

Investigating the introduction of the alcohol minimum unit price in the Northern Territory

FINAL REPORT

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Dr Kerri Coomber

Prof Peter Miller

Mr Nicholas Taylor

Dr Michael Livingston

Prof James Smith

A/Prof Penny Buykx

Dr Robyn Clifford

Dr Debbie Scott

Ms Sarah Clifford

Prof Tanya Chikritzhs

Dr Dhanya Nambiar

Dr Foruhar Moayeri

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LIST OF TERMS AND ACRONYMS USED IN THE REPORT

Acronym	Definition
ABS	Australian Bureau of Statistics
AOD	Alcohol and other drugs
BDR	Banned Drinker Register
BRADAAG	Barkly Region Alcohol & Drug Abuse Advisory Group
CATI	Computer-assisted telephone interviewing
CI	Confidence interval
ED	Emergency department
FARE	Foundation for Alcohol Research and Education
ITS	Interrupted time series
MUP	Minimum Unit Price
NDSHS	National Drug Strategy Household Survey
NHMRC	National Health and Medical Research Council
NT	Northern Territory
PALIs	Police Auxiliary Liquor Inspectors
PI	Policy implementer
POSIs	Point of Sale Interventions
PPSD	Price per standard drink
QUANTEM	QUEensland Alcohol-related violence and Night Time Economy Monitoring
SP	Service provider
TF	Territory Families

1 EXECUTIVE SUMMARY

Alcohol has been ranked as the most harmful drug in Australia based on estimated costs individuals and the community. The burden of alcohol-related harm is the most pronounced in the Northern Territory, with consumption and subsequent harm occurring at rates higher than other states.

Recently, minimum unit price (MUP) of alcohol was recommended for the Northern Territory as part of a suite of interventions from the 2017 Alcohol Policy and Legislation Review (Riley, Angus, Stedman, & Matthews, 2017). On 1 October 2018 the MUP in the Northern Territory was set at \$1.30 per standard drink. The MUP was introduced as part of a suite of supply reduction interventions that also included a banned drinker register (BDR; introduced September 2017) and police auxiliary liquor inspectors (PALIs; initiated June 2018 in Alice Springs, Katherine, and Tennant Creek).

The goal of the MUP is to minimise the harms associated with high-alcohol, low-cost alcoholic beverages. Specific objectives of the initiative, as outlined in the Act, are to 1) Reduce harmful consumption¹ of alcoholic beverages; and 2) Have a minimal impact on moderate consumers.

1.1 TERRITORY WIDE

Our evaluation has found that introduction of the MUP legislation has been associated² with significant declines in:

- total alcohol wholesale supply per capita
- alcohol-related assault offences per 10,000 people
- protective custody episodes per 10,000 people
- alcohol-related ambulance attendances per 10,000 people
- alcohol-related emergency department (ED) presentations per 10,000 people
- Sobering Up Shelter admissions per 10,000 people³
- alcohol-related road traffic crashes (resulting in injury or fatality) per 10,000 people
- the number of child protection notifications, protection orders, and out-of-home care cases.

The introduction of the MUP legislation has been associated with no significant changes in:

- Number of liquor licences across the NT
- Tourism number and expenditure

¹ 'Harmful consumption' is a broad term that is intended to encompass many kinds of direct and indirect harms that flow to individuals and the Territory community as a result of alcohol consumption.

² Modelling was able to observe change in trends at and after October 2018. However, some changes coinciding with the introduction of MUP are continuations of trends to which the MUP has had an added effect, or coincided with other interventions that were implemented at a similar time meaning the independent impact of MUP was impossible to distinguish.

³ Excluding Darwin and Tennant Creek due to operational changes

1.2 DARWIN AND PALMERSTON

In the greater Darwin area, cask wine and cider wholesale supply per capita declined after the date of MUP introduction. Additionally, there were significant decreases in the rate of alcohol-related assault offences, protective custody episodes, and alcohol-related ambulance attendances. There was also evidence of some decline in the rate of alcohol-related hospital admissions. While there was an initial increase in the rate of other substance use hospital admissions, this was followed by a gradual decline. Lastly, there were significant slope decreases in the rate of assault-related hospital admissions and there was evidence of some decline in non-government organisation and government alcohol and other drug treatment episodes.

There was no discernible impact on the number and type of nightlife venues in Darwin, nor was there significant change to the volume of alcohol wholesale supply to nightlife venues in Darwin.

1.3 ALICE SPRINGS

In Alice Springs, there was a step decrease in overall wholesale supply per capita of alcohol. There were significant declines in the rate of police recorded alcohol-related assault offences, protective custody episodes, alcohol-related ambulance attendances, alcohol-related ED presentations, alcohol-related hospital admissions, and Sobering Up Shelter admissions.

1.4 KATHERINE

In Katherine, there was a significant decrease in the wholesale supply of cask wine and bottled wine per capita after the date of the MUP introduction and an increase in light beer. There were also declines in the rate of alcohol-related assault offences, ambulance attendances, and alcohol-related hospital admissions.

1.5 TENNANT CREEK

In Tennant Creek, there was a significant gradual increase in the supply of mid strength beer per capita. There was a decrease in the rate of alcohol-related ambulance attendances, and alcohol-related ED presentations.

1.6 CONCLUSIONS

The MUP has complemented the BDR and PALIs in the NT. These observational findings show that the introduction of the MUP coincided with significant reductions in harm in many communities adding to the impact of the existing supply reduction measures. These changes occurred in Darwin and the rest of the Northern Territory, suggesting that the MUP has potentially made a unique contribution to reduced harm above and beyond regionally-specific policies like PALIs. The MUP achieved the goal of specifically targeting cask wine in many towns, but moderate drinking patterns show no change. Business reported that implementation of the legislation was straightforward and that turnover, including tourism, has improved or remained stable. This preliminary assessment describes some promising changes, and some challenges, but these findings are early and longer term patterns will be more informative.

2 INTRODUCTION

Alcohol has been ranked as the most harmful drug in Australia based on estimated costs individuals and the community (Bonomo et al., 2019). The burden of alcohol-related harm is the most pronounced in the Northern Territory, with consumption and subsequent harm occurring at rates far exceeding other states and territories (Skov, Chikritzhs, Li, Pircher, & Whetton, 2010). The social cost of alcohol consumption in the NT is estimated to be \$1.38 billion per year (Smith, Whetton, & d'Abbs, 2019).

In Australia the distribution of alcohol consumption is skewed toward heavy drinkers, with the top 10% of Australia's heaviest drinkers responsible for over half of all alcohol consumed across the population (Livingston & Callinan, 2019). Similarly, much of the alcohol-related harm in Australia comes from the heaviest subset of drinkers, with increasing numbers of heavy alcohol consumers resulting in increased cost of alcohol-related harm, despite no population level increase in per capita consumption (Ogeil, Gao, Rehm, Gmel, & Lloyd, 2016). These heavy drinkers are more likely to purchase cheaper alcohol than other drinkers, indicating interventions targeted at alcohol pricing may be effective at reducing total consumption, and therefore alcohol-related harm, in this group (Livingston & Callinan, 2019).

A minimum unit price (MUP) for alcohol is considered to be an efficient, and cost-effective approach to reducing overall alcohol consumption and related harms (Miller, Curtis, Chikritzhs, & Toumbourou, 2015). A MUP sets a minimum price per standard drink for all alcohol-based products. Minimum unit pricing interventions have low implementation costs and international literature provides a strong empirical evidence base for the effectiveness of these interventions (Miller et al., 2015). An epidemiological model from the United Kingdom predicted that a higher MUP for alcohol (1 unit = 8g of ethanol) would result in lower consumption. For example, MUPs of £0.50 and £0.70 have been associated 6% and 19% estimated reductions in consumption, respectively (Purshouse, Meier, Brennan, Taylor, & Rafia, 2010) and a 1.8% and 6.8% reduction, respectively (Angus, Holmes, Pryce, Meier, & Brennan, 2016a). Similarly, Meier et al. (2008) found a linear relationship between increasing MUP by 5p increments spanning from 20p to 70p and decreasing alcohol consumption. The review found that this strategy was most successful when applied to all alcohol products rather than targeted at certain types. More recent epidemiological modelling studies for the UK by Meier et al. (Meier et al., 2016) found that a £0.45 and £0.50 MUP would have a minimal effect on moderate consumers of alcohol, including those of on low incomes. On average, drinking levels would be reduced for harmful drinkers at all income levels, with low income harmful consumers experiencing the largest reduction in consumption, and in turn the largest health benefits. This suggests that MUP policies could contribute to the reduction of health inequalities (Holmes et al., 2014; Meier et al., 2016). Similar conclusions were drawn from a Scottish adaption of the UK model that examined potential benefits of a £0.50 MUP (Angus, Holmes, Pryce, Meier, & Brennan, 2016b).

Evidence from implementation studies in Canada has shown that following adjustments to minimum alcohol prices in British Columbia over the past 20 years, consumption reduced significantly across affected beverage types (Stockwell, Auld, Zhao, & Martin, 2012). From 2002 to 2009, a 10% increase in average minimum price in British Columbia for all liquor was associated with a 32% decrease in wholly alcohol attributable deaths per 100,000 people (Zhao et al., 2013). Stockwell and colleagues (2012) also reported that a 10% increase in minimum prices reduced consumption of spirits and liqueurs by 6.8%, wine by 8.9%, alcoholic sodas and ciders by 13.9%, beer by 1.5% and all alcoholic drinks by 3.4%.

Recently, MUP was recommended for the Northern Territory as part of a suite of interventions from the. On 22 August 2018, amendments to the Northern Territory *Liquor Act 1978* (the Act)⁴ were passed in the Northern Territory (NT) Legislative Assembly, introducing a MUP. On 1 October 2018 the MUP was set at \$1.30 per standard drink contained in the alcohol product, where the meaning of ‘a standard drink is the volume of a liquor product that contains 10 g of ethyl alcohol when measured at 20°C’. The legislative amendment prohibits selling alcohol below the price of \$1.30 per standard drink (as compared to the \$1.50 recommended by the Riley Review (Riley et al., 2017)), and imposes the minimum price as an automatic condition of a liquor licence. The MUP was introduced as part of a suite of supply reduction interventions that also included a Banned Drinker Register (BDR; introduced September 2017) and Police Auxiliary Liquor Inspectors (PALIs; initiated June 2018 in Alice Springs, Katherine, and Tennant Creek).

The goal of the MUP is to minimise the harms associated with high-alcohol, low-cost alcoholic beverages. Specific objectives of the initiative, as outlined in the Act, are to:

- a) Reduce harmful consumption of alcoholic beverages; and
- b) Have a minimal impact on moderate consumers.

‘Harmful consumption’ is a broad term that is intended to encompass many kinds of direct and indirect harms that flow to individuals and the Territory community as a result of alcohol consumption.

2.1 THE CURRENT STUDY

This project examines the initial effects of the introduction of the MUP on alcohol consumption rates, alcohol-related harm, and other indicators in the NT. It must be noted that it will be difficult to attribute any reductions in alcohol-related harm to any one individual policy initiative (i.e., MUP, BDR, PALIs), given the number of initiatives enacted in a relatively short time. Insofar as possible, however, this project will seek to determine the extent to which the minimum unit price has contributed to any observed short-term reductions in harms and consumption, while acknowledging the contribution of other

⁴ Now superseded by the Northern Territory Liquor Act 2019

measures across the NT. The project examines the impact of the MUP on particular groups of drinkers (e.g., risky drinkers as opposed to low-risk drinkers).

This study includes multiple data collection components and analysis of administrative data sources. Specifically, this mixed methods cross-sectional study data from five key sources:

1. Administrative data (e.g., health, police, treatment, and liquor licensing)
2. Population telephone survey
3. Key informant interviews
4. Price monitoring
5. Monitoring sales of substitution commodities

2.1.1 PROJECT OBJECTIVES

The study has the following objectives:

1. To examine the extent to which MUP is achieving its objectives in the short-term, defined as;
 - a. Reduce harmful consumption of alcoholic beverages; and
 - b. Have a minimal impact on moderate consumers.
2. To examine the extent to which MUP may reduce negative outcomes associated with alcohol consumption.
3. To the extent that it is possible, identify the unique contribution of the MUP to the achievement of the intended outcomes. Alternatively, identify which initiatives in combination with the MUP can be credited with achieving improvements.

2.1.1.1 STUDY AREAS

The current project was undertaken across the Northern Territory, Australia. Results are presented for five geographic areas, where there is sufficient reportable data. The five study areas are composed of one or more regions defined by the Australian Bureau of Statistics (ABS) as a ‘Statistical Area 2’ (SA2; Australian Bureau of Statistics, 2010). The SA2s in each study area are based on that used for NT police statistics. Each of the study areas, their 2018 estimated total residential population and the SA2s which they contain are shown in Table 1.

Table 1 Study area, SA2, and population

Study Area	Statistical Area 2	Total population 2018
Darwin and Palmerston	All Darwin City, Darwin Suburbs, and Palmerston SA2s	123,344
Alice Springs	Charles, East Side, Flynn, Larapinta, Mount Johns, Ross	26,534
Katherine	Katherine	10,718

Tennant Creek	Tennant Creek	3,252
Rest of NT	Alligator, Anindilyakwa, Barkly, Daly, East Arnhem, Elsey, Gulf, Howard Springs, Humpty Doo, Koolpinyah, Nhulunbuy, Petermann – Simpson, Sandover – Plenty, Tanami, Thamarrur, Tiwi Islands, Victoria River, Virginia, Weddell, West Arnhem, Yuendumu - Anmatjere	83,479

Note. Population estimates obtained through <http://stat.data.abs.gov.au/>

2.1.2 DEFINING ‘MODERATE’ DRINKING

The amendments to the Act proposed that as a part of the three year review, the Minister should take into account whether “the minimum pricing regime should result in minimal impact on moderate consumers”. However, ‘moderate’ drinking is not subsequently defined and the terms is highly subjective for most individuals and most contexts. According to the "Dietary Guidelines for Americans 2015-2020," U.S. Department of Health and Human Services and U.S. Department of Agriculture (<http://health.gov/dietaryguidelines/2015/guidelines/appendix-9/>), ‘moderate’ drinking is up to one drink per day for women and up to two drinks per day for men. The Substance Abuse and Mental Health Services Administration, which conducts the annual National Survey on Drug Use and Health, defines binge drinking as five or more alcoholic drinks for males or four or more alcoholic drinks for females on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least one day in the past month (<https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking>). In Australia, the relevant guidelines come from the National health and Medical Research Council (NHMRC) whose current guidelines were developed in 2009 and are currently under review (<https://www.nhmrc.gov.au/health-advice/alcohol>). However, these guidelines do not refer to ‘moderate’, but rather work on the quantitatively precise terminology of ‘low risk’. These guidelines state:

Guideline 1: Reducing the risk of alcohol-related harm over a lifetime

For healthy men and women, drinking no more than two standard drinks on any day reduces the lifetime risk of harm from alcohol-related disease or injury.

Guideline 2: Reducing the risk of injury on a single occasion of drinking

On a single occasion of drinking, the risk of alcohol-related injury increases with the amount consumed.

For healthy men and women, drinking no more than four standard drinks on a single occasion reduces the risk of alcohol-related injury arising from that occasion.

For the sake of alignment with other relevant research and future assessment, this report will define ‘moderate’ drinking as being in line with NHMRC guidelines.

2.2 LOGIC MODEL

The co-occurrence of the minimum floor price with other policy initiatives aimed at reducing alcohol consumption and harms, such as the BDR, PALIs, and other measures, means that some of the most harmful drinkers may be impacted by several initiatives. This makes assessing the specific effects of any particular policy challenging. The policies may have synergistic effects not only in relation to immediate harms, but also in the longer term, for example in preventing future harmful drinking trajectories. In an effort to address this complexity, the relative timing and location of the various policies will be taken into account, along with the key target groups for each policy.

As per the policy objective a), the MUP aims to ‘reduce harmful consumption of alcoholic beverages.’ Unlike the BDR, this initiative primarily targets people who have not come into contact with the health or justice systems (although it will also act on those who have recently come off the BDR). Based on proposed mechanisms of action from the Riley review (Riley, 2017), a logic model has been proposed. As shown in the logic model below (see Table 2), it is anticipated that the MUP will affect heavy and risky drinker’s short-term and long-term wellbeing and consumption, as well as potentially reducing the amount of alcohol purchased by people supplying alcohol to people on the BDR. It is generally proposed that the MUP will have an added benefit to the heaviest drinkers and generally impact on risky and heavy drinkers. It is proposed that ‘harmful’ consumption is consumption that puts people at risk of harm, and that reductions in risky drinking will represent a major preventative health success. It will further benefit harmful drinkers and have important implications for intergenerational transfer of alcohol-related harm. It is proposed that the MUP will have the most impact in larger population centres where alcohol was previously being sold very cheaply such as in Darwin.

Table 2 Logic model of new alcohol supply reduction policy interventions and their potential impact

Intervention (location)	Date introduced	Drinker Group	Drinker group impacted by policy?	Expected impact
Banned Drinker Register (NT-wide)	1 October 2017	Harmful ^a	✓	Reduced access to alcohol and related harm
		Heavy ^b	✓	Strong normative messaging
		Risky ^c	✓	Strong normative messaging
		Low-risk ^d	✓	No direct impact
		Secondary suppliers ^e	✓	Makes it more difficult to supply harmful drinkers
PALIs (excluding Darwin)	Varied	Harmful	✓	Reduced access to alcohol and related harm
		Heavy	✓	Strong normative messaging
		Risky	✓	Strong normative messaging
		Low-risk	✓	Strong normative messaging
		Secondary suppliers	✓	Makes it more difficult to supply harmful drinkers
Minimum Unit Price (NT-wide)	1 October 2018	Harmful (restricted budget)	✓	Reduced access to alcohol and related harm Reduced access to alcohol via secondary supply.

		Heavy (restricted budget)	✓	Reduced access to alcohol and related harm
		Risky (restricted budget)	✓	Reduced access to alcohol and related harm
		Low-risk	X	No direct impact
		Secondary suppliers	✓	Reduced access to alcohol via price

Note. *a* experience and/or cause substantial harm related to liquor consumption

b consuming more than double the NHMRC guidelines for alcohol consumption

c Risky (long term): more than 2 drinks per day on a regular basis, Risky (acute): more than 4 drinks on a single occasion

d <2 drinks per day and infrequent/no 5+ occasions

e Secondary suppliers of alcohol (purchasing for people on the BDR)

3 METHODS

3.1 ADMINISTRATIVE DATA

Administrative data from eight agencies were used to track the potential impact of the MUP on alcohol consumption and related harms (see Table 3). De-identified monthly aggregate data were analysed from January 2013 (where available) to the latest available. This start date was chosen to exclude a previous version of the BDR in place during 2011-12.

Table 3 Administrative data sources

Agency	Datasets
Licensing Northern Territory	Licensing and wholesale alcohol supply
Northern Territory Police and the Department of the Attorney-General and Justice	Police recorded alcohol-related assault offences, homicides, and protective custody episodes
St John Ambulance	Alcohol-related ambulance attendances
NT Department of Health	Emergency department presentations, hospital admissions, sobering up shelter admissions, and treatment centre episodes
Territory Families	Child protection (investigations of notifications, protection orders, out of home care)
NT Department of Infrastructure, Planning and Logistics	Alcohol-related road traffic crashes
NT Department of Education	School attendance data
NT Department of Tourism and Culture	Tourism (number of visitors and expenditure)

3.1.1 WHOLESALE ALCOHOL SUPPLY

Quarterly wholesale alcohol supply data were obtained for Quarter 1 2013 to Quarter 3 2019. Wholesale supply of litres of pure alcohol content to each licensed business were provided for cask wine, bottle wine, fortified wine, cider, standard spirits, mixed spirits, full-strength beer, mid-strength beer, and low-strength beer. Per-capita alcohol supply by each beverage type and overall were calculated based on

regional population estimates. These data represent wholesale supply only and do not represent the amount of alcohol sold by individual licensees.

3.1.2 POLICE DATA

3.1.2.1 ALCOHOL-RELATED ASSAULT OFFENCES

Three data files on police recorded alcohol-related assault (as recorded by the officer at the time of incident and includes alcohol consumption by offender and/or victim) offences were provided: offences data, offenders data, and victims data. Offences data were examined for the period 1 January 2013 to 30 September 2019 and offenders' and victims' data from 1 October 2013 to 30 September 2019. Count of assault offences consisted of the aggregate of three classes of assault: common assault, serious assault not involving injury, and serious assault involving injury. Offences data contained information on the number of alcohol-related assault offences each month, location, and which party alcohol involvement was associated with (e.g. perpetrator, victim, or both; this is recorded by the officer/s at the scene). The offenders and victims data included the number of offenders/victims per month, demographics (e.g., age, gender), and location. Victims are recorded against the most serious type of assault in an incident, and there may be more victims than offences, or more offences than victims, depending on the circumstances of the incident. Offender data consists of those who have been found and charged with offences; this information is drawn from courts data. Typically, there are fewer offenders than offences/victims.

3.1.2.2 ALCOHOL-RELATED PROTECTIVE CUSTODY EPISODES

The number of alcohol-related protective custody episodes per month were examined from 1 October 2015 to 30 September 2019. Protective custody consists of instances where people appear to be intoxicated to the point of not being able to adequately care for themselves and who may cause harm to themselves or to someone else, cause distress to the general public, or have committed an offence. Data were obtained by location. It must be noted that the data represents episodes, and one person could have multiple episodes per month.

3.1.2.3 HOMICIDE

The number of police recorded homicide offences for the whole of the NT were obtained from 1 October 2013 to 30 September 2019. These data included incidents of attempted murder, murder, manslaughter, and driving causing death. It must be noted that these data represent total homicides (not just those that were alcohol-related) and each offence could have more than one victim and/or offender.

3.1.3 AMBULANCE ATTENDANCES

Ambulance attendance data were examined from 1 January 2016 to 30 September 2019. The key variables included: attendance date and time, location, patient age, gender, and ethnicity, and detailed

case descriptions (within provisional diagnosis and chief complaint). In order to extract alcohol-related attendances, the following terms were used to select relevant attendances based on the case notes: alcohol, ETOH, drinking, drunk, intoxicated, intoxication, alcohol beverages found, patient admits to alcohol use, and alcohol use reported by other. Extracted cases were then manually checked to ensure where these terms occurred in the case notes it was due to the presence of alcohol, rather than noting an absence of alcohol use (e.g., ‘nil alcohol’; ‘denies ETOH’). Examples of the types of cases included are: injuries as a consequence of assault; falls due to intoxication; threats of self-harm; unconscious state; nausea and/or vomiting; abdominal pain; and, seizure or seizure like activity. There was a reporting system change in April 2019, however, the data have been deemed comparable with the previous system.

3.1.4 EMERGENCY DEPARTMENT PRESENTATIONS AND HOSPITAL ADMISSIONS

Emergency department (ED) and hospital admissions unit records were obtained for the period 1 January 2013 to 31 July 2019. Key outcome variables included: diagnosis; patient age and gender; time/date of presentation; and, SA2 of patient residence. All cases where an ICD-10 code of F10-F19 (alcohol and other substance use); S or T (injuries); W00-X59 (other causes of injury and poisoning); and/or, X60-Y09 (self-harm and assault) were recorded were used in the current study.

Table 4 provides the ICD-10 codes examined for this project. These choice of codes was informed by Department of Health advice and prior work by the team. There was very limited use of assault and toxic effect of alcohol ICD-10 codes within the ED data, therefore to avoid small cell counts, these were not included in analyses.

On 27 August 2018 Palmerston Regional Hospital ED opened; this may increase the number of ED presentations in the Darwin and Palmerston areas

Table 4 ICD-10 codes used for ED presentations and hospital admissions data analysis

ICD-10 code	Description	ED data	Admissions data
F10	Mental and behavioural disorders due to use of alcohol	✓	✓
F11-F19	Other substances use codes	✓	✓
S02	Fracture of skull and facial bones	✓	✓
S52	Fracture of forearm	✓	✓
T51	Toxic effect of alcohol	✗	✓
T74	Maltreatment syndromes (neglect or abandonment; physical abuse; sexual abuse; psychological abuse; other; unspecified)	✓ ^a	✓
X85-Y09	Assault	✗	✓
X99	Assault by sharp object	✓	✓

Note. aT74.9 (abuse of adult not otherwise specified or child abuse not otherwise specified) was the only code used for all ED maltreatment syndrome presentations. This resulted in an age range of 0-95 years (M = 34; SD = 11).

3.1.5 SOBERING UP SHELTERS

Sobering Up Shelter data were obtained for the period 1 January 2013 to 30 September 2019. This data provides information on the number of people attending Sobering Up Shelters, including: region (Darwin, Alice Springs, Katherine, Tennant Creek, or Nhulunbuy), date and time of admission/discharge, demographic information (age, gender, ethnicity), brief intervention flag, and an anonymised client code to track repeat attendances.

Shelter data can act as either an indicator of change, or an explanation of other trends occurring. While changes in Shelter attendance might be related to alcohol availability, they provide insight into the background trends of help-seeking in a group of people who may not show up in different measures.

In November 2018, a number of initiatives were introduced regarding the Sobering Up Shelter in Darwin (e.g., 24-hour opening for the Darwin centre; and increased patrols by police; see <https://dcm.nt.gov.au/breaking-the-cycle/antisocial>), resulting in increased admissions to Sobering Up Shelters that are not attributable to MUP. As the introduction of these measures commenced only one month after the introduction of MUP, we are unable to differentiate between the impacts of MUP compared to these specific anti-social behaviour interventions. As such, we will not be conducting statistical analyses using Darwin data; the rate of Sobering Up Shelter admissions for Darwin are provided in Appendix 1.

Similarly, a suite of changes to the Tennant Creek Sobering Up Shelter were brought in by the new CEO of the Barkly Region Alcohol & Drug Abuse Advisory Group (BRADAAG). These included staff training, provision of hot cooked breakfast, one-on-one interactions with clients every morning, increased ease of referrals, collection and distribution of clothing, extended opening hours (from 8pm to 10pm), and improved safety measures around the Sobering Up Shelter. These changes, independently of any MUP effects, have resulted in an increase in admissions to the Sobering Up Shelter; primarily driven by self-referrals. We therefore do not present statistical analyses for Tennant Creek. Instead, count data are provided in Appendix 1.

3.1.6 TREATMENT CENTRES

Data on alcohol and other drug (AOD) treatment sessions for non-government organisations, government centres, and community centres were extracted from the Alcohol and other Drug Treatment Services National Minimum Dataset and covered the period 1 January 2013 to 30 September 2019. Data on substantive treatment (counselling, rehabilitation, or withdrawal management), agency region (Darwin, Alice Springs, Tennant Creek, Katherine, or East Arnhem), and demographics of the clients were obtained. For analyses, treatment data were combined into one category of substantive treatment. For a

more detailed analysis about the met/unmet needs of treatment services in the NT see (Stephens et al., 2019).

3.1.7 ROAD TRAFFIC CRASHES

Monthly total count of injuries and fatalities resulting from road crashes where alcohol was involved were obtained for the period 1 January 2013 to 30 June 2019. Alcohol-involvement is flagged where evidence indicates obvious alcohol impairment or where a blood alcohol concentration of or above 0.03% was recorded for the driver, rider, pedestrian or other person who caused or contributed to the accident. Information obtained included: date, gender and age of person involved, alcohol and drug involvement, and location of the crash. Data on number of crashes not involving an injury are yet to be validated for the previous three years, therefore, we were unable to include this data in the current report. For fatal crashes, all deceased road-users involved (driver, motorcyclist, bicyclist, or pedestrian) are tested for a toxicology report, with those surviving a fatal crash also tested (breath within 4 hours and blood within 12 hours of crash). For other crash types, driver, motorcyclist, bicyclist, and pedestrians involved in a crash are tested for a toxicology report.

3.1.8 CHILD PROTECTION

Monthly aggregate child protection data were obtained for the period July 2014 to 31 August 2019. This data consists of three categories of child protection responses: investigations of a notification; care and protection orders; and, out-of-home care. Data for out-of-home care consist of open cases each month, not necessarily 'active' cases; therefore, it may be that there are incidences of the same individuals being counted each month. Data were provided for the following three regions: Greater Darwin (Territory Families (TF) Casuarina, TF Palmerston, CAT – North, and TF Central Intake team Territory Families work units); Northern Region (TF Arafura, TF East Arnhem, and TF Big Rivers work units); and, Southern Region (TF Alice Springs and TF Barkly work units). The data is current as at 1 September 2019 and may differ to data provided previously for these indicators in other publications.

3.1.9 PRICE MONITORING

Price monitoring data were drawn from a previous report compiled for the Foundation for Alcohol Research and Education (FARE; Mojica-Perez, Jiang, & Livingston, in press). Online catalogues were used collate alcohol prices for the two biggest off-premise alcohol retailers in the NT: Liquorland and BWS (Beer, Wine and Spirits), owned by the Coles and Woolworths chains, respectively. Off-premise alcohol price and product information (e.g., name, alcohol content, volume) were collected for six different alcohol beverage types (beer, bottled wine, cask wine, spirits, cider, and pre-mix). There were 2,054 alcoholic beverages included in the analysis (979 from Liquorland and 1,075 from BWS) from two

months (July and September 2018) prior to the introduction of minimum pricing in NT and data for three months after (October, November, and December 2018). While there is likely some overlap in the alcoholic beverages included from each outlet (i.e., the beverage counts do not represent independent types), the pricing decisions for each beverage are made independently between different chains. Each beverage price was converted into a price per standard drink (PPSD), as this is the basis on which the MUP policy is set. Products were grouped into three different categories based on their July PPSD: \$0.00-\$1.30 (low), \$1.31-\$2.00 (medium), and \$2.01+ (high). This was used to assess how the policy change affected prices at different points in the price distribution.

3.1.1 LICENSING

The total number of liquor licenses across the NT were obtained for each financial year from 2013/14 to 2018/19. We also obtained the total number of new licences issues and the number of special liquor licences by financial year.

3.1.1 MONITORING SALES OF SUBSTITUTION COMMODITIES

The research team contacted three major retailers who sell substitution commodities (e.g., methylated spirits; hand sanitiser). We submitted formal requests for monthly sales data of products containing more than 3% alcohol, however, each retailer either did not reply in time or denied release of data.

3.1.2 SCHOOL ATTENDANCE DATA

School attendance for Northern Territory Government schools for each term by region was obtained for 2014 to Term 2 2019 (see <https://education.nt.gov.au/statistics-research-and-strategies/enrolment-and-attendance>). The attendance rate is the proportion of time students attend compared to the time they are expected to attend during the time period. Total attendance rates by term were examined. Attendance data for students were broken down by the following regions: Darwin, Palmerston and rural, Alice Springs, Arnhem, Barkly, and Katherine.

3.1.3 TOURISM

Data by financial year were obtained from NT Tourism for the years 2013/14 to 2018/19 for the following: number of international and domestic tourists by month, and tourism expenditure. Data were provided across six tourism regions of the NT: Darwin; Litchfield, Kakadu, and Arnhem; Katherine and Daly; Barkly; Alice Springs and MacDonnell; and, Lasseter. Data were not provided where survey sample sizes were smaller than 40.

3.2 POPULATION TELEPHONE SURVEY

3.2.1 SURVEY DEVELOPMENT

We developed a 45-item questionnaire to assess alcohol consumption, policy attitudes and experiences of alcohol-related harms. The aim was to produce comparable estimates to the 2016 National Drug Strategy Household Survey (NDSHS) in order to provide some points of comparison on key measures. The questionnaire was piloted with the general public by Roy Morgan on July 16 and 17, 2019, with minor adjustments to questions where necessary for clarity. The full survey is provided in Appendix 2.

3.2.2 KEY MEASURES

Respondents were asked whether they had ever consumed alcohol and, if so, if they had consumed alcohol in the past 12 months. If they had consumed alcohol in the past 12 months they answered a full graduated-quantity-frequency (Greenfield, 2000) set of question on their patterns of drinking. These items ask respondents to report the frequency of consumption at a range of levels (20+ standard drinks, 11-19, 7-10, 5-8, 3-4, 1-2) over the previous twelve months. Each frequency category for these questions was then recoded into an annual frequency at the midpoint (e.g. 1-2 times per week is coded as $1.5 \times 52 = 78$ occasions per year). Similarly, each amount is coded to a specific value at the midpoint (thus a drinking occasion of between 7 and 10 drinks is treated as having involved 8.5 drinks). For the top category (20+), we assign a conservative value (21 drinks). Where respondents provided more than 365 drinking occasions (by, for example, saying they consumed 3-4 drinks 5-6 days a week and 1-2 drinks 3-4 days a week) their responses were capped to include only their 365 heaviest drinking occasions (see (Greenfield, 2000) for a good summary of the rationale behind this approach). These responses were then used to estimate total annual consumption for each respondent by multiplying the number of drinking days at each level by the quantity assigned to that level.

Measures of heavy episodic drinking were also derived from these items. We used three further measures of drinking. Two are based on the Australian drinking guidelines (National Health and Medical Research Council, 2009): regular short-term risky drinking (12 or more occasions of 5 or more standard drinks in the past 12 months) and long-term risky drinking (an average of >2 standard drinks per day in the past 12 months). We also use a third measure of very heavy drinking – at least one occasion involving 11 or more standard drinks – based on measures reported by the AIHW (Australian Institute of Health and Welfare, 2017).

