



Impact of the last drinks and lockouts

Prepared for the
Queensland Government

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ISSR RESEARCH REPORT

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1 Executive Summary

On the 1st July 2016, the following measures commenced as part of the Queensland Government's Tackling Alcohol-fuelled Violence Policy:

- A state-wide cessation of the service of alcohol at 2am unless the venue is in a Safe Night Precinct (SNP: see Appendix 4 for list of SNPs);
- 3am last drinks in Safe Night Precincts;
- A ban on the sale of rapid intoxication, high alcohol-content drinks after midnight;
- Publishing information on liquor licensing, compliance and enforcement activity.

This report focuses on the impact of these introduced measures by examining trends in administrative data from three emergency services: The Queensland Police Service, Queensland Health Emergency Department and the Queensland Ambulance Service. We also include data from The Queensland Office of Liquor and Gaming Regulation. As only six months of data is available following the introduction of the Policy it is too early to be able to make any definitive statements regarding whether any changes in trends post-implementation are statistically significant. However, a number of important conclusions can be noted:

- It is very important to note that there has been virtually no fidelity to the last-drinks at 3am in SNPs across Queensland due to the systematic and widespread use of extended trading permits;
- Since 1st July 2016, there has not been a single weekend night where all venues in the Fortitude Valley have ceased the service of alcohol at 3am;
- There has been no obvious reduction in alcohol-related assaults in the period 1 July 2016 to 31 December 2016, either in SNPs, or Queensland-wide;
- For the hours of 20:00 to 06:00 there has been a continuing downward trend in common and serious assaults in Queensland and for the hours of 03:00 and 06:00 a continuing downward trend in ambulance attendances in SNPs and a continuing downward trend in common assaults in the Fortitude Valley. This downward trend includes the period since the introduction of the Policy.
- There has been no significant change in injury presentations at Emergency Departments during high alcohol hours;
- Lack of notable change in trends since the introduction of the Policy also suggests the provision of extended trading permits (allowing the sale of alcohol until 5am) has compromised the impact of the Policy.

The current research evidence suggests that the introduction of lockouts (one-way doors) is not likely to significantly change current trends (except for pre-drinking).

Current available evidence reinforces the need for restricted trading hours to be actuated; suggesting modifications to current extended trading hours permits are necessary for the Policy to be deemed effective.

The lack of change in alcohol-related harms during earlier hours also indicates that measures used to reduce harm earlier in the night such as ID scanners, and banning orders for repeat offenders continue to be warranted.

2 Executive Findings

Table 1 and Table 2 summarise the findings of this report. Table 1 present trends in events occurring during high alcohol hours, defined here as: Friday 20:00 to Saturday 06:00 and Saturday 20:00 to Sunday 06:00. In the Fortitude Valley and in SNPs across Queensland trends in common assaults, serious assaults and ambulance attendances during HAH remained flat and stable between January 2014 and December 2016. There was no evidence of a change in these trends since 1st July 2016. Across Queensland, outside of SNPs, there was evidence that common and serious assaults during HAH have been stable but trending downwards since January 2014 while ambulance attendances during HAH have been stable but following an upward trend. There was no evidence of a change in these trends since 1st July 2016. The trend in emergency department injury presentations during HAH remained flat and stable across the time series. This trend has not changed since the 1st July 2016.

Table 1: Summary of findings: High Alcohol Hours (HAH)

	Fortitude Valley	SNPs	Rest of Queensland
Common assaults	Jan2014-Dec2016 Flat trend (see Figure 9, p 30)	Jan2014-Dec2016 Flat trend (see Figure 1,p 14)	Jan2014-Dec2016 Downward trend (see Figure 3,p 18)
Serious assaults	Jan2014-Dec2016 Flat trend (see Figure 10,p 32)	Jan2014-Dec2016 Flat trend (see Figure 2,p 16)	Jan2014-Dec2016 Downward trend (see Figure 4,p 20)
Alcohol-related injuries			Jan2014-Dec2016 Flat trend (see Figure 13,p 39)
Ambulance attendances	Jan2014-Dec2016 Flat trend (see Figure 19,p 52)	Jan2014-Dec2016 Flat trend (see Figure 15,p 44)	Jan2014-Dec2016 Upward trend (see Figure 16,p 46)

Table 2 presents trends in events occurring between 03:00 and 06:00 on Saturday and Sunday. Trends in common and serious assaults occurring between 03:00 and 06:00 on Saturday and Sunday in SNPs and across Queensland remained flat and stable between January 2014 and December 2016. The trend in serious assaults in the Fortitude Valley, also remained flat and stable across the time series. In the Fortitude Valley common assaults followed an upward trend between January 2014 and December 2015. This increase was followed by a downward trend between December 2015 and December 2016, There was no evidence that trends in common or serious assaults in the Fortitude Valley, SNPs or

Queensland changed after the 1st of July 2016. Ambulance attendances between 03:00 and 06:00 on Saturday and Sunday remained stable between January 2014 and December 2016. These data revealed an upward trend across Queensland, a downward trend in SNPs and a flat trend in the Fortitude Valley across the series. There was no evidence that trends in ambulance attendances between 3:00 and 06:00 on Saturday and Sunday changed after 1st July 2016. Similarly, injury presentations at Queensland Emergency Departments between 03:00 and 06:00 on Saturday and Sunday remained stable pre and post 1st of July 2016.

Table 2 also presents the number of OLGR approved applications for extended trade until 5am. Since 1st July 2016, there has not been a single weekend night without approved trading until 5am. In the Fortitude Valley, the total number of approved applications for extended trade until 5am from the 2 July until 4 January 2017 was 280, with a weekly average of 10.4. Across all SNPs in Queensland the total number of applications during the six month period was 844, with a weekly average of 31.26. Across all of Queensland, there was a total of 931 approved applications for extended trade until 5am and the weekly average was 34.48.

Table 2: Summary of findings: 3:00 and 06:00 Saturday and Sunday

	Fortitude Valley	SNPs	Rest of Queensland
Common assaults	Jan2014-Dec2015 Upward trend Dec2015- Dec2016 Downward trend (see Figure 11,p 34)	Jan2014-Dec2016 Flat trend (see Figure 5,p 22)	Jan2014-Dec2016 Flat trend (see Figure 7,p 26)
Serious assaults	Jan2014-Dec2016 Flat trend (see Figure 12,p 36)	Jan2014-Dec2016 Flat trend (see Figure 6,p 24)	Jan2014-Dec2016 Flat trend (see Figure 8,p 28)
Alcohol-related injuries			Jan2014-Dec2016 Flat trend (see Figure 14,p 41)
Ambulance attendances	Jan2014-Dec2016 Flat trend (see Figure 20,p 5414)	Jan2014-Dec2016 Downward trend (see Figure 17,p 48)	Jan2014-Dec2016. Upward trend (see Figure 18,p 50)
Total approved ext. trade 5am (2 Jul 2016-4 Jan 2017)	280	844	931
Weekly average ext. trade 5am (2 Jul 2016-4 Jan 2017)	10.4	31.26	34.48

3 Limitations and caveats

We note a number of important limitations of the data snapshots reported here:

- Data are aggregated to monthly counts. Due to only have 6 data points available post-1st July introduction of the Queensland Government's Tackling Alcohol-fuelled Violence Policy, we cannot state that any trends are significant or are associated with the Policy. This does not mean the Policy had no effect only that there is not enough data points to adequately detect an effect.
- Given the 6 data points post-1st July introduction of the policy, we have not controlled for seasonal effects or the effects of specific events that may be associated with increases/decreases in alcohol-related events (e.g. Winter, Summer, Christmas, New Year, Football finals).
- We cannot control for changing in police behaviour or procedures over time; especially any police procedural changes or increased presence in SNPs that may have occurred due to the death of Mr Cole Miller or as a result of the Policy.
- We note that all data are counts of alcohol-related events. As counts are used any increases may simply be reflective of an increased population.
- Previous research has shown that culture change takes time and that there is often an initial push-back by patrons to restrictions. It is reasonable to expect that the full impact of any measures would not be seen yet.

4 Ethics

This project has been granted ethical approval by Deakin University Ethics Review Committee.

5 Methods and data sources

5.1 Statistical analyses

Standard descriptive statistics and a time series analysis using Joinpoint regression software (Statistical Research and Applications Branch, 2013) were undertaken (see Appendix 1 for more detail on joinpoint regression). Joinpoint regression (or piecewise regression) is a method of analysis used for both linear and non-linear models to identify significant changes in trend at one or more values of an independent variable, usually in a time series (Kim et al., 2000).

All descriptive analysis and the regression analysis (and associated diagnostics) estimates were undertaken using Stata (StataCorp, 2013). Figures depicting time-series trends were produced using Stata.

Details of monthly percentage change segments for a particular series will be presented in the form of a point estimate, an associated confidence interval to signify significance at $\alpha=0.05$ (i.e., $p<0.05$). In the following example 1.43% (0.64% to 2.22%; $p<0.001$) the value 1.43 represents the point estimate for monthly percentage change; the values 0.64% to 2.22% represents the 95 per cent confidence interval of the point estimate. As the p-value is less than 0.05 the segment is statistically significant. For ease of reading the p-value is presented as either the value of p if p is greater than 0.001 or $p<0.001$. A statistically significant monthly percentage change indicates that the slope of the segment differs statistically from zero. A 'true' zero slope is neither increasing nor decreasing over time. A positive point estimate indicates that the slope is increasing whilst a negative point estimate indicates that the slope is decreasing. If the confidence interval spans zero this suggests that the true point estimate could be zero and therefore the test cannot reject that the true slope is not zero.

6 QPS Data Snapshot

We explore Queensland Police Service data for trends in non-domestic violence (NDV) related, assaults occurring during high alcohol hours (HAH). The data are sourced from the Queensland Police Records and Information Management Exchange (QPRIME) database. QPRIME is an administrative by-product database. QPRIME records information based on incidents which are referred to as ‘occurrences’ within the QPRIME system. Occurrences are required to be created in respect of the commission or suspected commission of any indictable offence, simple offence of a serious nature or any regulatory offence. This is inclusive of ‘assault’, which is an act considered to be in breach of the criminal law.

The QPRIME data contains a unit level record of the assault event which includes: 1) time and date of the offence; 2) location of the offence; 3) assault classifications (e.g., Grievous Bodily Harm) and; 4) a domestic violence indicator. QPRIME data contains nine assault classifications. Here we delineate between common and serious assaults. Common assaults include: assaults, common and assaults, minor (not elsewhere classified). Serious assaults include: assault occasioning bodily harm; assault, aggravated (Non-sexual); assault, police (PPRA); assault, serious (other); grievous bodily harm; wounding.

Data presented here are restricted to:

1. Assaults (exl. driving causing grievous bodily harm and assault (community by-law) occurring during HAH (full list of assaults classifications included in the data please see Appendix 2);
2. Assaults (exl. driving causing grievous bodily harm and assault (community by-law) occurring between 03:00 and 06:00 on Saturday and Sunday.

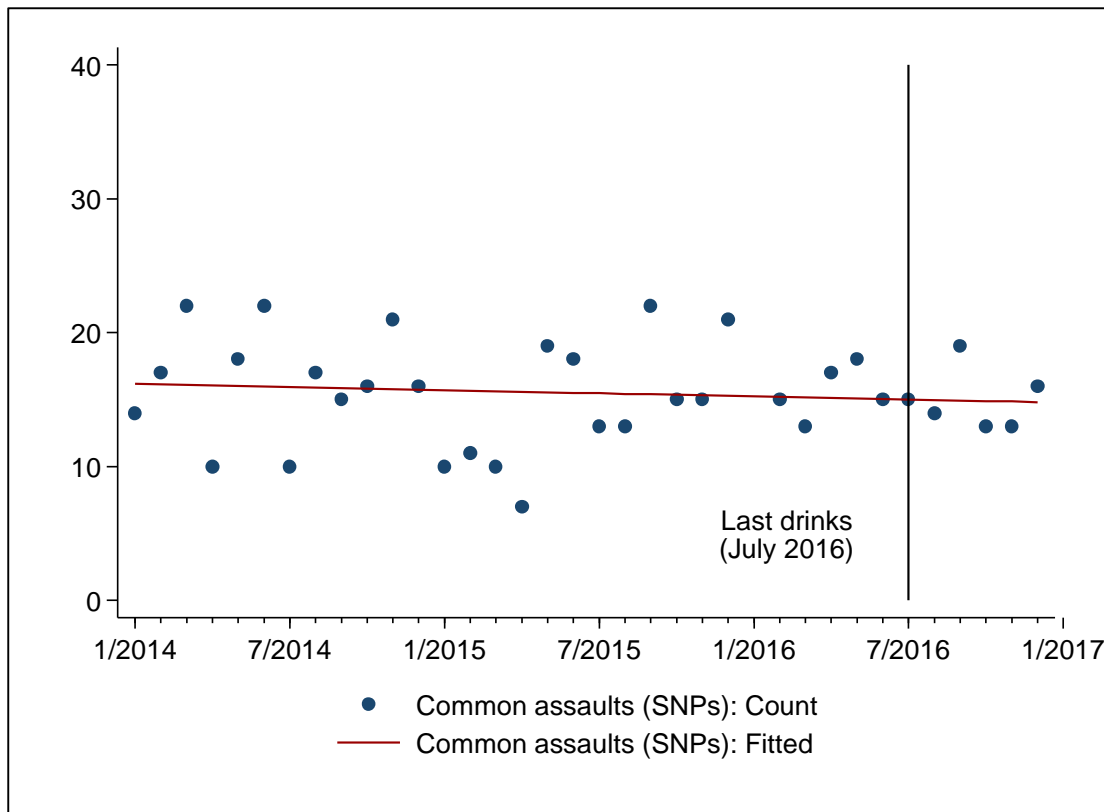
We define high alcohol hours (HAH) as (Coghlan, Sutherland & Millstead, 2016):

- Friday nights (Friday 20:00 to 23:59; Saturday 00:00 to 06:00)
- Saturday nights (Saturday 20:00 to 23:59; Sunday 00:00 to 06:00)

For the purposes of the analyses we delineate data by location (SNP/ rest of Queensland). We also present data for the Fortitude Valley SNP as a separate case study. The unit of analysis used for the series data are counts of assault by month. The study focuses on data ranging from January 2014 to December 2016.

6.1 NDV related assaults HAH

Figure 1: NDV Common assaults HAH (SNPs): January 2014-December 2016



Key Points:

- Post- 1st July: continuation of a stable flat trend in NDV, common assaults in SNPs during HAH. This trend reflects relative stability in events across the data series.
- Overall: the trend in monthly counts of NDV, common assaults during HAH in SNPs was flat and stable between January 2014 and December 2016.

