=339). The following sections will analyse trends in assaults overall, and by whether they were alcohol-related, and occurred within high alcohol hours (HAH). The definition of HAH used for the analysis of police records is between 8 pm and 6 am Friday to Sunday morning (Laslett et al. 2006).

Of all assaults, 51.2 percent (n=1,177; City: n=1,074, 54.9%; Braddon: n=103, 30.4%) took place during HAH and since 2011, 60.1 percent (n=1,090; City: n=990, 64.1%; Braddon: n=100, 37.3%) were alcohol-related. Of the total number of assaults (n=1,813) occurring during 2011–15, n=268 were in Braddon and n=1,545 in the City. Only 15 (0.65%) assaults were drug-related (ie drugs were seized), all of which occurred in City.

Table 90 Number of assaults in Braddon and City, January 2010 to December, 2014 in Canberra (ACT)

	Braddon	City
All assaults	339	1,957
Alcohol-related (all)	120	1,189
HAH	103	1,074
Drugs seized	0	15

Demographics

Victims

During the measurement period, there were 2,082 victims of assault in Braddon (*n*=300) and City (*n*=1,782). As shown in Figure 115 and Figure 116, victims of assault in Braddon and City were overwhelmingly in the 18 to 24 and 25 to 34 age groups. Assault victims in Braddon and City appear to be younger than those in the ACT overall. Assault victims in 2014 in the ACT were most likely aged between 25 and 34 years (26%), followed by 20 to 24 years (18%), and 35 to 44 years (16%) (ABS 2015).

Figure 115 Percentage of assault victims by age group: Braddon (ACT)
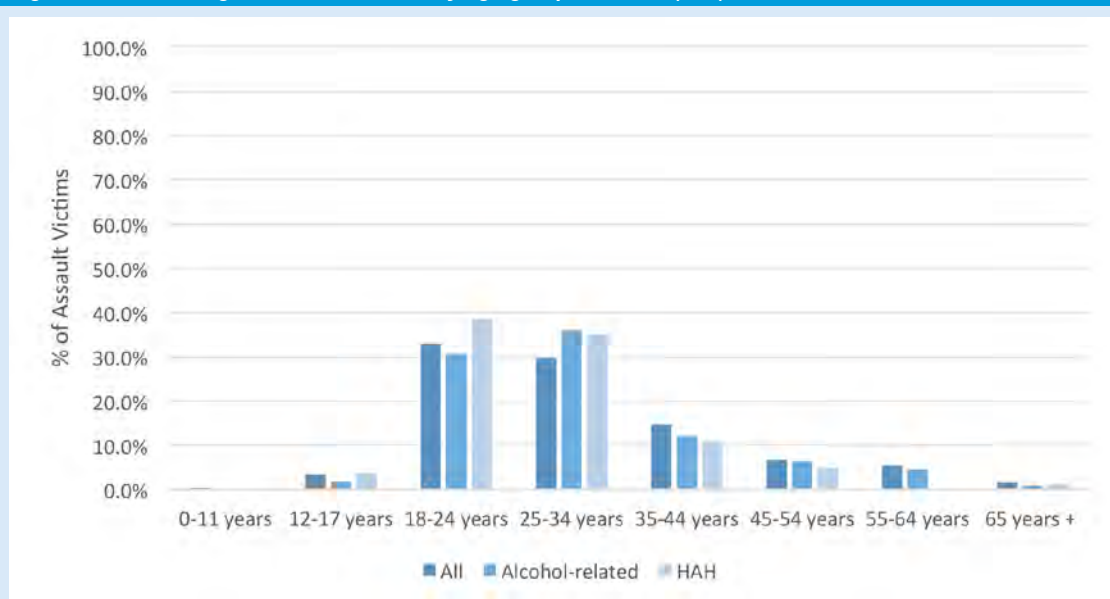
Figure 116 Percentage of assault victims by age group: City (ACT)
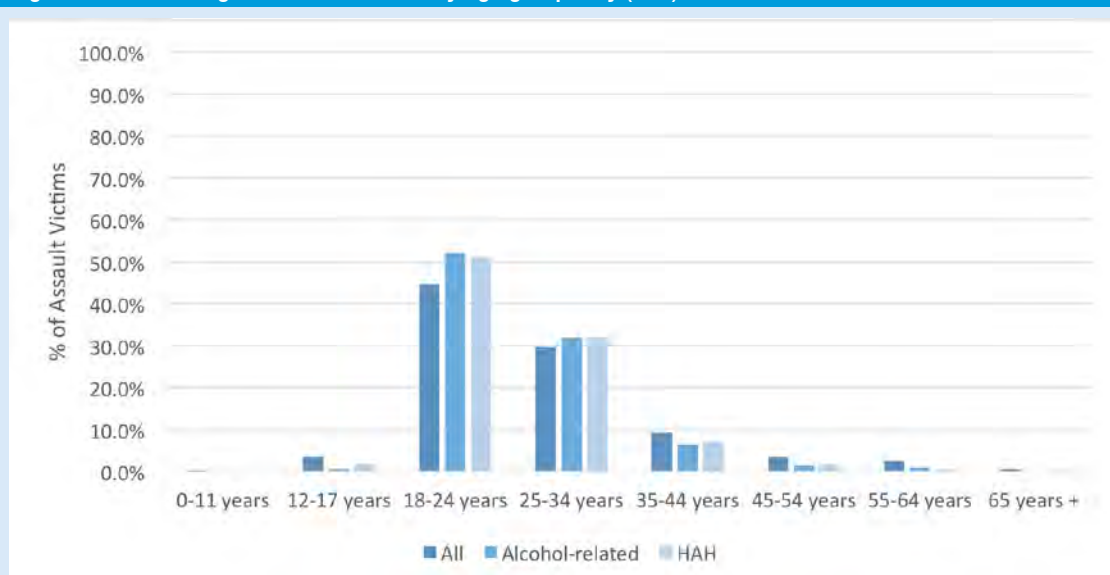
Figure 117 shows that, excluding incidents where the victim's sex was unknown (*n*=109), males comprised a significantly greater percentage of all assault victims (Braddon: *n*=174, 61.3%, p<0.001; City: *n*=1,237, 73.2%, p<0.001), alcohol-related assault victims in the City (*n*=770, 77.1%, p<0.001), and assault victims in HAH (Braddon: *n*=51, 66.7%, p<0.01; City: *n*=698, 75.1%, p<0.001). These proportions differ from ACT-wide data which reports that 52 percent of assault victims in 2014 were male, in contrast to Braddon's 61 percent and City's 73 percent (ABS 2015). However, excluding assaults where the offender was known to the victim, 76 percent of assault victims in 2014 in the ACT were male (ABS 2015), which is similar to the proportions in Braddon and City.

Figure 117 Percentage of assault victims who are male: Braddon and City (ACT)
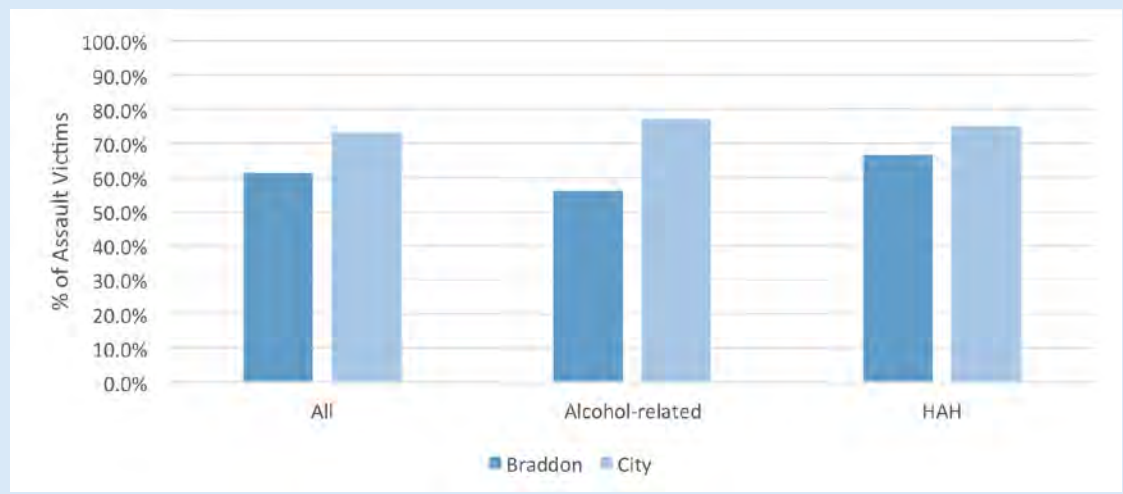
Figure 118 and Figure 119 show the percentage of victims who were male across each age group. Due to low numbers, the two youngest and two oldest age categories were combined. Most victims were males across each age group with a few exceptions. In particular, assault victims under the age of 18 were more likely to be female. These percentages are consistent with ACT-wide data which reports that males comprise at least 50 percent of victims aged 20 years or older (ABS 2015).

Figure 118 Percentage of assault victims who are male by age group, Braddon (ACT)
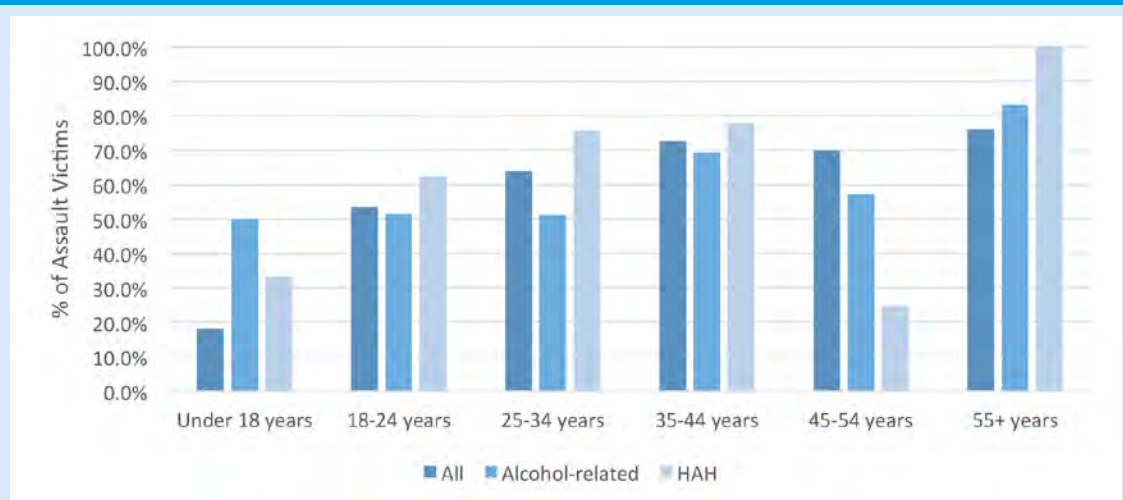
Figure 119 Percentage of assault victims who are male by age group, City (ACT)
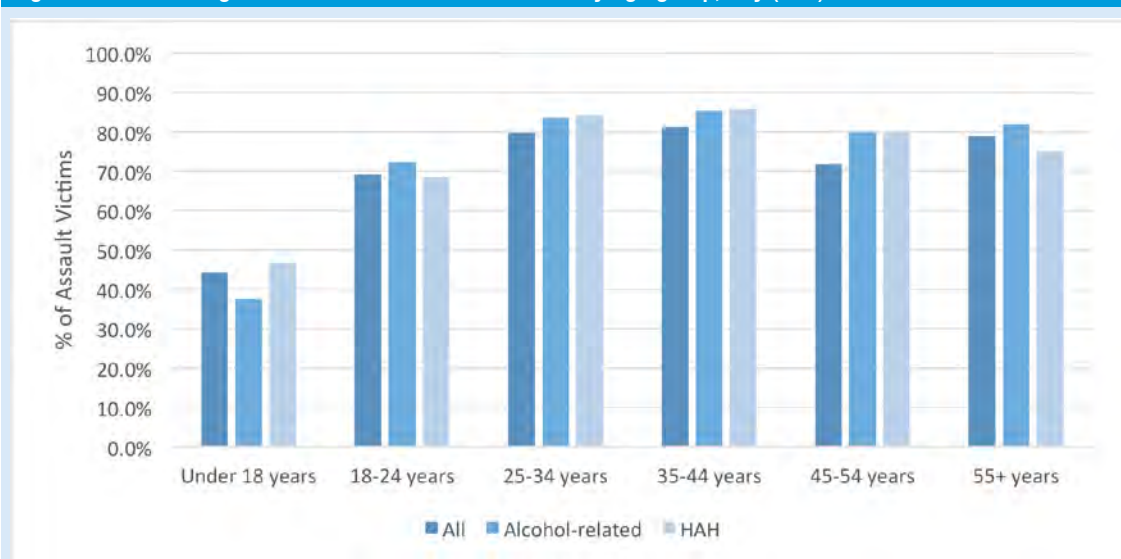
Type of location

Table 91 and Table 92 present the percentage of assaults that took place by location. In Braddon, the most frequent location of all assaults, alcohol-related assaults, and HAH assaults was at a public place, followed by at a house. In City, the most frequent location of all assaults, alcohol-related assaults, and HAH assaults was at a public place, followed by licensed premises.

Table 91 Location assaults took place, Braddon (ACT)						
	All		**Alcohol-related**		**HAH**	
	n	**%**	**n**	**%**	**n**	**%**
Bus depot	7	2.1	2	1.7	4	3.9
Car park	6	1.8	1	0.8	2	1.9
Hotel/motel	9	2.7	4	3.3	7	6.8
House	104	30.7	35	29.2	20	19.4
Licensed premises	9	2.7	6	5.0	2	1.9
Public place (including street/path/ bicycle path)	166	49.0	62	51.7	56	54.4
Shop	20	5.9	9	7.5	8	7.8
Other	18	5.3	1	0.8	0	0.0

Table 92 Location assaults took place, City (ACT)						
	All		Alcohol-related		HAH	
	n	%	n	%	n	%
Bus depot	12	0.6	0	0.0	0	0.0
Car park	28	1.4	10	0.8	10	0.9
Hotel/motel	18	0.9	13	1.1	12	1.1
House	39	2.0	7	0.6	9	0.8
Licensed premises	453	23.1	388	32.6	323	30.1
Police station	6	0.3	4	0.3	2	0.2
Public place (including street/path/ bicycle path)	1,246	63.7	723	60.8	689	64.2
Shop	105	5.4	32	2.7	21	2.0
Other	50	2.6	12	1.0	8	0.7

'Hotspots' for HAH assaults

Figure 120 maps out the streets where assaults took place during HAH in City and Braddon. Streets in the 90th percentile for assault (excluding streets where less than 5 offences occurred) are marked in red, streets in the first to 89th percentile for assaults (excluding streets where less than 5 offences occurred) are marked in orange, and streets where less than five offences occurred are marked in yellow. Across all the streets within the 90th percentile for HAH assaults, most (60.5%) occurred on the street or footpath; however, almost a third (31.6%) occurred on licensed premises (Bunda Street—38.5%; East Row—15.8%; London Circuit—39.3%; and Northbourne Avenue—25.2%). Rather than quartiles, the cut-off of the 90th percentile was chosen because it was clear that most assaults clustered on very few streets. In fact, approximately twice as many assaults occurred on the street with the lowest number of assaults in the red category (Northbourne Avenue, n=159), compared with the street with the highest number of assaults in the orange category (Alinga St, n=81).

All four streets that were in the 90th percentile for assaults during HAH (London Circuit, Bunda Street, East Row and Northbourne Avenue) are in close proximity to each other. Together, these streets accounted for more than two-thirds of assaults that occurred during HAH (London Circuit: 27%; Bunda Street: 14.4%; East Row: 14%; Northbourne Avenue: 13.5%). Searching for 'bars', 'nightclubs', 'pubs', 'hotels' and 'restaurants' ('in Canberra') in Google Maps reveals that licensed establishments are clustered around the streets where assaults during HAH occur most frequently.

Figure 119 Percentage of assault victims who are male by age group, City (ACT)
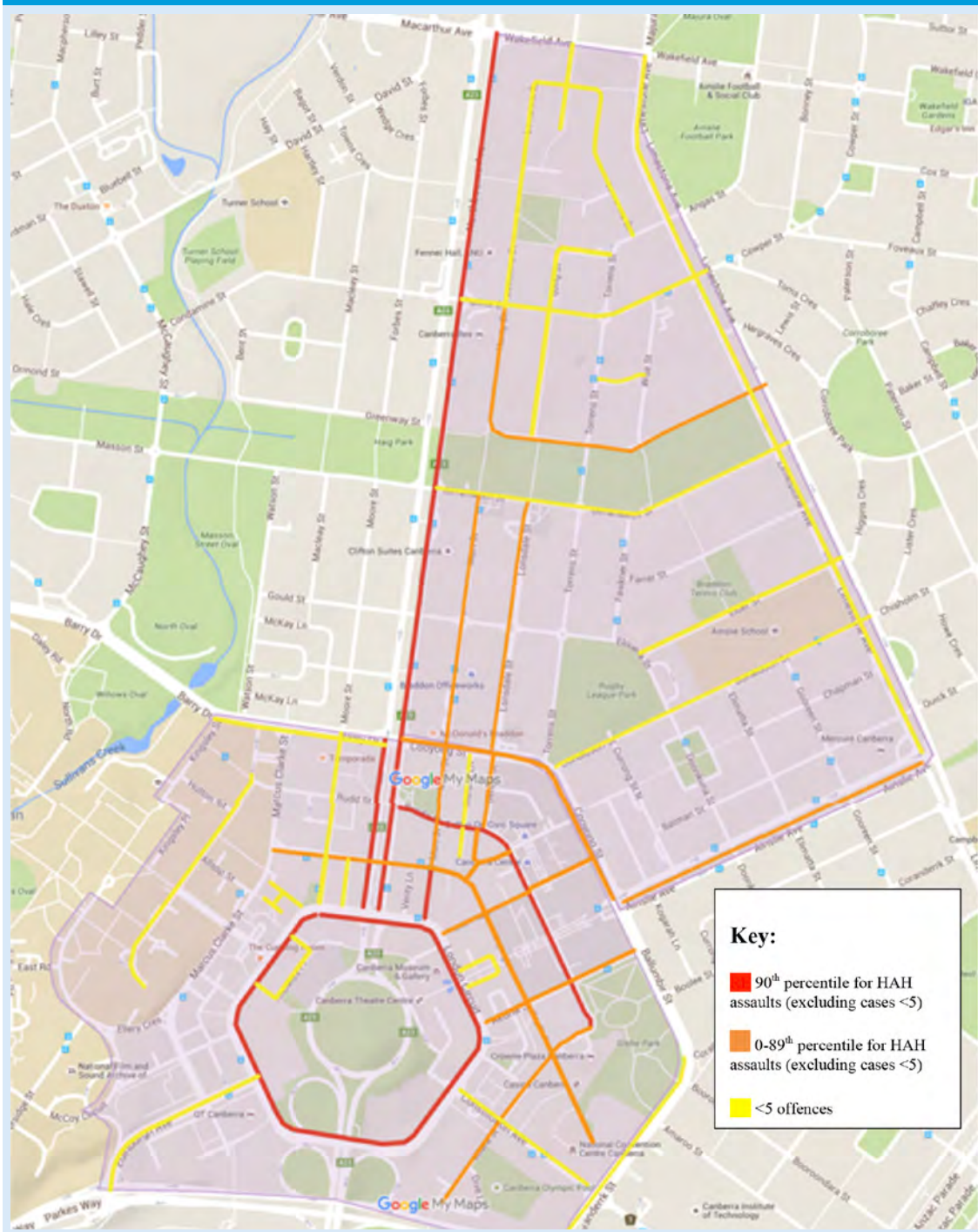
Source: Google Maps, 2016

Drug and alcohol intoxication and subsequent harm in night-time entertainment districts (DASHED)

Time of day, and day of week

Braddon

As there were too few offences to analyse trends in assaults in Braddon by day of week, and time of day together, Figure 121 shows assaults by day of the week, and Figure 122 shows assaults by time of day.

Figure 121 shows that all assaults and alcohol-related assaults followed similar trends by day of the week, with the highest percentage of assaults taking place on Sunday, followed by Friday and Saturday. However, a higher percentage of alcohol-related assaults occurred on Saturday (all: 16.5%; alcohol-related: 20.8%) and Sunday (all: 23%; alcohol-related: 31.7%) than assaults overall.

Figure 121 Percentage of assaults by day of the week, Braddon (ACT)
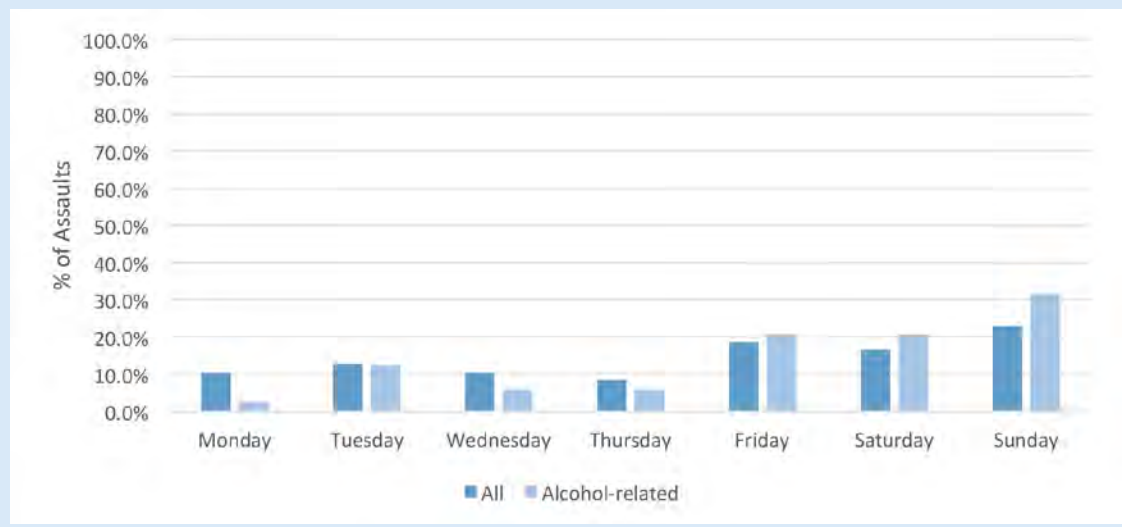
Figure 122 shows a general trend for fewer assaults during daytime hours, with assaults occurring more frequently as the evening progresses. Alcohol-related assaults gradually increased throughout the day, peaked at 12 and 1 am, and decreased thereafter.

Figure 122 Percentage of assaults by time of day, Braddon (ACT)
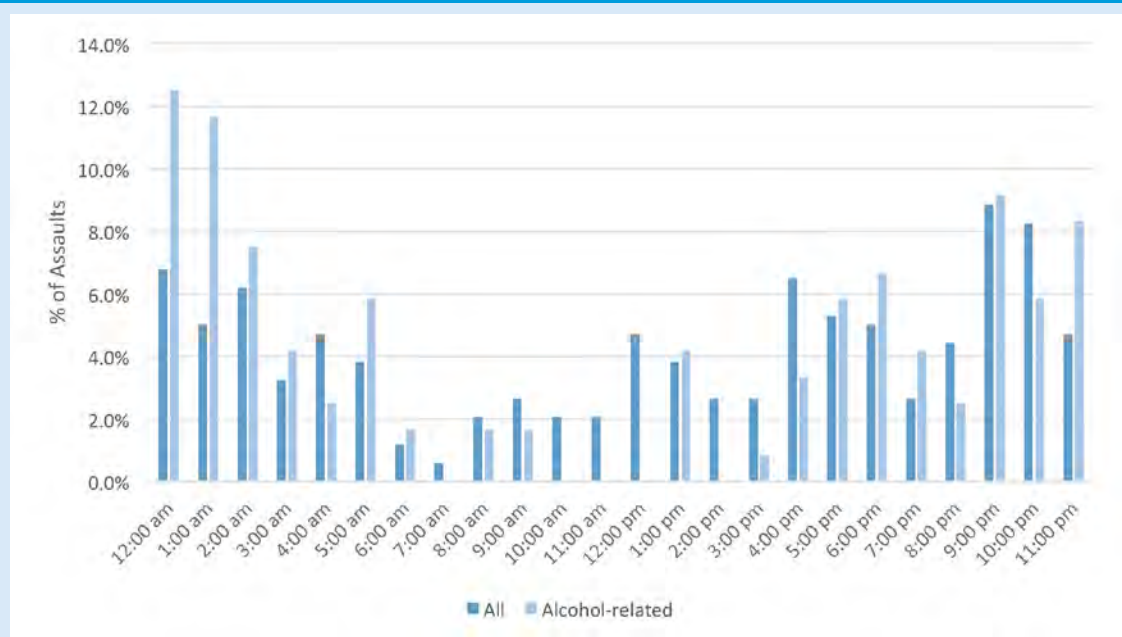
City

Figure 123 and Figure 124 show the frequency of all assaults and alcohol-related assaults in the City postcode by day of the week, and time of day. Fewer assaults generally occurred from Monday to Thursday, with an increase in assaults on Thursday night/Friday morning, Friday night/Saturday morning, and Saturday night/Sunday morning. These spikes were especially apparent for alcohol-related assaults, and particularly for Saturday night/Sunday morning.

Assaults that occurred during HAH (8 pm–6 am Friday night through Sunday morning) accounted for 54.9 percent (*n*=1,074) of all assaults and 67.9 percent (*n*=807) of alcohol-related assaults. Street offences occurring on Thursday nights/Friday morning (8 pm–6 am) accounted for an additional 16.2 percent of all assaults and 20.3 percent of alcohol-related assaults.

Figure 123 Number of assaults by day of week and time of day, City (ACT)
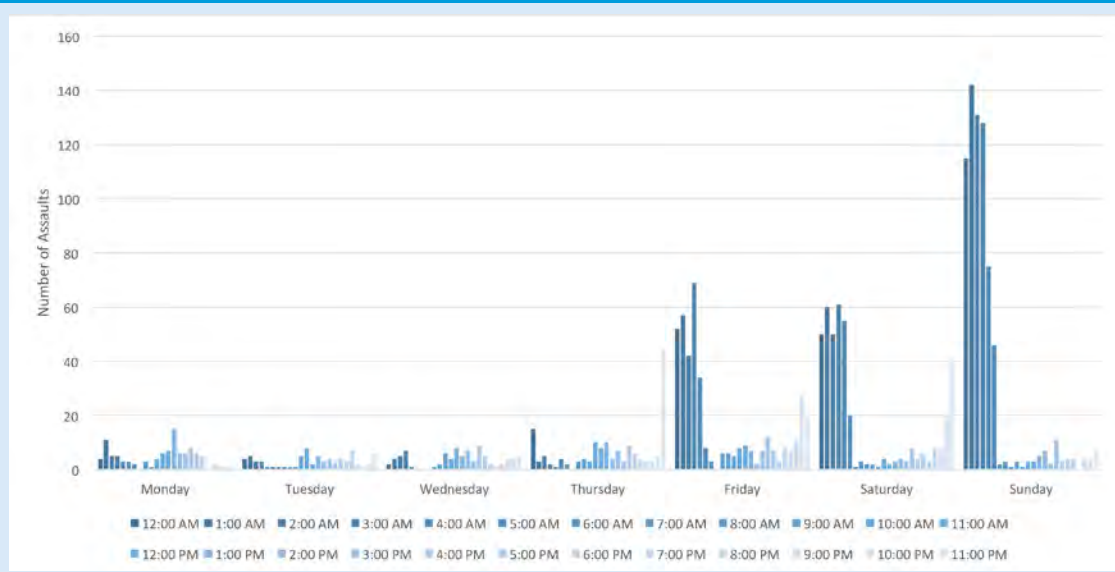
Figure 124 Number of alcohol-related assaults by day of week and time of day, City (ACT)
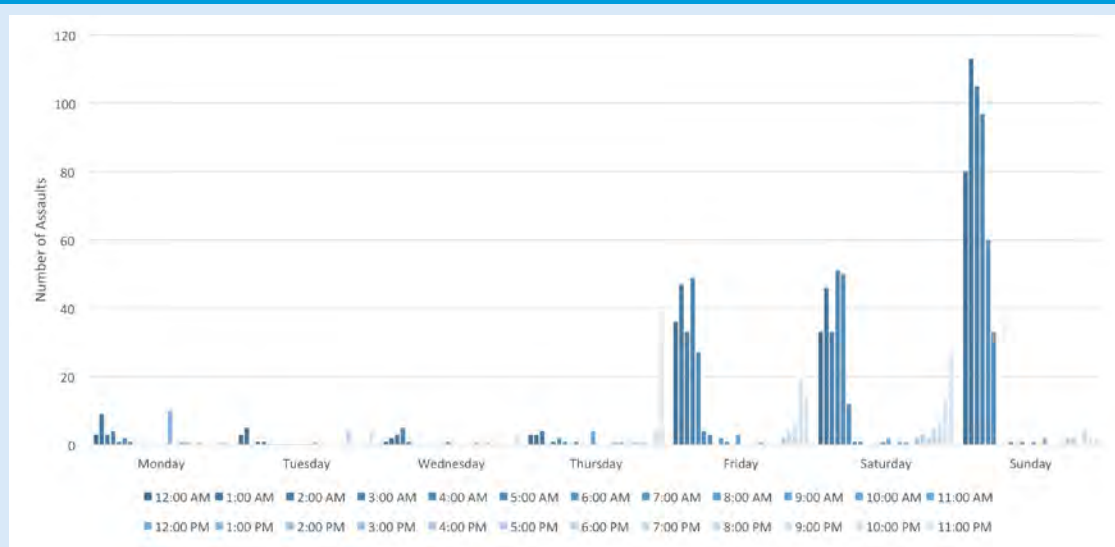
Annual trends

Figure 125 and Figure 126 present the percentage of assaults that occurred by month over the reporting period in Braddon and City. As the alcohol-related flag has only been collected since April/May 2010, only data from 2011–14 is presented for alcohol-related assaults.

Figure 125 Percentage of assaults by month, Braddon (ACT)
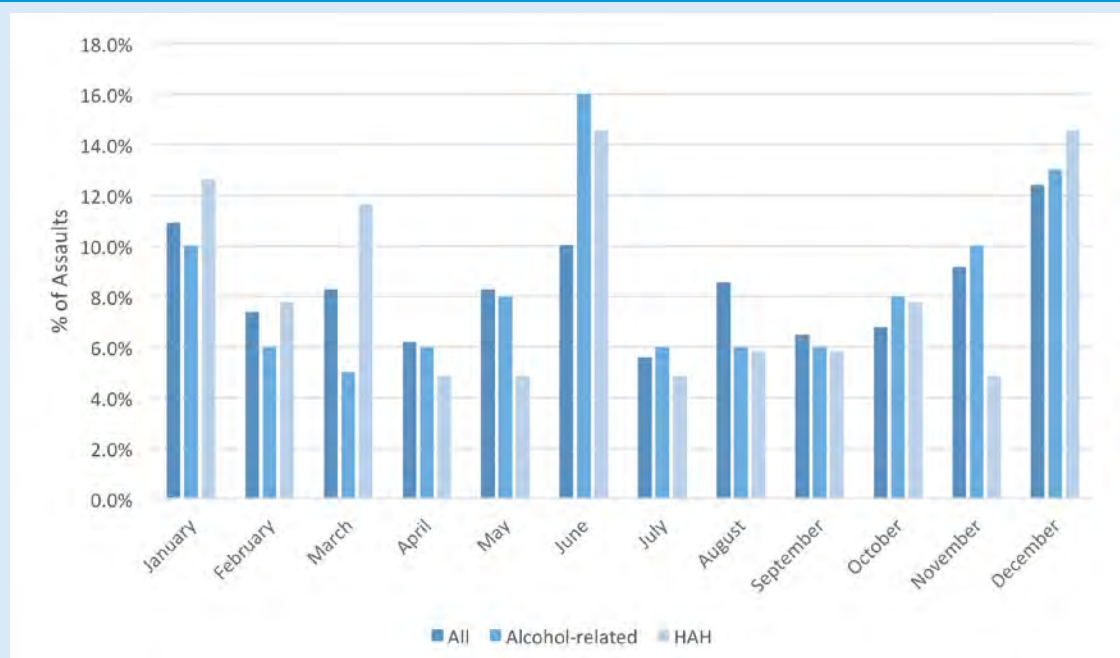
In Braddon, all assaults peaked in January (10.9%), June (10%), and December (12.4%), and were lowest in April (6.2%) and September (6.5%). Alcohol-related assaults showed a similar trend; however, the peak in June (16%) was more pronounced. Assaults during HAH also peaked in January (12.6%), June (14.6%), and December (14.6%), with a smaller peak in March (11.7%), and lows in April/May (4.9%).

Figure 126 Percentage of assaults by month, City (ACT)
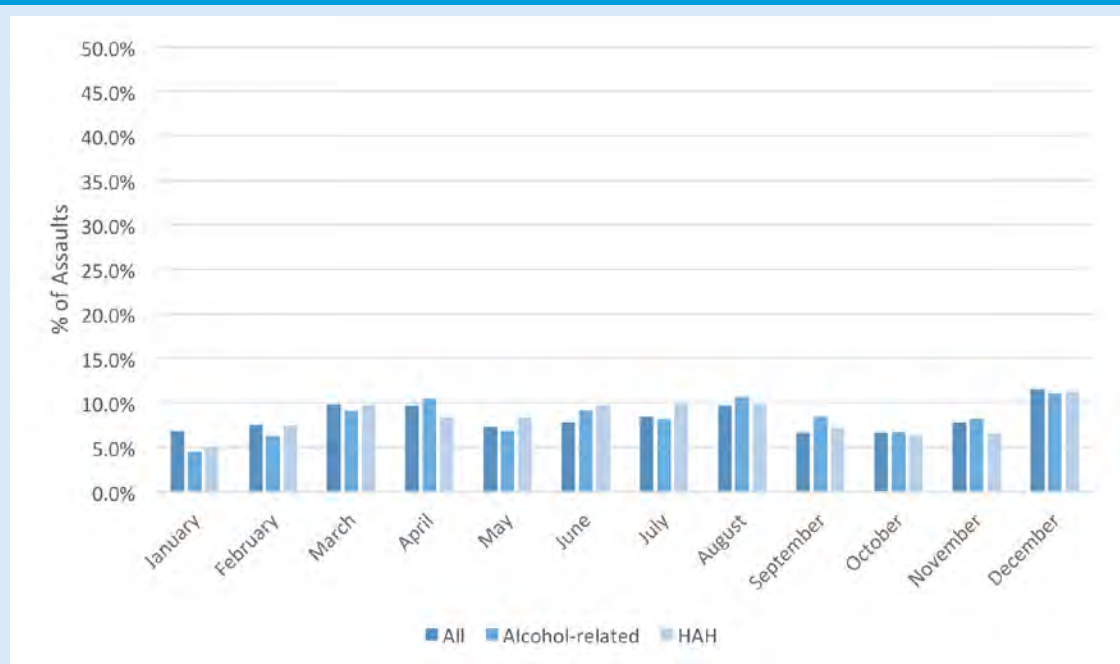
In City, the highest percentage of assaults occurred in December (all: 11.5%; alcohol-related: 11.1%; HAH: 11.3%) and the lowest took place in January (all: 6.9%; alcohol-related: 4.5%; HAH: 5%).

Figure 127, Figure 128 and Figure 129 present trends over time for assaults occurring within City and Braddon by all assaults, alcohol-related assaults, and assaults occurring within HAH. The three trend lines show a decrease in all assaults over time. This decrease is consistent with decreased assault rates in the ACT overall. Excluding assaults where the victim knew the offender, assaults steadily decreased from 28.9 per 10,000 in 2010 to 22.2 per 10,000 in 2013, and to 16.7 per 10,000 in 2014. These figures were calculated using ABS (2015) population statistics and the number of assault victims was drawn from Recorded Crime—Victims, Australia, 2014 (ABS 2015). Alcohol-related assaults and assaults occurring during HAH decreased slightly over the measurement period. Over this time they remained relatively steady from January 2010 to January 2013, where there was a sharp increase, after which rates decreased.

Figure 127 Assault trends over time by quarter, City and Braddon (rate per 10,000 in ACT)
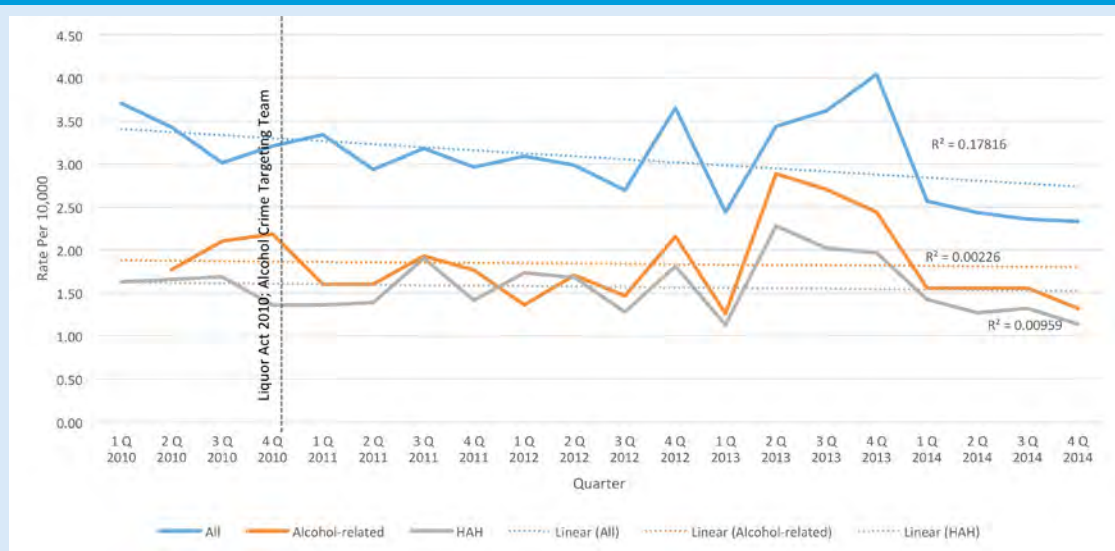
Figure 128 Assault trends over time by quarter, City (rate per 10,000 in ACT)
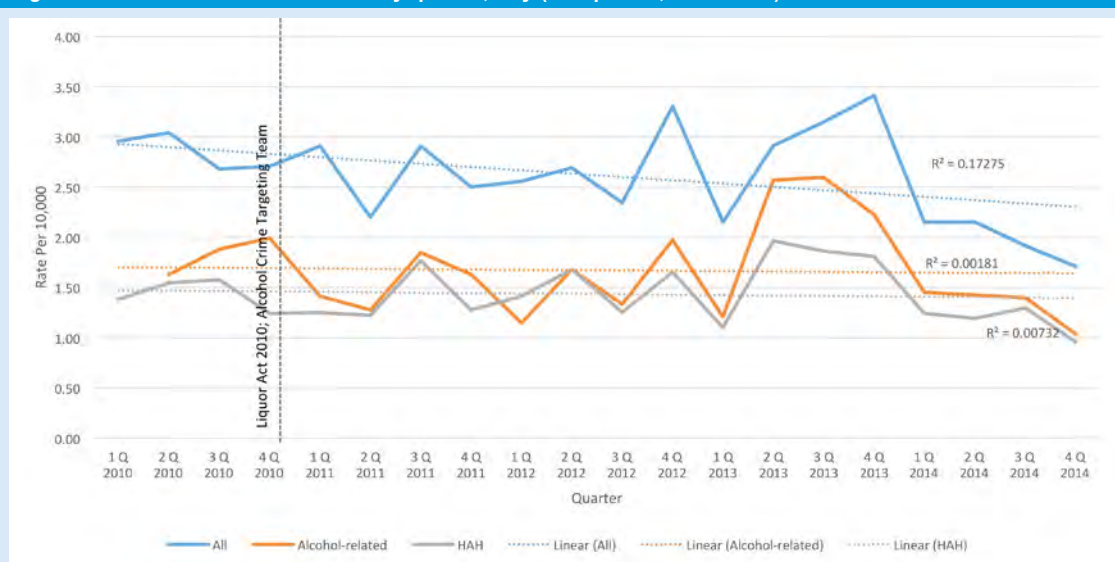
Figure 129 Assault trends over time by quarter, Braddon (rate per 10,000 in ACT)
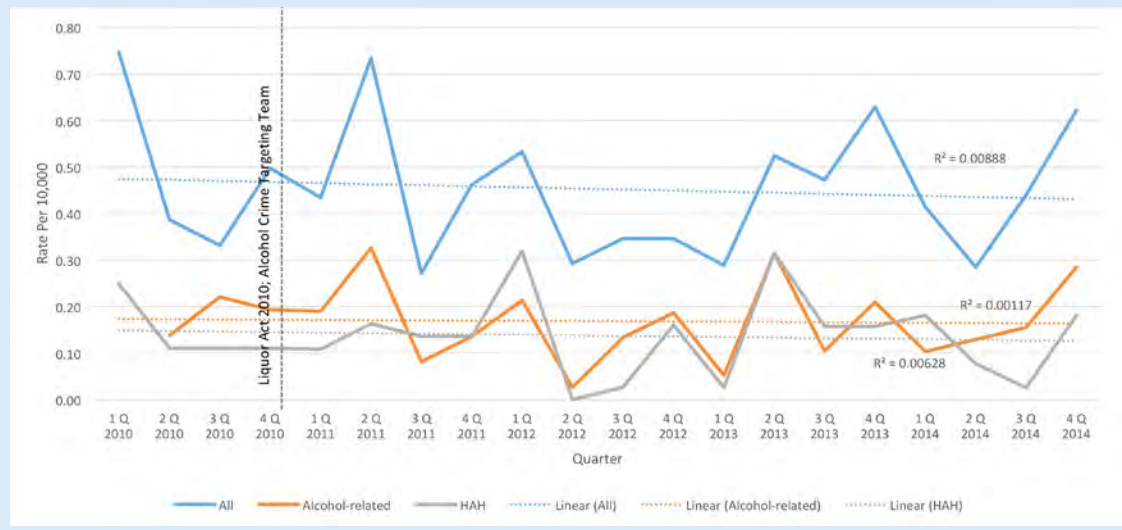
Time series analysis

The monthly rate of police-attended assaults per 10,000 people from January 2010 to December 2014 for Canberra is shown in Figure 130. As indicated, the rate of assaults demonstrates a small decline from 2013.

Figure 130 Rate of police-attended assaults during HAH from 2010–14, Canberra (note m1=January and so on)
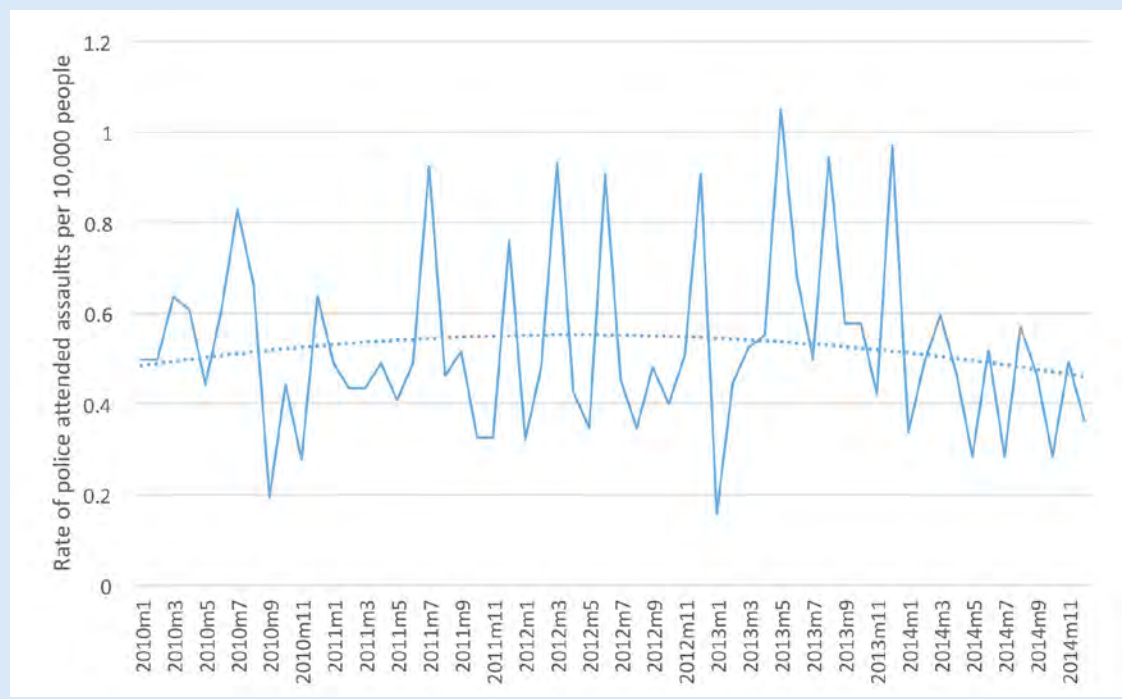
Using an ARIMA model, researchers examined the effect of two interventions (risk-based licensing and ACTT) on the rate of police-attended assaults in Canberra during HAH. The best-fitting model did not include any autoregressive or moving average terms, thus the data demonstrated no discernible changes or patterns over time (ie the data were white noise); ARIMA(0,0,0). The model fitted the data well, with a non-significant Portmanteau test for white noise (Q=34.07, p=0.20). The multivariable ARIMA model indicated that neither of the interventions had a significant effect on the rate of police-attended assaults per month during HAH in Canberra (see Table 93).

Table 93 The effect of interventions implemented in Canberra on the rate of police attended assaults per month		
Intervention	Coefficient (95% CI)	p-value
Liquor act (lag 0)	-0.07 (-0.29, 0.16)	0.573
ACTT (lag 1)	0.09 (-0.1, 0.29)	0.354

Sexual offences

Overall, between 1 January 2010 and 30 June 2015 there were 190 sexual offences in the entertainment areas of Canberra (Braddon: $n=48$; City: $n=142$). As the total number of offences is low (see Table 94), only high-level frequency data is presented for sexual offences. The definition of HAH used for analysing police records is between 8 pm and 6 am Friday to Sunday morning (Laslett et al. 2006).

Table 94 Number of sexual offences in Braddon and City (ACT)		
	Braddon	City
All sexual offences	48	142
Alcohol-related	12	50
HAH	11	40
Drug-related	0	2

Of all sexual offences, 26.8 percent ($n=51$, Braddon: $n=11$, 22.9%; City: $n=50$, 35.2%) occurred during HAH. Since 2011, 31.8 percent ($n=49$; Braddon: $n=12$, 26.7%; City: $n=37$, 33.9%) of sexual offences were alcohol-related. Sexual offences in 2011–14 were Braddon $n=45$; City $n=109$; and all $n=154$.Caution should be taken when interpreting the following offence statistics as they may not be representative of true trends due to the low number of offences in Braddon and City.

Demographics

Victims

Over the measurement period there were 163 victims (Braddon: $n=34$; City: $n=129$) of sexual offences. Figure 131 and Figure 132 present the percentage of sexual offence victims within each age group. Most victims of sexual offences were aged 24 years or younger. Similarly, in 2014, 63 percent of sexual assault victims ACT-wide were aged 24 or younger and an additional 21 percent were aged 25 to 34 years (ABS, 2015). All victims of sexual offences in Braddon were female; and most victims of sexual offences in City were female (all: $n=102$, 82.9%; alcohol-related: $n=35$, 92.1%; HAH: $n=29$, 96.7%). This is consistent with sexual assault figures across the Australian Capital Territory, where 89 percent of victims of sexual assault in 2014 were female (ABS 2015).

Figure 131 Sexual offence victims by age group, Braddon (ACT)
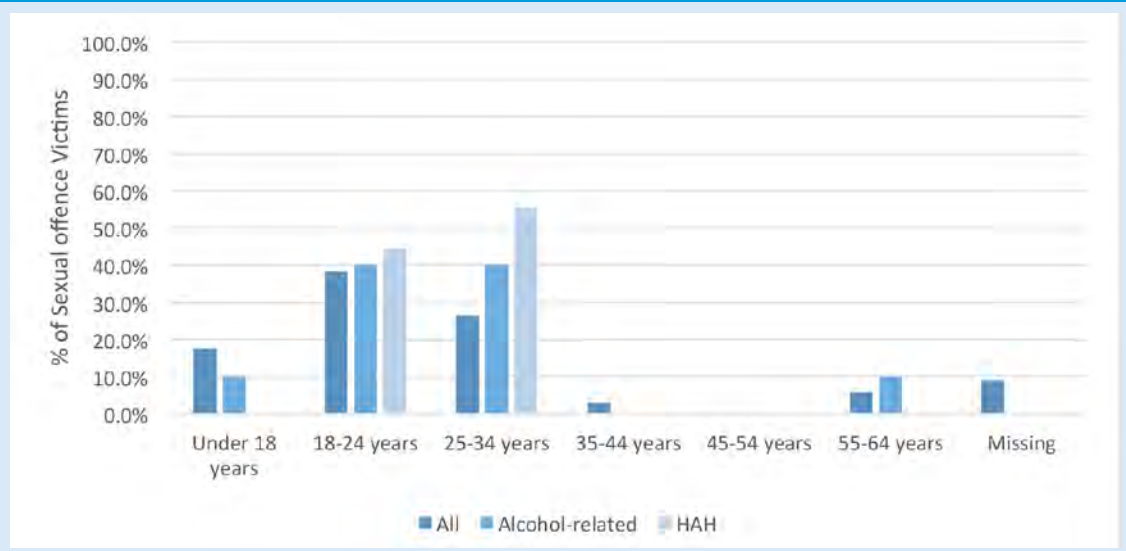
Figure 132 Sexual offence victims by age group, City (ACT)
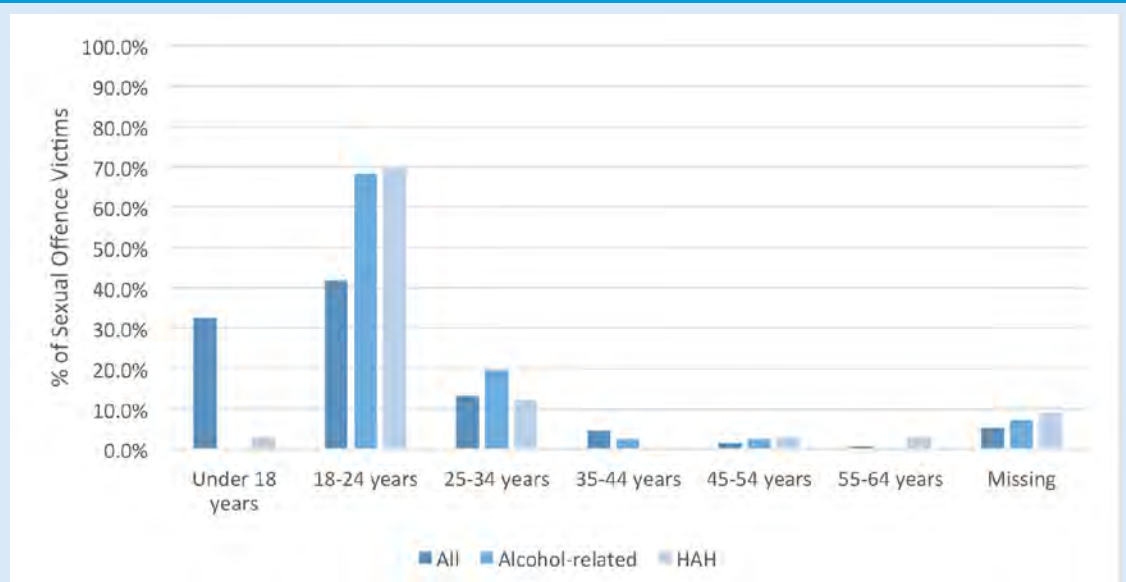
Time of day, and day of week

Figure 133 and Figure 134 show that there was a trend for a greater percentage of alcohol-related offences to take place on the weekend (Saturday and Sunday) compared with offences overall. In Braddon, 39.6 percent (*n*=19) of all offences took place on the weekend compared with 58.3 percent (*n*=7) of alcohol-related offences. In City, 31.7 percent (*n*=45) of all sexual offences took place on the weekend compared with 72 percent (*n*=36) of alcohol-related offences.