3.2.3 TELEPHONE SURVEY PROCEDURE

The telephone survey was conducted by Roy Morgan Research Institute, between July 18 and August 9, 2019 using computer-assisted telephone interviewing (CATI). The sample was selected using a combination of Random Digit Dialling methods (for landline telephones) and random selection of mobile

phone numbers from existing lists of NT numbers kept by Roy Morgan. This approach ensures that respondents living in households without landline phones are not excluded from the sampling frame, although the comprehensiveness and representativeness of the mobile phone lists remains a matter of some uncertainty. A fully random approach to the mobile sample was infeasible for this study as there are no geographic structures to mobile phone numbers meaning that over 90% of the numbers dialled would have been for out of scope respondents (people living in other states and territories).

We set broadly proportional sample quotas for age (18 years and over), sex and region (Darwin/Palmerston, Alice Springs, Katherine, and Rest of NT). For households reached on landlines, respondents were selected randomly (based on the most recent birthday) until we reached our quotas for older respondents, after which younger household members were prioritised.

Our final sample comprised 1000 respondents, with 74.3% reached on mobile phones and 25.7% on landlines; the final consent rate was 15.1%. Our sample over-represented respondents from urban centres of the NT (Darwin/Palmerston and Alice Springs) and under-represented Indigenous residents (8.1% of our sample vs 24.9% of the population). A full technical report on the survey is available on request for more details.

3.2.4 COMPARISON WITH NDSHS

As we were concerned with measuring changes in drinking practices since the introduction of the MUP, we designed our survey to be as comparable as possible with the most recent data available on drinking in the NT – the 2016 NDSHS data (Australian Institute of Health and Welfare, 2017). This national study collects data on alcohol and drug use, attitudes and harms every three years. We used the sample of respondents from the Northern Territory aged 18 or over to match our telephone sample (n=1,064). Our items on alcohol consumption and experiences of alcohol-related problems were based exactly on NDSHS items for maximum comparability. However, there are some differences in sampling approaches. In particular, the NDSHS is based on respondents recruited via their household (rather than by phone), which results in a higher consent rate (~50%); this should be kept in mind when interpreting the data.

To compare our telephone survey data with the NDSHS data, we derived estimates of per-capita alcohol consumption for the NT using both data sources. The 2016 NDSHS data produced an estimate of 681.5 standard drinks per year per person aged 18 or over (~8.64 litres of pure alcohol). In contrast, our 2019 survey data produce an estimate of 625.2 standard drinks per year per person over 18 (~7.92 litres of pure alcohol).

As is typical for survey data (Livingston & Callinan, 2015), both estimates represent significant under-estimation of consumption measured by sales – for example, in 2016 per-capita consumption in the NT was estimated at 11.9 litres of pure alcohol. Importantly though, the survey data seem to broadly reflect trends observed in the NT wholesale data – between 2016 and 2019, estimates of per-capita consumption

based on wholesale supply data declined by 8%, a comparable change to that observed in our survey data (8.3%). This pattern has been shown for the NDSHS at the national level, providing more reassurance that surveys provide a reasonable means for measuring broad population trends in alcohol (Livingston, Callinan, Raninen, Pennay, & Dietze, 2018; Livingston & Dietze, 2016).

3.3 KEY INFORMANT INTERVIEWS

A particularly informative element of previously successful projects in this area (e.g., QUANTEM) has been key informant interviews. They enable substantial insight into potential benefits and side-effects of policy which are not apparent from other data sources (Miller, Strang, & Miller, 2010).

In particular for this study, we used informant interviews to try and identify any potential factors which might confound or influence quantitative trends, as well as documenting the lived experience of people implementing the policies and how they impacted on the drinkers they deal with.

A qualitative component provided an observational description of impacts of the MUP. This was achieved through a series of 18 qualitative interviews and a further 20 interviews drawn from a prior evaluation of the BDR (Smith, Adamson, Clifford, & Wallace, 2019). In total the analysed data was drawn from 38 Key Informant interviews.

- Health workers (HW) = 5
- Police (Police) = 8
- Liquor Commission (Liquor/Gambling) = 1
- Tourism (Tourism) = 1
- Social workers (SW) = 3
- Licensee/Retailers (Licensee) = 20

Recruitment was based on a sampling frame which outlined the key occupational roles in implementing the policies, and those who would be dealing with alcohol related harm across the NT and in each of the regions. A list was compiled of the key roles and organisations and then relevant position holders (e.g. Emergency Department Director, Police area liquor Inspector or treatment service personnel) were contacted.

3.3.1 DATA COLLECTION

Potential stakeholders were contacted via email and phone and asked if they would like to be involved. If they agreed informed, voluntary consent was obtained. These participants were also asked to pass the information onto others who they think might be interested. Participants partook in a semi-structured interview that drew on their expert knowledge and opinion about MUP, BDR, PALIs, their experience of the intervention and its impacts on crime, alcohol-related harms, consumption behaviours, alcohol harms, their experiences of the policies currently in place in the NT, and their thoughts on other ways in which alcohol harm could be reduced.

Participants were asked questions based on a series of prompts, rather than a strict set of questions. While the interview schedule varied slightly for each stakeholder group, questions broadly covered the following topics: thoughts on current alcohol policy in the NT; impact of the MUP on their service/clients/business; public perceptions of the MUP; how the MUP could be improved; positive and negative aspects of the MUP; perceived impacts on levels of intoxication and violence; changes in clientele/patrons due the MUP; and, impacts of the BDR and PALIs. Interview data for licensees were predominantly drawn from a prior evaluation of the BDR (Smith, Adamson, et al., 2019).

Interviews were conducted face-to-face, over telephone or Skype. Each interview aimed to last approximately 45-60 minutes. Interviews were tape-recorded (with participant consent) and transcribed verbatim.

3.4 ANALYSIS APPROACH

3.4.1 ADMINISTRATIVE DATA

Administrative data were analysed as rates per 10,000 population. Population statistics were obtained from the Australian Bureau of Statistics (<http://stat.data.abs.gov.au/>; see Table 5). As 2019 population data were not available at the time of analyses, population data for 2019 were extrapolated from 2017 and 2018 data assuming a linear trend.

Table 5 Population by study area

Study Area	2013	2014	2015	2016	2017	2018	2019
Darwin and Palmerston	116,671	118,365	120,532	122,099	123,727	123,344	122,961
Alice Springs	28,124	27,486	26,518	26,518	26,554	26,534	26,514
Katherine	10,812	10,799	10,731	10,605	10,660	10,718	10,776
Tennant Creek	3,498	3,406	3,342	3,296	3,272	3,252	3,232
Rest of NT	82,617	82,838	83,244	83,160	83,304	83,479	83,654

Note. Population estimates obtained through <http://stat.data.abs.gov.au/>

Where there was a sufficient number of cases across the time period (>1000; less than 1000 cases does not provide a sufficient number of cases per month to draw accurate conclusions), the impacts of MUP introduction on trends in health, police, ambulance, and child protection outcomes were examined using interrupted time series (ITS) analysis (*itsa* command) in Stata 15 (Linden & Arbor, 2015). Interrupted time series analysis is particularly suited to interventions with clearly defined starting points (i.e., 1 October 2018) that target population-level health outcomes (Lopez Bernal, Cummins, & Gasparrini, 2017). We designated the MUP intervention variable as dichotomous ‘event’ variables (0=pre-intervention; 1=intervention). All models include a time variable (linear month variable from the start of the series) to control for long-term trends, interaction terms for MUP*time to test for slope changes in trends, the number of people on the BDR per month across the NT (see

<https://digitallibrary.health.nt.gov.au/prodjspui/handle/10137/1661> and Table 6), and a seasonal effects variable (coded as 0 = May-September (dry season); 1 = October-December (first half of wet season); and, 2 = January-April (second half of wet season)). A three category seasonal covariate was used due to the very distinct weather patterns (particularly in the Top End), the wet season often results in remote communities being cut-off for months (which has major implications and range of behaviours including alcohol consumption), and the dry season is the major tourist season whereas during the ‘build-up’ season (first half of wet season) there are far fewer tourists. The total number of people on the BDR were included in modelling to help isolate the effects of the MUP intervention.

Table 6 Number of active bans on the banned drinker register at the end of each month

Year	Month	Number of active bans
2017	September	1,532
	October	1,908
	November	2,288
	December	2,565
2018	January	2,776
	February	2,976
	March	3,124
	April	3,247
	May	3,367
	June	3,442
	July	3,526
	August	3,682
	September	3,796
	October ^a	3,855
	November	3,877
	December	3,925
2019	January	3,987
	February	4,001
	March	3,921
	April	3,915
	May	3,906
	June	3,845
	July	3,828
	August	3,786
	September	3,700

Note. Number of bans from September 2017 to August 2019 obtained through

<https://digitallibrary.health.nt.gov.au/prodjspui/handle/10137/1661>

^aThe start of the MUP

The effects of MUP were analysed in terms of both a ‘step’ function (0 before the MUP introduction in October 2018, 1 after) and a ‘slope’ function (0 before the MUP and increasing/decreasing steadily afterwards). These may be considered an immediate change after the introduction of the MUP (a step) and gradual change with MUP in place (a slope). Graphs produced from the ITS models with actual versus fitted data are provided in Appendix 3. A separate summary report has also been written, which provides summary tables of all administrative data analyses.

3.4.2 TELEPHONE SURVEY

Roy Morgan provided sample weights to improve sample representativeness of the telephone survey based on age, sex, survey region, and telephone status (landline/mobile). All analyses were conducted on weighted data.

Descriptive statistics were produced for all key outcome measures (alcohol consumption patterns, harms, and attitudes towards policy) by region (Darwin/Palmerston, Alice Springs, and Rest of NT) and demographic variables. Consumption data were split into the following categories:

1. Non-drinkers
2. Non-risky drinkers (<2 drinks per day)
3. Risky drinkers (2-4 drinks per day)
4. Heavy drinkers (4+ drinks per day)

Survey estimates were considered significantly different across demographics and region if their 95% confidence intervals did not overlap. Consumption and harms data were also compared to the 2016 NDSHS estimates; again, 95% confidence intervals were used to determine significant differences.

3.4.3 KEY INFORMANT INTERVIEWS

Interviews were entered into N-Vivo 11, a qualitative data analysis software program. Responses from key informants were analysed primarily based on questionnaire structure and subsequent analysis of narratives using thematic analysis. The analysis was a combined approach whereby deductive analysis used the survey instrument to look organise specific responses to questions, but an inductive approach was also used to interpret narratives and subsequent discussions where other themes could arise.

A thematic analysis of the interview material was conducted, using the following topics as an organising tool: impact of the MUP on their service/clients/business; public perceptions of the MUP; how the MUP could be improved; and, perceived impacts on levels of intoxication and violence. The Key Informant responses are presented in a descriptive way that highlights the informant narratives for each of the categories.

Thematic analysis (or ‘narrative analysis’) is an inductive design where, rather than approach a problem with a theory already in place, the researcher identifies and explores themes which arise during analysis

of the data (Kellehear, 1993). Where available, narratives offering opposing viewpoints were also presented (Pope & Mays, 1995).

For ease of understanding and in order to further inform the results and discussion sections, the categories of policy implementers (compliance with or enforcement of alcohol policy) and service providers (service provision based on alcohol policy) has been utilised. Participants were categorised in the following manner:

Policy Implementers (PI)

- Licensees/Retailers
- Liquor/Gambling
- Police

Service Providers (SP)

- Health workers
- Social workers
- Tourism

3.5 ETHICAL APPROVAL

Ethical approval was obtained from the Human Research Ethics Committee of the Northern Territory Department of Health and Menzies School of Health Research (Administrative data: 2019-3486, Telephone survey: 2019-3421, Key informant interviews: 2019-3422 and 2019-3287), the Central Australian Human Research Ethics Committee Centre for Remote Health (Administrative data: 2019-3486, Telephone survey: 2019-3421, Key informant interviews: 2019-3422 and 2019-3358), and the Deakin University Human Research Ethics Committee (Administrative data: 2019-371; Telephone survey: 2019-287, Key informant interviews: 2019-294).

4 RESULTS

4.1 ADMINISTRATIVE DATA

4.1.1 NORTHERN TERRITORY

4.1.1.1 ALCOHOL WHOLESALE SUPPLY DATA

The total alcohol wholesale supply per capita for the Northern Territory is shown in Figure 1. There was a significant step decline in the supply of total alcohol per capita after the introduction of the MUP (see Table 7).

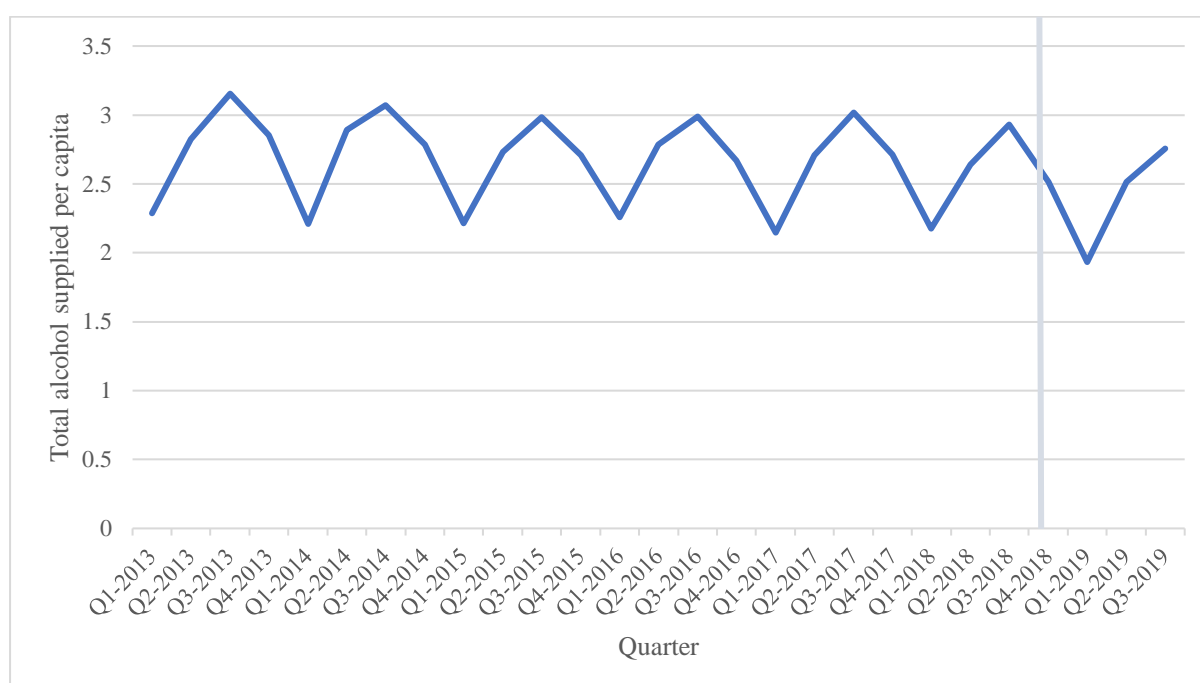


Figure 1 Total alcohol wholesale supply per capita, Northern Territory

The alcohol wholesale supply per capita by beverage type for the Northern Territory is provided in Figure 2. As shown in Table 7, there was a significant step decrease in the supply of cask wine, bottled wine, and mid-strength beer after the introduction of the MUP. There was a small, but significant slope increase in the supply of fortified wine post-MUP. No other changes were observed in the remaining beverage types (not shown in Table 7).

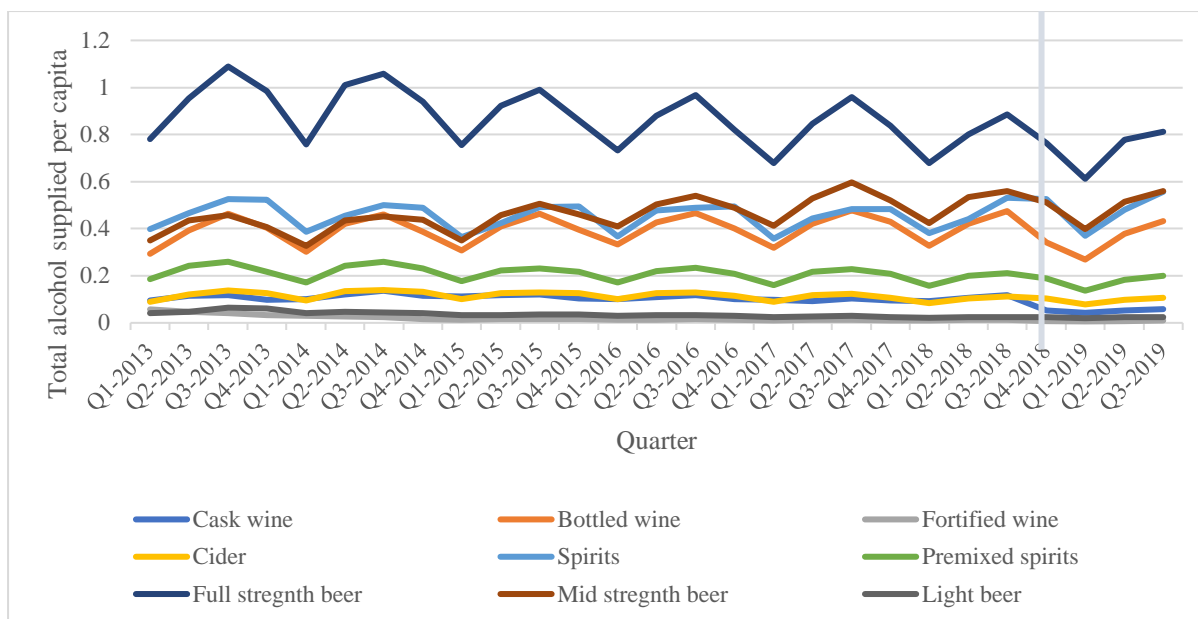


Figure 2 Alcohol wholesale supply per capita by beverage type, Northern Territory

Table 7 Time series models for per capita alcohol wholesale supply, Northern Territory

Total alcohol	β co-eff	95% CI	p-value
Time (slope)	-0.01	-0.02, 0.002	.094
MUP (step)	-0.22	-0.42, -0.03	.025
Time X MUP(slope)	0.03	-0.06, 0.12	.476
Cask wine	β co-eff	95% CI	p-value
Time (slope)	-0.001	-0.002, 0.001	.436
MUP (step)	-0.05	-0.06, -0.04	<.001
Time X MUP(slope)	-0.001	-0.01, 0.01	.775
Bottled wine	β co-eff	95% CI	p-value
Time (slope)	0.001	-0.001, 0.004	.250
MUP (step)	-0.09	-0.12, -0.05	<.001
Time X MUP(slope)	0.01	-0.001, 0.03	.067
Fortified wine	β co-eff	95% CI	p-value
Time (slope)	-0.003	-0.004, -0.001	<.001
MUP (step)	-0.002	-0.005, 0.001	.126
Time X MUP(slope)	0.003	0.001, 0.01	.012
Mid strength beer	β co-eff	95% CI	p-value
Time (slope)	0.01	0.004, 0.01	<.001
MUP (step)	-0.04	-0.08, -0.001	.044
Time X MUP(slope)	-0.002	-0.02, 0.02	.875

Note. Models control for seasonality and number of people on the BDR at the end of each quarter

4.1.1.2 POLICE ALCOHOL-RELATED ASSAULTS DATA

A total of 25,945 alcohol-related assault offences were recorded across the time period; 9% recorded victim alcohol involvement, 48% offender alcohol involvement, and 44% both victim and offender alcohol involvement. As shown in Figure 3, the rate of alcohol-related assault offences demonstrated a step decrease in the Northern Territory after the introduction of the MUP, continuing the decline that commenced in early-2018, coinciding with the introduction of the BDR and continued implementation of point of sale interventions (POSIs). Interrupted time series (ITS) modelling indicated a significant step decrease after MUP (see Table 8). As with many of the subsequent findings, it is worth considering these the trends after MUP in line previous public health programmes such as anti-smoking and drink-driving campaigns where downward trends were achieved by the addition of successive elements.

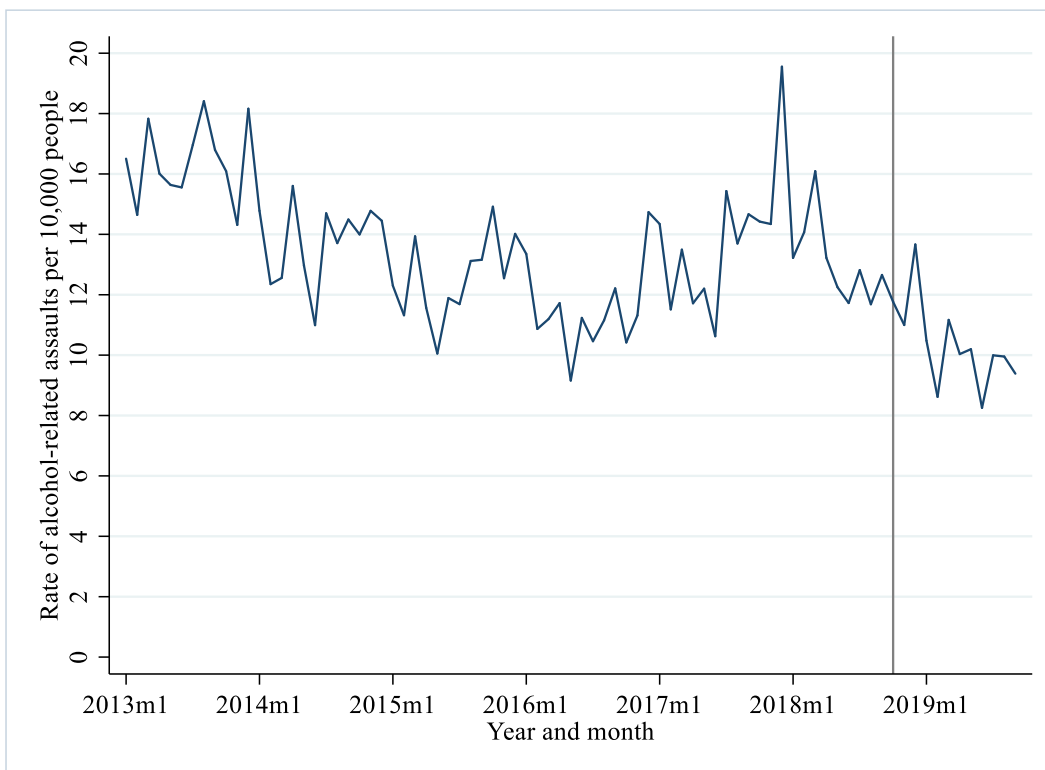


Figure 3 Rate of alcohol-related assault offences per 10,000 population, Northern Territory

Table 8 Time series models for rate of police recorded assault offences, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	-0.08	-0.12, -0.04	<.001
MUP (step)	-3.07	-5.40, -0.74	<.010
Time X MUP (slope)	-0.01	-0.22, 0.19	.905

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.3 OFFENDERS – ALCOHOL-RELATED ASSAULTS

There were a total of 10,379 offenders involved in alcohol-related assault offences across the time period, with 83% of offenders male, 84% aged 18-44 years, and 89% identifying as Aboriginal. Figure 4 shows that the number of offenders involved in alcohol-related assault offences per 10,000 population declined in early 2018 in the Northern Territory. ITS modelling indicated a significant step reduction in the rate of offenders post-MUP, continuing the downward trend that commenced in early 2018 (Table 9).

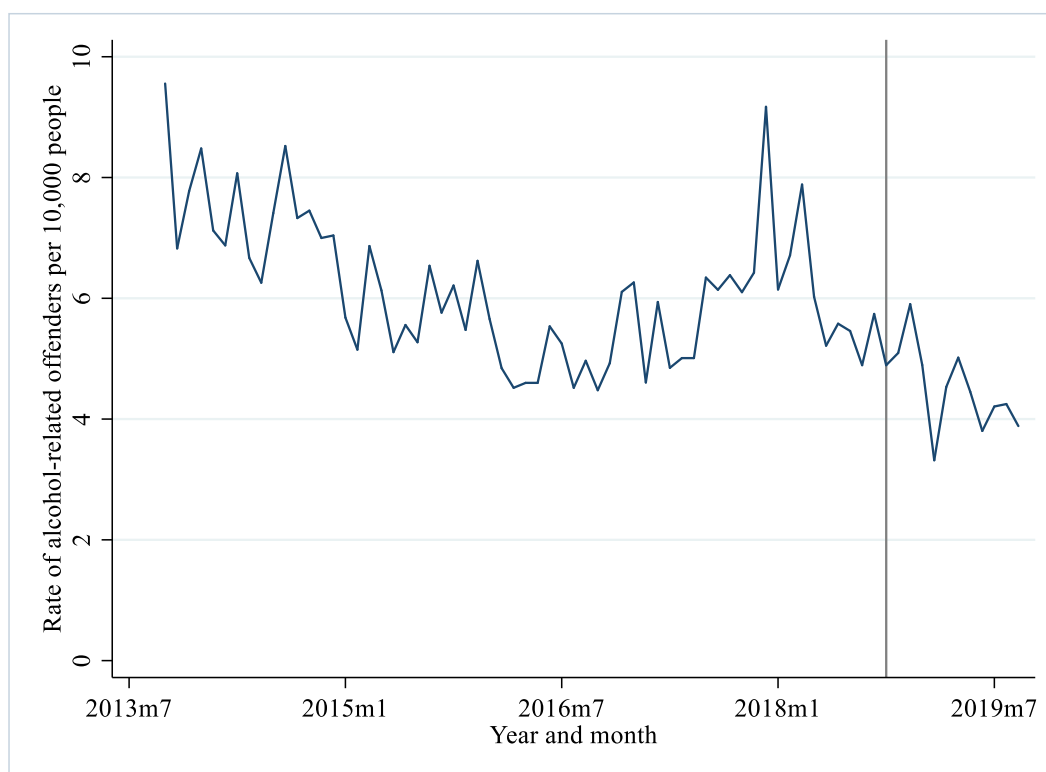


Figure 4 Rate of offenders in alcohol-related assault offences per 10,000 population, Northern Territory

Table 9 Time series models for rate of police recorded offenders, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	-0.06	-0.09, -0.03	<.001
MUP (step)	-1.62	-2.86, -0.38	.011
Time X MUP (slope)	0.02	-0.07, 0.12	.633

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.4 VICTIMS – ALCOHOL-RELATED ASSAULTS

There were a total of 23,152 victims involved in alcohol-related assault offences across the time period, with 66% of victims female, 77% aged 18-44 years, and 75% identifying as Aboriginal. As demonstrated in Figure 5 the rate of victims in alcohol-related assault offences in the Northern Territory showed the

start of a decline from 2018. ITS modelling indicated a significant step decrease in the rate of victims after the introduction of MUP, continuing the downward trend that commenced in early 2018 (Table 10).

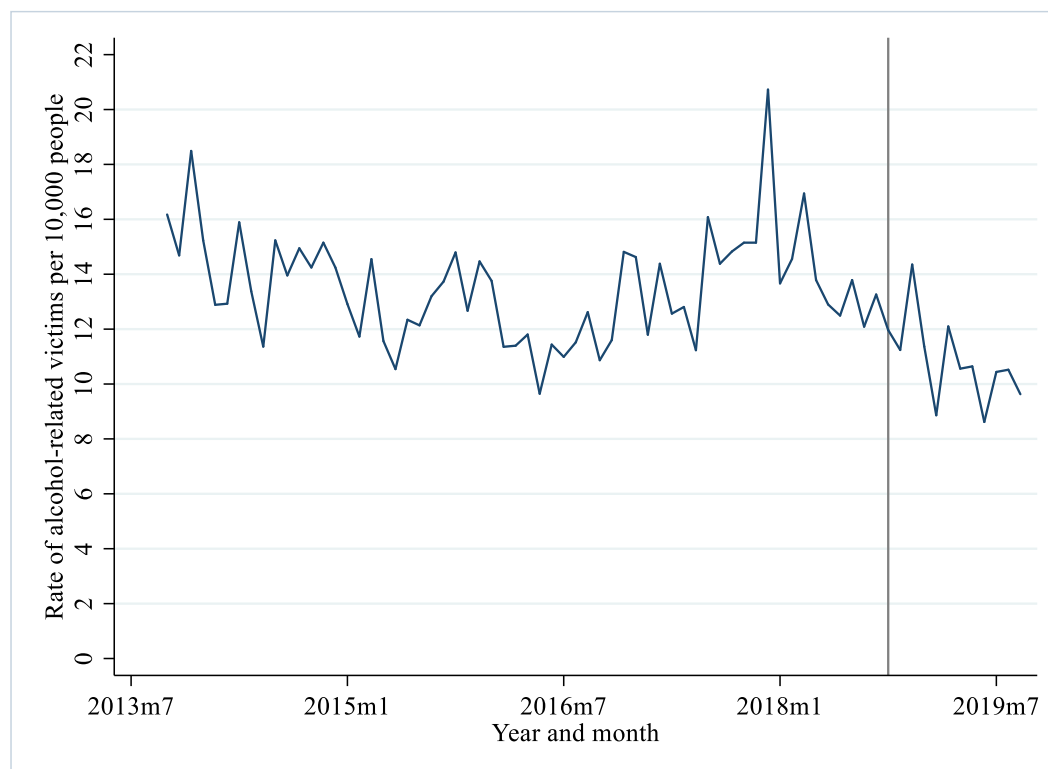


Figure 5 Rate of victims in alcohol-related assault offences per 10,000 population, Northern Territory

Table 10 Time series models for rate of police recorded victims, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	-0.03	-0.08, 0.01	.135
MUP (step)	-3.80	-6.18, -1.42	.002
Time X MUP (slope)	0	-0.21, 0.22	.991

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.5 POLICE PROTECTIVE CUSTODY DATA

There were a total of 38,636 episodes of alcohol-related protective custody across the time period. Figure 6 shows that the rate of alcohol-related protective custody episodes in Northern Territory increased until approximately late-2017, after which there was a decline. ITS modelling indicated a significant step decrease in the rate of protective custody episodes after the introduction of MUP, continuing the downward trend that commenced in late-2017 to early-2018 (Table 11).

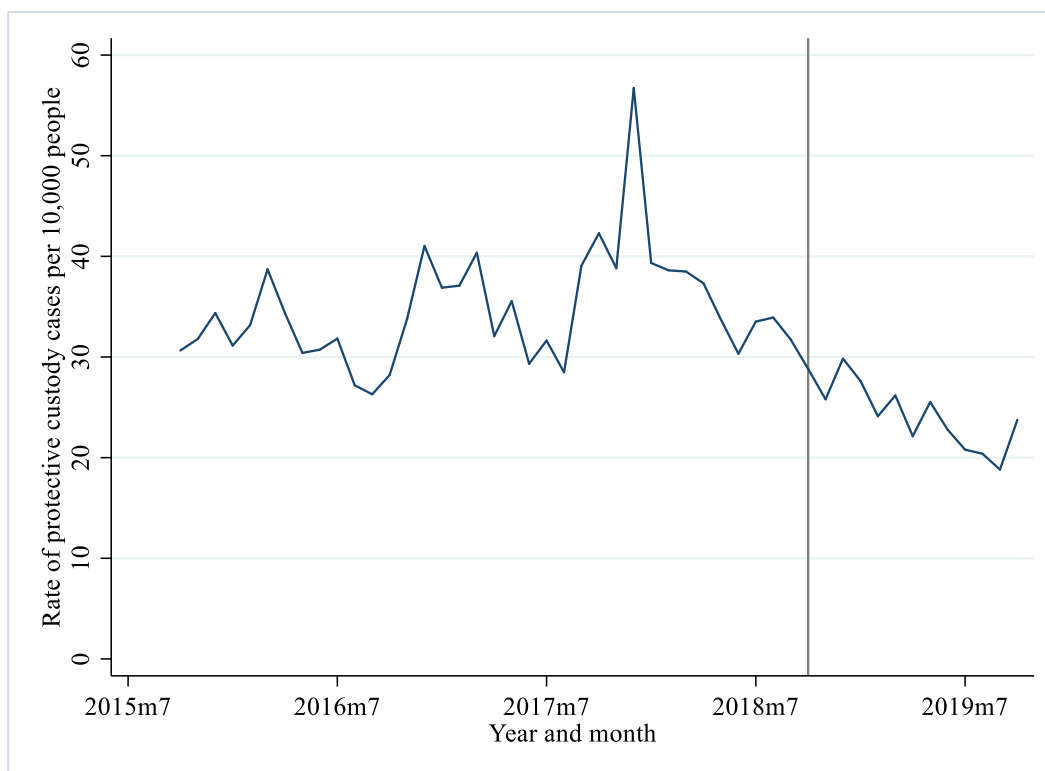


Figure 6 Rate of alcohol-related protective custody episodes per 10,000 population, Northern Territory

Table 11 Time series models for rate of alcohol-related protective custody episodes, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	0.25	0, 0.49	.048
MUP (step)	-14.94	-21.84, -8.05	<.001
Time X MUP (slope)	-0.25	-0.83, 0.33	.380

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.1 HOMICIDE DATA

As demonstrated in Table 12, there have been reduced numbers of homicide offences across the NT and in Darwin since 2016, with the highest number of offences occurring in 2018 for Alice Springs. There has only been two recorded offences in 2019; one in Darwin and one in Katherine.