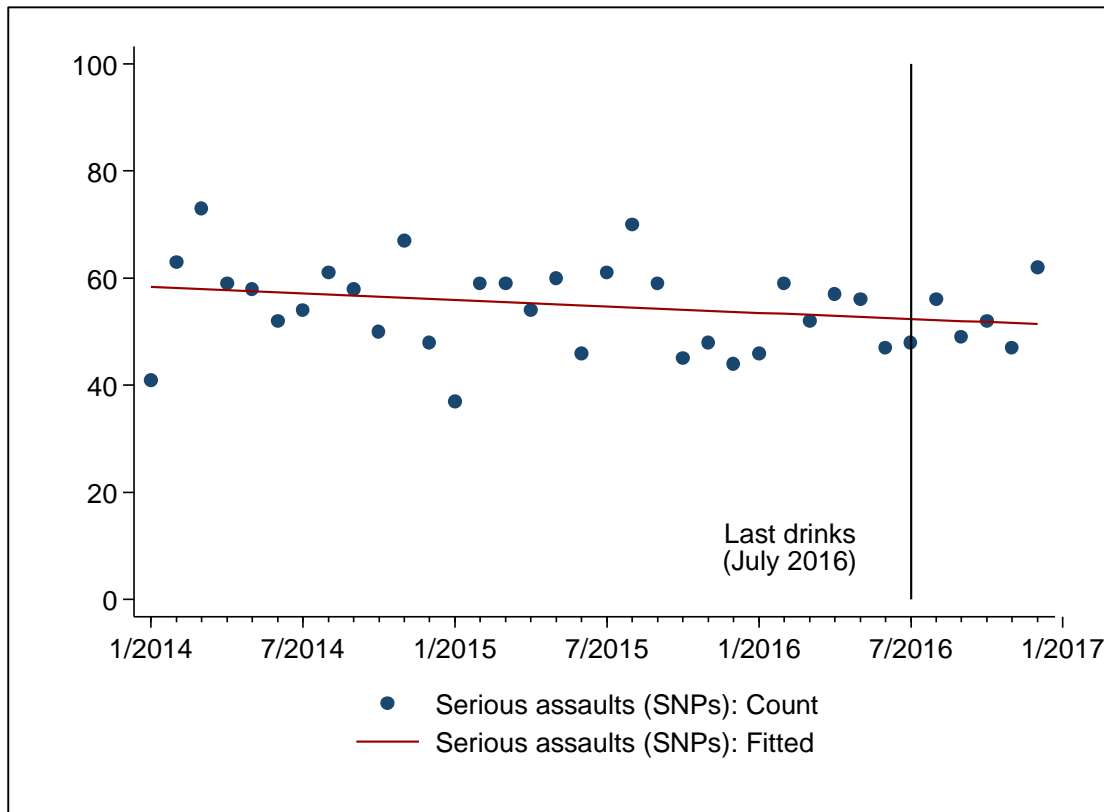
Figure 1 demonstrates the monthly percentage change (MPC) in counts of non-domestic violence (NDV) related, common assaults during HAH in Queensland SNPs between January 2014 and December 2016. The average monthly count of NDV, common assaults in SNPs during HAH over the three year period was 15.14 (SD 4.12). The monthly count of NDV, common assaults in SNPs during HAH ranged from 5 in January 2016 to 22 in March 2014; June 2014 and September 2015. As depicted in Figure 1, the trend in monthly counts of NDV, common assaults in SNPs during HAH remained relatively stable across the data series. Average monthly percentage change in NDV, common assaults in SNPs during HAH was -0.25% per month (-0.92% to 0.42%, $p=0.45$) between January 2014 and December

2016. Table 3 presents the results of the joinpoint analysis for NDV, common assaults in SNPs during HAH.

Table 3: Average monthly percentage change in NDV Common assaults in HAH (SNPs): January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	-0.25%	(-0.92%, -0.42%)	0.45

Figure 2: NDV Serious assaults HAH (SNPs): January 2014-December 2016



Key Points:

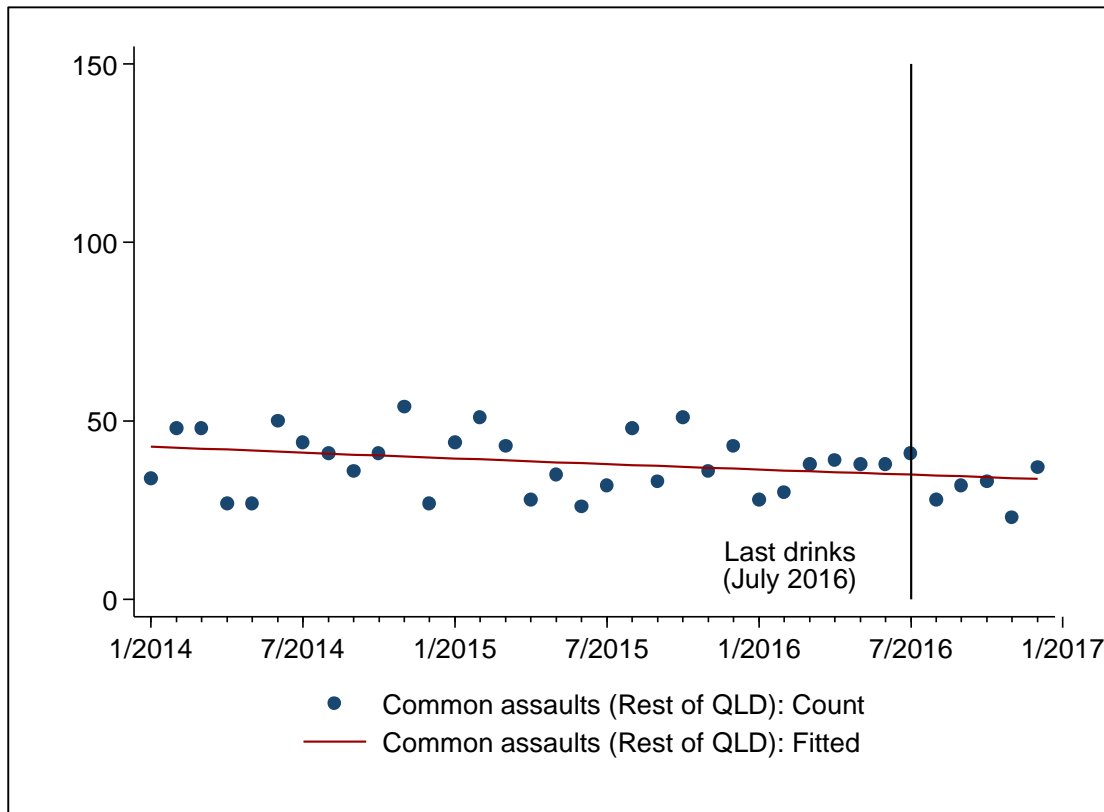
- Post- 1st July: continuation of a stable trend in NDV, serious assaults in SNPs during HAH. This trend reflects relative stability in events across the data series.
- Overall: the trend in monthly counts of NDV, serious assaults during HAH in SNPs was relatively stable between January 2014 and December 2016.

Figure 2 demonstrates the monthly percentage change (MPC) in counts of non-domestic violence (NDV) related, serious assaults during HAH in Queensland SNPs between January 2014 and December 2016. The average monthly count of NDV, serious assaults during HAH in SNPs over the three year period was 54.36 (SD 8.04). The monthly count of NDV, serious assaults during HAH in SNPs ranged from 37 in January 2015 to 73 in March 2014. As depicted in Figure 2, the trend in monthly counts of NDV, serious assaults in SNPs during HAH remained relatively stable across the data series. The average monthly percentage change in NDV serious assaults in HAH in SNPs between January 2014 and December 2016 was -0.36% (-0.79% to 0.07%, p=0.10). Table 4 presents the results of the joinpoint analysis for NDV, serious assaults during HAH inside SNPs.

Table 4: Average monthly percentage change in NDV Serious assaults in HAH (SNPs):
January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	-0.36%	(-0.79%, 0.07%)	0.10

Figure 3: NDV Common assaults HAH (Rest of QLD): January 2014-December 2016



Key Points:

- Post- 1st July: continuation of a downward trend in NDV, common assaults outside SNPs during HAH. This trend reflects a downward trend in events across the data series.
- Overall: monthly counts of NDV, common assaults during HAH outside SNPs were trending downwards between January 2014 and December 2016.

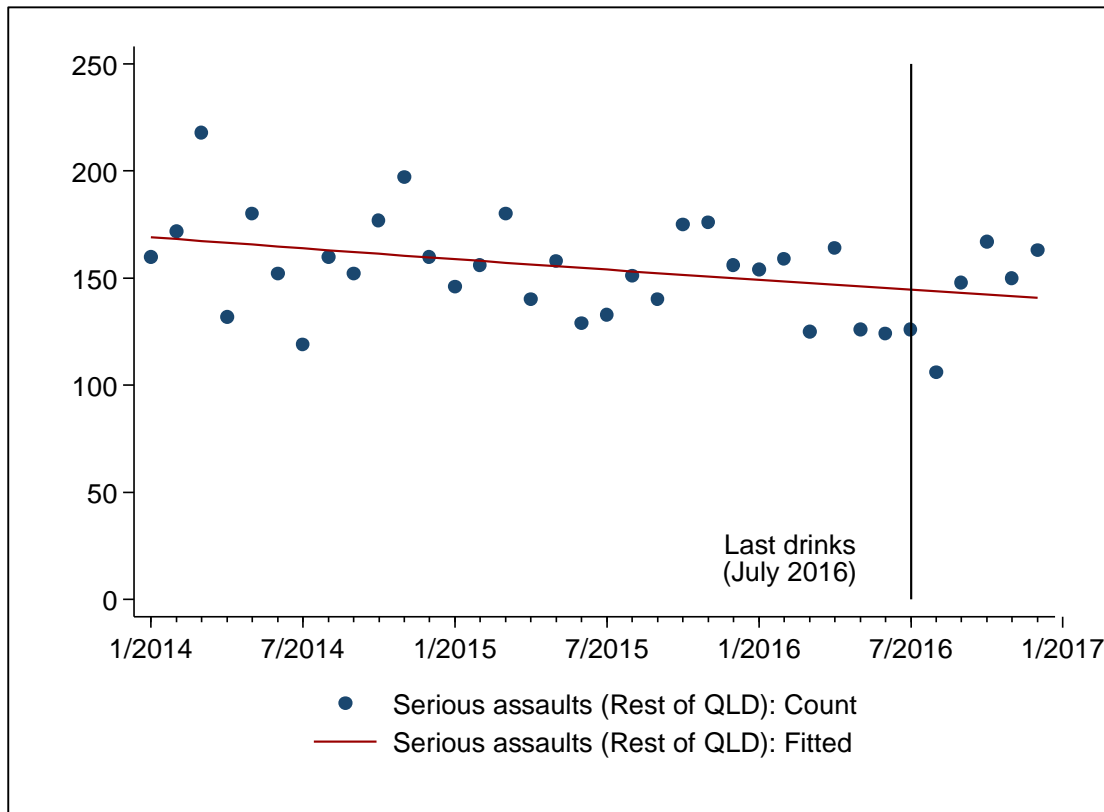
Figure 3 demonstrates the monthly percentage change (MPC) in counts of non-domestic violence (NDV) related, common assaults during HAH outside Queensland SNPs between January 2014 and December 2016. The average monthly count of NDV, common assaults outside SNPs during HAH over the three year period was 37.56 (SD 8.34). The monthly count of NDV, common assaults outside SNPs during HAH ranged from 23 in November 2016 to 54 in November 2014. As depicted in Figure 3, there was evidence of a downward trend in monthly counts of NDV, common assaults outside SNPs during HAH across the data series. Average monthly percentage change in NDV, common assaults outside SNPs during HAH was -0.68% per month (-1.26 % to -0.09%, $p < 0.05$) between January 2014 and December 2016. This equates to an average annual decrease of 3.06 offences across the three

year period. Table 5 presents the results of the joinpoint analysis for NDV, common assaults outside SNPs during HAH.

Table 5: Average monthly percentage change in NDV Common assaults in HAH (Rest of Queensland): January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	-0.68%	(-1.26%, -0.09%)	<0.05

Figure 4: NDV Serious assaults HAH (Rest of QLD): January 2014-December 2016



Key Points:

- Post- 1st July: continuation of a downward trend in NDV, serious assaults outside SNPs during HAH. This trend reflects a downward trend in events across the data series.
- Overall: monthly counts of NDV, serious assaults during HAH outside SNPs were trending downwards between January 2014 and December 2016.

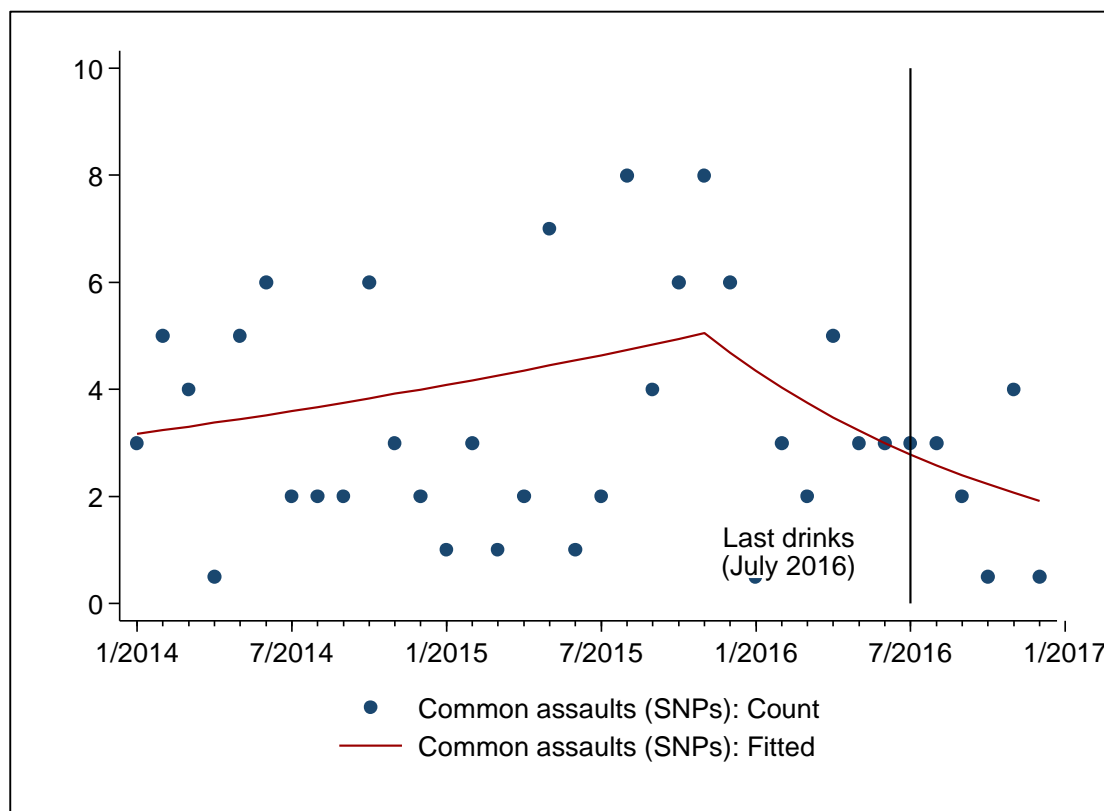
Figure 4 demonstrates the monthly percentage change (MPC) in counts of non-domestic violence (NDV) related, serious assaults during HAH outside Queensland SNPs between January 2014 and December 2016. The average monthly count of NDV, serious assaults outside SNPs during HAH over the three year period was 153.64 (SD 22.98). The monthly count of NDV serious assaults outside SNPs during HAH ranged from 106 in August 2016 to 218 in March 2014. As depicted in Figure 4, there was evidence of a downward trend in NDV, serious assaults outside SNPs during HAH across the data series. Average monthly percentage change in NDV, serious assaults outside SNPs during HAH was -0.52% per month (-0.91 % to -0.14%, $p < 0.01$) between January 2014 and December 2016. This equates to an average annual decrease of 9.59 offences across the three year period. Table 6 presents the results of the joinpoint analysis for NDV, serious assaults outside SNPs during HAH.