Figure 133 Percentage of sexual offences by day of the week, Braddon (ACT)
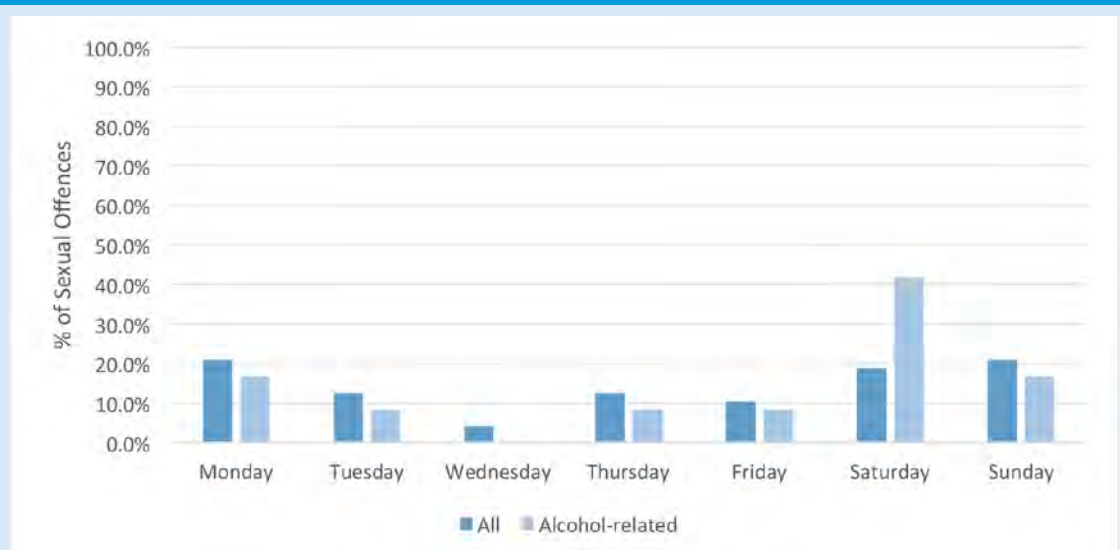
Figure 134 Percentage of sexual offences by day of the week, City (ACT)
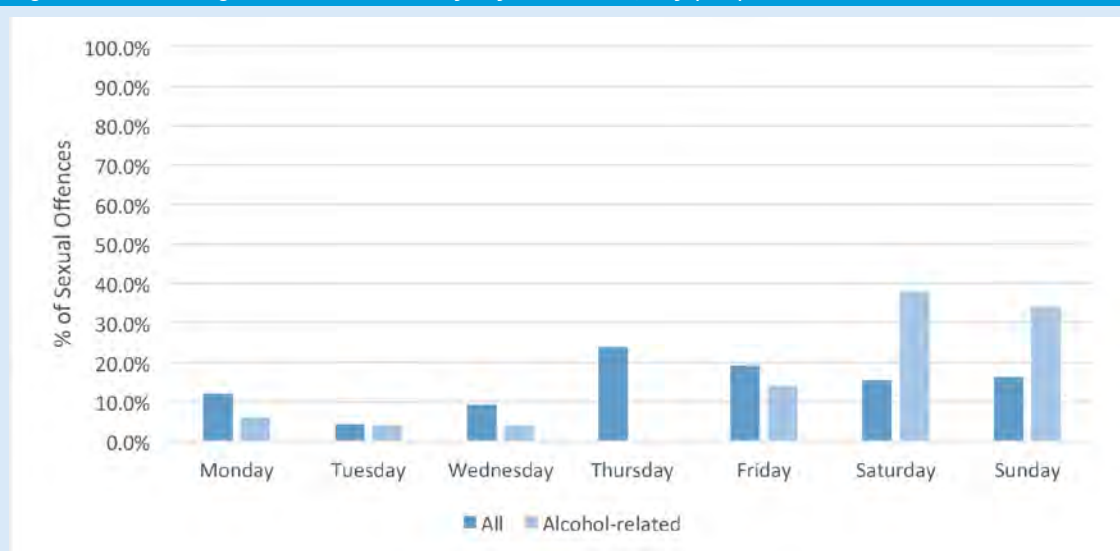
Figure 135 presents the percentage of sexual offences by time of day in City. Braddon is not presented graphically due to the low number of offences. Figure 135 shows different trends for sexual offences overall compared with those sexual offences that were alcohol-related. Compared with offences overall, fewer alcohol-related offences took place during the daytime hours. Only one alcohol-related sexual offence took place between 7 am and 6 pm, compared with 59 (41.5%) sexual offences overall. Just over half (*n*=75, 52.8%) of all sexual offences took place between 8 pm and 6 am compared with 90 percent (*n*=45) of alcohol-related sexual offences.

Figure 135 Percentage of sexual offences by time of day, City (ACT)
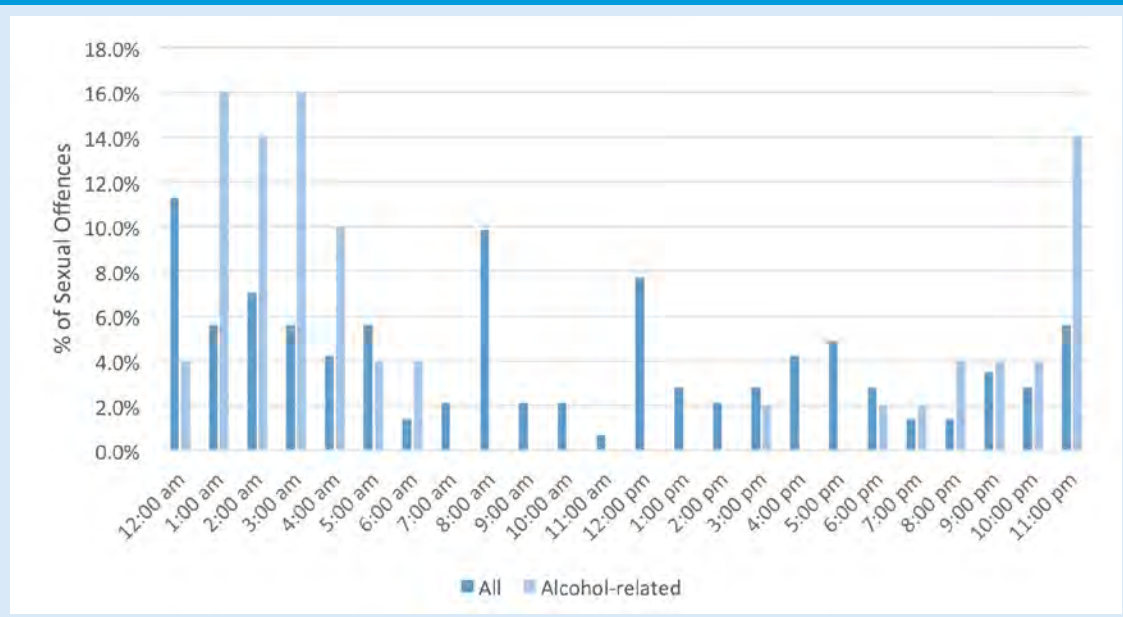
Annual trends

Figure 136 presents the percentage of sexual offences per month in City. The numbers of offences in Braddon were too few to allow interpretation of annual trends. As the alcohol-related flag has only been collected since April/May 2010, only data from 2011–14 is presented for alcohol-related offences.

Figure 136 shows that alcohol-related sexual offences and sexual offences that occurred during HAH reflect a different pattern across each month compared with sexual offences overall. Specifically, alcohol-related offences and those sexual offences occurring during HAH were more likely to take place in July (all: n=11, 7.7%; alcohol-related: n=9, 18%; HAH: n=6, 20%), November (all: n=11, 7.7%; alcohol-related: n=9, 18%; HAH: n=8, 20%), and December (all: n=13, 9.2%; alcohol-related: n=9, 18%; HAH: n=7, 17.5%). Sexual offences overall, on the other hand were more likely to take place in the early months of the year, from January to April (all: n=63, 44.4%; n=7, alcohol-related: 14%; HAH: n=8, 20%).

Figure 136 Percentage of sexual offences by month, City (ACT)
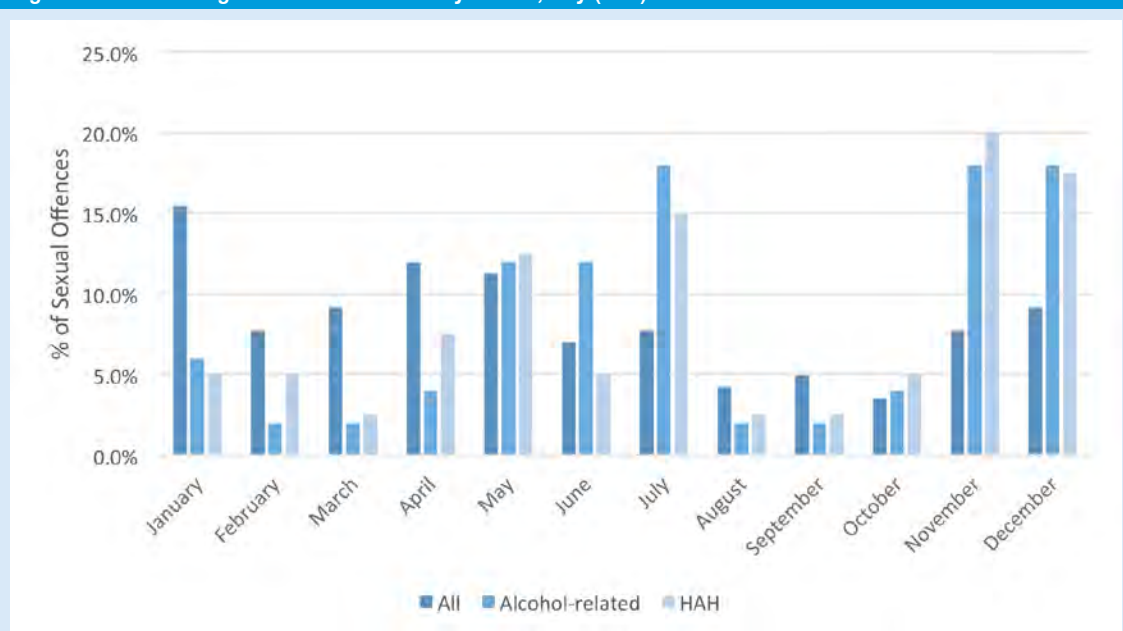
Figure 137 and Figure 138 present the trends over time for sexual offences in City and Braddon. The three trend lines show a small increase in sexual offences over the measurement period.

Figure 137 Sexual offence trends over time by quarter: City and Braddon (rate per 10,000 in ACT)
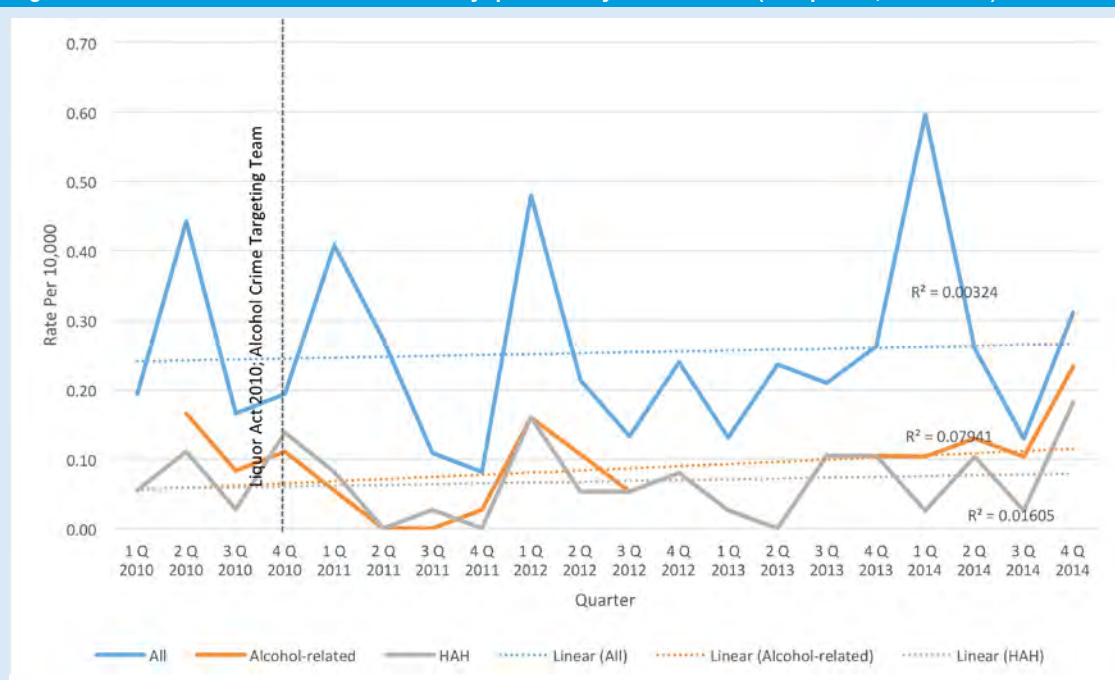
Figure 138 Sexual offence trends over time by quarter: City (rate per 10,000 in ACT)
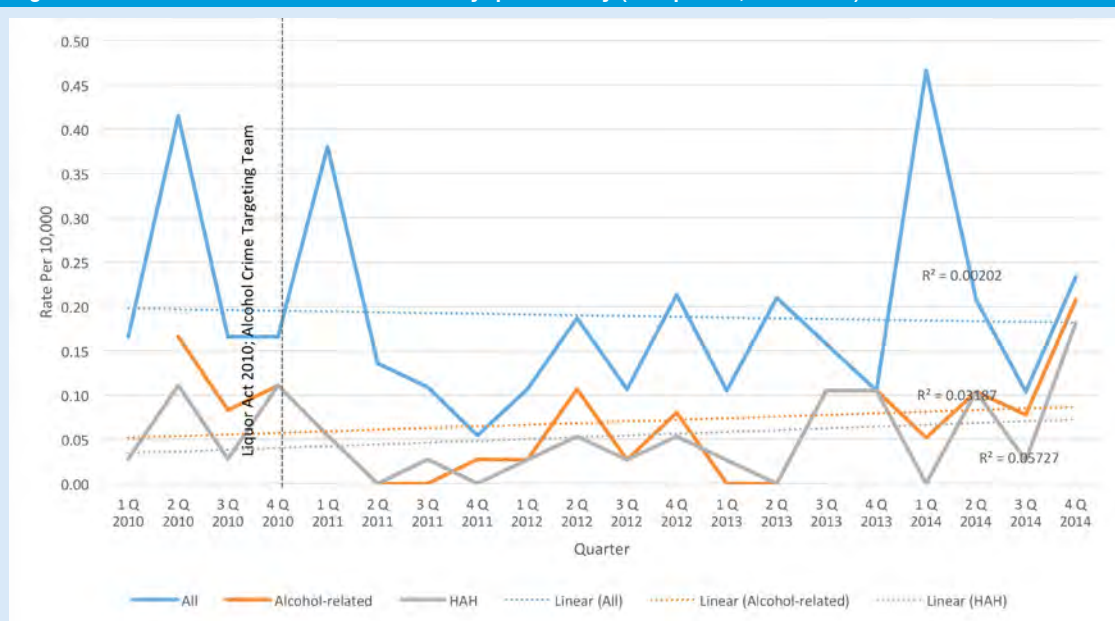
Property damage offences

Between 1 January 2010 and 30 December 2014 there were 2,299 property damage offences in the entertainment areas of Canberra (City: n=1,183; Braddon: n=1,017). The following sections analyse trends in property damage offences overall, and by whether they were alcohol-related, and by high alcohol hours (HAH). The definition of HAH used to analyse police records is between 8 pm and 6 am Friday to Sunday morning (Laslett et al. 2007).

Drug and alcohol intoxication and subsequent harm in night-time entertainment districts (DASHED)

Of all property damage offences, 24 percent (*n*=551; City: *n*=367, 31%; Braddon: *n*=184, 18.1%) took place during HAH, and since 2011. In 2011–15 property damage was Braddon *n*=781; City *n*=886; total *n*=1,667. Of those, 12.8 percent (*n*=212; City: *n*=150, 16.9%; Braddon: *n*=62, 7.8%) were alcohol-related. Only 11 (0.50%) property-damage offences were drug-related (ie drugs were seized).

Table 95 Frequency of property damage in Braddon and City (ACT)		
	Braddon	City
All property damage	1017	1183
Alcohol-related (all)	75	178
HAH	184	367
Drugs seized	7	4

Type of location

Table 96 presents the percentage of property damage that took place at each location in Braddon. Property damage offences overall were most likely to take place at a car park (*n*=321, 31.6%), house (*n*=236, 23.2%), or public place (*n*=214, 21%). Similarly, property damage offences occurring during HAH were also most likely to take place in a car park (*n*=48, 26.1%), house (*n*=48, 26.1%), or public place (*n*=46, 25%). Alcohol-related property damage offences were most likely to take place in a public place (*n*=32, 42.7%), followed by a house (*n*=20, 26.7%); very few alcohol-related property damage offences took place in a car park (*n*=3, 4%).

Table 96 Location where property damage took place, Braddon (ACT)						
	All		Alcohol-related		HAH	
	n	%	n	%	n	%
Car park	321	31.6	3	4.0	48	26.1
Garage (attached to residence)	56	5.5	0	0.0	2	1.1
Garage (not attached to residence)	27	2.7	0	0.0	3	1.6
Hotel/motel	16	1.6	6	8.0	3	1.6
House	236	23.2	20	26.7	48	26.1
Licensed premises	8	0.8	5	6.7	2	1.1
Office	12	1.2	0	0.0	1	0.5
Police station	1	0.1	1	1.3	0	0.0
Public place	214	21.0	32	42.7	46	25.0
Recreational centre	4	0.4	0	0.0	1	0.5
School	11	1.1	0	0.0	1	0.5
Shop	49	4.8	5	6.7	17	9.2
Other	62	6.1	3	4.0	12	6.5

Table 97 presents the percentage of property damage that took place at each location in City. Similar to Braddon, a high percentage of property damage offences overall and within HAH in City took place in a car park (all: *n*=495, 41.8%; HAH: *n*=123; 33.5%) or in a public place (all: *n*=345; 29.2%; HAH: *n*=138; 37.6%). However, unlike Braddon, only a very small percentage of property damage offences took place in a house (all: 0.5%; alcohol-related: 0%; HAH: 0.5%). Further, a high percentage of alcohol-related property damage offences in City took place in a licensed venue (*n*=39, 21.9%).

Table 97 Location where property damage took place, City (ACT)						
	All		Alcohol-related		HAH	
	n	%	n	%	n	%
Car park	495	41.8	10	5.6	123	33.5
Garage (attached to residence)	1	0.1	0	0.0	0	0.0
Garage (not attached to residence)	1	0.1	0	0.0	0	0.0
Hotel/motel	14	1.2	6	3.4	8	2.2
House	6	0.5	0	0.0	2	0.5
Licensed premises	57	4.8	39	21.9	36	9.8
Office	28	2.4	1	0.6	4	1.1
Police station	9	0.8	5	2.8	2	0.5
Public place	345	29.2	82	46.1	138	37.6
Recreational centre	11	0.9	0	0.0	2	0.5
School	4	0.3	0	0.0	2	0.5
Shop	154	13.0	26	14.6	35	9.5
Other	58	4.9	9	5.1	15	4.1

Time of day, and day of week

Figure 139 and Figure 140 present the frequency of property damage offences by day of the week, and time of day in Braddon and City. There were too few alcohol-related offences to present trends by day of the week/ time of day so they are presented separately in Table 98 and Figure 141.

Figure 139 shows the trends for property damage offences overall in Braddon over day of the week/time of day. Generally, offences occurred in the later hours of the day through the evening and early hours of the morning. There were no clear spikes in frequency of property damage offences over HAH (8 pm–6 am Friday night to Sunday morning)

Property damage offences in City (Figure 140) show clear spikes in the evening/early morning across each day of the week, particularly on Thursday night/Friday morning, Friday night/Saturday morning, and Saturday night/Sunday morning. Offences occurring during HAH accounted for 31 percent (*n*=367) of all property damage offences occurring in City with an additional 10.1 percent (*n*=125) of offences occurring on Thursday night/Friday morning (between 8 pm and 6 am).

Figure 139 Frequency of property damage offences by day of week, and time of day, Braddon (ACT)
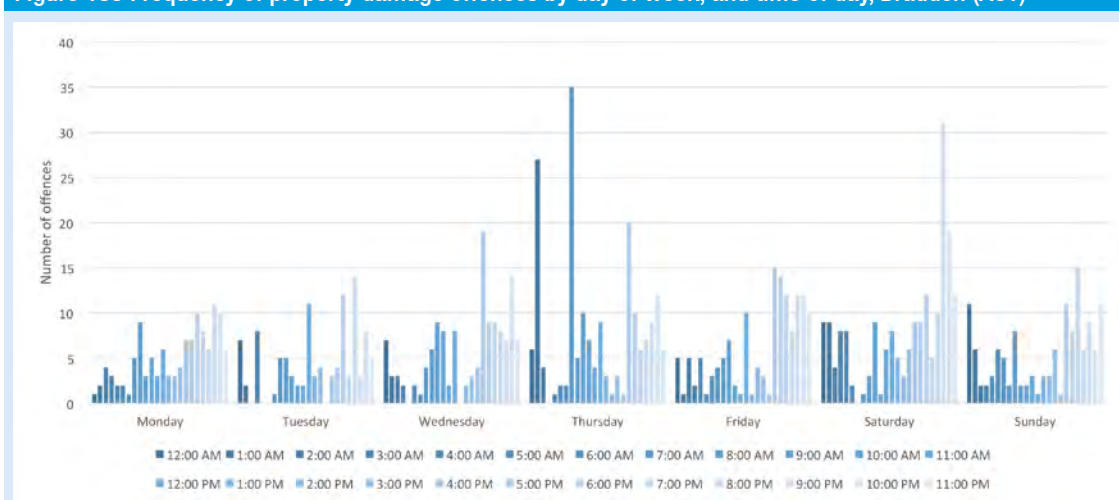
Figure 140 Frequency of property damage offences by day of week, and time of day, City (ACT)
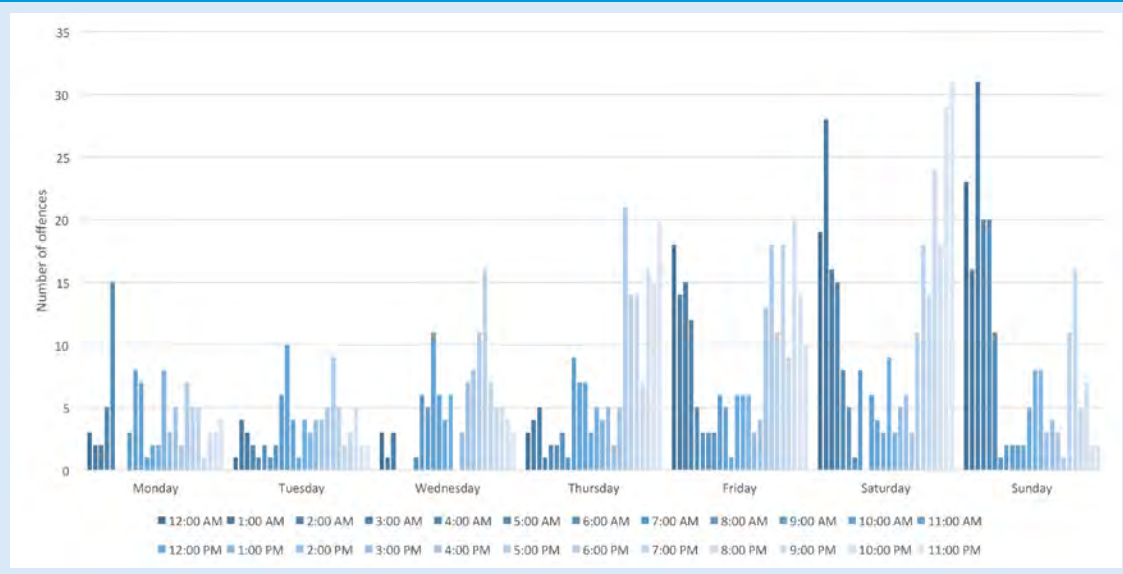
As shown in Table 98, the highest percentage of alcohol-related property damage offences in Braddon occurred on Saturdays and Sundays. In City, the highest percentage occurred on Sundays, followed by Saturdays and then Fridays.

Table 98 Number and percentage of alcohol-related property damage offences by day of the week, Braddon and City (ACT)

	Braddon		City	
Day	n	%	n	%
Monday	7	9.3	4	2.2
Tuesday	9	12.0	7	3.9
Wednesday	6	8.0	3	1.7
Thursday	7	9.3	17	9.6
Friday	6	8.0	37	20.8
Saturday	25	33.3	53	29.8
Sunday	15	20.0	57	32.0

Figure 141 shows that alcohol-related property damage offences in Braddon and City were most likely to occur in the early hours of the morning (12–5 am, especially for City) and in the evening (5 pm–12 am, especially for Braddon).

Figure 141 Percentage of alcohol-related property damage offences by time of day, Braddon and City (ACT)

Annual trends

Figure 142 and Figure 143 present the percentage of property damage offences that occurred each month over the reporting period in Braddon and City. As the alcohol-related flag has only been collected since April/May 2010, only data from 2011–14 is presented for alcohol-related offences.

Figure 142 shows unclear annual trends for property-damage offences in Braddon. Offences overall peaked in April and August. Alcohol-related offences peaked mid-year (June/July), February/March, and then again in November. Conversely, HAH offences peaked in April, August and September. The lack of clarity in annual trends may be due to a low number of alcohol-related offences (*n*=62) and HAH offences (*n*=184).

Figure 142 Percentage of property damage offences by month, Braddon (ACT)
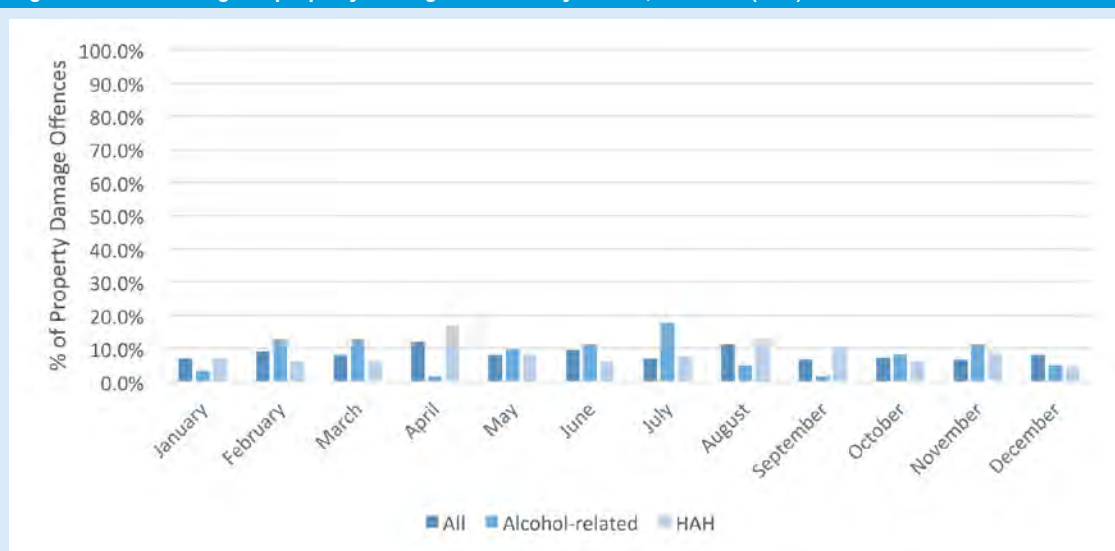
Figure 143 shows that alcohol-related property damage offences in City peaked in January and December, as well as April and August. On the other hand, property damage offences overall and those occurring in HAH showed less clear annual trends and were most frequent in February, followed by August and April.

Figure 143 Percentage of property damage offences by month, City (ACT)
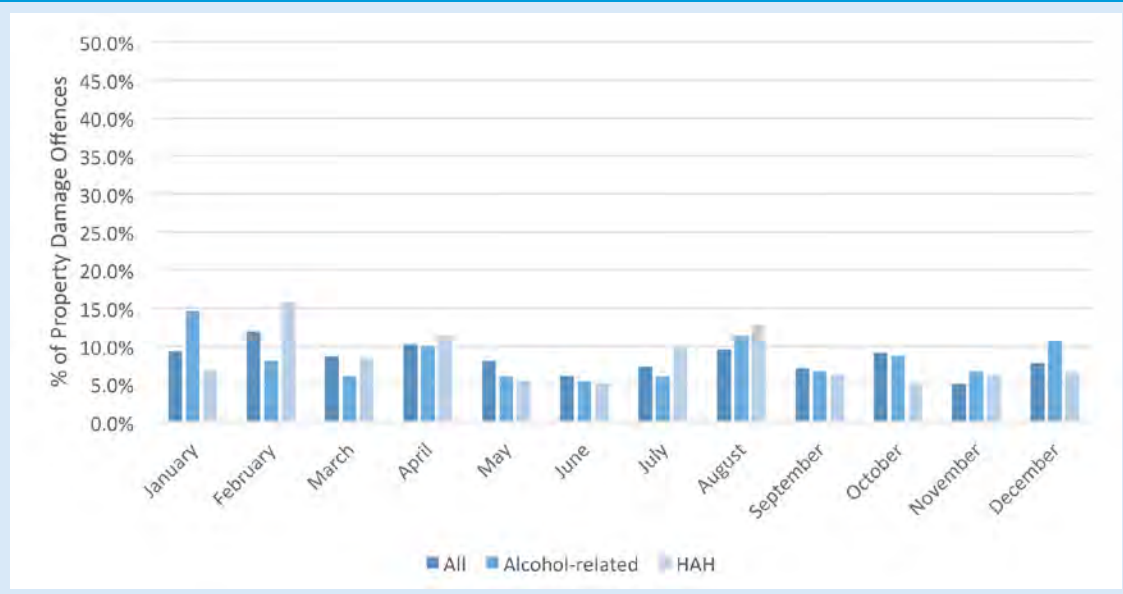
Figure 144, Figure 145 and Figure 146 present trends over time for property damage offences occurring within City and Braddon by all offences, alcohol-related offences, and offences occurring within HAH. The three trend lines show a decrease in all assaults over time. Alcohol-related assaults and assaults occurring during HAH decreased over the measurement period, but only slightly.

Figure 144 Property damage offence trends over time per quarter, City and Braddon (rate per 10,000 in ACT)
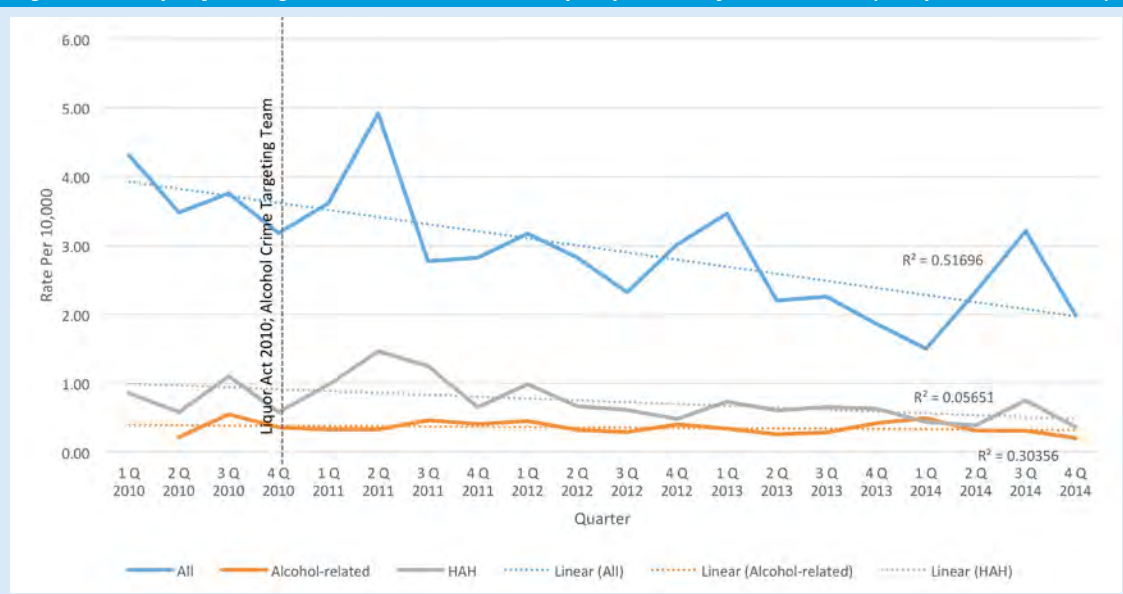
Figure 145 Property damage offence trends over time by quarter, City (rate per 10,000 in ACT)
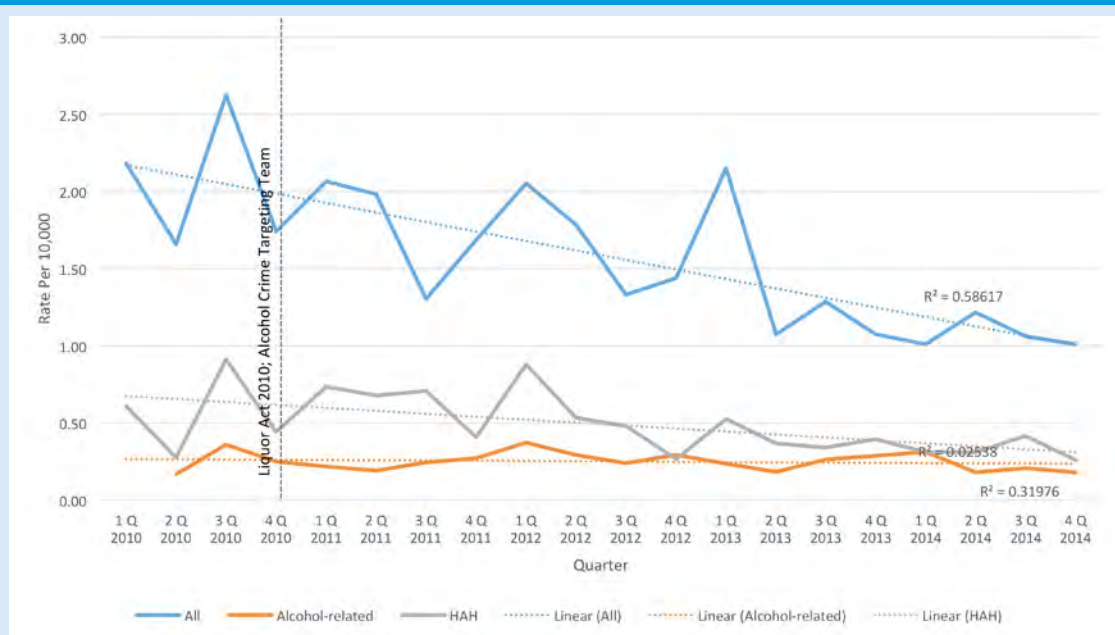
Figure 146 Property damage offence trends over time by quarter, Braddon (rate per 10,000 in ACT)
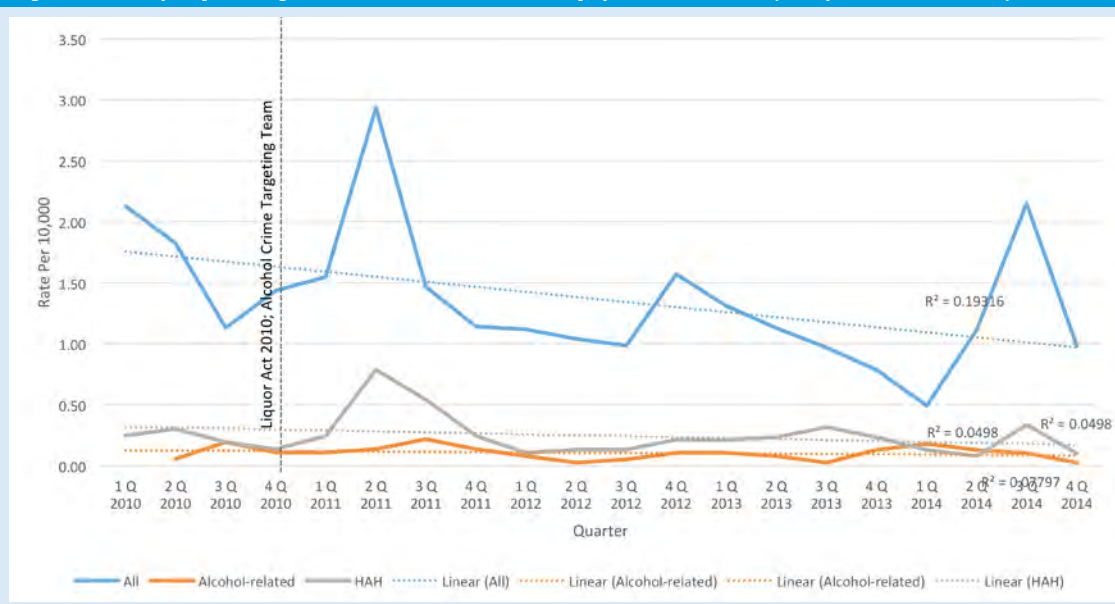
Street offences

Between 1 January 2010 and 30 December 2014 there were 480 street offences in the entertainment areas of Canberra (City: n=398; Braddon: n=82). The following sections look at trends in street offences overall, by whether they were alcohol-related, and by high alcohol hours (HAH). The definition of HAH used for the analysis of police records is between 8 pm–6 am Friday to Sunday morning (Laslett et al. 2007).

Of all street offences, 50.8 percent (n=244; City: n=230, 57.8%; Braddon: n=14, 17%) took place during HAH, and since 2011, 73.7 percent (n=305; City: n=269, 78.2%; Braddon: n=36, 51.4%) were alcohol-related. Street offences in 2011–15 were: Braddon n=70; City n=344; total n=414. Only 11 (2.3%) of the offences were drug-related (ie drugs were seized).

No demographic data is presented for street offences as there was only demographic data available for 11.6 percent (n=48) street offence victims.

Drug and alcohol intoxication and subsequent harm in night-time entertainment districts (DASHED)

Table 99 Number of street offences in Braddon and City (ACT)		
	Braddon	City
All offences	82	398
Alcohol-related (all)	43	302
HAH	14	230
Drugs seized	2	9

Type of location

Table 100 presents the locations that street offences took place in Braddon. Due to the small number of overall offences, these proportions should be interpreted cautiously. Nevertheless, for all street offences, alcohol-related street offences, and those occurring during HAH, the greatest percentage of street offences occurred in a public place (including street/path/bicycle path) followed by in a house.

Table 100 Location street offences took place, Braddon (ACT)						
	All		Alcohol-related		HAH	
	n	%	n	%	n	%
Bus depot	0	0.0	0	0.0	0	0.0
Hotel/motel	2	2.4	1	2.3	0	0.0
House	22	26.8	16	37.2	4	28.6
Licensed premises	0	0.0	0	0.0	0	0.0
Police station	1	1.2	0	0.0	0	0.0
Public place	49	59.8	22	51.2	8	57.1
Shop	3	3.7	0	0.0	1	7.1
Other	5	6.1	4	9.3	1	7.1

Table 101 presents the locations where street offences took place in City. The vast majority of all (88.9%), alcohol-related (90.4%), and HAH (94.3%) street offences in City took place in a public place. The second most frequent location of street offences in City was at a licensed premises; however, the percentage occurring at a licensed venue was small (all: n=15; alcohol-related: n=15; HAH: n=9).

Table 101 Location street offences took place, City (ACT)						
	All		Alcohol-related		HAH	
	n	%	n	%	n	%
Bus depot	5	1.3	4	1.3	0	0.0
Hotel/motel	5	1.3	3	1.0	2	0.9
House	1	0.3	1	0.3	0	0.0
Licensed premises	15	3.8	15	5.0	9	3.9
Police station	5	1.3	3	1.0	0	0.0
Public place	354	88.9	273	90.4	217	94.3
Shop	6	1.5	0	0.0	0	0.0
Other	7	1.8	3	1.0	2	0.9

Time of day, and day of week

Braddon

As there were too few offences to analyse trends in street offences in Braddon by day of week and time of day together, Figure 147 shows street offences by day of the week, and Figure 148 show street offences by time of day.

Figure 147 shows that all street offences and alcohol-related street offences followed similar trends by day of the week, with the highest percentage of offences taking place on the weekend, and the lowest taking place on Wednesday.

Figure 147 Percentage of street offences by day of the week, Braddon (ACT)
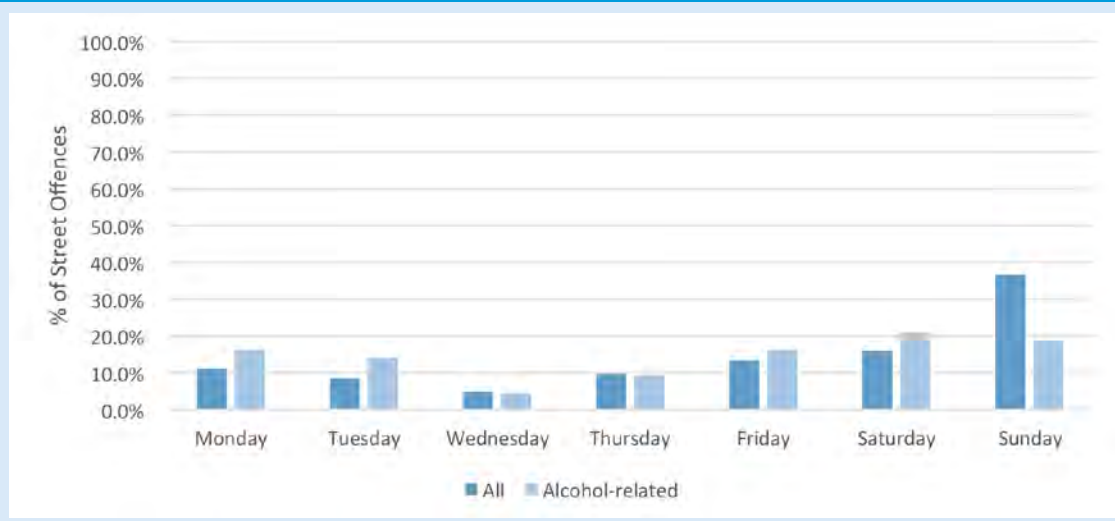
Figure 148 shows a general trend towards fewer offences during daytime hours, with the percentage of offences increasing as the evening progresses. The (unexpected) 'spike' in street offences for 9 am (which can also be seen in Figure 147 on Sunday) can be attributed to one incident involving three offenders charged with multiple counts of offensive behaviour.

Figure 148 Percentage of street offences by time of day, Braddon (ACT)
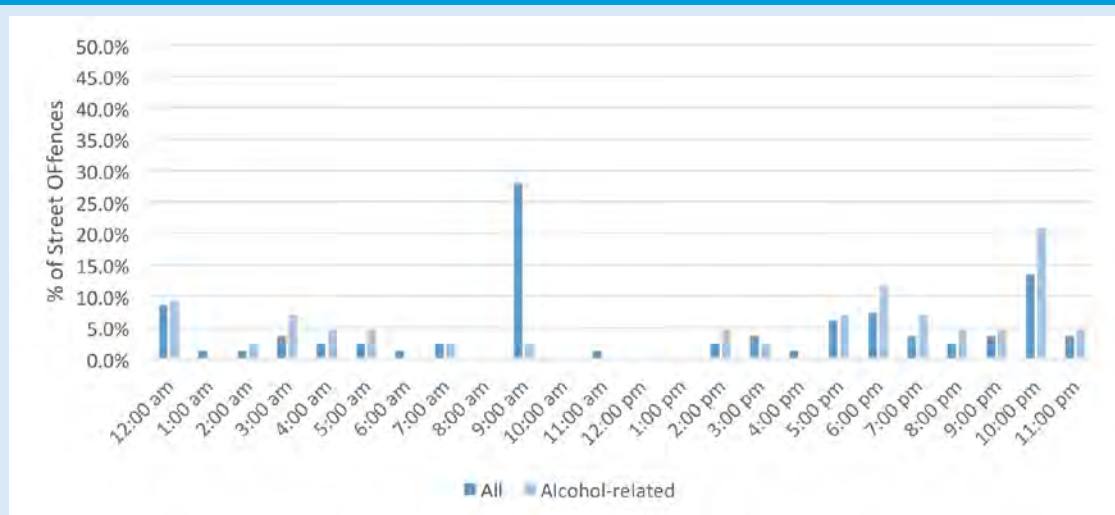
City

Figure 149, Figure 149 and Figure 150 show the frequency all street offences and alcohol-related offences by day of the week, and time of the day in City. A general trend was evident for fewer street offences occurring Monday to Thursday, and relative increases in number of street offences on Thursday night/Friday morning, Friday night/Saturday morning and Saturday night/Sunday morning.

Street offences occurring during HAH (8 pm–6 am Friday night through Sunday morning) accounted for 57.8 percent (*n*=230) of all street offences and 66.2 percent (*n*=200) of alcohol-related street offences. Assaults occurring on Thursday nights/Friday morning (8 pm–6 am) accounted for an additional 15.3 percent (*n*=61) of all street offences and 17.9 percent (*n*=54) of alcohol-related street offences.

Figure 149 Frequency of street offences by day of week, and time of day, City (ACT)
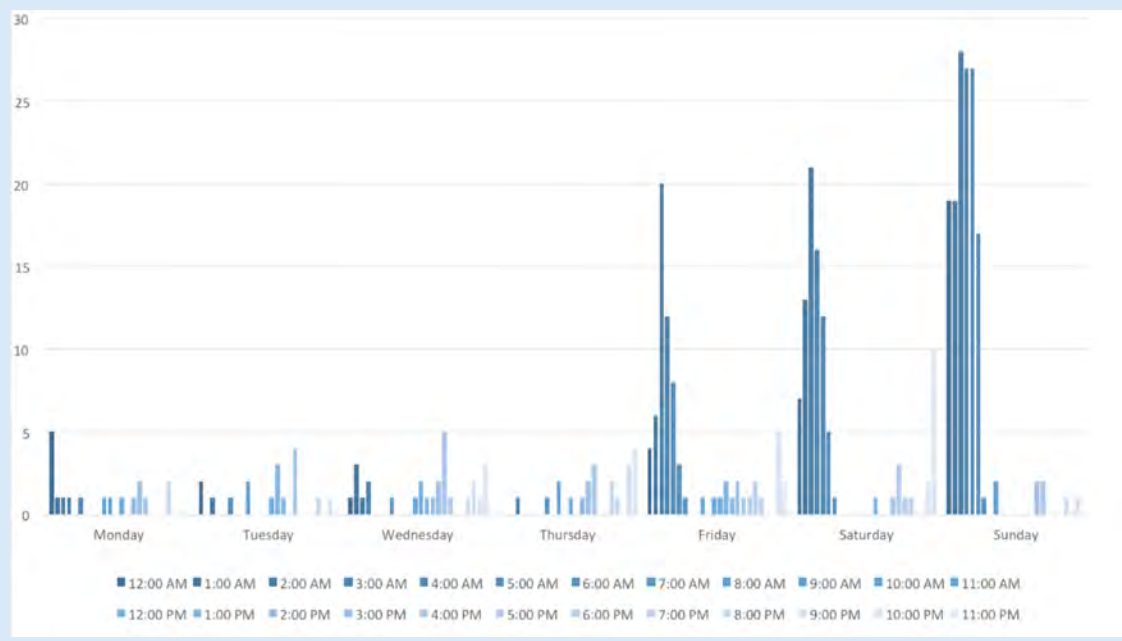
Figure 150 Frequency of alcohol-related street offences by day of week, and time of day, City (ACT)
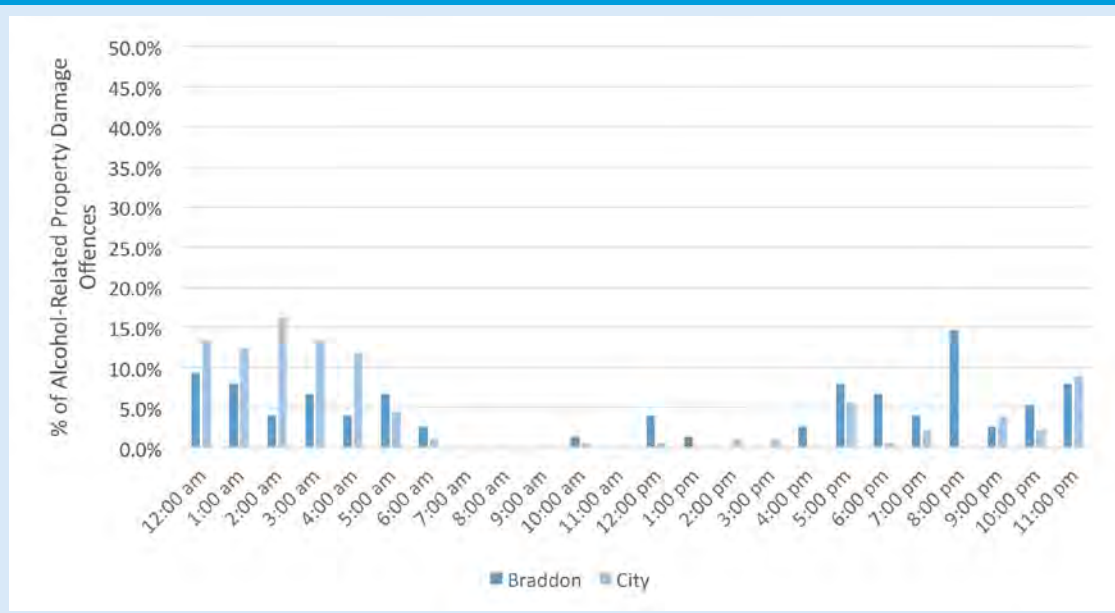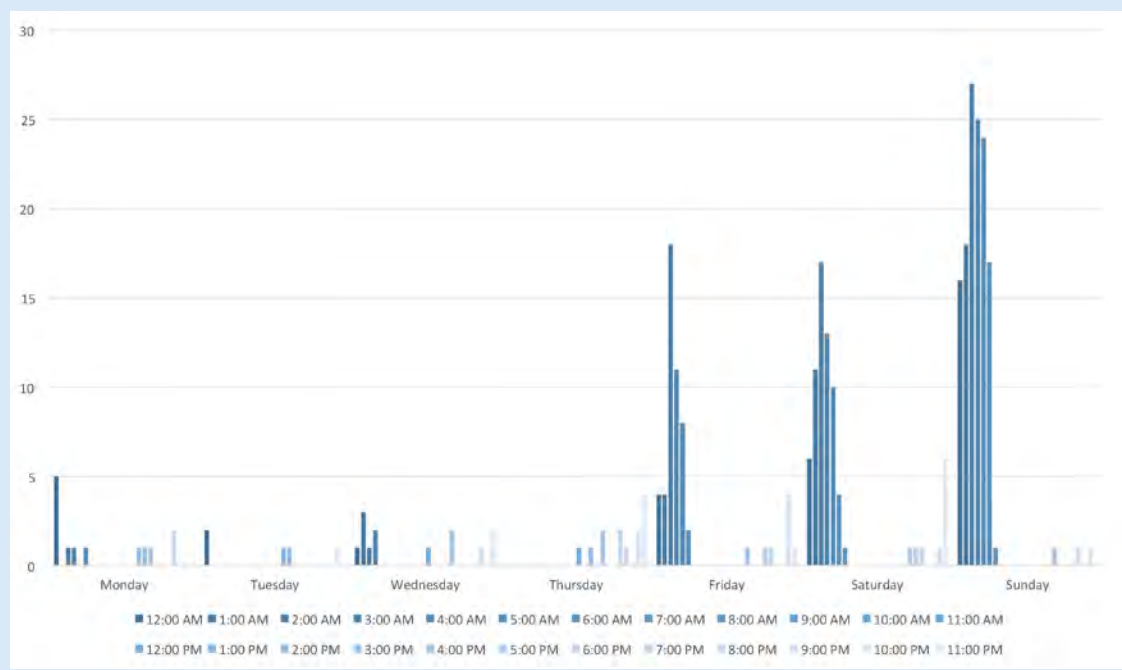
Annual trends

Figure 151 presents the percentage of street offences that occurred each month over the reporting period in City. As the alcohol-related flag has only been collected since April/May 2010, only data from 2011–14 is presented for alcohol-related offences. The annual trends for Braddon are not presented due to the low number of offences (*n*=82).

Figure 151 shows that street offences in City appear to be more frequent mid-year (June, August), but overall there are no clear annual trends. The percentage of street offences overall, alcohol-related street offences, and street offences occurring during HAH was similar across the year.

Figure 151 Percentage of street offences by month, City (ACT)
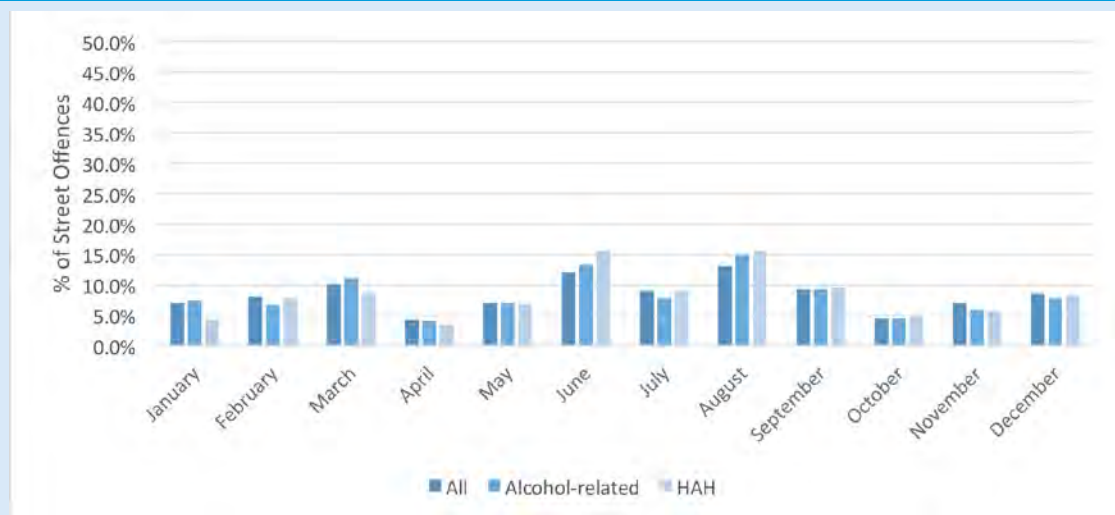
Figure 152, Figure 153 and Figure 154 present trends over time for street offences occurring within City and Braddon by all offences, alcohol-related offences, and offences occurring within HAH. The three trend lines show an increase in overall street offences, alcohol-related street offences, and street offences occurring during HAH over time. Nevertheless, the rate of street offences remained less than one offence per 10,000 in the ACT across the measurement period.