Table 12 Homicides per year, by region

Year	Darwin	Palmerston	Alice Springs	Katherine	Tennant Creek	Nhulunbuy	Rest of NT	Total
2013 _a	4	0	1	2	1	0	0	8
2014	5	2	3	1	2	1	1	15
2015	11	2	3	1	1	0	7	25
2016	2	0	1	2	1	0	1	7

2017	1	0	1	3	2	0	3	10
2018	2	2	6	0	1	0	5	16
2019 ^b	1	0	0	1	0	0	0	2

Note. ^aOctober to December only
^bJanuary to September only

4.1.1.2 AMBULANCE ATTENDANCES

In total, 31,281 alcohol-related ambulance attendances were recorded in NT across the time period. As shown in Figure 7, the rate of alcohol-related ambulance attendances did not show any specific trend in NT after the introduction of the MUP. ITS modelling indicated a significant step change but no significant slope change in the rate of ambulance attendances post-MUP (see Table 13).

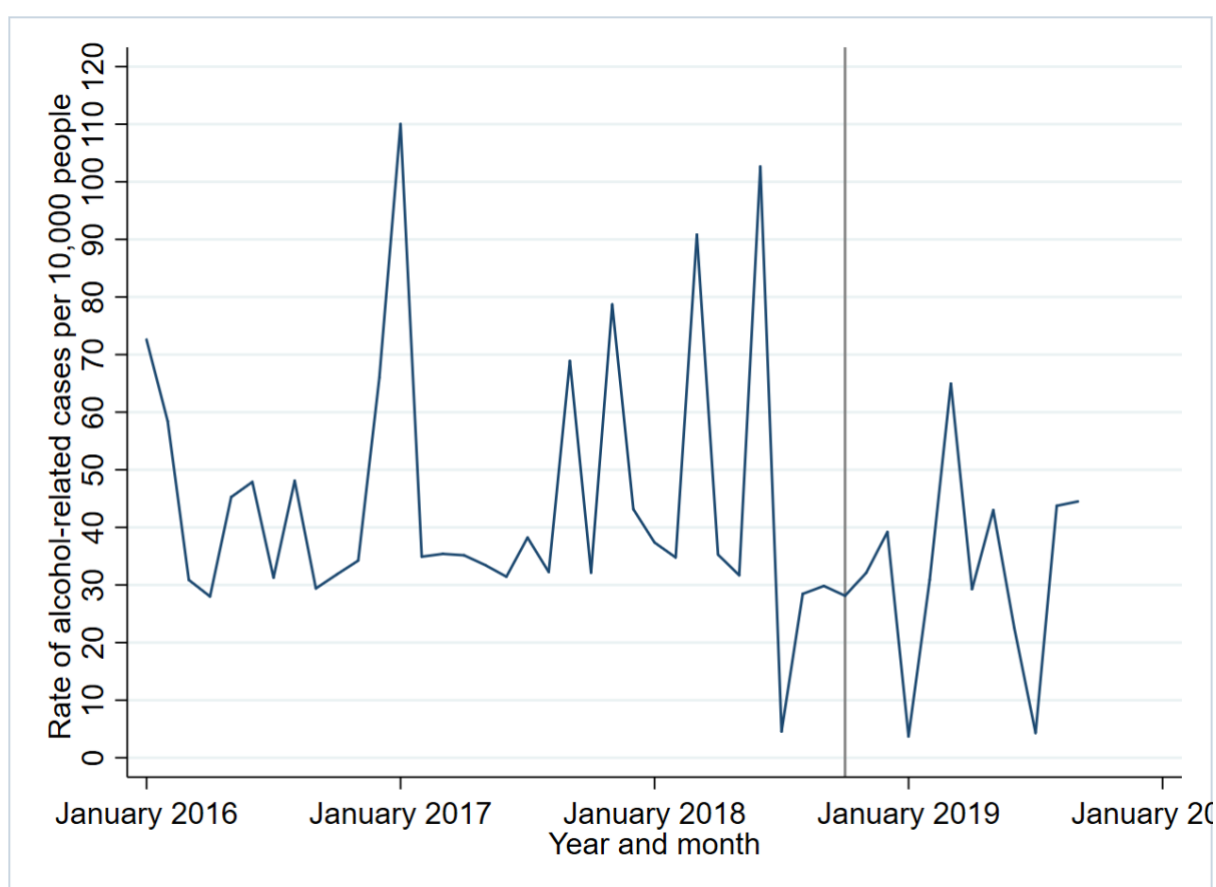


Figure 7 Rate of alcohol-related ambulance attendances per 10,000 population, Northern Territory

Table 13 Time series models for rate of alcohol-related ambulance attendances, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	-0.23	-1.39, .93	.690
MUP (step)	-25.91	-48.02, -3.80	.023
Time X MUP (slope)	2.17	-0.55, 4.90	.114

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.3 EMERGENCY DEPARTMENT PRESENTATIONS

4.1.1.3.1 ALCOHOL-RELATED PRESENTATIONS

A total of 39,377 alcohol-related ED presentations were examined over the study period; 47% were male, 89% identified as Indigenous, and the average age was 40 years. As shown in Figure 8, the rate of ED presentations involving alcohol fluctuated over the time period for the Northern Territory. Post-MUP, the rate of presentations demonstrated a significant step decline, continuing the downward trend that commenced early 2018 (see Table 14).

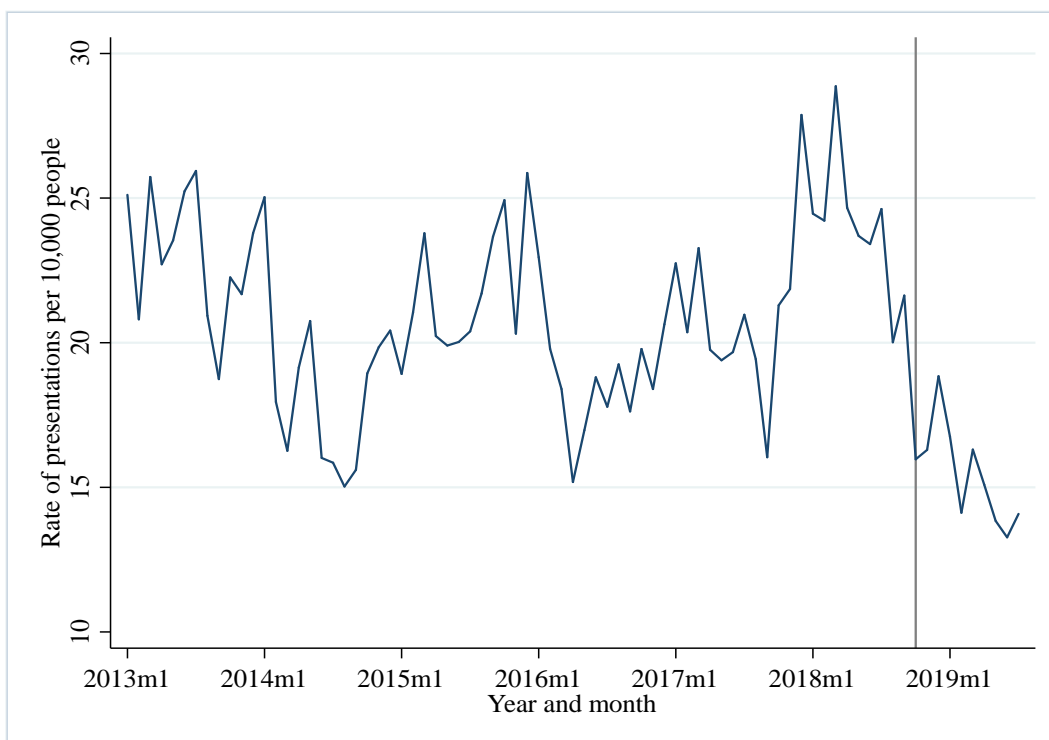


Figure 8 Rate of alcohol-related ED presentations per 10,000 people, Northern Territory

Table 14 Time series models for rate of alcohol-related ED presentations, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	-0.04	-0.11, 0.02	.203
MUP (step)	-8.35	-11.17, -5.54	<.001
Time X MUP (slope)	-0.07	-0.35, 0.21	.622

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.3.2 OTHER SUBSTANCE USE

A total of 3,834 other substance use ED presentations were examined over the study period; 68% were male, 55% identified as Indigenous, and the average age was 29 years. Figure 9 shows the rate of individuals presenting for other substance use at the ED in the Territory increased slightly over the time period. ITS modelling indicated a significant step increase after the introduction of MUP, however, there was also a significant slope decline since the MUP (Table 15).

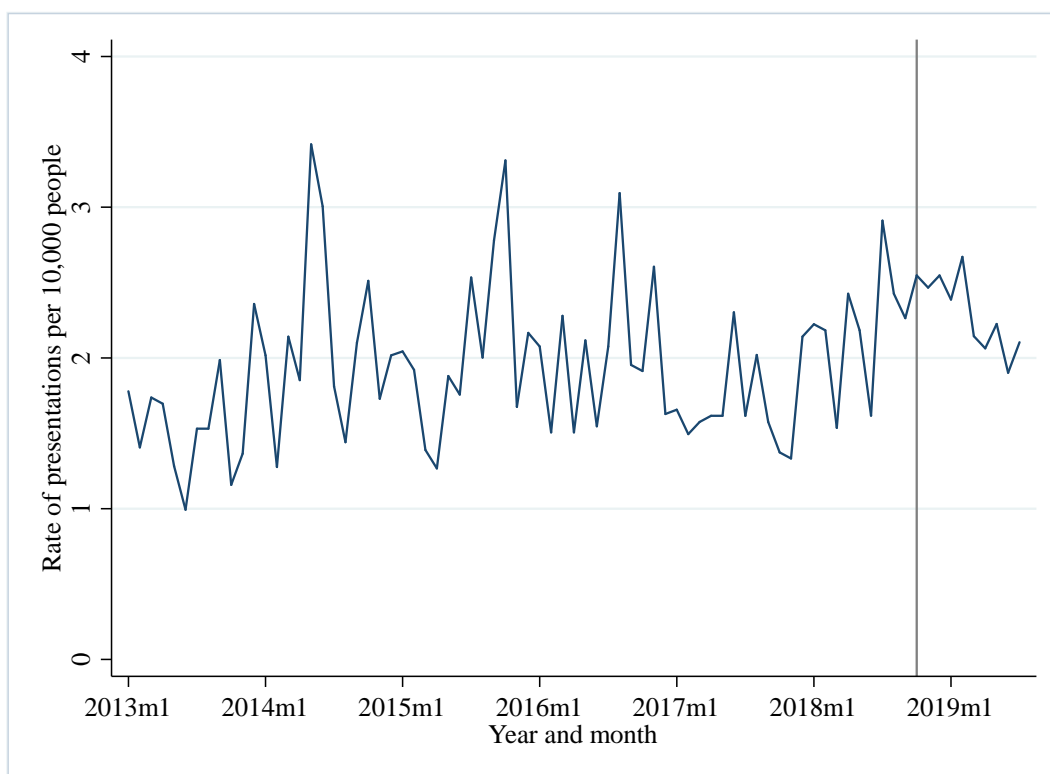


Figure 9 Rate of other substance use ED presentations per 10,000 people, Northern Territory

Table 15 Time series models for rate of other substance use ED presentations, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	0.01	-0.01, 0.01	.437
MUP (step)	0.55	0.02, 1.08	.041
Time X MUP (slope)	-0.08	-0.14, -0.01	.016

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.3.3 FRACTURE OF SKULL AND FACIAL BONES

A total of 2,524 fracture of skull and facial bones-related ED presentations were examined over the study period; 64% were male, 42% identified as Indigenous, and the average age was 31 years. Figure 10 shows that the rate of fracture of skull and facial bones-related ED presentations were stable across the period. ITS modelling indicated no significant change post-MUP (Table 16).

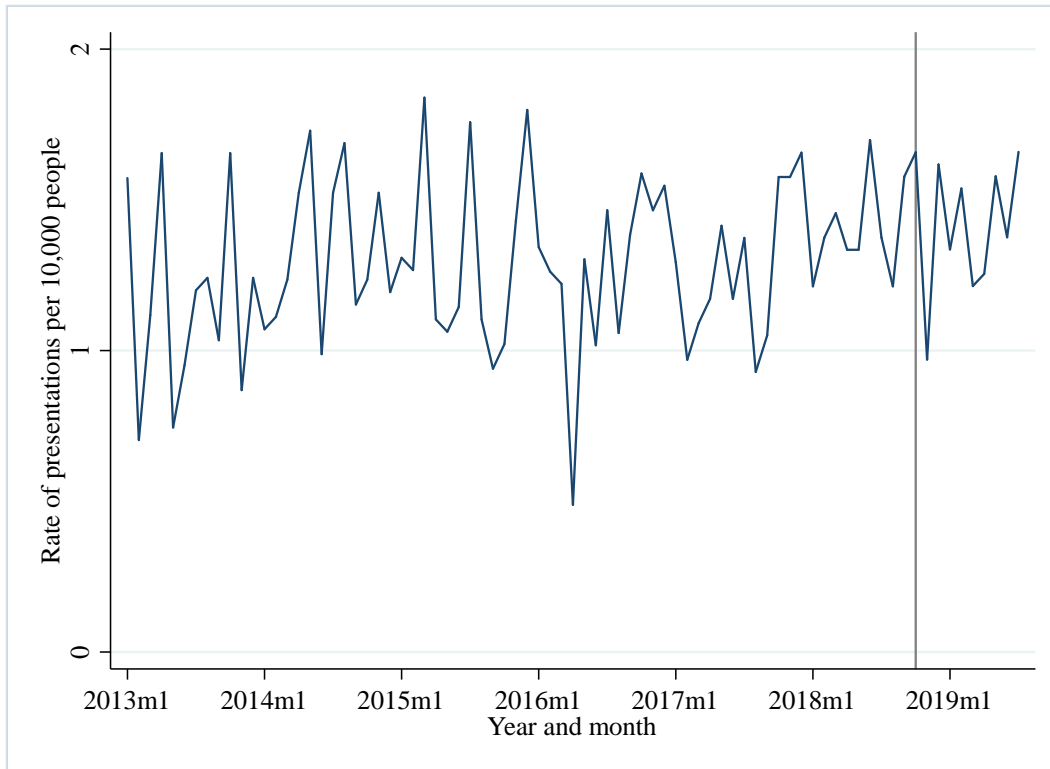


Figure 10 Rate of fracture of skull and facial bones-related ED presentations per 10,000 people, Northern Territory

Table 16 Time series models for rate of fracture of skull and facial bones-related ED presentations, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	0.01	-0.01, 0.01	.802
MUP (step)	-0.23	-0.57, 0.11	.183
Time X MUP (slope)	0.03	-0.02, 0.09	.200

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.3.4 FRACTURE OF FOREARM BONES

A total of 3,015 fracture of forearm bones-related ED presentations were examined over the study period; 52% were male, 52% identified as Indigenous, and the average age was 25 years. Figure 11 shows that the rate of fracture of forearm bones-related ED presentations were stable across the period. ITS modelling indicated no significant changes after the introduction of the MUP (Table 17).

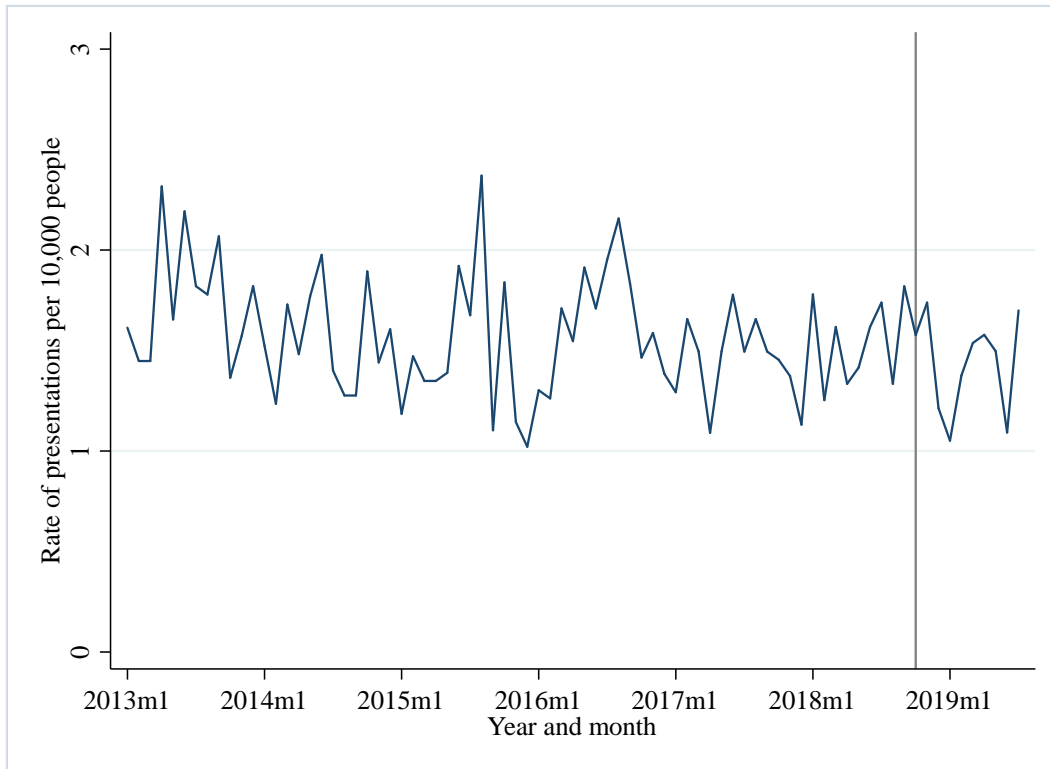


Figure 11 Rate of fracture of forearm bones-related ED presentations per 10,000 people, Northern Territory

Table 17 Time series models for rate of fracture of forearm bones-related ED presentations, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	-0.01	-0.01, -0.01	.036
MUP (step)	0.17	-0.14, 0.47	.280
Time X MUP (slope)	-0.03	-0.09, 0.02	.219

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.3.5 MALTREATMENT SYNDROMES

A total of 19,215 maltreatment syndrome-related ED presentations were examined over the study period; 31% were male, 88% identified as Indigenous, and the average age was 34 years. Figure 12 shows that rates of maltreatment syndrome-related ED presentations fluctuated across the period examined. ITS modelling indicated that there was a significant step decline in the rate of presentations after the introduction of the MUP (Table 18).

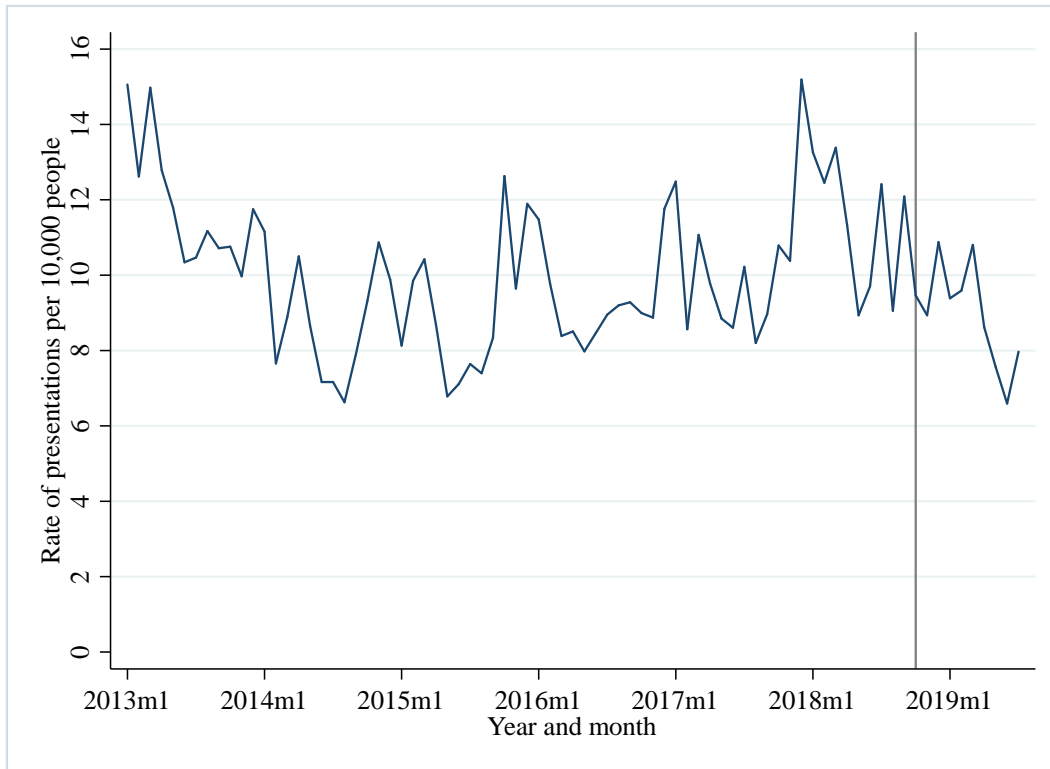


Figure 12 Rate of maltreatment syndrome-related ED presentations per 10,000 people, Northern Territory

Table 18 Time series models for rate of maltreatment syndrome-related ED presentations, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	-0.04	-0.08, 0.01	.076
MUP (step)	-3.60	-5.58, -1.62	.001
Time X MUP (slope)	-0.06	-0.20, 0.31	.661

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.3.6 ASSAULT BY SHARP OBJECT

A total of 1,600 assault by sharp object-related ED presentations were examined over the study period; 59% were male, 89% identified as Indigenous, and the average age was 34 years. Figure 13 shows that assault by sharp object-related ED presentation rates remained stable over the period examined. ITS modelling indicated no significant change post-MUP (Table 19).

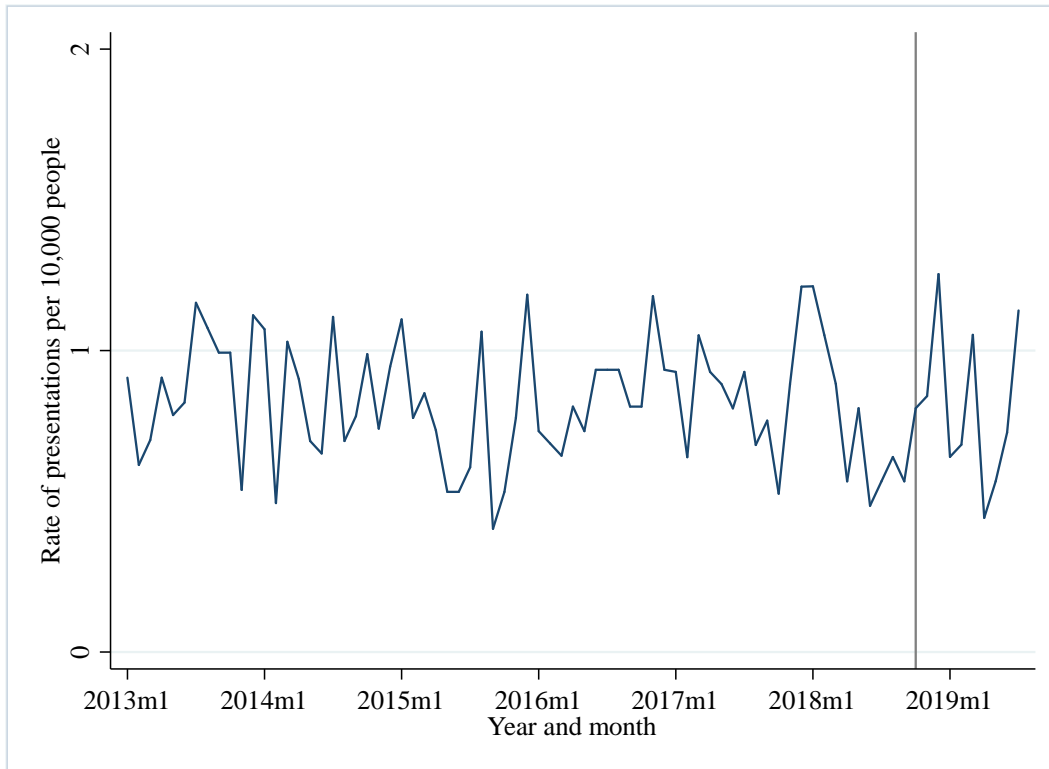


Figure 13 Rate of assault by sharp object-related ED presentations per 10,000 people, Northern Territory

Table 19 Time series models for rate of assault by sharp object-related ED presentations, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	-0.01	-0.01, 0.01	.888
MUP (step)	0.02	-0.29, 0.33	.898
Time X MUP (slope)	0.01	-0.05, 0.06	.786

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.4 HOSPITAL ADMISSIONS

4.1.1.4.1 ALCOHOL-RELATED ADMISSIONS

A total of 53,832 alcohol-related hospital admissions were examined over the study period; 54% were male, 80% identified as Indigenous, and the average age was 43 years. As shown in Figure 14, the rate of hospital admissions involving alcohol increased across the Territory in 2015, after which they remained relatively stable. Post-MUP, the rate of admissions demonstrated a significant step decline and a significant slope change (decreasing since the introduction of MUP; see Table 20). This appears to be a continuation of the downward trend that commenced in late 2017.

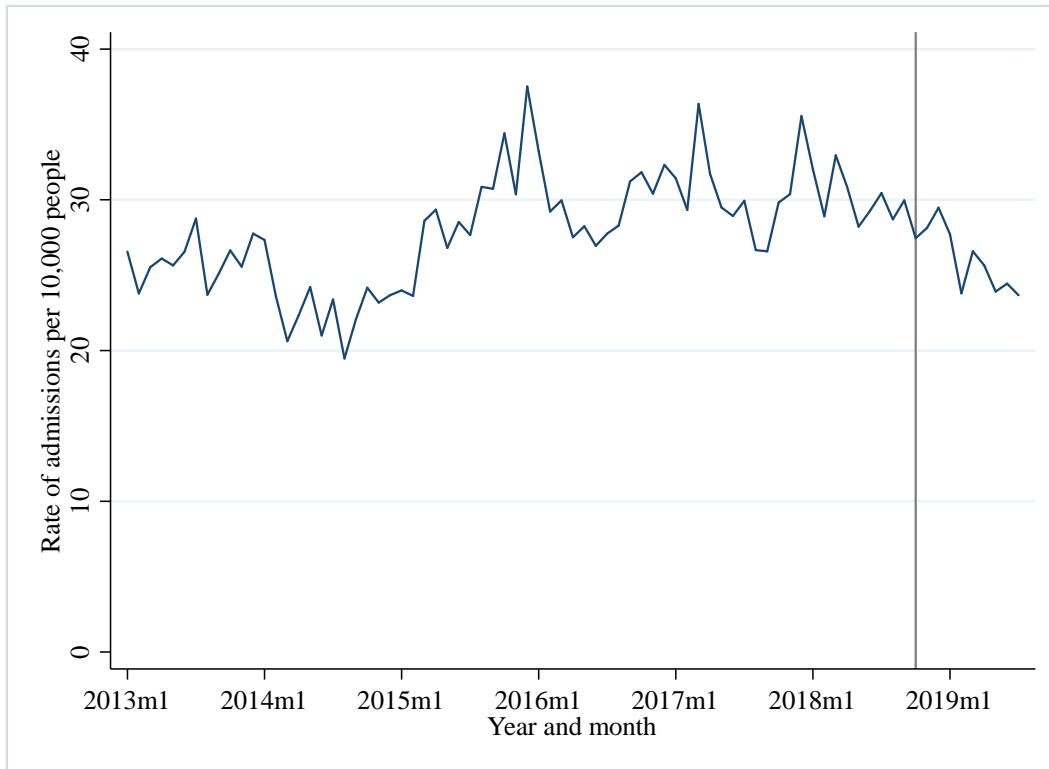


Figure 14 Rate of alcohol-related hospital admissions per 10,000 people, Northern Territory

Table 20 Time series models for rate of alcohol-related hospital admissions, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	0.13	0.05, 0.21	.001
MUP (step)	-4.61	-7.11, -2.12	<.001
Time X MUP (slope)	-0.31	-0.61, -0.01	.048

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.4.2 OTHER SUBSTANCE USE

A total of 13,313 other substance use hospital admissions were examined over the study period; 64% were male, 55% identified as Indigenous, and the average age was 42 years. Figure 15 shows that other substance use hospital admission rates increased over the period examined. ITS modelling indicated that there was a significant step increase and a significant slope decrease after the introduction of the MUP (Table 21).

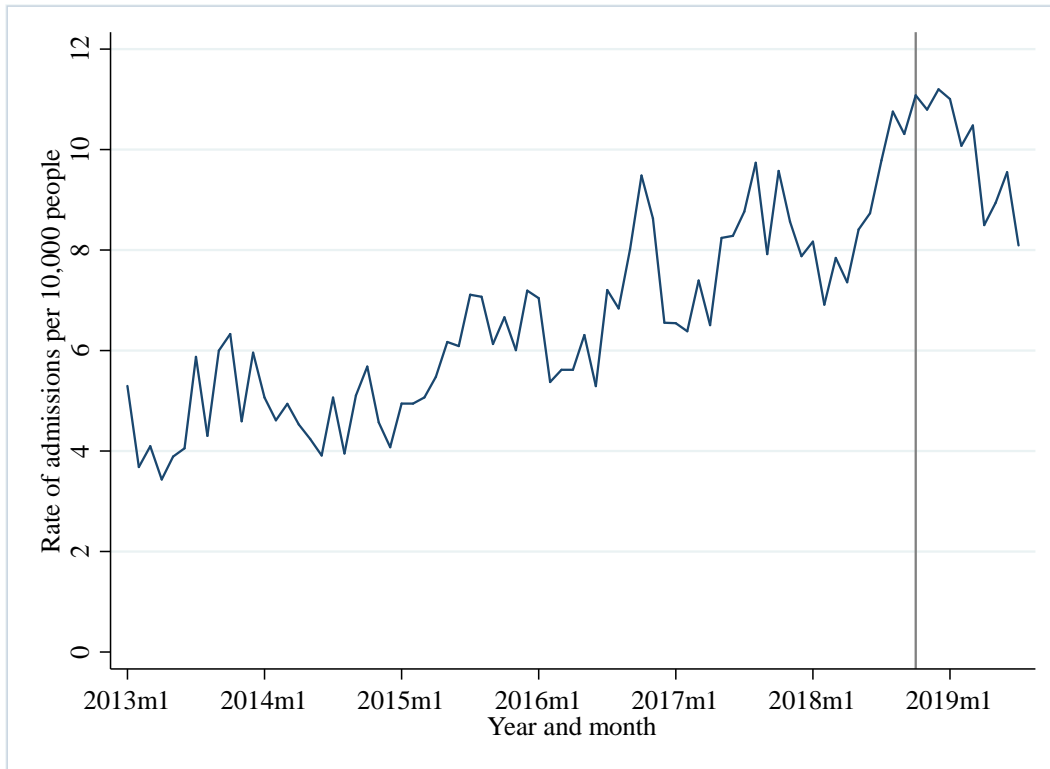


Figure 15 Rate of other substance use hospital admissions per 10,000 people, Northern Territory

Table 21 Time series models for rate of other substance use hospital admissions, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	0.07	0.05, 0.09	<.001
MUP (step)	1.87	0.55, 3.20	.006
Time X MUP (slope)	-0.35	-0.57, -0.14	.001

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.4.3 FRACTURE OF SKULL AND FACIAL BONES

A total of 4,226 fracture of skull and facial bones-related hospital admissions were examined over the study period; 68% were male, 60% identified as Indigenous, and the average age was 34 years. Figure 16 shows the rate of fracture of skull and facial bones-related hospital admission rates increased leading up to the introduction of the MUP and decreased post-introduction. ITS modelling indicated that there was a significant step decrease in admission rates post-MUP (Table 22).

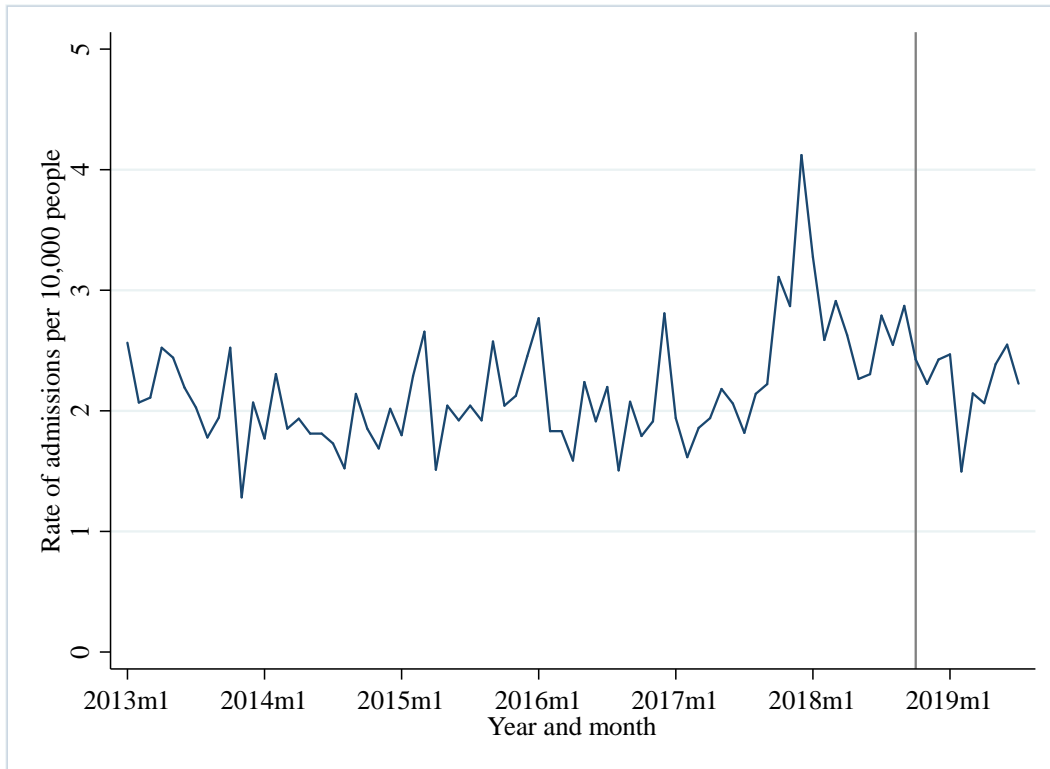


Figure 16 Rate of fracture of skull and facial bones-related hospital admissions per 10,000 people, Northern Territory

Table 22 Time series models for rate of fracture of skull and facial bones-related hospital admissions, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	-0.01	-0.01, 0.01	.763
MUP (step)	-0.91	-1.46, -0.36	.002
Time X MUP (slope)	0.03	-0.03, 0.09	.310

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.4.4 FRACTURE OF FOREARM

A total of 4,451 fracture of forearm bones-related ED presentations were examined over the study period; 52% were male, 48% identified as Indigenous, and the average age was 32 years. Figure 17 shows that the rate of fracture of forearm bones-related hospital presentations were stable across the period. ITS modelling indicated no significant changes post-MUP (Table 23).