Table 6: Average monthly percentage change in NDV Serious assaults in HAH (Rest of Queensland): January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	-0.52%	(-0.91%, -0.14%)	<0.01

6.2 NDV related assaults Saturday and Sunday 03:00 and 06:00

Figure 5: NDV Common assaults 03:00 and 06:00 Saturday and Sunday (SNPs): January 2014-December 2016



Key Points:

- **Note: apparent trends are non-significant and reflect small counts in the data series**
- Post- 1st July: continuation of a stable trend in NDV, common assaults in SNPs between 03:00 and 06:00 on Saturday and Sunday. This trend reflects relative stability in events across the data series.
- Overall: the trend in monthly counts of NDV, common assaults between 03:00 and 06:00 on Saturday and Sunday in SNPs was relatively stable between January 2014 and December 2016. There was a non-significant upwards trend in the data between January 2014 and November 2015 followed by a non-significant downwards trend until December 2016.

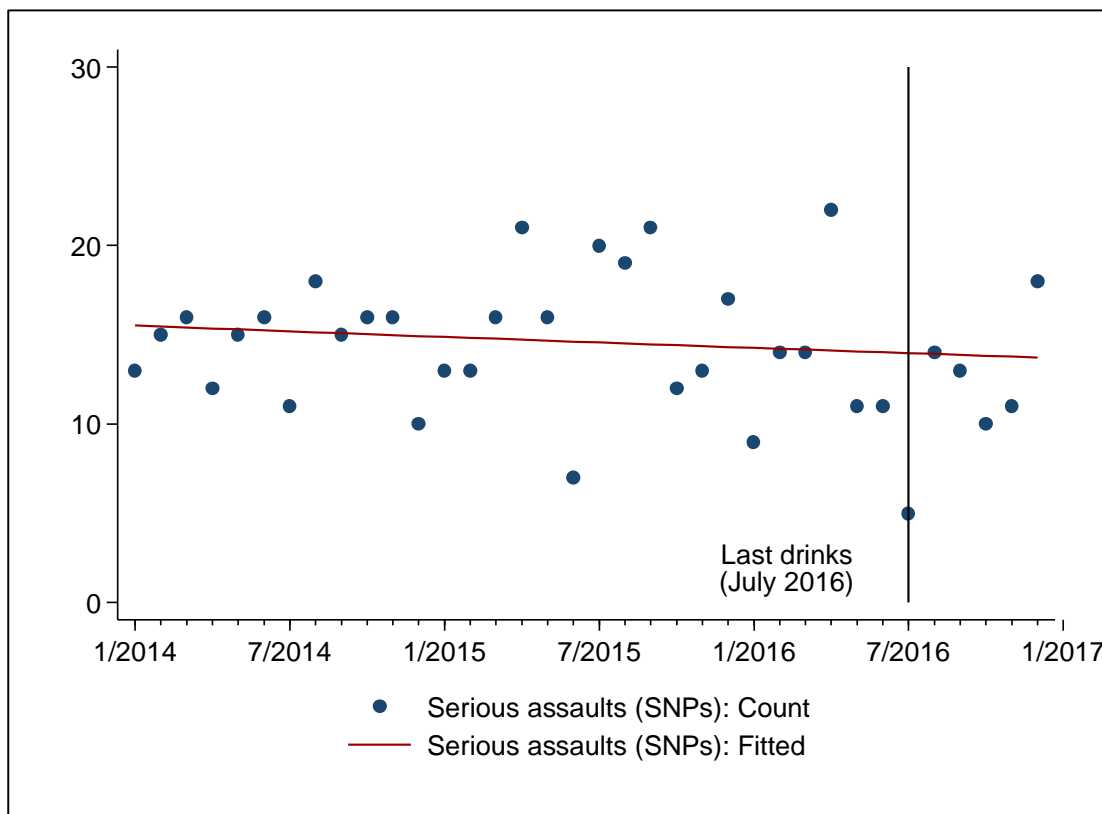
Figure 5 demonstrates the monthly percentage change (MPC) in counts of non-domestic violence (NDV) related, common assaults between 03:00 and 06:00 on Saturday and Sunday in Queensland SNPs between January 2014 and December 2016. The average monthly count of NDV, common assaults in SNPs between 03:00 and 06:00 on Saturday and Sunday over

the three year period was 3.31 (SD 2.13). The monthly count of NDV, common assaults in SNPs between 03:00 and 06:00 on Saturday and Sunday ranged from 0 in April 2014; January 2016; October 2016 and December 2016 to 8 in August 2015 and November 2015. As depicted in Figure 5, the trend in monthly counts of NDV, common assaults in SNPs between 03:00 and 06:00 on Saturday and Sunday remained relatively stable across the data series. There was some evidence of a non-significant upward trend in events between January 2014 and November 2015. Average monthly percentage change in NDV, common assaults in SNPs between 03:00 and 06:00 on Saturday and Sunday was 2.14% per month (-0.53% to 4.89%, p=0.11) during this period. Following November 2015 and continuing to December 2016, there was evidence of a non-significant downward trend in the data series. The average monthly percentage change in NDV, common assaults in SNPs between 03:00 and 06:00 on Saturday and Sunday was -7.17% per month (-14.24% to 0.47%, p=0.06) during this period. Table 7 presents the results of the joinpoint analysis for NDV, common assaults in SNPs during HAH.

Table 7: Average monthly percentage change in NDV Common assaults 03:00 and 06:00 Sat/Sun (SNPs): January 2014-December 2016

	MPC	95% CI	P-value
January 2014-November 2015	2.14%	(-0.53%, 4.89%)	0.11
November 2015-December 2016	-7.17	(-14.24%, 0.47%)	0.06

Figure 6: NDV Serious assaults 03:00 and 06:00 Saturday and Sunday (SNPs): January 2014-December 2016



Key Points:

- Post- 1st July: continuation of a stable flat trend in NDV, serious assaults in SNPs between 03:00 and 06:00 on Saturday and Sunday. This trend reflects relative stability in events across the data series.
- Overall: the trend in monthly counts of NDV, serious assaults between 03:00 and 06:00 on Saturday and Sunday in SNPs was relatively stable between January 2014 and December 2016.

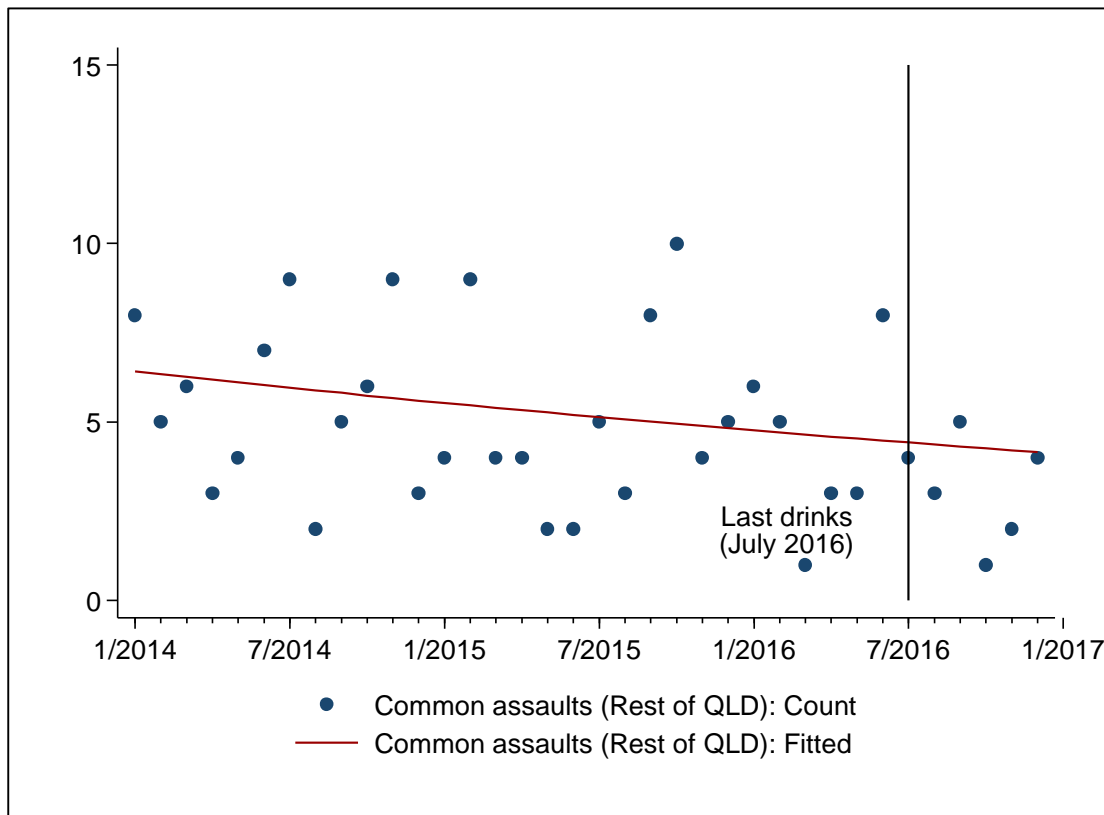
Figure 6 demonstrates the monthly percentage change (MPC) in counts of non-domestic violence (NDV) related, serious assaults between 03:00 and 06:00 on Saturday and Sunday in Queensland SNPs between January 2014 and December 2016. The average monthly count of NDV, serious assaults between 03:00 and 06:00 on Saturday and Sunday in SNPs over the three year period was 14.25 (SD 3.87). The monthly count of NDV, serious assaults between 03:00 and 06:00 on Saturday and Sunday in SNPs ranged from 5 in July 2015 to 22 in April 2016. As depicted in Figure 6, the trend in monthly counts of NDV, serious assaults in SNPs between 03:00 and 06:00 on Saturday and Sunday remained relatively stable across the data series. The average monthly percentage change in NDV serious assaults between 03:00 and

06:00 on Saturday and Sunday in SNPs between January 2014 and December 2016 was -0.35% (-1.10 % to 0.041%, p=0.34). Table 8 presents the results of the joinpoint analysis for NDV, serious assaults between 03:00 and 06:00 on Saturday and Sunday inside SNPs.

Table 8: Average monthly percentage change in NDV Serious assaults 03:00 and 06:00 Sat/Sun (SNPs): January 2014-December 2016

	MPC	95% CI	P-value
January 2014- December 2016	-0.35%	(-1.10%, 0.41%)	0.34

Figure 7: NDV Common assaults 03:00 and 06:00 Saturday and Sunday (Rest of QLD): January 2014-December 2016



Key Points:

- Post- 1st July: continuation of a relatively stable trend in NDV, common assaults outside SNPs between 03:00 and 06:00 on Saturday and Sunday. This trend reflects a relatively stable trend in events across the data series.
- Overall: the trend in monthly counts of NDV, common assaults between 03:00 and 06:00 on Saturday and Sunday outside SNPs was relatively stable between January 2014 and December 2016. The apparent downward trend was not statistically significant.