Figure 152 Street offence trends over time by quarter, City and Braddon (rate per 10,000 in ACT)

Drug and alcohol intoxication and subsequent harm in night-time entertainment districts (DASHED)
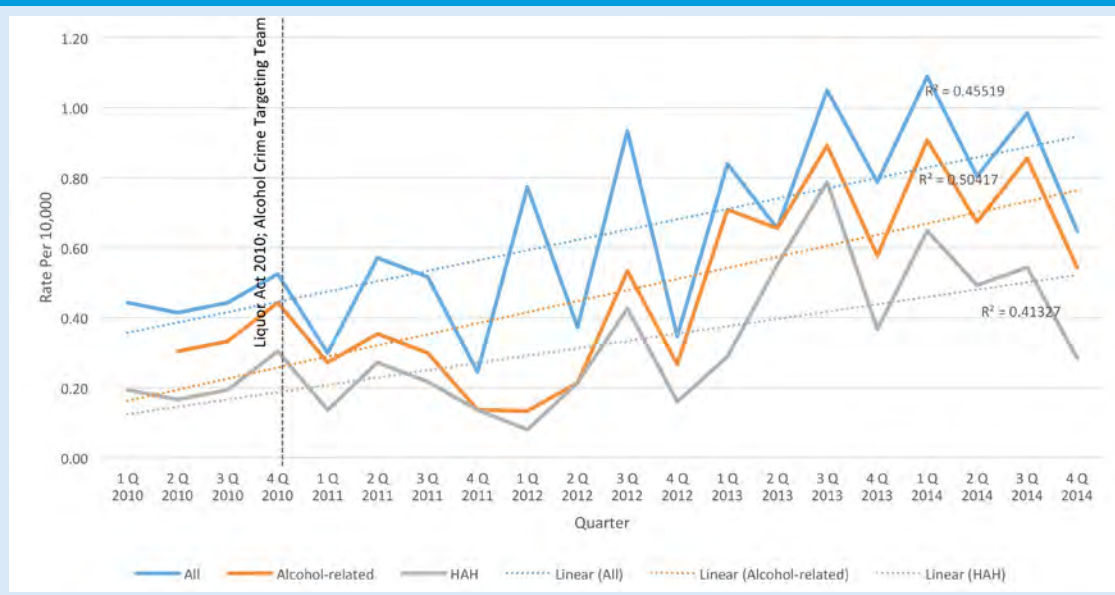
Figure 153 Street offence trends over time by quarter, City (rate per 10,000 in ACT)
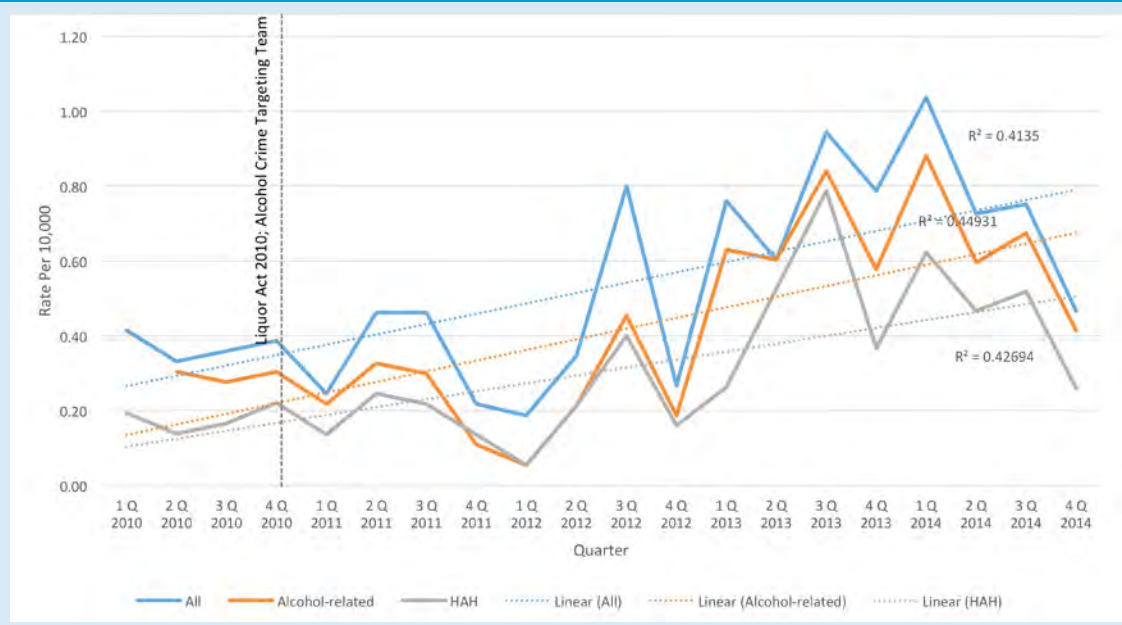
Figure 154 Street offence trends over time by quarter, Braddon (rate per 10,000 in ACT)
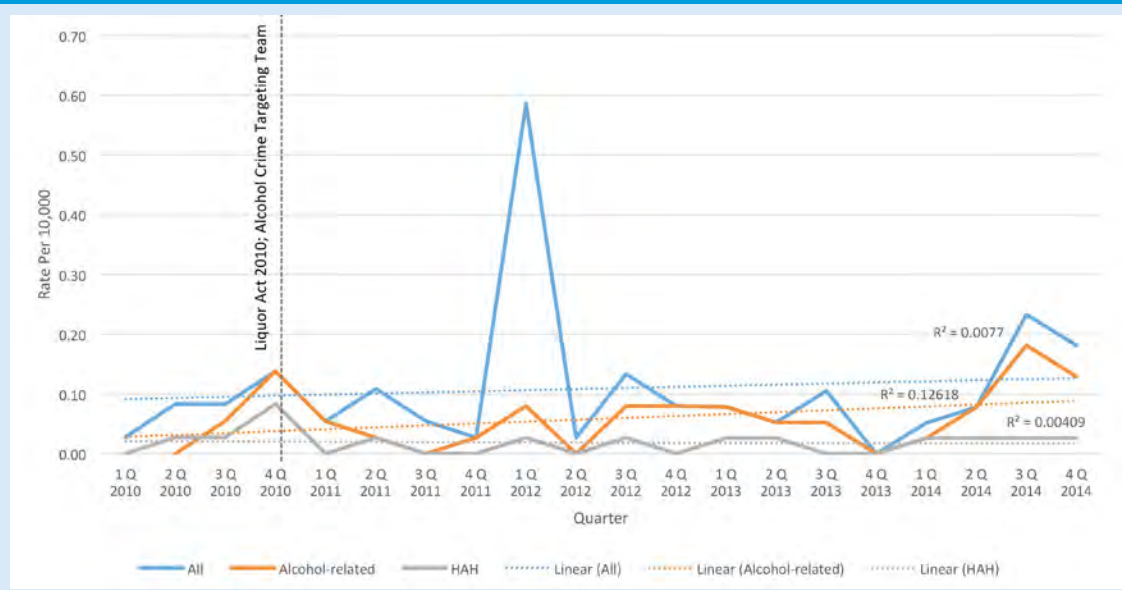
Drink-driving offences

Between 1 January 2010 and 30 December 2014 there were 668 drink-driving offences in the entertainment areas of Canberra (City: *n*=524; Braddon: *n*=144). The following looks at trends in drink-driving offences overall and by high alcohol hours (HAH). The definition of HAH used for analysing police records is between 8 pm–6 am Friday to Sunday morning (Laslett et al. 2007).

Of all drink-driving offences, 53.6 percent (*n*=369; City: *n*=310, 59.2%; Braddon: *n*=59, 41%) took place during HAH. Only 10 (1.5%) offences were drug-related (ie drugs were seized).

Table 102 Number of drink-driving offences in Braddon and City (Canberra)		
	Braddon	**City**
All offences	144	524
HAH	59	310
Drugs seized	2	8

Time of day, and day of week

Braddon

As there were too few offences to analyse trends in drink-driving offences in Braddon by day of week, and time of day together, Figure 155 shows drink-driving offences by day of the week, and Figure 156 shows drink-driving offences by time of day.

The greatest percentage of drink-driving offences took place on Saturday (*n*=35, 24.3%), followed by Sunday (*n*=32, 22.2%) and Friday (*n*=29, 20.1%). Drink-driving offences were lowest on Monday (*n*=9, 6.3%).

Figure 155 Percentage of all drink-driving offences by day of the week, Braddon (ACT)
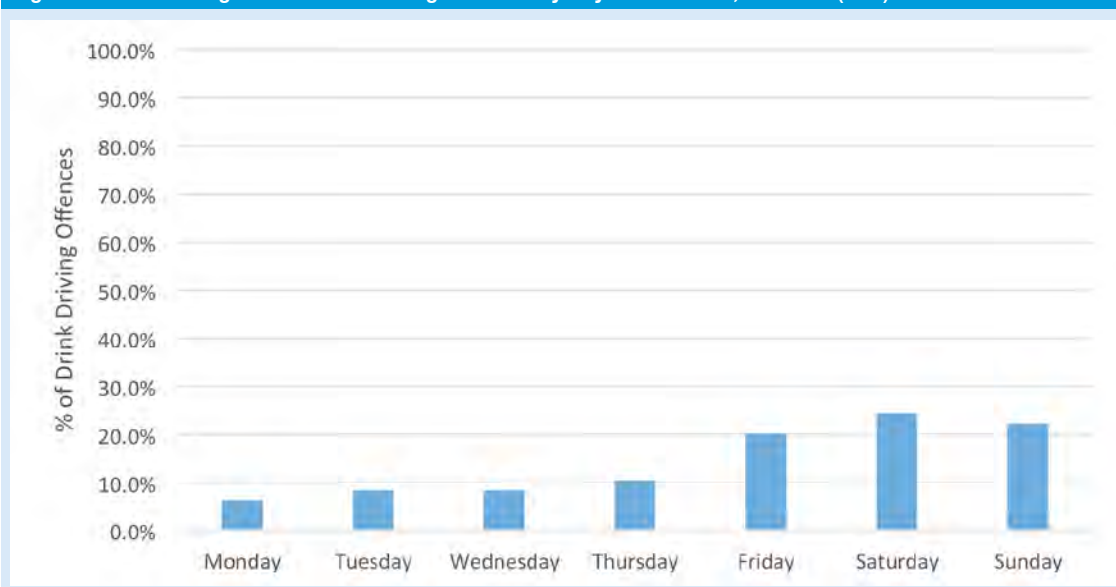
Figure 156 shows a general trend for fewer offences during the daytime hours (ie between 6 am and 6 pm) compared with the evening/early morning hours, with 86.8 percent (*n*=125) of all drink-driving offences in Braddon taking place between 6 pm and 6 am.

Figure 156 Percentage of all drink-driving offences by time of day, Braddon (ACT)
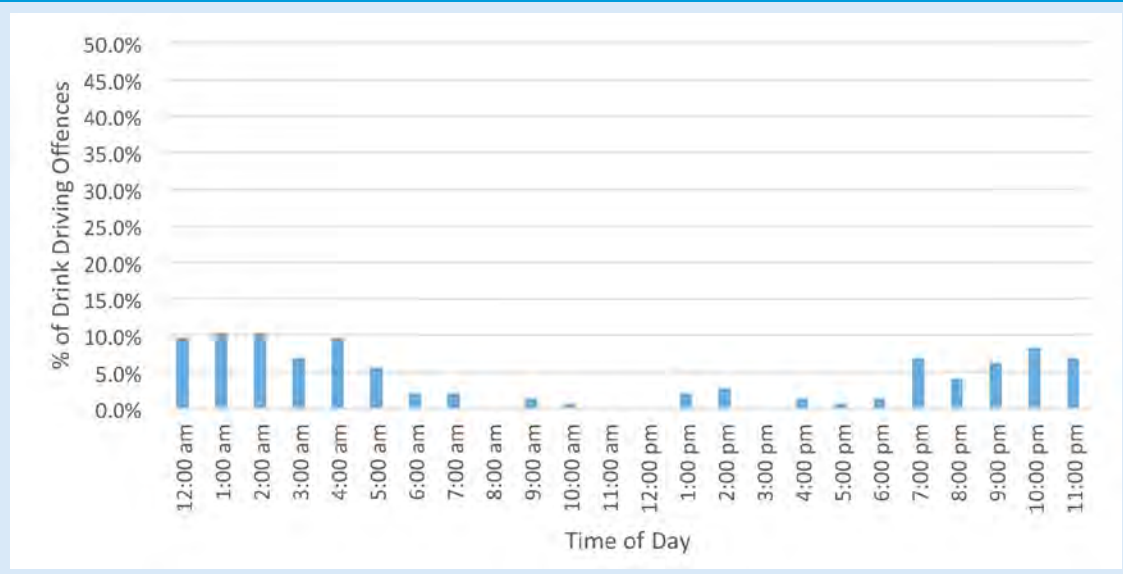
City

Figure 157 shows the frequency all drink-driving offences by day of the week, and time of the day in City. Very few drink-driving offences occurred from Monday until Thursday evening. Drink-driving offences showed marked increases on Thursday night/Friday morning, Friday night/Saturday morning and Saturday night/Sunday morning.

Drink-driving offences taking place during HAH (8 pm–6 am Friday night through Sunday morning) accounted for 59.2 percent (*n*=310) of all drink-driving offences. Drink-driving offences occurring on Thursday nights/Friday morning (8 pm–6 am) accounted for an additional 20.4 percent (*n*=107) of all drink-driving offences.

Figure 157 Frequency of drink-driving offences by day of week, and time of day, City (ACT)
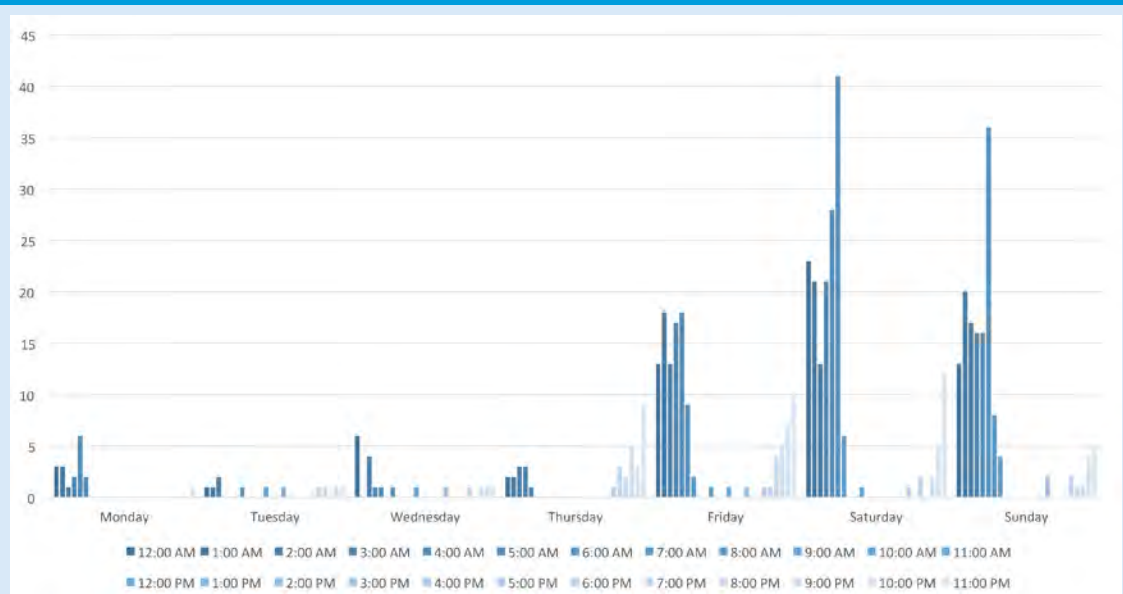
Annual trends

Figure 158 and Figure 159 present the percentage of drink-driving offences occurring each month over the reporting period in Braddon and City.

No clear annual trends emerged in drink-driving offences in Braddon, most likely due to the low number of these offences taking place in Braddon over the measurement period (n=144). Overall, drink-driving offences were most likely to occur in August (n=18, 12.5%), followed by January (n=13, 9%), and were lowest in November (n=7, 4.9%). Drink-driving offences that occurred during HAH where highest in December (n=8, 13.6%), followed by May (n=7, 11.9%) and March (n=6, 10.2%), and were lowest in June (n=2, 3.4%).

Figure 158 Percentage of drink-driving offences by month, Braddon (ACT)
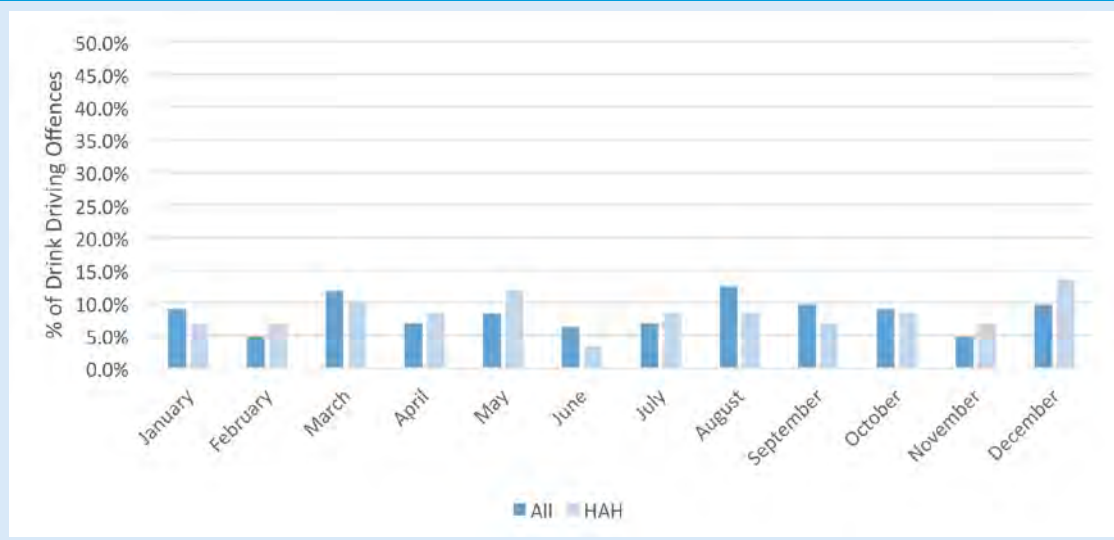
As shown in Figure 159, drink-driving offences overall in the City increased from May (n=33, 6.3%) through to August (n=54, 10.3%) where they declined until October (n=46, 8.8%). Drink-driving offences were highest in November (n=75, 14.3%), and then decreased again in December (n=51, 9.7%), January (n=30, 5.7%), and February (n=28, 5.3%). Drink-drinking offences that occurred during HAH followed a similar trend, but did not show the same decrease from November (n=44, 14.2%) to December (n=42, 13.5%).

Figure 159 Percentage of drink-driving offences by month, City (ACT)

Drug and alcohol intoxication and subsequent harm in night-time entertainment districts (DASHED)
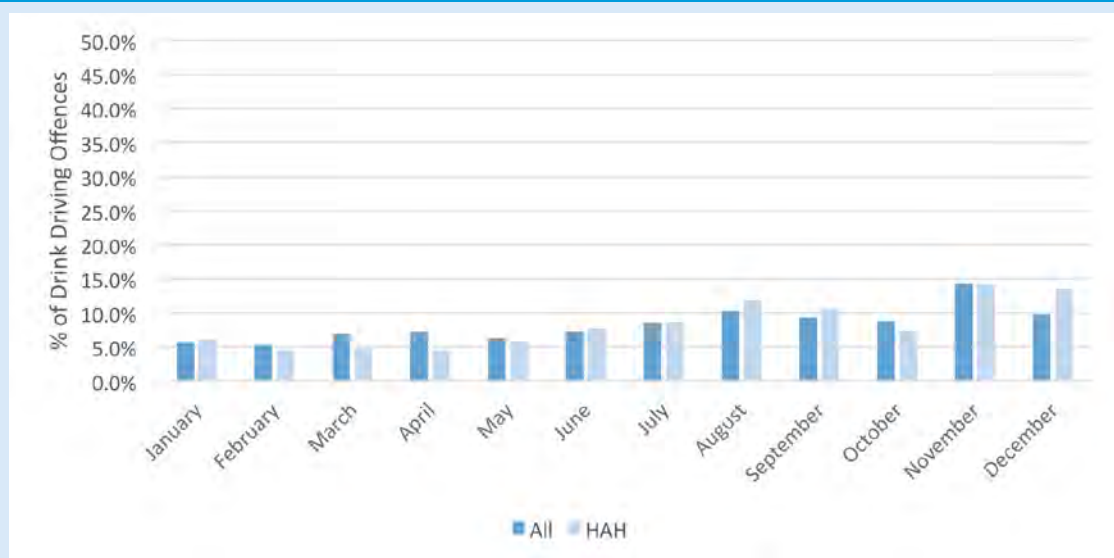
Figure 160, Figure 161 and Figure 162 present trends over time for drink-driving offences occurring within City and Braddon, by all offences, and offences occurring within HAH. The two trend lines show a slight decrease in all drink-driving offences and those occurring within HAH over time.

Figure 160 Drink-driving trends over time by quarter, City and Braddon (rates per 10,000 in ACT)
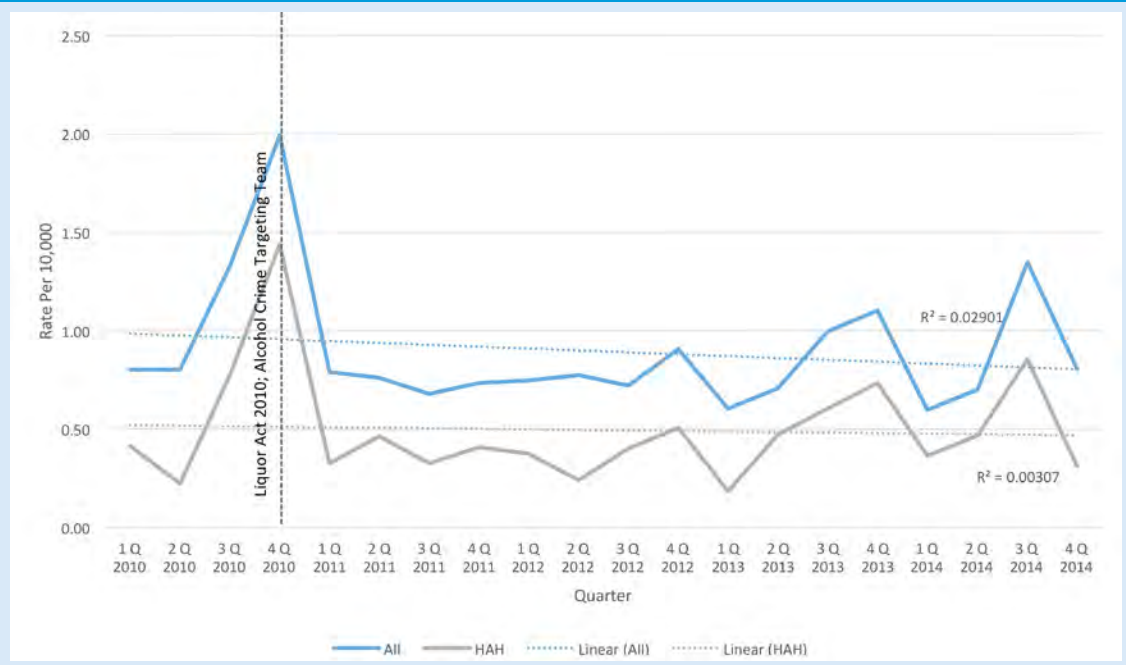
Figure 161 Drink-driving trends over time by quarter, City (rates per 10,000 in ACT)
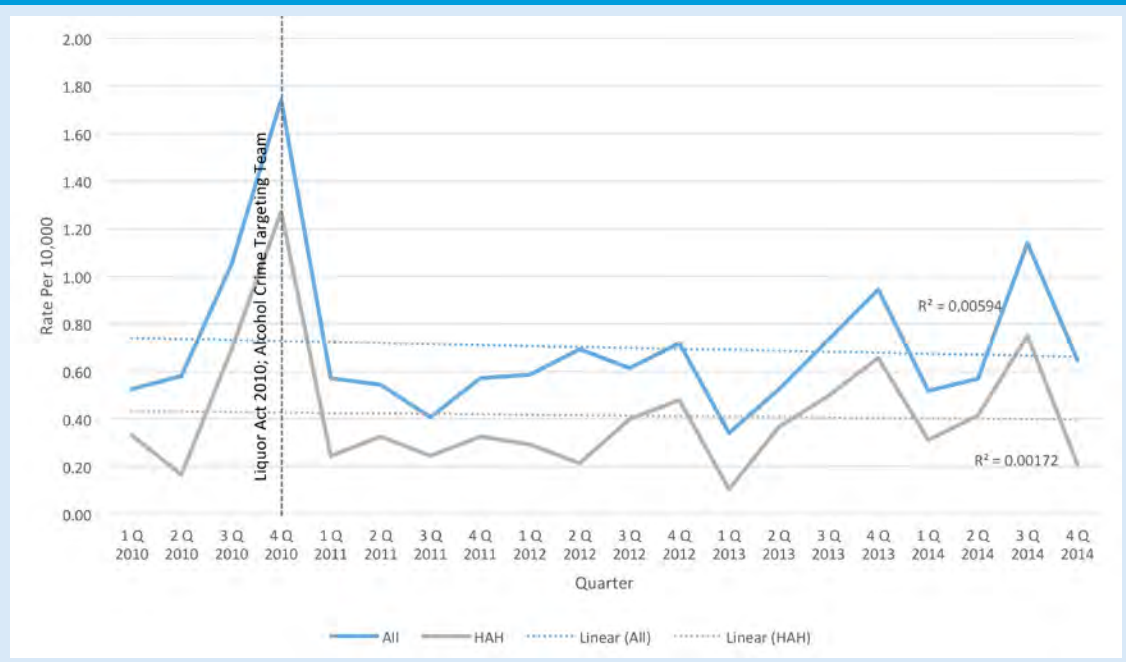
Figure 162 Drink-driving trends over time by quarter, Braddon (rates per 10,000 in ACT)
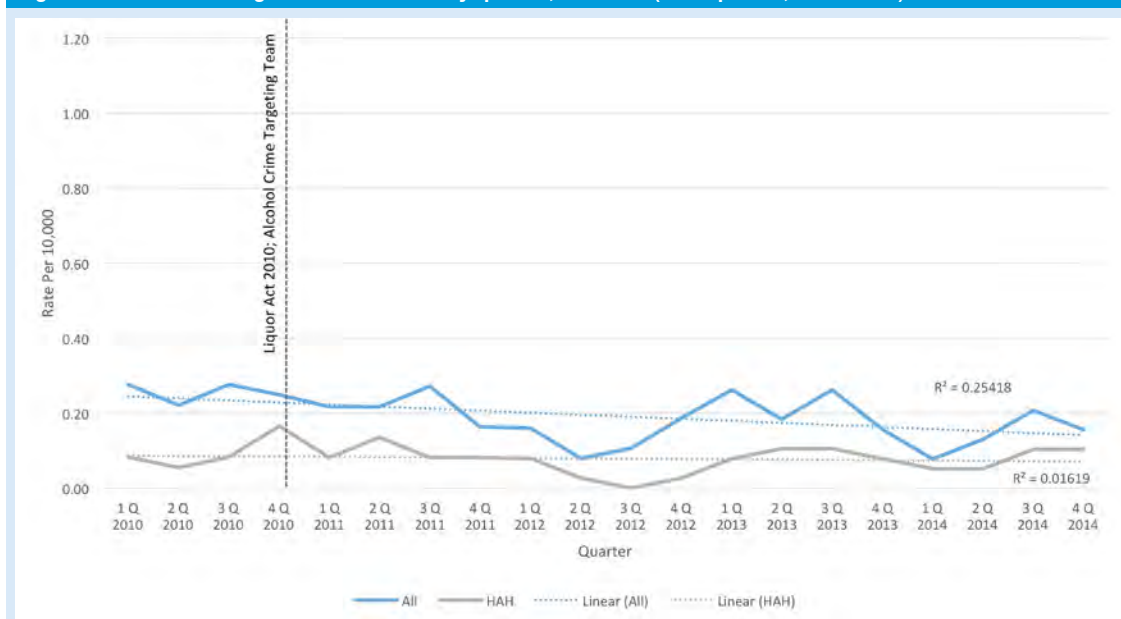
Custody data

This section presents data for offences where offenders were lodged into custody at Canberra Police Station between 1 January 2010 and 30 December 2014. It includes only assault, sexual offences, property damage, or street offences that took place in City or Braddon (see Table 3). The following analyses overall trends and whether they were alcohol-related. Data were not analysed by HAH or time of day/day of the week, as no data were available for the date/time the offence actually took place. Date and time were only noted when the apprehension was logged in the database and when the offender was arrested (both of which differ from when the offence actually took place).

Table 103 shows offences occurring in City since 2011, as alcohol-relatedness has only been recorded since April/May 2010. The table shows data from 1 January 2011 to 31 December 2014 only. Alcohol-related offences during that time were: assault (Braddon: $n=66$; City: $n=408$); sexual offences (Braddon: $n=9$; City: $n=8$); property damage (Braddon: $n=34$; City: $n=80$); street offence (Braddon: $n=40$; City: $n=574$). Most assaults (65.2%) and street offences (83.3%) were flagged as alcohol-related, and a large percentage of property damage offences were also alcohol-related (41.5%). Only a small percentage of sexual offences were alcohol-related (14.5%). For offences that occurred in Braddon, more than half the street offences were alcohol-related (60.3%), and a large proportion of assaults (43.7%), sexual offences (30%), and property damage (34.4%) offences were alcohol-related.

Table 103 Offence types and percentage of each offence type that was alcohol-related, Canberra (ACT)					
		n offences		Alcohol-related offences since 2011 n (%)	
Offence Type	ASOC code(s)	Braddon	City	Braddon	City
Assault	0211; 0212; 0213; 0299	151	676	53 (42.7)	330 (65.2)
Sexual offences	0311; 0312; 0321;0329	32	64	9 (30.0)	8 (14.5)
Property damage	1210; 1211; 1212; 1219	98	188	25 (34.7)	59 (41.5)
Street offences	1313; 1319; 1331; 1332	70	715	35 (60.3)	528 (83.3)

Table 104 Offence outcomes, Canberra (ACT)								
	Arrest		Sexual offences		Property damage		Street offences	
Offence type	n	%	n	%	n	%	n	%
Arrest	427	51.6	27	28.1	151	52.8	318	40.5
Caution	30	3.6	0	0.0	31	10.8	368	46.9
Charged before the court	166	20.1	56	58.3	62	21.7	35	4.5
Diversionary conference	5	0.6	0	0.0	2	0.7	1	0.1
Summons	199	24.1	13	13.5	40	14.0	63	8.0

Demographics

Offenders

Figure 163 and Figure 164 show the percentage of offenders brought into custody within each age group for offences that took place in Braddon. Alcohol-related sexual offences are not presented due to too few cases (*n*=9).

Figure 163 shows that, with the exception of sexual offences, offenders brought into custody for offences that took place in Braddon were most likely to fall in the 18 to 24 year and 25 to 34 year age groups. Offenders bought into custody for sexual offences tended to be older, and were most likely aged between 25 and 34 years, followed by 45 to 54 years and 65+ years. Alcohol-related assaults and property damage showed similar trends; however, those brought into custody for alcohol-related street offences were most likely aged between 34 and 44 years.

Figure 163 Offenders brought into custody by age group, all offences, Braddon (ACT)
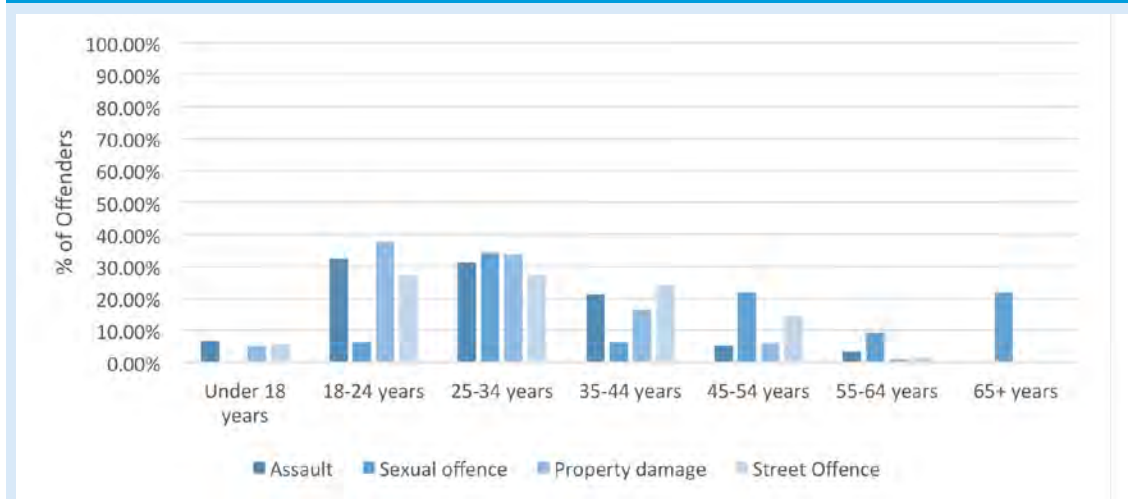
Figure 164 Offenders brought into custody by age group, alcohol-related offences, Braddon (ACT)
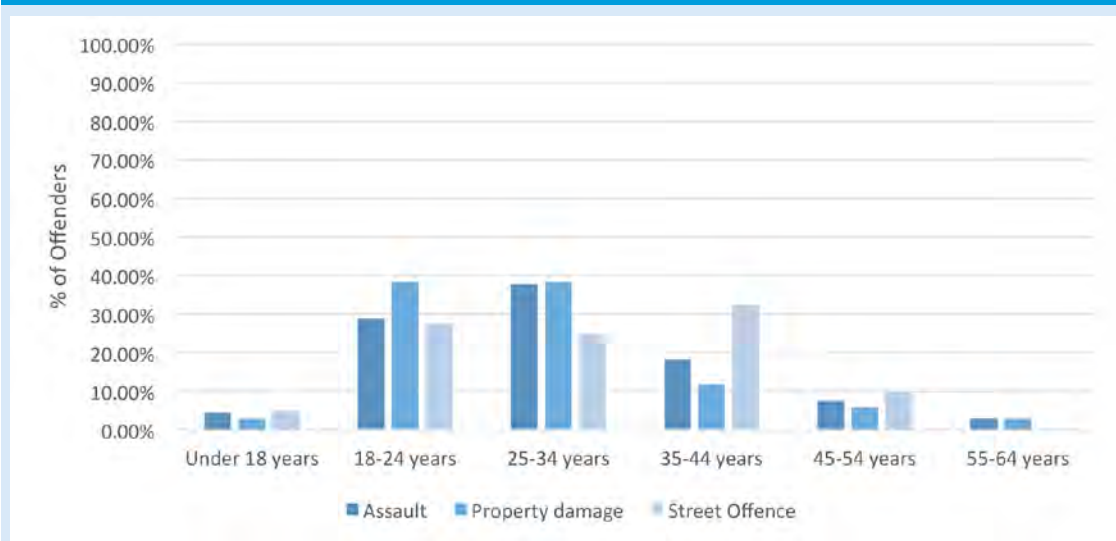
Figure 165 and Figure 166 present the percentage of offenders brought into custody within each age group for offences that took place in Braddon. Again, alcohol-related sexual offences are not presented due to too few cases (*n*=8).

Figure 165 shows that, with the exception of sexual offences, those brought into custody for offences that took place in City were most likely to be in the 18 to 24 year and 25 to 34 year age groups. Sexual offenders tended to be older, and were most likely aged between 45 and 54 years. Alcohol-related offences also showed similar trends (see Figure 166).

Figure 165 Offenders brought into custody by age group, all offences, City (ACT)
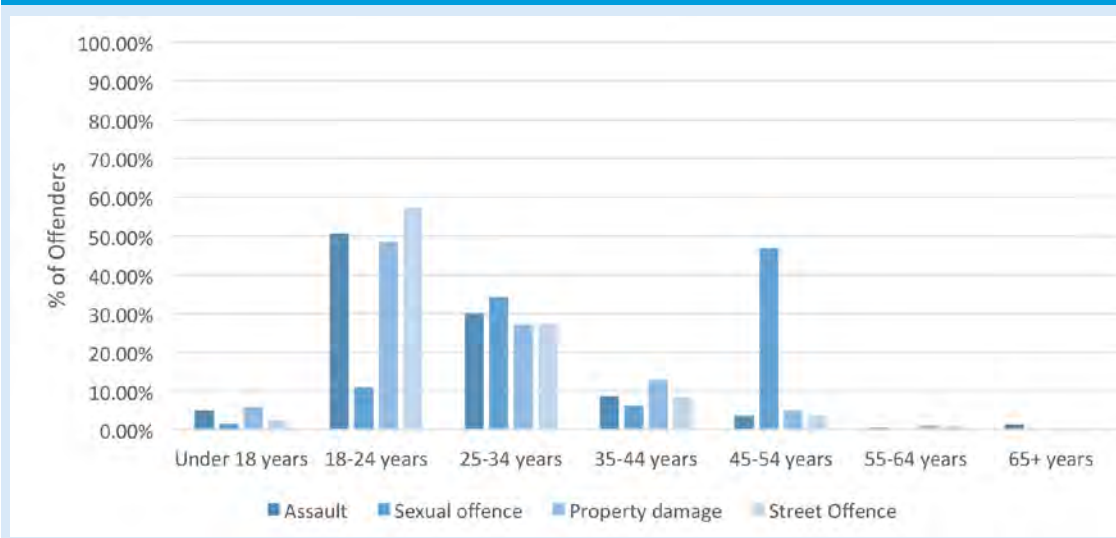
Figure 166 Offenders brought into custody by age group, alcohol-related offences, City (ACT)
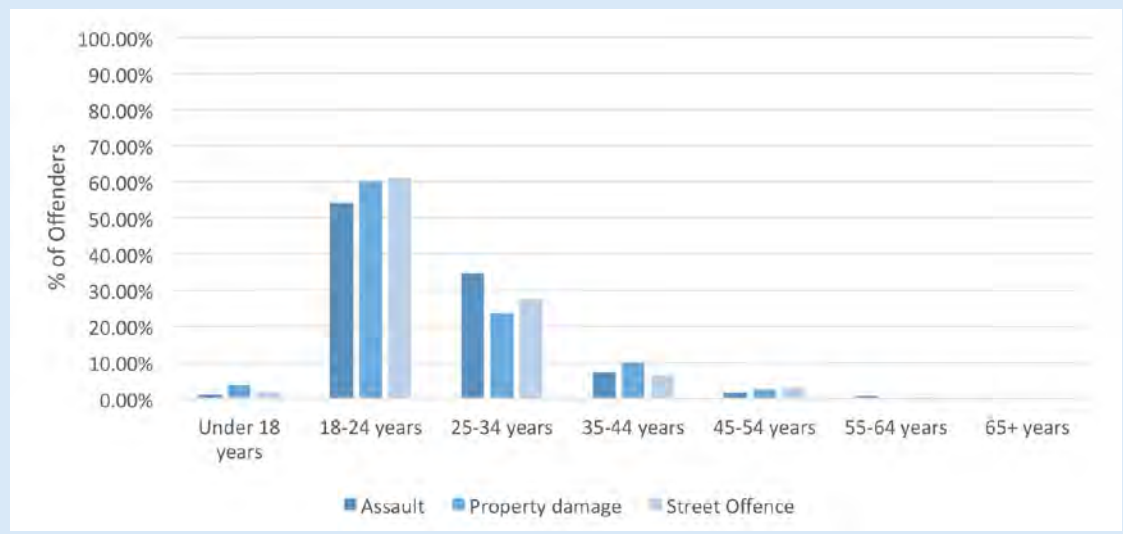
Figure 167 and Figure 168 show the percentage of those brought into custody for offences that took place in Braddon and City who were male. Most offenders brought into custody across each offence type were males (67–100%).

Figure 167 Percentage of offenders brought into custody who are male, Braddon (ACT)
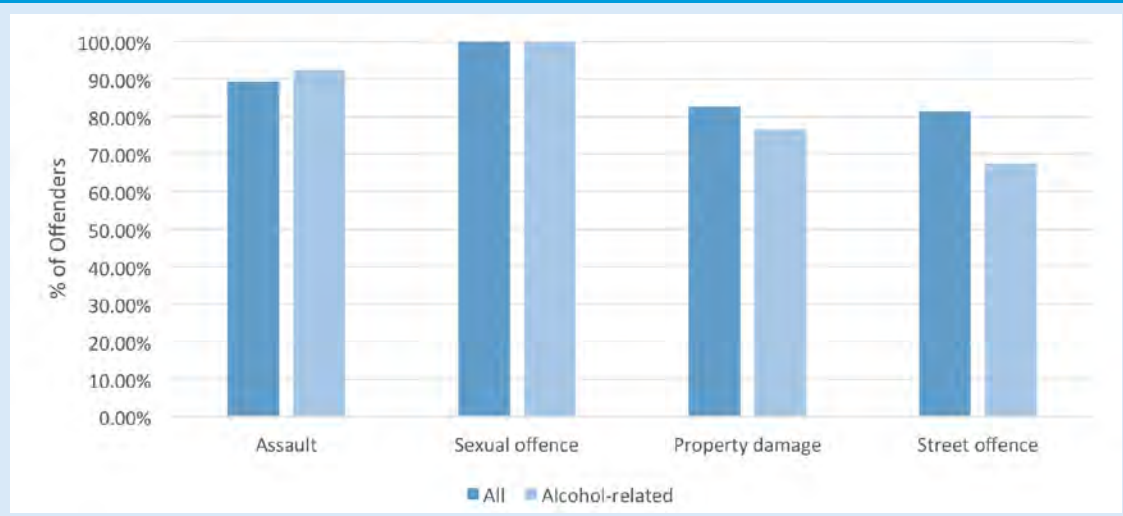
Figure 168 Percentage of offenders brought into custody who are male, City (ACT)
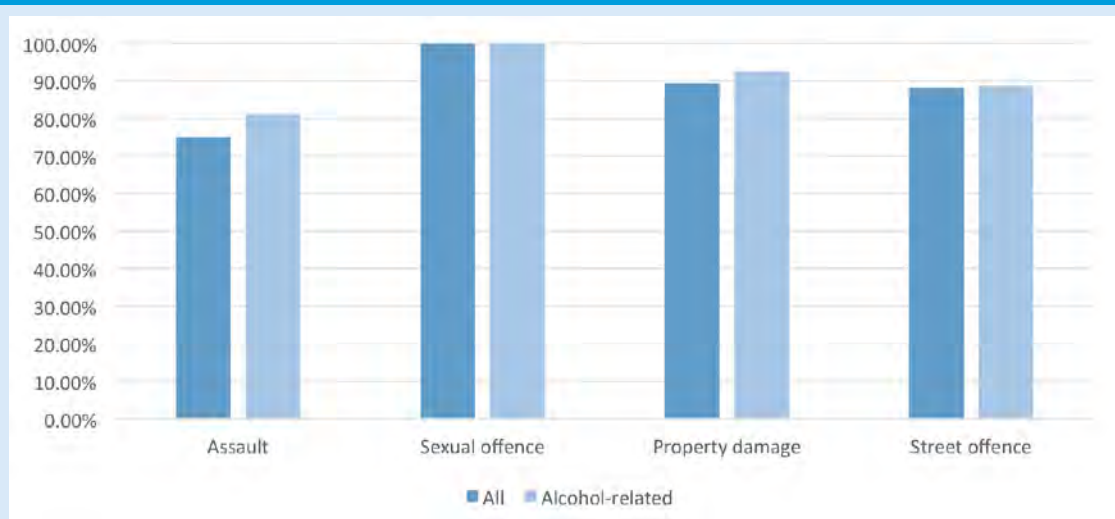
Annual trends

The following sets out annual trends for assaults, property damage and street offences where an offender was taken into custody. No annual trends are given for sexual offences as the number of cases was too low (Braddon: *n*=32; City: *n*=64). As the alcohol-related flag has only been collected since April/May 2010, only data from 2011–14 is shown for alcohol-related offences.

Assaults

Figure 169 and Figure 170 show the percentage of assaults in Braddon and City, occurring each month over the reporting period, where an offender was brought into custody.

Figure 169 shows no clear annual trend in assault custody offences occurring in Braddon. Although alcohol-related assaults appeared to occur more frequently in February and March, there were very few alcohol-related assaults overall in Braddon (*n*=53).

Figure 169 Percentage of assault offenders taken into custody, by month, Braddon (ACT)
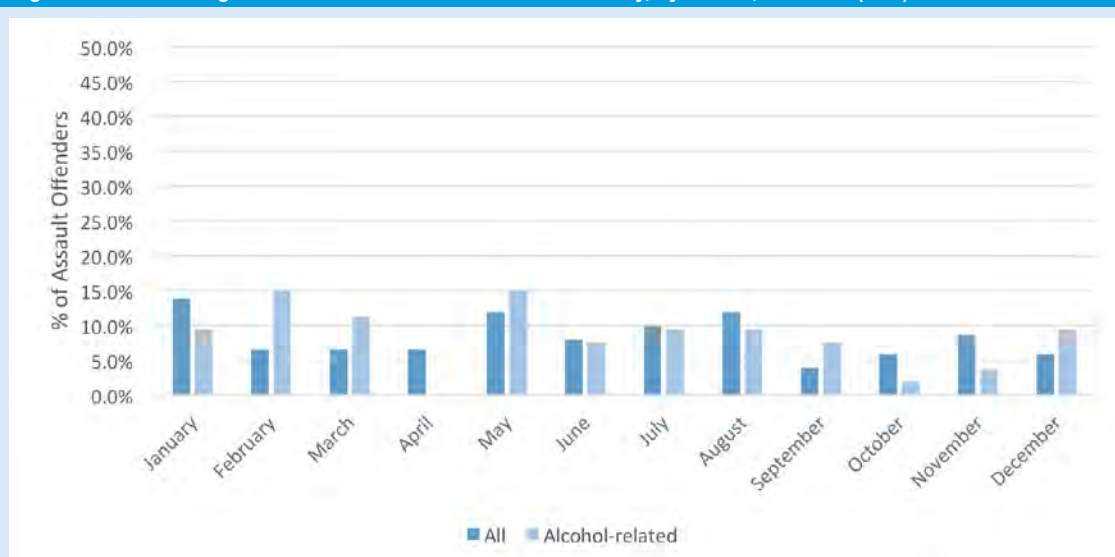
As shown in Figure 170, there was no clear annual trend for assaults that occurred in City and that led to the offender being placed in custody.

Figure 170 Percentage of assault offenders taken into custody, by month, City (ACT)
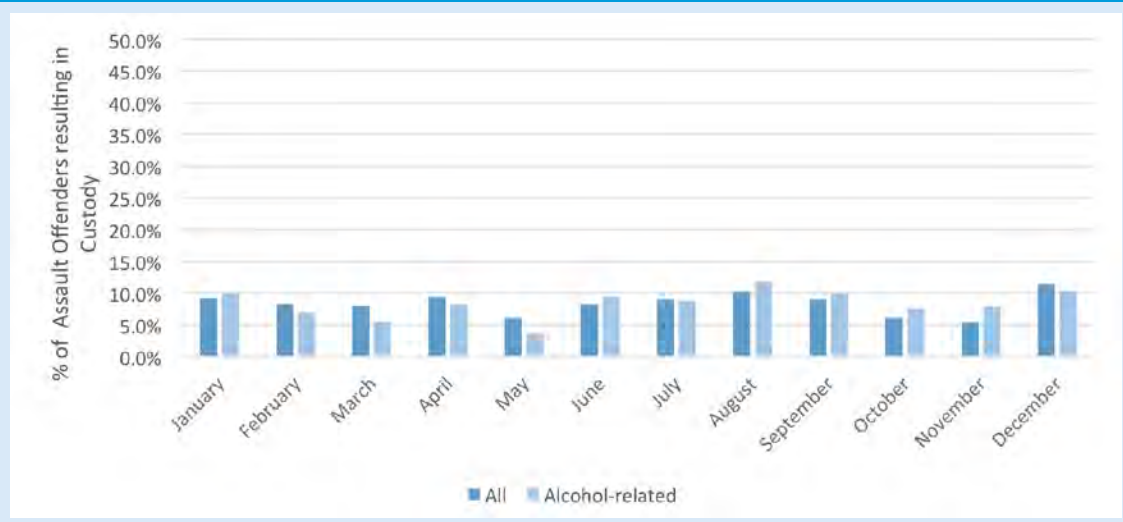
Figure 171 and Figure 172 present trends over time for assault offences that led to an offender being place in custody in City and Braddon by all offences and by those that were alcohol-related. The two trend lines show a slight decrease in all assaults and alcohol-related assaults over time. A separate graph was not produced for Braddon, as there were too few cases to determine trends over time (all: n=151, alcohol-related: n=66).

Figure 171 Trends over time, by quarter, for assault offences that led to an offender being placed into custody, City and Braddon (rates per 10,000 in ACT)
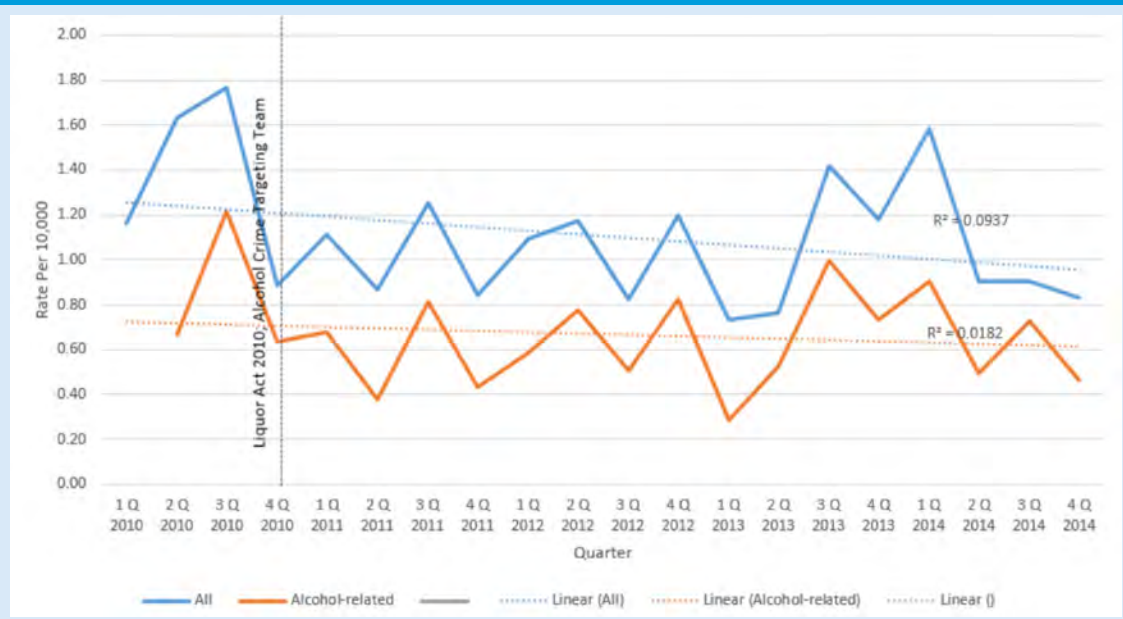
Figure 172 Trends over time, by quarter, for assault offences that led to an offender being placed into custody, City (rates per 10,000 in ACT)
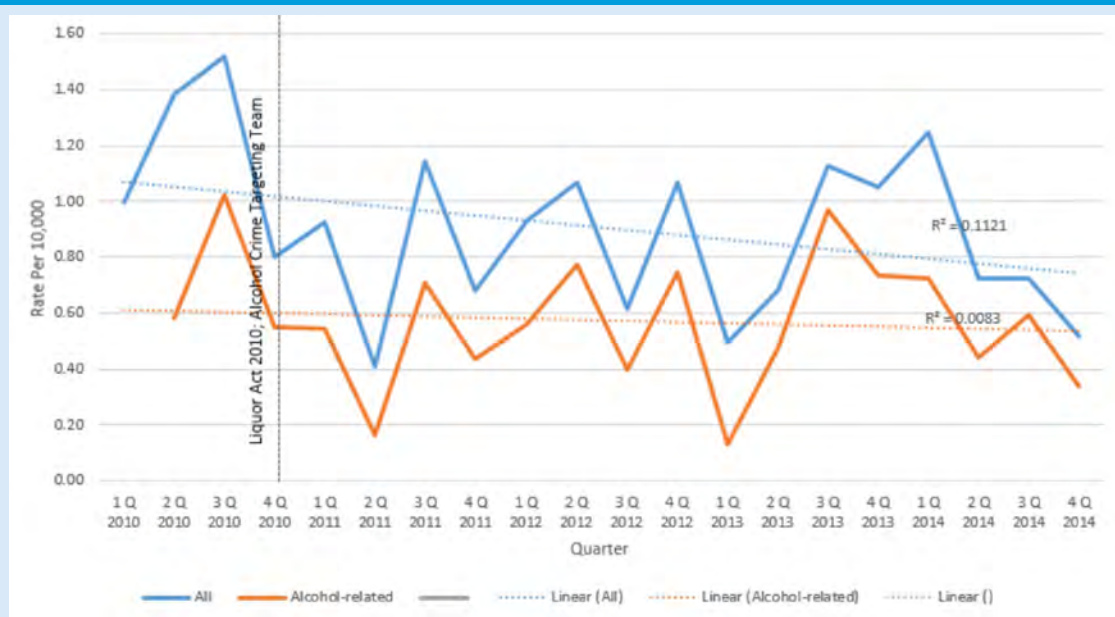
Property damage

Figure 173 and Figure 174 show the percentage of property damage offences for which offenders were taken into custody each month in Braddon and City.