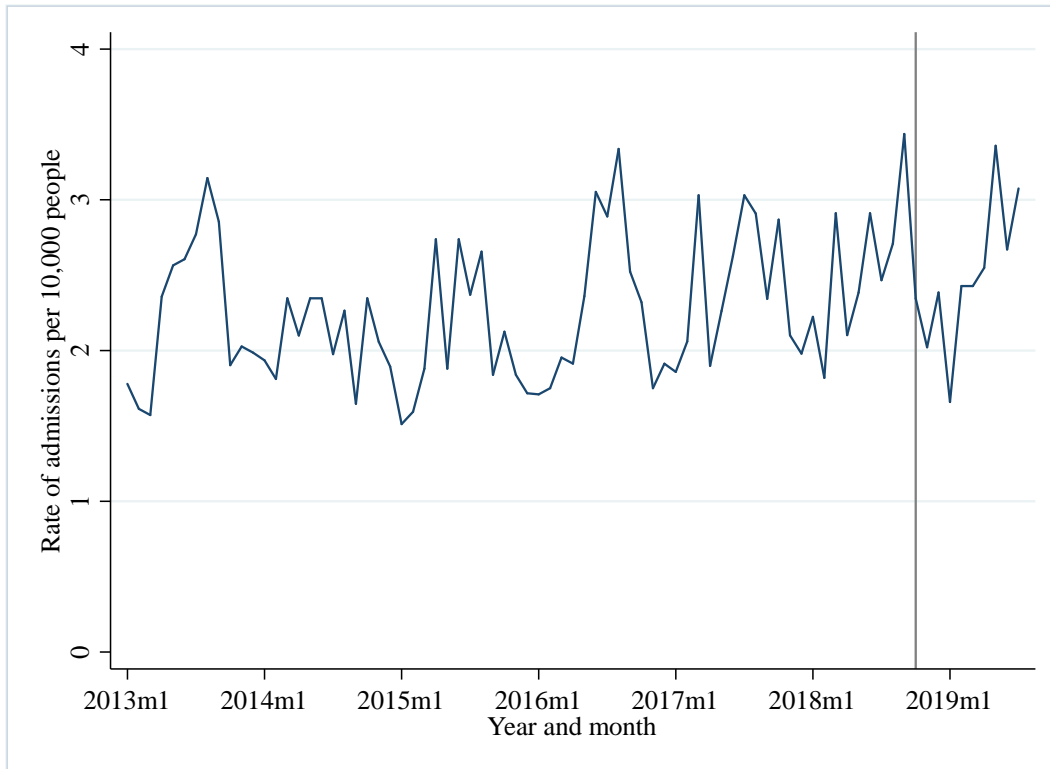


Figure 17 Rate of fracture of forearm bones-related hospital admissions per 10,000 people, Northern Territory

Table 23 Time series models for rate of fracture of forearm bones-related hospital admissions, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	0.01	-0.01, 0.01	.197
MUP (step)	-0.19	-0.64, 0.27	.414
Time X MUP (slope)	0.04	-0.02, 0.10	.149

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.4.5 TOXIC EFFECT OF ALCOHOL

A total of 440 toxic effect of alcohol-related hospital admissions were examined over the study period; 41% were male, 25% identified as Indigenous, and the average age was 38 years. The number of admissions with toxic effect of alcohol were too small to conduct any further analysis.

4.1.1.4.6 MALTREATMENT SYNDROMES

A total of 336 maltreatment syndrome-related hospital admissions were examined over the study period; 23% were male, 91% identified as Indigenous, and the average age was 23 years. The number of admissions with maltreatment syndromes were too small to conduct any further analysis.

4.1.1.4.7 ASSAULT

A total of 4,972 assault-related hospital admissions were examined over the study period; 46% were male, 91% identified as Indigenous, and the average age was 34 years. Figure 18 shows that assault-related hospital admission rates increased over the period examined. ITS modelling indicated no significant changes after the introduction of the MUP (Table 24).

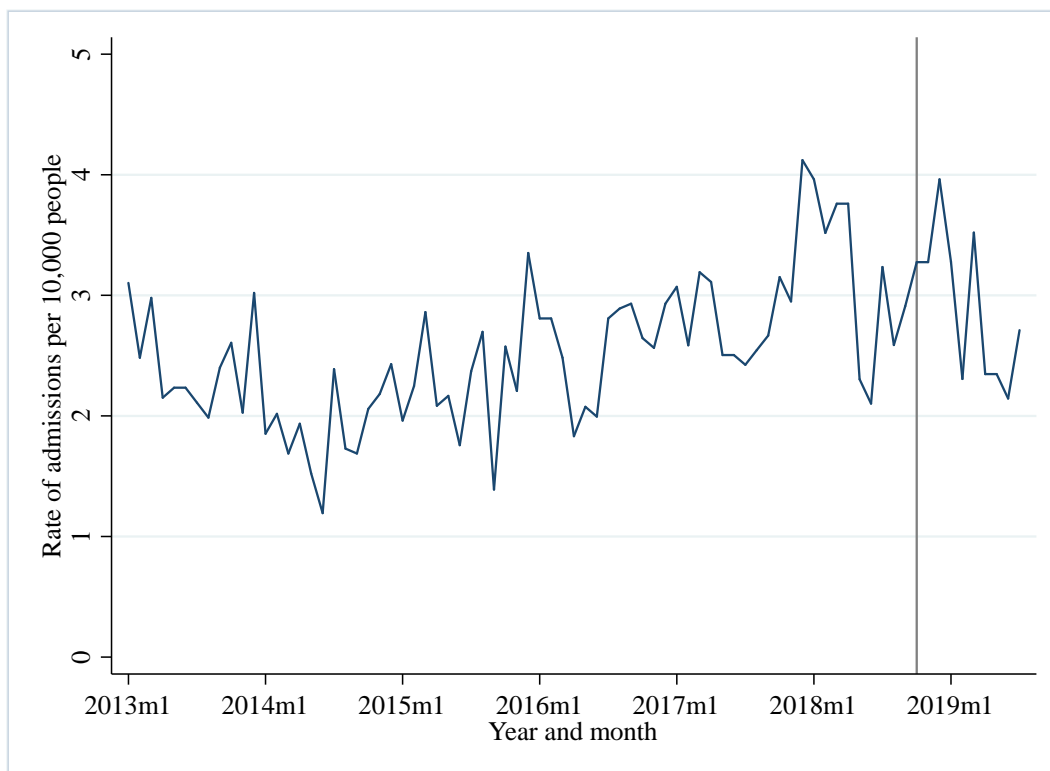


Figure 18 Rate of assault-related hospital admissions per 10,000 people, Northern Territory

Table 24 Time series models for rate of assault-related hospital admissions, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	0.01	0.01, 0.02	.007
MUP (step)	-0.19	-0.82, 0.44	.557
Time X MUP (slope)	-0.08	-0.17, 0.01	.089

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.4.8 ASSAULT BY SHARP OBJECT

A total of 2,695 assault by sharp object-related hospital admissions were examined over the study period; 51% were male, 92% identified as Indigenous, and the average age was 34 years. Figure 19 shows that assault by sharp object-related hospital admission rates remained relatively stable over the time period. ITS modelling indicated no significant changes after the introduction of the MUP (Table 25).

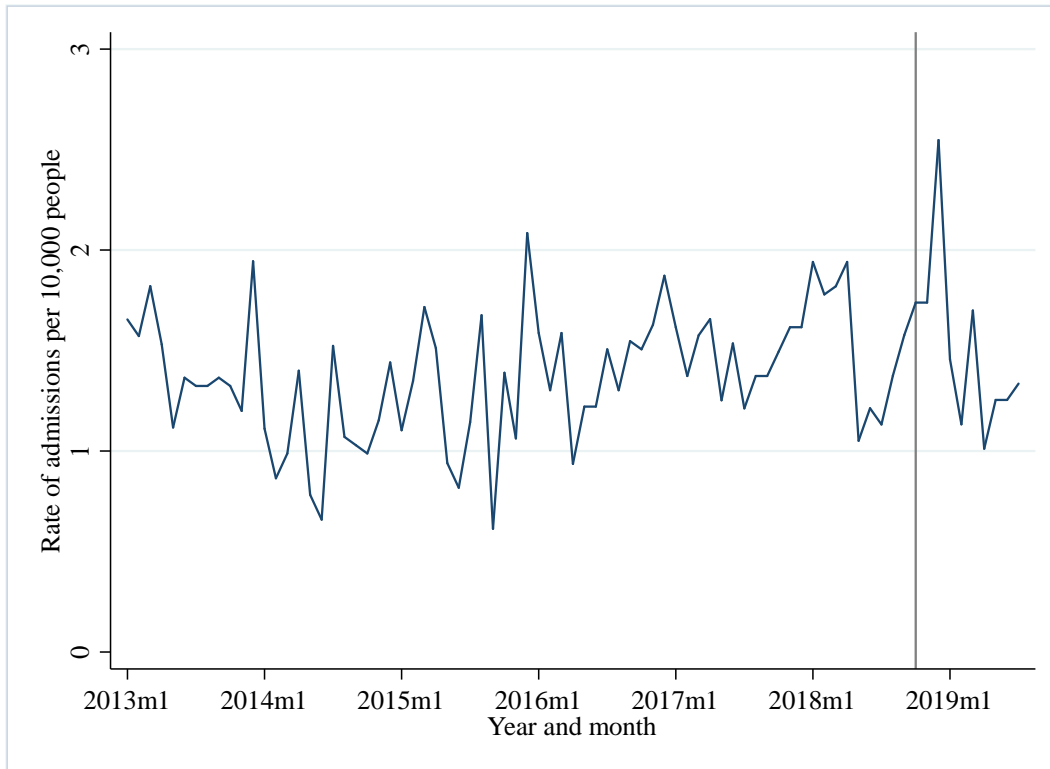


Figure 19 Rate of assault by sharp object-related hospital admissions per 10,000 people, Northern Territory

Table 25 Time series models for rate of assault by sharp object-related hospital admissions, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	0.01	-0.01, 0.01	.142
MUP (step)	0.09	-0.37, 0.56	.691
Time X MUP (slope)	-0.05	-0.11, 0.02	.140

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.5 SOBERING UP SHELTERS

A total of 37,911 Sobering Up Shelter admissions were recorded across the time period in Alice Springs, Katherine, and Nhulunbuy regions; 53% were male, 99% identified as Aboriginal or Torres Strait Islander, and the average age was 43 years. As shown in Figure 20, the rate of Sobering Up Shelter admissions declined until 2016 across these three regions, with an increase post-2016. Post-MUP, the rate of admissions demonstrated a significant step decrease and a significant slope change (plateauing since the introduction of MUP; see Table 26). The addition of MUP has continued the significant downward trend apparent across the entire time period.

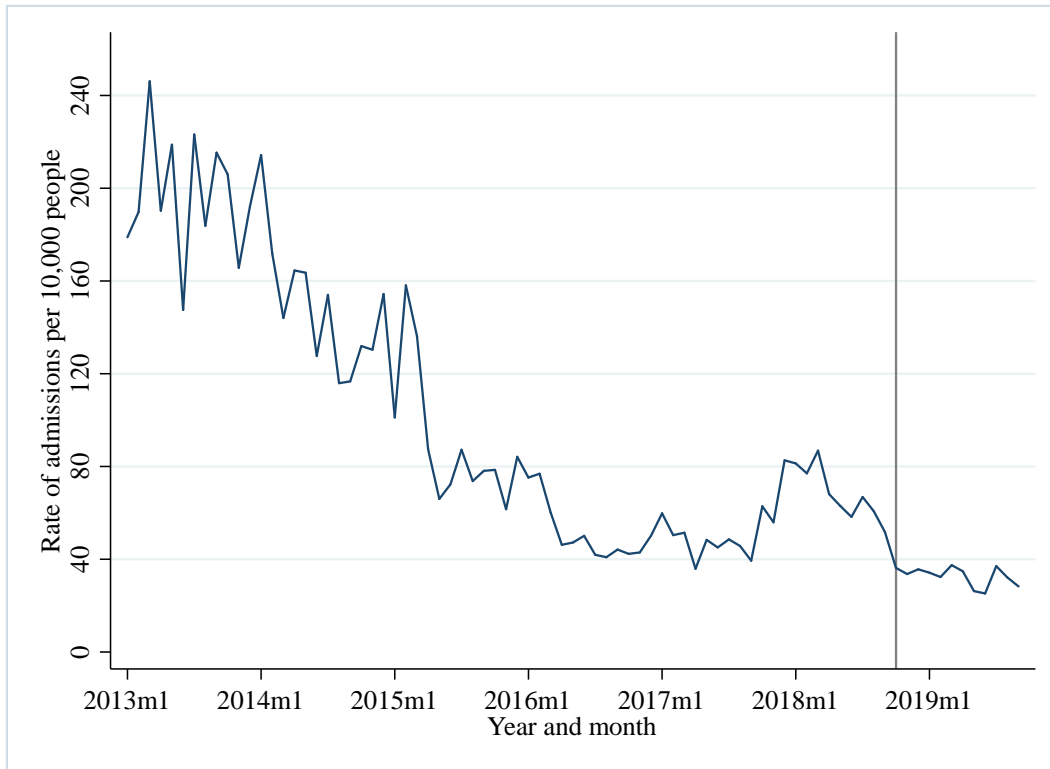


Figure 20 Rate of Sobering Up Shelter admissions per 10,000 people, Alice Springs, Katherine, and Nhulunbuy

Table 26 Time series models for rate of Sobering Up Shelter admissions, Alice Springs, Katherine, and Nhulunbuy

	β co-eff	95% CI	p-value
Time (slope)	-3.49	-4.01, -2.97	<.001
MUP (step)	-34.33	-47.73, -20.94	<.001
Time X MUP (slope)	4.07	2.41, 5.73	<.001

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.6 TREATMENT DATA

A total of 11,746 substantive AOD treatment episodes were recorded over the study period; 64% were male, 68% identified as Aboriginal or Torres Strait Islander, and the average age was 35 years. The majority of treatment episodes were for counselling (44%) or rehabilitation (41%). As shown in Figure 21, the rate of substantive treatment episodes across treatment centres in the Northern Territory demonstrated a steady increase over the study period. There was a significant slope change after the introduction of the MUP (decreasing rate of treatment episodes; see Table 27).

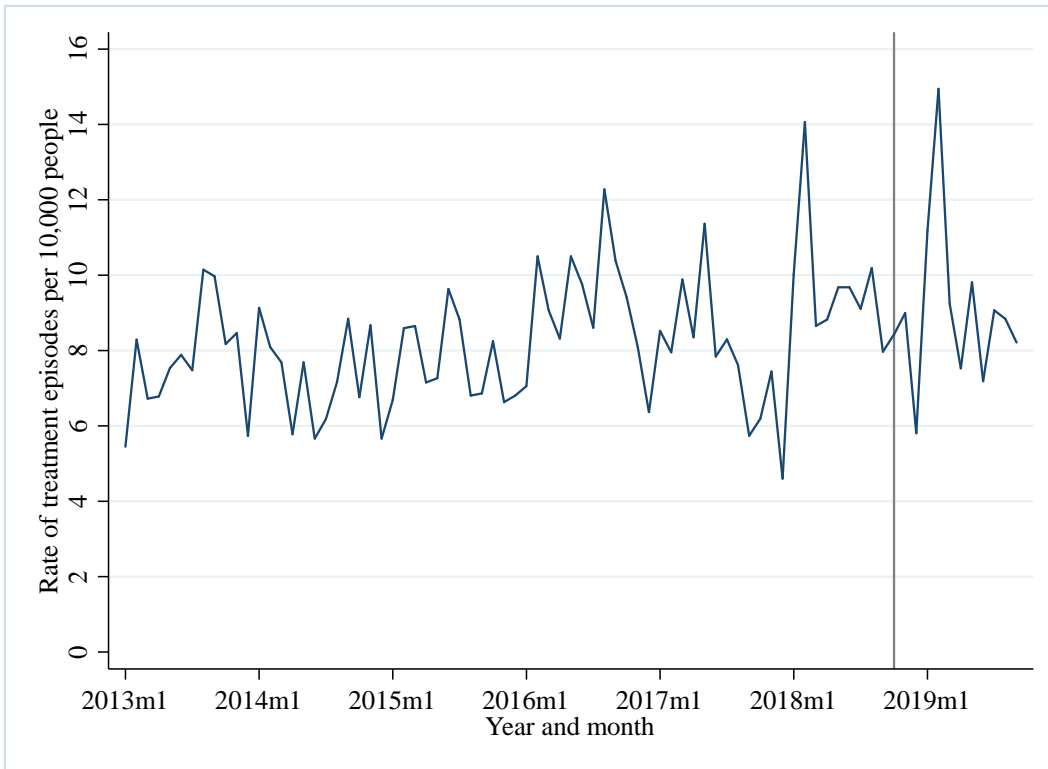


Figure 21 Rate of substantive treatment episodes per 10,000 people, Northern Territory

Table 27 Time series models for rate of substantive treatment episodes, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	0.03	0.01, 0.06	.034
MUP (step)	1.43	-1.32, 4.18	.303
Time X MUP (slope)	-0.25	-0.50, -0.01	.040

Note. Models control for seasonality and number of people on the BDR per month

In order to examine possible displacement of people accessing treatment, rehabilitation episodes by usual treatment centre were examined. As shown in Figure 22, the percentage of people receiving rehabilitation treatment at their usual centre did not decline after the introduction of the MUP.

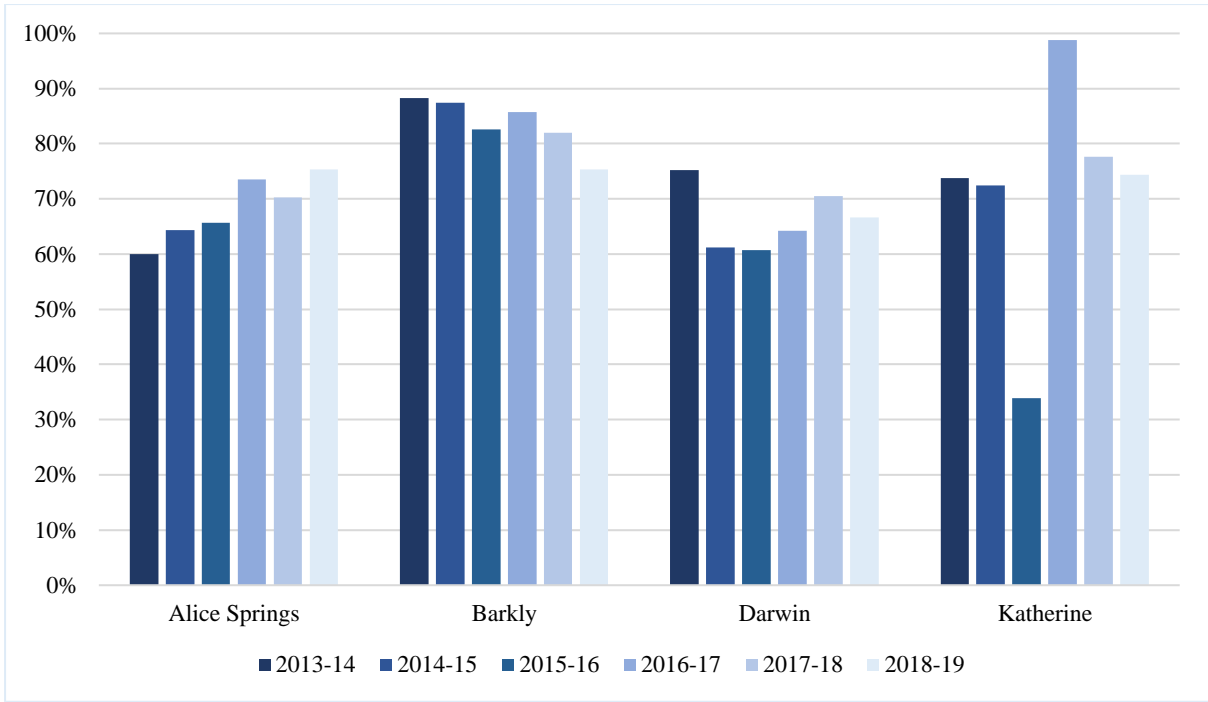


Figure 22 Percentage of people undergoing rehabilitation at their usual treatment centre

4.1.1.7 ROAD TRAFFIC CRASH DATA

There were a total of 1,245 alcohol-related crashes that resulted in injury and fatality from January 1 2013 to June 31 2019. Figure 23 Shows that the rate of crashes remained stable over the period, declining in early-2017. There was a significant step decrease in the rate of crashes after the introduction of the MUP (Table 28).

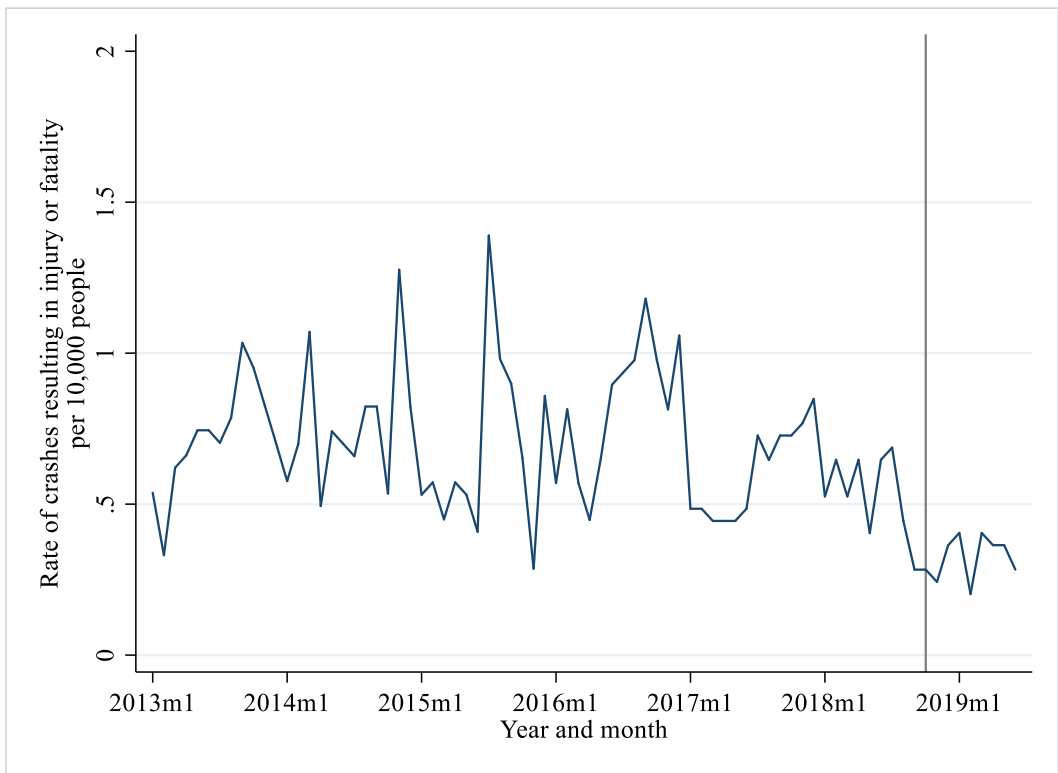


Figure 23 Rate of alcohol-related crash injuries and fatalities per 10,000 people, Northern Territory

Table 28 Time series models for rate of alcohol-related crash injuries and fatalities, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	-0.01	-0.09, 0.07	.741
MUP (step)	-6.30	-11.57, -1.03	.020
Time X MUP (slope)	0.30	-0.60, 1.20	.511

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.8 CHILD PROTECTION DATA

Figure 24 shows that investigations (mean = 625 per month) increased over time before declining prior to the introduction of the MUP, while care and protection orders (mean = 1,084 per month) and out of home care (mean = 1,020 per month) increased over the period before declining shortly after the introduction of the MUP. There was a significant step decrease in the number investigations of a notification (Table 29), and a significant slope decline in the number of child protection orders (Table 30) and out of home care cases (Table 31) after the introduction of the MUP.

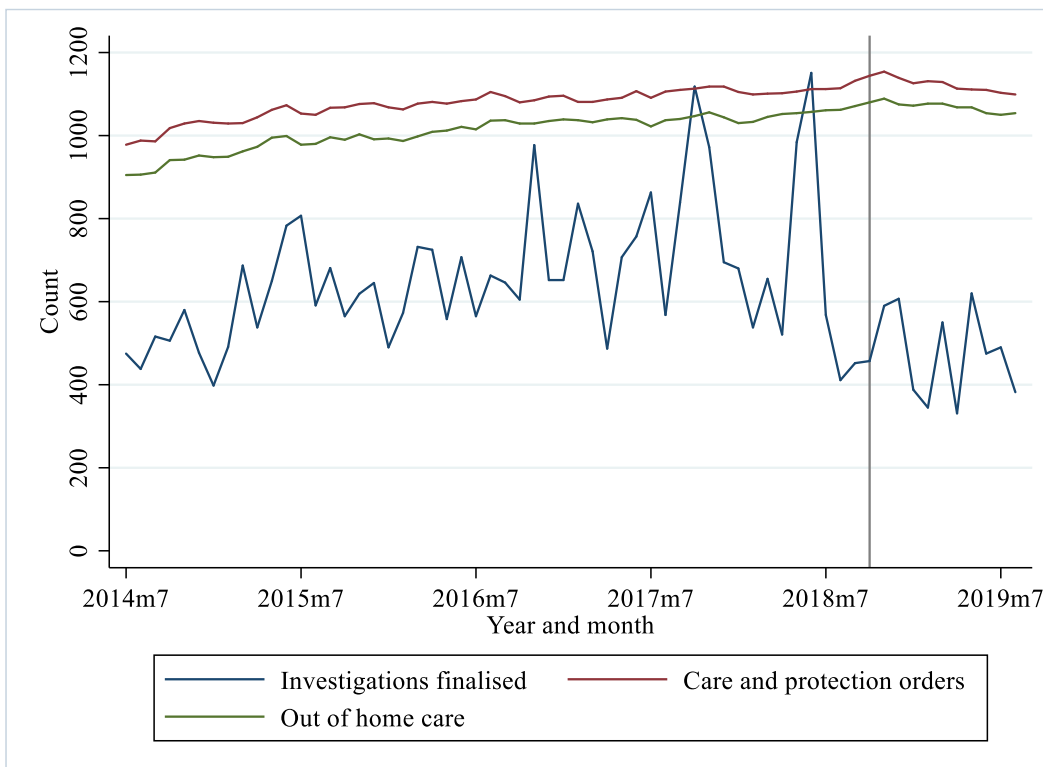


Figure 24 Count of children in child protection, Northern Territory

Table 29 Time series model for count of children subject to an investigation of a notification, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	4.43	0.01, 8.85	.050
MUP (step)	-244.40	-423.63, -65.17	.008
Time X MUP (slope)	-12.82	-35.65, 10.01	.265

Note. Models control for seasonality and number of people on the BDR per month

Table 30 Time series model for count of children on care and protection orders, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	2.45	1.55, 3.35	<.001
MUP (step)	5.50	-7.24, 18.24	.391
Time X MUP (slope)	-6.68	-9.24, -4.13	<.001

Note. Models control for seasonality and number of people on the BDR per month

Table 31 Time series model for count of children in out-of-home care, Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	2.91	2.02, 3.81	<.001
MUP (step)	2.64	-7.69, 12.97	.611
Time X MUP (slope)	-5.89	-9.02, -2.77	<.001

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.9 PRICE MONITORING

This section presents key data from a larger report on price monitoring in the NT (see Mojica-Perez et al., in press). As shown in Figure 25, before the MUP came into effect in October 2018 in the NT, cask wine was sold as the cheapest alcoholic beverage, at on average \$0.70 per standard drink, followed by beer, cider, spirits, bottled wine, and pre-mix. Bottled wine had the largest number of distinct products (n=1,387), while cask wine had the fewest (n=19). After the introduction of the MUP, there were non-significant increases in the overall mean price per standard drink (PPSD) of bottled wine, spirits, cider and pre-mix spirits and a significant jump in cask wine prices.

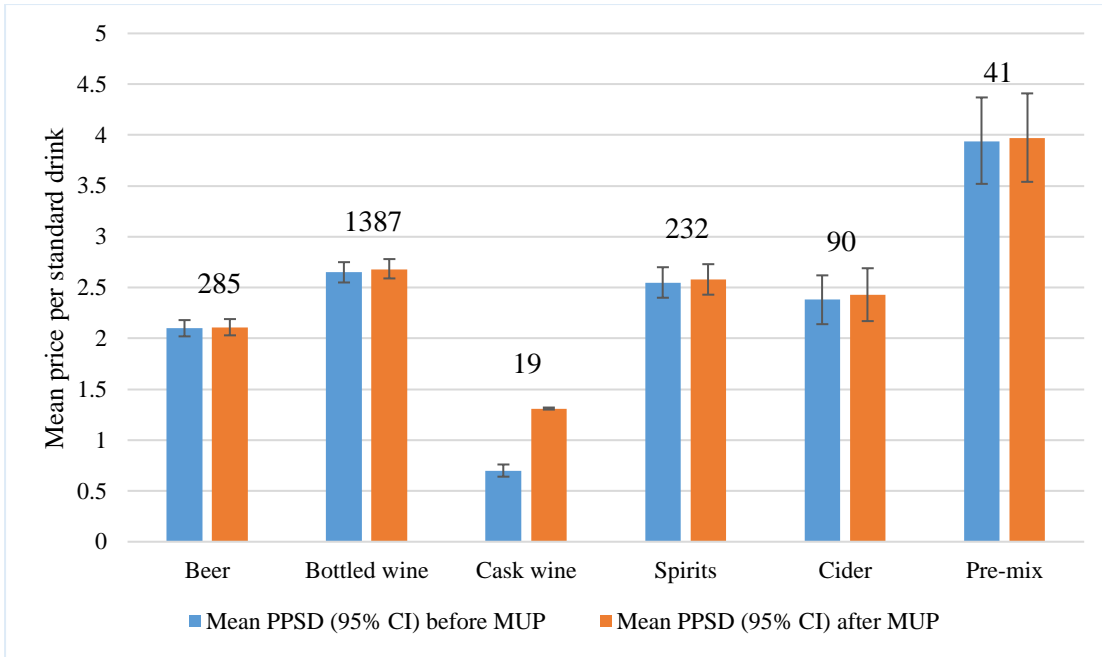


Figure 25 Mean price per standard drink (with 95% CIs) for each alcohol beverage type (n=2,054)

Note. Number above columns represents number of products included in estimate. Data from (Mojica-Perez et al., in press)

Figure 26 displays the PPSD for cask wine for only the low July PPSD category as all cask wine sold fell below the PPSD of \$1.30 in July 2018. The PPSD prior to October 2018 was at \$0.70, once the policy was introduced this was increased to \$1.31 and remained at this PPSD for November and December 2018.

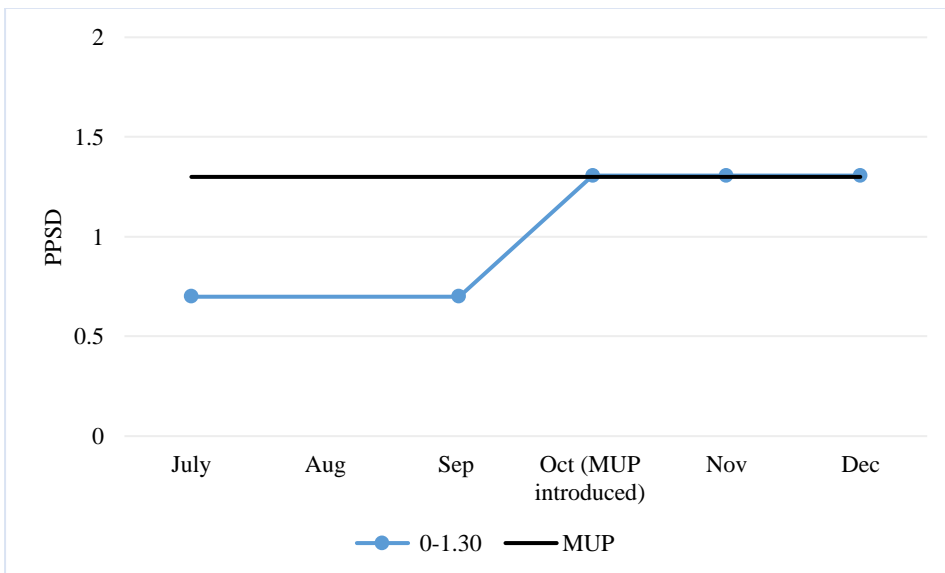


Figure 26 The price per standard drink for cask wine before and after the MUP in NT was implemented across the low July PPSD category.