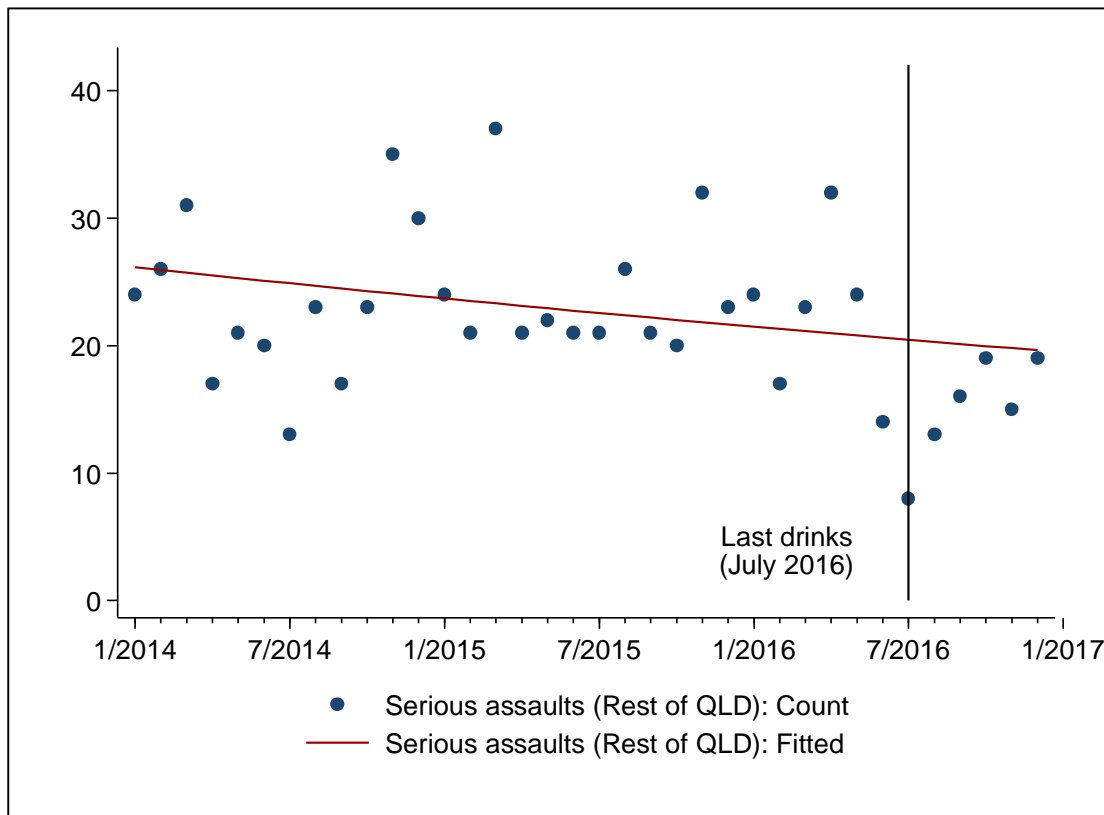
Figure 7 demonstrates the monthly percentage change (MPC) in counts of non-domestic violence (NDV) related, common assaults between 03:00 and 06:00 on Saturday and Sunday outside Queensland SNPs between January 2014 and December 2016. The average monthly count of NDV, common assaults outside SNPs between 03:00 and 06:00 on Saturday and Sunday over the three year period was 4.78 (SD 2.42). The monthly count of NDV, common assaults outside SNPs between 03:00 and 06:00 on Saturday and Sunday ranged from 1 in March 2016; October 2016 to 10 in October 2015. The downward trend in monthly counts of NDV, common assaults outside SNPs between 03:00 and 06:00 on Saturday and Sunday depicted in Figure 7 was not statistically significant. This suggests the trend in monthly

counts of NDV, common assaults outside SNPs between 03:00 and 06:00 on Saturday and Sunday remained relatively stable across the data series. Average monthly percentage change in NDV, common assaults outside SNPs between 03:00 and 06:00 on Saturday and Sunday was -1.24% per month (-2.61 % to 0.16%, p=0.08) between January 2014 and December 2016. Table 9 presents the results of the joinpoint analysis for NDV, common assaults outside SNPs between 03:00 and 06:00 on Saturday and Sunday.

Table 9: Average monthly percentage change in NDV Common assaults 03:00 and 06:00 Sat/Sun (Rest of QLD): January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	-1.24%	(-2.61%, 0.16%)	0.08

Figure 8: NDV Serious assaults 03:00 and 06:00 Saturday and Sunday (Rest of QLD): January 2014-December 2016



Key Points:

- Post- 1st July: continuation of a relatively stable trend in NDV, serious assaults outside SNPs between 03:00 and 06:00 on Saturday and Sunday. This trend reflects a relatively stable trend in events across the data series.
- Overall: the trend in monthly counts of NDV, serious assaults between 03:00 and 06:00 on Saturday and Sunday outside SNPs was relatively stable between January 2014 and December 2016. The apparent downward trend was not statistically significant.

Figure 8 demonstrates the monthly percentage change (MPC) in counts of non-domestic violence (NDV) related, serious assaults between 03:00 and 06:00 on Saturday and Sunday outside Queensland SNPs between January 2014 and December 2016. The average monthly count of NDV, serious assaults outside SNPs between 03:00 and 06:00 on Saturday and Sunday over the three year period was 22.02 (SD 6.34). The monthly count of NDV, serious assaults outside SNPs between 03:00 and 06:00 on Saturday and Sunday ranged from 8 in July 2016 to 37 in March 2015. The downward trend in monthly counts of NDV, serious assaults outside SNPs between 03:00 and 06:00 on Saturday and Sunday depicted in Figure 8 was not statistically significant. This suggests the trend in monthly counts of NDV, serious

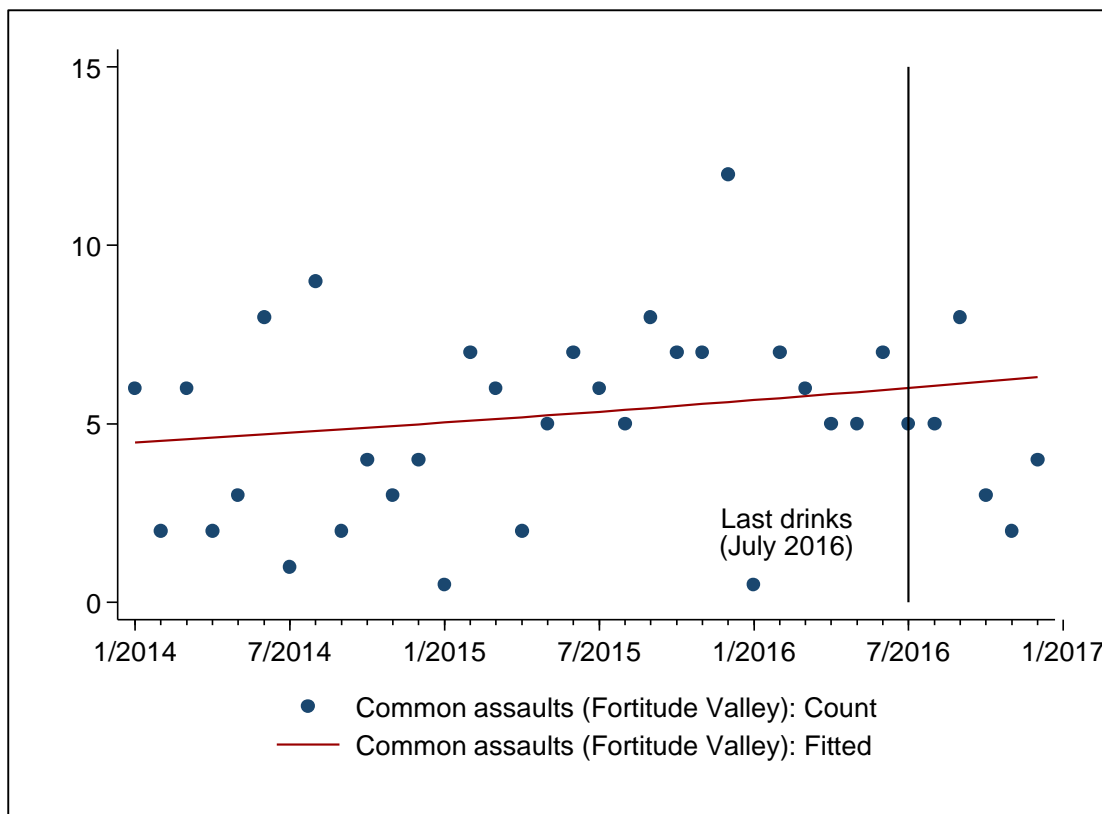
assaults outside SNPs between 03:00 and 06:00 on Saturday and Sunday remained relatively stable across the data series. Average monthly percentage change in NDV, serious assaults outside SNPs between 03:00 and 06:00 on Saturday and Sunday was -0.81% per month (-1.66% to 0.04%, $p=0.06$) between January 2014 and December 2016. Table 10 presents the results of the joinpoint analysis for NDV, serious assaults outside SNPs between 03:00 and 06:00 on Saturday and Sunday.

Table 10: Average monthly percentage change in NDV Serious assaults 03:00 and 06:00 Sat/Sun (Rest of QLD): January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	-0.81%	(-1.66%, 0.04%)	0.06

6.3 NDV assault Fortitude Valley

Figure 9: NDV Common assaults HAH (Fortitude Valley): January 2014-December 2016



Key Points:

- Post- 1st July: continuation of a relatively stable trend in NDV, common assaults in the Fortitude Valley SNP during HAH. This trend reflects relative stability in events across the data series.
- Overall: the trend in monthly counts of NDV, common assaults during HAH in the Fortitude Valley SNP was relatively stable between January 2014 and December 2016. The apparent upward trend across the data series was not statistically significant.

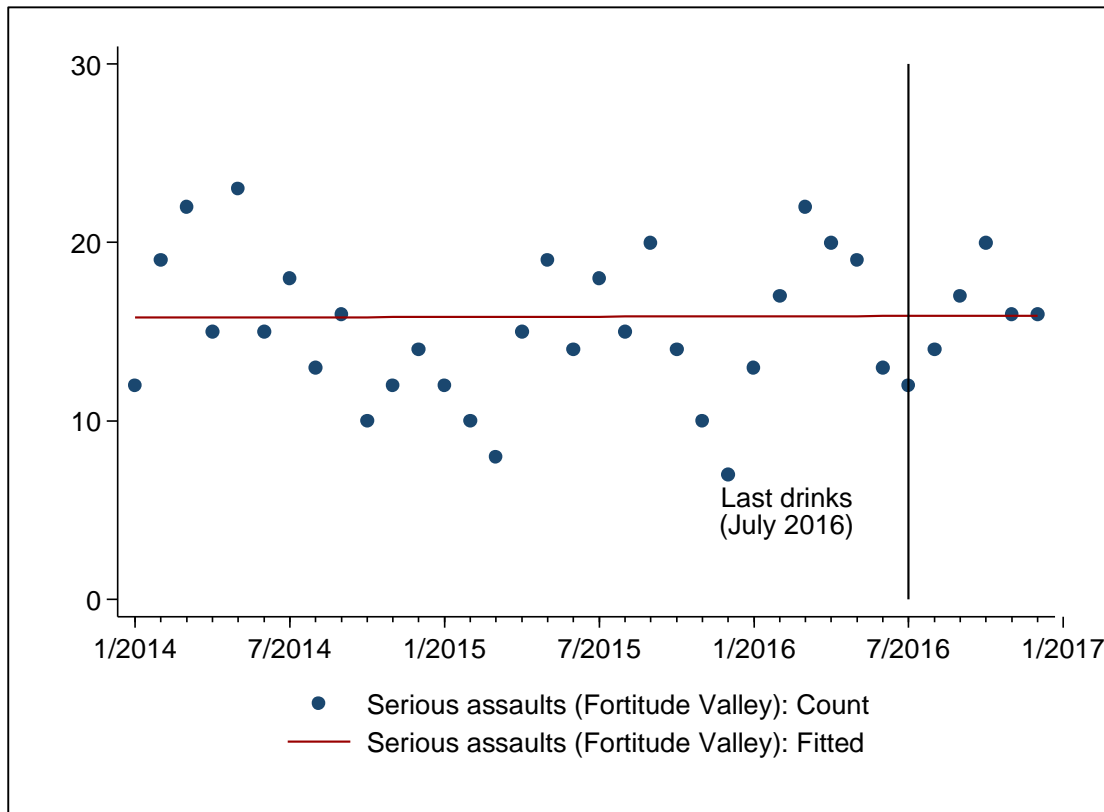
Figure 9 demonstrates the monthly percentage change (MPC) in counts of non-domestic violence (NDV) related, common assaults during HAH in the Fortitude Valley SNP between January 2014 and December 2016. The average monthly count of NDV, common assaults in the Fortitude Valley SNP during HAH over the three year period was 5 (SD 2.60). The monthly count of NDV, common assaults in the Fortitude Valley SNP during HAH ranged from 0 in January 2015 and January 2016 to 12 in December 2015. As depicted in Figure 9, the trend in monthly counts of NDV, common assaults in the Fortitude Valley SNP during HAH remained relatively stable across the data series (the upward trend in events across the

data series was not statistically significant). Average monthly percentage change in NDV, common assaults in the Fortitude Valley SNP during HAH was 0.98% per month (-0.16% to 2.14%, $p=0.09$) between January 2014 and December 2016. Table 11 presents the results of the joinpoint analysis for the NDV, common assaults in the Fortitude Valley SNP during HAH data series.

Table 11: Average monthly percentage change in NDV Serious assaults HAH Sat/Sun (Fortitude Valley): January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	0.98%	(-0.16 %, 2.14%)	0.09

Figure 10: NDV Serious assaults HAH (Fortitude Valley): January 2014-December 2016



Key Points:

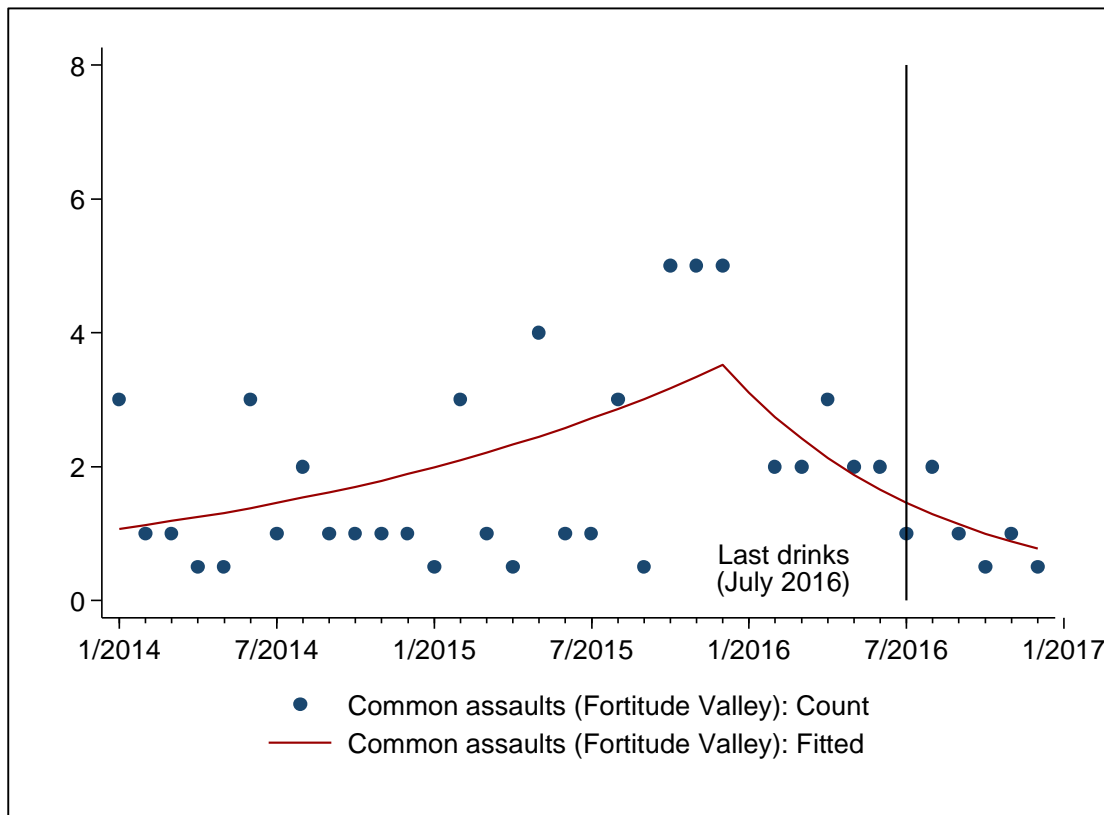
- Post- 1st July: continuation of a stable trend in NDV, serious assaults in the Fortitude Valley SNP during HAH. This trend reflects stability in events across the data series.
- Overall: the trend in monthly counts of NDV, serious assaults during HAH in the Fortitude Valley SNP remained stable between January 2014 and December 2016.