Figure 173 shows no clear annual trend for property damage offences occurring in Braddon that led to an offender being placed in custody. Although alcohol-related offences appeared to occur more frequently in February, March and July, very few alcohol-related offences occurred in Braddon (*n*=25).

Figure 173 Percentage of property damage offences for which offenders were taken into custody, by month, Braddon (ACT)
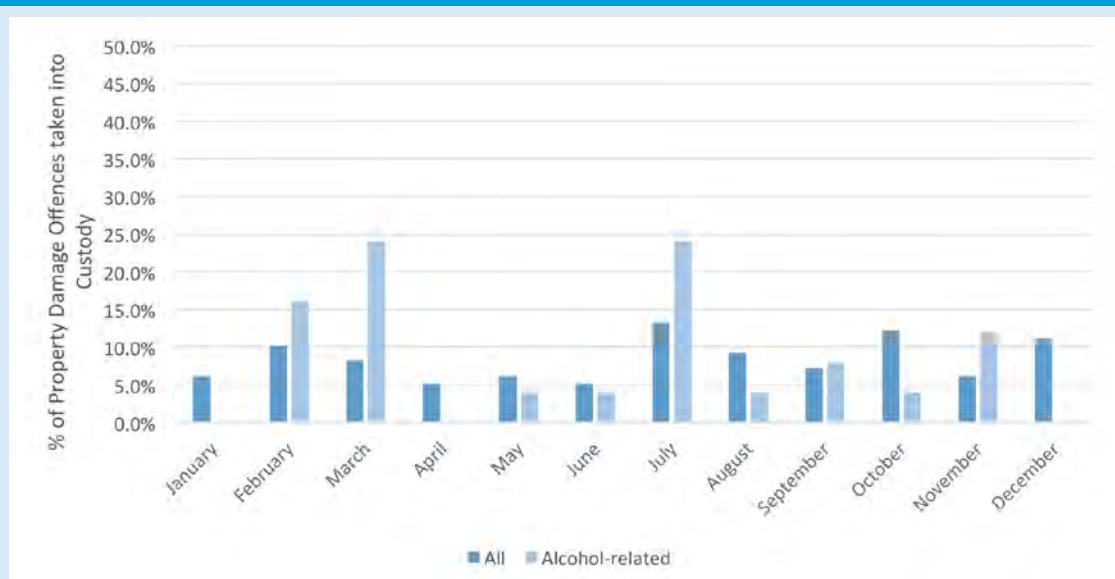
Figure 174 shows property damage offences occurring in City, and that led to an offender being placed in custody, appeared to be generally more frequent in the first half of the year compared with the second half. However, this is based on a relatively low number of offences (*n*=188). Alcohol-related trends are difficult to interpret due to the low number of offences (*n*=59).

Figure 174 Percentage of property damage offences for which offenders were taken into custody, by month, City (ACT)
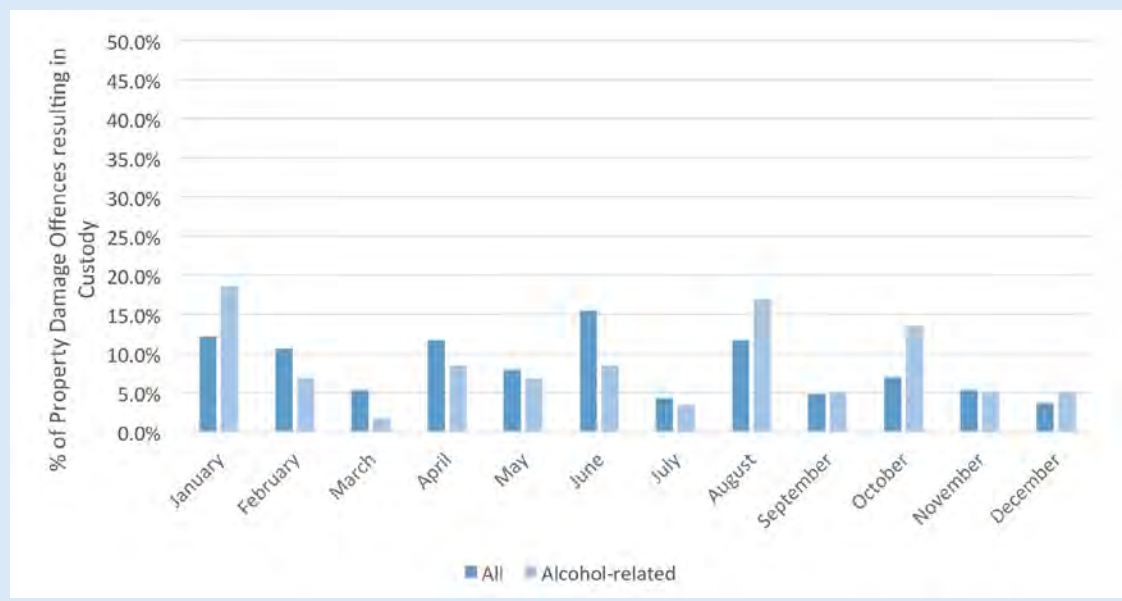
Figure 175 and Figure 176 show trends over time for property damage offences in City and Braddon that led to an offender being place in custody. They show all offences and those that were alcohol-related. The two trend lines show a slight decrease in all property damage offences and alcohol-related property damage offences over time. A separate graph was not produced for Braddon, as there were too few cases to determine trends over time (all: n=98, alcohol-related: n=34).

Figure 175 Trends over time, by quarter, for property damage offences that led to an offender being placed in custody, City and Braddon (rates per 10,000 in ACT)
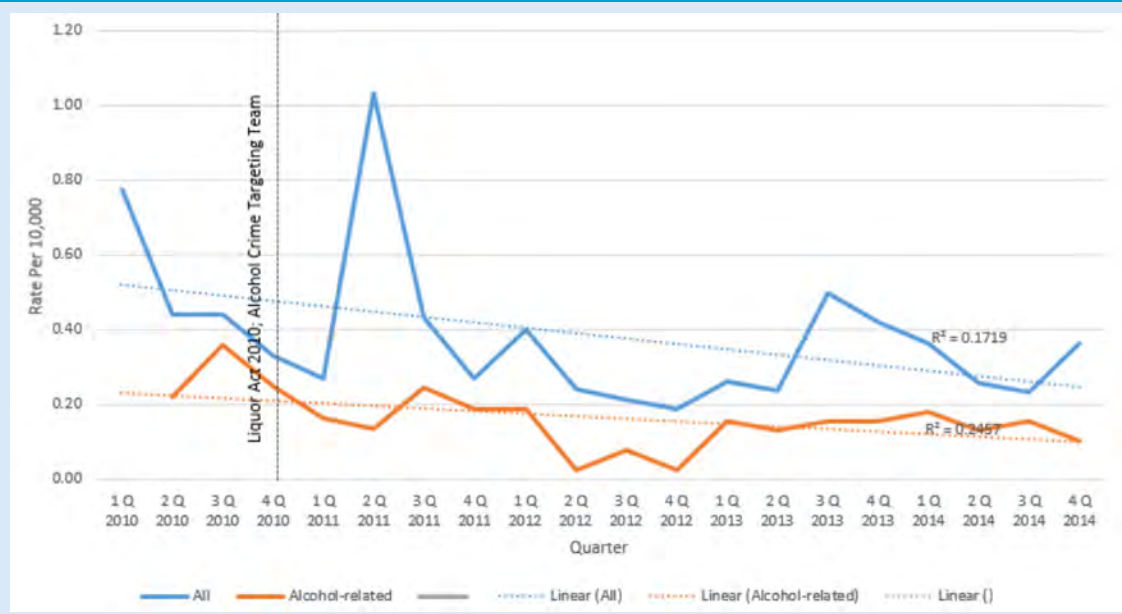
Figure 176 Trends over time, by quarter, for property damage offences that led to an offender being placed into custody, City (rates per 10,000 in ACT)
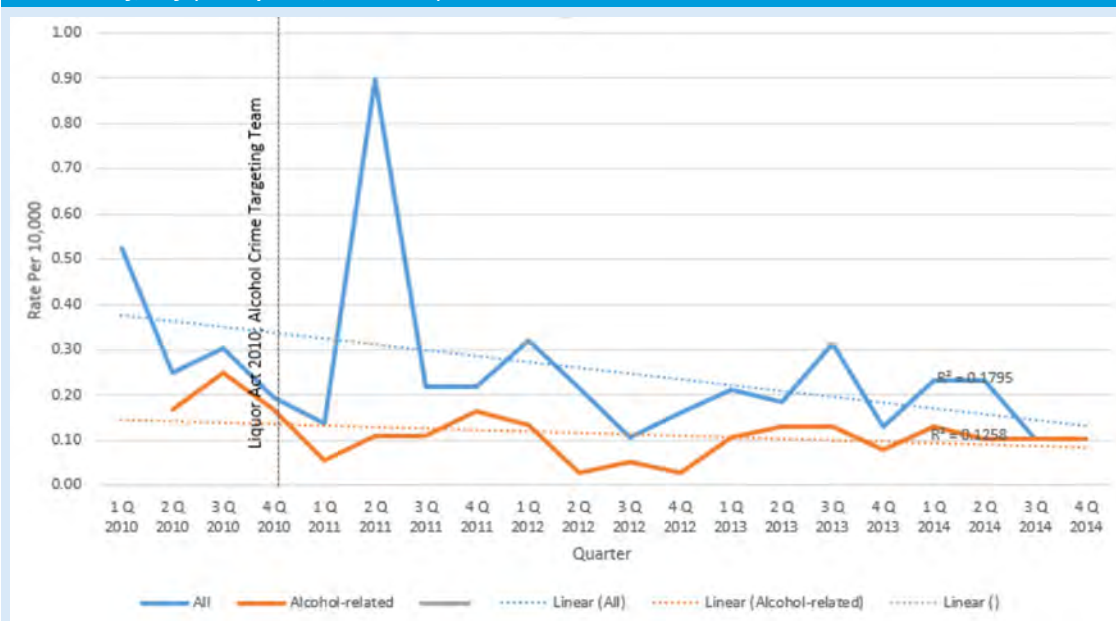
Street offences

Figure 177 and Figure 178 show the percentage of street offences in Braddon and City, where an offender was brought into custody, each month over the reporting period.

Figure 177 shows street offences in Braddon, that resulted in an offender being placed in custody, appeared to occur more frequently in the second half of the year compared with the first half. However, a relatively small number of offences occurred in Braddon, making interpretation of annual trends difficult (all: *n*=70; alcohol-related: *n*=35).

Figure 177 Percentage of street offences for which offenders were taken into custody, by month, Braddon (ACT)
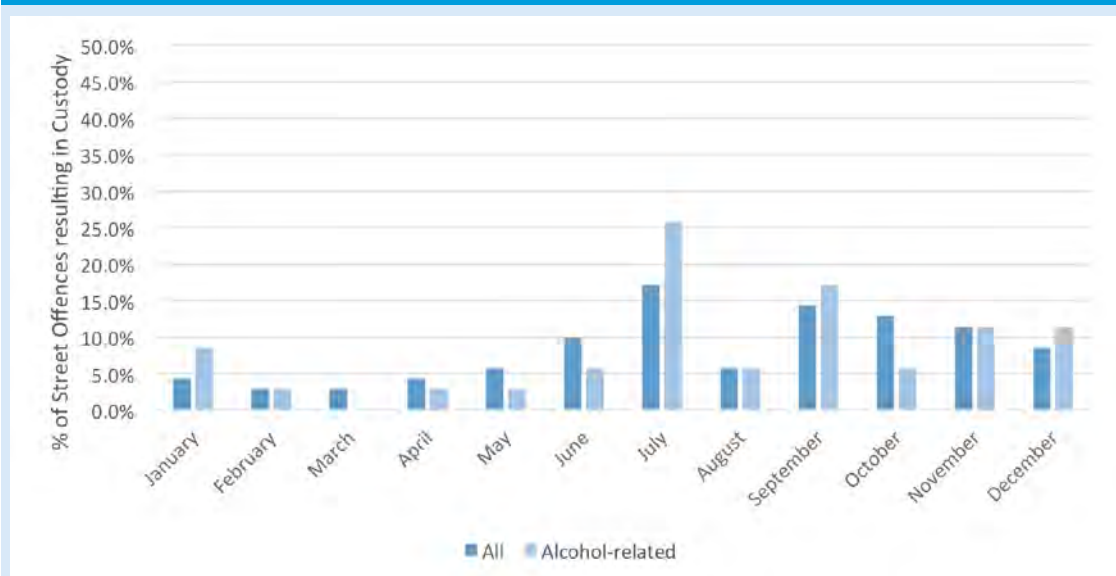
Figure 178 shows similar trends across each month for street offences and alcohol-related street offences that occurred in City and that led to the offender being placed in custody. The highest percentage of street offences took place in August (all: *n*=79, 11%; alcohol-related: *n*=62, 11.7%) and September (all: *n*=82, 11.5%; alcohol-related: *n*=60, 11.4%).

Figure 178 Percentage of street damage offences for which offenders were taken into custody, by month, City (ACT)
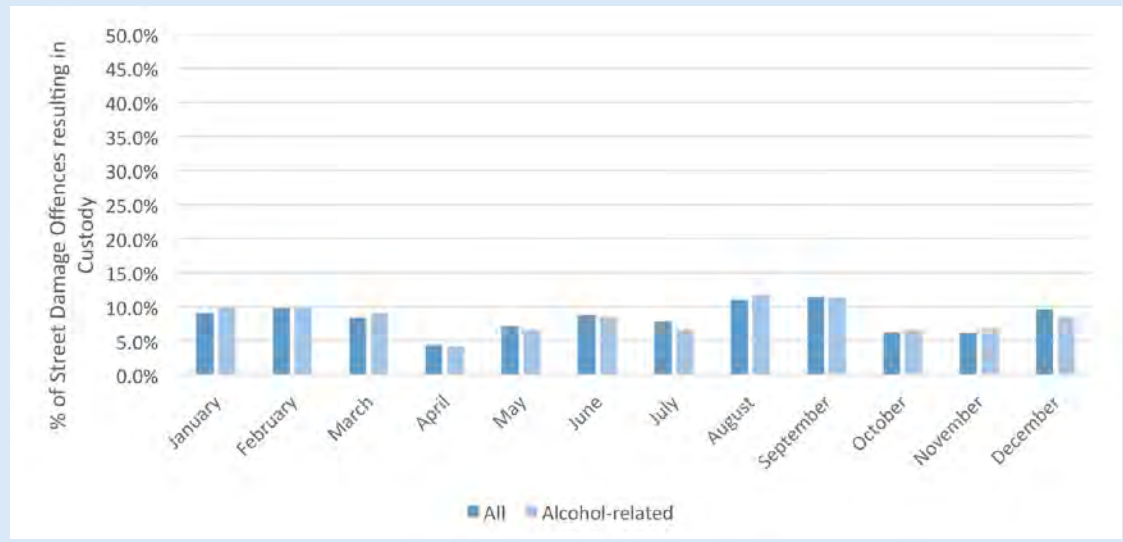
Figure 179 and Figure 180 present trends over time for street offences that led to an offender being place in custody in City and Braddon, by all offences and by those that were alcohol-related. The two trend lines show an increase in all street offences and alcohol-related street offences over time. A separate graph was not produced for Braddon, as there were too few cases to determine trends over time (all: *n*=70; alcohol-related: *n*=40).

Figure 179 Trends over time, by quarter, for street offences that led to an offender being placed into custody, City and Braddon (rates per 10,000 in ACT)
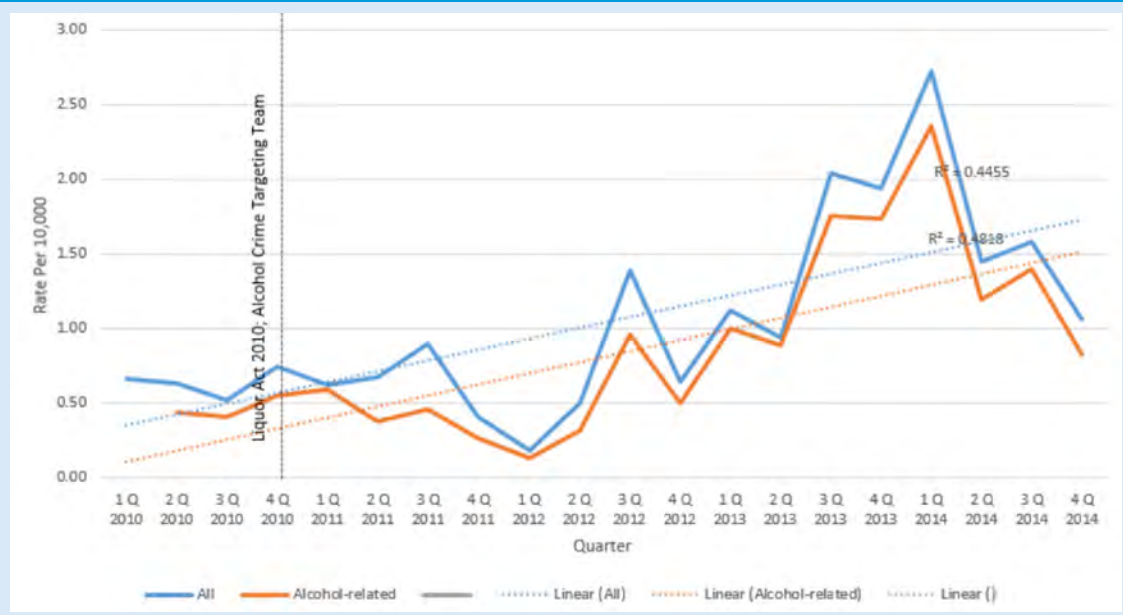
Figure 180 Trends over time, by quarter, for street offences that led to an offender being placed into custody, City (rates per 10,000 in ACT)
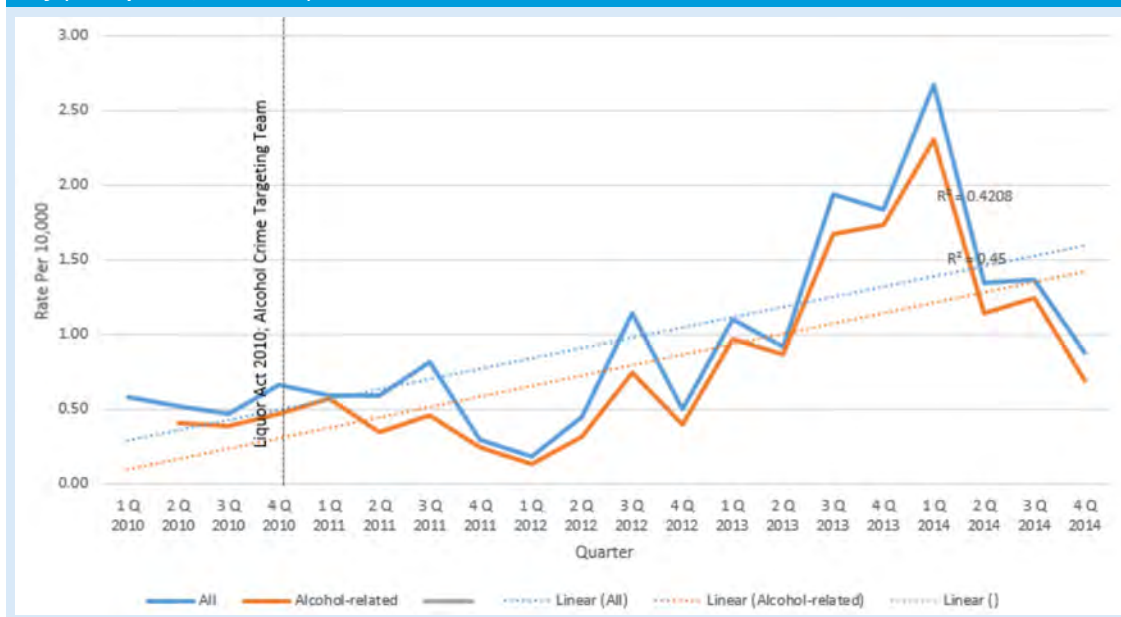
Hobart

The following sets out data on assault, property damage, street offence and drink-driving occurring in the Hobart suburbs—Hobart and Battery Point. These encompass the main entertainment precinct of Hobart.

Assaults

Between 1 January 2010 and 30 June 2015, 1,581 assaults were recorded in the entertainment areas of Hobart (Battery Point: n=128; Hobart: n=1,453). The following looks at trends in assaults overall, whether they were alcohol-related and drug-related, and by HAH. The definition of HAH used in analysing police records, is between 8 pm–6 am Friday to Sunday morning (Laslett et al. 2007).

Of all assaults, 50.1 percent (n=792; Battery Point: n=71, 55.5%; Hobart: n=721, 49.6%) took place during HAH. Since 2012, 45.5 percent (n=459; Battery Point: n=58, 51.8%; Hobart: n=401, 44.8%) were alcohol-related and 6.1 percent of assaults (n=61; Battery Point: n=2, 1.8%; Hobart: n=59, 6.6%) were drug-related. Assaults from 2012 to June 2015 were Battery Point n=112; Hobart n=896; and all n=1,008. Given the very low number of offences that were drug-related in Battery Point, drug-related analysis is given for Hobart (suburb) only.

Table 105 Number of assaults, Battery Point and Hobart (suburb)		
	Battery Point	Hobart
All assaults	128	1,453
Alcohol-related	58	401
HAH	71	721
Drug-related	2	59

Drug and alcohol intoxication and subsequent harm in night-time entertainment districts (DASHED)

Demographics

Victims

Overall there were 1,464 victims of assault (Battery Point: *n*=116; Hobart: *n*=1,388), 431 victims of alcohol-related assaults (Battery Point: *n*=53; Hobart: *n*=378), 730 victims of assaults during HAH (Battery Point: *n*=62; Hobart: *n*=668), and 55 victims of drug-related assault (Battery Point: *n*=2; Hobart: *n*=53). As shown in Figure 181, victims of assault in Battery Point were overwhelmingly in the 18 to 24, 25 to 34, and 34 to 44 year age groups.

In Hobart (Figure 182), the greater percentage of victims was in the 18 to 24 year age group followed by the 25 to 34 year group. Drug-related assault victims in Hobart were mostly aged between 18 and 54 years (18–24 years: *n*=11, 20.8%; 25–34 years: *n*=14, 26.4%; 35–44 years: *n*=14, 26.4%; 45–54 years: *n*=9, 17%; 55–64 years: *n*=3, 5.7%). These proportions appear to be similar compared with Tasmania overall. Of assaults where the offender was unknown to the victim, 10 percent of victims were aged 15 to 19 years and 16 percent were aged between 20 and 24 years in 2014 in Tasmania (compared with 28–38% aged 18–24 years in Battery Point/Hobart). Further, 24 percent were aged between 25 and 34 years (compared with 26–30% in Battery Point/Hobart) and 20 percent were aged between 35 and 44 years (compared with 15–22% in Battery Point/Hobart; ABS, 2015).

Figure 181 Assault victims by age group, Battery Point (Tas)
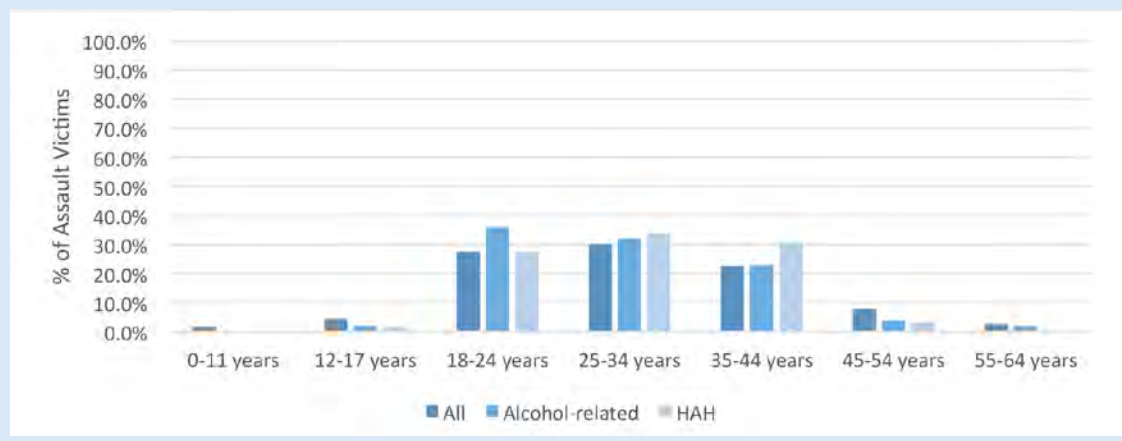
Figure 182 Assault victims by age group, City (Tas)
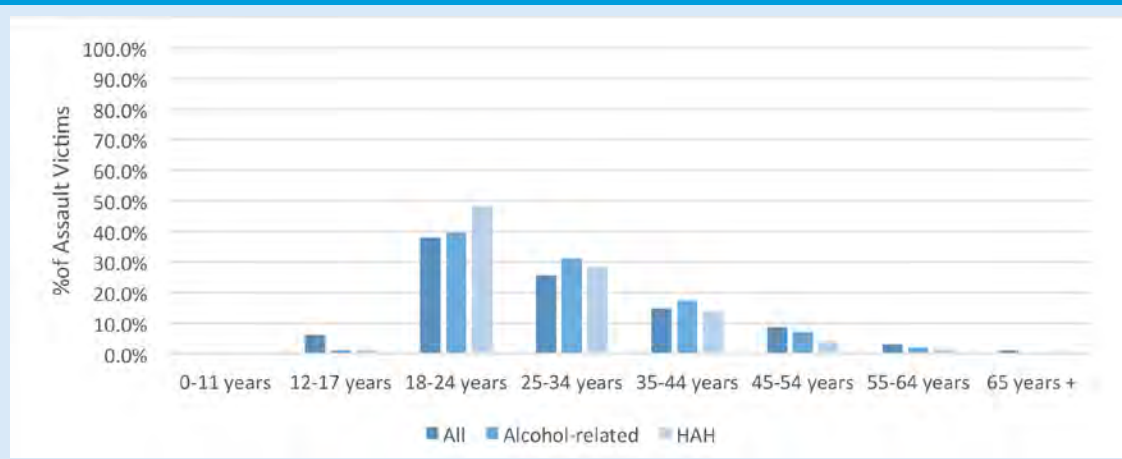
Figure 183 shows that males make up most (71–82%) of all assault victims, alcohol-related assault victims, and HAH assault victims. Chi-square analyses confirmed that significantly more males were assault victims than females across all comparisons (ps<0.001). Males also comprised most drug-related assault victims in Hobart (n=35, 66.0%, p<0.05). These proportions differ from Tasmania-wide data where 48.3 percent of assault victims were male in 2014 (ABS, 2015). However, excluding assaults where the offender was known to the victim, 76 percent of assault victims in Tasmania in 2014 were male (ABS 2015), which is similar to the percentage in Battery Point and Hobart.

Figure 183 Percentage of assault victims who are male, Battery Point and Hobart (Tas)
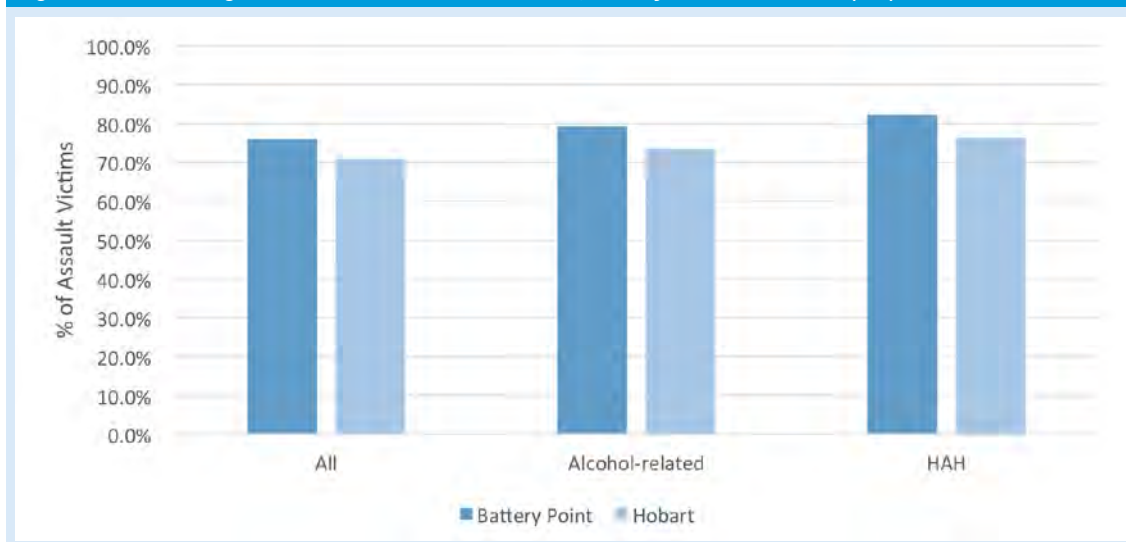
Figure 203 and Figure 205 show the proportion of victims who were male across each age group. Due to low numbers, the two youngest and two oldest age categories were combined. Males comprised most victims across each age group with a few exceptions in Battery Point. Specifically, males in the under 18 year group comprised 42.9 percent (n=3) of victims, and males in the 45 to 54 year group comprised 50 percent (n=1) of alcohol-related assault victims/assault victims during HAH. However, given the low numbers in these groups of assault victims in Battery Point, proportions in this category require cautious interpretation.

Figure 184 Percentage of assault victims who are male, by age group, Battery Point (Tas)

Drug and alcohol intoxication and subsequent harm in night-time entertainment districts (DASHED)
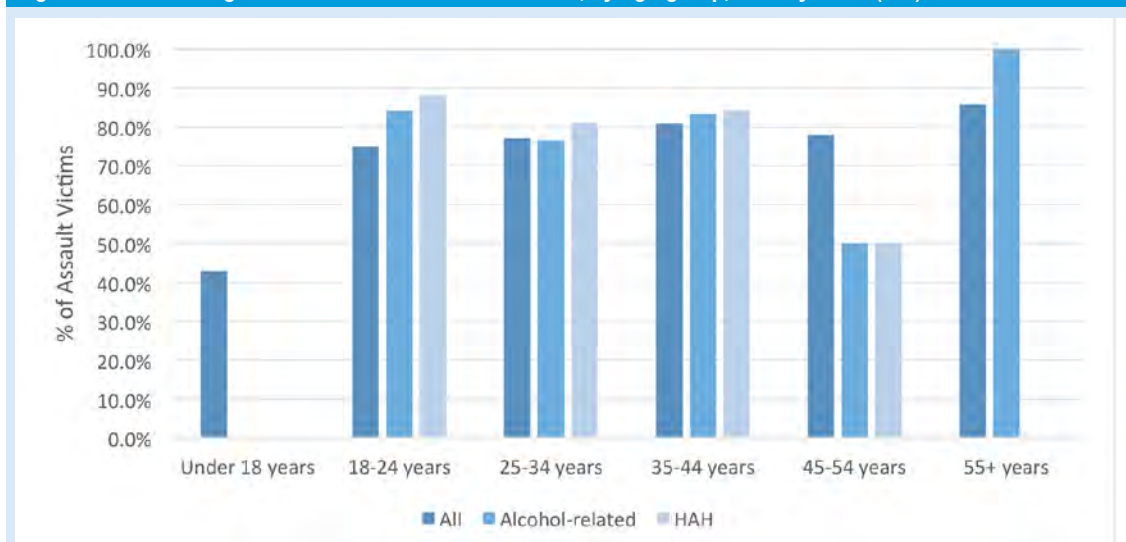
Figure 185 Percentage of assault victims who are male, by age group, Hobart (Tas)
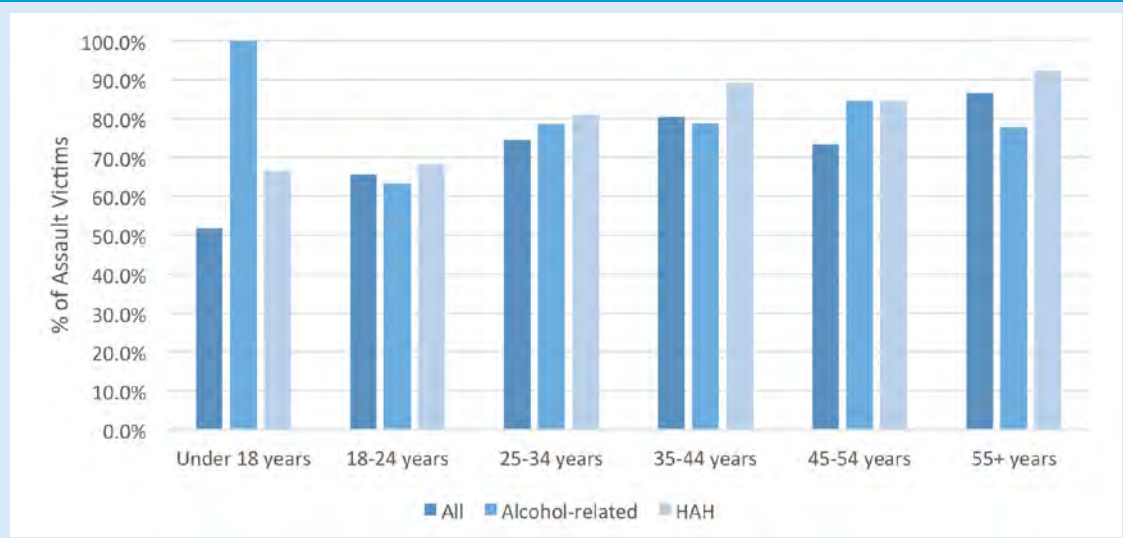
Offenders

Figure 186 and Figure 187 present the percentage of assault of offenders by age group. Just over one-quarter of offender data was missing (Battery Point: *n*=39, 33.6%; Hobart: *n*=386, 28.6%). As shown in Figure 186, the highest percentage of assault offenders were in the 25 to 34 year age group, followed by the 18 to 24 year age group.

Figure 186 Assault offenders by age group, Battery Point (Tas)
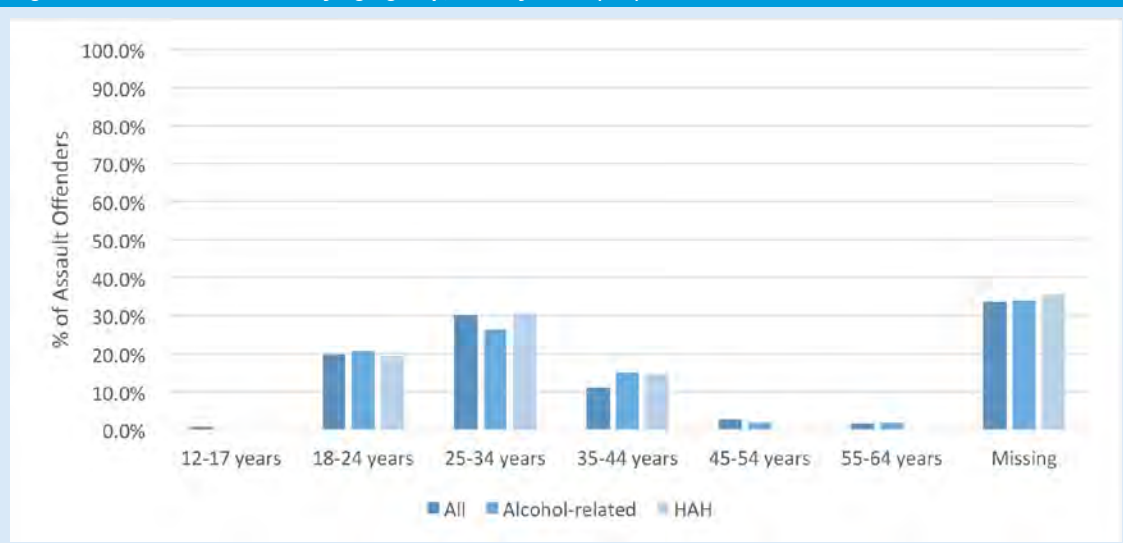
Figure 187 shows that assault offenders in Hobart were most frequently in the 18 to 24 year age group, followed by the 25 to 34 year group. Drug-related assault offenders in Hobart were mostly aged between 18 and 44 years (12–17 years: *n*=2, 3.8%; 18–24 years: *n*=18, 34%; 25–34 years: *n*=18, 34%; 35–44 years: *n*=9, 17%; 45–54 years: *n*=1, 1.9%; 55–64 years: *n*=1, 1.9%; missing: *n*=4, 7.5%).

Figure 187 Assault offenders by age group, City (ACT)
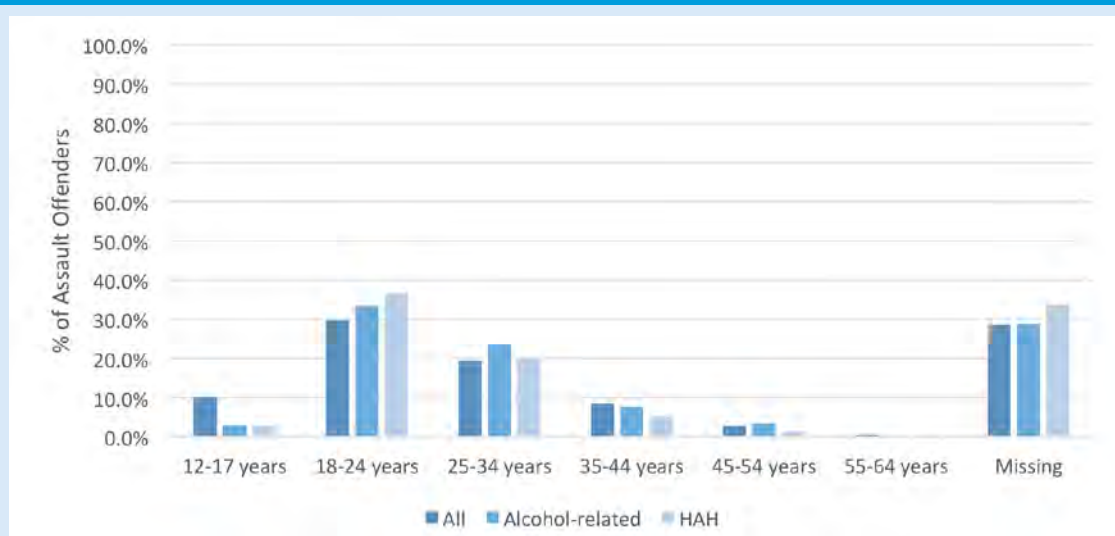
Figure 188 shows the percentage of assault offenders who are male in Battery Point and Hobart. Offences with missing offender data were not included in calculations. Males comprised most (69–89%) of all assault, alcohol-related assault, and HAH assault offenders. Males also comprised most drug-related assault offenders in Hobart (*n*=38, 77.6%).

Figure 188 Percentage of assault offenders who are male, Battery Point and Hobart (Tas)
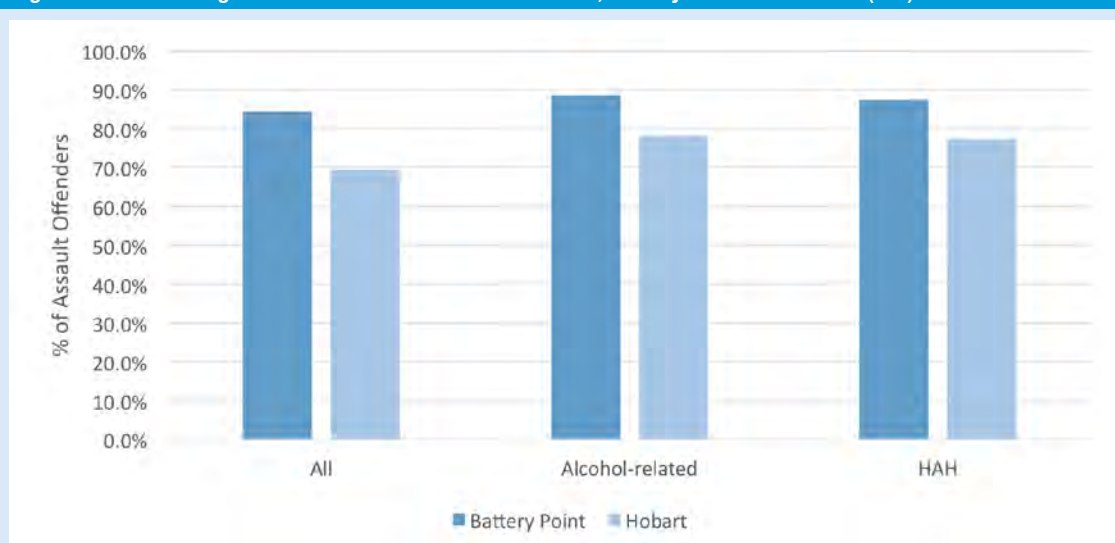
Figure 189 shows the percentage of victims who were male across each age group in Hobart. Due to low numbers, offenders over the age of 55 are not shown (alcohol-related: *n*=1; HAH: *n*=2). No graph was produced for Battery Point, as offender numbers were too small to allow meaningful interpretation at this level of analysis. Most offenders were males across each age group in Hobart except for the under 18 years category where males made up 34.8 percent (*n*=48) of all assault offenders, 27.3 percent (*n*=3) of alcohol-related assault offenders, and 36.8 percent (*n*=7) of assault offenders in HAH.

Figure 189 Percentage of assault offenders who are male by age group, Hobart (Tas)
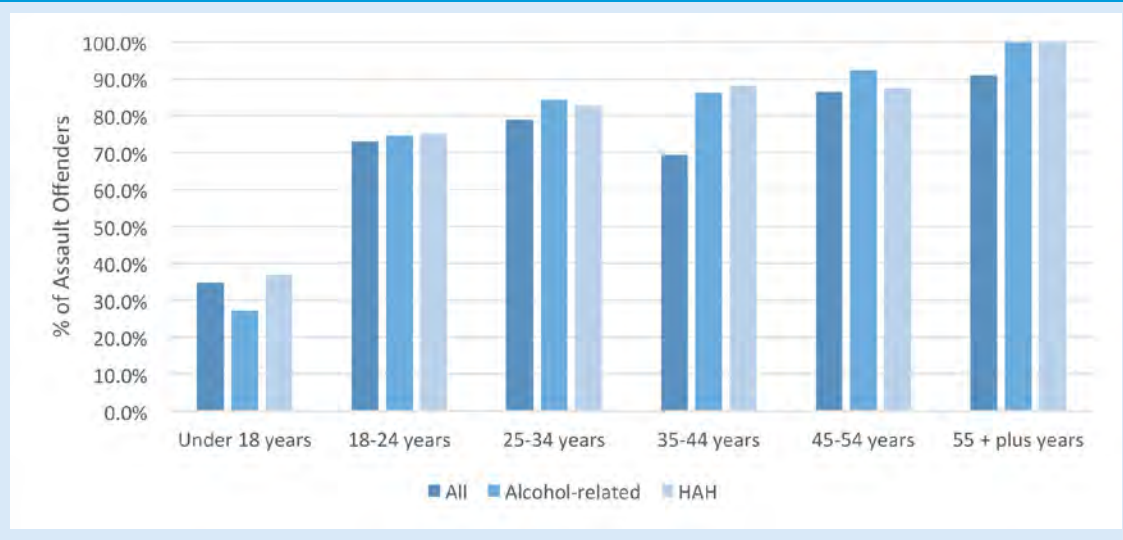
Time of day, and day of week

Battery Point

As there were too few offences to analyse trends in assaults in Battery Point by day of week and time of day together, Figure 190 shows assaults by day of the week, and Figure 191 show assaults by time of day.

Figure 190 shows that all assaults and alcohol-related assaults in Battery Point followed similar trends by day of the week, with the highest percentage of assaults taking place on Saturday and Sunday.

Figure 190 Percentage of assaults by day of the week, Battery Point (Tas)
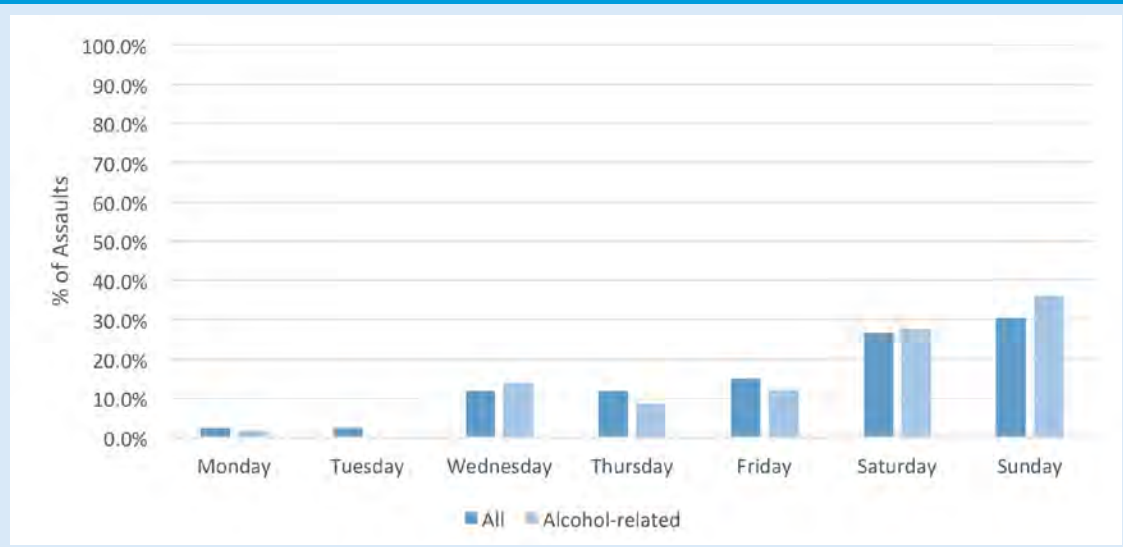
Figure 191 Percentage of assaults by time of day, Battery Point (Tas)
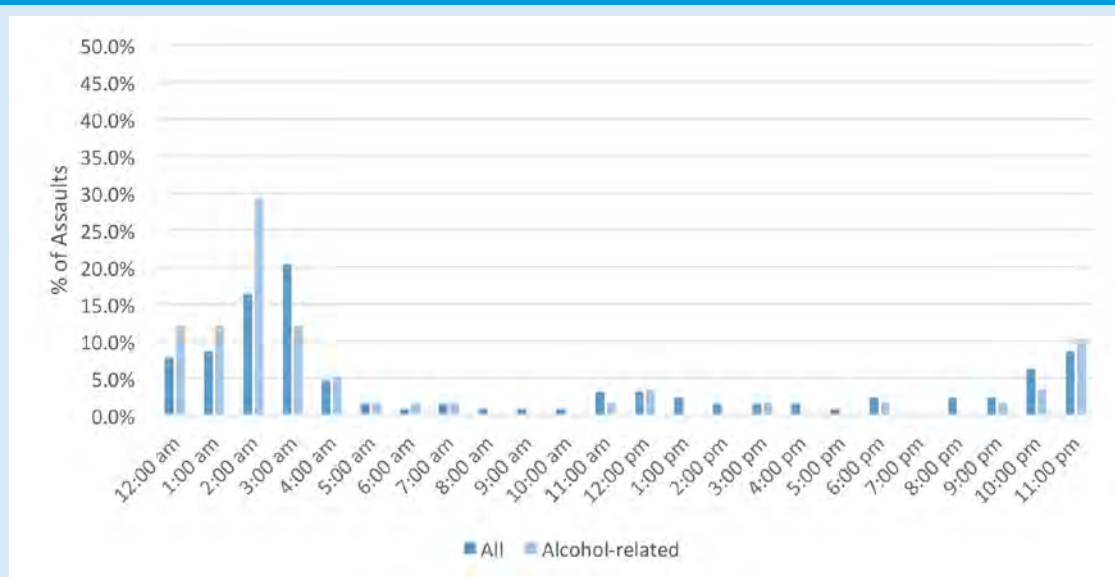
Figure 191 shows a general trend for fewer assaults during the daytime hours between 5 am and 8 pm. Assaults gradually occurred more frequently as the evening progressed, peaking at 2 am for alcohol-related assaults and 3 am for all assaults.

Hobart

Figure 192 and Figure 193 show the frequency of all assaults and alcohol-related assaults by day of the week, and time of the day in Hobart. As a general trend, fewer assaults occurred Monday to Friday daytimes and frequencies spiked on Friday night/Saturday morning and Saturday night/Sunday morning. These trends were similar for alcohol-related assaults, and assaults overall. Assaults that occurred during HAH (8 pm–6 am Friday night through Sunday morning) accounted for 49.6 percent (*n*=721) of all assaults, and 66.6 percent (*n*=267) of alcohol-related assaults.

Drug-related assaults also occurred most frequently on weekends and late evening/early morning. Two-fifths (42.3%, *n*=25) of alcohol-related assaults occurred on a Saturday or Sunday, and an additional 16.9 percent (*n*=10) of drug-related assaults occurred on Friday. Half (*n*=30, 50.1%) of drug-related assaults occurred between 8 pm and 6 am.

Figure 192 Frequency of assaults by day of week, and time of day, suburb of Hobart (Tas)
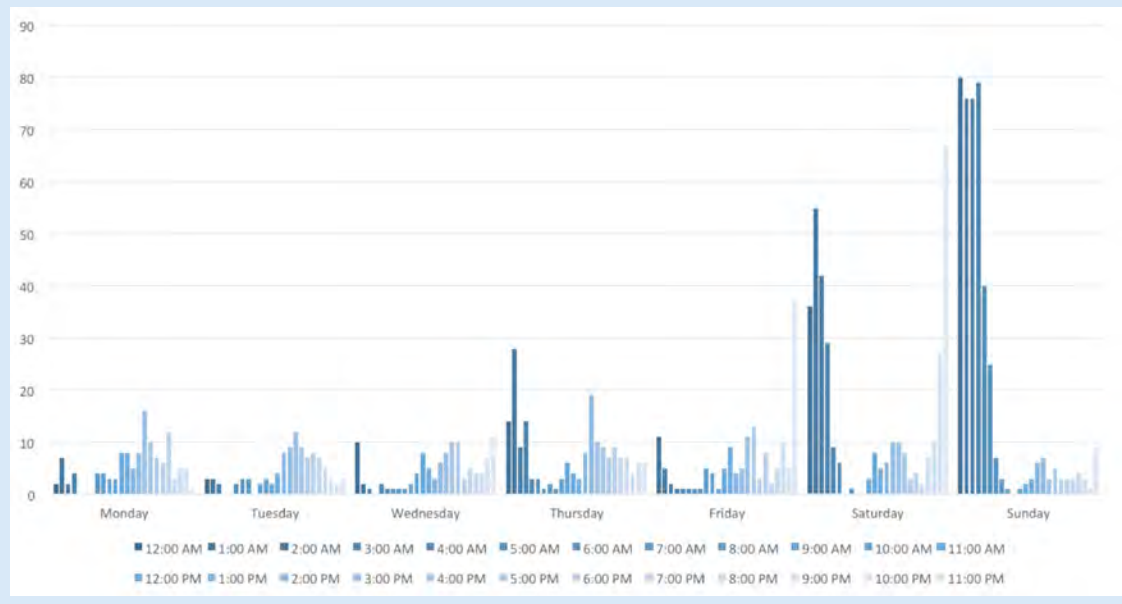
Figure 193 Frequency of alcohol-related assaults by day of week, and time of day, suburb of Hobart (Tas)
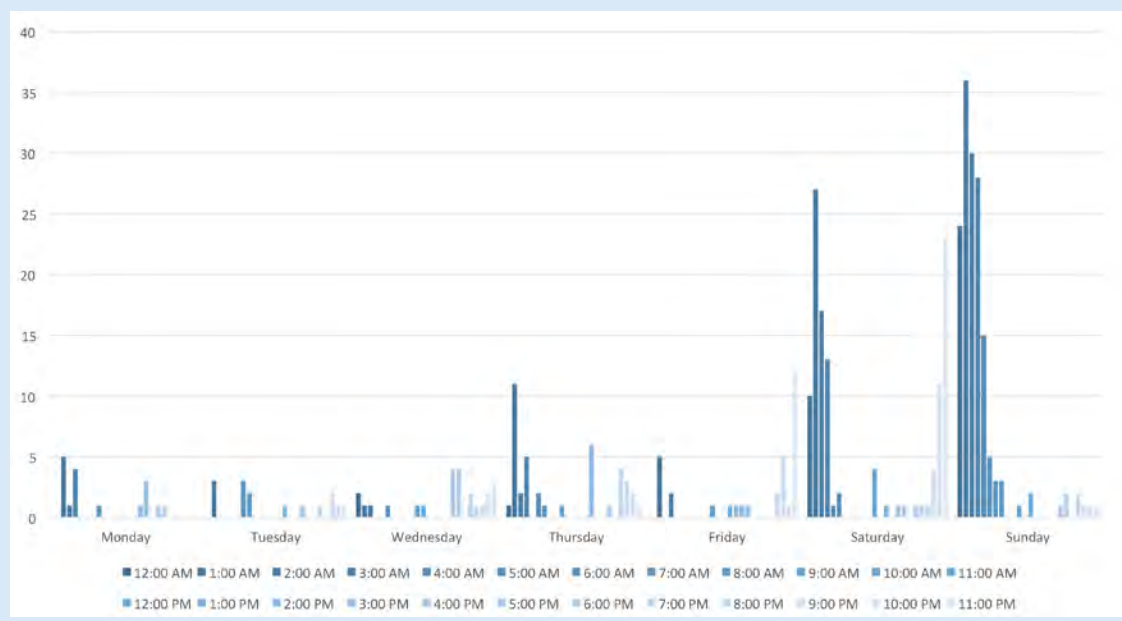
Annual trends

Table 106 and Figure 194 present the percentage of assaults that occurred each month over the reporting period in Battery Point and Hobart (suburb). As the alcohol-related flag has only been collected since 2012, only data from 2012 to June 2015 is presented for alcohol-related assaults.