Note. Data from (Mojica-Perez et al., in press)

4.1.1.10 LICENSING DATA

Table 32 provides the total number of liquor licenses, the number of new liquor licenses, and the total number of special liquor licenses across the NT, respectively. The total number of full licences has remained relatively stable since 2015/16, with the number of new licenses fluctuating over the time period. For special liquor licenses, 2018/19 saw the highest number licenses issues.

Table 32 Total number of full liquor licenses, new liquor licenses, and special liquor licenses operating across the NT

Financial year	Number of full liquor licenses	Number of new liquor licenses	Number of special liquor licenses
2013/14	492	4	362
2014/15	502	12	407
2015/16	537	38	323
2016/17	538	18	287
2017/18	541	8	244
2018/19	535	30	417

4.1.1.11 SCHOOL ATTENDANCE DATA

As demonstrated in Figure 27, school attendance across the Northern Territory remained relatively stable throughout the time period examined. There were no discernible changes after the introduction of MUP.

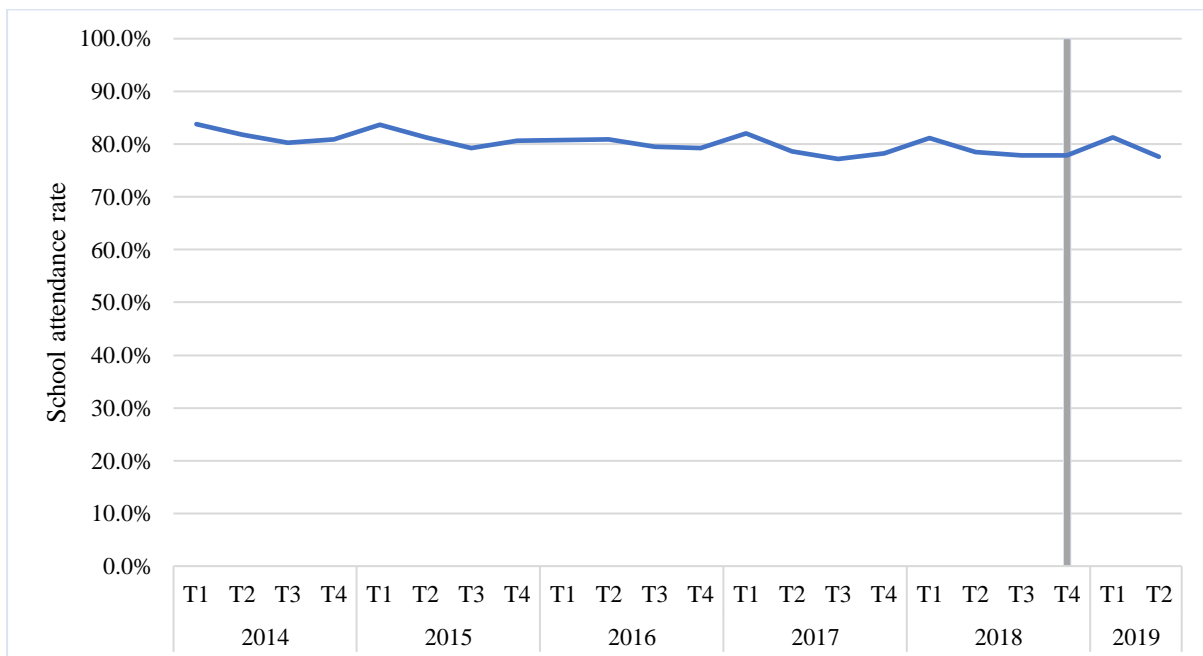


Figure 27 School attendance by term, Northern Territory

4.1.1.12 TOURISM DATA

Figure 28 provides the total number of domestic and international visitors to the Northern Territory from 2013-14 to 2018-19. As shown, the numbers have remained relatively stable over time.

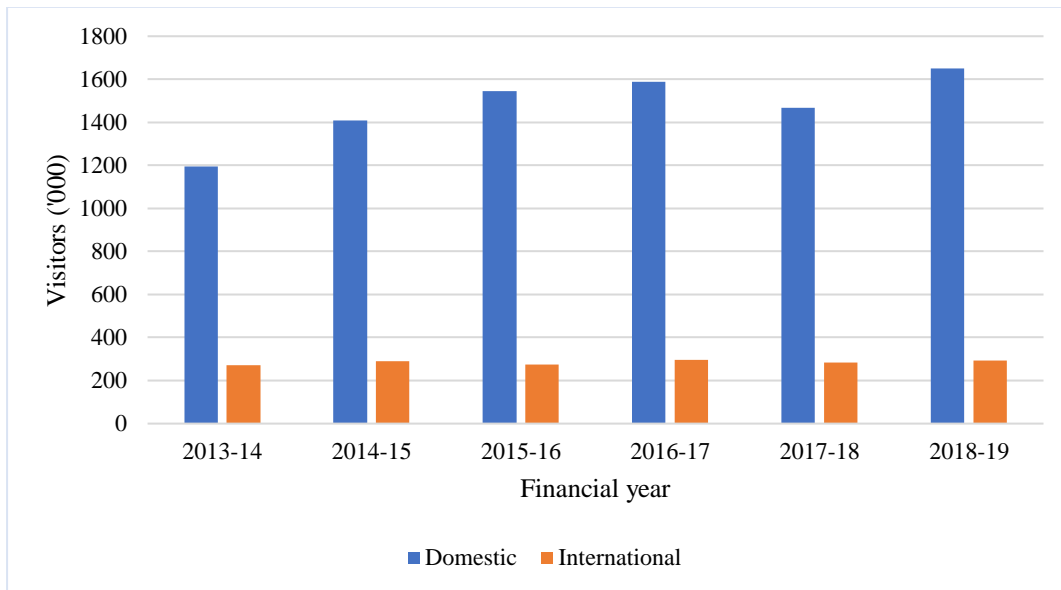


Figure 28 Number of domestic and international visitors, Total NT

Tourism expenditure is shown in Figure 29; the expenditure figures have remained relatively stable over the time period.

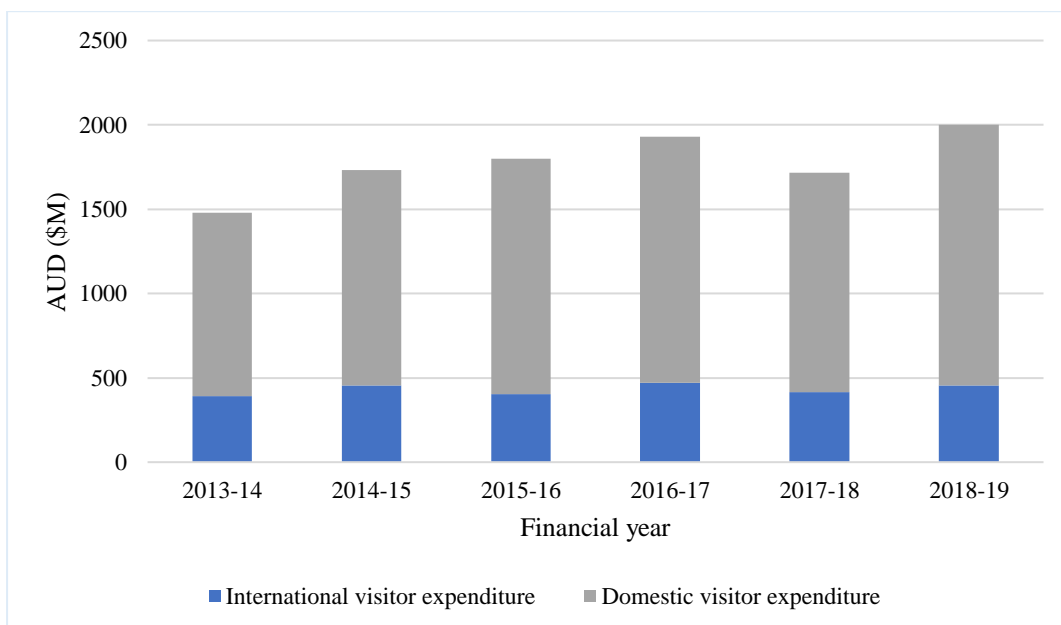


Figure 29 Tourist expenditure (\$M), by domestic and international visitors, Total NT

4.1.2 DARWIN AND PALMERSTON

4.1.2.1 ALCOHOL WHOLESALE SUPPLY DATA

The total alcohol wholesale supply per capita for the Darwin and Palmerston region is shown in Figure 30. There was no significant step or slope change in the supply of total alcohol post-MUP.

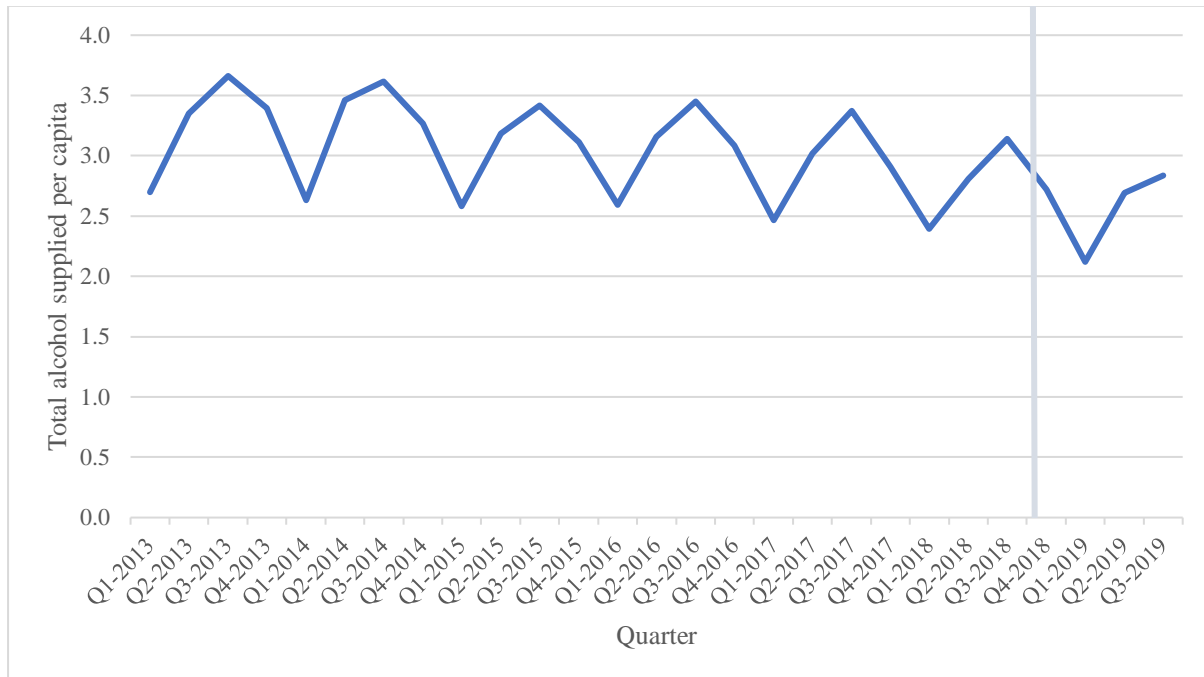


Figure 30 Total alcohol wholesale supply per capita, Darwin and Palmerston

Table 33, there was a significant step decrease in the supply of cask wine post-MUP. There was also a significant slope decrease in the supply of cider. While there was a significant slope increase in the supply of fortified wine, the actual amount supplied per capita demonstrated a non-significant decrease. There was also a very small, but significant slope increase in spirits wholesale supply. No significant changes were observed in the remaining beverage types (not shown in Table 33).

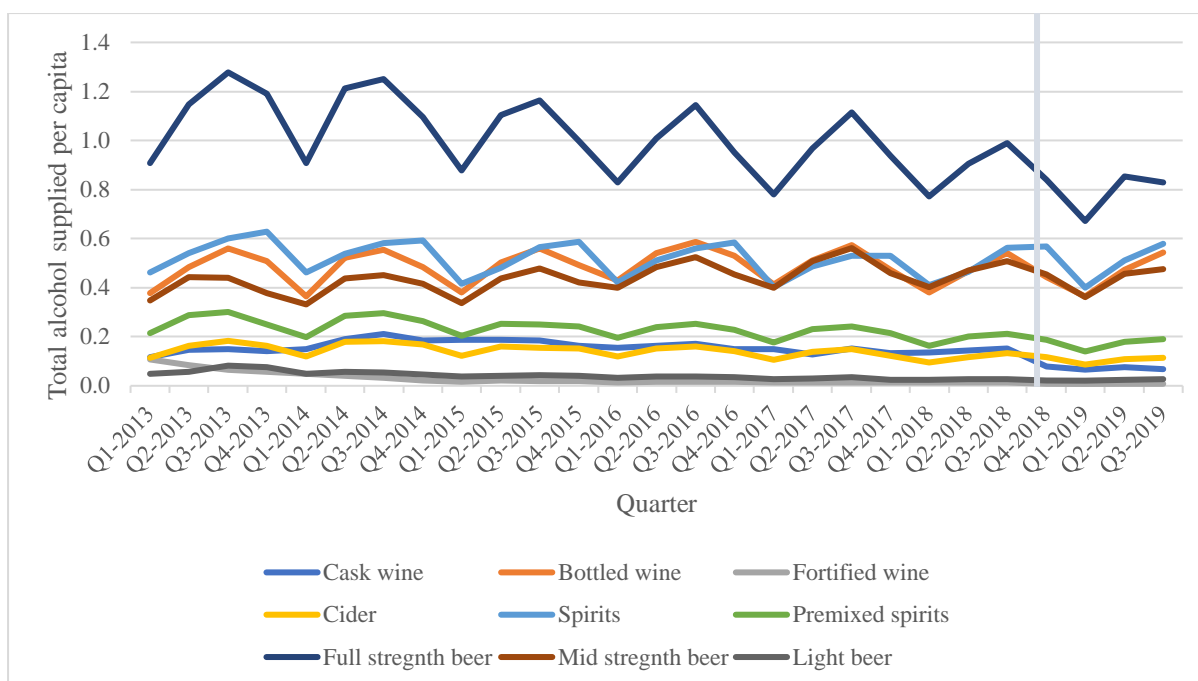


Figure 31 Alcohol wholesale supply per capita by beverage type, Darwin and Palmerston

Table 33 Time series models for per capita alcohol wholesale supply, Darwin and Palmerston

Cask Wine	β co-eff	95% CI	p-value
Time (slope)	-0.001	-0.01, 0.004	.792
MUP (step)	-0.06	-0.07, -0.05	<.001
Time X MUP(slope)	-0.01	-0.02, 0.002	.110
Fortified Wine	β co-eff	95% CI	p-value
Time (slope)	-0.01	-0.01, -0.003	<.001
MUP (step)	-0.0001	-0.01, 0.01	.984
Time X MUP(slope)	0.01	0.001, 0.01	.020
Cider	β co-eff	95% CI	p-value
Time (slope)	-0.001	-0.002, -0.0004	.009
MUP (step)	0.01	-0.01, 0.02	.483
Time X MUP(slope)	-0.01	-0.01, -0.0001	.048
Spirits	β co-eff	95% CI	p-value
Time (slope)	-0.004	-0.01, -0.002	.003
MUP (step)	-0.01	-0.07, 0.06	.858
Time X MUP(slope)	0.02	0.0003, 0.05	.047

Note. Models control for seasonality and number of people on the BDR at the end of each quarter

4.1.2.1.1 NIGHTLIFE VENUES

In order to examine whether the MUP had an impact on nightlife in Darwin the alcohol supplied to late night venues (e.g. bars, hotels, and nightclubs) each quarter was examined (Figure 31). ITS models were used to determine if change occurred on a per capita or per venue basis. Alcohol supply declined over the period examined, both on a per capita and per venue basis. No per capita changes were found, although a significant slope increase was found per venue after the introduction of the MUP (see Table 34).

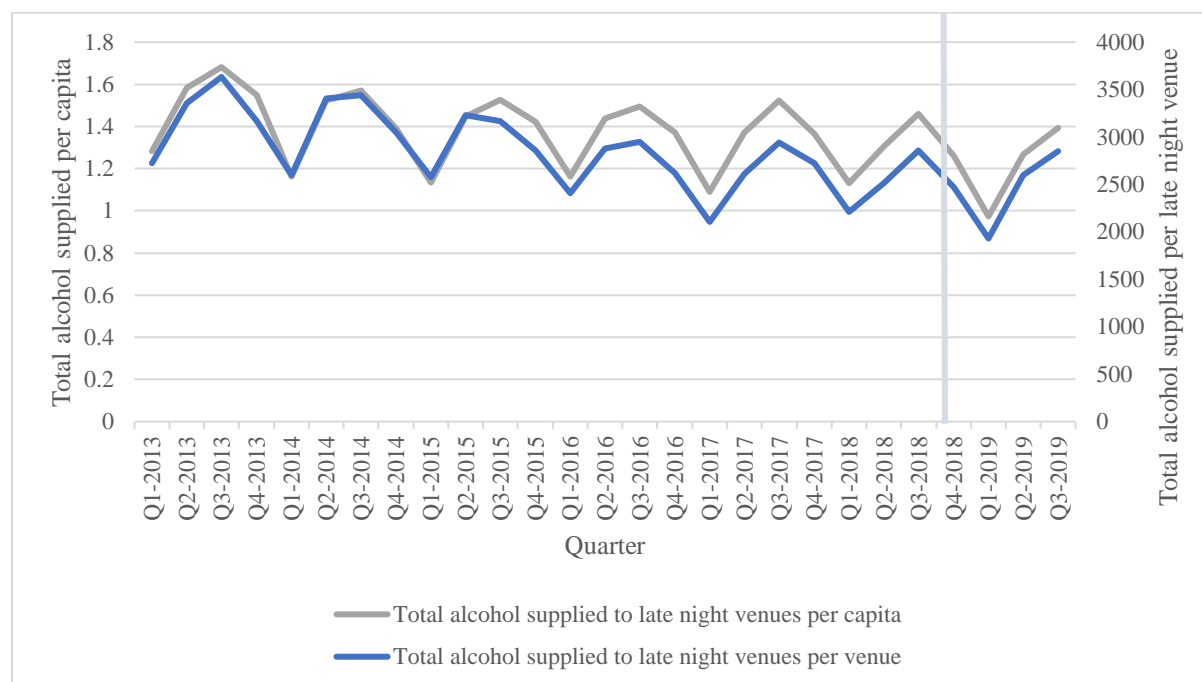


Figure 32 Alcohol wholesale supply to nightlife venues, Darwin

Table 34 Time series models for alcohol wholesale supply to nightlife venues, Darwin

Supply per capita	β co-eff	95% CI	p-value
Time (slope)	-0.01	-0.02, -0.01	<.001
MUP (step)	-0.10	-0.21, 0.003	.057
Time X MUP(slope)	0.03	-0.02, 0.07	.248
Supply per venue	β co-eff	95% CI	p-value
Time (slope)	-46.35	-55.14, -37.57	<.001
MUP (step)	-100.91	-300.68, 98.86	.305
Time X MUP(slope)	93.66	33.58, 153.74	.004

Note. Models control for seasonality and number of people on the BDR at the end of each quarter

4.1.2.2 POLICE ALCOHOL-RELATED ASSAULTS DATA

A total of 8,663 alcohol-related assault offences were recorded across the time period; 11% recorded victim alcohol involvement, 44% offender alcohol involvement, and 46% both victim and offender alcohol involvement. As shown in Figure 33, the rate of alcohol-related assault offences began to decline in Darwin and Palmerston before the introduction of the MUP. ITS modelling indicated a significant step decrease in the rate of assault offences post-MUP (see Table 35).

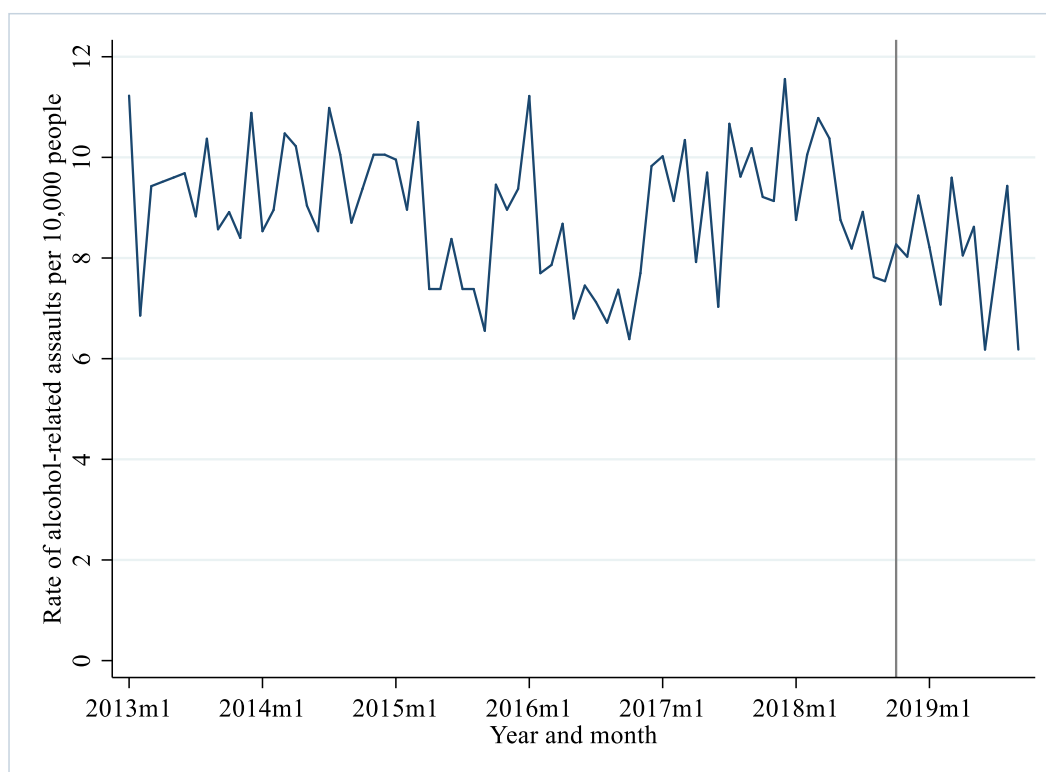


Figure 33 Rate of alcohol-related assault offences per 10,000 population, Darwin and Palmerston

Table 35 Time series models for rate of police recorded assault offences, Darwin and Palmerston

	β co-eff	95% CI	p-value
Time (slope)	-0.02	-0.04, 0.01	.140
MUP (step)	-1.33	-2.64, -0.02	.047
Time X MUP (slope)	0.02	-0.20, 0.24	.858

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.3 OFFENDERS – ALCOHOL-RELATED ASSAULTS

There were a total of 2,831 offenders involved in alcohol-related assault offences across the time period, with 80% of offenders male, 81% aged 18-44 years, and 80% identifying as Aboriginal. Figure 34 shows that the number of offenders involved in alcohol-related assault offences per 10,000 population declined

in early 2018 in Darwin and Palmerston. ITS modelling indicated a significant step reduction in the rate of offenders post-MUP (Table 36).

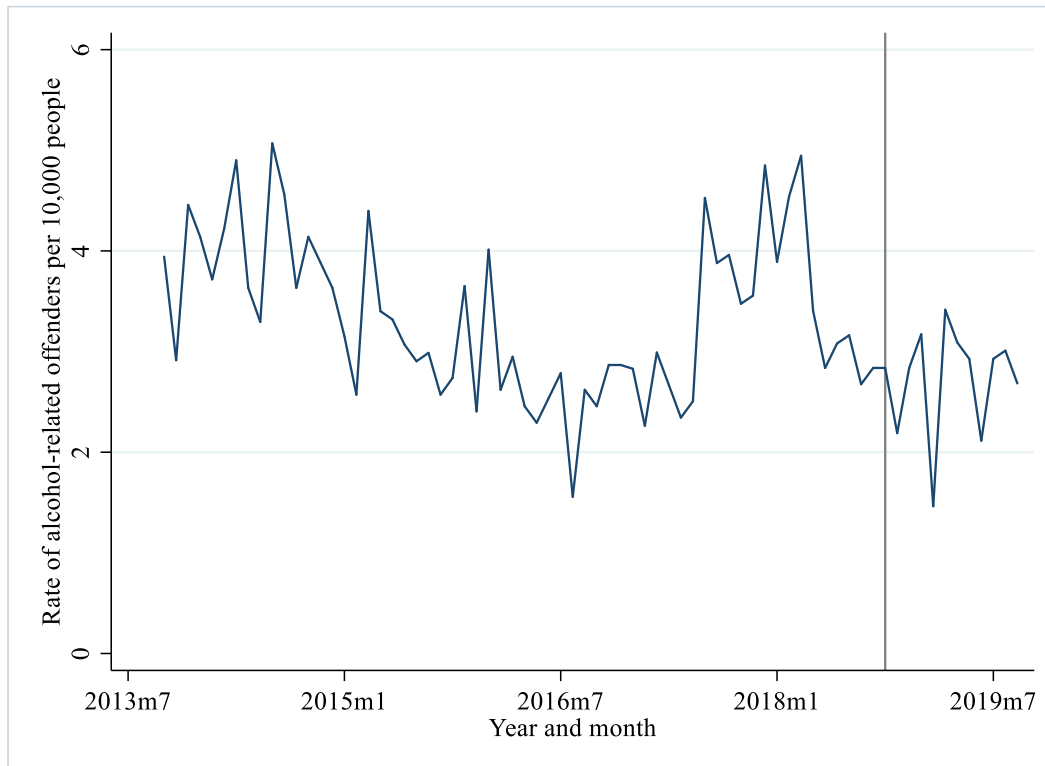


Figure 34 Rate of offenders in alcohol-related assault offences per 10,000 population, Darwin and Palmerston

Table 36 Time series models for rate of police recorded offenders, Darwin and Palmerston

	β co-eff	95% CI	p-value
Time (slope)	-0.03	-0.05, -0.01	.005
MUP (step)	-1.10	-2.08, -0.11	.029
Time X MUP (slope)	0.07	-0.03, 0.16	.166

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.4 VICTIMS – ALCOHOL-RELATED ASSAULTS

There were a total of 8,021 victims involved in alcohol-related assault offences across the time period, with 56% of victims female, 74% aged 18-44 years, and 60% identifying as Aboriginal. As demonstrated in Figure 35 the rate of victims in alcohol-related assault offences in Darwin and Palmerston showed the start of a decline from 2018. ITS modelling indicated no significant change in the rate of victims after the introduction of MUP (Table 37).

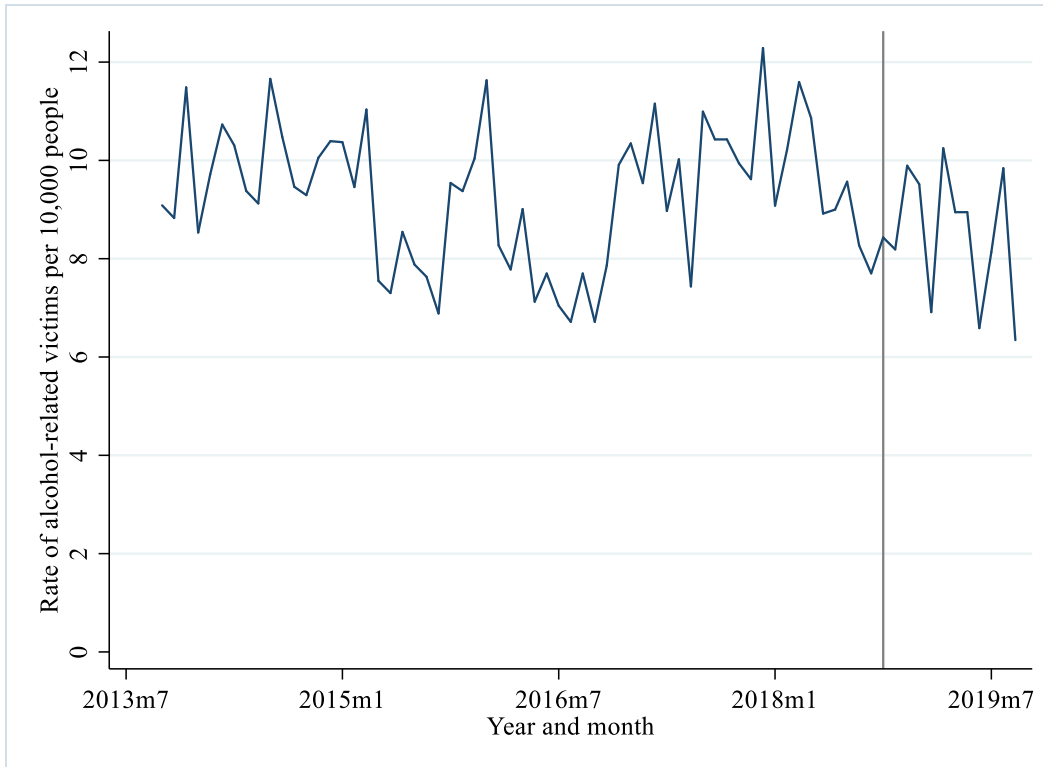


Figure 35 Rate of victims in alcohol-related assault offences per 10,000 population, Darwin and Palmerston

Table 37 Time series models for rate of police recorded victims, Darwin and Palmerston

	β co-eff	95% CI	p-value
Time (slope)	-0.01	-0.05, 0.02	.463
MUP (step)	-1.34	-3.02, 0.34	.116
Time X MUP (slope)	0	-0.27, 0.27	.978

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.5 POLICE PROTECTIVE CUSTODY DATA

There were a total of 19,660 episodes of alcohol-related protective custody across the time period. Figure 36 shows that the rate of alcohol-related protective custody episodes in Darwin and Palmerston increased until approximately late-2017, after which there was a levelling out. ITS modelling indicated there was a significant slope decrease in the rate of protective custody episodes after the introduction of MUP (Table 37).

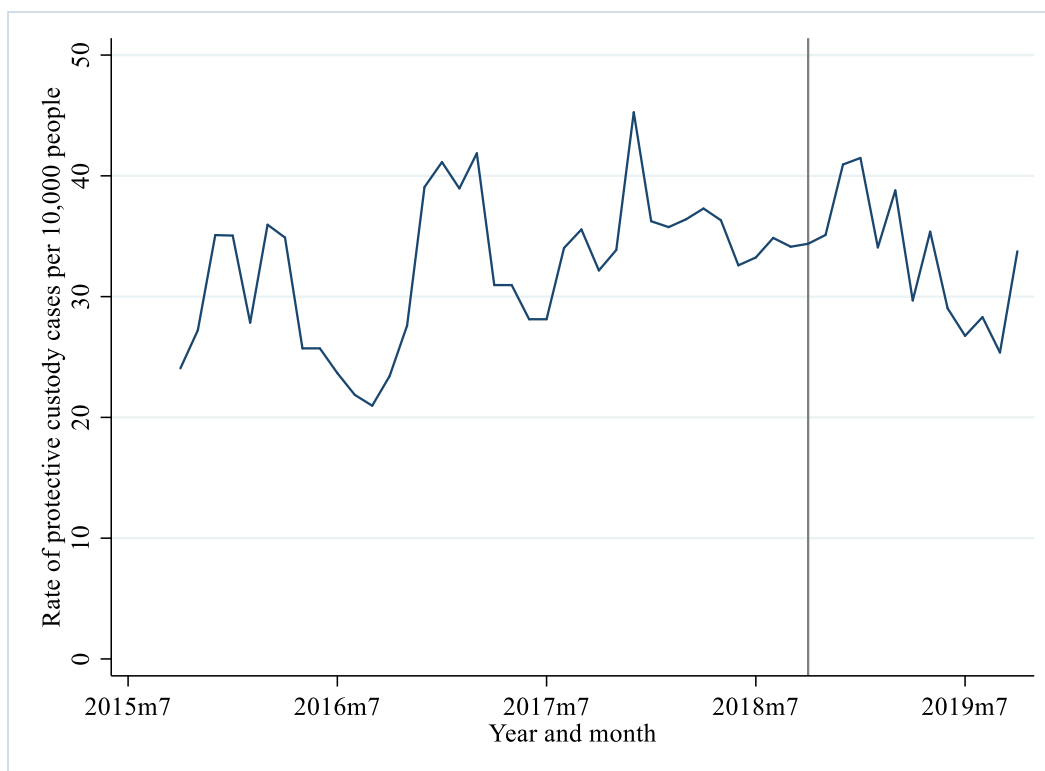


Figure 36 Rate of alcohol-related protective custody episodes per 10,000 population, Darwin and Palmerston

Table 38 Time series models for rate of alcohol-related protective custody episodes, Darwin and Palmerston

	β co-eff	95% CI	p-value
Time (slope)	0.35	0.02, 0.67	.035
MUP (step)	-1.71	-8.17, 4.75	.595
Time X MUP (slope)	-0.90	-1.58, -0.26	.010

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.6 AMBULANCE ATTENDANCES

A total of 17,602 alcohol-related ambulance attendances were recorded across the time period. As shown in Figure 37, the rate of alcohol-related ambulance attendances began to decline in Darwin and Palmerston after the introduction of the MUP, although a lag period was observed. ITS modelling indicated no significant step change, however a significant slope change in the rate of ambulance attendances post-MUP was observed (the rate of ambulance attendances declined after October 2018; see Table 39).