Figure 10 demonstrates the monthly percentage change (MPC) in counts of non-domestic violence (NDV) related, serious assaults during HAH in the Fortitude Valley SNP between January 2014 and December 2016. The average monthly count of NDV, serious assaults during HAH the Fortitude Valley SNP over the three year period was 15.28 (SD 3.96). The monthly count of NDV, serious assaults during HAH the Fortitude Valley SNP ranged from 7 in December 2015 to 23 in May 2014. As depicted in Figure 10, the trend in monthly counts of NDV, serious assaults in the Fortitude Valley SNP during HAH remained relatively stable across the data series. The average monthly percentage change in NDV serious assaults in HAH in the Fortitude Valley SNP between January 2014 and December 2016 was 0.02% (-0.83% to 0.87%, p=0.96). Table 12 presents the results of the joinpoint analysis for NDV, serious assaults during HAH in the Fortitude Valley SNP.

Table 12: Average monthly percentage change in NDV Serious assaults HAH Sat/Sun
 (Fortitude Valley): January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	0.02%	(-0.83%, 0.87%)	0.96

Figure 11: NDV Common assaults 03:00 and 06:00 Saturday and Sunday (Fortitude Valley): January 2014-December 2016



Key Points:

- **Note: apparent trends reflect small counts in the data series and should be interpreted with caution**
- Post- 1st July: continuation of a downward trend in NDV, common assaults in the Fortitude Valley SNP between 03:00 and 06:00 on Saturday and Sunday. This trend reflects a downward trend in the data series beginning around December 2015.
- Overall: monthly counts of NDV, common assaults between 03:00 and 06:00 on Saturday and Sunday in the Fortitude Valley SNP followed an upward trend between January 2014 and December 2015. This was followed by a downward trend in the data between December 2015 and December 2016.

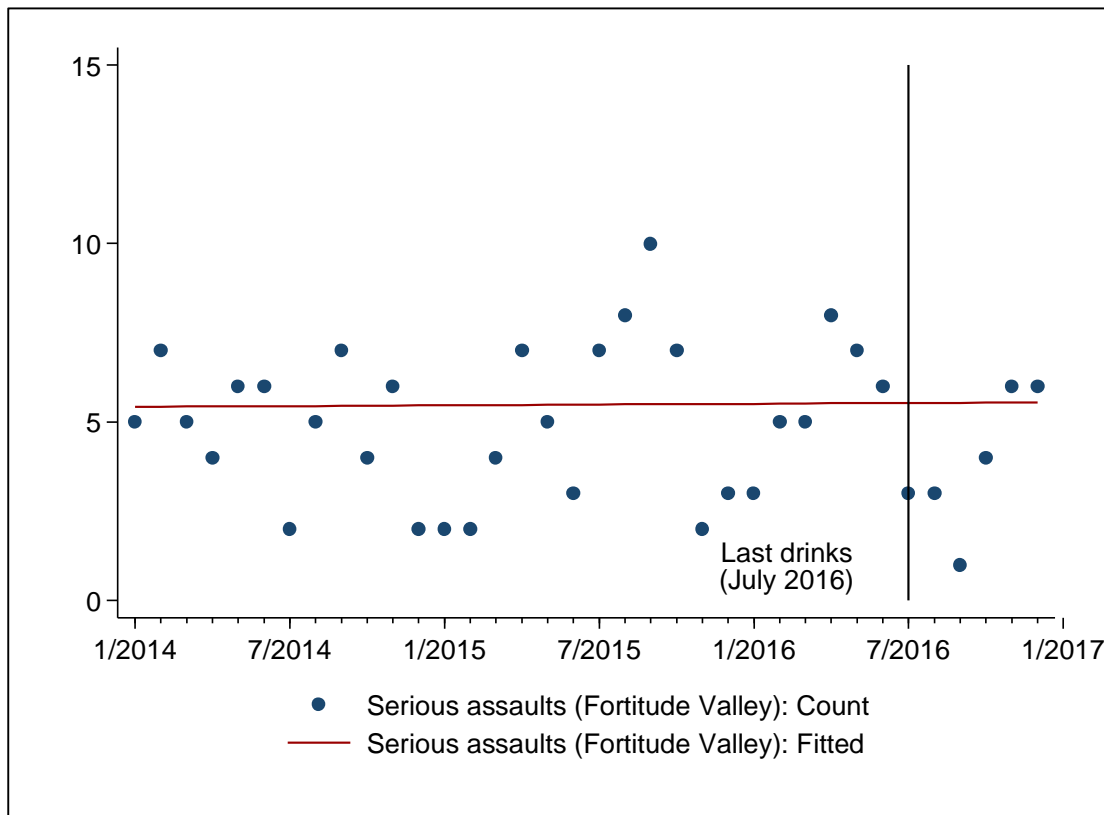
Figure 11 demonstrates the monthly percentage change (MPC) in counts of non-domestic violence (NDV) related, common assaults between 03:00 and 06:00 on Saturday and Sunday in the Fortitude Valley SNP between January 2014 and December 2016. The average monthly count of NDV, common assaults in the Fortitude Valley SNP between 03:00 and 06:00 on Saturday and Sunday over the three year period was 1.75 (SD 1.36). The monthly count of NDV, common assaults in the Fortitude Valley SNP between 03:00 and 06:00 on Saturday and Sunday ranged from 0 in April 2014; May 2014; January 2015; April 2015;

September 2015; January 2016; October 2016 and December 2016 to 5 in October 2015; November 2015 and December 2015. As depicted in Figure 11, there was some evidence of an upward trend in monthly counts of NDV, common assaults in the Fortitude Valley SNP between 03:00 and 06:00 on Saturday and Sunday between January 2014 and December 2015. Average monthly percentage change in NDV, common assaults the Fortitude Valley SNP between 03:00 and 06:00 on Saturday and Sunday was 5.34% per month (2.39% to 8.34%, $p < 0.001$) during this period. Following December 2015 and continuing to December 2016, there was evidence of a downward trend in the data series. The average monthly percentage change in NDV, common assaults in the Fortitude Valley SNP between 03:00 and 06:00 on Saturday and Sunday was -11.81% per month (-20.68% to -1.98%, $p < 0.05$) during this period. Table 13 presents the results of the joinpoint analysis for the NDV, common assaults in the Fortitude Valley SNP during HAH. Given the small monthly counts in the data series, trends should be interpreted with caution.

Table 13: Average monthly percentage change in NDV Common assaults 03:00 and 06:00 Sat/Sun (Fortitude Valley): January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2015	5.32%	(2.39%, 8.34%)	<0.001
December 2015 – December 2016	-11.81%	(-20.68%, -1.98%)	<0.05

Figure 12: NDV Serious assaults 03:00 and 06:00 Saturday and Sunday (Fortitude Valley): January 2014-December 2016



Key Points:

- Post- 1st July: continuation of a stable trend in NDV, serious assaults in the Fortitude Valley SNP between 03:00 and 06:00 on Saturday and Sunday. This trend reflects relative stability in events across the data series.
- Overall: the trend in monthly counts of NDV, serious assaults between 03:00 and 06:00 on Saturday and Sunday in the Fortitude Valley SNP remained relatively stable between January 2014 and December 2016.

Figure 12 demonstrates the monthly percentage change (MPC) in counts of non-domestic violence (NDV) related, serious assaults between 03:00 and 06:00 on Saturday and Sunday in the Fortitude Valley SNP between January 2014 and December 2016. The average monthly count of NDV, serious assaults between 03:00 and 06:00 on Saturday and Sunday in the Fortitude Valley SNP over the three year period was 4.89 (SD 2.12). The monthly count of NDV, serious assaults between 03:00 and 06:00 on Saturday and Sunday in the Fortitude Valley SNP ranged from 1 in September 2016 to 10 in September 2016. As depicted in Figure 12, the trend in monthly counts of NDV, serious assaults in the Fortitude Valley SNP between 03:00 and 06:00 on Saturday and Sunday remained relatively stable across the data

series. The average monthly percentage change in NDV serious assaults between 03:00 and 06:00 on Saturday and Sunday in the Fortitude Valley SNP between January 2014 and December 2016 was 0.07% (-1.39 % to 1.55%, p=0.93). Table 14 presents the results of the joinpoint analysis for the NDV, serious assaults between 03:00 and 06:00 on Saturday and Sunday in the Fortitude Valley SNP.

Table 14: Average monthly percentage change in NDV Serious assaults 03:00 and 06:00 Sat/Sun (Fortitude Valley): January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	0.07%	(-1.39%, 1.55%)	0.93

6.4 ED Snapshot

We explored the Queensland Department of Health data for trends in estimated alcohol-related injuries using emergency department (ED) data from 28 facilities in Queensland.¹ The data was sourced from the Queensland Hospital Admitted Patient Data Collection.³ The analytic sample was restricted to emergency presentations where the patient was aged 18-100 years. Patients arriving via a community service vehicle or 'other' were excluded from the sample leaving only those who arrived via ambulance, police/correctional services vehicle or public/private transport (walk-ins). The data cover a three year period from January 2014 to December 2016.

The Queensland Department of Health ED data include measures of primary diagnosis, time of day, day of the week, patient age, sex and visit type. The data do not include an indicator of patient intoxication or alcohol involvement in the incident preceding presentation. Instead we use primary diagnosis coupled with time of day and day of the week to identify ED presentations for which alcohol is highly likely to have been involved. Research demonstrates that the use of surrogate measures are reliable for assessing trends over time (Coghlan, Sutherland & Millstead, 2016; Lensvelt et al., 2015).

Data presented here are restricted to:

- Injury related primary diagnosis ICD-10 codes presentations occurring during high alcohol hours (this is based on research by Evans et al., 2011, full list of codes Appendix 3).
- Injury related primary diagnosis ICD-10 codes presentations occurring between 03:00 and 06:00 on Saturday and Sunday.

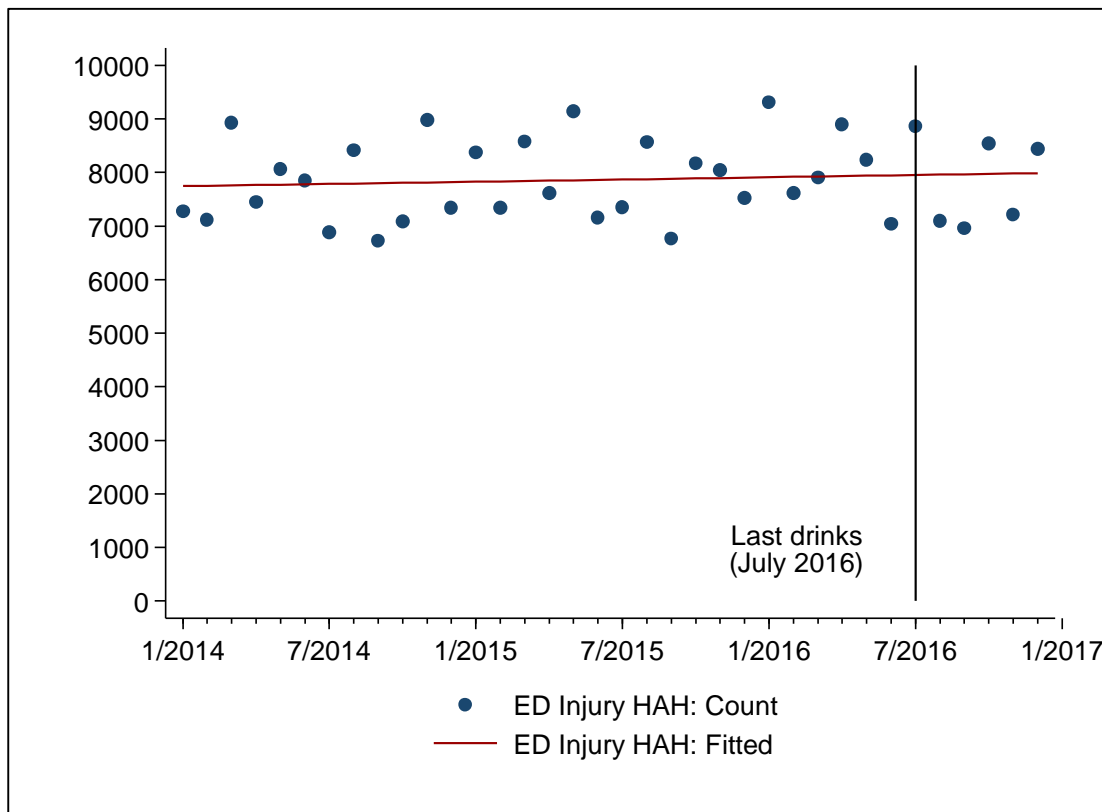
We define high alcohol hours (HAH) as (Lensvelt et al., 2015):

- Friday nights (Friday 20:00 to 23:59; Saturday 00:00 to 06:00)
- Saturday nights (Saturday 20:00 to 23:59; Sunday 00:00 to 06:00)

¹ The Gold Coast Hospital closed in October 2013 and the Gold Coast University Hospital opened late September 2013. The Mater Children's Public Hospital and the Royal Children's Hospital closed in December 2014 and the Lady Cilento Children's Hospital opened in November 2014.

These data are counts of ED presentations meeting the noted inclusion criteria and therefore do not control for increases in Queensland population during the time period of interest.