As shown in Table 106, assaults in Battery Point were generally most frequent in March/May and least frequent in August/September/October. However, as there were only 128 assaults in Battery Point over the measurement period, the difference between the month with the greatest frequency and lowest frequency was only nine for all assaults, 12 for alcohol-related assaults, and 11 for assaults occurring during HAH.

Table 106 Number and percentage of assaults by month, Battery Point (Tas)						
	All		Alcohol-related		HAH	
	n	%	n	%	n	%
January	10	7.8	4	6.9	6	8.5
February	9	7.0	3	5.2	4	5.6
March	16	12.5	12	20.7	5	7.0
April	12	9.4	7	12.1	7	9.9
May	16	12.5	7	12.1	13	18.3
June	11	8.6	2	3.4	2	2.8
July	9	7.0	3	5.2	8	11.3
August	7	5.5	1	1.7	3	4.2
September	7	5.5	0	0.0	4	5.6
October	7	5.5	4	6.9	5	7.0
November	12	9.4	6	10.3	7	9.9
December	12	9.4	9	15.5	7	9.9

As shown in Figure 194, there was a general trend for fewer assaults occurring in the middle of the year (May–October), compared with other 'warmer' months. Assaults overall were highest in April (10.5%) and January (10.4%); alcohol-related assaults were highest in January (11%), April (10.2%), and November (14.5%); and assaults occurring during HAH were greatest in April (10.4%) and November (10.3%). Despite few offences (*n*=59), drug-related assaults in Hobart showed similar trends and were most frequent in April (*n*=11, 18.6%), February (*n*=7, 11.9%), and November (*n*=7, 11.9%).

Figure 194 Percentage of assaults by month, suburb of Hobart (Tas)
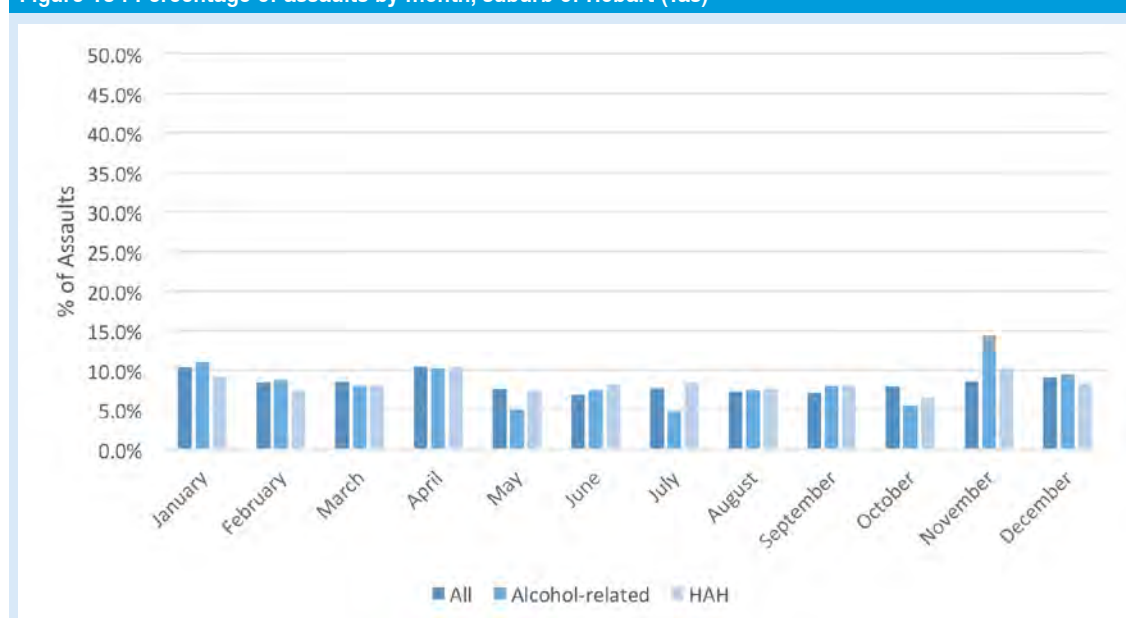
Figure 195, Figure 196 and Figure 197 present trends over time for assaults occurring within Hobart (suburb) and Battery Point by all assaults, alcohol-related assaults, and assaults occurring within HAH. The trend lines show a slight increase in assaults overall and assaults occurring within HAH over time, but a decrease in alcohol-related assaults over time. Tasmania Police also recorded a five percent increase in the number of assaults that occurred in Tasmania (excluding assaults against police officers) between 2013–14 and 2014–15 (Department of Police, Fire and Emergency Management 2015).

Figure 195 Assault trends over time by quarter, Hobart (suburb) and Battery Point—rate per 10,000 in greater Hobart (Tas)
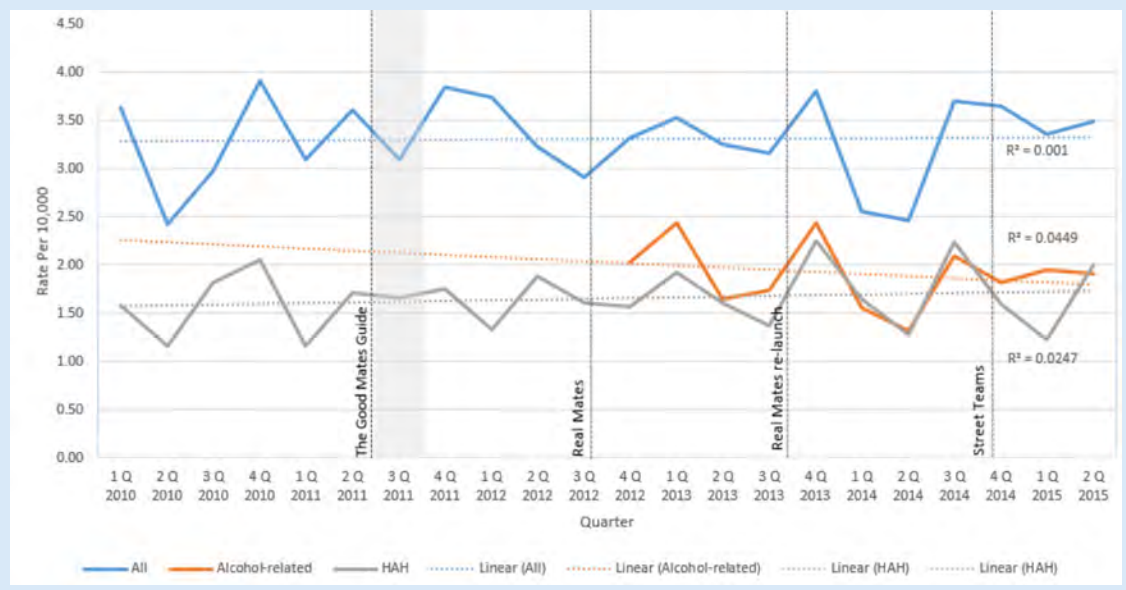
Figure 196 Assault trends over time by quarter, Hobart (suburb)—rate per 10,000 in greater Hobart (Tas)
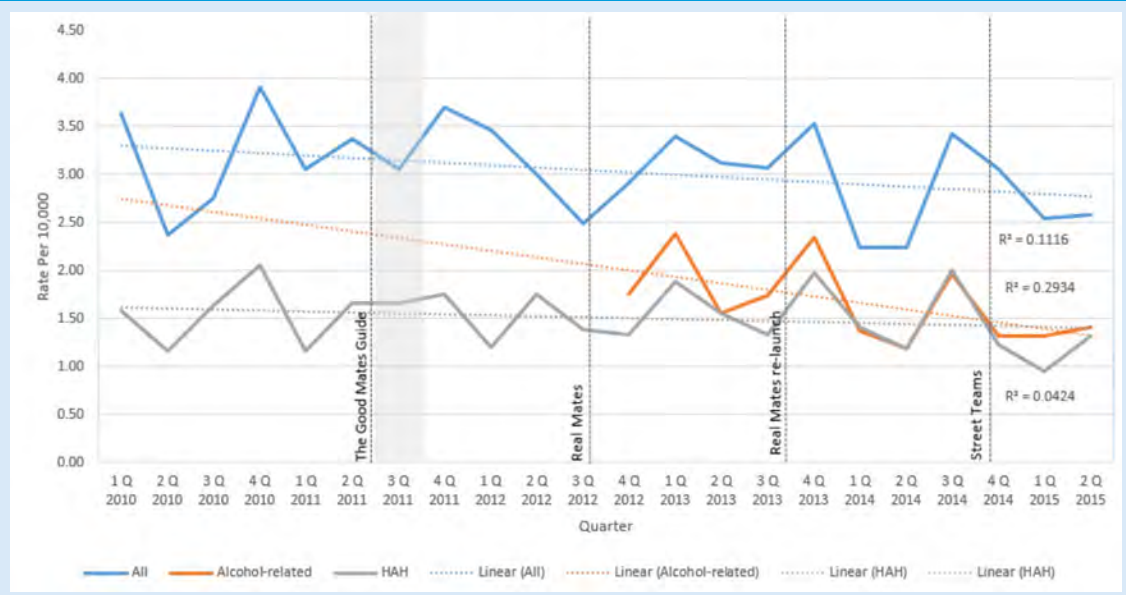
Figure 197 Assault trends over time by quarter, Battery Point (suburb)—rate per 10,000 in greater Hobart (Tas)
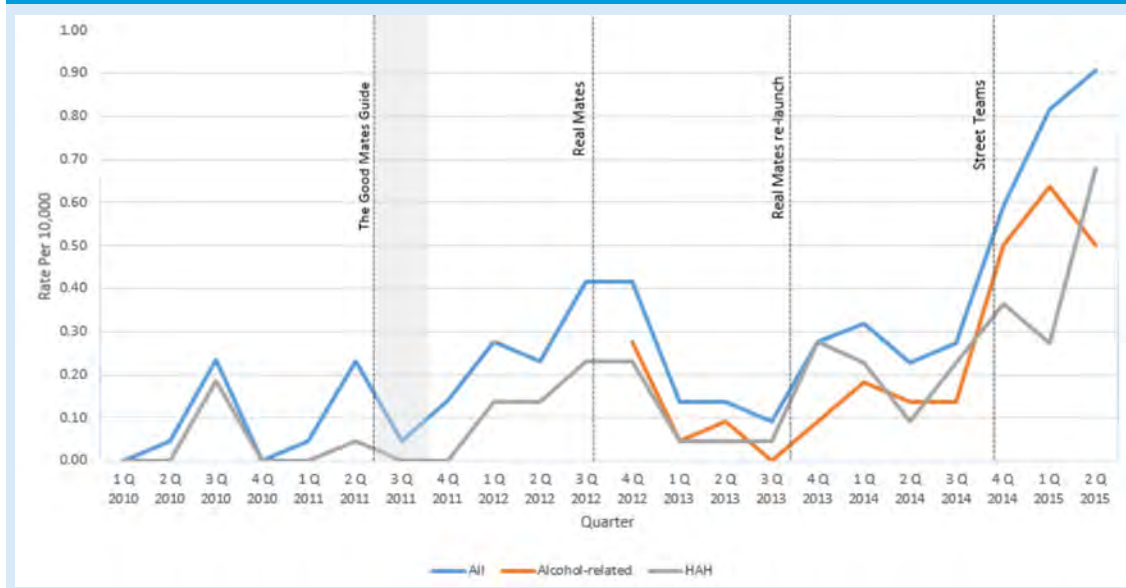
'Hotspots' for HAH drink-driving alcohol consumption

Figure 198 maps out the streets of venues where offenders, charged with a drink-driving offence during HAH, indicated that they had consumed alcohol prior to their offence. Streets in the 90th percentile for offences (excluding streets where less than 5 attendances occurred) are marked in red, streets in the first to 89th percentile for offences (excluding streets where less than 5 attendances occurred) are marked in orange, and streets where less than five offences occurred are marked in yellow. Most venues identified by offenders were located within Salamanca Place, with almost double the number of offences (*n*=114, 26.8% of offences during HAH) compared with the second most frequent street (Murray Street, *n*=66). At least five drink-driving offences were associated with offenders consuming alcohol at venues located at almost all streets in the Hobart suburb.

Figure 198 Hotspot analysis of drink-driving alcohol consumption, Hobart (Tas)
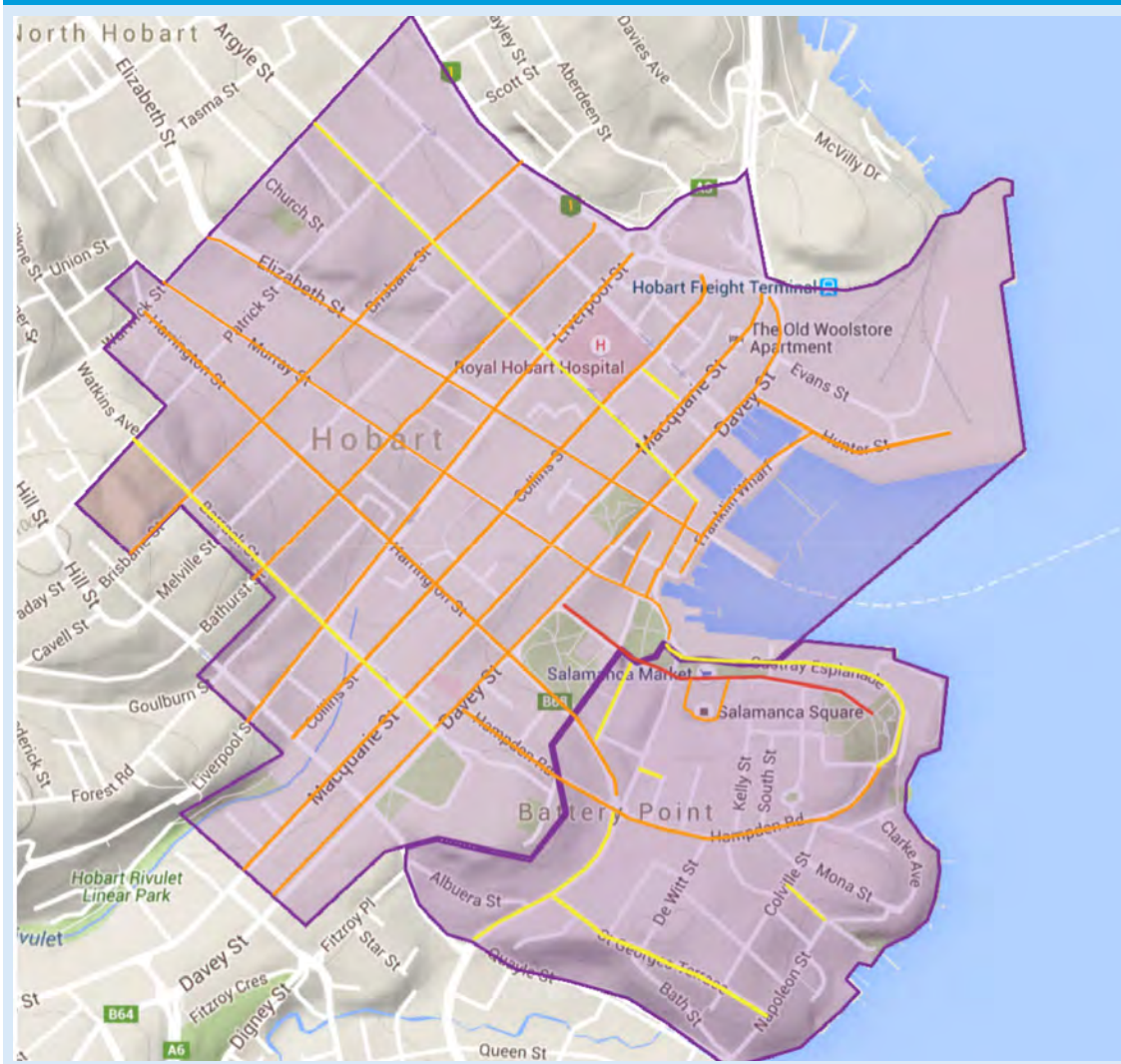
Source: Google Maps, 2016

Time series analysis

Figure 199 shows the monthly rate of police-attended assaults per 10,000 people from January 2010 to December 2014 for Hobart. The rate of police attended assaults remained relatively steady over the study period.

Figure 199 Rate of police-attended assaults during high-alcohol hours from 2010–15, Hobart (Tas)
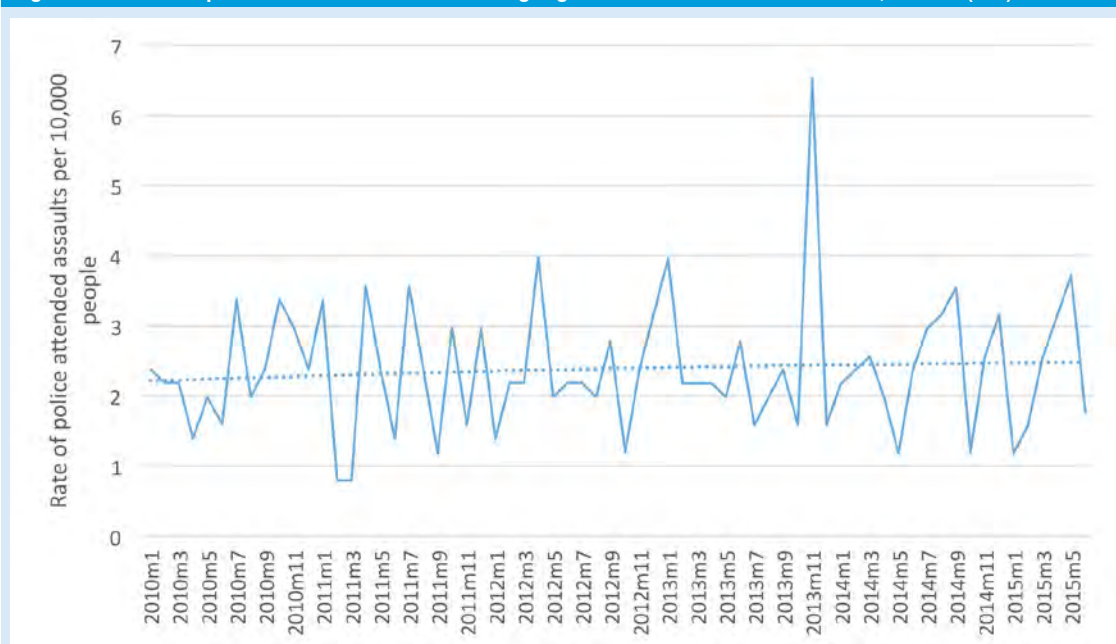
Using an ARIMA model, researchers examined the effect of five interventions on the rate of police-attended assaults in Hobart during HAH. The best-fitting model did not include any autoregressive or moving average terms, thus the data demonstrated no discernible changes or patterns over time (ie. the data were white noise); ARIMA(0,0,0). The model fitted the data well, with a non-significant Portmanteau test for white noise (Q=32.21, p=0.41). The multivariable ARIMA model indicated that none of the interventions had a significant effect on the rate of police-attended assaults during HAH in Hobart (see Table 107).

Table 107 The effect of interventions implemented in Hobart on the rate of police-attended assaults per month

Intervention	Coefficient (95% CI)	p-value
Operation Unite (lag 0)	0.14 (-1.28, 1.55)	0.851
Real Mates (lag 0)	-0.16 (-6.34, 6.01)	0.959
Good Mates (lag 0)	-0.05 (-0.95, 0.86)	0.919
Crime Stoppers Week (lag 2)	0.21 (-0.69, 1.12)	0.646
Street Teams (lag 1)	0.08 (-0.70, 0.86)	0.838

Sexual offences

Between 1 January 2010 and 30 June 2015 there were 47 sexual offences in the entertainment areas of Hobart (Battery Point: $n=6$; Hobart: $n=41$). As the number of offences is low (see Table 108), only high-level frequency data is presented for sexual offences. The definition of HAH used for analysing police records is between 8 pm–6 am Friday to Sunday morning (Laslett et al. 2007).

Of all sexual offences 40.4 percent ($n=19$, Battery Point: $n=4$, 66.7%; Hobart: $n=15$, 34.1%) occurred during HAH. Since 2012, 64.7 percent ($n=22$; Battery Point: $n=2$, 50%; Hobart: $n=20$, 66.7%) of sexual offences were alcohol-related and 14.7 percent ($n=5$; Battery Point: $n=1$, 25%; Hobart: $n=4$, 13.3%) were drug-related. Sexual offences from 2012 to June 2015 were Battery Point $n=4$; Hobart $n=30$; All $n=34$. Given the very low number of offences that were drug-related in Battery Point, no further analysis is presented for that area. Also, given the low number of offences in Hobart, cautious interpretation is needed for the frequencies set out below.

Table 108 Number of sexual offences in Battery Point and the suburb of Hobart (Tas)		
	Battery Point	Hobart
All sexual offences	6	41
Alcohol-related	2	20
HAH	4	15
Drug-related	1	4

Demographics

Victims

Figure 200 shows that victims of sexual offences tended to be young, with more than three quarters (78%) of all victims aged 34 years or younger. This is consistent with Tasmania-wide figures, where 73 percent of victims of sexual assault in 2014 were aged 34 or younger (ABS 2015). A lower percentage of victims of alcohol-related sexual offences were aged under 18 years compared with victims overall, and victims during HAH (all: $n=11$, 26.8%; alcohol-related: $n=2$, 10%; HAH: $n=4$, 26.7%). Most victims of sexual offences were female (all: $n=35$, 85.4%; alcohol-related: $n=19$, 95%; HAH: $n=11$, 73.3%; drug-related: $n=4$, 100%). Similarly, 80 percent of sexual assault victims in Tasmania in 2014 were female (ABS 2015).

Figure 200 Sexual offence victims by age group, suburb of Hobart (Tas)
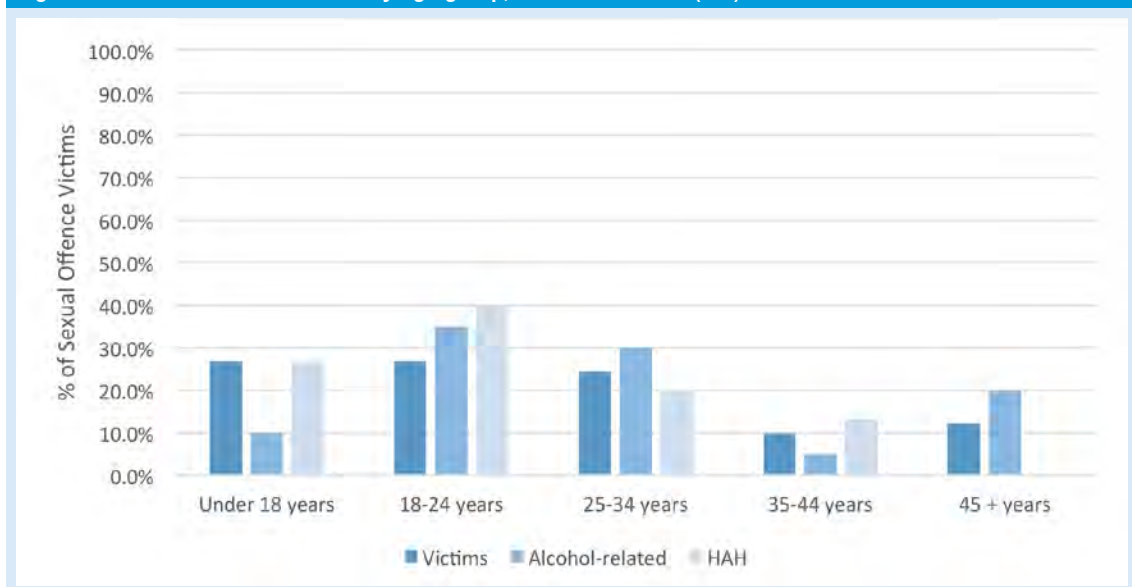
Offenders

A substantial number of cases had missing demographic information for offenders of sexual offences ($n=18$, 45%). Excluding incidents where offender data was missing, most offenders were aged between 18 and 34 years ($n=16$, 69.6%) and all offenders were male. There were too few incidents with available offender data to analyse age group trends for alcohol-related ($n=6$) and HAH ($n=8$) offenders.

Time of day, and day of week (the suburb of Hobart)

Figure 201 shows that sexual offences in Hobart most frequently took place on Fridays, Saturdays, and Sundays. More than half of all sexual offences ($n=21$, 51.2%) and alcohol-related ($n=11$, 55.0%) sexual offences took place between midnight and 5 am.

Figure 201 Percentage of sexual offences by day of the week, suburb of Hobart (Tas)
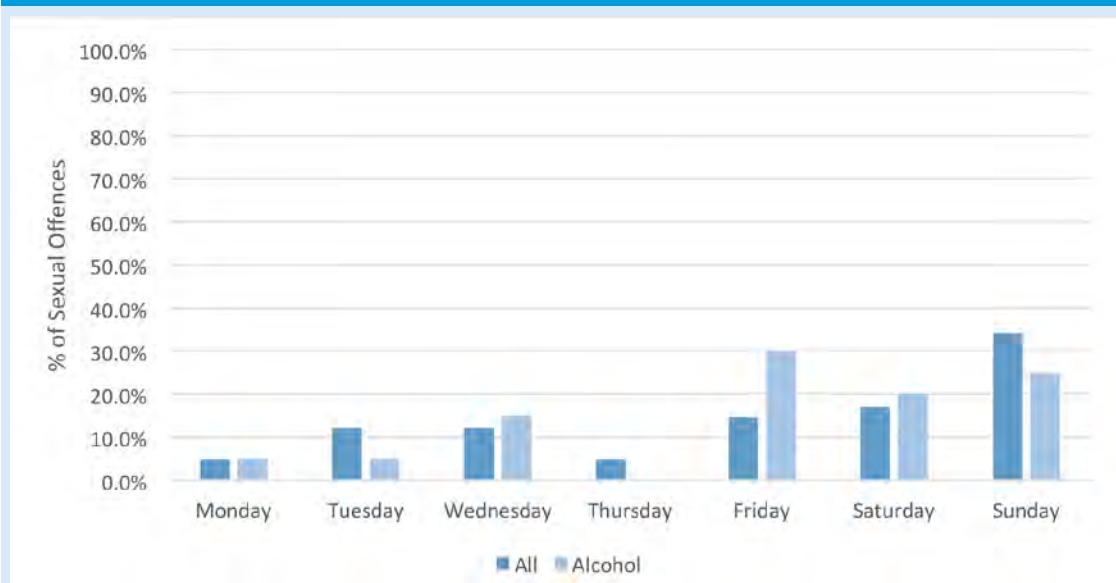
Property damage

Between 1 January 2010 and 30 June 2015 there were 1,148 property damage offences in Hobart's entertainment areas (Battery Point: $n=97$; Hobart: $n=1,051$). The following shows trends in property damage offences overall, whether they were alcohol-related and drug-related, and by HAH. Of all property damage offences, 25.8 percent ($n=296$; Battery Point: $n=31$, 32%; Hobart: $n=265$, 25.2%) took place during HAH. Since 2012, 15.7 percent ($n=109$; Battery Point: $n=6$, 9%; Hobart: $n=103$, 16.4%) were alcohol-related and 3.2 percent ($n=22$; Hobart: $n=22$, 3.5%) of assaults were drug-related. Property damage from 2012 to June 2015 was: Battery Point $n=67$; Hobart $n=628$; and all $n=695$. Given the very low number of offences that were drug-related, and the low number of offences that were alcohol-related in Battery Point, no further analyses are presented for drug-related property damage offences and alcohol-related offences in Battery Point.

Table 109 Number of property damage offences in Battery Point and the suburb of Hobart (Tas)

	Battery Point	Hobart
All property damage	97	1,051
Alcohol-related	6	103
HAH	31	265
Drug-related	0	22

A large percentage of property damage offences (Battery Point: $n=80$, 82.4%; Hobart: $n=689$, 65.6%) were 'unresolved' and therefore did not have offender demographic data available. This section only presents offender age data for offences that occurred in Hobart ($n=324$ offences for age; $n=485$ offences for sex) as the number of offences with offender age in Battery Point was too low to analyse ($n=15$ offences for age; $n=72$ offences for sex).

Figure 202 shows that the highest percentage of property damage offenders were aged between 18 and 25 years followed by 25 to 34 years. The percentage of offenders within the 18 to 24 year and 25 to 34 year age groups was slightly higher for alcohol-related offences and offences that occurred during HAH than offences overall.

Figure 202 Property damage offenders by age group, suburb of Hobart (Tas)
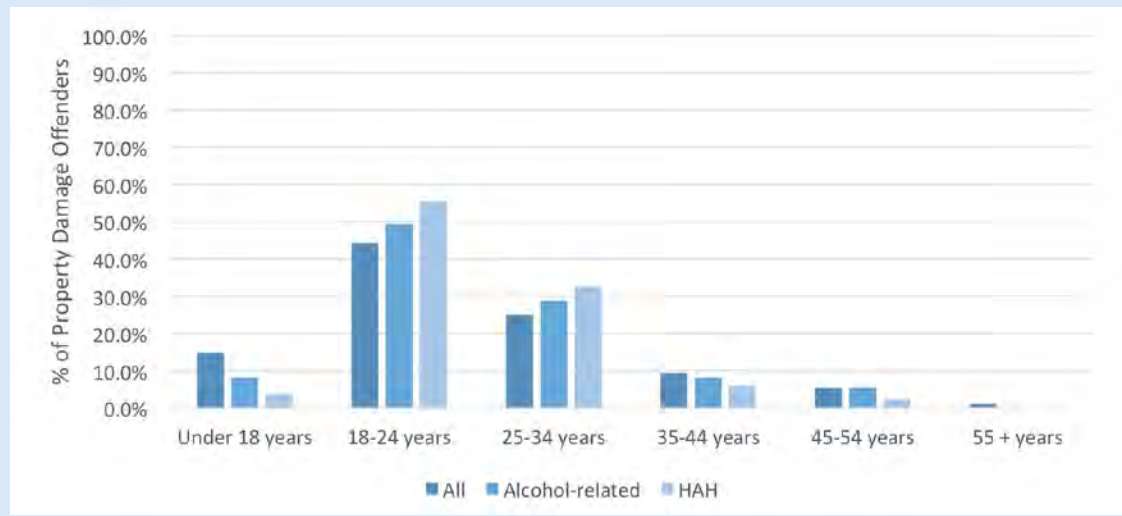
With the exception of offences where the sex of the offender was unknown or missing, most property damage offenders in Hobart were male (all: n=242, 87.4%; alcohol-related: n=62, 84.9%; HAH: n=72, 86.7%; drug-related: n=14, 77.8%).

Figure 203 shows the percentage of property damage offenders who were male, by age group. Males comprised at least half of all property damage offenders in Hobart. Only three offenders were over the age of 54 years, all of whom were male.

Figure 203 Percentage of property damage offenders who are male by age group, suburb of Hobart (Tas)
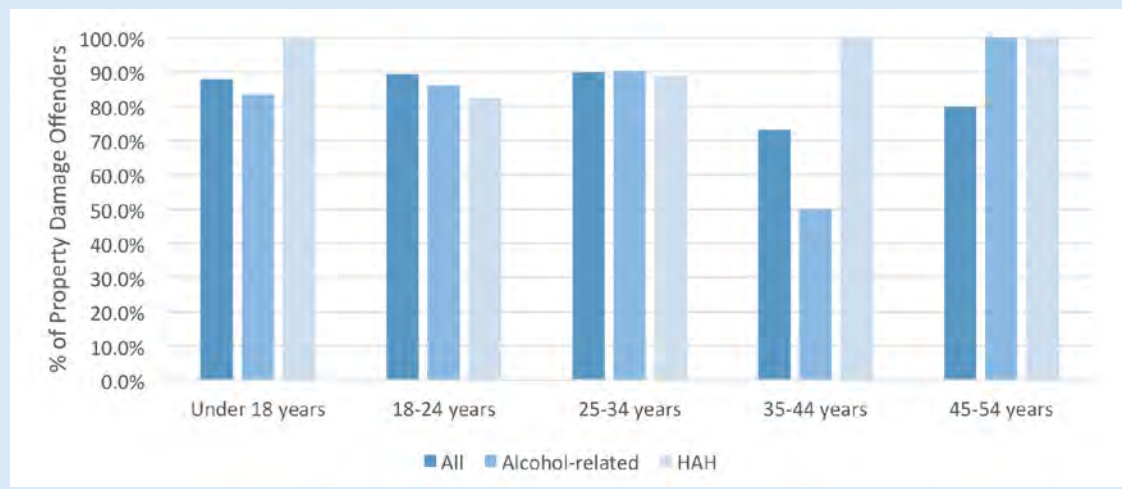
Time of day, and day of week

Battery Point

As there were too few offences to analyse trends in property damage offences in Battery Point by day of week, and time of day together, Figure 204 shows property damage by day of the week, and Figure 205 shows property damage by time of day.

Figure 204 shows property damage offences were most likely to take place on Saturday and Friday and were least likely to take place on a Monday and Tuesday.

Figure 204 Percentage of property damage offences by day of the week, Battery Point (Tas)
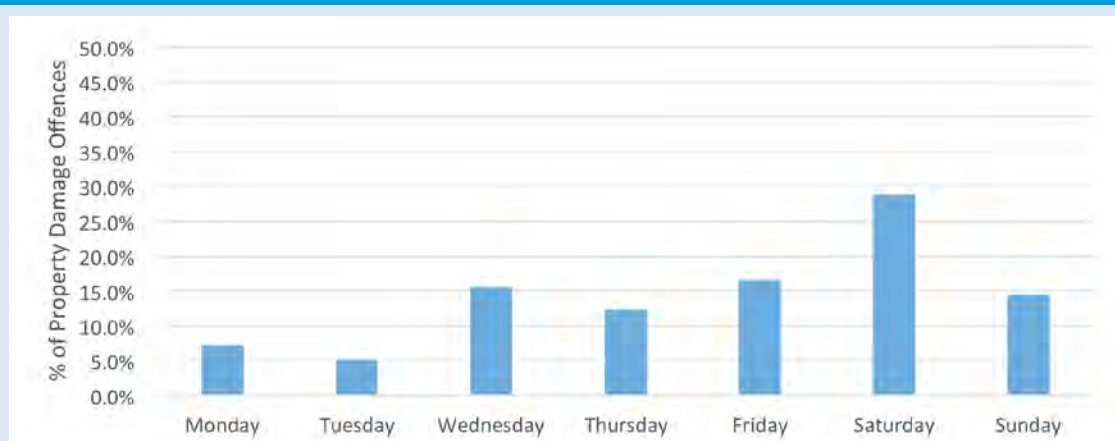
Figure 205 shows no clear trend for property damage offences in Battery Point by time of day.

Figure 205 Percentage of property damage offences by time of day, Battery Point (Tas)
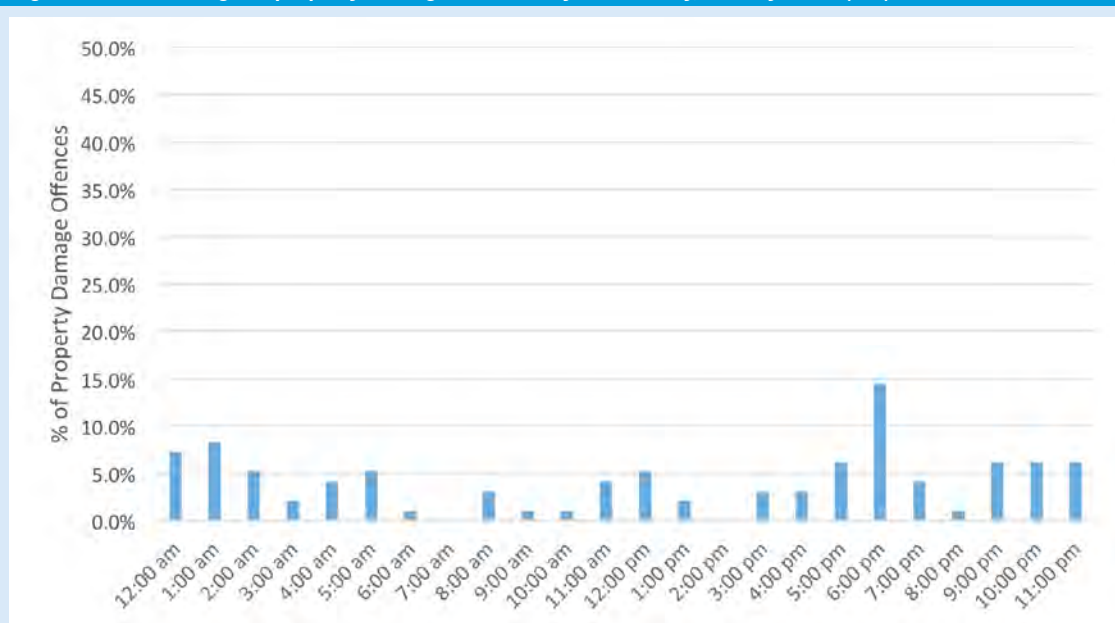
Hobart

Figure 206, Figure 207 and Figure 208 show the frequency of all property damage offences and alcohol-related property damage offences by day of the week, and time of the day in Hobart.

Figure 206 shows a general trend for offences to occur more frequently in the later hours of the day/early morning compared with during the day. The number of offences increased somewhat on Friday night/ Saturday morning and Saturday night/Sunday morning. However, the increased frequency period was different to normally-considered HAH (8 pm–6 am Friday through Sunday morning). Instead, offences started to increase from 4 pm on Friday and remained high until about 4 am (n=171, 16.3%, of offences occurred during this period). On Saturday, offences started to increase at around 4 pm and remained high until about 7 am on Sunday (n=236, 22.5% of offences occurred during this period). The frequency of offences occurring during the rest of the day on Sunday was also higher compared with all other days. Nevertheless, the percentage of offences that took place during normally-considered HAH was 25.2 percent (n=265).

Figure 206 Frequency of property damage offences by day of week, and time of day, suburb of Hobart (Tas)
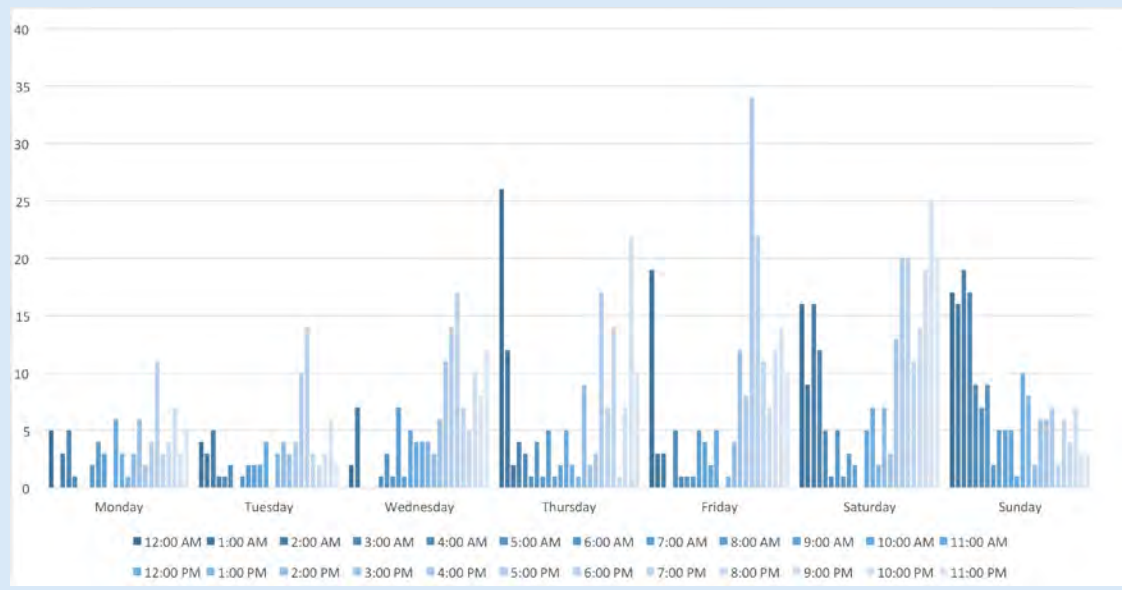
Given the low number of alcohol-related property offences in Hobart (*n*=103), property offences by day of the week, and time of day are presented separately in Figure 207 and Figure 208.

Figure 207 shows almost half (48.6%) of alcohol-related property damage offences in Hobart took place on Saturday and Sunday. A further 25.2 percent of alcohol-related offences took place on Thursday.

Figure 207 Percentage of alcohol-related property offences by day of the week, Hobart (Tas)
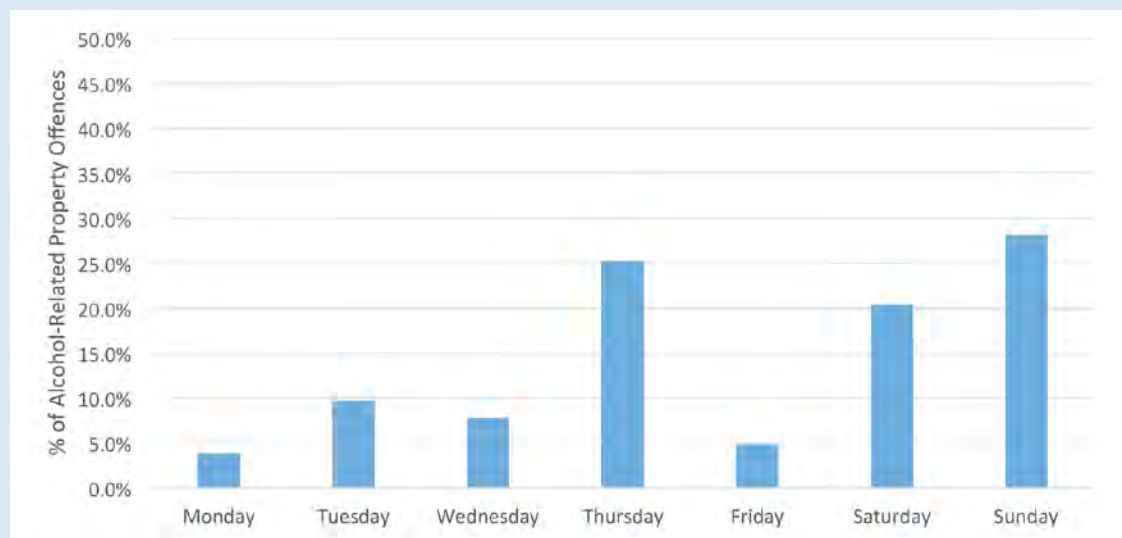
Figure 208 shows that alcohol-related property damage offences in Hobart occurred most frequently in the late evening/early morning. About two-thirds (67%, *n*=69) took place between 9 pm and 3 am.

Figure 208 Percentage of alcohol-related property damage offences by time of day, Hobart (Tas)
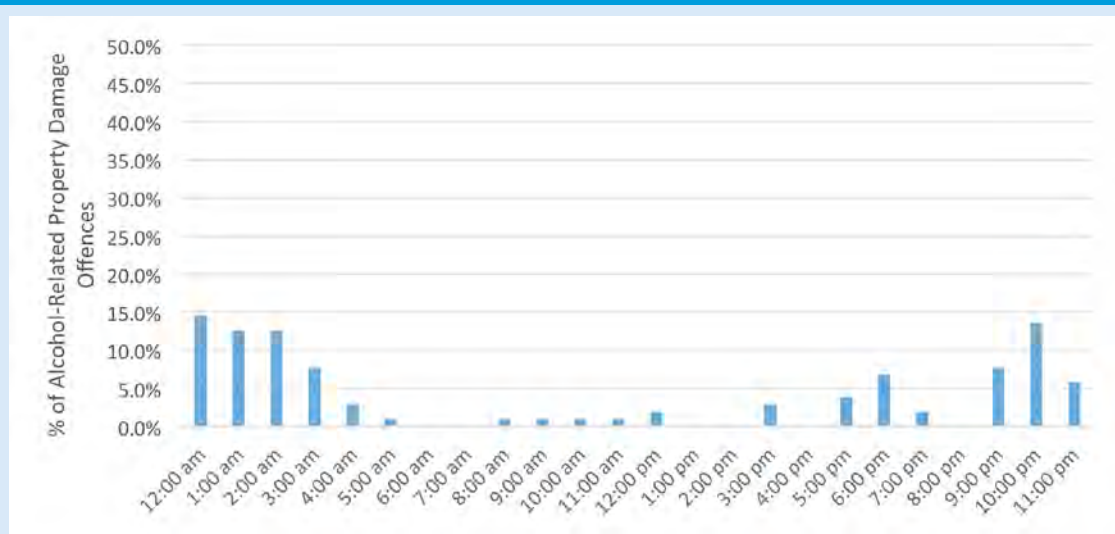
Annual trends

Table 110, Table 111 and Figure 209 show the percentage of property damage offences that occurred each month over the reporting period in Battery Point and Hobart (suburb). As the alcohol-related flag has only been collected since 2012, only data from January 2012 to June 2015 is presented for alcohol-related assaults.

As shown in Table 110, property damage offences overall were most frequent from November to January, and in March and July.

Table 110 Number and percentage of property damage offences by month, Battery Point (Tas)				
	All		HAH	
	n	%	n	%
January	13	13.4	3	9.7
February	7	7.2	5	16.1
March	11	11.3	4	12.9
April	7	7.2	1	3.2
May	4	4.1	4	12.9
June	6	6.2	1	3.2
July	10	10.3	4	12.9
August	4	4.1	0	0.0
September	9	9.3	3	9.7
October	5	5.2	2	6.5
November	10	10.3	2	6.5
December	11	11.3	2	6.5

Property damage offences by month are presented in Table 111 and Figure 209. Because of the low number of alcohol-related property damage offences (n=103), these trends are not presented in Figure 209. Property damage offences in Hobart showed no clear trend by month. All offences, alcohol-related offences, and those occurring during HAH were most frequent in April.

Table 111 Number and percentage of property damage offences by month, Hobart (Tas)						
	All		Alcohol-related		HAH	
	n	%	n	%	n	%
January	100	9.5	5	4.9	22	8.3
February	77	7.3	8	7.8	19	7.2
March	94	8.9	8	7.8	17	6.4
April	111	10.6	14	13.6	32	12.1
May	90	8.6	8	7.8	30	11.3
June	87	8.3	4	3.9	22	8.3
July	79	7.5	7	6.8	14	5.3
August	97	9.2	8	7.8	17	6.4
September	69	6.6	8	7.8	19	7.2
October	86	8.2	10	9.7	26	9.8
November	92	8.8	11	10.7	28	10.6
December	69	6.6	12	11.7	19	7.2

Figure 209 Percentage of property damage offences by month, suburb of Hobart (Tas)
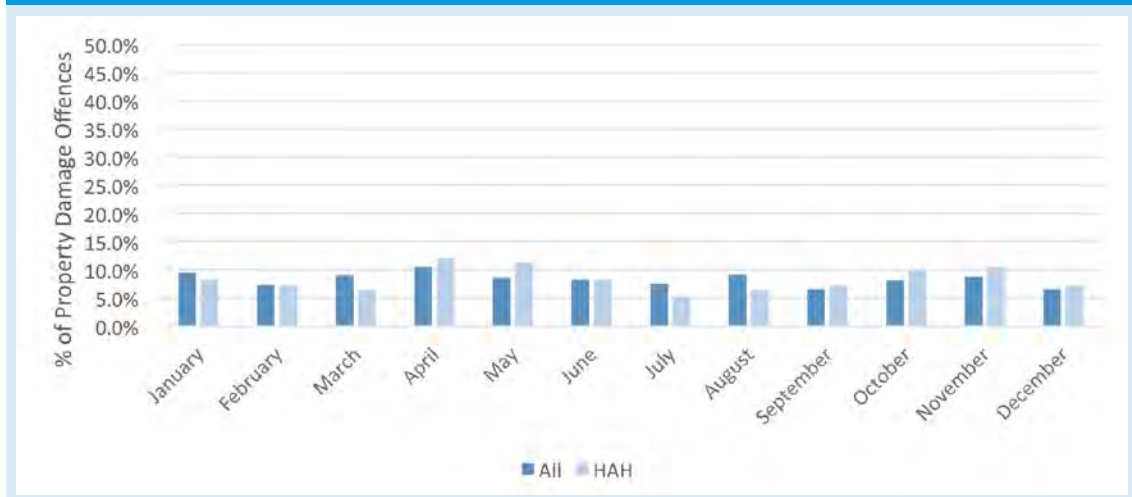
Figure 210, Figure 211 and Figure 212 present trends over time for property damage offences occurring within Hobart (suburb) and Battery Point by all offences, alcohol-related offences, and offences occurring within HAH. The three trend lines show a decrease in property damage offences over time, although the decrease for alcohol-related property damage offences and those occurring during HAH was only very slight. For Tasmania overall, Tasmania Police recorded a 14 percent increase in the number of injure/destroy property offences from 2012–13 to 2013–14, but a four percent decrease in the number of injure/destroy property offences from 2013–14 to 2014–15 (DPEM 2015).