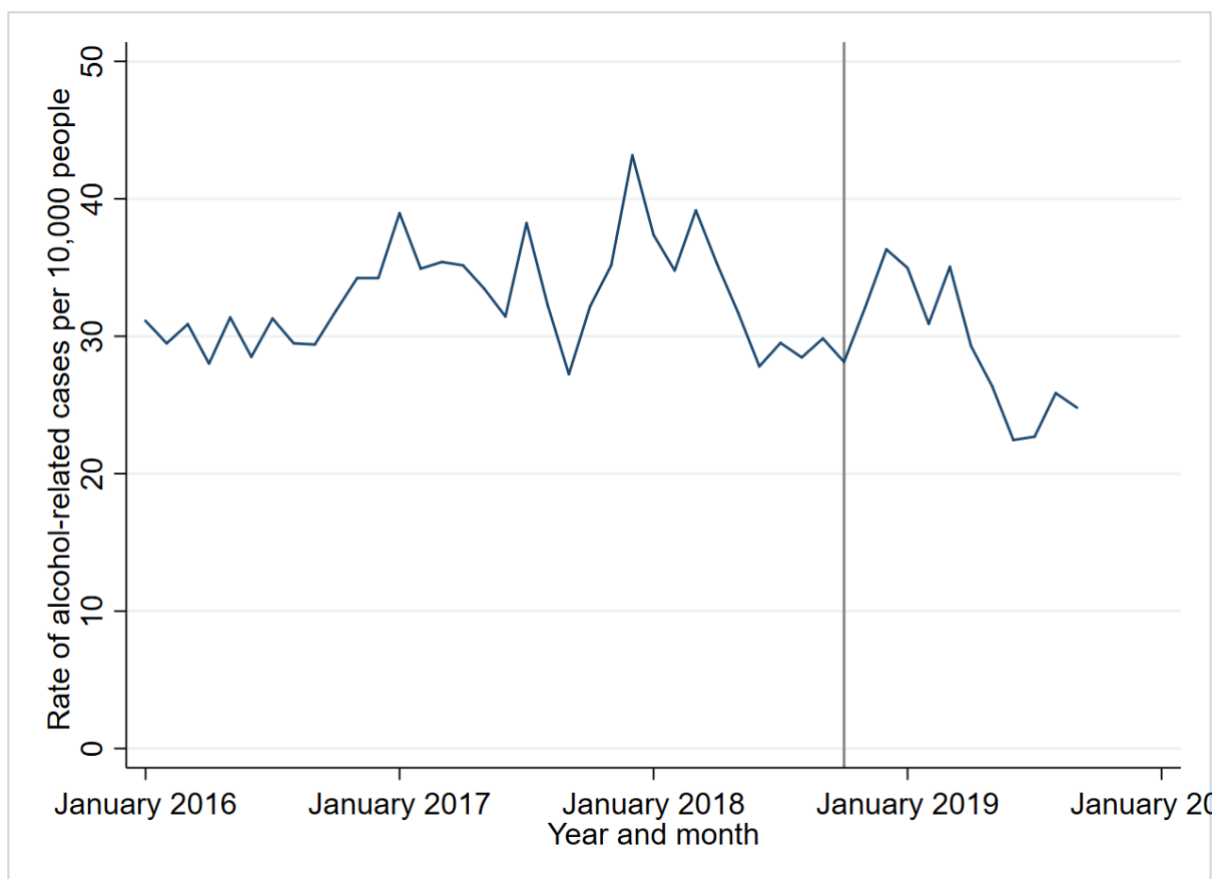


Figure 37 Rate of alcohol-related ambulance attendances per 10,000 population, Darwin and Palmerston

Table 39 Time series models for rate of alcohol-related ambulance attendances, Darwin and Palmerston

	β co-eff	95% CI	p-value
Time (slope)	0.39	0.16, 0.64	.002
MUP (step)	-3.41	-9.39, 2.57	.256
Time X MUP (slope)	-0.76	-1.46, -0.06	.035

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.7 EMERGENCY DEPARTMENT PRESENTATIONS

4.1.2.7.1 ALCOHOL-RELATED PRESENTATIONS

A total of 6,738 alcohol-related ED presentations were examined over the study period; 62% were male, 73% identified as Indigenous, and the average age was 41 years. As shown in Figure 38, the rate of ED presentations involving alcohol increased in Darwin in 2015, after which they remained relatively stable. There were no significant step or slope changes post-MUP (see Table 40).

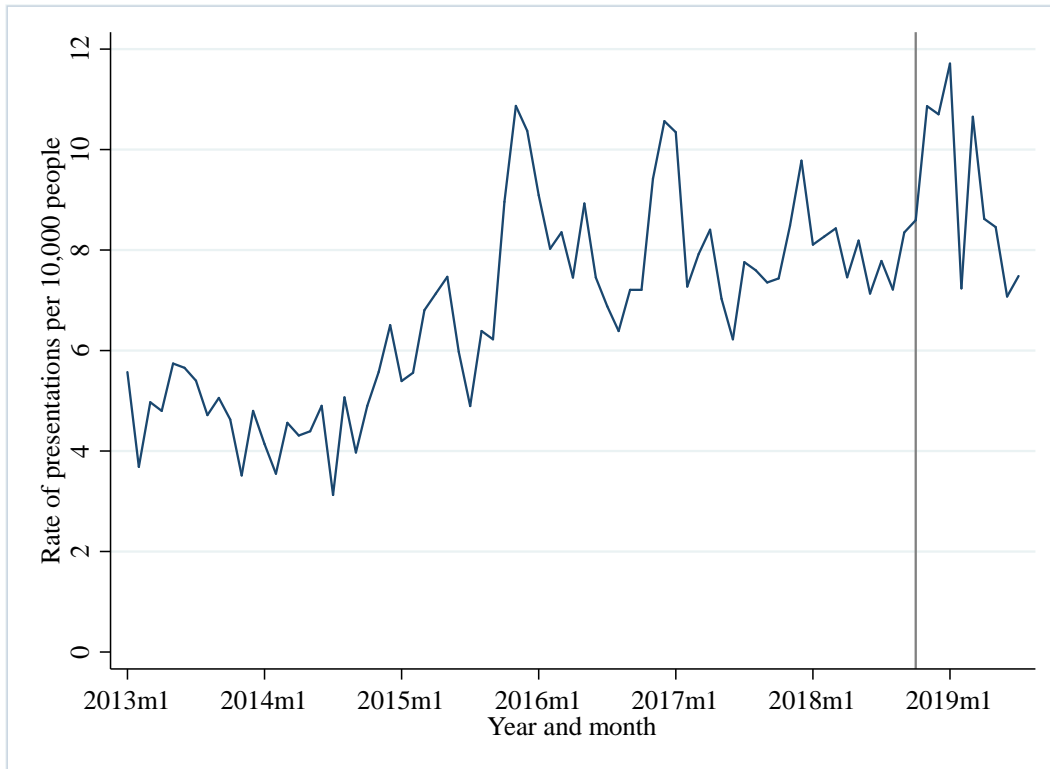


Figure 38 Rate of alcohol-related ED presentations per 10,000 people, Darwin

Table 40 Time series models for rate of alcohol-related ED presentations, Darwin

	β co-eff	95% CI	p-value
Time (slope)	0.08	0.05, 0.11	<.001
MUP (step)	0.86	-1.88, 3.59	.535
Time X MUP (slope)	-0.20	-0.58, 0.19	.308

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.7.2 OTHER SUBSTANCE USE

A total of 1,654 other substance use ED presentations were examined over the study period; 69% were male, 44% identified as Indigenous, and the average age was 29 years. Figure 39 the rate of individuals presenting for other substance use at the ED in Darwin increased slightly over the period. ITS modelling indicated no significant change after the introduction of the MUP (Table 41).

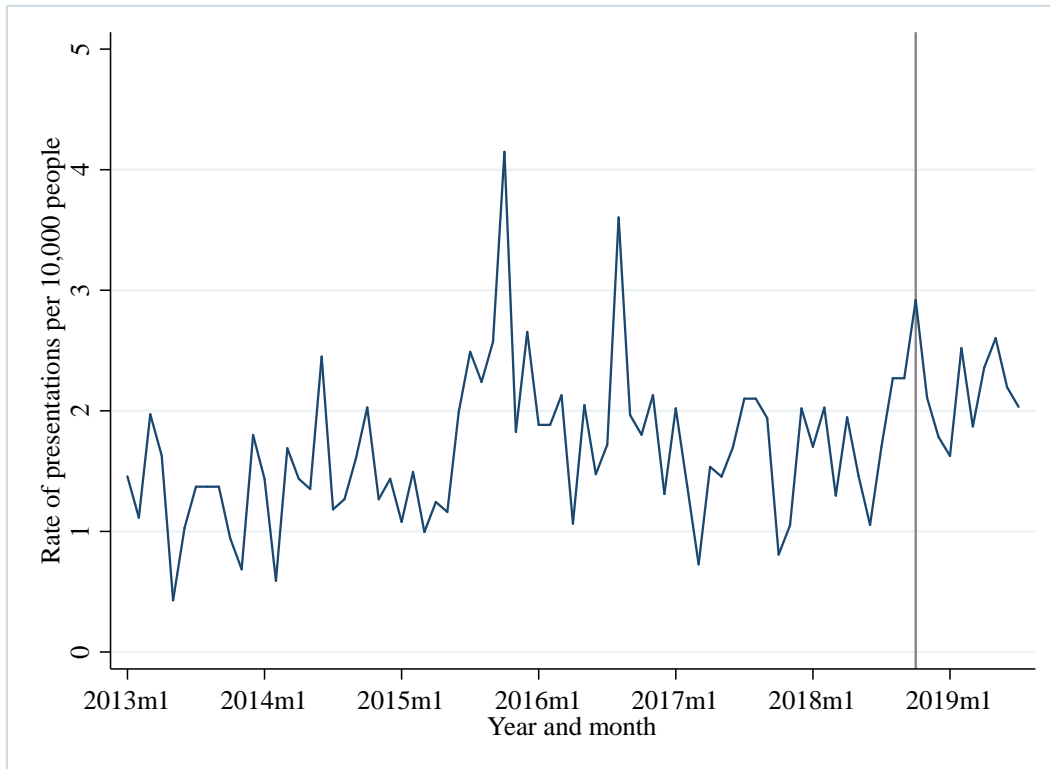


Figure 39 Rate of other substance use ED presentations per 10,000 people, Darwin

Table 41 Time series models for rate of other substance use ED presentations, Darwin

	β co-eff	95% CI	p-value
Time (slope)	0.01	0.01, 0.02	.023
MUP (step)	0.63	-0.21, 1.47	.138
Time X MUP (slope)	-0.03	-0.14, 0.08	.594

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.7.3 FRACTURE OF SKULL AND FACIAL BONES

A total of 1,349 fracture of skull and facial bones-related ED presentations were examined over the study period; 71% were male, 31% identified as Indigenous, and the average age was 31 years. Figure 40 shows that the rate of fracture of skull and facial bones ED presentations were stable across the period. ITS modelling indicated no significant change after the introduction of the MUP (Table 42).

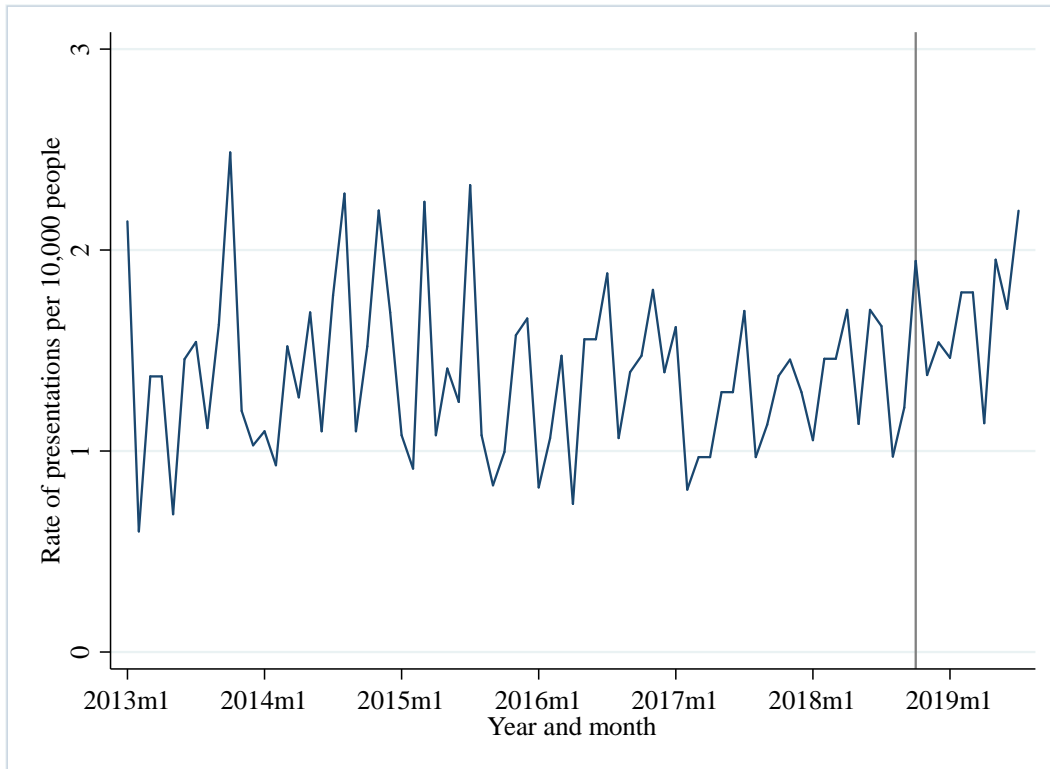


Figure 40 Rate of fracture of skull and facial bones-related ED presentations per 10,000 people, Darwin

Table 42 Time series models for rate of fracture of skull and facial bones-related ED presentations, Darwin

	β co-eff	95% CI	p-value
Time (slope)	-0.01	-0.01, 0.01	.290
MUP (step)	0.07	-0.29, 0.43	.683
Time X MUP (slope)	0.05	-0.01, 0.11	.054

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.7.4 FRACTURE OF FOREARM BONES

A total of 1,577 fracture of forearm bones-related ED presentations were examined over the study period; 56% were male, 37% identified as Indigenous, and the average age was 24 years. Figure 41 shows that the rate of fracture of forearm bones-related ED presentations were stable across the period. ITS modelling indicated a significant step increase in ED presentations after the introduction of the MUP (Table 43).

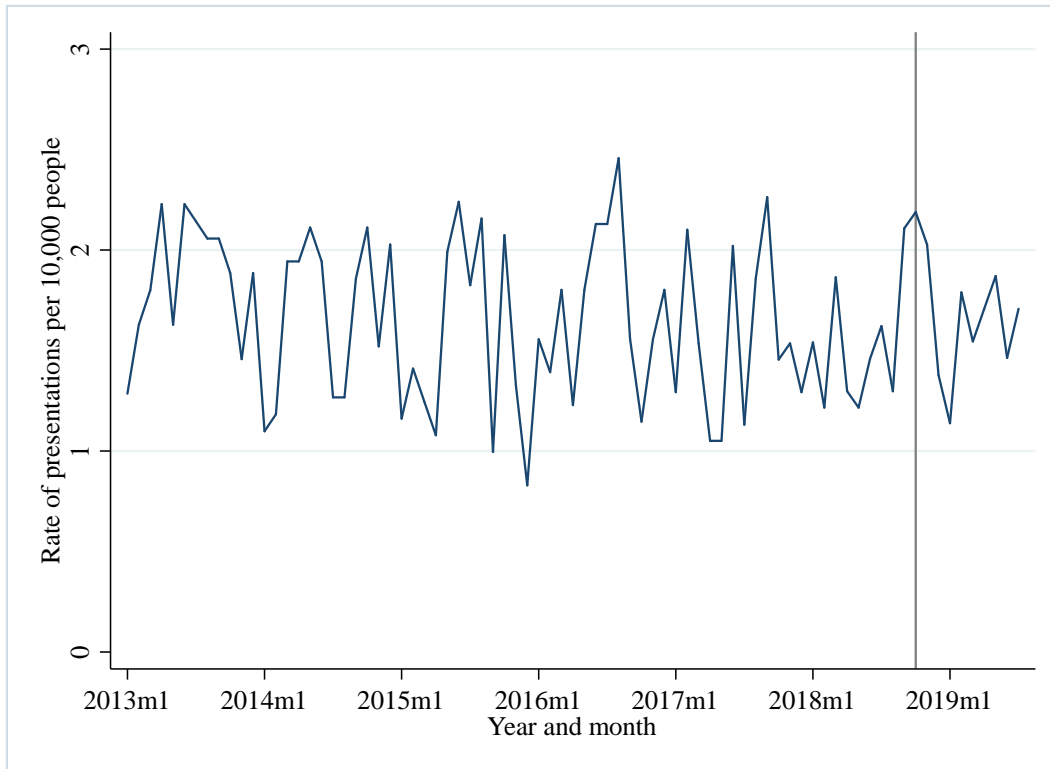


Figure 41 Rate of fracture of forearm ED presentations per 10,000 people, Darwin

Table 43 Time series models for rate of fracture of forearm bones-related ED presentations, Darwin

	β co-eff	95% CI	p-value
Time (slope)	-0.01	-0.01, 0.01	.108
MUP (step)	0.47	0.01, 0.93	.048
Time X MUP (slope)	-0.05	-0.11, 0.01	.133

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.7.5 MALTREATMENT SYNDROMES

A total of 4,106 maltreatment syndrome-related ED presentations were examined over the study period; 37% were male, 73% identified as Indigenous, and the average age was 35 years. Figure 42 shows that rates of maltreatment syndrome-related ED presentations increased across the period examined. ITS modelling indicated that there was a significant slope decline in the rate of presentations after the introduction of the MUP (Table 44).

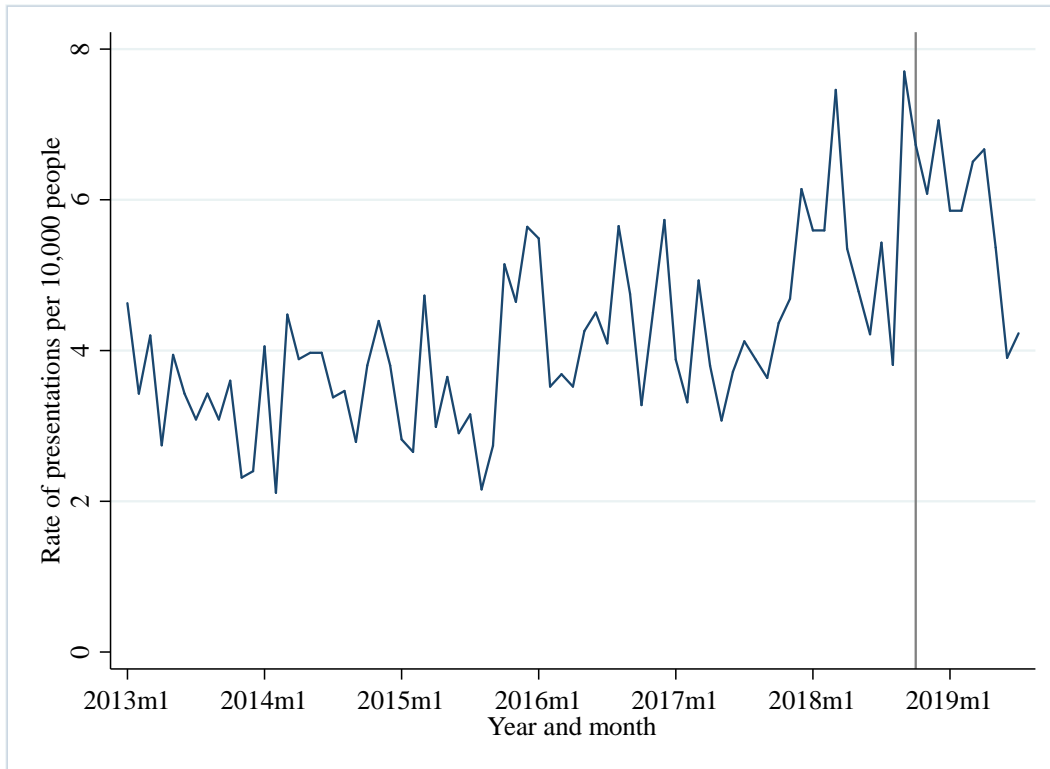


Figure 42 Rate of maltreatment syndrome-related ED presentations per 10,000 people, Darwin

Table 44 Time series models for rate of maltreatment syndrome-related ED presentations, Darwin

	β co-eff	95% CI	p-value
Time (slope)	0.02	0.01, 0.03	.014
MUP (step)	0.77	-0.33, 1.86	.168
Time X MUP (slope)	-0.21	-0.35, -0.06	.006

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.7.6 ASSAULT BY SHARP OBJECT

A total of 617 assault by sharp object-related ED presentations were examined over the study period; 67% were male, 81% identified as Indigenous, and the average age was 35 years. Figure 43 shows that assault by sharp object-related ED presentation rates increased over the period examined. ITS modelling indicated no significant change post-MUP (Table 45).

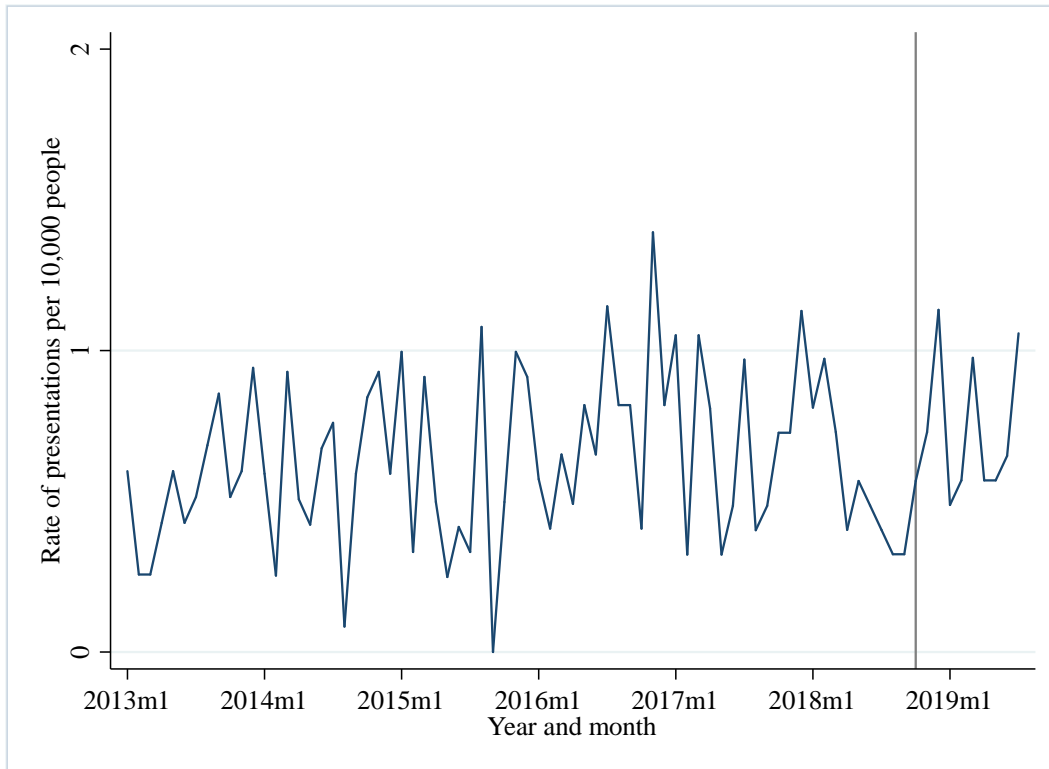


Figure 43 Rate of assault by sharp object-related ED presentations per 10,000 people, Darwin

Table 45 Time series models for rate of assault by sharp object-related ED presentations, Darwin

	β co-eff	95% CI	p-value
Time (slope)	0.01	0.01, 0.01	.009
MUP (step)	-0.08	-0.35, 0.18	.541
Time X MUP (slope)	0.04	-0.01, 0.08	.073

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.8 HOSPITAL ADMISSIONS

4.1.2.8.1 ALCOHOL-RELATED ADMISSIONS

A total of 24,742 alcohol-related hospital admissions were examined over the study period; 62% were male, 69% identified as Indigenous, and the average age was 45 years. As shown in Figure 44, the rate of hospital admissions involving alcohol increased in Darwin in 2015, after which they remained relatively stable. Post-MUP, the rate of admissions demonstrated a significant slope change (decreasing since the introduction of MUP; see Table 46).

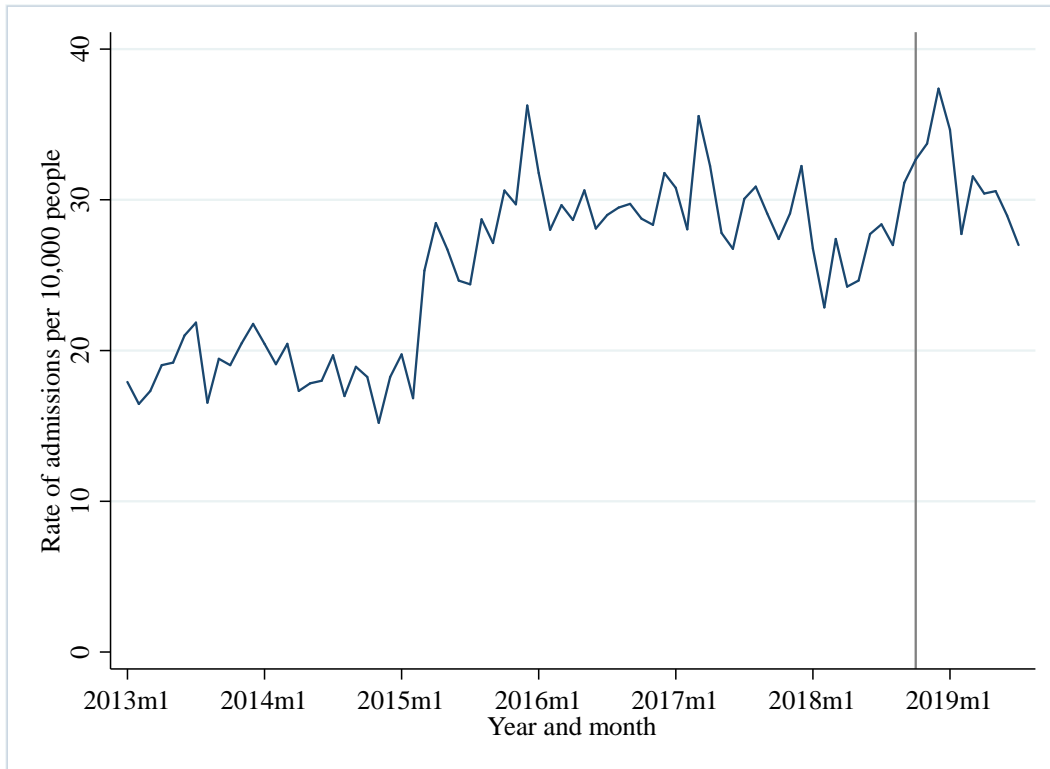


Figure 44 Rate of alcohol-related hospital admissions per 10,000 people, Darwin

Table 46 Time series models for rate of alcohol-related hospital admissions, Darwin

	β co-eff	95% CI	p-value
Time (slope)	0.29	0.21, 0.36	<.001
MUP (step)	3.63	-0.95, 8.20	.119
Time X MUP (slope)	-0.67	-1.31, -0.03	.041

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.8.2 OTHER SUBSTANCE USE

A total of 8,861 other substance use hospital admissions were examined over the study period; 63% were male, 53% identified as Indigenous, and the average age was 43 years. Figure 45 shows that other substance use hospital admission rates increased over the period examined. ITS modelling indicated that there was a significant step increase and a significant slope decrease after the introduction of the MUP (Table 47).

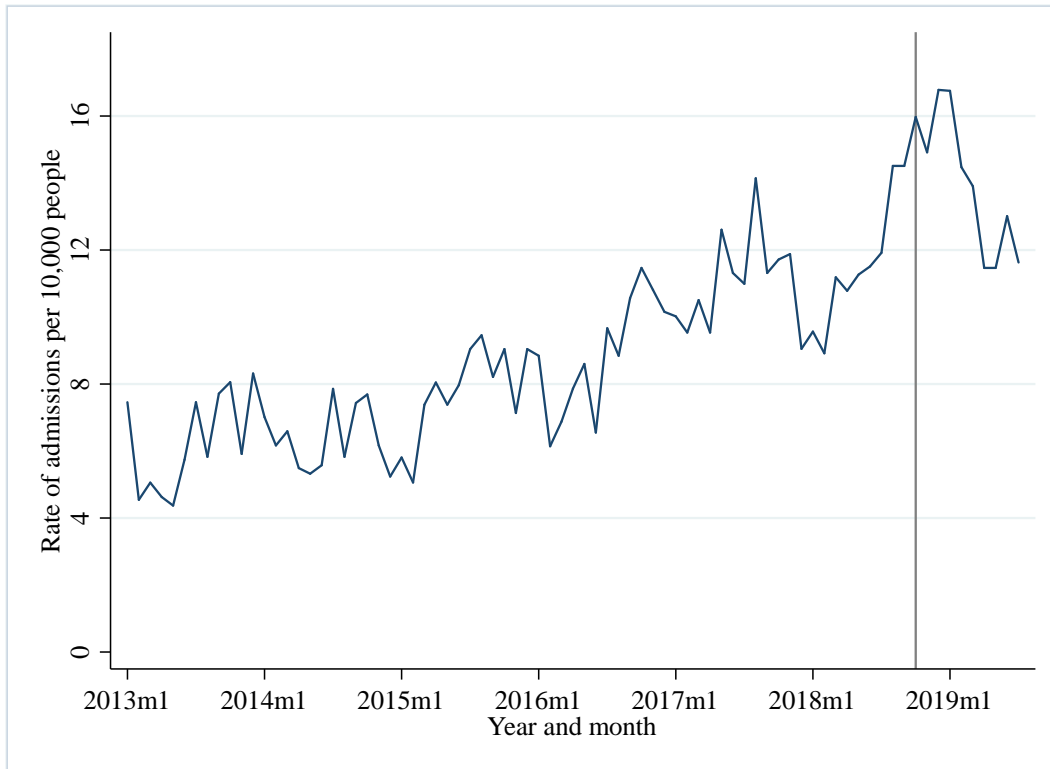


Figure 45 Rate of other substance use hospital admissions per 10,000 people, Darwin

Table 47 Time series models for rate of other substance use hospital admissions, Darwin

	β co-eff	95% CI	p-value
Time (slope)	0.10	0.07, 0.13	<.001
MUP (step)	4.06	1.83, 6.29	.001
Time X MUP (slope)	-0.63	-0.94, -0.32	<.001

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.8.3 FRACTURE OF SKULL AND FACIAL BONES

A total of 3,027 fracture of skull and facial bones-related hospital admissions were examined over the study period; 71% were male, 55% identified as Indigenous, and the average age was 34 years. Figure 46 shows the rate of fracture of skull and facial bones hospital admission rates increased leading up the introduction of the MUP and decreased post-introduction. ITS modelling indicated that there was a significant step decrease in admission rates post-MUP (Table 48).