Figure 13: Queensland ED injury presentations during HAH (Friday and Saturday 20:00 and 06:00): January 2014-December 2016



Key Points:

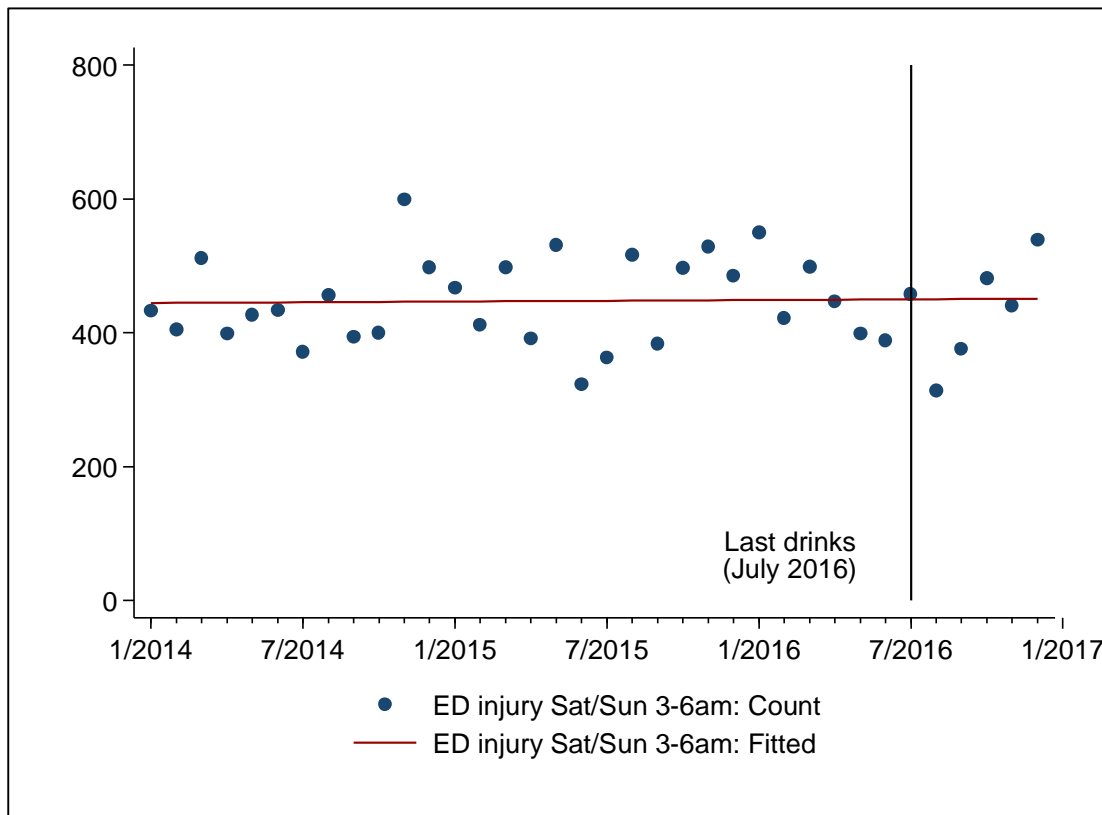
- Post- 1st July: continuation of stable trend in estimated alcohol-related ED injury presentations during HAH.
- Overall: the trend in monthly counts of estimated alcohol-related ED injury presentations remained stable between January 2014 and December 2016.

Figure 13 demonstrates the monthly percentage change (MPC) in counts of injury presentations during high alcohol hours (HAH) in 28 Queensland Health Emergency Departments (ED) between January 2014 and December 2016. The average monthly count of estimated alcohol-related injury presentations over the three year period was 7856.36 (SD 757.05). The monthly count of estimated alcohol-related injury presentations in Queensland EDs ranged from 6726 in September 2010 to 9312 in January 2016. As depicted in Figure 13, average monthly percentage change in HAH ED injury presentations was 0.09% per month (-0.10% to 0.27%, p=0.34) between January 2014 and December 2016. Table 15 presents the results of the joinpoint analysis for HAH ED injury presentations.

Table 15: Average monthly percentage change in Queensland ED injury presentations during HAH: January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	0.09%	(-0.10%, 0.27%)	0.34

Figure 14: Queensland ED injury presentations 03:00 and 06:00 Saturday and Sunday: January 2014-December 2016



Key Points:

- Post- 1st July: continuation of stable trend in estimated alcohol-related ED injury presentations between 03:00 and 06:00 Saturday and Sunday.
- Overall: the trend in monthly counts of estimated alcohol-related ED injury presentations between 03:00 and 06:00 on Saturday and Sunday remained stable between January 2014 and December 2016.

Figure 14 demonstrates the monthly percentage change (MPC) in counts of injury presentations between 03:00 and 06:00 on Saturday and Sunday in 28 Queensland Health Emergency Departments (ED) between January 2014 and December 2016. The average monthly count of estimated alcohol-related injury presentations over the three year period was 445.61 (SD 66.33). The monthly count of estimated alcohol-related injury presentations in Queensland EDs between 03:00 and 06:00 on Saturday and Sunday ranged from 314 in August 2016 to 599 in November 2014. As depicted in Figure 14, the average monthly percentage change in ED injury presentations between 03:00 and 06:00 on Saturday and Sunday was 0.09% per month (-0.10% to 0.27%, p=0.34) between January 2014 and

December 2016. Table 16 presents the results of the joinpoint analysis for the ED injury presentations between 03:00 and 06:00 on Saturday and Sunday.

Table 16: Average monthly percent change in Queensland ED injury presentations during Sat/Sun 03:00 and 06:00: January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	0.04%	(-0.34%, 0.42%)	0.83

7 Queensland Ambulance Service (QAS) Data

We explore Queensland Ambulance Service (QAS) data for trends in ambulance attendances occurring during high alcohol hours (HAH). The data are sourced from the Queensland Ambulance Electronic Ambulance Report Form (EARF) and Queensland Ambulance Case Information Reporting (QACIR) databases.

The QAS data contain unit level records of all ambulance attendances in Queensland. The data include: 1) time and date of patient contact; and 2) scene location. Data presented here are restricted to:

- Ambulance attendances occurring during HAH;
- Ambulance attendances occurring between 03:00 and 06:00 on Saturday and Sunday.

We define high alcohol hours (HAH) as (Coghlan, Sutherland & Millstead, 2016):

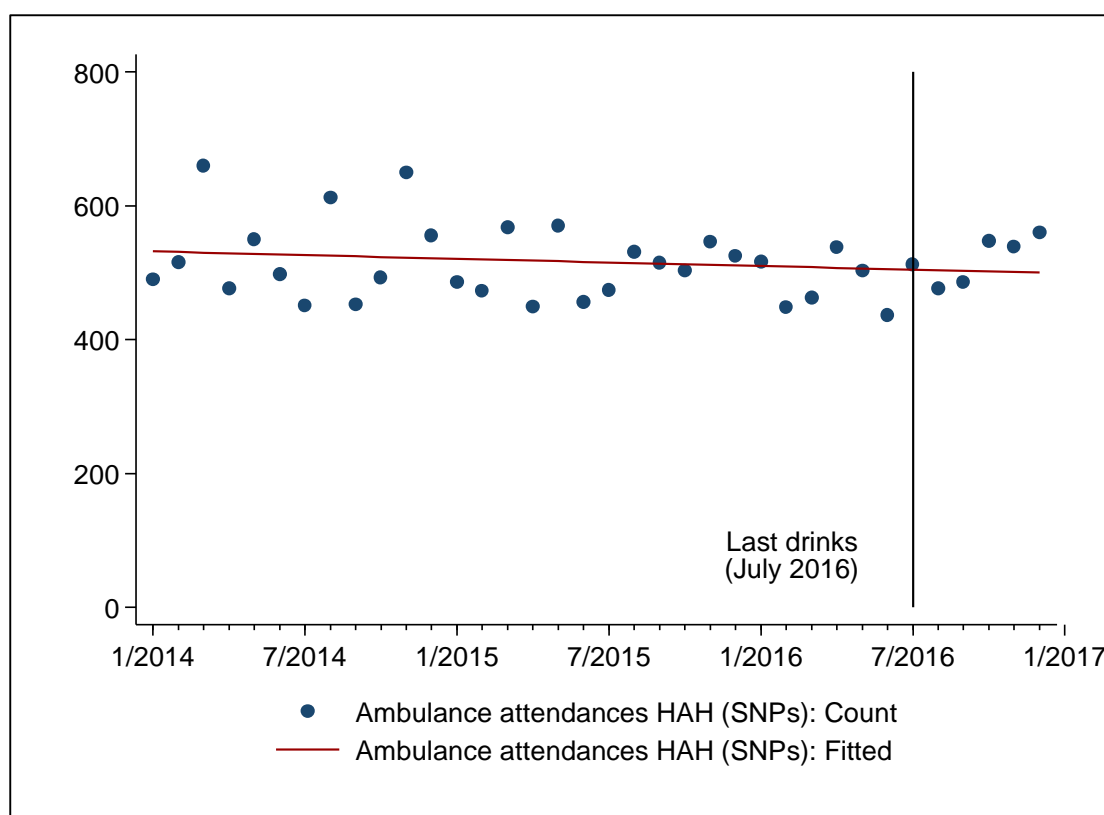
- Friday nights (Friday 20:00 to 23:59; Saturday 00:00 to 06:00)
- Saturday nights (Saturday 20:00 to 23:59; Sunday 00:00 to 06:00)

For the purposes of the analyses we delineate data by location (SNP/ rest of Queensland). We also present data for the Fortitude Valley as a separate case study.² We use patient suburb as a proxy measure for SNP. For a full list of suburbs included in the SNP classification see Appendix 4. The unit of analysis used for the series data are counts of attendances by month. The study focuses on data ranging from January 2014 to December 2016.

² Location is based on suburb and not SNP boundaries.

7.1 Ambulance attendances HAH

Figure 15: Ambulance attendances HAH (SNPs): January 2014-December 2016



Key Points:

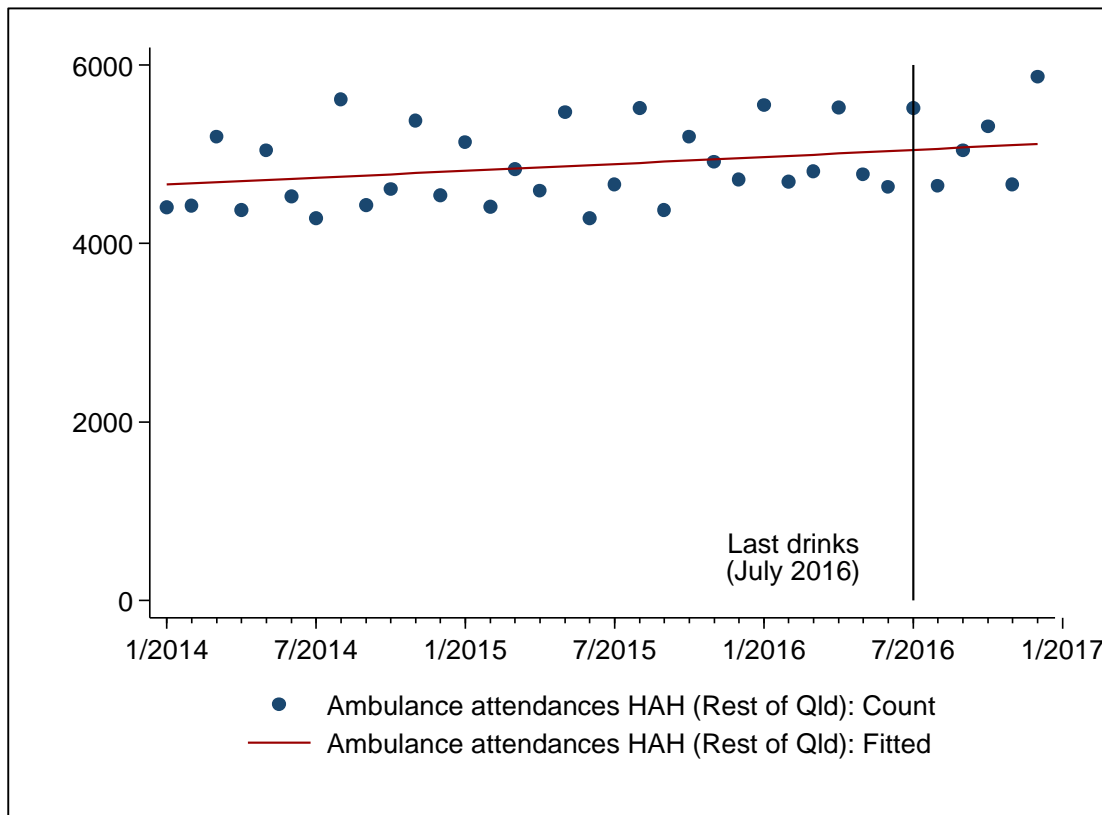
- Post- 1st July: continuation of a stable, flat trend in ambulance attendances in SNPs during HAH. This trend reflects relative stability in events across the data series.
- Overall: the trend in monthly counts of ambulance attendances in SNPs during HAH was stable and flat between January 2014 and December 2016.

Figure 15 demonstrates the monthly percentage change (MPC) in counts of ambulance attendances during HAH in Queensland SNPs between January 2014 and December 2016. The average monthly count of ambulance attendances in SNPs during HAH over the three year period was 514.69 (SD 53.87). The monthly count of ambulance attendances in SNPs during HAH ranged from 437 in June 2016 to 660 in March 2014. As depicted in Figure 15, the trend in monthly counts of ambulance attendances in SNPs during HAH remained flat and stable across the data series. Average monthly percentage change in ambulance attendances in SNPs during HAH was -0.18% per month (-0.41% to 0.07%, $p=0.15$) between January 2014 and December 2016. Table 17 presents the results of the joinpoint analysis for ambulance attendances in SNPs during HAH.