Figure 210 Property damage trends over time by quarter, Hobart (suburb) and Battery Point (rates per 10,000 in greater Hobart, Tas)
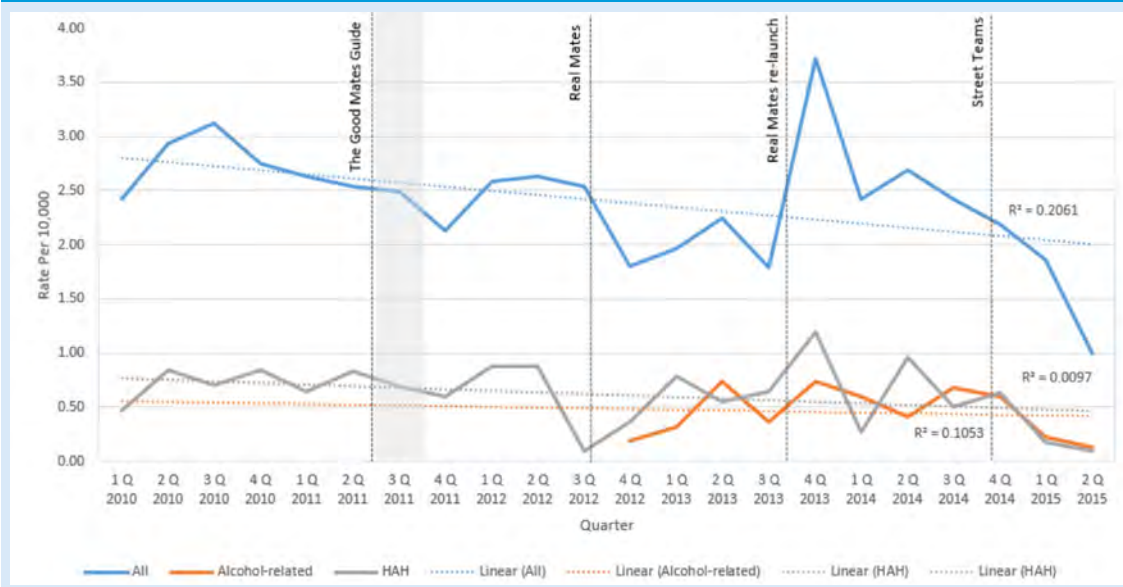
Figure 211 Property damage trends over time by quarter, the suburb of Hobart (rates per 10,000 in greater Hobart, Tas)

Drug and alcohol intoxication and subsequent harm in night-time entertainment districts (DASHED)
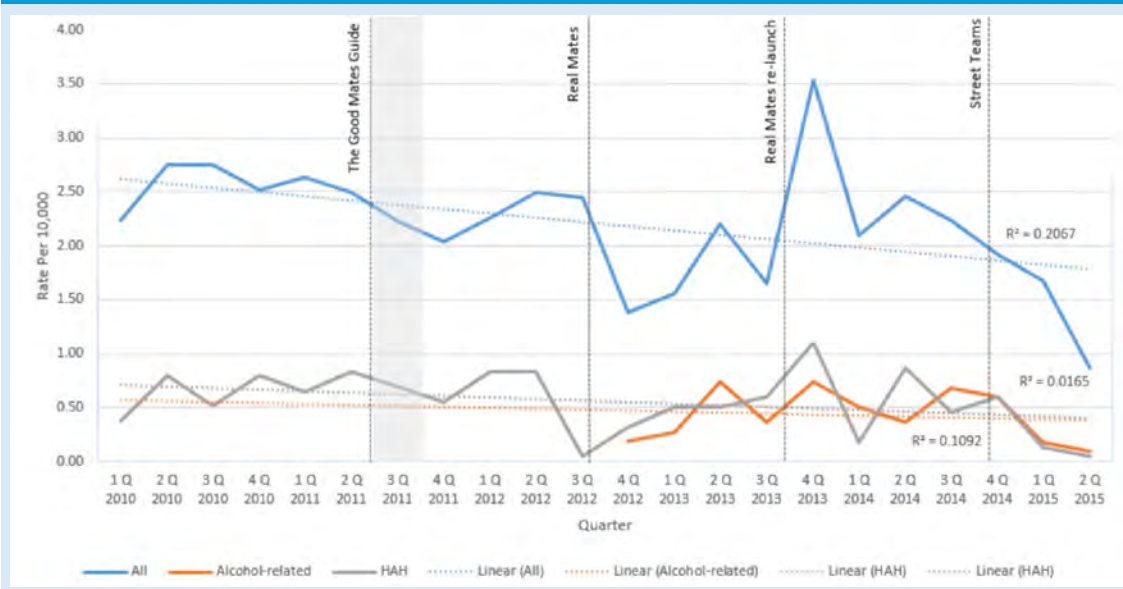
Figure 212 Property damage trends over time by quarter, Battery Point (rates per 10,000 in greater Hobart, Tas)
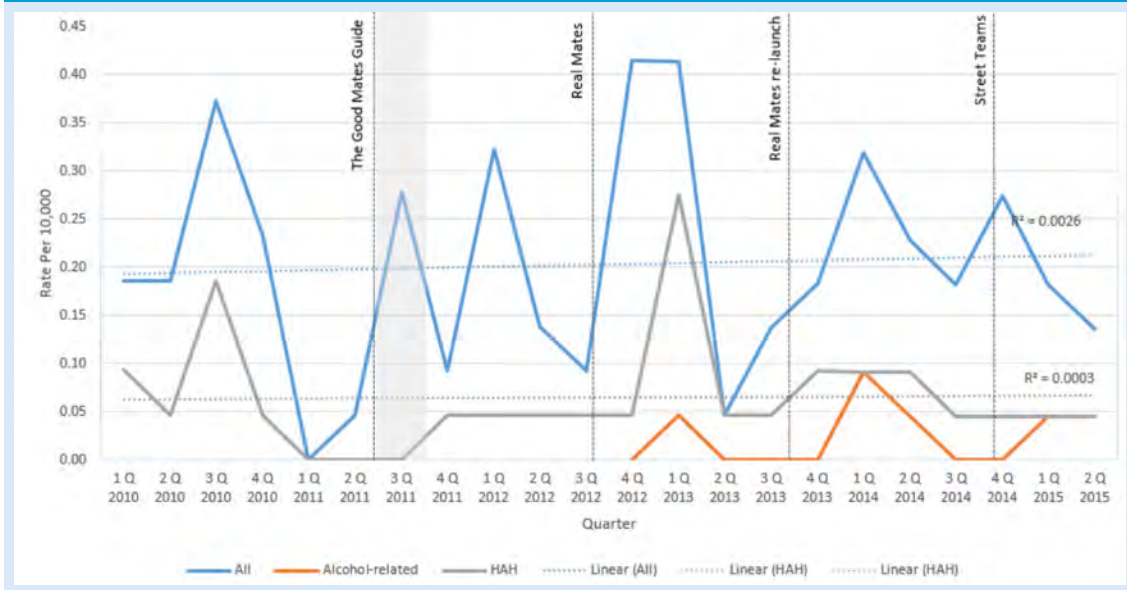
Street offences

Between 1 January 2010 and 30 June 2015 there were 534 street offences in the entertainment area of Hobart (Battery Point: n=29; Hobart: n=505). The following shows trends in street offences overall, whether they were alcohol- and drug-related, and by HAH. The definition of HAH used for analysing police records is between 8 pm–6 am Friday to Sunday morning (Laslett et al. 2007).

Of all street offences, 48.9 percent (n=261; Battery Point: n=17, 58.6%; Hobart: n=244, 48.3%) took place during HAH. Since 2012, 60.2 percent (n=201; Battery Point: n=19, 65.5%; Hobart: n=182, 59.1%) were alcohol-related and 15.9 percent (n=53; Battery Point: n=3, 11.5%; Hobart: n=50, 16.2%) of assaults were drug-related. Street offences from 2012 to June 2015 were: Battery Point n=26; Hobart n=308; and all n=334. Given the very low number of offences that took place in Battery Point, no further trends will be analysed for Battery Point for street offences.

Table 112 Number of street offences in Battery Point and suburb of Hobart (Tas)		
	Battery Point	Hobart
All street offences	29	505
Alcohol-related	19	182
HAH	17	244
Drug-related	3	50

Demographics

Victims

Most street offences in Hobart (*n*=492, 97.4%) involved police officers as victims. Since police officer demographics are not a focus of the current study, only brief victim data is presented.

Figure 213 shows differences in the percentage of victims in each age group by whether the offence was alcohol-related or occurred during HAH. Overall, victims and victims of street offences during HAH were most frequently aged 34 to 44 years (all: *n*=112, 22.5%; HAH: *n*=57, 23.8%), followed by 25 to 34 years (all: *n*=101, 20.3%; HAH: *n*=44, 18.3%), and 18 to 24 years (all: *n*=55, 11%; HAH: *n*=25, 10.4%). Conversely, victims of alcohol-related street offences were most frequently aged between 25 and 34 years (*n*=58, 32.6%), followed by 18 to 25 years (*n*=44, 24.7%). However, much data was missing (all: *n*=181, 38%; alcohol-related: *n*=23, 12.9%; HAH: *n*=94, 39.2%). Victims of drug-related offences were also most frequently aged between 25 to 34 years (*n*=13, 26%) and 35 to 44 years (*n*=11, 22%).

Figure 213 Street offence victims by age group, Hobart (Tas)
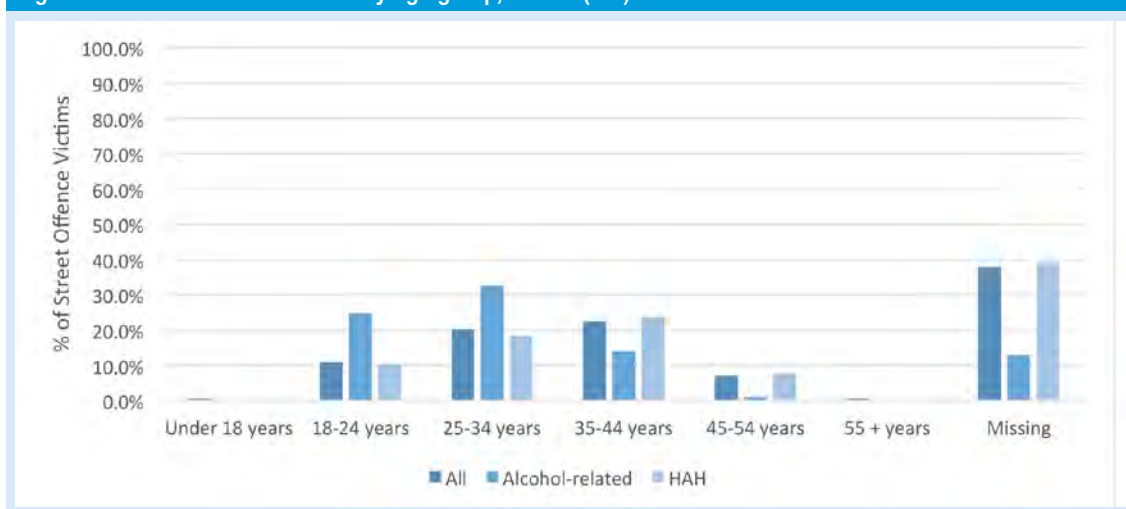
Excluding offences where the sex of the victim was unknown or missing, approximately three-quarters of street offence victims were male (all: *n*=327, 73.3%; alcohol-related: *n*=135, 79.9%; HAH: *n*=157, 73%; drug-related: *n*=37, 78.7%).

Offenders

Figure 214 and Figure 215 present the percentage of street offenders in Hobart by age group and by sex.

Figure 214 shows that those committing street offences were most frequently aged between 18 and 24 years followed by 25 to 34 years. The percentage of offenders aged 18 to 25 years during HAH in particular was higher compared with offenders overall (all: 37.1%; HAH: 47.1%). The greatest percentage of offenders of drug-related street offences were aged from 25 to 34 years (*n*=26, 52 %), followed by 18 to 24 years (*n*=13, 26.0%).

Figure 214 Street offence offenders by age group, Hobart (Tas)
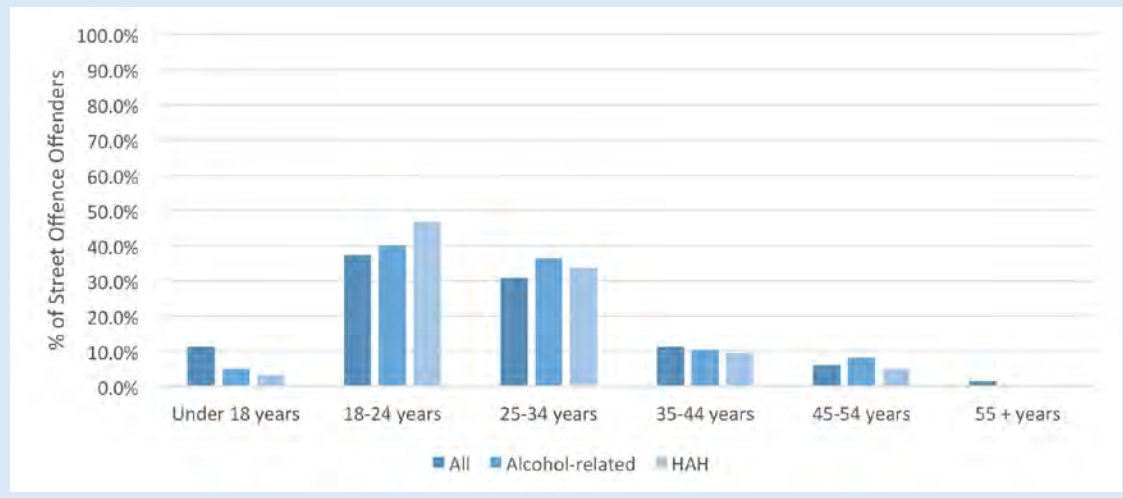
Excluding offences where the sex of the offender was unknown or missing, more than 80 percent of street offenders were male (all: *n*=401, 81.3%; alcohol-related: *n*=151, 84.8%; HAH: *n*=198, 83.2%; drug-related: *n*=49, 98%). Figure 215 below presents by age group the percentage of those committing street offences who were male. At least 50 percent of offenders within each age group were male. Although there were differences in the percentage of male victims in the under 18 year age group, the number of victims in this category was small (all: *n*=54; alcohol-related: *n*=8; HAH: *n*=6).

Figure 215 Percentage of those committing street offences who are male, by age group, Hobart (Tas)
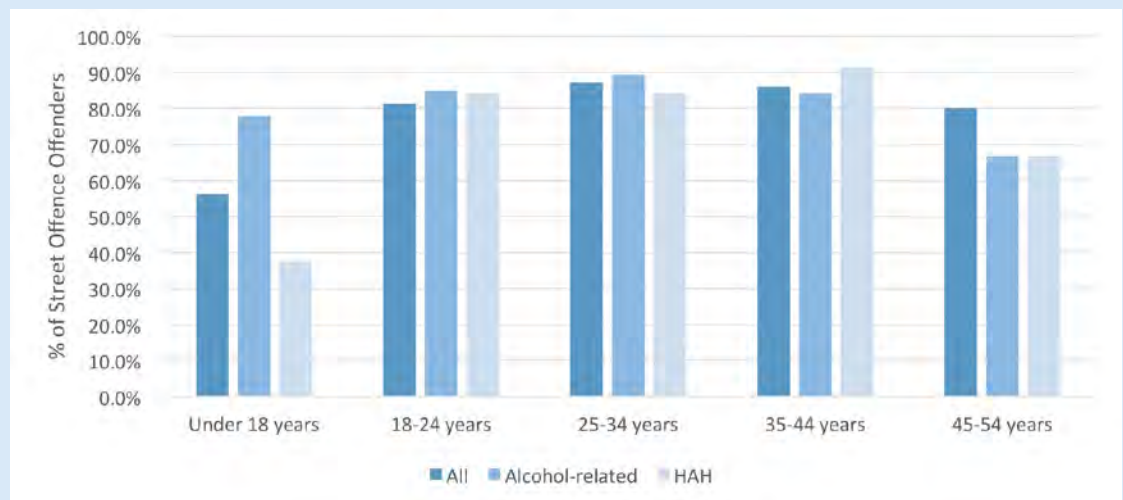
Time of day, and day of the week

Hobart

Figure 216, Figure 217 and Figure 218 present the frequency of all property damage offences and alcohol-related property damage offences by day of the week, and time of day in Hobart.

As shown in Figure 216 there was a general trend for fewer offences to occur during the day with increases over the evening/early morning. Offences increased markedly on Friday night/Saturday morning and Saturday night/Sunday morning, and a smaller increase on Wednesday night/Thursday morning. Street offences occurring during HAH (8 pm–6 am Friday night through Sunday morning) accounted for 48.3 percent (*n*=244) of all street offences, with an additional 9.1 percent (*n*=46) of offences taking place on Wednesday night/ Thursday morning.

Figure 216 Frequency of street offences by day of week, and time of day, suburb of Hobart (Tas)
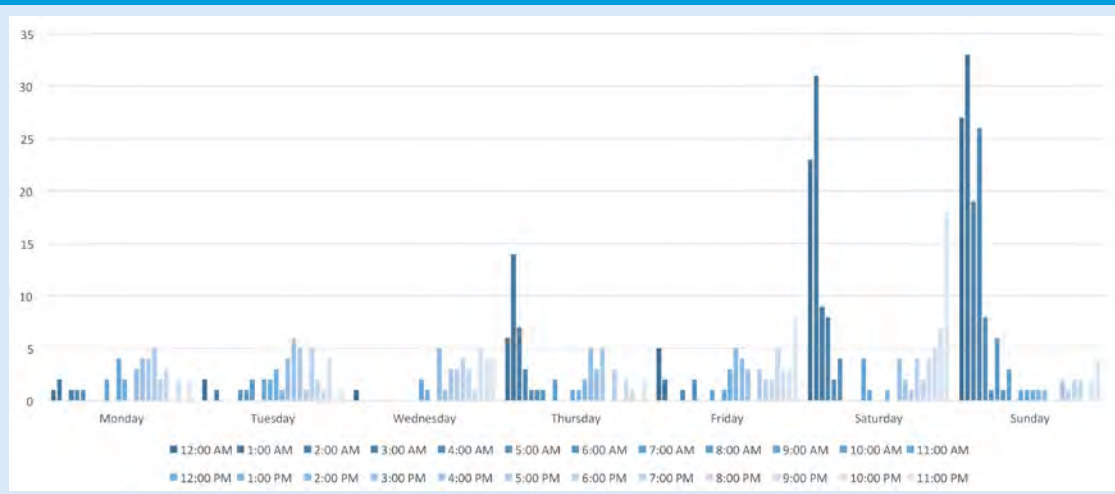
As there were too few alcohol-related offences (*n*=182) to examine trends by day of week/time of day together, alcohol-related street offences by day of the week, and time of day are presented separately below in Figure 217 and Figure 218.

Figure 217 shows that most alcohol-related street offences took place on the weekend, with offences taking place on Saturdays and Sundays accounting for 64.3 percent (*n*=117) of all street offences.

Figure 217 Percentage of alcohol-related street offences by day of week, suburb of Hobart (Tas)
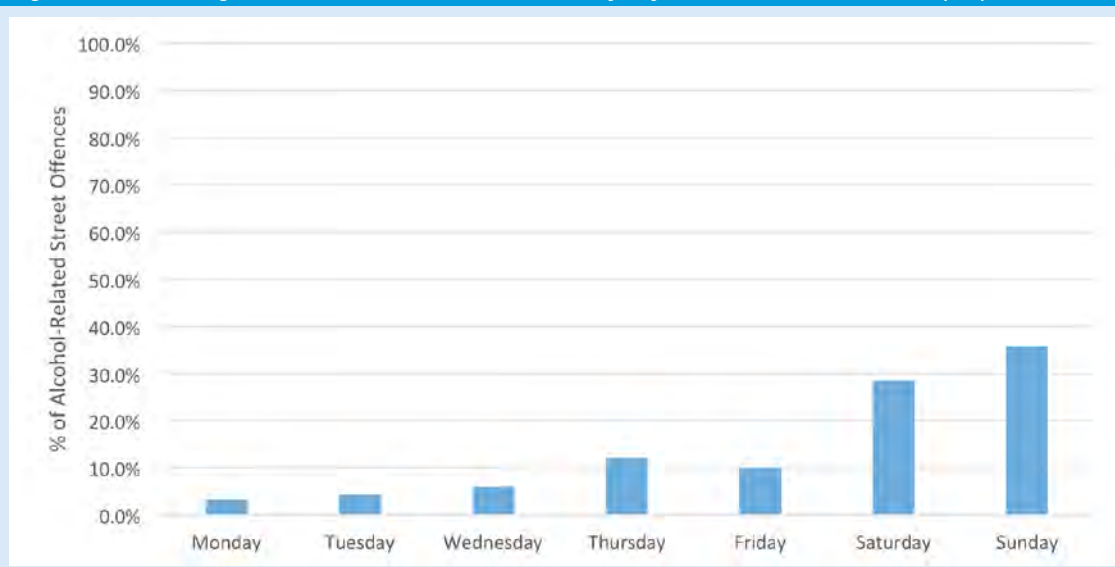
Figure 218 shows that few alcohol-related street offences took place during the day (between 6 am and 5 pm), with the percentage of these gradually increasing from 6 pm, peaking at 1 am (*n*=39, 21.4%), and then decreasing thereafter.

Figure 218 Percentage of alcohol-related street offences by time of day, suburb of Hobart (Tas)
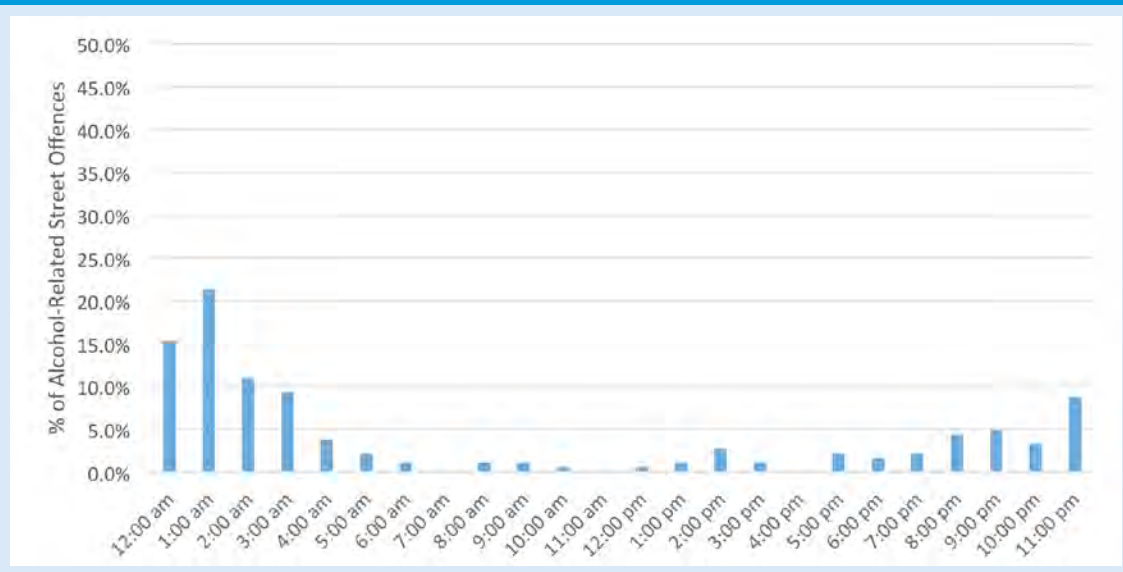
Drug-related street offences also occurred most frequently on the weekends and late evening/early morning. Three-fifths (58%, *n*=29) of alcohol-related street offences took place on a Saturday or Sunday. Most drug-related street offences (*n*=42, 84%) occurred between 8 pm and 6 am.

Annual trends

As shown in Figure 219, all street offences, alcohol-related street offences, and those occurring during HAH showed a similar annual trend, with a higher percentage of offences occurring in March, June, November, and December. Compared with all street offences, a higher percentage of alcohol-related street offences took place in November (all: *n*=47, 9.3%, alcohol-related: *n*=23, 12.6%) and December (all: *n*=52, 10.3%; alcohol-related: *n*=24, 13.2%). Further, compared with all street offences, a higher percentage of street offences that took place during HAH, also occurred in November (*n*=30, 12.3%).

Figure 219 Percentage of street offences by month, suburb of Hobart (Tas)
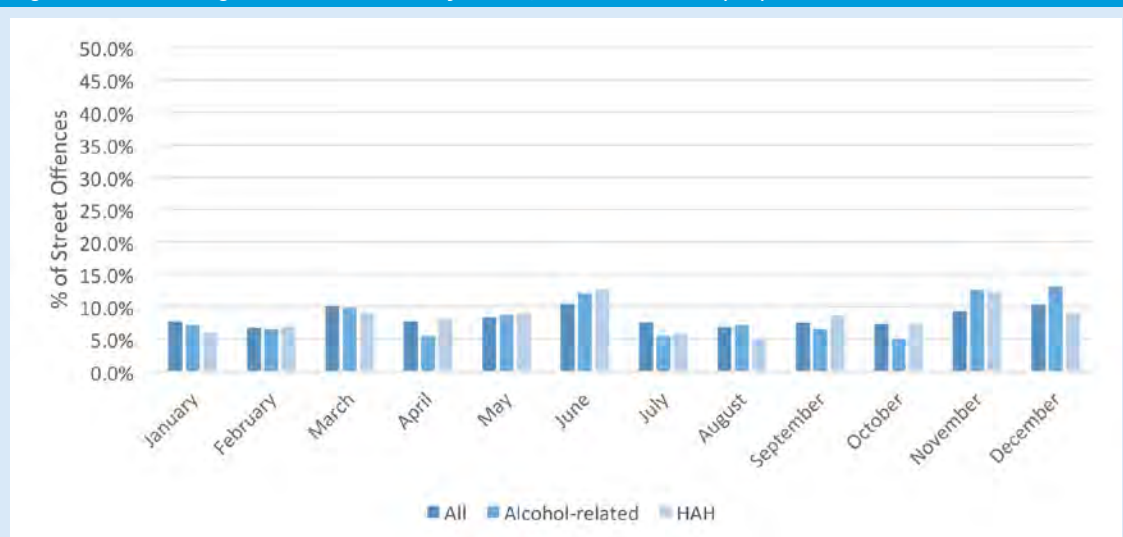
Figure 220 and Figure 221 show trends for street offences over the measurement period within Hobart (suburb) and Battery Point. A separate graph displaying trends for Battery Point was not produced as there were too few offences (*n*=29). All three trend lines decreased over the measurement period; however, alcohol-related street offences decreased more than street offences overall, and those occurring within HAH.

Figure 220 Street offence trends over time, by quarter, Hobart (suburb) and Battery Point (rate per 10,000 in greater Hobart)
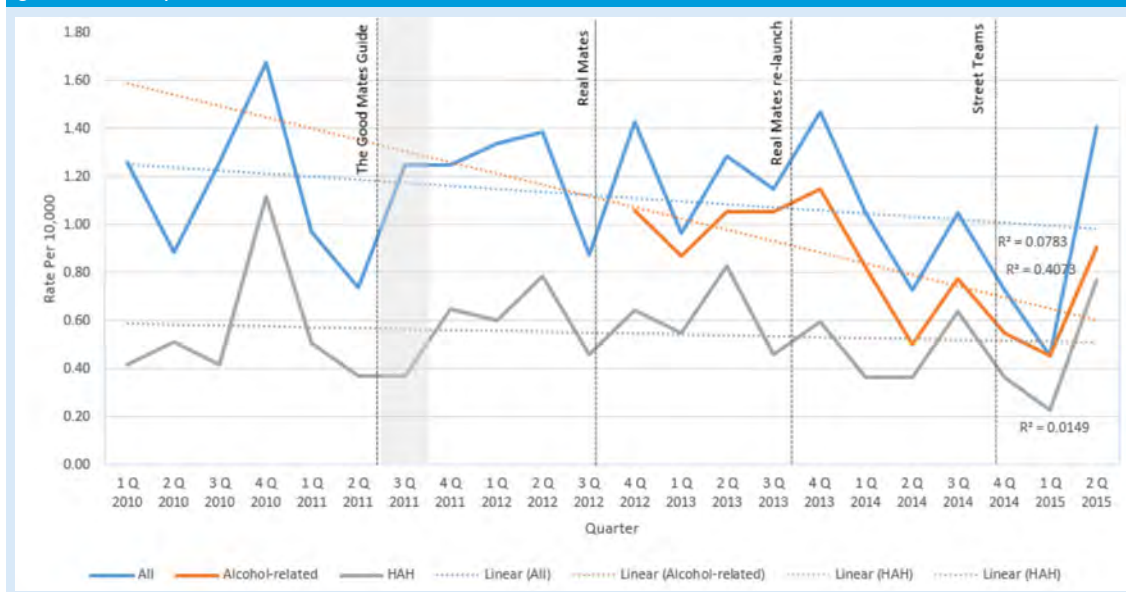
Figure 221 Street offence trends over time, by quarter, Hobart (suburb) (rates per 10,000 in greater Hobart)
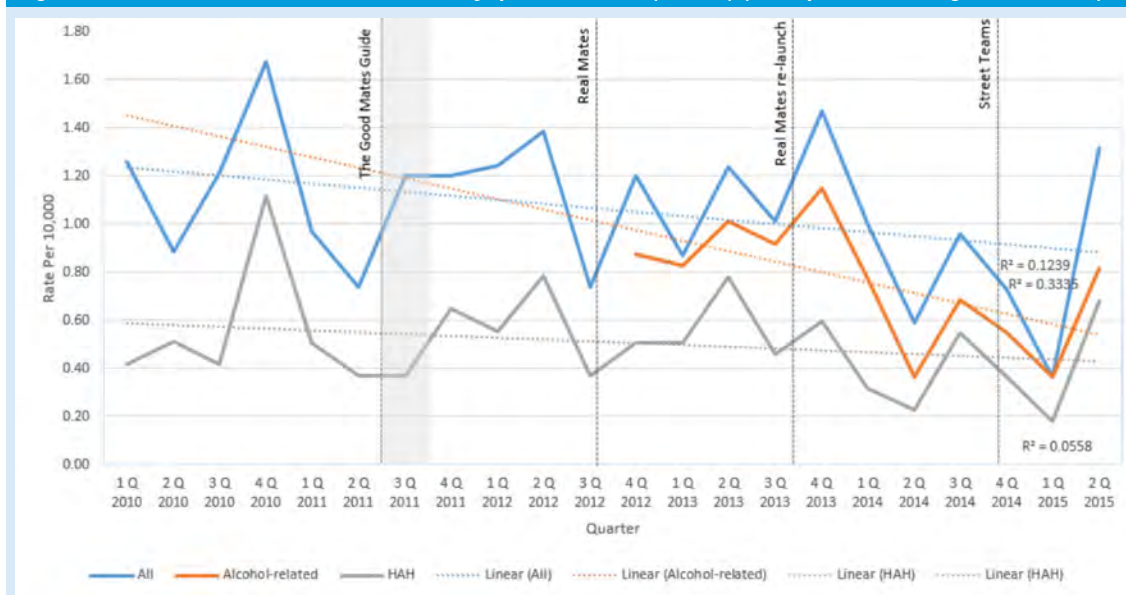
Drink-driving offences

This section examines drink-driving offences occurring between 1 July 2011 and 30 June 2015. Using Google and Google maps, the locations were found (suburb and street name) of the premises where offences had taken place. They were flagged as 'yes' for 'licensed premises'—indicating the offender had consumed alcohol at a licensed venue. The only offences included in this section are those that took place in licensed premises located in the suburbs of Hobart or Battery Point.

Over the four-year measurement period, alcohol was consumed at locations within Hobart (suburb) for 669 offences, and in Battery Point for 141 offences. More than half (n=349, 52.2%) the offences where alcohol had been consumed within Hobart or Battery Point (n=83, 58.9%) took place (ie the offender was breathalysed by Tasmania Police) during high alcohol hours (between 8 pm and 6 am Friday to Sunday morning).

Most offenders were charged with an alcohol offence via static (ie a breath testing station set-up in a highly visible location) or mobile (ie police vehicles stopping motorists at random) random breath testing (see Table 113).

Table 113 Type of occurrence of drink-driving offences, Battery Point and Hobart (suburb)							
	Battery Point				Hobart		
	All		HAH		All		HAH	
Occurrence type	n	%	n	%	n	%	n	%
Crash	6	4.3	6	7.2	45	6.7	22	6.3
DUI/manner of driving	4	2.8	2	2.4	23	3.4	9	2.6
Offence	2	1.4	1	1.2	20	3.0	8	2.3
Random breath tests (RBT) mobile	82	58.2	43	51.8	414	61.9	213	61.0
RBT static	46	32.6	30	36.1	164	24.5	96	27.5

Demographics

Figure 222 and Figure 223 present the percentages of drink-driving offenders within each age group according to whether they consumed alcohol before their offence in Battery Point and Hobart (suburb).

The greater percentage of drink-driving offenders who consumed alcohol in Battery Point were aged between 25 and 34 years (all: n=53, 37.6%; HAH: n=36, 43.4%), followed by 34 to 44 years (all: n=34, 24.1%; HAH: n=16, 19.3%). Drink-driving offenders who consumed alcohol in Hobart were younger, with the greatest percentage of offenders aged between 25 and 34 years (all: n=221, 33%; HAH: n=124, 35.5%) and 18 to 24 years (all: n=210, 31.4%; HAH: n=99, 28.4%).

Figure 222 Drink-driving offenders by age group, Battery Point (Tas)
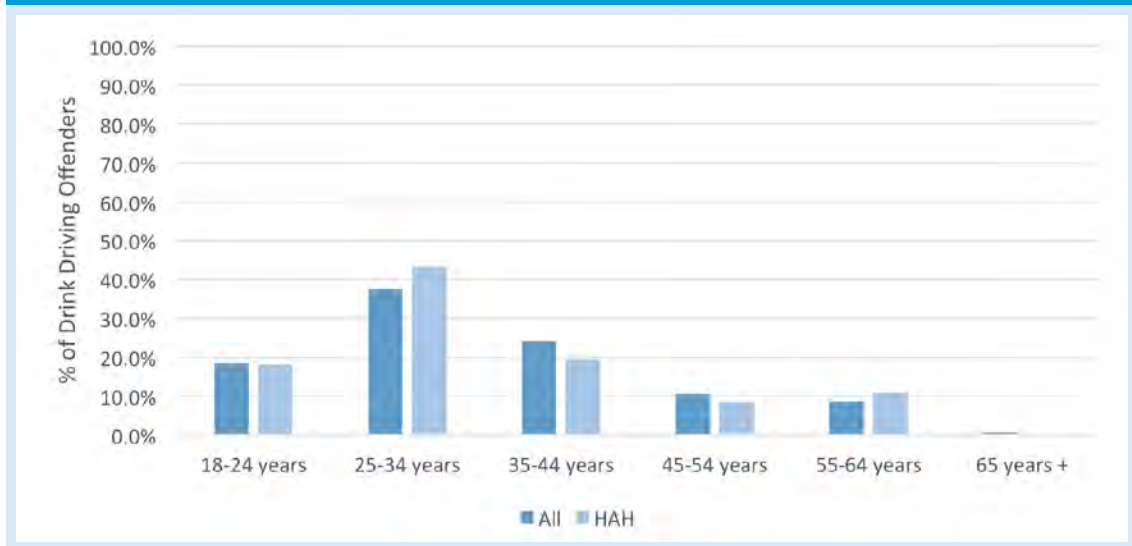
Figure 223 Drink-driving offenders by age group, suburb of Hobart (Tas)
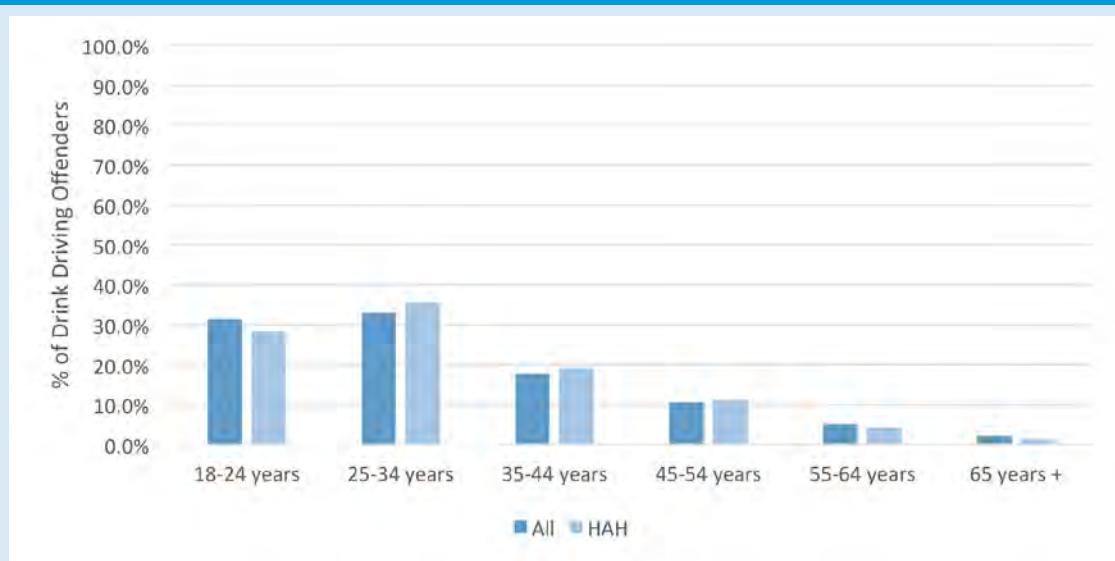
Time of day, and day of week

Battery Point

As there were too few offences to analyse trends for drink-driving offences where the offender had consumed alcohol in Battery Point by day of week, and time of day together, Figure 224 shows drink-driving offences by day of the week, and Figure 225 shows them by time of day.

The greatest percentage of offences took place on Saturday (*n*=45, 31.9%) and Sunday (*n*=41, 29.1%). The lowest percentage of drink-driving offences took place on Tuesday (*n*=4, 2.8%).

Figure 224 Percentage of all drink-driving offences by day of the week, Battery Point (Tas)
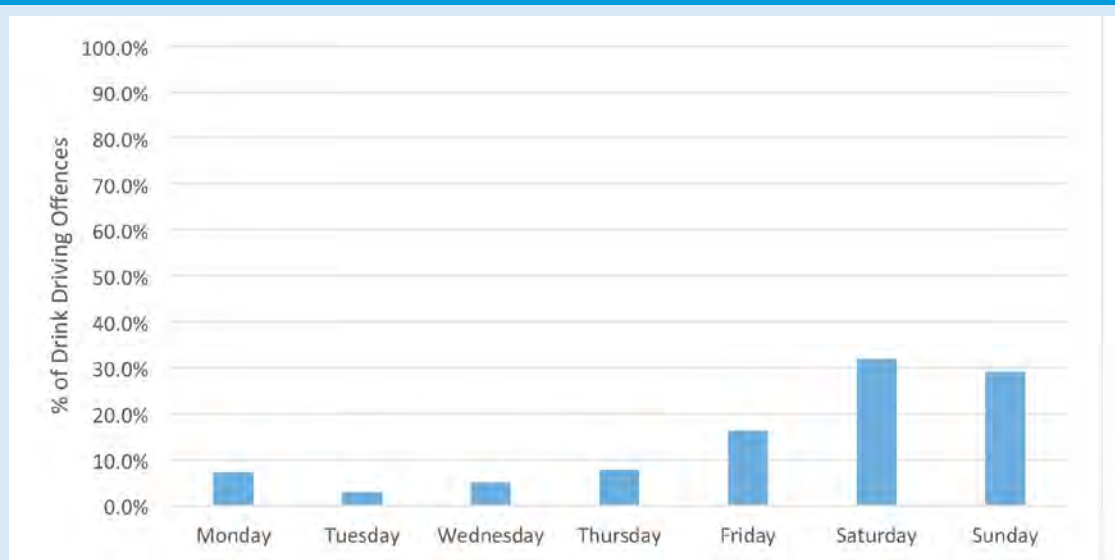
Figure 225 shows a general trend for fewer offences during the daytime hours and early evening between 8 am and 9 pm compared with the late evening/early morning hours, with 89.4 percent of all drink-driving offences taking place between 9 pm and 6 am.

Figure 225 Percentage of all drink-driving offences by time of day, Battery Point (Tas)
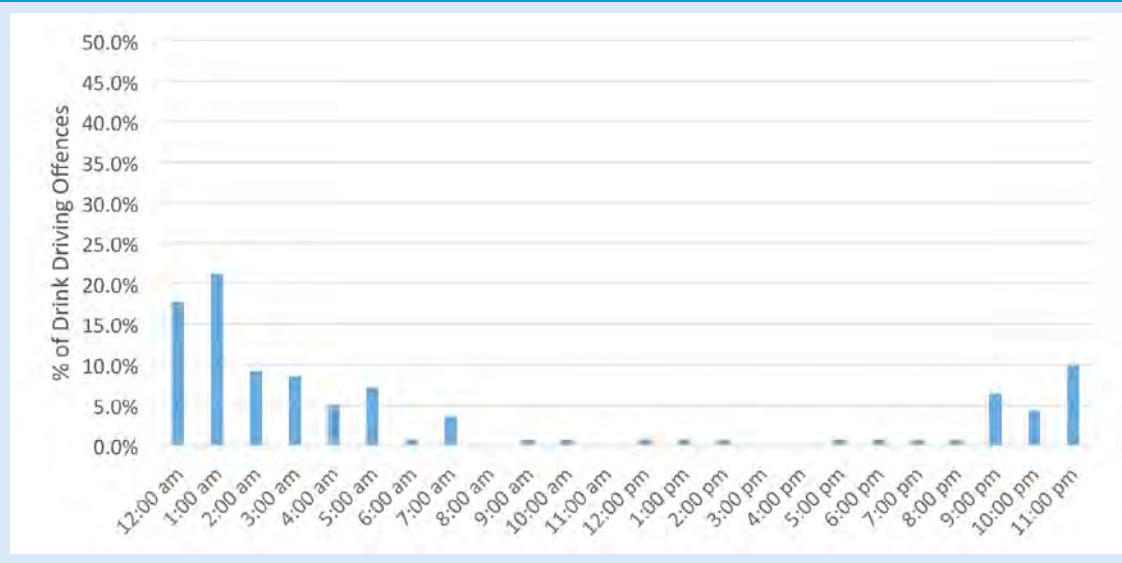
Hobart

Figure 232 shows the frequency of drink-driving offences where the offender had consumed alcohol in Hobart (suburb) by day of the week, and time of the day. There were marked increases in drink-driving offences on Friday night/Saturday morning, Saturday night/Sunday morning, and a smaller increase on Wednesday night/ Thursday morning. Drink-driving offences that occurred during HAH (8 pm–6 am Friday night through Sunday morning) accounted for 52.2 percent (*n*=349) of all offences. Drink-driving offences occurring on Wednesday night/Thursday morning (8 pm–6 am) accounted for an additional 15.2 percent (*n*=102) of all drink-driving offences.

Figure 226 Frequency of drink-driving offences by day of week and time of day, suburb of Hobart (Tas)
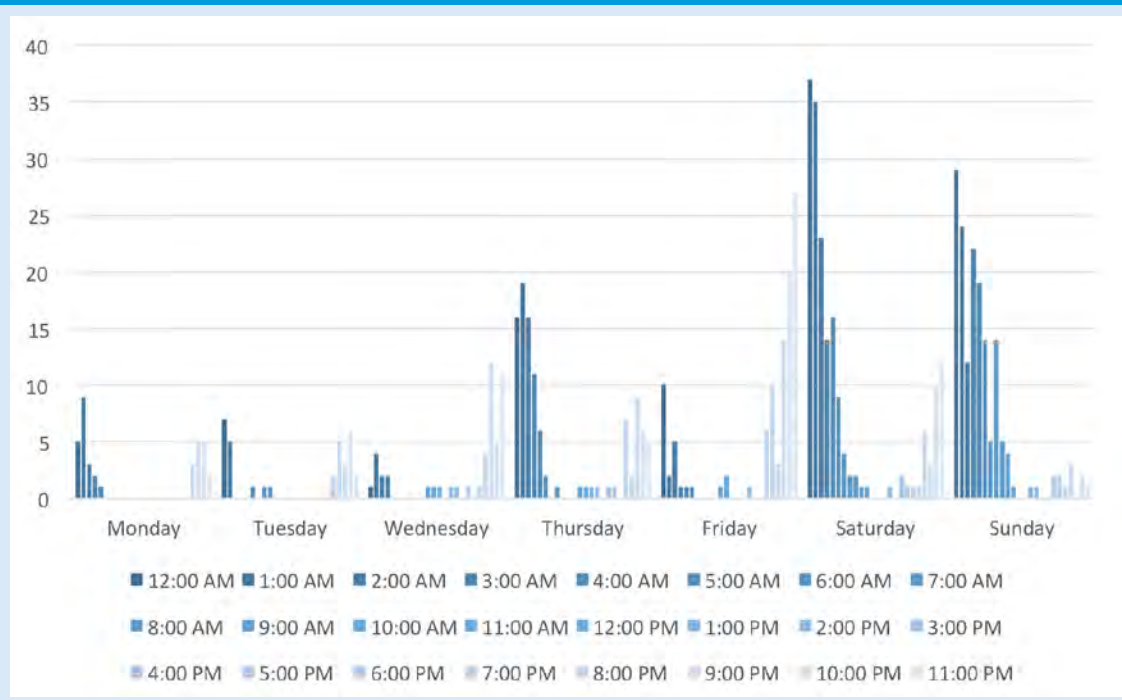
Figure 227 presents by time of day the mean BAC level of drink-driving offenders at the time of intercept, who consumed alcohol in Hobart (suburb). Mean BAC level peaked at 6 am (M=0.124 g/100ml) and 4 pm (M=0.114 g/100ml), and was lowest at 12 pm (M=0.068 g/100ml) and 5 pm (M=0.057 g/100ml). No graph was produced for Battery Point due to several data points without data (ie no offences occurred during some times), but BAC levels for offences where offenders consumed alcohol in Battery Point were highest at 6 am (M=0.170 g/100ml) and lowest at 1 pm (M=0.022 g/100ml).

Figure 227 Mean BAC level of drink-driving offenders by time of day, alcohol was consumed in the suburb of Hobart (Tas)
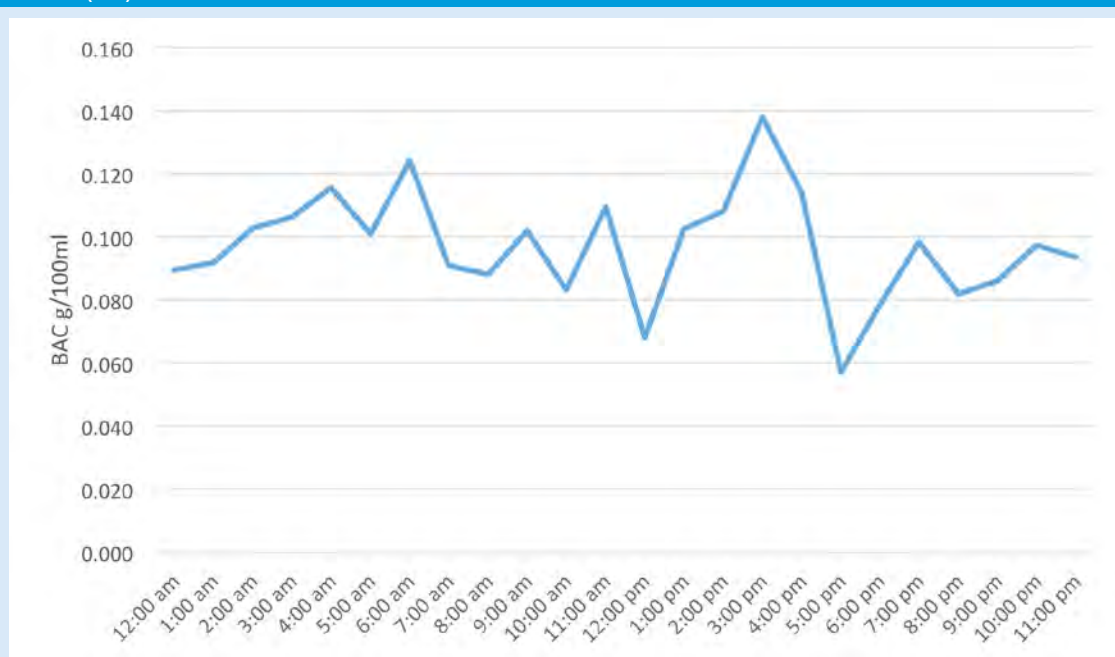
Drug driving offences

The following presents drug driving offences occurring between 1 July 2011 and 30 June 2015. Only offences that occurred within the Tasmania Police offence division of Hobart (ie Hobart Police Station) were included. Over the four-year measurement period, 310 drug-driving offences occurred in the offence division of Hobart. Most offenders (72.6%) tested positive for THC (marijuana), and more than a third tested positive for methamphetamines (41%) or amphetamines (36.5%)—see Table 114.

Table 114 Types of drugs detected for drug driving offences, Hobart Offence Division		
Drug type	n	%
Amphetamines	113	36.5
Diazepam	5	1.6
Ecstasy	18	5.8
Methadone	4	1.3
Methamphetamines	127	41.0
Morphine	8	2.6
THC	222	71.6
Other drugs	7	2.3

Note: offenders could test positive for more than one drug

Demographics

Figure 228 presents the percentage of drug driving offenders by age group. The greater percentage of drug driving offenders was aged 25–34 years (*n*=109, 35.2%) and 18–24 years (*n*=85, 27.4%).

Figure 228 Drug-driving offenders by age group, Hobart Offence Division
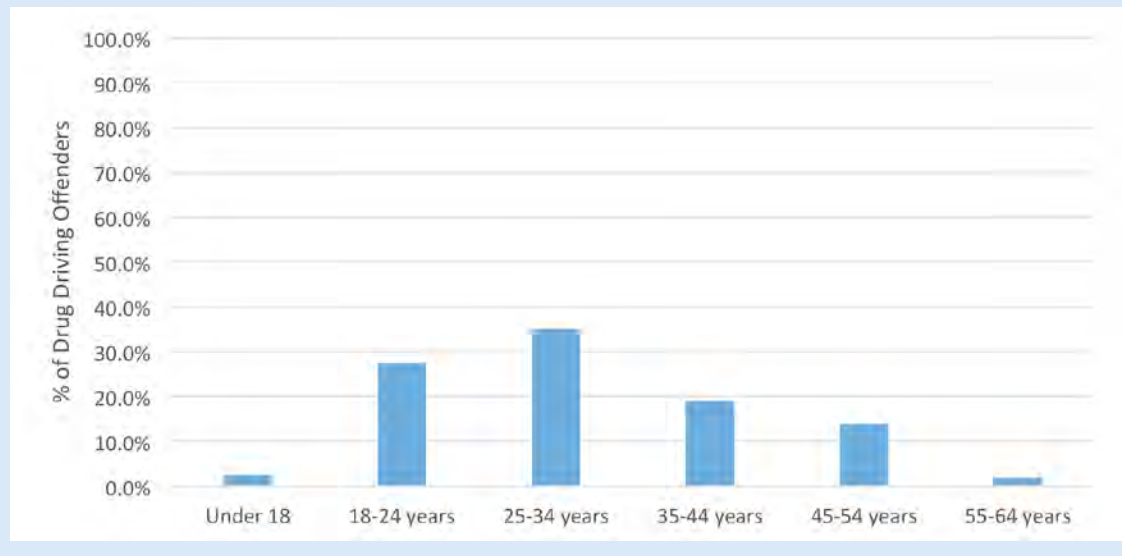
Time of day, and day of week

Figure 229 and Figure 230 present the percentage of drug driving offences by day of the week, and time of day. Drug driving offences were most frequent on Saturdays (*n*=64, 20.6%) and Fridays (*n*=56, 18.1%), and occurred least often on Mondays (*n*=33, 10.65) and Tuesdays (*n*=34, 11%).

Figure 229 Percentage of drug driving offences by day of the week, Hobart Offence Division
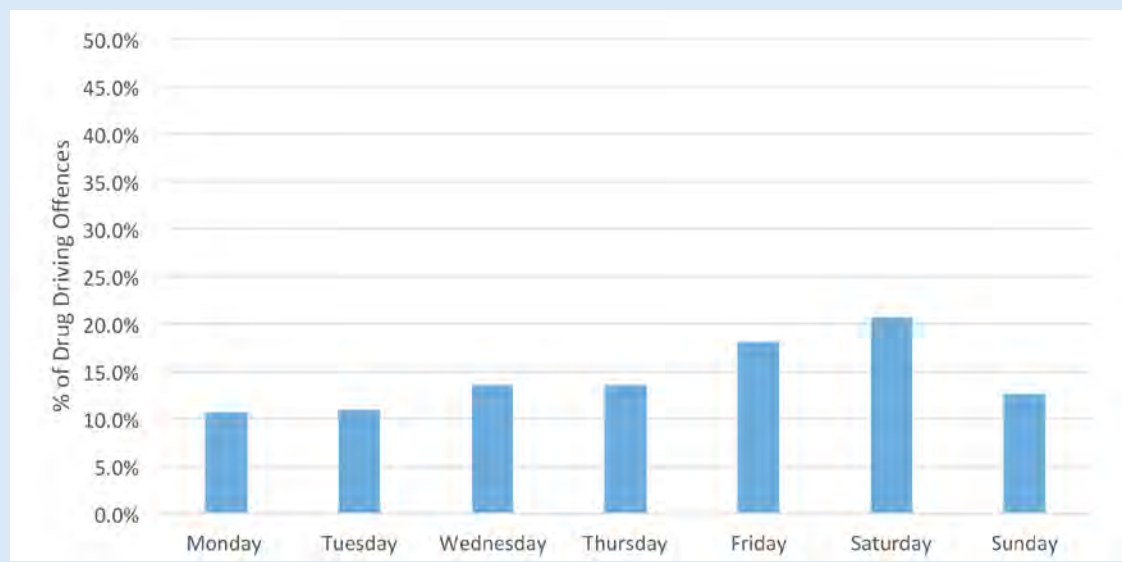
Figure 230 shows that drug driving offences were most frequent at 1 am (*n*=46, 14.8%) and least frequent at 6 am (*n*=4, 1.3%). Drug driving offences appeared to be more frequent in the evening/early morning, with 59 percent (*n*=183) taking place between 8 pm and 6 am.