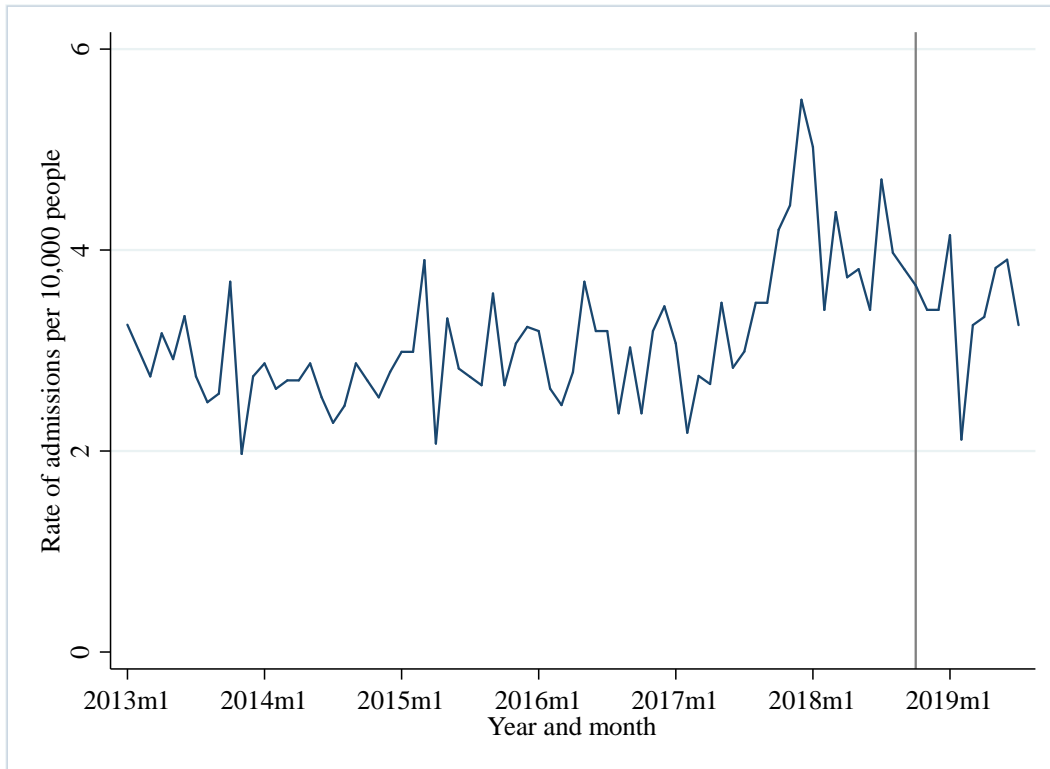


Figure 46 Rate of fracture of skull and facial bones-related hospital admissions per 10,000 people, Darwin

Table 48 Time series models for rate of fracture of skull and facial bones-related hospital admissions, Darwin

	β co-eff	95% CI	p-value
Time (slope)	0.01	-0.01, 0.01	.218
MUP (step)	-1.18	-1.96, -0.40	.003
Time X MUP (slope)	0.03	-0.06, 0.11	.498

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.8.4 FRACTURE OF FOREARM

A total of 2,701 fracture of forearm bones-related hospital admissions were examined over the study period; 54% were male, 36% identified as Indigenous, and the average age was 33 years. Figure 47 shows that fracture of the forearm bones-related hospital admission rates increased over the period examined. ITS modelling indicated that there was a significant slope increase after the introduction of the MUP (Table 49).

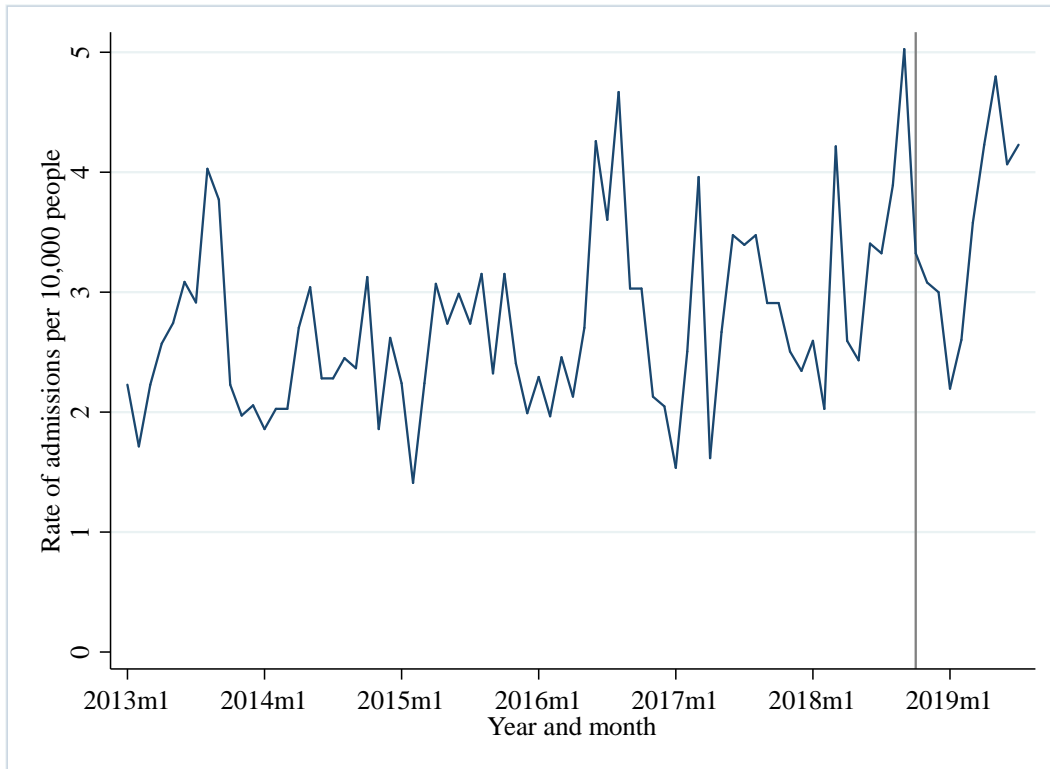


Figure 47 Rate of fracture of forearm hospital admissions per 10,000 people, Darwin

Table 49 Time series models for rate of fracture of forearm bones-related hospital admissions, Darwin

	β co-eff	95% CI	p-value
Time (slope)	0.01	-0.01, 0.02	.201
MUP (step)	-0.13	-0.95, 0.69	.753
Time X MUP (slope)	0.10	0.01, 0.20	.048

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.8.5 TOXIC EFFECT OF ALCOHOL

A total of 268 toxic effect of alcohol-related hospital admissions were examined over the study period; 54% were male, 36% identified as Indigenous, and the average age was 33 years. The number of admissions with toxic effect of alcohol were too small to conduct any further analysis.

4.1.2.8.6 MALTREATMENT SYNDROMES

A total of 77 maltreatment syndrome-related hospital admissions were examined over the study period; 19% were male, 81% identified as Indigenous, and the average age was 21 years. The number of admissions with maltreatment syndromes were too small to conduct any further analysis.

4.1.2.8.7 ASSAULT

A total of 2,234 assault-related hospital admissions were examined over the study period; 57% were male, 85% identified as Indigenous, and the average age was 36 years. Figure 48 shows that assault-related hospital admission rates increased over the period examined. ITS modelling indicated that there was a significant slope decrease after the introduction of the MUP (Table 50).

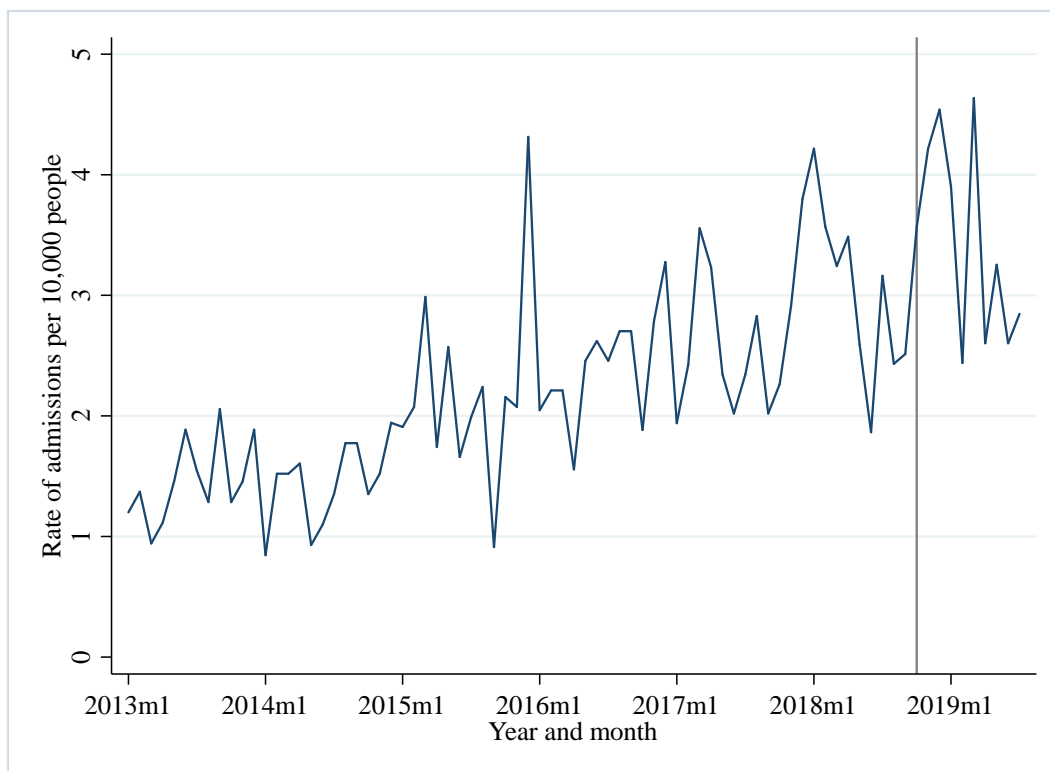


Figure 48 Rate of assault-related hospital admissions per 10,000 people, Darwin

Table 50 Time series models for rate of assault-related hospital admissions, Darwin

	β co-eff	95% CI	p-value
Time (slope)	0.03	0.02, 0.04	<.001
MUP (step)	0.80	-0.02, 1.62	.055
Time X MUP (slope)	-0.14	-0.24, -0.04	.005

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.8.8 ASSAULT BY SHARP OBJECT

A total of 1,215 assault by sharp object-related hospital admissions were examined over the study period; 61% were male, 88% identified as Indigenous, and the average age was 34 years. Figure 49 shows that assault by sharp object-related hospital admission rates increased over the period examined. ITS modelling indicated no significant changes post-MUP (Table 51).

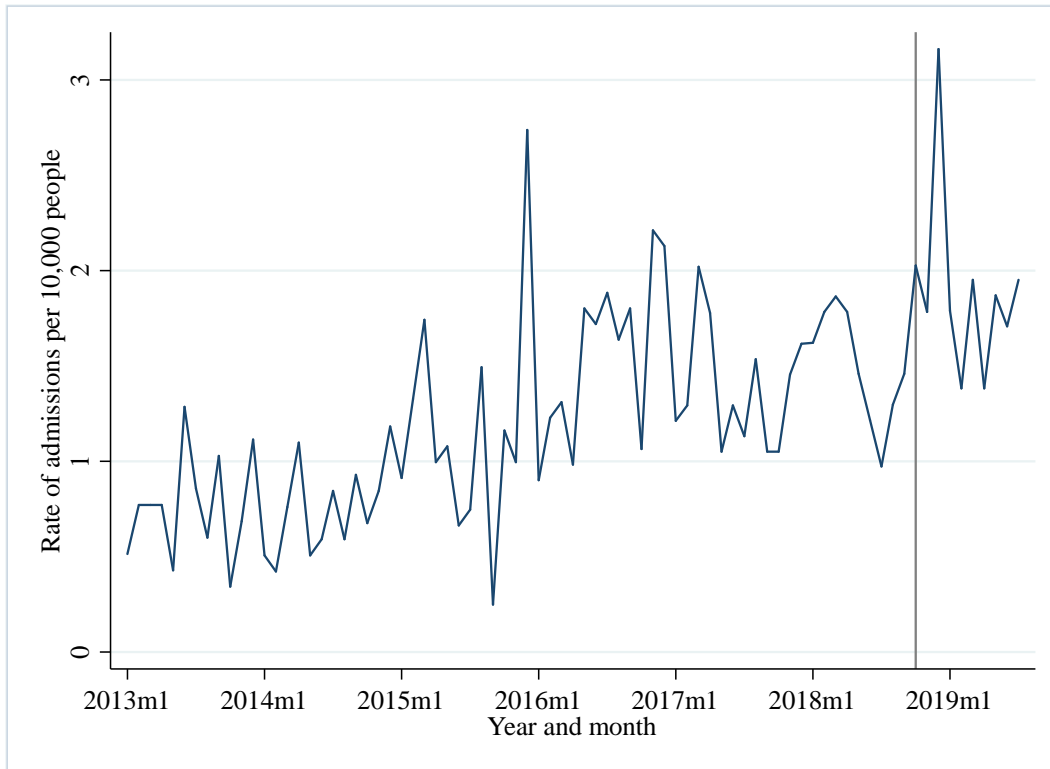


Figure 49 Rate of assault by sharp object-related hospital admissions per 10,000 people, Darwin

Table 51 Time series models for rate of assault by sharp object-related hospital admissions, Darwin

	β co-eff	95% CI	p-value
Time (slope)	0.02	0.01, 0.03	<.001
MUP (step)	0.49	-0.14, 1.12	.128
Time X MUP (slope)	-0.04	-0.13, 0.04	.323

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.9 TREATMENT DATA

A total of 5,097 substantive treatment episodes were recorded over the study period; 63% were male, 52% identified as Aboriginal or Torres Strait Islander, and the average age was 40 years. The majority of treatment episodes were for counselling (50%) or rehabilitation (31%). As shown in Figure 50, the rate of admissions demonstrated a significant slope change (plateauing since the introduction of MUP relative to pre-MUP; see Table 52).

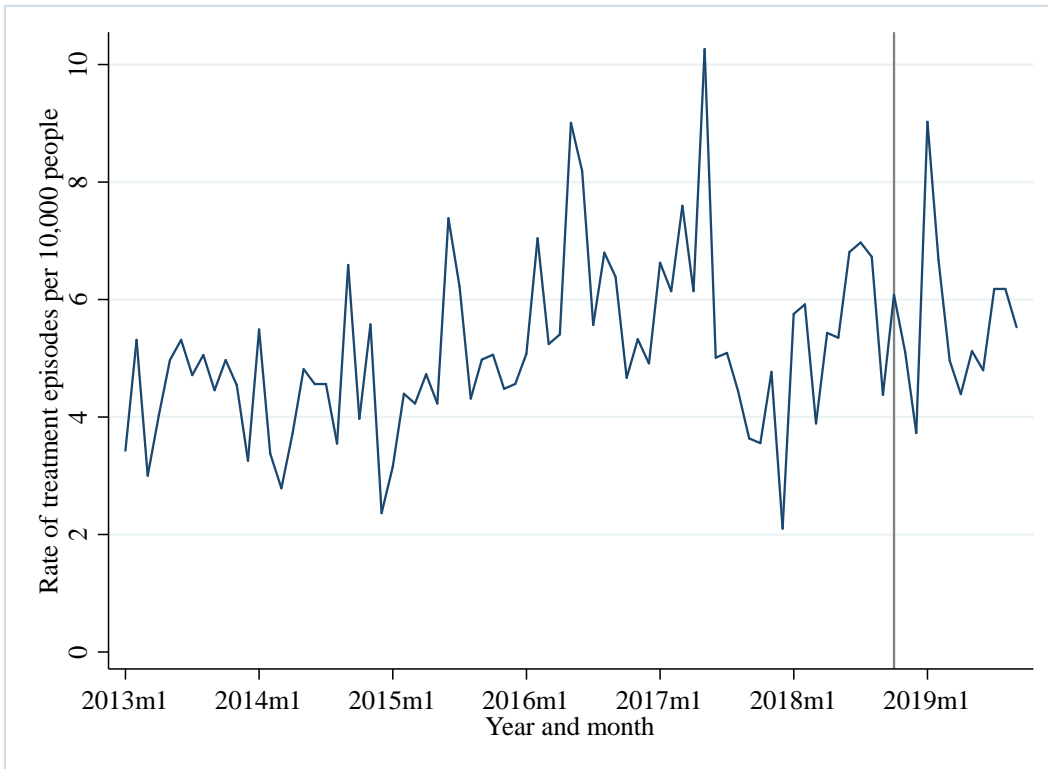


Figure 50 Rate of substantive treatment episodes per 10,000 people, Darwin

Table 52 Time series models for rate of substantive treatment episodes, Darwin

	β co-eff	95% CI	p-value
Time (slope)	0.04	0.02, 0.07	.001
MUP (step)	1.76	-0.14, 3.68	.069
Time X MUP (slope)	-0.24	-0.44, -0.03	.024

Note. Models control for seasonality and number of people on the BDR per month

4.1.2.10 ROAD TRAFFIC CRASH DATA

There were a total of 532 alcohol-related traffic crashes that resulted in injury or fatality in Darwin and Palmerston from January 1 2013 to June 30 2019 (Figure 51). The number of crashes were too small to conduct any further analysis.

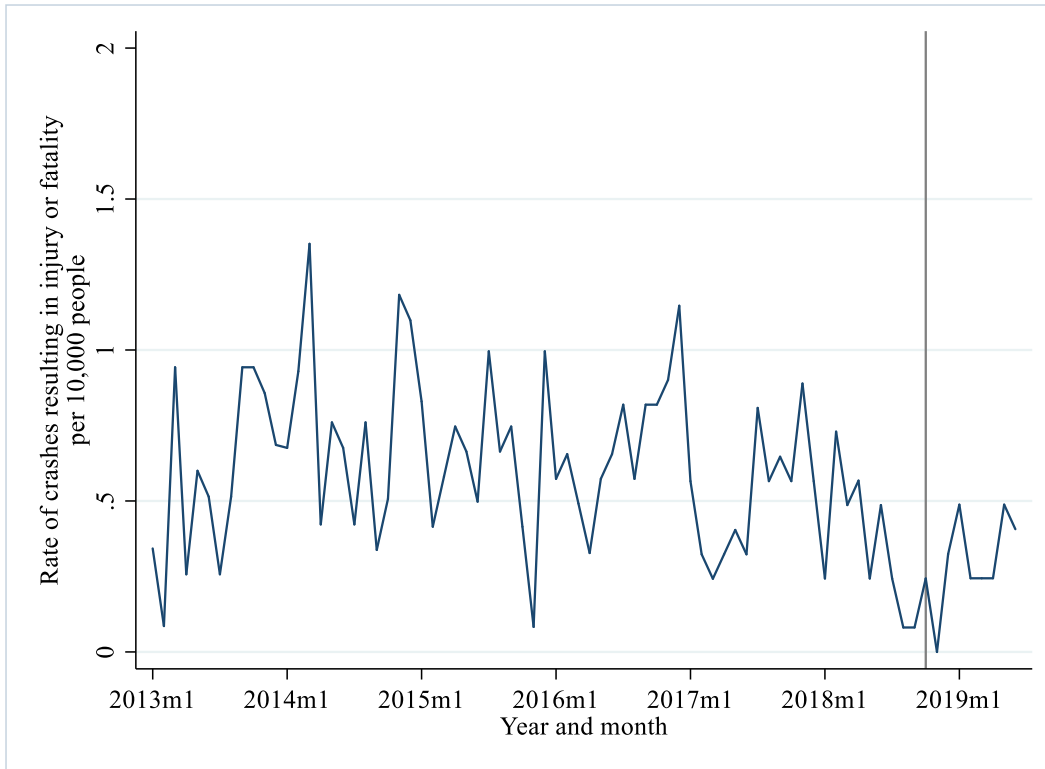


Figure 51 Rate of alcohol-related crash injuries and fatalities per 10,000 people, Darwin

4.1.3 ALICE SPRINGS

4.1.3.1 ALCOHOL WHOLESALE SUPPLY DATA

The total alcohol wholesale supply per capita for the Alice Springs region is shown in Figure 52. There was a significant step decrease, but a significant slope increase, in the total wholesale alcohol supply (see Table 53).

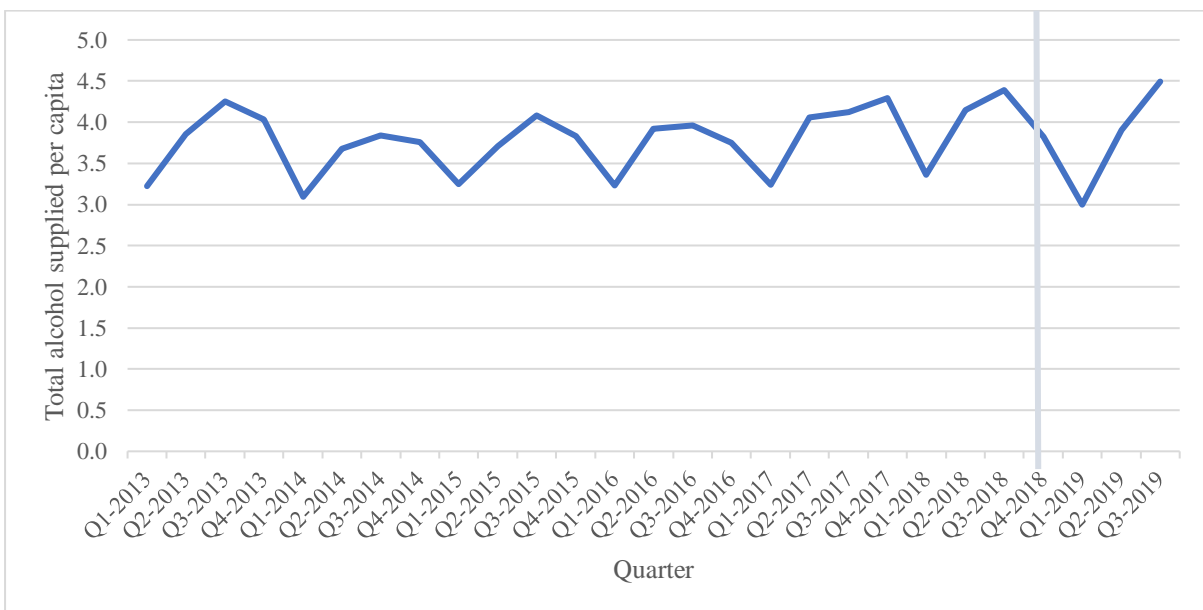


Figure 52 Total alcohol wholesale supply per capita, Alice Springs

The alcohol wholesale supply per capita by beverage type for the Alice Springs region is provided in Figure 53. As shown in Table 53, there was a significant step decrease in the supply of total alcohol, bottled wine, and mid strength beer post-MUP. There was also a significant slope increase in the supply of total alcohol, full-strength beer, and mid strength beer. The remaining beverage types did not show any significant changes after the introduction of the MUP (not shown in Table 53).

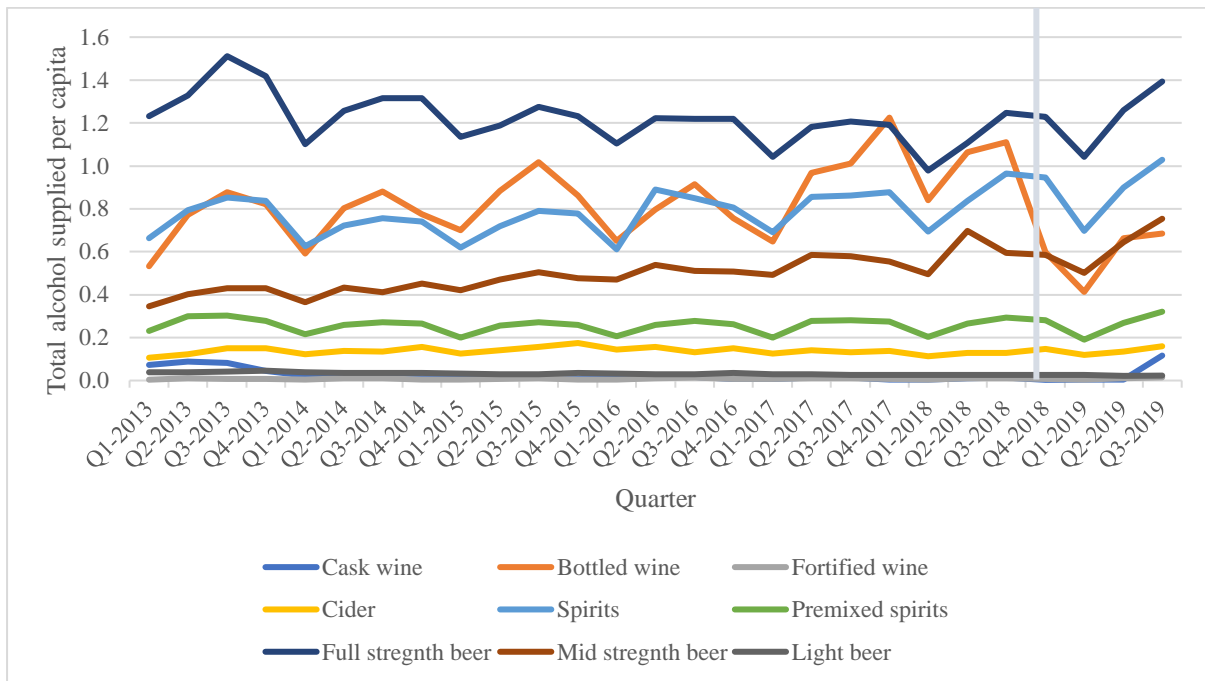


Figure 53 Alcohol wholesale supply per capita by beverage type, Alice Springs

Table 53 Time series models for per capita alcohol wholesale supply, Alice Springs

Total alcohol	β co-eff	95% CI	p-value
Time (slope)	0.0004	-0.01, 0.02	.958
MUP (step)	-0.63	-1.00, -0.26	.002
Time X MUP(slope)	0.22	0.03, 0.41	.028
Bottled wine	β co-eff	95% CI	p-value
Time (slope)	0.01	0.0004, 0.01	.038
MUP (step)	-0.54	-0.71, -0.38	<.001
Time X MUP(slope)	0.02	-0.02, 0.06	.356
Full strength beer	β co-eff	95% CI	p-value
Time (slope)	-0.01	-0.02, -0.01	<.001
MUP (step)	0.02	-0.08, 0.13	.623
Time X MUP(slope)	0.07	0.04, 0.11	.001

Mid strength beer	β co-eff	95% CI	p-value
Time (slope)	0.01	0.01, 0.01	<.001
MUP (step)	-0.09	-0.16, -0.01	.024
Time X MUP(slope)	0.04	0.01, 0.08	.007

Note. Models control for seasonality and number of people on the BDR at the end of each quarter

4.1.3.2 POLICE ALCOHOL-RELATED ASSAULTS DATA

A total of 7,177 alcohol-related assault offences were recorded across the time period; 11% recorded victim alcohol involvement, 44% offender alcohol involvement, and 45% both victim and offender alcohol involvement. As shown in Figure 54, the rate of alcohol-related assault offences fluctuated over the time period in Alice Springs. Post-MUP, the rate of assault offences demonstrated a significant step decrease, continuing the downward trend that commenced in late 2017 to early 2018 (see Table 54).

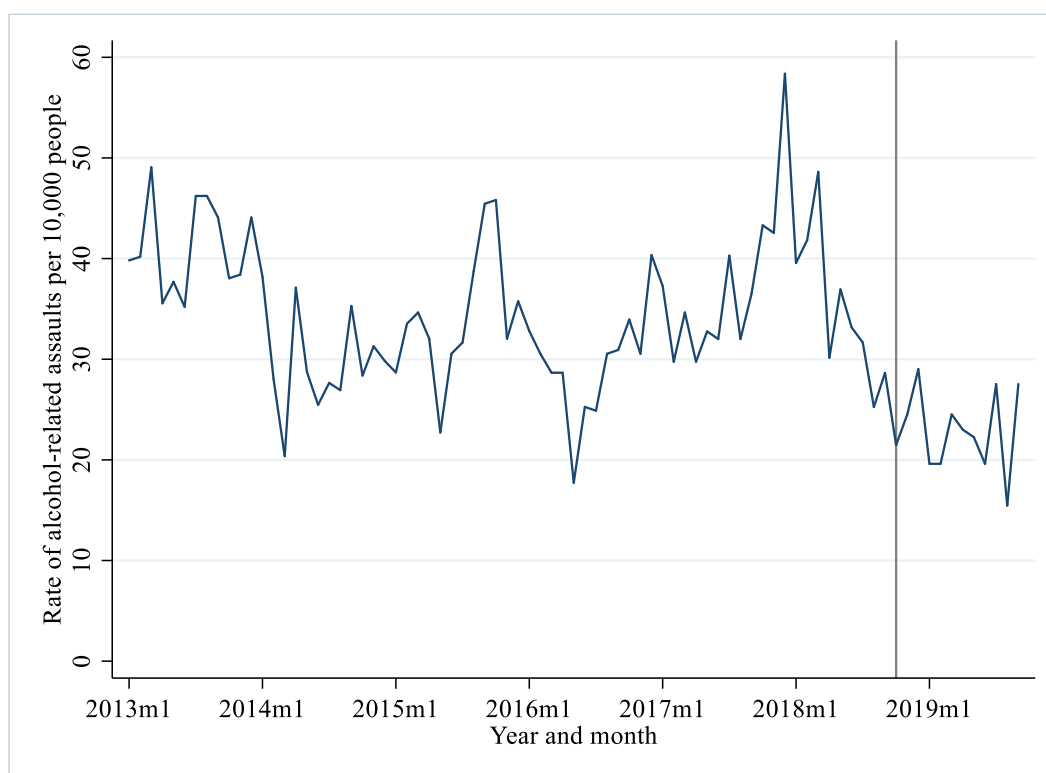


Figure 54 Rate of alcohol-related assault offences per 10,000 population, Alice Springs

Table 54 Time series models for rate of police recorded assault offences, Alice Springs

	β co-eff	95% CI	p-value
Time (slope)	-0.13	-0.27, 0.02	.091
MUP (step)	-16.82	-26.04, -7.60	<.001
Time X MUP (slope)	0.52	-0.88, 1.94	.459

Note. Models control for seasonality and number of people on the BDR per month

4.1.3.1 OFFENDERS – ALCOHOL-RELATED ASSAULTS

There were a total of 2,635 offenders involved in alcohol-related assault offences across the time period, with 84% of offenders male, 85% aged 18-44 years, and 90% identifying as Aboriginal. Figure 55 shows that number of offenders in alcohol-related assault offences per 10,000 population in Alice Springs fluctuated over the time period, with a decline beginning early 2018. ITS modelling demonstrated a significant step decline in the rate of offenders post-MUP, however there was also a small significant slope increase since the introduction of MUP (Table 55).

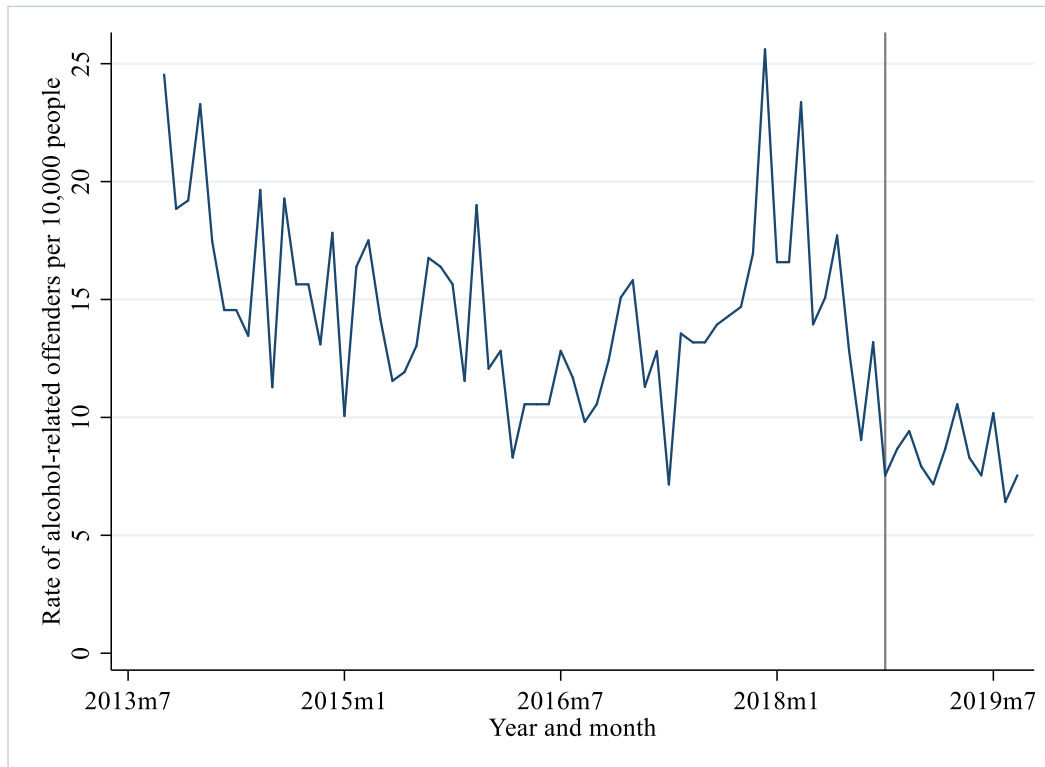


Figure 55 Rate of offenders in alcohol-related assault offences per 10,000 population, Alice Springs

Table 55 Time series models for rate of police recorded offenders, Alice Springs

	β co-eff	95% CI	p-value
Time (slope)	-0.14	-0.22, -0.06	<.001
MUP (step)	-9.75	-13.68, -5.83	<.001
Time X MUP (slope)	0.38	0.06, 0.70	.023

Note. Models control for seasonality and number of people on the BDR per month

4.1.3.1 VICTIMS – ALCOHOL-RELATED ASSAULTS

There were a total of 6,364 victims involved in alcohol-related assault offences across the time period, with 72% of victims female, 79% aged 18-44 years, and 81% identifying as Aboriginal. As shown in Figure 56 the rate of victims in alcohol-related assault offences in Alice Springs peaked in late 2017, after

which there was a decline. ITS modelling showed a significant step decrease in the rate of victims post-MUP, continuing the downward trend that commenced in late 2017 to early 2018 (Table 56).