Table 17: Average monthly percentage change in ambulance attendances in HAH (SNPs):
January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	-0.18%	(-0.41%, 0.07%)	0.15

Figure 16: Ambulance attendances HAH (Rest of Queensland): January 2014-December 2016



Key Points:

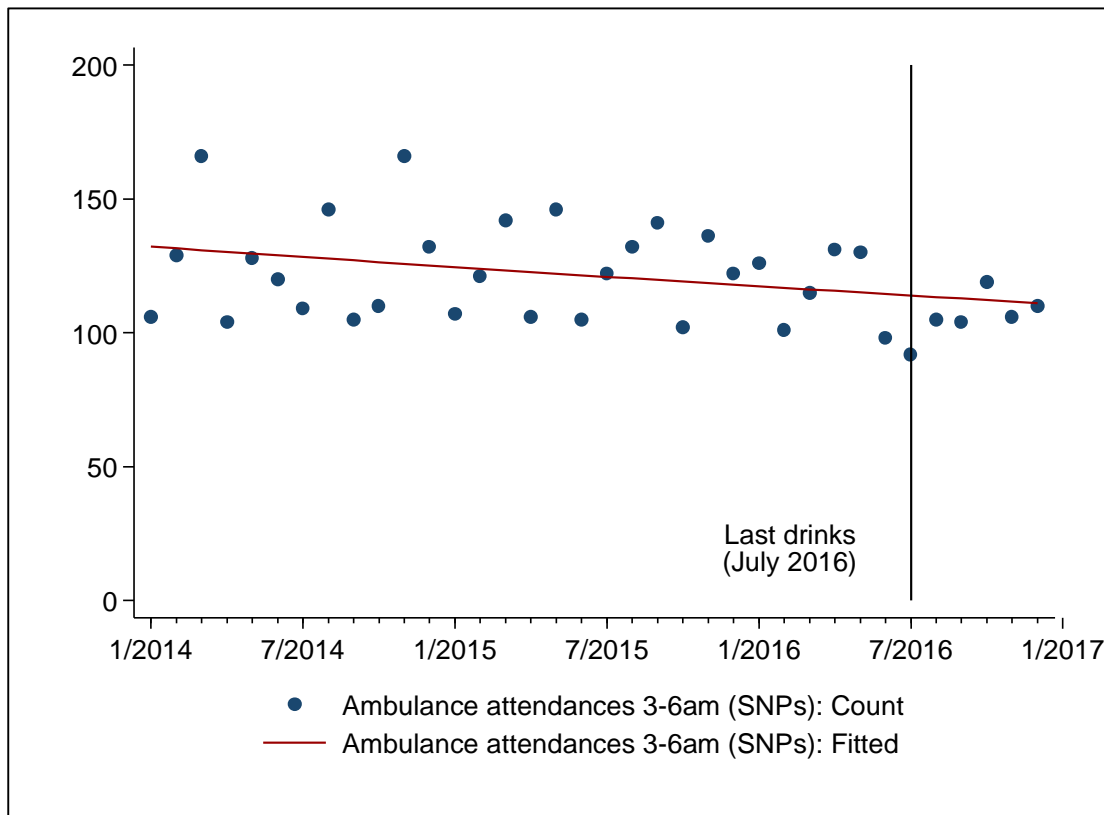
- Post- 1st July: continuation of an upward trend in ambulance attendances outside SNPs during HAH. This trend reflects an upward trend in events across the data series.
- Overall: monthly counts of ambulance attendances outside of SNPs during HAH were trending upward between January 2014 and December 2016.

Figure 16 demonstrates the monthly percentage change (MPC) in counts of ambulance attendances during HAH outside of SNPs in Queensland between January 2014 and December 2016. The average monthly count of ambulance attendances during HAH outside SNPs over the three year period was 4887.47 (SD 448.17). The monthly count of ambulance attendances during HAH outside SNPs ranged from 4283 in June 2015 to 1113 in December 2016. As depicted in Figure 16, there was an upward trend in monthly counts of ambulance attendances outside SNPs during HAH across the data series. The average monthly percentage change in ambulance attendances in HAH outside SNPs between January 2014 and December 2016 was 0.27% (0.12% to 0.41%, $p < 0.001$). Table 18 presents the results of the joinpoint analysis for ambulance attendances during HAH outside SNPs.

Table 18: Average monthly percentage change in ambulance attendances in HAH (Rest of Queensland): January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	0.27%	(0.12%, 0.41%)	<0.001

Figure 17: Ambulance attendances 03:00 and 06:00 Saturday and Sunday (SNPs): January 2014-December 2016



Key Points:

- Post- 1st July: continuation of a downward trend in ambulance attendances between 03:00 and 06:00 on Saturday and Sunday in SNPs. This trend reflects a downward trend in events across the data series.
- Overall: monthly counts of ambulance attendances in SNPs between 03:00 and 06:00 on Saturday and Sunday were trending downward between January 2014 and December 2016.

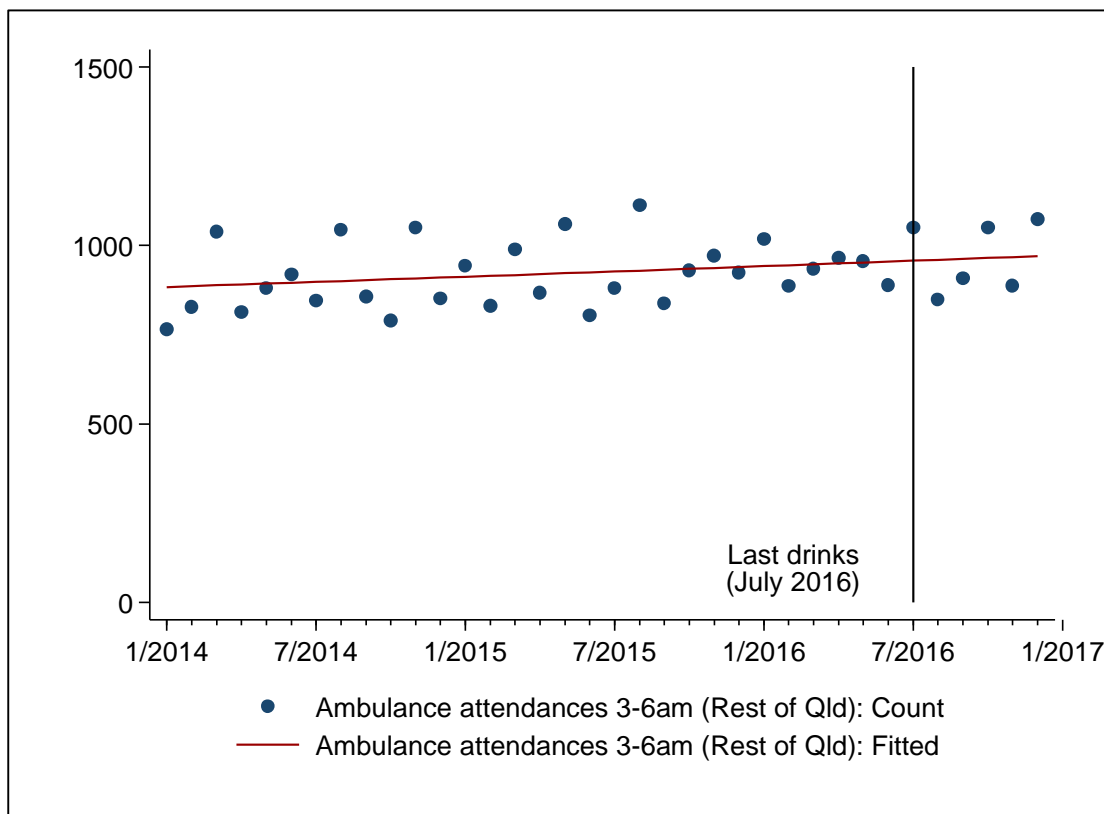
Figure 17 demonstrates the monthly percentage change (MPC) in counts of ambulance attendances between 03:00 and 06:00 on Saturday and Sunday in Queensland SNPs between January 2014 and December 2016. The average monthly count of ambulance attendances in SNPs between 03:00 and 06:00 on Saturday and Sunday over the three year period was 120.56 (SD 18.28). The monthly count of ambulance attendances in SNPs between 03:00 and 06:00 on Saturday and Sunday ranged from 92 in July 2016 to 166 in March 2014 and November 2014. As depicted in Figure 17, there was evidence of a downward trend in monthly counts of ambulance attendances in SNPs between 03:00 and 06:00 on Saturday and Sunday across the data series. Average monthly percentage change in ambulance attendances

between 03:00 and 06:00 on Saturday and Sunday in SNPs was -0.49% per month (-0.84 % to -0.14%, $p < 0.01$) between January 2014 and December 2016. Table 19 presents the results of the joinpoint analysis for ambulance attendances in SNPs between 03:00 and 06:00 on Saturday and Sunday.

Table 19: Average monthly percentage change in ambulance attendances 03:00 and 06:00 Sat/Sun (SNPs): January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	-0.49%	(-0.84%, -0.14%)	<0.01

Figure 18: Ambulance attendances 03:00 and 06:00 Saturday and Sunday (Rest of Queensland): January 2014-December 2016



Key Points:

- Post- 1st July: continuation of an upward trend in ambulance attendances outside SNPs between 03:00 and 06:00 on Saturday and Sunday. This trend reflects an upward trend in events across the data series.
- Overall: monthly counts of ambulance attendances outside SNPs between 03:00 and 06:00 on Saturday and Sunday were trending upward between January 2014 and December 2016.

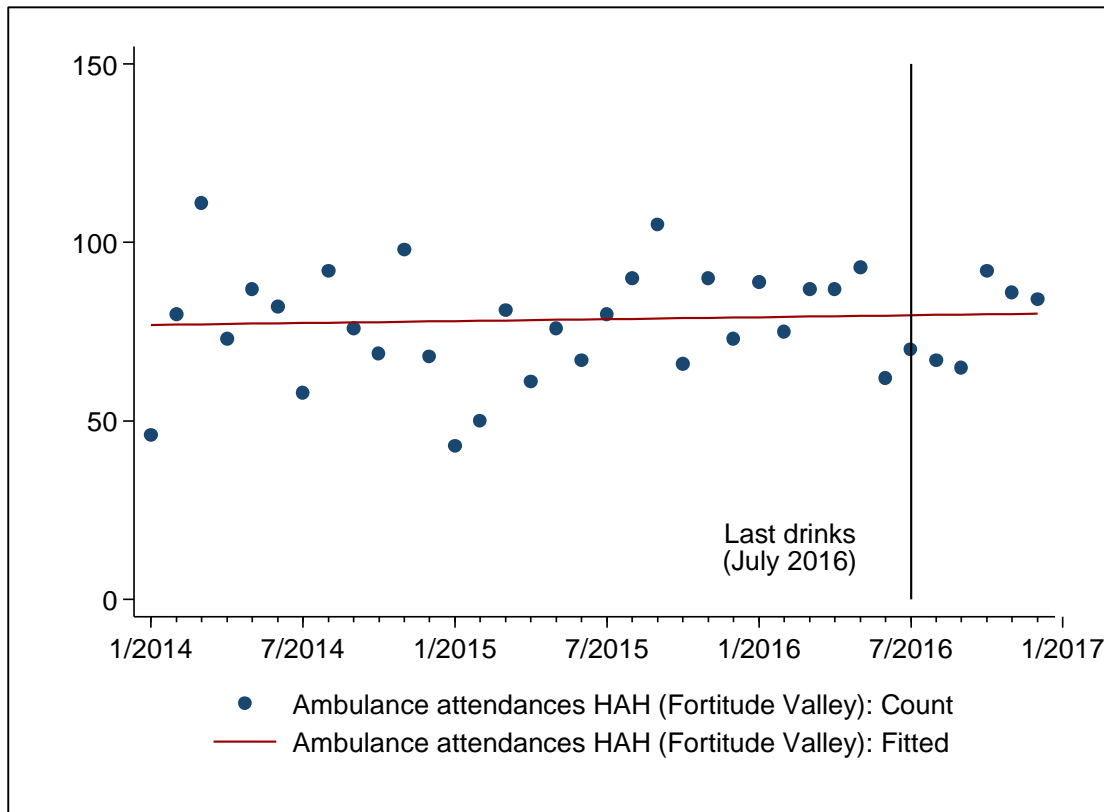
Figure 18 demonstrates the monthly percentage change (MPC) in counts of ambulance attendances between 03:00 and 06:00 on Saturday and Sunday outside Queensland SNPs between January 2014 and December 2016. The average monthly count of ambulance attendances outside SNPs between 03:00 and 06:00 on Saturday and Sunday over the three year period was 925.22 (SD 92.28). The monthly count of ambulance attendances outside SNPs between 03:00 and 06:00 on Saturday and Sunday ranged from 766 in January 2014 to 1113 in August 2015. As depicted in Figure 18, there was evidence of an upward trend in monthly counts of ambulance attendances outside SNPs between 03:00 and 06:00 on Saturday and Sunday across the data series. Average monthly percentage change in

ambulance attendances outside SNPs between 03:00 and 06:00 on Saturday and Sunday was 0.27% per month (0.10 % to 0.44%, $p < 0.01$) between January 2014 and December 2016. Table 20 presents the results of the joinpoint analysis for ambulance attendances outside SNPs between 03:00 and 06:00 on Saturday and Sunday.

Table 20: Average monthly percentage change in ambulance attendances 03:00 and 06:00 Sat/Sun (Rest of Queensland): January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	0.27%	(0.10%, 0.44%)	<0.01

Figure 19: Ambulance attendances HAH (Fortitude Valley): January 2014-December 2016



Key Points:

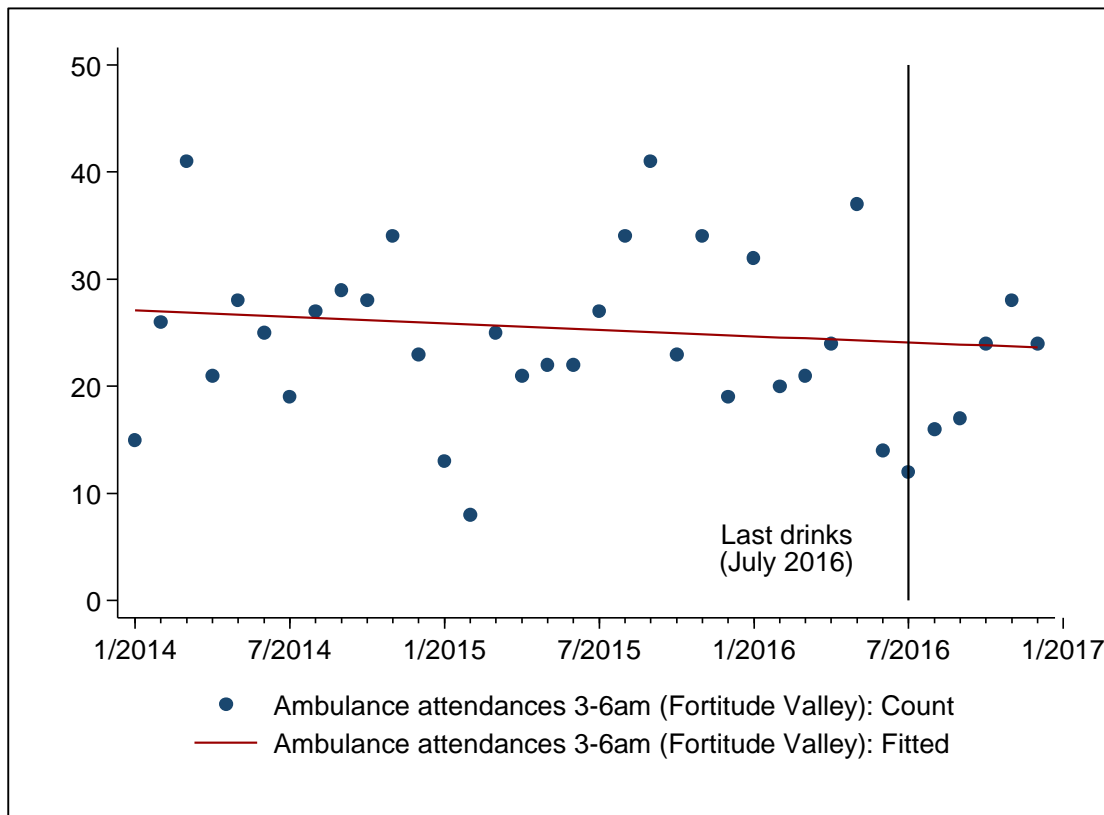
- Post- 1st July: continuation of a stable, flat trend in ambulance attendances in the Fortitude Valley in HAH. This trend reflects a stable trend in events across the data series.
- Overall: the trend in monthly counts of ambulance attendances in the Fortitude Valley in HAH remained stable and flat between January 2014 and December 2016.