Figure 230 Percentage of drug driving offences by time of day, Hobart Offence Division
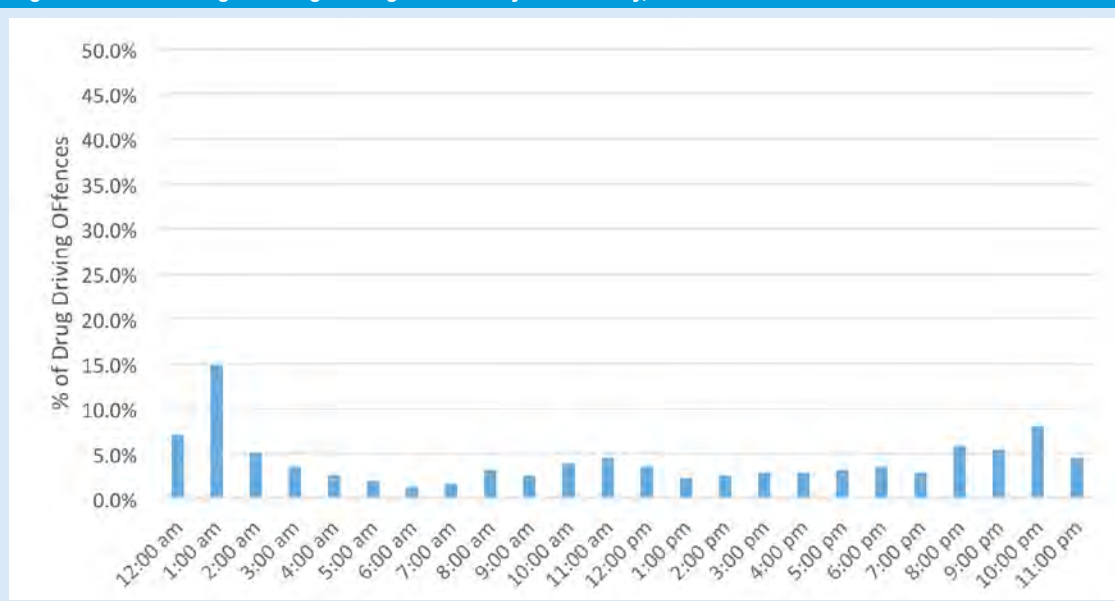
Annual trends

Figure 231 presents the percentage of drug driving offences per month in the Hobart Offence Division. Figure 232 presents the percentage of drug driving offences per quarter over the measurement period. As there were only 310 offences, caution is needed when interpreting these findings.

Figure 231 shows a general trend for more drug driving offences in the first half the year compared with the second half, with the highest percentage of offences recorded in May (*n*=42, 13.5%), and the lowest in October (*n*=9, 2.9%).

Figure 231 Percentage of drug driving offences by month, Hobart Offence Division
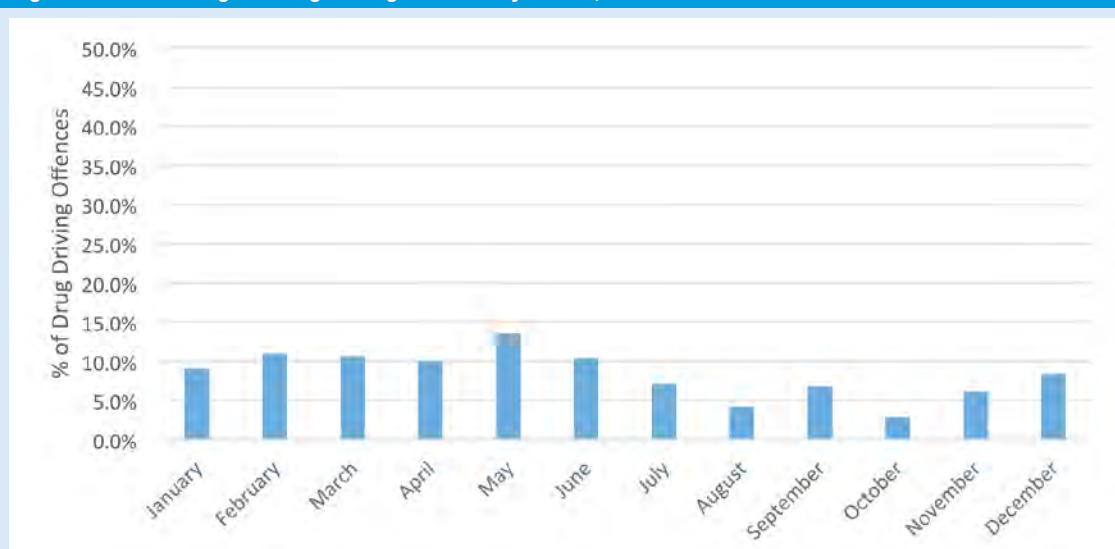
Figure 232 shows that the rate per 10,000 of drug driving offences gradually increased over the measurement period.

Figure 232 Drug driving offences over time by quarter, Hobart Offence Division (rate per 10,000 in greater Hobart, Tas)
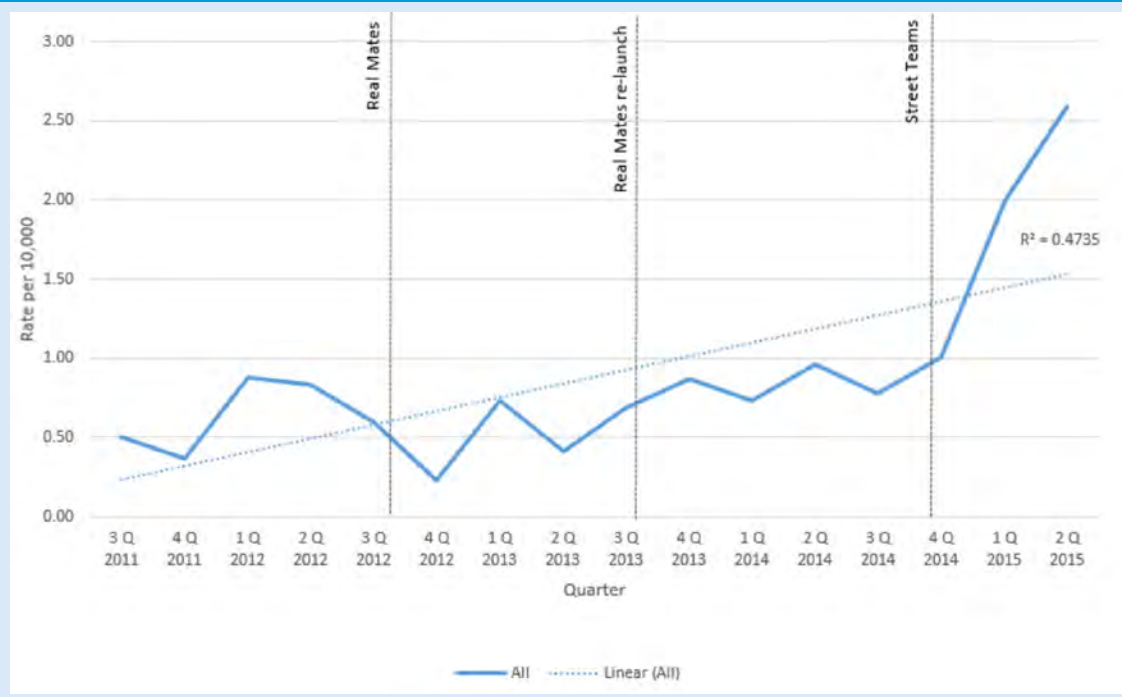
Summary of trends for offence data

Assaults

Canberra

Approximately half (51%) of assaults in Braddon and City took place during HAH and 60 percent were alcohol-related. Victims of assaults were predominately male (61–73%) and within the 18 to 24 year and 25 to 35 year age groups. In Braddon, about half (49–54%) the assaults took place in a public place. In City, most assaults occurred in a public place (61–64%), but the percentage of assaults that took place in a licensed venue was higher for alcohol-related assaults (33%) and assaults during HAH (30%) than assaults overall (23%). Assaults that occurred during HAH appeared to occur more frequently on streets where licensed premises in Canberra were located.

Assaults peaked in Braddon and City in December. In Braddon only, assaults also peaked in January, and alcohol-related assaults and those occurring during HAH also peaked in June. Rates of assaults in Braddon and City, including alcohol-related assault and assaults during HAH, decreased slightly across the measurement period. A time series analysis indicated that neither of the interventions during the measurement period (Liquor Act 2010; Alcohol Crime Targeting Team) had a significant impact on assault rates over time.

Hobart

Half (50.1%) the assaults in Battery Point and Hobart (suburb) took place during HAH and 45.5 percent were flagged as alcohol-related. A small percentage (6.1%) was drug-related. Victims of assaults were predominately male (71–82%) and within the 18 to 24 year and 25 to 34 year age groups. Offenders of assaults were also predominately male (69–89%) and within the 18 to 24 year and 25 to 34 year age groups. Rates of assaults overall and assaults occurring within HAH in Battery Point and Hobart showed a very small increase over the measurement period, but alcohol-related assaults showed a slight decrease over that time. A time series analysis indicated that none of the interventions during the measurement period (eg the 'Good Mates Guide', 'Real Mates', Street Teams) had a significant impact on assault rates over time.

Sexual offences

Canberra

Almost one in three (32%) sexual offences in Braddon and City were alcohol-related and about a quarter (27%) occurred during HAH. Victims of sexual offences tended to be young, aged 24 years or less and most (83%) were female. Alcohol-related offences were more likely to take place on the weekend (Saturday and Sunday) than offences overall. For example, 72 percent of alcohol-related sexual offences in City took place on Saturday or Sunday compared with 32 percent of all sexual offences. Ninety percent of alcohol-related offences in City took place between 8 pm and 6 am (compared with 53% of all offences). Alcohol-related sexual offences in City peaked in November, December and July, while offences overall were more likely to take place in the early months of the year, from January to April. Overall, the rate of sexual offences per 10,000 increased slightly over the measurement period.

Hobart

Of all sexual offences that occurred in Battery Point and Hobart (suburb), 40 percent took place during HAH, 65 percent were flagged as alcohol-related, and 15 percent were flagged as drug-related. Victims and offenders of sexual offences tended to be young, with more than three-quarters (77.5%) of victims, and more than two-thirds of offenders (68.2%) aged 34 years or younger. Most sexual offence victims were female (85%) and all sexual offenders were male. Sexual offences took place mostly on Fridays, Saturdays and Sundays. More half of all sexual offences (51%) and alcohol-related sexual offences (55%) took place between midnight and 5 am.

Property damage offences

Canberra

Almost a quarter (24%) of property damage offences in Braddon and City took place during HAH, and 13 percent were flagged as alcohol-related. The most frequent location of alcohol-related offences in City (46%) and Braddon (43%) was in a public place. In City, alcohol-related property damage offences were more likely to take place in a licensed venue (22%) compared with those that occurred during HAH (10%) and property damage offences overall (5%).

Annual trends in property damage offences in Braddon were unclear, but alcohol-related property damage offences in City were most frequent in January, August and December. Rates of overall property damage Braddon and City decreased across the measurement period. Alcohol-related property damage and property damage during HAH also decreased, but only slightly.

Hobart

About a quarter (25.8%) of property damage offences in Battery Point and Hobart (suburb) took place during HAH, 16 percent were flagged as alcohol-related, and three percent were flagged as drug-related. The highest percentage of property damage offenders was within the 18 to 24 year and 25 to 34 year age groups. The percentage of offenders within these age groups was higher for alcohol-related (78%) and HAH (88%) property damage than property damage offences overall (69%). Most property damage offenders were male (87%). Property damage offences showed no clear monthly trends. Rates of property damage offences decreased over the measurement period, although the decrease for alcohol-related property damage offences and those occurring during HAH was only very small.

Street offences

Canberra

About half (51%) of street offences in Braddon and City took place during HAH and almost three-quarters (74%) were flagged as alcohol-related. Rates of street offences overall, alcohol-related street offences, and street offences that occurred during HAH, increased over the measurement period but still remained relatively low (less than 1 offence per 10,000).

Hobart

Approximately half (49%) the street offences in Battery Point and Hobart (suburb) took place during HAH, 60 percent were flagged as alcohol-related, and 16 percent were flagged as drug-related. Offenders, especially committing street offences during HAH, were most frequently aged between 18 and 25 years (all: 37%, HAH: 47%). Most (80%) of those committing street offences were male. Street offences in Hobart were more likely to happen in the middle (June) and at the end of the year (November, December). Rates of street offences overall, alcohol-related street offences, and street offences during HAH all decreased over the measurement period. However, alcohol-related street offences demonstrated a greater decrease than street offences overall and those occurring within HAH.

Drug and drink-driving offences

Canberra

More than half (54%) of drink-driving offences in Braddon and City occurred during HAH. The percentage that occurred in City increased from May to August and was highest in November and December. In Braddon, there were no clear monthly trends for drink-driving offences. Overall, there was a slight decrease in the rate of drink-driving offences over the measurement period.

Hobart

About half (52%) of drink-driving offences where the offender had consumed alcohol within Battery Point or Hobart (suburb), took place within HAH. Offenders who had consumed alcohol in Battery Point were most frequently aged between 25 and 34 years, followed by 34 to 44 years, while offenders who had consumed alcohol in Hobart were most frequently aged between 25 and 34 years, followed by 18 to 24 years. Most offenders who had consumed alcohol in Battery Point reported drinking at a venue located on Salamanca Place (54–60%) or in Salamanca Square (24–34%). Of offenders who consumed alcohol in Hobart, the venues where they reported consuming alcohol most often were on Murray Street (20%) and Salamanca Place (18%) for offences overall, and Liverpool Street (9%) and Brisbane Street (8%) for offences within HAH. In Hobart, offences appeared to be less frequent in the early months of the year (January–April) compared with all other months. There were no clear monthly trends for Battery Point. Across Battery Point and Hobart, the rate of drink-driving offences increased slightly over time.

Most (69%) of those committing drug driving offences in the Tasmania Police division of Hobart were aged between 18 and 34 years. These offences were most frequent on Saturdays (21%) and Fridays (18%), and in the evening/early morning, with 59 percent of offences taking place between 8 pm and 6 am. More drug driving offences tended to take place in the first half of the year (64%) compared with the second half (36%). The rate of drug driving offences gradually increased over the measurement period.

Liquor licensing

Number of liquor licensing breaches

From 2010 to 2015, there were 109 licensed venues in the Canberra CBD. Most (83%) were on-premises licences, followed by off-premises (11%), club (3%), special (3%) and general (1%) licences. Across the five-year period, 198 licensing breaches were recorded. About a quarter (26%) of venues did not have any liquor licensing breaches during 2010–15 (see Table 115). Of those who did have a breach recorded, one-third had one breach. Two venues had a large number of breaches, with one recording eight, and another nine.

In Hobart during the five-year period, there were 86 licensed venues in the main entertainment district. Four venues closed during this time: three restaurants and one with a special licence. Most licences were categorised as special (49%), with on-premises (33%) and general (19%) licences making up the remainder of venue types. From 2010 to 2015, 28 licensing breaches were recorded for the Hobart entertainment district; seven in 2010, seven in 2011, six in 2012, one in 2013, seven in 2014, and none in 2015. Most venues (79%) did not have any licensing breaches recorded against them (see Table 115). Fifteen percent of all venues had one breach and five percent had two or more breaches.

Table 115 Total number of venues by number of liquor licensing breaches in Canberra and Hobart				
Number of breaches	Canberra		Hobart	
	n	%	n	%
0	28	26	68	79
1	36	33	13	15
2	14	13	1	1
3	11	10	3	3
4	10	9	1	1
5	4	4	0	0
6	4	4	0	0
7	0	0	0	0
8	1	1	0	0
9	1	1	0	0

Types of liquor licensing breaches

Eighty-six percent of breaches within Canberra were due to five types of breach. The most common type was related to 'failure to keep an incident register', with 52 instances (26% of all breaches) of this type of breach across 42 venues. 'Failure to display signage' constituted 24 percent of breaches; this was observed across 39 venues. Common types of breaches related to RSA (13%), failure to comply with risk-assessment management plans (13%) and failure to comply with licensing conditions (10%). The remaining types of licensing breaches were not reported often; each representing up to five percent of all breaches recorded during this time.

Breaches in RSA (46%) were the most common type of breach in Hobart. Use of, or sale of, alcohol outside an on-premises venue only comprised 18 percent of breaches, followed by failure to display required signage (14%), failure to keep or display the liquor licence on the premises (11%), and unaccompanied minors in service areas (11%) .

Figure 233 Percentage of type of breach in Canberra and Hobart
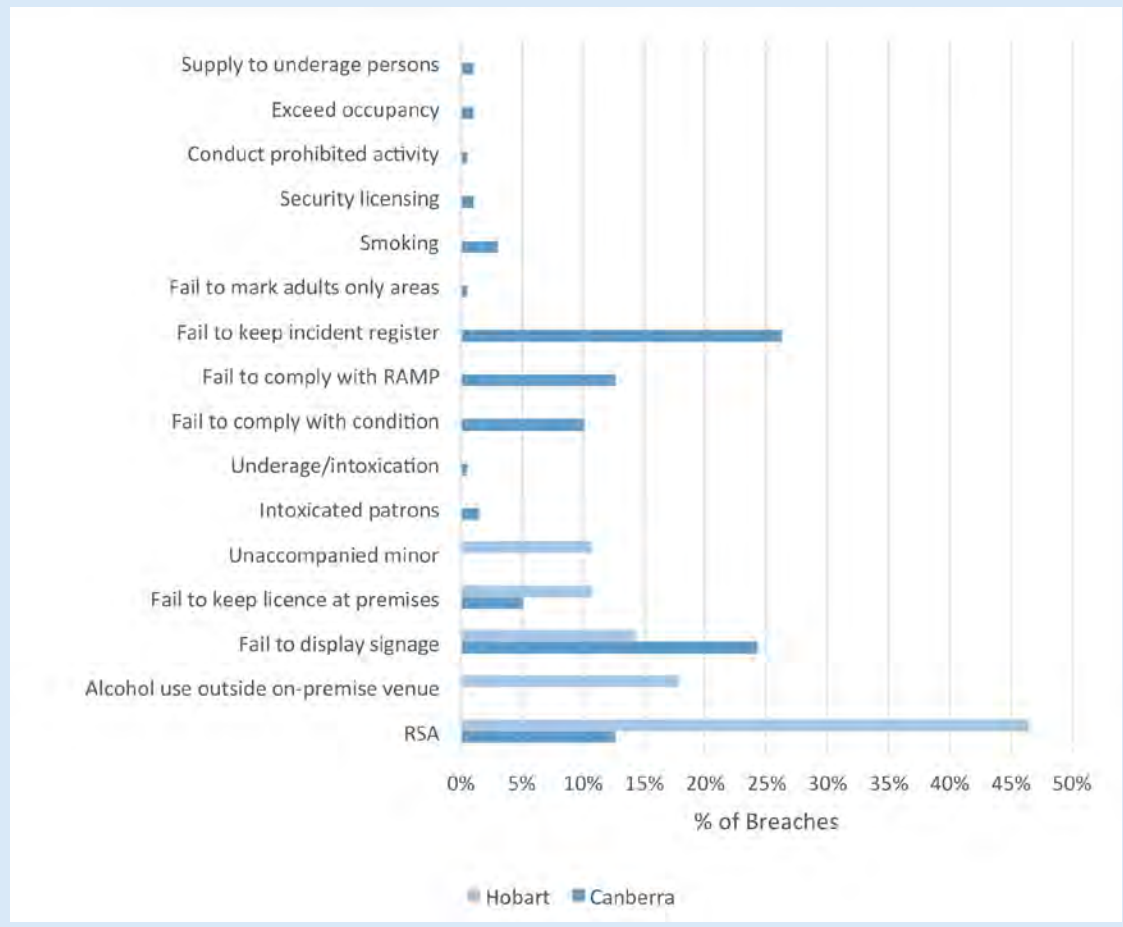
Number and type of complaints

Only three complaints, for three separate venues, were recorded during 2010–15 for Canberra. One complaint referred to the sale of takeaway alcohol at a venue licensed as on-premises only. The second related to venue security, while the third related to inappropriate behaviour; there was insufficient data to indicate if the latter related to venue staff or patrons.

In Hobart, 13 complaints for seven separate venues were recorded during 2010–15 within the Hobart entertainment district. No complaints were recorded in 2010, three in 2011, three in 2012, four in 2013, two in 2014, and one in 2015. Most of the recorded complaints referred to noise or disturbances (seven complaints; 62% of all complaints), with five of these complaints made against one venue. Two complaints (at two separate venues) were made concerning an alleged assault, while an additional two (also at two separate venues) were made regarding RSA practices. One complaint was made in relation to an illegal card game being played in a venue.

Place of last drink

The ACT Policing form for the place of last drink was designed to be completed by officers attending any alcohol-related incident in the Canberra City and Braddon entertainment precinct. An 'alcohol-related incident' was defined as an incident attended by police in which the person of interest or victim reported having consumed alcohol in the six hours prior to the incident, or where the officer believed the person had consumed alcohol in the specified time period (eg because the person exhibited signs of intoxication, or the incident took place inside or within the immediate vicinity of a licensed premises).

Place-of-last-drink forms were designed to be completed in each of the interview and observation periods of fieldwork during HAH. While recorded crime data does not permit a valid comparison, since the forms were completed for a variety of incidents not always involving an offence, the total number completed suggests that a form was not routinely completed for every alcohol-related incident attended by police.

In total, ACT Policing completed 154 place-of-last-drink forms for incidents in Canberra City or Braddon during HAH in which either the person of interest or victim had consumed alcohol. These forms were most frequently completed for incidents involving a disturbance (35%, $n=50$), intoxication or welfare check (24%, $n=34$), suspicious individuals (17%, $n=25$) and assaults (10%, $n=15$). Most forms were completed for a person of interest (79%, $n=121$), while 10 percent were completed for victims ($n=15$). This information was missing on 12 percent of forms ($n=18$). Illicit drug use was suspected in nine percent of all incidents.

Eighty-seven incidents occurred near a licensed venue. Figure 234 provides a breakdown of the percentage of incidents occurring near a licensed premises, by the venue name. While individual premises have been de-identified, nearly half of all incidents (42%, $n=32$) occurred near one of the largest venues in Civic—three premises accounted for nearly 60 percent of all incidents that occurred within or near a licensed venue. As shown in Figure 236, most incidents (59%, $n=43$) occurred outside, but near a licensed venue. Thirty-two percent of incidents ($n=23$) occurred inside, and 10 percent ($n=7$) took place both inside and outside a licensed venue.

Figure 234 Incidents occurring near a licensed premises, by venue name (%; n=72)
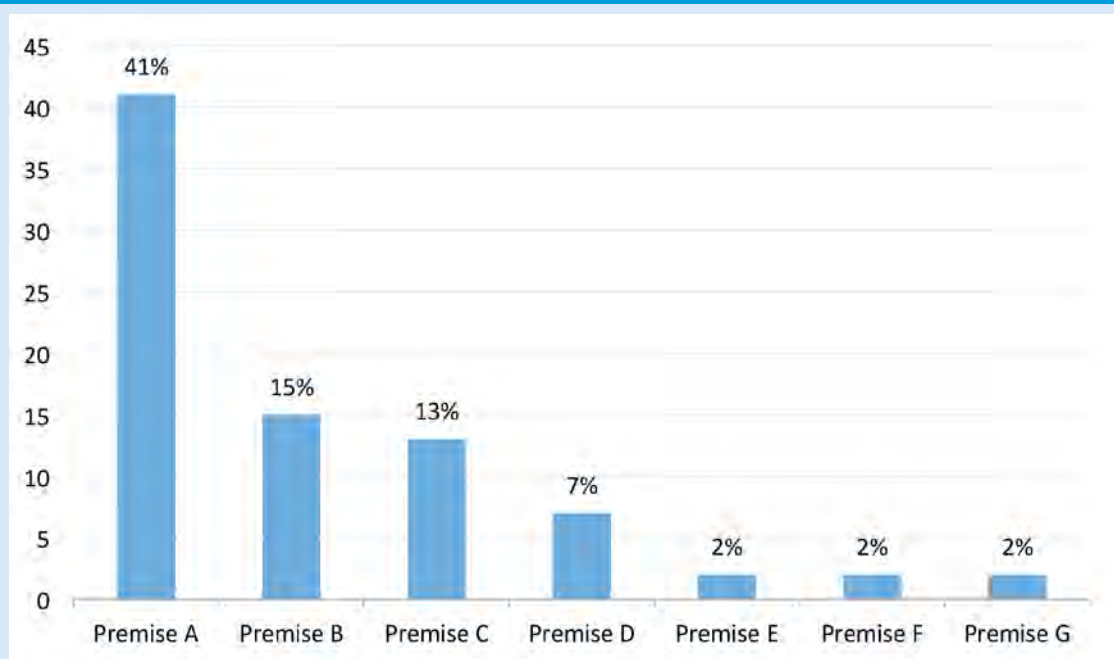
Figure 235 Incidents occurring near a licensed premises, by incident location (%; n=73)
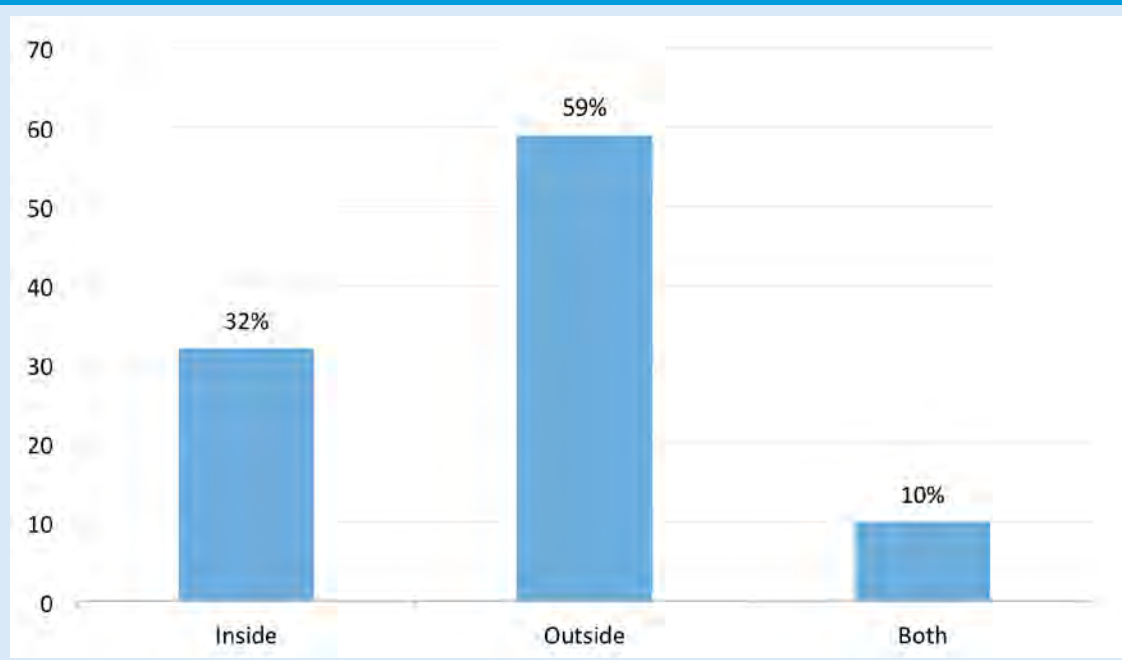
The place of last drink was identified as a public place in 40 percent of incidents (*n*=53) and a licensed venue in 56 percent of incidents (*n*=75). Sixty-three percent of respondents (*n*=32) who identified a licensed venue as the place of last drink reported that they had consumed most of their alcohol at the venue where they consumed their most recent drink.

Using the same venue identifiers as in Figure 234, the frequency with which each venue was identified as the place of last drink is presented in Figure 236. The overall pattern is similar to that in Figure 234. One venue was identified as the place of last drink in 43 percent of all incidents in which a person had consumed alcohol at a licensed venue—three-quarters of these incidents were linked back to four premises.

Figure 236 Incidents in which a licensed premises was identified as the place of last drink, by venue name (%; n=61)
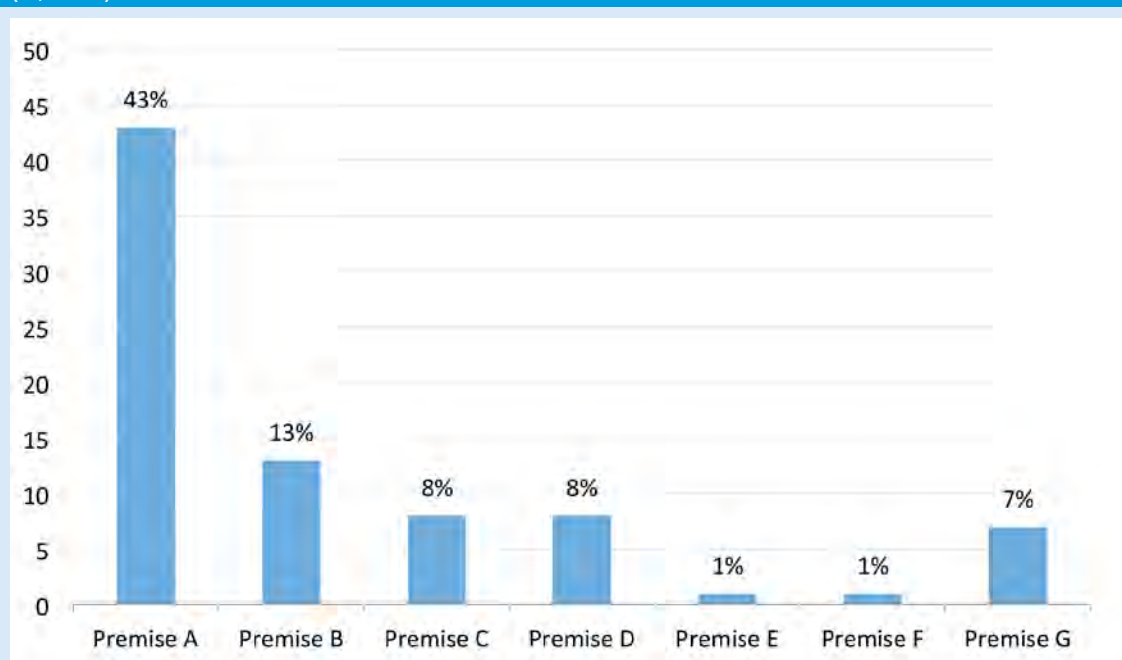
The three premises identified as the most common location for incidents were also most commonly identified as a place of last drink. While this may reflect the targeting of these premises by ACT Policing (as known trouble spots), it also reinforces the concentrated nature of alcohol-related problems within the night-time economy. These findings suggest that targeting this relatively small number of premises could generate significant reductions in the total number of incidents requiring police involvement.

The results of this component of the study are consistent with the findings from an earlier ACT pilot project (Smith et al. 2011). As with this earlier research, the current study shows the capacity of the place-of-last-drink forms to identify particular premises as either the location of the incident, or place of last drink. It also shows the potential value of the form to police and licensing authorities. However, it also reinforces the challenge of collecting additional data on alcohol-related incidents. As recommended by Smith et al. (2011), there would be value in integrating place-of-last-drink data into mainstream data collection and information systems, as has been done successfully in other jurisdictions (Wiggers et al. 2016). This would increase the likelihood that these data would be collected and would provide a valuable source of intelligence to inform proactive policing strategies.

Assessment of the economic costs of alcohol-related crime

The following describes the results from the economic assessment, which involved estimating the costs associated with alcohol-related crime incidents in Canberra's main entertainment precinct in 2014. Several cost items have been estimated, including:

- the cost of police time responding to alcohol-related offences and other alcohol-related incidents;
- proactive and associated costs related to alcohol, incurred by police responsible for policing the CBD;
- the health care costs of alcohol-related offences to victims, including hospitalisation, emergency department admissions, ambulances attendances and counselling;
- the cost of alcohol-related offences to victims and the broader community, including lost output, intangible costs and damage to property; and
- criminal justice system costs for alcohol-related assault offences, including court proceedings and imprisonment costs.

The methodology used to calculate each cost item, the final estimate and limitations are described in this section.

Cost of police time

The first cost item included in the economic assessment was the cost of police time undertaking reactive activities in response to alcohol-related offences and other incidents that occurred within the Canberra entertainment precinct. The method of calculating these reactive costs was based on the methodology developed for a previous NDLERF-funded study into the short-term cost of alcohol to police by Donnelly et al. (2007), which, while developed for NSW Police, was intended to be used to calculate policing costs in other jurisdictions. These represent the opportunity costs to police—the resources they could have otherwise invested in alternative activities. It was not possible to reliably estimate the additional cost for an increase in police numbers that might occur in response to an increase in alcohol-related problems; however, it is acknowledged that these costs are potentially significant.

Total cost of police time (PC) for reactive activities was calculated using the following inputs:

- the number of recorded incidents for each offence type and for other incident types recorded in 2014 (N_i);
- the average length of time that police spend responding to these incidents (T_i); and
- the average hourly cost of police resources (P).

Results from analysing police recorded crime data were used to determine the number of alcohol-related incidents requiring police intervention. As with previous sections of this report, the economic assessment focused on incident types known to be closely related to alcohol misuse—assault, disorderly conduct, property damage, regulated public order offences (which includes liquor offences), theft offences (excluding motor vehicle theft), sexual assault and robbery. Together, these offences accounted for 83 percent of all alcohol-related offences recorded in the City and Braddon in 2014.

The mean number of police hours spent responding to each type of offence was drawn from the study by (Donnelly et al.(2007). This was based on an activity survey that enabled police to record information on the total person-hours involved in responding to different alcohol-related incident types. The relevant estimate was applied to each offence category examined as part of the current study. This aligned with earlier research that was also focused on those incidents most commonly found to be alcohol-related. Donnelly et al. did not provide an estimate specifically for sexual assault or robbery, therefore the estimate for assault was applied to both sexual assault and robbery incidents.

Standard hourly rates for police officers were calculated from the average number of hours worked yearly (Australian Federal Police 2012) and salary information included in the Australian Federal Police Enterprise Agreement. Salary costs were based on the staffing levels of officers within the Regional Targeting Team (RTT)—assumed to be similar to general duties officers, who share responsibility for policing the entertainment precinct. They include relevant allowances for flexible work patterns and salary-related payments (based on staffing costs for police staff in 2014–15 reported by the SCRGSP (2016). This equated to $76 per hour in salary costs and salary-related expenditure. This excludes other costs such as those for equipment, professional development, and supervisors and support staff, primarily because these costs would be difficult to accurately estimate and also because they are fixed (ie do not change for each additional incident).

Estimated costs of police time for reactive activities were then calculated using the formula:

$$PC = \sum (N_i \times T_i \times P)$$

ACT Policing was estimated to have spent nearly 1,100 person-hours responding to alcohol-related offences in the Canberra entertainment precinct in 2014, at a total cost of $82,883 in salaries and related costs (Table 116).

Table 116 Salary costs of police time responding to alcohol-related offences, by offence type, 2014			
	n	Mean police hours	Salary costs (S)*
Assault	205	2.4	37,632
Disorderly conduct	176	1.7	22,885
Property damage	51	1.9	7,412
Regulated public order offences	56	1.6	6,853
Theft (except motor vehicles)	23	2.1	3,694
Sexual assault	16	2.4	2,937
Robbery	8	2.4	1,469
Total			82,883

*all costs are presented in 2014–15 Australian dollars

Source: ACT Policing 2015 [computer file]; Donnelly et al. 2007

The estimates of mean time spent by police responding to incidents did require some adaptation to align with the offence classifications used in the current study (most notably for sexual assault and robbery, which rely instead on Donnelly's at al. estimate for assault for offences). The cost of drink-driving offences and alcohol-related traffic offences are counted elsewhere.

An assumption exists regarding the applicability of Donnelly et al's estimates of the time spent by police responding to different incident types. Given these are based on NSW Police activity logs, there may be important differences between the time spent by officers in Canberra that have implications for cost estimates. However, Donnelly et al. argue that, in theory, it should be possible to apply their methodology to other jurisdictions (2007). Research into the short-term costs of alcohol to policing in Victoria, also funded by NDLERF, is currently being undertaken. Other estimates of the amount of time police have spent responding to alcohol-related incidents have been produced (Ireland & Thommeny 1993; Palk et al. 2007), and these were significantly higher than those produced by Donnelly et al. (2007). Specifically, they estimated the following hours for responding to assault—2.22; public nuisance—1.62; malicious damage—1.53; liquor breaches—1.63; theft-related—1.89; and traffic—1.62. They concluded that eight percent of police time was spent responding to alcohol-related crime, which seemed like an underestimate compared with Palk et al. (25%) and Ireland (62%; Ireland & Thommeny 1993; Palk et al. 2007). The estimated hours for responding are probably an underestimate as well. However, as well as producing an estimate for individual incident types, Donnelly et al. (2007) also account for the range of other activity undertaken by police (proactive and other costs, described below) and time between incidents.

Most importantly, the estimate also excludes the costs associated with the police response to those incidents that do not result in a recorded offence. To address this gap, police attendance data from PROMIS (ACT Policing's primary system for recording information about recorded offences and incidents) were used to measure the time spent responding to common alcohol-related incidents in the City and Braddon. This included welfare checks, disturbances, assisting intoxicated individuals and responding to suspicious or wanted individuals—more than 1,200 incidents. Information is recorded in PROMIS on all incidents attended by police, including the start and end time of the event and whether the incident was alcohol-related. Using these starts and end times, the average duration of each police attendance was calculated, and the mean police hours for each incident type were determined. A small proportion of incidents lasting longer than four hours were excluded, as this would have included follow-up inquiries, that there had been delays in closing the event or that the information was incorrectly recorded. To calculate mean police hours per attendance it was assumed three officers, on average, attended each incident.

The results are presented in Table 117—ACT Policing were found to have spent an additional 1,500 person-hours responding to alcohol-related incidents in the Canberra entertainment precinct in 2014, at an additional cost of $116,968 in salaries and related costs. This means that, in 2014, the direct cost to ACT Policing of responding to alcohol-related offences and incidents in the City and Braddon was almost $200,000.

Table 117 Salary costs of police time responding to alcohol-related incidents, by incident type, 2014			
	n	Mean police hours	Salary costs ($)*
Intoxicated person	790	1.2	$74,074
Disturbance	251	1.1	$20,238
Suspicious or wanted person	106	1.2	$9,752
Disturbance—licensed premises	73	0.9	$4,881
Check welfare/premises	54	1.9	$8,023
Total			$116,968

*all costs are presented in 2014–14 Australian dollars

Source: ACT Policing 2015 [computer file]; Donnelly et al. 2007

Proactive and associated costs to police, related to alcohol

Other important short-term costs to police arise from alcohol, including the costs associated with proactive policing activity, such as venue walkthroughs and inspections, RBTs and proactive or high visibility policing, designed to prevent alcohol-related crime and promote public safety. Police also undertake associated activities after they have responded to an incident, such as paperwork and court preparation. Donnelly et al. (2007) developed a method for estimating these costs based on the proportion of shift time allocated to these tasks.

Drawing on this method, alcohol-related salary costs for proactive policing and associated costs were calculated for the RTT, made up of 18 constables, two sergeants and an alcohol sergeant (and total estimated salaries and salary-related expenditure of $3.2m). The RTT is responsible for high visibility policing in Canberra's town centres, but spends about 90 percent of its time in the City and Braddon. Officers from the RTT are rostered to provide high visibility policing in Canberra's main entertainment precinct between Thursdays and Sundays, supported by general duties officers on the remaining, quieter days. However, while they are supported by officers in each district, they are the only officers whose time is dedicated to Canberra's main entertainment precinct. Therefore it was possible to determine the total person-shift hours worked by these officers to inform the economic assessment, alongside the estimated salary costs and related expenditure reported on earlier.

Using the proportion of total person-shift time estimated by Donnelly et al. (2007) for metropolitan regions in NSW, alongside staffing levels and salary information for ACT Policing, it was possible to estimate the proactive and associated costs of alcohol to ACT Policing. Recognising the specific role of the RTT, the proportion of total person-shift time was adjusted from metropolitan regions based on the results for the NSW Police Force special purpose VIKINGS unit, which more closely resembles the RTT in its focus on alcohol and drug-related antisocial behaviour in city centres.

The results are presented in Table 118. The cost to ACT Policing of proactive activities related to alcohol undertaken by the RTT was estimated to be $121,679 in 2014, including $48,672 for proactive licensing and $73,008 for RBT activities, with a further $283,919 in salary costs for associated activities. Limiting this component to the RTT means that the findings underestimate the cost of alcohol to ACT Policing, since general duties officers are responsible for patrolling the city centre outside peak periods for alcohol consumption. Nevertheless, combining reactive, proactive and associated activities reveals a direct, short-term cost of more than half a million dollars in salaries and salary-related expenditure to ACT Policing resulting from alcohol, and incurred within the two suburbs that comprise Canberra's main entertainment precinct.

Table 118 Person-shift hours and associated salary costs for proactive resource allocation and activity constants, Regional Targeting Team, 2014			
	% total person-shift time*	Adjusted %	Salary costs ($)**
Proactive resource allocation			
Proactive licensing	0.60	1.54	48,672
RBT	0.90	2.32	73,008
Subtotal			121,679
Activity constants			
Paperwork	0.90	2.32	73,008
Court-related	0.20	0.51	16,224
Custody	0.30	0.77	24,336
Monitoring intoxicated individuals	0.30	0.77	24,336
Traffic-related	0.20	0.51	16,224
Miscellaneous	1.60	4.12	129,791
Subtotal			283,919
Total salary costs			405,598

*Percentage of total person-shift time in a calendar year

**All costs are presented in 2014–15 Australian dollars

Source: Donnelly et al. 2007

Costs of alcohol-related crime

The next component of the economic assessment estimated the costs associated with crime within the entertainment precinct, including the costs to victims, to government and the wider community (excluding criminal justice costs). Three main inputs—the number of recorded alcohol-related offences for each incident type (N_i), multipliers that account for unrecorded crime (M_i) and the average per incident costs (IC_i)—have been produced by the Australian Institute of Criminology (Smith et al. 2014). These costs are based on an established methodology and include:

- medical costs, which include the costs of treatment for injured victims, which may or may not require hospitalisation (MC);
- lost output due to victims not being able to perform work through paid employment and daily unpaid activities (LO);
- intangible costs such as fear, pain, suffering and lost quality of life (IT);
- opportunity costs associated with the time spent reporting crime to police (RT), which was based on Laslett et al. (2010); and
- the average value of property lost (PL)—for property damage.

Costs associated with the criminal justice response to crime were not reported by Smith et al. (2014) on a per incident basis and are therefore counted separately. Similarly, lost output and intangible costs only refer to the disrupted daily work, suffering and decreased life quality of victims. They do not include the costs of lost productivity and wages for offenders, which can be substantial with incarceration. They also exclude the societal costs of fear of crime, and the costs of guilt and dysfunction for offenders and their families.

Per incident costs comprise weighted estimates for different levels of offence seriousness (s). For example, the average cost for assault is based on the cost of assault offences that result in injuries requiring hospitalisation, are treated outside of hospital, do not require treatment, and do not result in any injury. The formula used by Smith et al. (2014) to estimate the per incident costs was:

$$IC_i = \sum_s [W_{is} \times (MC_{is} + LO_{is} + IT_{is} + RT_{is} + PL_{is})]$$

Where W_{is} is the weighting for each level of offence seriousness, based on the likelihood of that outcome (eg injury) being observed. The resulting incident costs reported by Smith et al. were in 2011 dollars and have been adjusted to 2014–15 dollars using the General Government Final Consumption Expenditure (GGFCE) chain price inflator.

Multipliers are important because they adjust for levels of under-reporting to provide more accurate estimates of the actual frequency of crime (Mayhew 2003). Not all offences that are committed in an entertainment precinct will be recorded by police—a large number go unrecorded. It was therefore necessary to use multipliers to determine the number of actual offences, accounting for those not recorded by ACT Policing. This involved using the multipliers reported by Smith et al. (2014), which are based on known reporting rates for different crime types, drawn from ABS crime victimisation surveys. The higher a multiplier, the less often a crime is reported to police. These multipliers assume similar reporting rates in each jurisdiction and for offences in entertainment precincts. Importantly, while these are based on the original costs of crime report (Smith et al. 2014), there is evidence that alcohol-related offences are less likely to be reported to police, meaning these multipliers may be even higher.

The total cost of alcohol-related crime in entertainment precincts (CC) was determined by multiplying the number of recorded alcohol-related offences by the applicable multiplier and the relevant incident cost, and then summing this across all incident types:

$$CC = \sum(N_i \times M_i \times IC_i)$$

Using this approach, the total cost of crime for alcohol-related offences in 2014 was estimated to be $5.9 million in Canberra City and Braddon (Table 119). Assault offences accounted for the largest proportion of crime costs (73%), followed by sexual assault (13%) and property damage (10%).

Table 119 Costs of crime (excluding criminal justice costs) for selected incident types, 2014[ab]						
	Assault	Sexual assault	Robbery	Property damage	Theft	Shop theft
Number of incidents						
Number of alcohol-related incidents	205	16	8	51	18	5
% reported to police	14	9	16	17	33	6
Multiplier	6.9	11.3	6.2	5.9	3.0	16.1
Estimated offences	1415	181	50	301	54	81
Estimated costs per incident ($)						
Medical costs	609	522	502	–	–	–
Lost output	1,283	1,884	1,749	51	20	29
Intangible costs	1,134	1,881	1,284	1,300	241	–
Property loss and damage	10	–	469	592	534	73
Cost per incident	3,035	4,287	4,004	1,943	796	102
Total cost	4,293,071	775,117	198,613	584,624	42,972	8,241

a: Lost output includes opportunity costs associated with calling police

b: All costs are presented in 2014–15 Australian dollars

Source: ACT Policing 2015 [computer file]; Smith et al. 2014

The incident costs presented in Table 119 are based on Smith et al. (2014); however, some important differences and additional costs have been included to better reflect the cost of alcohol-related offending, particularly for assault (Table 120). Laslett et al. (2010) found that the cost of hospitalisations was significantly higher for alcohol-related assault injury—nearly double the estimate reported by Smith et al. (2014)—and this higher figure was used to estimate medical costs for assaults resulting in injury requiring hospitalisation in the current study. Medical costs for assault were also adjusted to account for emergency department presentations, ambulance attendances and counselling costs.

The number of assault incidents resulting in an emergency department presentation (n=43) was estimated using NSW research by Poynton et al. (2005), who found that 60 percent of emergency department presentations resulted in hospitalisation. Smith et al. (2014) reported that 1.83 percent of assaults result in hospitalisation, meaning 3.05 percent of assaults would have resulted in an emergency department presentation. The cost of each presentation was estimated using the average cost for emergency department presentations reported by the SCRGSP (2016). The total cost of these presentations for alcohol-related assault incidents within the Canberra CBD was therefore estimated to be $36,973.

The estimated cost of ambulance attendances was based on the average labour costs for an ambulance service response in the ACT. The average cost per ambulance response was calculated by dividing the total labour costs (salaries and related payments) in 2014–15 by the total number of ambulance responses in the same period. Both figures were reported by the SCRGSP (2016). The costs of ambulance attendances include emergency, urgent and non-emergency responses by ambulance personnel. It does not include the number of patients or incidents for each attendance, and there may be multiple attendances sent to one incident. It also excludes the costs of transport and medical supplies.

The number of ambulance attendances reported elsewhere in this document included all incident types. It was therefore necessary to determine the number of attendances in 2014 in the City and Braddon for alcohol-related assault injuries using the narratives recorded by ACT Ambulance Service personnel within the ambulance data. Combinations of keywords relating to assault (eg assault, fight, brawl, punched etc) and alcohol (intoxicated, drinking, drunk etc) were used to identify ambulance attendances that responded to alcohol-related assaults. Where there was no obvious reference to alcohol, other indicators (HAH, proximity to licensed venue etc) were used to determine whether alcohol was involved. In 2014 there were 74 ambulance attendances for alcohol-related assault within the City and Braddon, with salary costs estimated to be nearly $50,000.

The opportunity costs associated with counselling for assault victims (affecting 4% of assault victims at a cost of $204 per victim), property damage costs including damaged clothing (6% of victims at a cost of $173 per victim) and opportunity costs associated with calling police (205 assault incidents at a cost $33 per incident) were all included on the basis of findings from Laslett et al. (2010). The estimate for the latter cost—calling police to report alcohol-related crimes—was also applied to other crime types to ensure consistency across the different estimates (and included within the total lost output).

Table 120 Additional cost items included in the estimated cost of assault incidents

	Emergency department presentations	Ambulance attendances	Counselling (opportunity cost)	Property damage	Calling police (opportunity cost)
n*	43	74	58	79	205
Percentage (%) of alcohol-related assaults	3	5	4	6	14
Average cost ($)**	857	624	204	173	33
Total cost ($)**	36,973	46,176	11,817	13,740	6,790
Cost per incident ($)**	26	33	8	10	5

*n=number of assault incidents for which cost is relevant

**All costs are presented in 2014–15 Australian dollars

Source: ACT Ambulance Service 2015 [computer file]; ACT Policing 2015 [computer file]; Laslett et al. (2010); Poynton et al. 2005; SCRGSP 2016

Criminal justice system costs of alcohol-related assaults

The final component of the economic assessment involved estimating the criminal justice system costs for alcohol-related assaults. This included the costs associated with court proceedings and imprisonment costs for sentenced offenders. The number of defendants finalised in an ACT court for alcohol-related assault was determined using data from the ABS Criminal Courts publication series (ABS 2016). This involved multiplying the percentage of all alcohol-related assaults in the ACT that occurred within the City and Braddon (18%), by the proportion of assault offences that were, alcohol-related (60%) and the number of defendants finalised for acts intended to cause injury in magistrates and higher courts.

The total recurrent expenditure for alcohol-related assault (TC_i) was calculated by multiplying the number of defendants finalised for alcohol-related assault in each level of court (N_{ic}) and the real recurrent expenditure per finalisation for the relevant court level (CF_c). Estimates for each level of court were then combined.

$$TC_i = \sum_c (N_i \times CF_c)$$

The real recurrent expenditure per finalisation for criminal court matters for each court level was based on figures reported by the SCRGSP (2016). Real recurrent expenditure comprises costs associated with the judiciary, court and probate registries, sheriff and bailiff's offices, court accommodation and other overheads (SCRGSP 2016). However, it does not include the costs to various parties involved in a criminal matter, such as prosecution costs or legal representation (eg Legal Aid).

The results are presented in Table 121. The cost of court proceedings for alcohol-related assaults in Canberra City and Braddon was estimated to be $156,214 (Table 121).

Table 121 Cost of court proceedings for alcohol-related assault offences, 2014

	Higher court	Magistrates court
Defendants finalised, 2014–15	33	488
Alcohol-related (estimated)	20.0	295.1
City and Braddon (estimated)	3.6	52.9
Average cost per finalisation, 2014–15 ($)*	24,434	1,303
Total cost ($)*	87,339	68,875

*All costs are presented in 2014–15 Australian dollars

Source: ACT Policing 2015 [computer file]; SCRGSP 2016

This approach has limitations. It assumes that perpetrators of alcohol-related assaults within the night-time economy were as likely to be detected, apprehended and prosecuted as assaults occurring outside entertainment precincts. It also assumes that alcohol-related assaults, which may be more serious, were equally likely to be heard in a magistrates and higher court. The relatively small number of defendants finalised for other offence types, and the aggregated nature of ABS data, prevent reliable estimates from being developed for offence types other than assault. More reliable estimates of the proportion of alcohol-related offences that are finalised in court would require further data links between police, courts and corrections systems databases. This would provide better estimates of the actual court costs for alcohol-related crime.

The same approach was used to estimate the total cost of imprisonment for alcohol-related assault. This involved multiplying the percentage of all alcohol-related assaults in the ACT that occurred in the City and Braddon by the proportion of assault offences that were alcohol-related, and the number of defendants finalised for acts intended to cause injury in the ACT and sentenced to a custodial order. The estimated number of prisoners sentenced for an alcohol-related assault (N_i) was then multiplied by the median number of days of imprisonment for acts intended to cause injury (MD_i) and the total net operating expenditure and capital costs, per prisoner per day (OC_c).

$$TC_i = (N_i \times MD_i \times OC_c)$$

The estimated imprisonment costs for alcohol-related assault offences in the City and Braddon in 2014 was just over $5m (Table 122).

Table 122 Imprisonment costs for alcohol-related assault offences, 2014 ($)	
Custodial orders	104
Alcohol-related (estimated)	62.9
City and Braddon (estimated)	11.2
Prison days (total)	11,924
Total net operating expenditure and capital costs, per prisoner per day ($)	421.60
Total cost ($)*	5,026,680

*All costs are presented in 2014–15 Australian dollars

Source: ACT Policing 2015 [computer file]; SCRGSP 2016

Cost of alcohol-related crime by time of day

Given the earlier findings from the analysis of administrative data that showed peaks in alcohol-related offences and other incidents at certain times, estimates were also produced of the cost of these incidents at different times of the day. While this study has focused on HAH because of the concentration of alcohol-related offences on Friday and Saturday nights, the results of the financial analysis show that the economic cost of alcohol-related crime is not evenly distributed over this period.

The estimated cost of alcohol-related offences committed within Canberra's main entertainment precinct, comprising medical costs, lost output, intangible costs and property loss and damage, is set out in Figure 237, disaggregated by the time of the offence. This shows that the cost of offending peaked after 2 am. In Canberra City and Braddon, 43 percent ($2.5m) of the cost of offences in 2014 resulted from incidents that occurred between 2 and 6 am.

Figure 237 Estimated cost of alcohol-related offences, by time of day of the offence, 2014
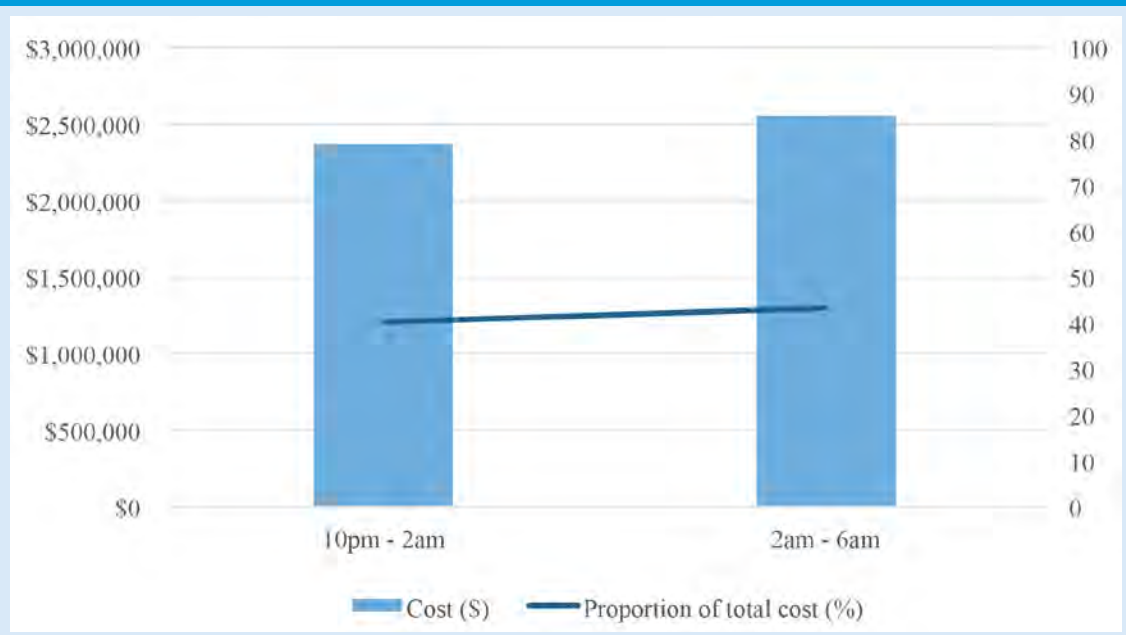
Similar analyses were conducted for the reactive costs of policing alcohol-related crime and other incidents, presented in Figure 238, and these show a similar pattern to the costs of crime. The direct cost to ACT Policing (in terms of officer salary and salary-related expenditure) of responding to alcohol-related offences and incidents in Canberra City and Braddon was almost $200,000 in 2014. This is likely to be a conservative estimate given it was limited to the immediate response by police, excluded driving offences and traffic incidents, and excluded incidents that occurred outside the entertainment precinct but involved someone who had been drinking there. The burden on police resources of responding to alcohol-related incidents in Canberra's main entertainment precinct peaked between 2 and 6 am (46% of the total reactive costs)—and was 26 percent higher than the costs incurred in the equivalent four-hour period before 2 am.

Figure 238 Estimated reactive costs of alcohol-related incidents to police, by time of day of the offence, 2014
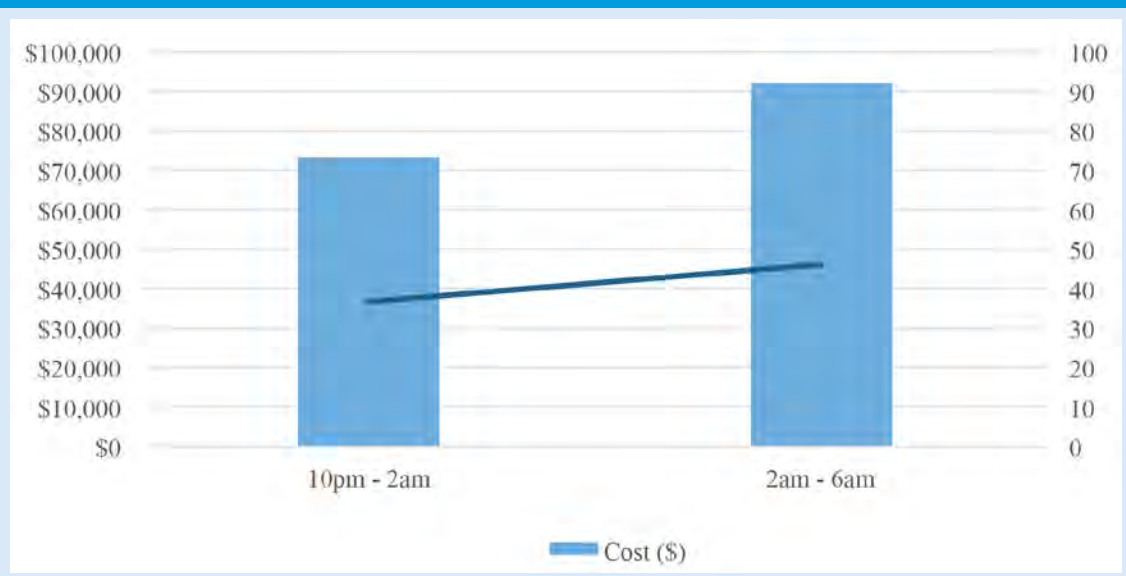
Summary and discussion of trends

This project—Drug and Alcohol intoxication and Subsequent Harm in night-time Entertainment Districts (DASHED)—collected data within the night-time economy. It did this through short patron interviews with people entering or leaving licensed venues, sessions of structured observation within licensed venues, and by using administrative data (police, ambulance, emergency department and liquor licensing data).

A core aim of DASHED was to examine alcohol-related violence and to investigate the factors and correlates associated with such violence in the night-time economy. This study provides a valuable evidence base to assist in selecting and adapting appropriate responses to alcohol and drug-related intoxication and crime in Canberra and Hobart. It also provides a baseline against which to measure the impact of future responses. To inform future decisions regarding the allocation of resources, the project provided an estimate of the costs attributable to alcohol and drug-related crime within a particular entertainment precinct. These included the costs to policing.

Patron demographics

Interview data showed that most of the patrons in the late-night entertainment districts of Canberra and Hobart were male, with males in Canberra staying out longer than females. Observational data also indicated that most of the patrons in licensed venues were male, with the proportion of male patrons increasing over the night in Canberra. The age of patrons was relatively young, with the average age of interviewees being 22 years and observational data indicating that most patrons were under the age of 25 years. These patterns of demographics are similar to that for DANTE (Miller et al. 2012) and POINTED (Miller et al. 2013). They also suggest that social media campaigns such as Good Mates and Real Mates in Tasmania are targeting the primary age demographic of those entering night-time entertainment precincts (NEPs) in Hobart and Canberra.

Alcohol consumption

The interviewees showed moderate levels of intoxication, with peak BAC readings at around 12 am, and subsequent declines in both sites. The overall average BAC at time of interview was 0.048 for Canberra and 0.062 for Hobart. This is similar to that found for POINTED (0.054). However, for observational data, the percentage of patrons showing high levels of intoxication and the percentage who were too intoxicated to remain in the venue continued to increase throughout the night in both Canberra and Hobart. It is possible that the more intoxicated patrons were remaining in the venues past the time interviews ceased, and may have contributed to the sort of findings seen in POINTED where 40 percent of the people on the street at 4 am had more than 0.1 BAC. However, small numbers of patrons were on the streets. Interventions similar to the Street Team Initiative, where volunteers are stationed in NEPs to provide coffee, snacks and bottled water between 10 pm and 3 am on Friday and Saturday evenings, may be able to target streets with particularly high proportions of patrons with high BAC levels.

In both Canberra and Hobart, self-rated intoxication was moderately correlated with higher BAC readings. People who rated their level of intoxication at three out of 10, on average, were almost at (in Canberra) or over (in Hobart) the legal BAC drink-driving limit (0.05). People who self-rated their intoxication at more than five varied between 0.081 and 0.130 g/100 mL. Similar self-report patterns were found for POINTED.

Just over half of interview participants in both sites showed signs of intoxication, with the most common being slurred speech or glassy/red eyes. Males in Canberra showed more of these indicators of intoxication than females. In both sites, patrons showed signs of intoxication, had been consuming alcohol for a longer period of time, had consumed more standard drinks, and were more likely to have consumed drugs pre-interview. Observational data demonstrated that the percentage of patrons showing signs of intoxication increased over the course of the night in both Canberra and Hobart. In Canberra, a higher proportion of patrons in bars and nightclubs showed signs of intoxication compared with those in pubs. In Hobart, the proportion of patrons showing signs of intoxication was similar for all three venue types.

This research shows that the higher the BAC reading or standard drinks consumed on the night for interviewees in Canberra, the better they thought of their driving capability. This has serious implications for levels of drink-driving and suggests a need for greater driver training and awareness.

Pre-drinking behaviours

Pre-drinking behaviour was consistent across the cities of Canberra and Hobart, with more than half the interview sample in Canberra and more than two-thirds of the sample in Hobart reporting having consumed alcohol before they went out to licensed venues. The rate of pre-dinking is similar to that found for POINTED. Males were more likely to report pre-drinking than females and during pre-drinking consumed more alcohol than females. Pre-drinking was associated with increased intoxication, heavier alcohol consumption, and greater involvement in risk-taking behaviour. The main motivator for pre-drinking in both sites was the cost of drinks in licensed venues.

Energy drink consumption

In both Canberra and Hobart, approximately one in five interview participants said they had consumed energy drinks that night, with the percentage increasing from five to 12 percent at 10 to 11 pm, and dropping from 37 to 36 percent at 2 to 3 am. Almost all patrons (96–98%) who reported consuming energy drinks reported drinking alcohol as well. The proportion of observed AmED use was lower in Canberra (11%) than Hobart (32%). Approximately a quarter of participants from the POINTED study reported consuming energy drinks, with 15 percent having consumed AmEDs. The rate of AmED consumption in Hobart is higher than expected.

Interviewees in both sites who consumed energy drinks were more likely to be younger, report pre-drinking, record a higher BAC, have consumed illicit substances, report higher self-related intoxication, and refused entry and service at a licensed venue. In addition, participants in Canberra who consumed energy drinks were more likely to have driven while drunk or on drugs, and committed a property crime.

Illicit drug consumption

In Canberra, 13 percent of interview participants reported using substances other than alcohol (excluding tobacco) during their current night out, compared with 11 percent in Hobart. The most commonly used substance in both sites was ecstasy, followed by cocaine and cannabis in Canberra, and cannabis in Hobart. The rates of illicit substance use for DANTE were seven percent and for POINTED 16 percent. It appears that patrons in Hobart are consuming illicit drugs at more than twice the expected rate.

Observers suspected illicit substance use among patrons in 9.3 percent of observations in Canberra and 14.2 percent of those in Hobart. The rate of suspected illicit drug use for POINTED was 22 percent, with the actual observed rate of use somewhat lower, at 4.6 percent. The estimated rate of illicit drug use increased throughout the night in both sites, with patrons in nightclubs being the most likely to be using illicit substances. For both sites, ecstasy was the most frequently suspected substance being used.

In both Canberra and Hobart the most frequent positive drug swab test was for amphetamines (includes amphetamine, methamphetamine and ecstasy). Across both sites, approximately one percent of self-reported drug use was for amphetamines. The prevalence of self-reported illicit drug use in this study was consistent with another Melbourne-based survey of nightclub attendees conducted in 2004 (Degenhardt et al. 2004), but higher than that observed in a recent study of nightclub patrons conducted in two regional Australian cities which reported a prevalence of seven percent (Miller et al. 2012). The discrepancy between swab results and self-reported amphetamine use (with 8 people in Canberra and 15 in Hobart testing positive but not reporting it) continues to highlight the validity of conducting additional testing along with asking people about the drugs they have used. Previous work has suggested that, for a variety of reasons, up to 20 percent of people may not disclose drug use during an interview. The findings in the current study confirm the need for objective testing measures. The findings for ecstasy and methamphetamines also confirm previous findings that many people taking ecstasy are actually taking methamphetamine-based pills.

National self-report survey data indicates that 10.2 percent of Australians use cannabis (AIHW 2014) however, only three percent (Hobart) to five percent (Canberra) tested positive to cannabis use via drug swabs. Given that only 2.8 percent (Canberra) to 4.6 percent (Hobart) of interviewees self-reported cannabis use—and people who attend night-time entertainment districts generally report higher levels of risky behaviour—it can be assumed that either the drug wipes failed to identify a substantial amount of cannabis use or cannabis is not the drug of choice within these areas.

Mouth swabs may be ineffective in detecting cannabis use due to the fast-acting nature of the drug and because eating and drinking may wash the mouth free of cannabis resin. Other factors which might affect test reliability include: patron intoxication, the purity of drugs, and peer group/social influence effects on inaccurate (eg exaggerated) self-reported drug use.

As previously found in the DANTE and POINTED studies (Miller et al. 2015; Pennay et al. 2015) illicit drug use was associated with the significantly increased likelihood of engaging in risky behaviour. This could include driving under the influence of alcohol or drugs, and experiencing harm, such as accidents (Miller et al. 2015). While people in Hobart who used drugs were significantly more likely to be involved in aggression, as was observed in DANTE and POINTED, people in Canberra did not demonstrate such associations, yet patrons interviewed on the streets reported experiencing similar levels of aggression. It is possible that different types of drugs available in the different cities may contribute, or that the different levels of styles of policing in the districts may be relevant. Further research would be required to gain a deeper understanding of these differences.

Aggressive incidents and safety

This section discusses the overall findings regarding aggression, risky behaviour and harm associated with nightlife in Canberra and Hobart. It combines information from different sources to give an overall picture.

Injuries and accidents

For both Canberra and Hobart, most injury-related ED attendees were male. During HAH, 18 to 24 year olds were most likely to attend the ED in Canberra, whereas in Hobart, those between 18 and 24 years, and 25 to 34 years were the most likely to attend the ED for an injury.

Within Canberra, the monthly averages of injury-related ED attendances within HAH showed a slight annual peak over November/December and a decline in the cooler months (April to October). This pattern was also seen in the Hobart data. The rate of HAH injury ED presentations increased between 2010 and 2014 in Canberra, but remained steady in Hobart.

Of those attending the ED for acute intoxication during HAH, attendees in Canberra and Hobart were relatively young with a mode age of 19 years for each location. Similarly, the most common age for ED drug-related attendances was 17 years in Canberra and 18 years in Hobart. In both sites, most drug-related attendees were female.

Although there appeared to be some seasonal variation, the number of alcohol-related ambulance attendances gradually increased over the measurement period in both Canberra and Hobart. Alcohol-related ambulance attendances in the entertainment areas were most frequently for young individuals aged 18 to 24 years in Canberra and 18 to 24 years in Hobart. Males were more likely to be involved in alcohol-related and drug-related ambulance attendances in both Canberra and Hobart. The most common age range for drug-related cases was 25 to 44 years in Canberra, and 18 to 34 in Hobart.

Identified alcohol-related interventions did not have an impact on the rate of injury-related ED presentations or the rate of alcohol-related ambulance attendances during HAH in either Canberra or Hobart.

Interview findings show that users in Canberra, who had consumed illicit substances, were significantly more likely to have alcohol-related accidents, while in Hobart they were more likely to have alcohol-related injuries. Female participants were more likely to report accidents than male participants in Canberra. In Hobart, female participants were more likely to report getting injured than male participants. Alcohol-related injuries were more common than alcohol-related injuries in both cities.

Overall, these findings demonstrate that a substantial proportion of people who attend nightlife settings in both Hobart and Canberra experience harm in the form of injuries and accidents. This is in line with other Australian cities.

Assaults

In Canberra, 47 percent of interview participants reported being involved in verbal aggression (30%), physical aggression (17%) or unwanted sexual attention (28%) in or around licensed venues in the three months prior to interview, with a median of four incidents. Similar patterns were apparent for Hobart where 49 percent of the sample reported that they had been involved in any form of verbal aggression (33%), physical aggression (16%) or unwanted sexual attention (26%) in or around licensed venues in the three months prior to interview, with a median of four incidents. The rate of involvement in any aggression is higher than that found for POINTED (at 11% physical and 10% verbal), although it is closer to the findings from sites such as Geelong and Newcastle which might better reflect the nature of cities which normally have only one key nightlife area. Across the two sites, it is clear that both Hobart and Canberra experience similar or higher levels of assault and injury compared with other cities in Australia, suggesting the need for greater attention and evidence-based responses.

In Canberra, victims of assaults during HAH were predominately male and within the 18 to 24 year and 25 to 34 year age-groups. The same pattern of results was found for Hobart; most assault victims were male and within the 18 to 24 year and 25 to 34 year age groups. For assaults occurring in Canberra, 30 percent of HAH assaults took place in a licensed venue. The location of assaults was not available for Hobart.

For Canberra, Northbourne Avenue was the most frequent location for assaults occurring during HAH (36%) in Braddon. London Circuit was the most frequent location of assaults during HAH in City (25–30%).

The overall rate of assaults during HAH was similar for Canberra (average of 1.57 per 10,000) and Hobart (average of 1.66 per 10,000). The rate of assaults during HAH peaked in the summer months of January/December in Canberra, with a small decrease in the rate over time. However, rates of HAH assaults showed a slight increase over time in Hobart.

Neither of the interventions during the measurement period (Liquor Act 2010; Alcohol Crime Targeting Team) had a significant impact on assault rates during HAH over time in Canberra. Similarly in Hobart, none of the implemented interventions (ie The Good Mates Guide, Real Mates, Street Teams) had a significant impact on the rate of HAH assaults over time. These results reflect previous findings from DANTE and associated studies (Miller et al. 2011b). There remains no empirical support for the ability of such interventions to reduce alcohol-related harm, which aligns with the experimental and cognitive-neurological understandings of the impulsive nature of alcohol-related violence (Giancola et al. 2009; Leonard et al. 2003). While further research into these specific issues is required, a strong argument exists for implementing evidence-based measures that have been found to be effective, such as reducing late-night trading hours.

Unwanted sexual attention and sexual offences

In both Canberra and Hobart, females were more likely to report receiving unwanted sexual attention, whereas males were more likely to report being involved in a physically aggressive incident. Those who consumed energy drinks were more likely to be involved in physical aggression in Canberra, and both verbal and physical aggression in Hobart. For interviewees in Hobart, those who reported using illicit drugs were also more likely to report being involved in verbal and physical incidents.

In both Canberra and Hobart, most victims of sexual offences reported to police during HAH, tended to be aged 34 years or less. Most were also female (78–85%). In Canberra, the rate of sexual offences during HAH showed seasonal peaks in November and December, with a small increase in the rate over the reporting period. However, the rate of offences remained relatively low, at an average of 1.36 per 10,000 for the entire period. This research does not have annual trend data for Hobart. Similarly, little data exists which reports on sexual assaults in different jurisdictions, particularly in relation to nightlife districts. This suggests the need for dedicated research in this area.

Property damage offences

In Canberra, 26 percent of HAH property damage offences took place in a car park, with a further 26 percent within a private house. The rate of property damage offences during HAH was at an average of 0.74 per 10,000 people during the measurement period. In Canberra, there were no clear seasonal trends in property damage; however, rates declined over the study period. Demographic information for property damage offenders was unavailable for Canberra.

In Hobart, the highest proportion of property damage offenders during HAH was in the 18 to 24 year, and 25 to 34 year age groups, and most were male (87%). As in Canberra, the rate of property damage offences during HAH in Hobart was low for the entire study period, averaging 0.62 offences per 10,000 people. Rates of property damage offences during HAH over the measurement period decreased slightly, with no clear seasonal patterns.

Male interview participants were more likely to report causing property damage in both cities. A higher proportion of males reported having committed property crime in Hobart (7.4%) than in Canberra (5.5%). The proportion of female participants in Hobart who reported causing property damage (2.8%) was also higher than those in Canberra (1.5%). Hobart participants who had reported illicit substance use were also more likely to report property damage. However, this was not true of Canberra.

Street offences

In Canberra, street offences occurring during HAH most frequently took place on Ainslie Avenue and London Circuit. Rates of street offences occurring during HAH increased over the measurement period but still remained relatively low at less than one offence per 10,000 people.

Street offenders during HAH in Hobart were most frequently aged 18 to 25 years (47%), with 80 percent of offenders being male. Street offences in Hobart were more likely to take place in the middle (June) and end of the year (November, December). Rates of street offences during HAH all decreased over the measurement period, and averaged 0.55 offences per 10,000 people.

Drug and drink-driving offences

More than half (54%) of drink-driving offences in Braddon and City occurred during HAH. In Canberra, there was a slight decrease in the rate of drink-driving offences during HAH over the measurement period, with no clear seasonal pattern. The rate of drink-driving during HAH remained low, at an average of 0.49 offences per 10,000 people. Throughout the administrative data collection period two drink-driving associated interventions were running: the harm minimisation focused Liquor Act 2010 in Canberra, and a police-on-the-street intervention Operation Unite in Hobart.

Drink-driving offenders during HAH in Hobart were predominantly in the 18 to 24, and 25 to 34 year age groups. Rates of drink-driving offences during HAH slightly increased over the measurement period, with no clear seasonal patterns. Most offenders reported drinking at a venue located on Salamanca Place, Salamanca Square, Liverpool Street and Brisbane Street.

For Hobart, most (69%) of those committing drug driving offences in the Tasmania Police division of Hobart were aged between 18 and 34 years. Drug driving offences were most frequent on Saturdays (21%) and Fridays (18%) and in the evening/early morning, with 59 percent of offences taking place between 8 pm and 6 am. More drug driving offences were committed in the first half of the year (64%) compared with the second half (36%), with the rate of offences gradually increasing over the measurement period. Drug driving data was not available for Canberra.

In comparison, 17 percent of patron interviewees in Canberra and 15 percent in Hobart reported having driven under the influence of alcohol in the past three months. Further, four participants who reported the intent to drive home in Canberra (4%) were over the legal limit at the time of interview, while in Hobart six participants who reported their intention to drive home (15%) were over the legal limit at the time of interview. Interviewees who reported pre-drinking or illicit drug use in Canberra were significantly more likely to report having driven under the influence of both alcohol and drugs in the previous three months. However, in Hobart the only significant difference found was that participants who reported illicit drug use on the current night out were more likely to have driven under the influence of drugs in the previous three months. In both cities, male participants were also more likely to drive under the influence of both drugs and alcohol compared with female participants.

These levels of drink-driving are similar to the levels previously documented in the POINTED study. They continue to suggest that drug and drink-driving is a substantial problem in nightlife patrons requiring further attention. They also hint that recent anti-drink-driving measures appear to be missing a substantial proportion of new drivers.

Key findings

A number of key findings associated with the study objectives are presented below.

Objective 1: Determine the prevalence of alcohol and substance-related harms in Canberra and Hobart entertainment precincts and major trends over time

Across all measures of alcohol and substance-related harms in Canberra and Hobart entertainment precincts, rates per 10,000 people appear to be increasing between 2010 and 2014. The only exceptions are drink-driving, police-attended assaults, police-attended property damage, and sexual assault in Canberra, and street offences in Hobart. These all show decreasing trends.

Figure 239 Rate per 10,000 of ambulance attendances during HAH by year, Canberra (ACT)
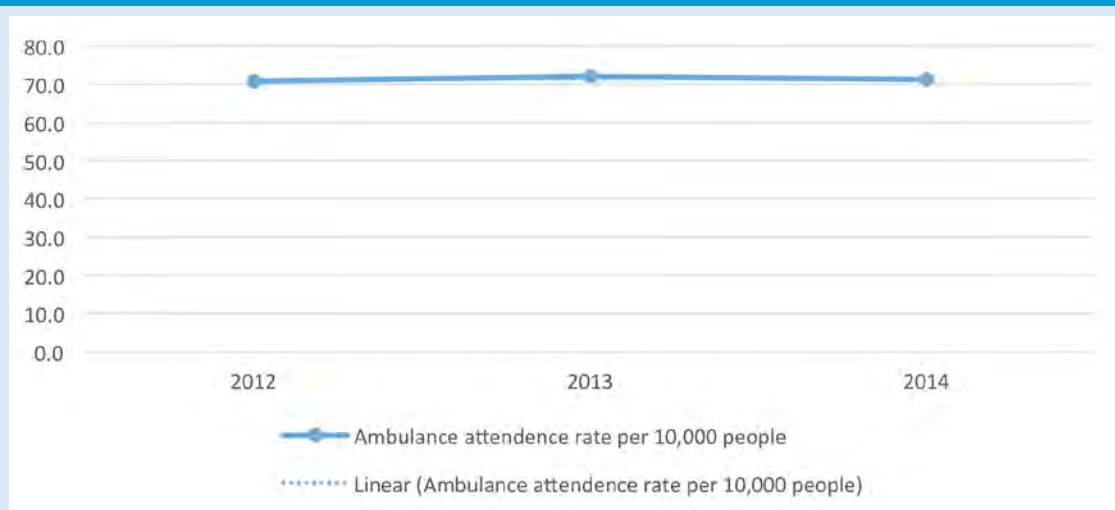
Figure 231 and Figure 232 show the rate of ambulance attendances between 2010 and 2014 for high alcohol hours within suburbs containing NEPs in Canberra and Hobart. Rates of ambulance attendances during HAH in Canberra have remained relatively stable from 2012 to 2014, showing between 70 and 72 ambulance attendances per 10,000 people. Rates are considerably lower in Hobart, ranging from 17 ambulance attendances per 10,000 people in 2010, to 23 in 2013. Across both Canberra and Hobart, individuals aged between 18 and 24 years comprised most ambulance attendances during high alcohol hours.

Figure 240 Rate per 10,000 of ambulance attendances during HAH by year, Hobart (Tas)
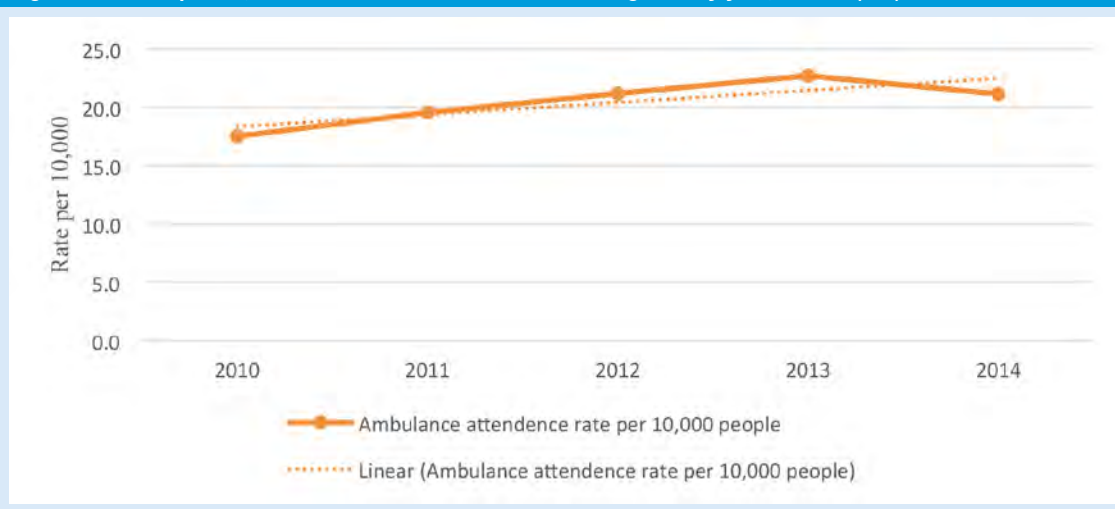
Figure 241 and Figure 242 show the rate of emergency department attendances between 2010 and 2014 for high alcohol hours. Attendance rates within HAH have increased slightly in both Canberra and Hobart, ranging from 61.5 per 10,000 people in 2010 to 70 in 2014 in Canberra, and from 56.5 in 2010 to 58.2 in 2014 in Hobart.

Figure 241 Rate per 10,000 of emergency department attendances in HAH by year, Canberra (ACT)
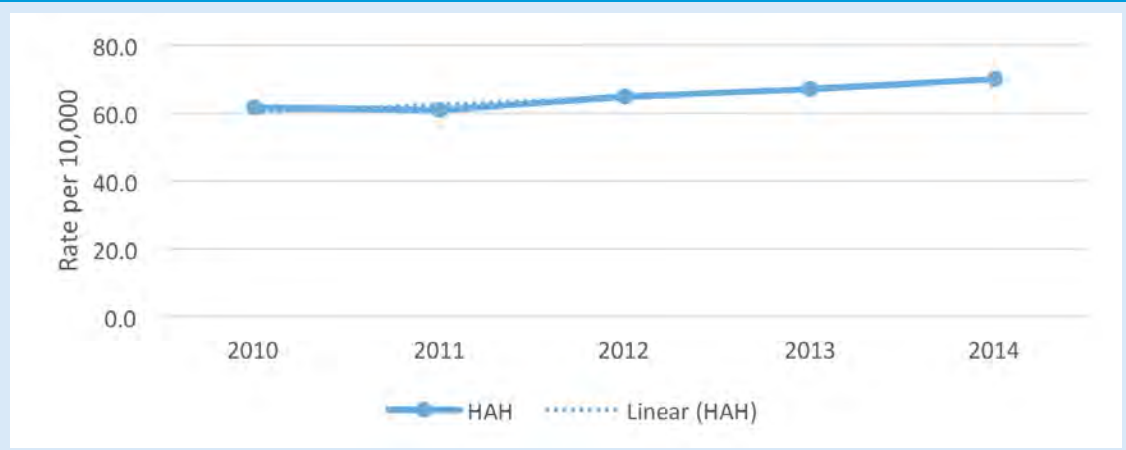
Figure 242 Rate per 10,000 of emergency department attendances in HAH by year, Hobart (Tas)
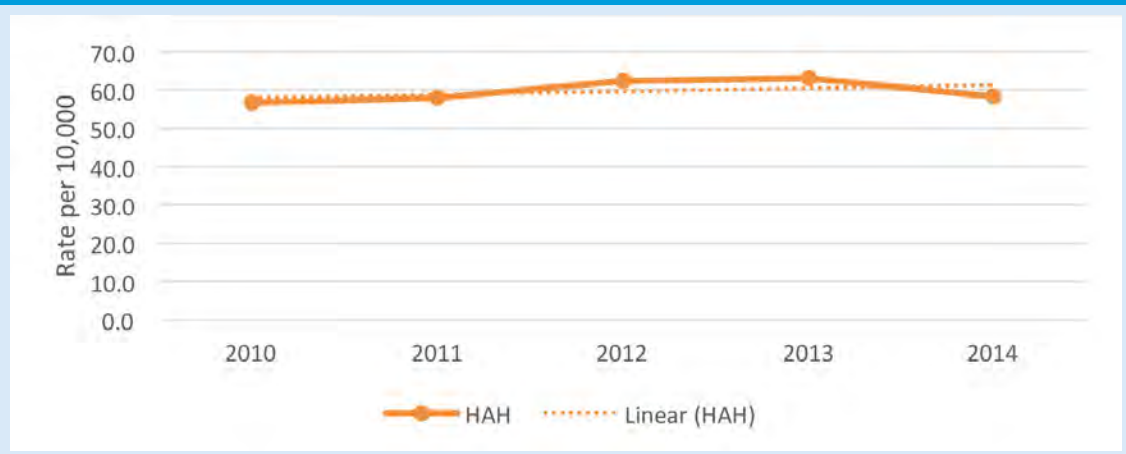
Figure 243 shows rates of assaults attended by police around NEPs in high alcohol hours between 2010 and 2014 in Hobart and Canberra. The rate of assaults ranged between 4.7 and 6.6 per 10,000 people in Canberra, and 6.3 to 7.2 per 10,000 in Hobart, both peaking in 2013.

Figure 243 Rate per 10,000 of police-attended assaults in HAH surrounding NEPs by year, Canberra and Hobart

Summary and discussion of trends
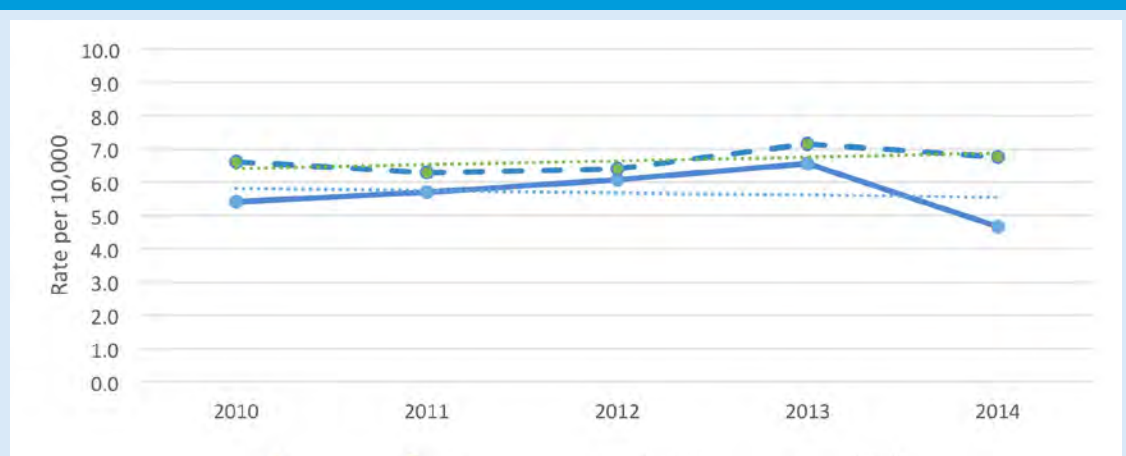
Objective 2: Identify the main characteristics of alcohol and substance-related harms in Canberra and Hobart entertainment precincts and how these compare with other entertainment precincts elsewhere in Australia

Experiences of alcohol- and drug-related harms and involvement in risk behaviours relating to intoxication were measured across Canberra and Hobart. Table 123 shows median BAC levels of patron interview participants for Canberra and Hobart, as well as sites from POINTED (Geelong, Melbourne, Perth, Sydney and Wollongong) between midnight and 2 am on Saturday nights. This allows for fairly direct comparisons.

In interviews conducted in the DASHED study, Hobart interviewees showed higher median BAC than Canberra. Compared with past studies, both Canberra and Hobart fell between the lowest (Sydney) and the highest (Wollongong). Hobart showed higher median BAC than most other cities. The table also shows that different cities have different trends of intoxication after midnight. Cities like Wollongong and Hobart have many venues shutting at 1 am, showing decreasing levels of intoxication, whereas cities like Canberra, Geelong and Perth have a higher proportion of much later trading venues, showing increasing BAC levels. While comparing different cities has some problems because of different dynamics within nightlife settings, both Canberra and Hobart have levels of intoxication on their streets that are comparable to other Australian cities.

Table 123 BAC levels across Australian cities				
	Median BAC 12 am–12.59 am Sunday	BAC Range	Median BAC 1–1.59 am Sunday	BAC Range
DASHED—Canberra	0.060	(0–0.218)	0.062	(0–0.176)
DASHED—Hobart	0.071	(0–0.256)	0.067	(0–0.151)
POINTED—Geelong	0.058	(0–0.220)	0.072	(0–0.201)
POINTED—Melbourne	0.061	(0–0.328)	0.067	(0–0.278)
POINTED—Perth	0.066	(0–0.236)	0.070	(0–0.237)
POINTED—Sydney	0.043	(0–0.269)	0.051	(0–0.350)
POINTED—Wollongong	0.089	(0–0.277)	0.060	(0–0.183)

Table 124 shows the proportion of patron interviewees who experienced alcohol and other substance-related harms, or had been involved in risk behaviours relating to intoxication.

Table 124 Proportion of interviewees experiencing alcohol-related harms and involved in risk behaviours in the past three months across sites							
	DASHED Canberra %	DASHED Hobart %	DASHED Geelong %	DASHED Melbourne %	DASHED Perth %	DASHED Sydney %	DASHED Wollongong %
Drove under the influence of alcohol	17	15	18	16	13	11	15
Drove under the influence of drugs	9	5	–	–	–	–	–
Committed property damage while intoxicated	3	4	9	4	2	3	6
Been refused entry to a licensed venue	14	13	–	–	–	–	–
Been refused service in a licensed venue	6	6	–	–	–	–	–
Been kicked out of a licensed venue	9	8	–	–	–	–	–
Alcohol-related injury	13	18	17	12	14	13	16

Drug and alcohol intoxication and subsequent harm in night-time entertainment districts (DASHED)

The findings demonstrate that nightlife patrons in Canberra and Hobart experience high levels of alcohol-related harm and engage in comparable levels of antisocial or risky behaviour as those in other Australian cities. Notable risk-taking behaviours include a high proportion of patrons reporting that they had driven while under the influence of alcohol or drugs in the past three months. Only a small proportion report having been refused service in a licensed venue, while substantially more report having been refused entry, suggesting that, similar to other cities around Australia, pre-drinking plays a role in the problems faced by licensed venues in Hobart and Canberra.

Experiences of verbal and physical aggression, as well as unwanted sexual attention were measured across Canberra and Hobart. Table 125 shows the proportion of interviewees across DASHED, POINTED, and DANTE sites who had experienced aggression or unwanted sexual attention in the three months prior to the interviews, in or around night-time entertainment precincts.

Table 125 Proportion of interviewees involved in aggression in and surrounding NEPs in the past three months across sites								
	DASHED Canberra %	DASHED Hobart %	POINTED Geelong %	POINTED Melbourne %	POINTED Perth %	POINTED Sydney %	POINTED Wollongong %	DANTE Geelong %	DANTE Newcastle %
Verbal aggression	30	33	14	8	5	11	8	–	–
Physical aggression	17	16	16	8	9	13	7	15	15
Unwanted sexual attention	28	26	–	–	–	–	–	–	–
Sexual aggression	–	–	3	1	1	2	1	–	–

Much higher proportions of interviewees in Canberra and Hobart were involved in verbal aggression than those in any of the POINTED sites, while proportions of physical aggression were similar in Canberra and Hobart to POINTED and DASHED findings. The decision to change the wording around sexual aggression experienced by patrons demonstrates that a substantial proportion of people experience unwanted sexual attention in nightlife areas. This signals an issue that deserves substantial intervention, in and around licensed venues across Australia. The findings demonstrate the continuing high levels of aggression experienced by people attending nightlife areas in this country. They indicate the need for evidence-based responses.

Objective 3: Examine the nature of the relationship between patron alcohol consumption, intoxication, substance use and associated harms in Canberra and Hobart entertainment precincts

A series of multivariate models were conducted, using patron interview data, to examine the key correlates of experience of physical aggression, verbal aggression, unwanted sexual attention, accidents, and injuries that had occurred in the last three months. Correlates entered into the models included BAC (grouped= 0; >0 to 0.05; 0.051 to 0.10; and 0.10+); pre-drinking; consumption of energy drinks; and illicit drugs.

No significant correlates were found when investigating factors associated with the experience of physical aggression in Canberra in the past three months. In Hobart, consumption of energy drinks (OR=1.91, p=0.006) and illicit drugs (OR=2.75, p<0.001) were both significant correlates, suggesting that those who drink energy drinks or consume illicit drugs (on the night of interview) were more likely to report physical aggression in the past three months.

Summary and discussion of trends

When predicting the occurrence of verbal aggression incidents within the past three months, no significant correlates were found in Canberra patron interviews. In Hobart, pre-drinking (OR=1.49, p=0.028) and the use of illicit drugs on the night of the interview (OR=2.37, p=0.001) were both significant correlates, suggesting that those who consumed drinks before going out or consumed drugs on the night of interview were more likely to report verbal aggression.

Experiences of unwanted sexual attention in Canberra were found to be correlated with BAC level on the night. Compared with 0.10+, those with >0.0 to 0.05 (OR=1.82, p=0.015) and those with 0.051 to 0.10 (OR=1.96, p=0.004) were more likely to report unwanted attention in the last three months. In Hobart, only the occurrence of pre-drinking on the night of the interview (OR=1.73, p=0.005) was a significant predictor. This suggests that those who pre-drink were more likely to report unwanted sexual attention than those who did not report pre-drinking on the night.

When predicting the occurrence of accidents in the past three months, in Canberra the only significant correlate was use of illicit drugs (OR=2.12, p=0.013). This indicated that those who reported using illicit drugs on the night of the interview were 2.12 times more likely to report an alcohol-related accident. No significant correlates of accidents were found for Hobart.

When predicting the occurrence of alcohol-related injuries in the past three months, Canberra showed no significant correlates. In Hobart, pre-drinking (OR=1.59, p=0.042), and consuming energy drinks (OR=1.69, p=0.021) significantly predicted the occurrence of injuries.

These findings demonstrate that a range of factors are associated with people experiencing aggression. While some suggest stronger associations, such as using energy drinks or illicit drugs, these may reflect other patterns of behaviour in general. Ultimately, a variety of factors contribute. Experiencing harm, or engaging in risky behaviour, continue to be complex phenomena with multiple risk and protective factors.

Objective 4: Determine the main drivers of alcohol and substance-related harm in Canberra and Hobart entertainment precincts and identify opportunities to implement responses to reduce the level of harm associated with alcohol

The findings of this report demonstrate that key drivers of alcohol-related harm are consistent with other cities in Australia, and internationally. They can be linked back mostly to high concentrations of venues, generally high consumption levels in the community, pre-drinking (normally related to the price discrepancy between on-licence and off-licence outlets) late trading hours, high levels of intoxication and the failure of RSA legislation and training to ensure intoxicated patrons are not served more alcohol. However, the findings also specifically point to energy drinks and illicit drugs as correlates of harm. They highlight again the high levels of drug and drink-driving in this sub-population.

Opportunities exist to implement responses that will reduce the level of harm associated with alcohol. The following outlines key findings and potential responses for implementing or piloting.

Finding 1

This research shows that levels of intoxication increased throughout the night across both sites, resulting in a substantial proportion of the people in the night-time economy being heavily intoxicated.

Proposal 1a—Further refine and invest in current regulatory and enforcement frameworks

In particular, responsible service of alcohol measures are insufficient and require more stringent regulation and more comprehensive and systematic enforcement regimes. Possessing a licence to sell liquor means that licensees need to comply with all conditions and do so to make profit from the sale of alcohol. As with driving or other areas of licensing, repeated breaches should result in licences being revoked. Specific responses include:

- making publicly available data about specific venues that are failing to meet their licence conditions (such as the Violent Venues list released quarterly by the NSW Bureau of Crime Statistics and Research; also using data collected from emergency departments and ambulance services; and

- increasing penalties, such as trading hours restrictions or temporary closure, for venues that have consistently high numbers of assaults, injuries or licensing breaches.

Proposal 1b—Australian states to impose trading hour restrictions

These would be applied consistently across regions to ensure businesses can compete on a level playing field. The evidence from this report shows substantial spikes in assaults between 2 and 3 am. This indicates that 2 am last drinks should be a default minimum, with the option for communities and/or police to appeal for earlier close of trading where indicated. Beyond preventing violence and injury, this measure provides substantial savings—lessening the financial and resources drain on emergency services.

Finding 2

This research, as with previous studies, has identified pre-drinking as a predictor of intoxication and a major impediment to responsible service of alcohol. This behaviour reflects Australia's culture of determined drunkenness and requires serious, substantial, evidence-based interventions across a range of variables (eg price, availability and advertising).

Proposal 2a—Introduce a minimum price per standard drink of alcohol

Evidence from British Columbia has shown a 10.4 percent reduction in violence associated with alcohol, while the price of most alcohol sold has remained unaffected. By targeting the very cheapest alcohol sold in the community, the measure affects problem and young drinkers; both groups are mostly likely to experience alcohol-related harm.

Proposal 2b—Implement regulatory measures to reduce discount alcohol sales

In particular, policy responses such as banning bulk-buys, two-for-one offers and other promotions based on price could reduce heavy episodic drinking. Some states have regulations relating to discounting that should be more strictly enforced both on and off licensed venues.

Proposal 2c—Place caps on outlet density and the number of licensed venues in nightlife precincts

This would help to prevent any further increases in alcohol-related harm. A large and robust literature demonstrates the association between increased liquor outlet density and street and domestic violence, indicating the need for such restrictions.

Finding 3

As a part of the pre-drinking culture, the research teams often observed people consuming alcohol near licensed venues just prior to entering.

Proposal 3a—Review security training for identifying intoxicated people

A potential amendment could be introduced for training in field-sobriety testing, requiring at least one staff member from each venue to have additional qualifications in this area. Piloting different levels of complexity of testing would determine what is practical. This intervention should be scientifically evaluated before being implemented.

Proposal 3b—Undertake further research and intervention trials to identify methods for reducing levels of pre-drinking in night-time entertainment districts

Examples include:

- systematic trials into the selective use of breathalysers by door staff in night-time entertainment districts to assess their use and effectiveness;
- heavier enforcement such as blitzes on pre-drinking, and specific operations targeting venue lines and working with security;
- trial interventions by police and councils to address drinking in cars and taxis, even when stationary, and investigation of council by-laws or state laws; and
- use specially hired and trained council officers to enforce such by-laws and also address the issue of open alcohol containers in many night-time entertainment districts—this is a potential alternative to further stretching police resources.

Finding 4

Energy drink use in nightlife patrons has again been found to be associated with increased experience of harm and alcohol consumption in the night-time economy. Measures addressing energy drink consumption include:

Proposal 4a—Undertake policy trials that ban energy drink sales after 10 pm.

Proposal 4b—Ban discounts and promotions on AmEDs in all venues.

Proposal 4c—Distribute posters to all venues displaying information about the maximum number of energy drinks that should be consumed daily

Posters would include information about the potential risks associated with combining alcohol and energy drinks, and would be placed behind the bar and in the toilets.

Proposal 4d—Trial public education campaigns about the potential dangers of mixing alcohol and energy drinks

Finding 5

Illicit drug use was found at both sites and was associated with people experiencing greater violence and injury. A high proportion of interviewees reported illicit drug use and, despite the hidden nature of this use, research teams consistently observed drug dealing.

Proposal 5a—Trial a policy that tests the impact of banning from nightlife areas those caught drug dealing or trafficking, or drug dealing inside and around licensed venues

This would extend current patron banning measures in place in most states. Such a measure would also require implementing mandatory ID scanner technology and the real-time linking of police data to ID scanners.

Proposal 5b—Amend liquor licensing legislation in each state to consider illicit drug-related offences within venues as amenity infringements associated with liquor licence breaches

This includes harms such as overdoses. The amendment would endorse drug harm minimisation licence conditions and allow for disciplinary/amenity inquiries for drug-related reasons. It would empower licensing agencies to invoke inquiry powers that address illicit drug-related harm at licensed premises (eg grievous bodily harm, overdoses etc).

Proposal 5c—Implement harm-reduction measures, such as posters and conditions of the licence

Posters would be placed in venues to warn of the harms of combining alcohol and illicit drugs in night-time entertainment districts. Venues identified as having a lot of drug use could consider conditions on the environmental factors of the licence to limit the consumption of illicit drugs within the venue, such as removing flat surfaces in toilets and having their security increase the surveillance of toilet areas.

Proposal 5d—Use well-constructed, funded trials of interventions such as the Clubs against Drugs program

Finding 6

Drug and drink-driving were identified as major issues in terms of harm to the community. A large proportion of nightlife patrons reported driving under the influence of alcohol or drugs.

Proposal 6a—Trial targeted enforcement campaigns, with associated awareness campaigns

Proposal 6b—Instigate specific research around who is driving under the influence of drugs (including alcohol) and why, to inform subsequent responses.

Finding 7

Unwanted sexual attention is a major harm experienced primarily by women in nightlife. It demands a rapid and serious response.

Proposal 7a—Implement and evaluate pilot interventions that draw attention to respectful behaviour in nightlife settings

Proposal 7b—Further research perpetrators of unwanted sexual behaviour and their criminogenic needs and offending pathways

Proposal 7c—Trial and evaluate specific banning provisions to target offenders that are linked to mandatory ID scanning in licensed venues

Banning provisions should be only available via a court-based system and include treatment options.

Objective 5: Estimating the costs associated with alcohol and substance-related crime in Canberra's main entertainment precinct

The final objective of the study was to estimate the financial costs associated with alcohol-related crime incidents within the Canberra entertainment precincts. Drawing on the administrative data analysed as part of the current research, together with the results from previously published studies, it was possible to estimate the:

- short-term costs of alcohol to policing (both reactive and proactive);
- costs of crime including medical costs (hospitalisation, emergency department presentations and ambulance attendances), lost output, intangible costs, property loss and damage; and
- criminal justice system costs associated with alcohol-related assault.

This assessment reports only on the costs of alcohol-related crime within the limited geographical area of the nightlife district. It should be considered a bottom-line cost—and a substantial underestimate. Given the limitations of available data, the results from this economic assessment underestimate the total cost to police and the criminal justice system. It does not include costs incurred outside the suburbs of Canberra City and Braddon and therefore does not represent the total cost of the CBD entertainment precinct to the ACT Government or wider community. Similarly, the 'bottom-up approach' always seems to underestimate the cost of police time. A range of other harms is also associated with alcohol, including accidental injury and other health problems, which are not included in this estimate. Finally, having been developed specifically for the ACT, this estimate will not be applicable to other cities' entertainment precincts. The number of recorded

assaults in other major city entertainment precincts (eg Sydney, Melbourne and Brisbane) is substantially larger, which means the cost to police and to the wider community will be proportionally larger.

A summary of these costs is presented in Table 126. In 2014, the cost of alcohol-related offences committed within Canberra's main entertainment precinct (City and Braddon), including unrecorded offences, was estimated to be $5.9m. Intangible costs accounted for the largest proportion of this cost (41%), followed by lost output (38%) and medical costs (17%). In addition, the immediate and short-term cost to police of responding to alcohol-related offences and incidents in the Canberra CBD, based solely on the salaries of officers attending incidents, was estimated to be $199,851. The total short-term cost to police of dealing with alcohol-related issues—primarily the RTT—was estimated to be more than $600,000. A further $5.2m was estimated in criminal justice costs for alcohol-related assault, although this was based on a number of assumptions and limited to assault offences only.

While this research focused on HAH, because of the concentration of alcohol-related offences on Friday and Saturday nights, the economic assessment revealed that the cost of alcohol-related crime is not evenly distributed over this period. The cost of crime and the cost to police both peaked after 2 am. Forty-six percent of the short-term reactive costs to police and 43 percent of the cost of alcohol-related offences committed in Canberra's main entertainment precinct resulted from incidents between 2 and 6 am. The ability of evidence-based interventions to reduce the level of harm later in the evening therefore has the potential to deliver significant financial savings.

Table 126 Summary of estimated costs associated with alcohol-related crime in Canberra City and Braddon, ACT 2014 (2014–15 Australian dollars)	
Short-term policing costs	
Reactive policing activities	199,851
Proactive policing activities	121,679
Activity constants	283,919
Total	605,449
Cost of offences committed within the entertainment precinct	
Medical costs	980,369
Lost output	2,259,872
Intangible costs	2,412,389
Property loss and damage	250,009
Total	5,902,639
Criminal justice system costs (alcohol-related assault only)	
Court proceedings	156,214
Imprisonment	5,026,680
Total	5,182,894

Limitations aside, this assessment shows the substantial avoidable costs from alcohol-related incidents in CBD entertainment precincts that may be reduced through effective interventions. It also highlights the need for data to be able to better estimate both the prevalence of harm in specific areas, and the economic cost of that harm to individuals, business, government and the wider community.

Conclusions

This study demonstrates that alcohol-related harm is a major burden in Canberra and the ACT with levels similar to or higher than other cities around Australia. This harm comes at considerable cost to the community, both through the physical, psychological and emotional harms of violence and injury, and the huge economic cost and burden to emergency services. Much of this cost is entirely preventable.

As with previous research, this study shows that alcohol remains the driver of most harm in the night-time economy, and while such harm is not common, most people experience it in some form. Striking similarities emerged across the two sites in this study and the six sites investigated in previous NDLERF studies. Levels of intoxication, energy drink use and mixed alcohol/energy drink use increased throughout the night. These findings reinforce the large body of research that shows a relationship between later trading and greater levels of intoxication and harm (Babor et al. 2010; Chikritzhs & Stockwell, 2002; Miller et al. 2012).

This study also found that the fundamental tenet of liquor licensing—responsible service of alcohol—fails to be adequately enforced in both Hobart and Canberra, replicating previous findings across Australia.

Intoxication resulting from pre-drinking is common in patrons in the night-time economy, presenting significant problems for law enforcement and bar staff. Calls for improved intoxication screening practices are valid, but while refusing entry to highly intoxicated patrons may remove harm from specific venues, it will do little to reduce the prevalence of overall violence in these areas given that most alcohol-related assaults occur outside venues. Most pre-drinkers are motivated by price discrepancies between packaged and on-premises alcohol. Pre-drinking behaviour is a policy challenge for those seeking to reduce alcohol-related harm.

The use of energy drinks in the night-time economy was also found to be associated with increased intoxication and an increased risk of harm. Consumers of AmEDs were more likely to have a higher BAC reading, to pre-drink and use illicit drugs. They were also more likely to have engaged in risky behaviour in the past three months, including being involved in a fight or drink-driving. Such findings have been consistent across Australia for almost a decade. This demands greater attention from relevant regulators.

Illicit drug use was common in the cities studied and was associated with increased intoxication, offending, risk and harm in the night-time economy. Associations were found between self-reported use of illicit drugs on the night of interview, and reported aggressive and offending behaviour in the three months prior to interview. People who reported illicit drug use on the night of interview were significantly more likely to report having engaged in all forms of aggression and antisocial behaviour, as well as being more likely to experience an injury. An innovative program of research interventions and policy responses is needed to address the issue.

This study shows that alcohol-related intoxication and subsequent harm are significant social, economic and health burdens for the cities of Hobart and Canberra. These cities are similar in most ways to others across Australia and it is clear that much of the harm that occurs is preventable. While pre-drinking, energy drink use and illicit drug use all contribute significantly to the observed harm and offending behaviour, the basic levels of intoxication and pre-drinking remain the major predictors of offending and harm.

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