Figure 19 demonstrates the monthly percentage change (MPC) in counts of ambulance attendances during HAH in the Fortitude Valley between January 2014 and December 2016. The average monthly count of ambulance attendances during HAH in the Fortitude Valley over the three year period was 77.19 (SD 15.53). The monthly count of ambulance attendances in the Fortitude Valley during HAH ranged from 43 in January 2015 to 111 in March 2014. As depicted in Figure 19, the trend in monthly counts of ambulance attendances in the Fortitude Valley in HAH remained stable and flat across the data series. Average monthly percentage change in ambulance attendances in the Fortitude Valley during HAH was 0.12% per month (-0.45 % to 0.68%, p=0.68) between January 2014 and December 2016. Table 21 presents the results of the joinpoint analysis for ambulance attendances in the Fortitude Valley during HAH.

Table 21: Average monthly percentage change in ambulance attendances HAH (Fortitude Valley): January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	0.12%	(-0.45%, 0.68%)	0.68

Figure 20: Ambulance attendances 03:00 and 06:00 Saturday and Sunday (Fortitude Valley): January 2014-December 2016



Key Points:

- Post- 1st July: continuation of a stable, flat trend in ambulance attendances in the Fortitude Valley between 03:00 and 06:00 Saturday and Sunday. This trend reflects a stable trend in events across the data series.
- Overall: the trend in monthly counts of ambulance attendances in the Fortitude Valley between 03:00 and 06:00 Saturday and Sunday remained stable and flat between January 2014 and December 2016.

Figure 20 demonstrates the monthly percentage change (MPC) in counts of ambulance attendances between 03:00 and 06:00 on Saturday and Sunday in the Fortitude Valley between January 2014 and December 2016. The average monthly count of ambulance attendances during between 03:00 and 06:00 on Saturday and Sunday in the Fortitude Valley over the three year period was 24.28 (SD 7.79). The monthly count of ambulance attendances in the Fortitude Valley between 03:00 and 06:00 on Saturday and Sunday ranged from 2 in January 2015 to 41 in March 2014 and September 2015. As depicted in Figure 20, the trend in monthly counts of ambulance attendances between 03:00 and 06:00 on Saturday and Sunday in the Fortitude Valley remained stable across the data series. Average monthly

percentage change in ambulance attendances between 03:00 and 06:00 on Saturday and Sunday in the Fortitude Valley was -0.39% per month (-1.32% to 0.54%, $p=0.40$) between January 2014 and December 2016. Table 22 presents the results of the joinpoint analysis for ambulance attendances between 03:00 and 06:00 on Saturday and Sunday in the Fortitude Valley.

Table 22: Average monthly percentage change in ambulance attendances 03:00 and 06:00 Saturday and Sunday (Fortitude Valley): January 2014-December 2016

	MPC	95% CI	P-value
January 2014-December 2016	-0.39%	(-1.32 %, 0.54%)	0.40

8 OLGR Data

Table 23: Approved extended trading permits July 2016-December 2016 5am close

	Fortitude Valley SNP	All QLD SNPs	All QLD
July 2/3	9	24	24
Jul 9/10	5	21	22
Jul 16/17	7	9	11
Jul 23/24	5	15	16
Jul 30/31	11	20	20
Aug 6/7	10	19	22
Aug 13/14	8	21	29
Aug 20/21	9	22	25
Aug 27/28	11	25	28
Sep 3/4	5	10	13
Sep 10/11	8	29	30
Sep 17/18	6	17	21
Sep 24/25	14	32	33
Oct 1/2	15	45	49
Oct 8/9	5	15	17
Oct 15/16	9	20	22
Oct 22/23	10	31	33
Oct 29/30	16	44	49
Nov 5/6	3	17	19
Nov 12/13	11	23	26
Nov 19/20	11	33	37
Nov 26/27	13	40	43

Dec 3/4	13	52	55
Dec 10/11	17	57	60
Dec 17/18	23	70	76
Dec 24/25	9	63	69
Jan 3/4	17	70	82

9 Lock Out Laws Summary

The lockout (or one-way door) refers to an intervention that requires licenced venues to refuse entry or re-entry to patrons after a designated time, prior to the end of trading hours. The aim of the intervention is to reduce alcohol-related violence by impeding late-night movement between venues (de Andrade et al., 2016). Lockouts have been implemented in Australia, Scotland and New Zealand. In Australia, variants of lockouts are currently in effect in all jurisdictions except Tasmania (Trifonoff et al., 2011). Core differences which are important to consider are the time of night the lockout is in place (i.e. 1.30am or 3am), whether the lockout is stand-alone or part of wider restrictions (especially last drinks regulations) and whether the lockouts are precinct-wide or whether they are targeted at specific venues (such as the NSW violent venues scheme).

9.1 History of the lockout in Queensland

In Queensland, the first trial of the lockout occurred in 2004 when a mandatory 3am lockout was introduced in Surfers Paradise. The 3am lockout was rolled out across Queensland starting in 2005.

9.2 Evidence

As lockouts tend to be implemented simultaneously with other strategies, as part of multi-pronged approaches to curbing alcohol-related violence, evaluating their effectiveness as a stand-alone measure can be difficult. Three evaluations of lockouts as stand-alone strategies to curb alcohol-related violence come from Surfers Paradise (de Andrade et al., 2016), Ballarat (Miller et al., 2012) and Newcastle (Kypri et al., 2014).

A comprehensive evaluation of the 2004 trial of the lockout in Surfers Paradise, Queensland found no evidence to suggest that the lockout introduction had a significant effect on crime, violence, injury or levels of intoxication (de Andrade et al., 2016). This study examined both police and ambulance data and followed a rigorous design to examine both temporal and spatial patterns of alcohol related events (de Andrade et al., 2016). The research findings, that lockouts had no effect on crime or alcohol-related injuries, resonate with those of two other studies that examined the effectiveness of the lockout as a stand-alone intervention. Evaluations of the lockout in Ballarat and Newcastle found that the

intervention had no effect on emergency department attendances for alcohol-related injuries and alcohol-related assaults respectively (Miller et al., 2012; Kypri et al., 2014).

Other studies have reported positive outcomes related to lockouts. An evaluation of the Surfers Paradise lockouts in 2004 by Palk and colleagues (2010) found post-lockout reductions in sexual assaults and street disturbances, however, there was no changes in assaults, property damages or stealing. Further, as this evaluation focused on a very short time period of 5 weeks post-lockout, conclusions are speculative at best. In another example, evaluation of a temporary 2am lockout in Melbourne in 2008 indicated decreases in assaults following the introduction of the lockouts (KPMG, 2008). Again, these results must be considered with caution given that 25% of licensed venues in the lockout zone were exempt from the lockouts and the evaluation relied on emergency department presentations of all alcohol-related incidents (not just injuries) at an aggregate level including areas outside the lockout zone (Miller et al., 2015).

The most recent and relevant evaluations of lockouts have both come from Newcastle in New South Wales. Using qualitative data, Miller et al (Miller et al., 2015) found that lockouts can impact negatively on smaller bars and those that trade earlier, because patrons chose to go to venues offering the most options for entertainment and socialising.

The most important finding regarding the impact of one-way doors comes from the comparison between Newcastle city centre and the neighbouring nightlife precinct of Hamilton conducted by Kypri, McElduff and Miller (2016). The Newcastle strategy was a multipronged approach. While Newcastle had mandatory restrictions that included a lockout, it also had a 3am cessation of alcohol service. On the other hand, Hamilton district had adopted all of the Newcastle conditions except 3am cessation of alcohol service, but it did have the lockout. While there was substantial reduction in assaults in Newcastle, there was no discernible change in assault levels in Hamilton, suggesting the 3am cessation of alcohol service was the active element of the Newcastle measures, rather than the lockout. However, it was also noted that the lockout in Newcastle may have impacted on pre-drinking levels (Miller et al., 2016) although further evidence is required.

Despite its popularity in entertainment districts across Australia, current empirical evidence surrounding stand-alone lockouts (i.e, no entry or re-entry into a premise after a particular time) is weak or non-existent with regards to reducing alcohol fuelled violence. Only a few studies have looked at the impact of the lockout as a part of a multi-pronged approach, as

in Newcastle and Sydney and have shown little discernible impact on assaults; but have been found to at least stop pre-drinking at the prescribed hour. However, it is unclear whether this has benefits in its own right and other negative consequences (such as impacting small venues and earlier traders) have been noted (Miller et al., 2015).

Alternatively, restricting (opening) hours for venues demonstrates compelling empirical support for reducing alcohol-related harm (Chikritzhs et al., 2002; Chikritzhs et al., 2005; Chikritzhs et al., 2006; Chikritzhs et al., 2007; Nelson et al., 2010). Australian research has demonstrated overwhelmingly that last drinks at 3am or earlier is by far the most effective measure implemented. In the case of multi-pronged approaches, research has shown that it is trading hours restrictions that are impactful, not the lockout or other measures (Miller et al., 2015).

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11 Appendices

Appendix 1

Joinpoint Regression (Statistical Research and Applications Branch, 2013) is used to evaluate and quantify any significant deviations in trends over time. When using time series data the assumptions of linear regression are typically violated. For example, it is often the case that the assumption of homoscedasticity is invalid as the variance of the outcome changes with time and potentially other variables in the model (i.e., heteroscedastic). As such we have modelled the data using weighted least squares to account for any heteroscedasticity. Finally, as it is well known that data in a time series are often correlated (or dependent) with each other from one or more time points to the next we account for serial auto-correlation in the error terms associated with the outcome variable.

Using Joinpoint Regression avoids the need to arbitrarily select a base for estimating the direction and magnitude of slopes within a data series. The software uses statistical criteria to determine when and how often a change in the count of events (or slope) occurs across a series by fitting counts using joined log-linear segments. Commencing January 2014, monthly aggregate data is used which consists of 36 data points. All zero values are replaced with 0.05 as non-zero values are required. The model is specified to test with a maximum number of four joinpoints. Based on the number of estimated line segments drawn from the analysis, each segment of the series is characterised by an average monthly percentage change (Kim et al., 2000) and the associated 95 per cent confidence interval is indicative of the adequacy of the final model and the degree of random variation inherent in the underlying count data. P-values are presented to indicate if the monthly percentage change in each segment is significantly different from zero (e.g., $p < 0.05$). Furthermore, when comparing the slope of the alcohol and non-alcohol related offences within and outside SNPs, having an alpha level for significance at $\alpha = 0.05$ may be misleading due to multiple testing. Rather than performing Bonferroni statistical correction to account for family-wise error, we have retained an $\alpha = 0.05$ to test for statistical difference between the slopes but have also presented the p-values for readers to have a more refined interpretation. The model uses a Monte Carlo Permutation method to test if an apparent change in trend is statistically significant. A re-sampling method of 5,000 iterations is

specified. For further information the reader is encouraged to visit www-surveillance.cancer.gov/joinpoint.

Appendix 2: Assault Classifications

QPRIME contains items to indicate the nature of assault. There are 10 assault classifications:

- Assault occasioning grievous bodily harm
- Assault occasioning wounding
- Assault occasioning bodily harm
- Assault; serious (other)
- Assault; police (PPRA)
- Assault; minor (not elsewhere classified)
- Assault; Common
- Assault; aggravated (Non-sexual)
- Assault (Comm By-Law)
- Driving causing grievous bodily harm (0212) data not included in 'Assaults by Substance'.

For the purpose of this report the first nine classifications are combined to reflect all assaults.

Appendix 3: EDI ICD Injury Diagnosis Codes

Table 24: EDI ICD Diagnosis Codes: Injuries

S00-S09	Injuries to the head
S10-S19	Injuries to the neck
S20-S29	Injuries to the thorax
S30-S39	Injuries to the abdomen, lower back, lumbar spine and pelvis
S40-S49	Injuries to the shoulder and upper arm
S50-S59	Injuries to the elbow and forearm
S60-S69	Injuries to the wrist and hand
S70-S79	Injuries to the hip and thigh
S80-S89	Injuries to the knee and lower leg
S90-S99	Injuries to the ankle and foot
T00-T07	Injuries involving multiple body regions
T08-T14	Injuries to unspecified part of trunk, limb or body region
T15-T19	Effects of foreign body entering through natural orifice
T20-T32	Burns and corrosions
T33-T35	Frostbite
T36-T50	Poisoning by drugs, medicaments and biological substances Toxic
T51-T65	Effects of substances chiefly nonmedicinal as to source
T66-T75	Other and unspecified effects of external causes (T78 Excluded)
T79-T79	Certain Early complications of trauma

Queensland Health. (2013). Queensland Alcohol related presentation to the Emergency Department. Statistics provided to FARE by QLD Health.

Appendix 4. Suburbs included in SNP classification in QAS Data

SNP	Suburb inclusions
Airlie Beach	Airlie Beach
Brisbane City	Brisbane Brisbane City
Broadbeach	Broadbeach
Bundaberg	Bundaberg Bundaberg Central
Cairns	Cairns Cairns City Cairns Central
Fortitude Valley	Fortitude Valley
Gladstone	Gladstone Gladstone Central Gladstone City
Inner West Brisbane	NB. This SNP is encapsulated in Brisbane City
Ipswich CBD	Ipswich
Mackay CBD	Mackay
Sunshine Coast	Caloundra Maroochydore Mooloolaba
Rockhampton	Rockhampton

	Rockhampton City
Surfers Paradise	Surfers Paradise
Toowoomba	Toowoomba Toowoomba City
Townsville	Townsville Townsville City