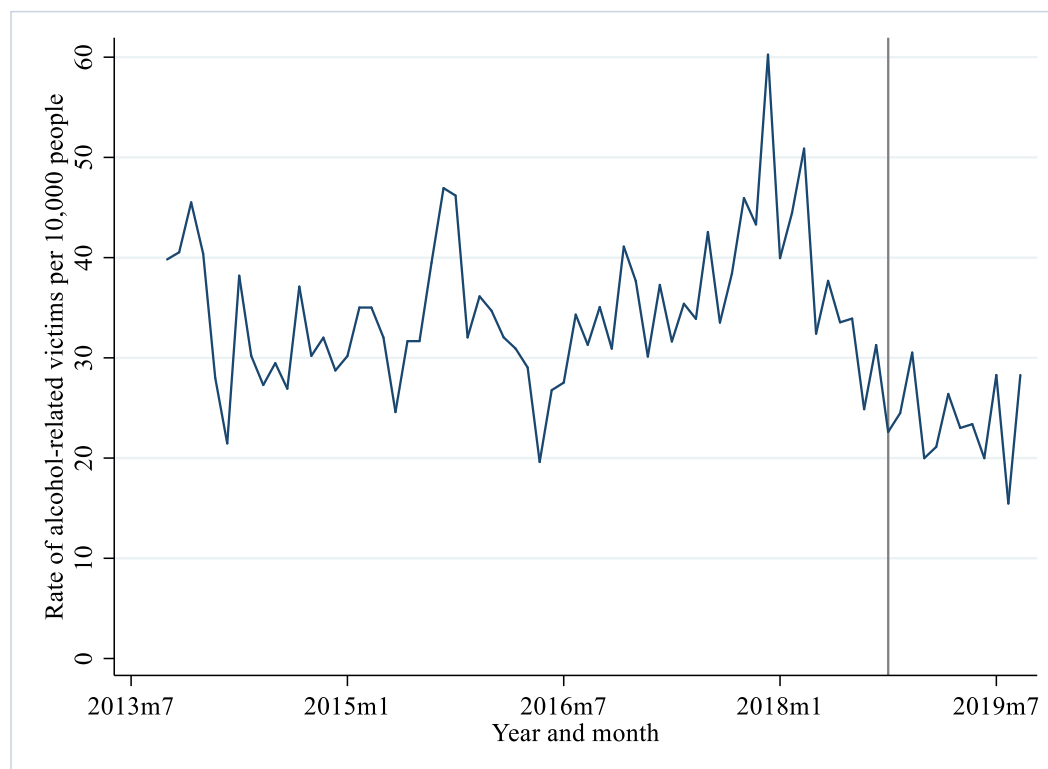


Figure 56 Rate of victims in alcohol-related assault offences per 10,000 population, Alice Springs

Table 56 Time series models for rate of police recorded victims, Alice Springs

	β co-eff	95% CI	p-value
Time (slope)	0.06	-0.09, 0.21	.488
MUP (step)	-20.09	-29.18, -10.99	<.001
Time X MUP (slope)	0.58	-0.62, 1.79	.335

Note. Models control for seasonality and number of people on the BDR per month

4.1.3.2 POLICE PROTECTIVE CUSTODY DATA

There were a total of 12,929 episodes of alcohol-related protective custody across the time period. Figure 57 shows that the rate of alcohol-related protective custody episodes in Alice Springs began to decline from late-2017 to early-2018. ITS modelling demonstrated a significant step decline in the rate of protective custody episodes after the introduction of MUP, continuing a downward trend that commenced in early-2018 (Table 57).

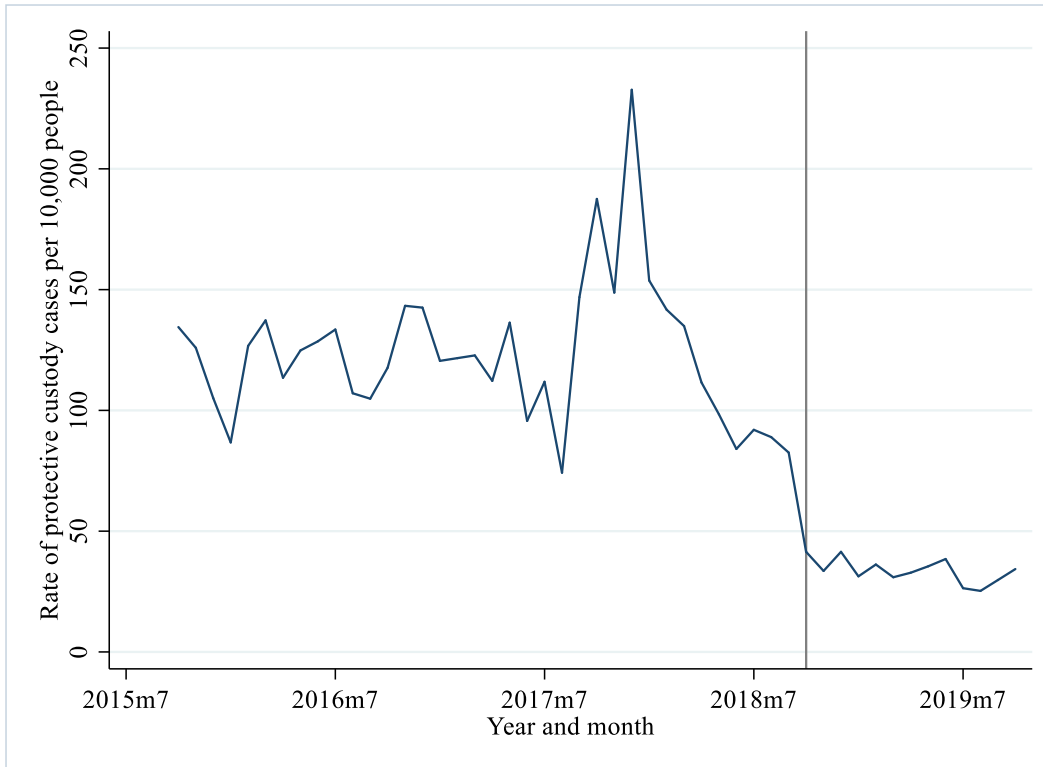


Figure 57 Rate of alcohol-related protective custody episodes per 10,000 population, Alice Springs

Table 57 Time series models for rate of alcohol-related protective custody episodes, Alice Springs

	β co-eff	95% CI	p-value
Time (slope)	-0.53	-2.85, 1.79	.647
MUP (step)	-97.66	-141.20, -54.12	<.001
Time X MUP (slope)	1.68	-2.19, 5.55	.387

Note. Models control for seasonality and number of people on the BDR per month

4.1.3.3 AMBULANCE ATTENDANCES

A total of 7,138 alcohol-related ambulance attendances were recorded across the time period. As shown in Figure 58, the rate of alcohol-related ambulance attendances was observed to decline overall in Alice Springs after the introduction of the MUP. ITS modelling indicated a significant step decrease but no significant slope change in the rate of ambulance attendances post-MUP (see Table 58).

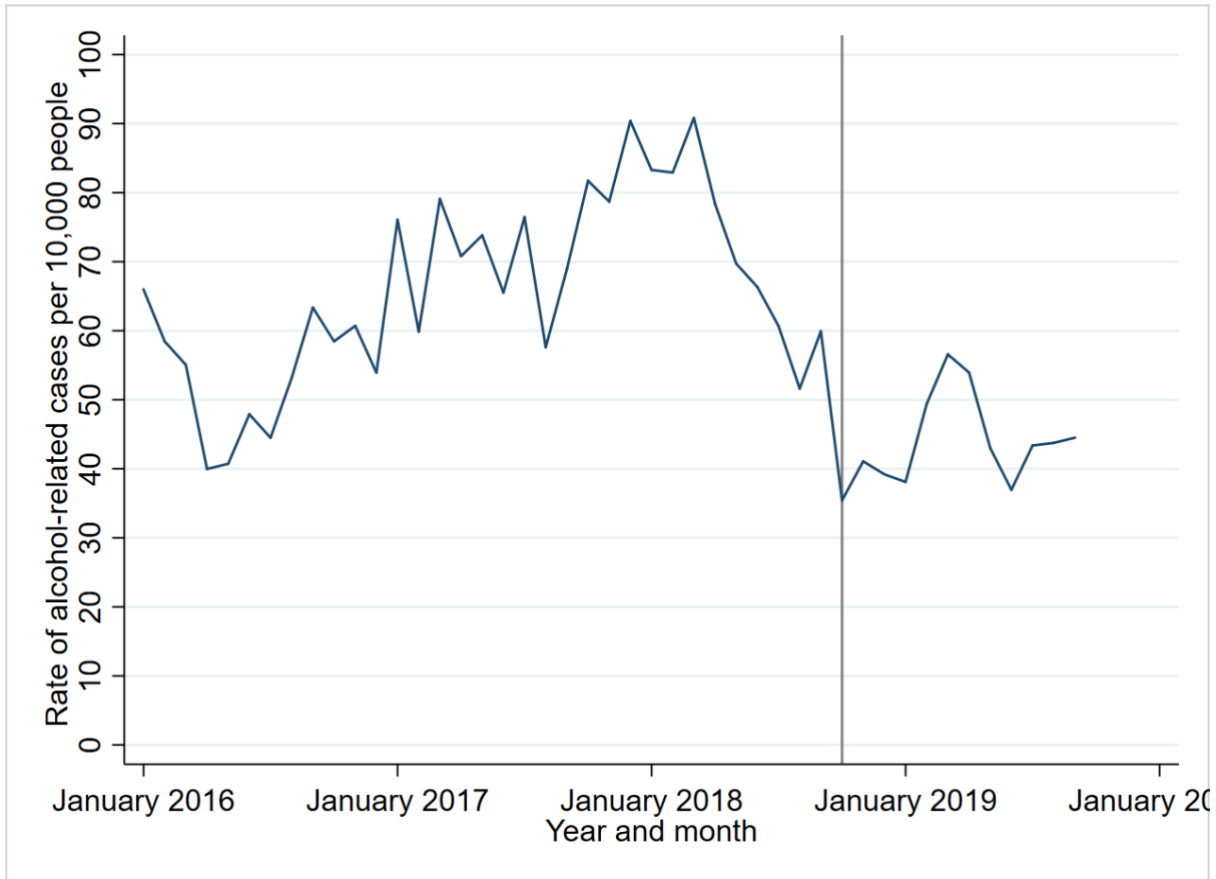


Figure 58 Rate of alcohol-related ambulance attendances per 10,000 population, Alice Springs

Table 58 Time series models for rate of alcohol-related ambulance attendances, Alice Springs

	β co-eff	95% CI	p-value
Time (slope)	1.25	0.29, 2.21	.012
MUP (step)	-44.17	-55.63, -32.71	<.001
Time X MUP (slope)	0.38	-1.23, 2.00	.632

Note. Models control for seasonality and number of people on the BDR per month

4.1.3.4 EMERGENCY DEPARTMENT PRESENTATIONS

4.1.3.4.1 ALCOHOL-RELATED PRESENTATIONS

A total of 26,827 alcohol-related ED presentations were examined over the study period; 44% were male, 92% identified as Indigenous, and the average age was 40 years. Figure 59 shows that alcohol-related ED presentation rates fluctuated over the period examined. ITS modelling indicated a significant step decrease in presentation rates after the introduction of the MUP, continuing a downward trend that commenced in early 2018 (Table 59).

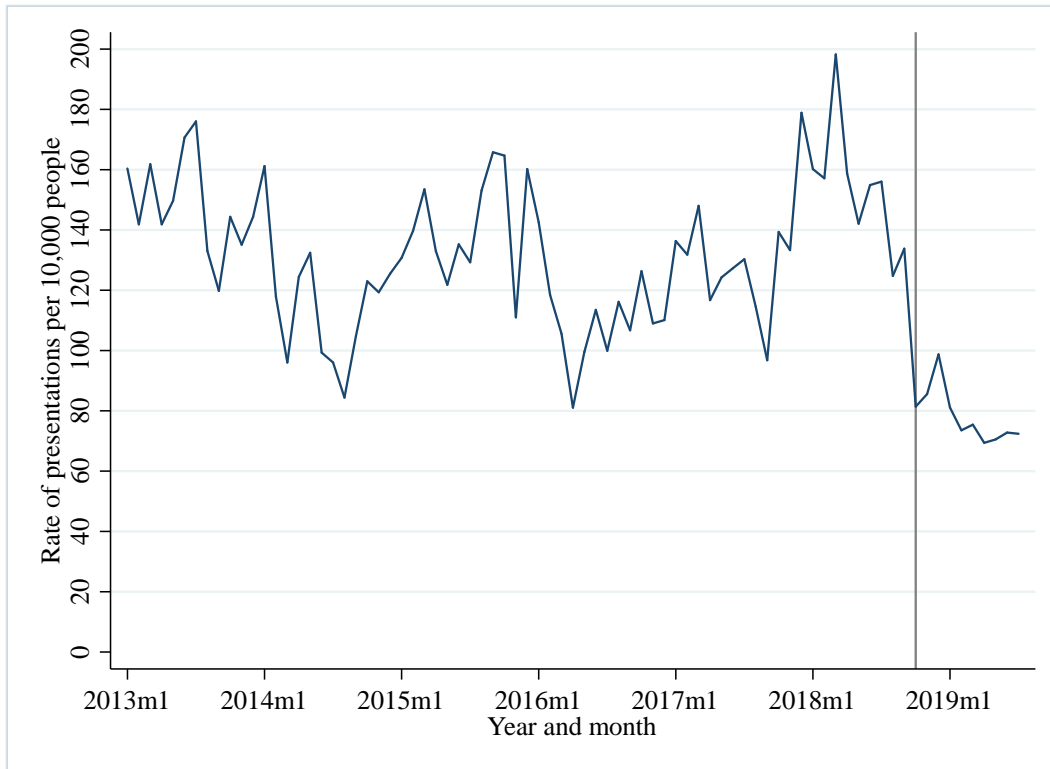


Figure 59 Rate of alcohol-related ED presentations per 10,000 people, Alice Springs

Table 59 Time series models for rate of alcohol-related ED presentations, Alice Springs

	β co-eff	95% CI	p-value
Time (slope)	-0.45	-0.94, 0.04	.073
MUP (step)	-72.26	-93.97, -50.56	<.001
Time X MUP (slope)	-0.43	-2.37, 1.50	.656

Note. Models control for seasonality and number of people on the BDR per month

4.1.3.4.2 OTHER SUBSTANCE USE

A total of 1,506 other substance use ED presentations were examined over the study period; 67% were male, 56% identified as Indigenous, and the average age was 30 years. Figure 60 shows other substance use ED presentations rates were stable over the period analysed. ITS modelling indicated that there was a significant slope decrease in in presentation rates response to the introduction of the MUP (Table 60).

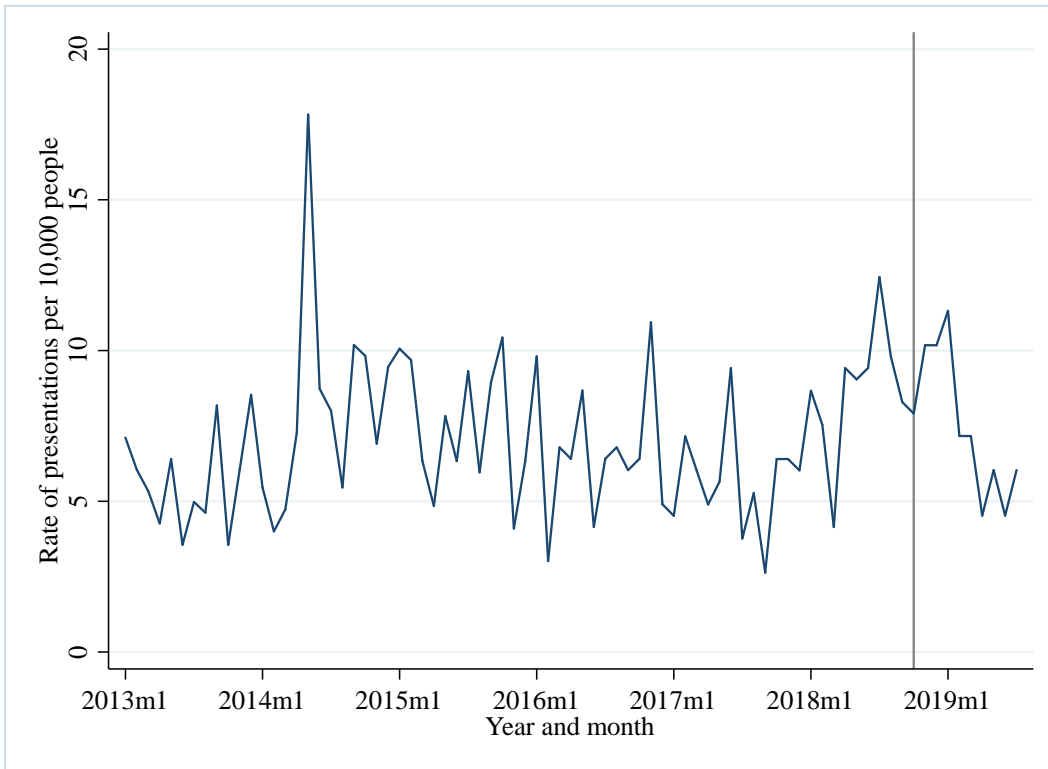


Figure 60 Rate of other substance use ED presentations per 10,000 people, Alice Springs

Table 60 Time series models for rate of other substance use ED presentations, Alice Springs

	β co-eff	95% CI	p-value
Time (slope)	-0.01	-0.05, 0.34	.645
MUP (step)	1.89	-1.46, 5.23	.265
Time X MUP (slope)	-0.61	-1.07, -0.14	.011

Note. Models control for seasonality and number of people on the BDR per month

4.1.3.4.3 FRACTURE OF SKULL AND FACIAL BONES

A total of 857 fracture of skull and facial bones-related ED presentations were examined over the study period (see Figure 61); 56% were male, 55% identified as Indigenous, and the average age was 32 years. The number of presentations with fracture of skull and facial bones were too small to conduct any further analysis.

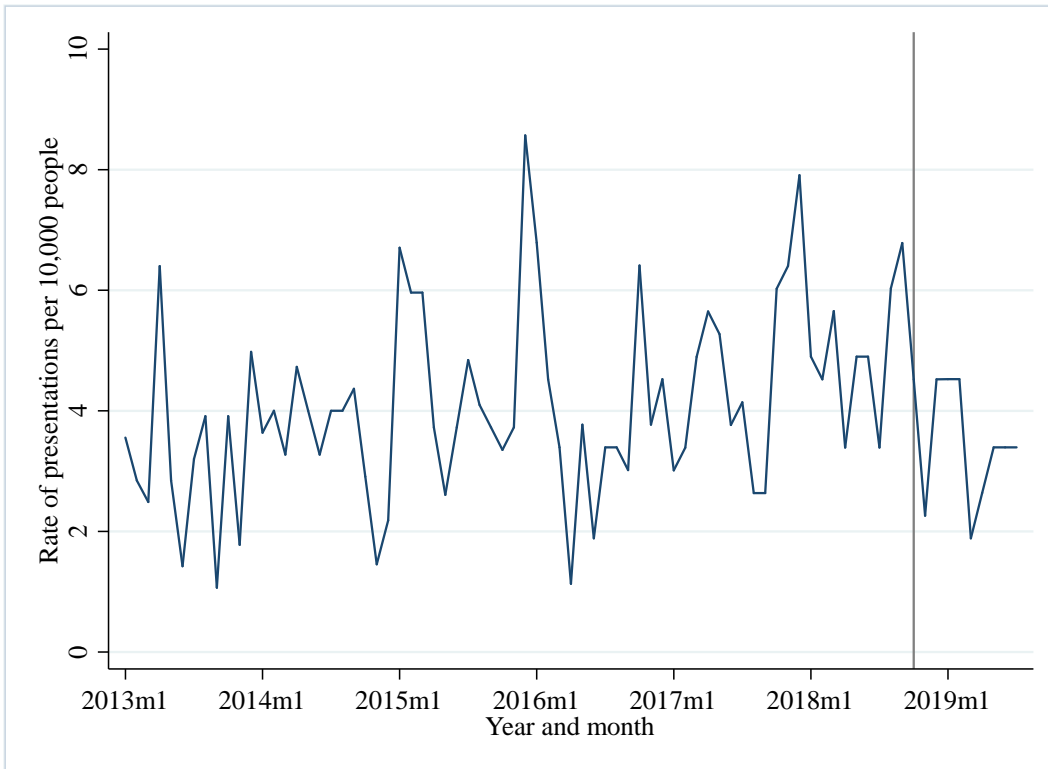


Figure 61 Rate of fracture of skull and facial bones-related ED presentations per 10,000 people, Alice Springs

4.1.3.4.4 FRACTURE OF FOREARM BONES

A total of 784 fracture of forearm bones-related ED presentations were examined over the study period (Figure 62); 46% were male, 66% identified as Indigenous, and the average age was 26 years. The number of presentations with fracture of forearm bones were too small to conduct any further analysis.

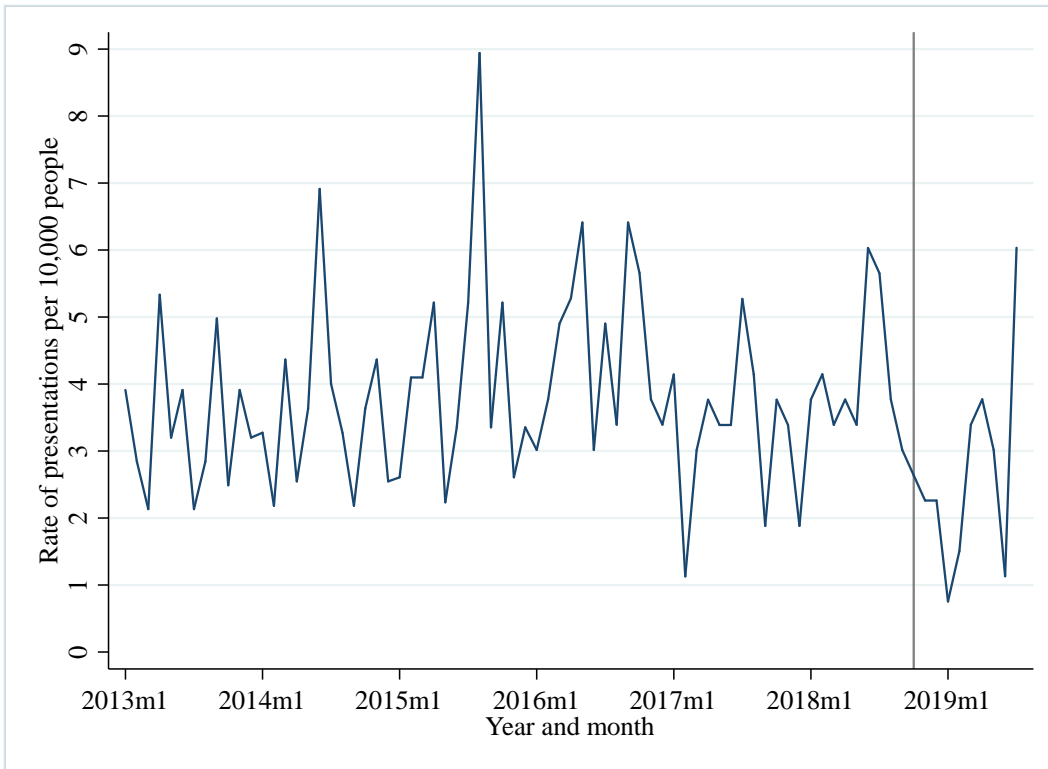


Figure 62 Rate of fracture of forearm ED presentations per 10,000 people, Alice Springs

4.1.3.4.5 MALTREATMENT SYNDROMES

A total of 11,232 maltreatment syndrome-related ED presentations were examined over the study period; 30% were male, 92% identified as Indigenous, and the average age was 34 years. Figure 63 shows that maltreatment syndrome-related ED presentation rates fluctuated across the period examined. ITS modelling indicated that there was a significant step decrease in presentation rates post-MUP (Table 61).

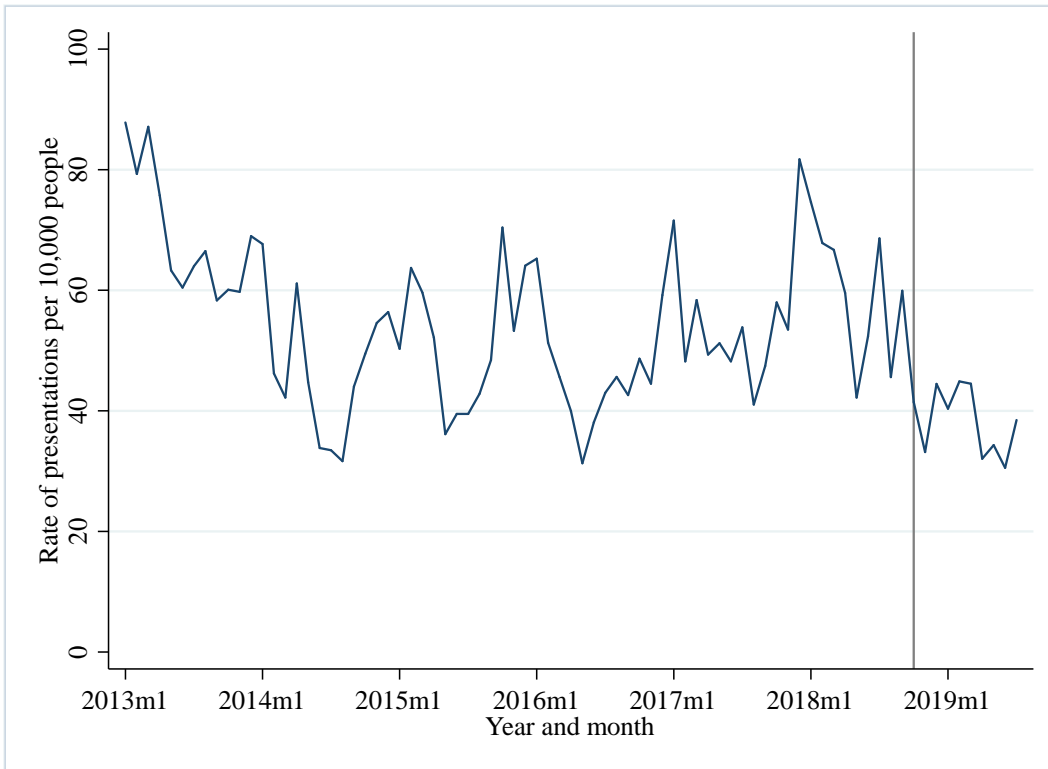


Figure 63 Rate of maltreatment syndrome-related ED presentations per 10,000 people, Alice Springs

Table 61 Time series models for rate of maltreatment syndrome-related ED presentations, Alice Springs

	β co-eff	95% CI	p-value
Time (slope)	-0.36	-0.65, -0.06	.019
MUP (step)	-29.63	-41.84, -17.43	<.001
Time X MUP (slope)	1.20	-0.71, 3.12	.214

Note. Models control for seasonality and number of people on the BDR per month

4.1.3.4.6 ASSAULT BY SHARP OBJECT

A total of 667 assault by sharp object-related ED presentations were examined over the study period (see Figure 64); 51% were male, 95% identified as Indigenous, and the average age was 33 years. The number of presentations due to assault by sharp object-related were too small to conduct any further analysis.

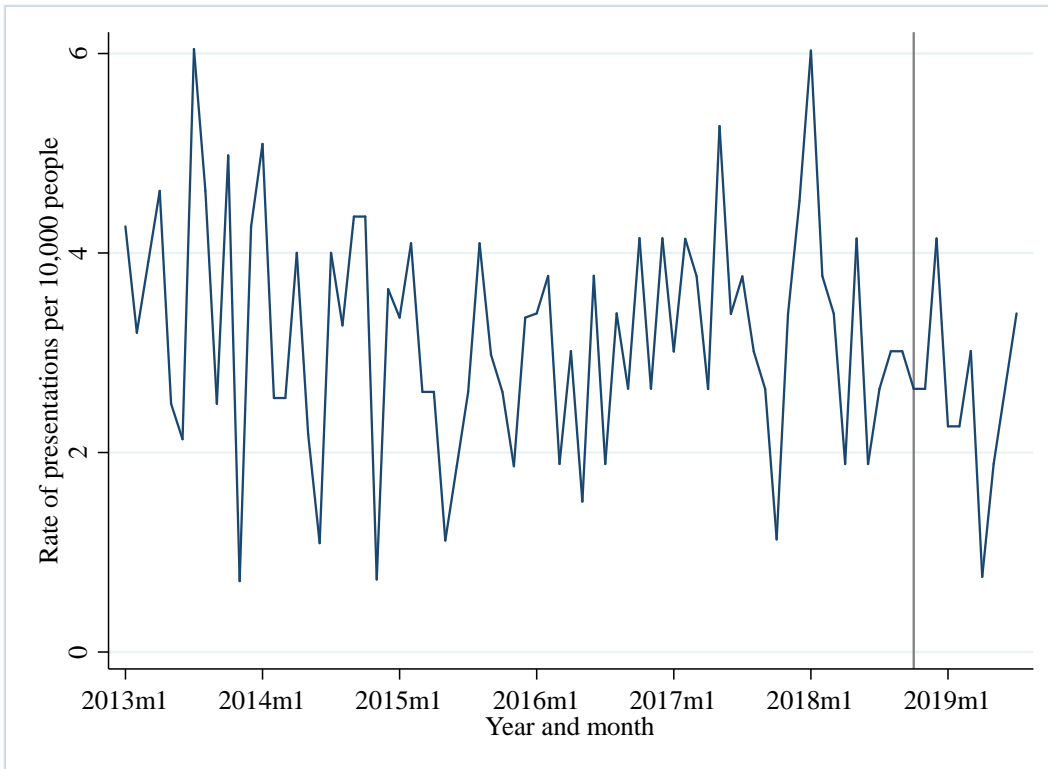


Figure 64 Rate of assault by sharp object-related ED presentations per 10,000 people, Alice Springs

4.1.3.5 HOSPITAL ADMISSIONS

4.1.3.5.1 ALCOHOL-RELATED ADMISSIONS

A total of 23,258 alcohol-related hospital admissions were examined over the study period; 47% were male, 90% identified as Indigenous, and the average age was 42 years. As shown in Figure 65, the rate of hospital admissions in Alice Springs involving alcohol demonstrated a decline from mid-2018. There was a significant step decrease in the rate of admissions after the introduction of MUP (see Table 62).

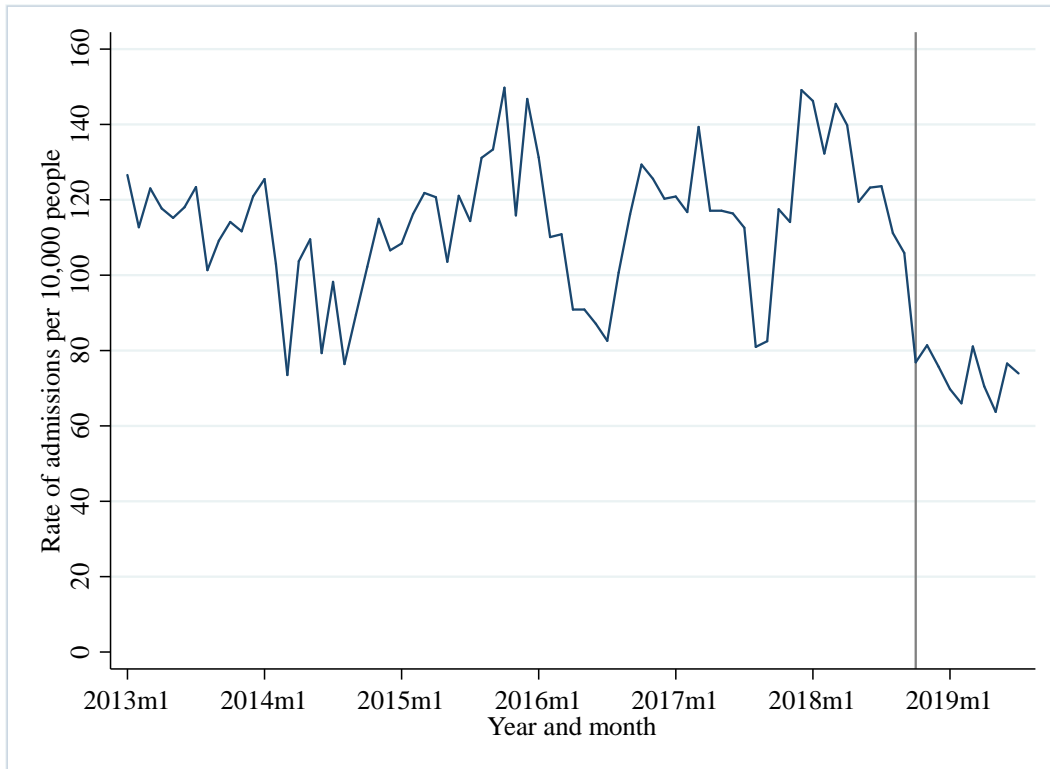


Figure 65 Rate of alcohol-related hospital admissions per 10,000 people, Alice Springs

Table 62 Time series models for rate of alcohol-related hospital admissions, Alice Springs

	β co-eff	95% CI	p-value
Time (slope)	0.04	-0.36, 0.43	.859
MUP (step)	-55.28	-69.87, -40.68	<.001
Time X MUP (slope)	0.57	-1.62, 2.77	.605

Note. Models control for seasonality and number of people on the BDR per month

4.1.3.5.2 OTHER SUBSTANCE USE

A total of 3,797 other substance use hospital admissions were examined over the study period; 67% were male, 60% identified as Indigenous, and the average age was 40 years. Figure 66 shows that other substance use hospital admission rates increased over the period examined. ITS modelling indicated that there were no significant changes in response the introduction of the MUP (Table 63).

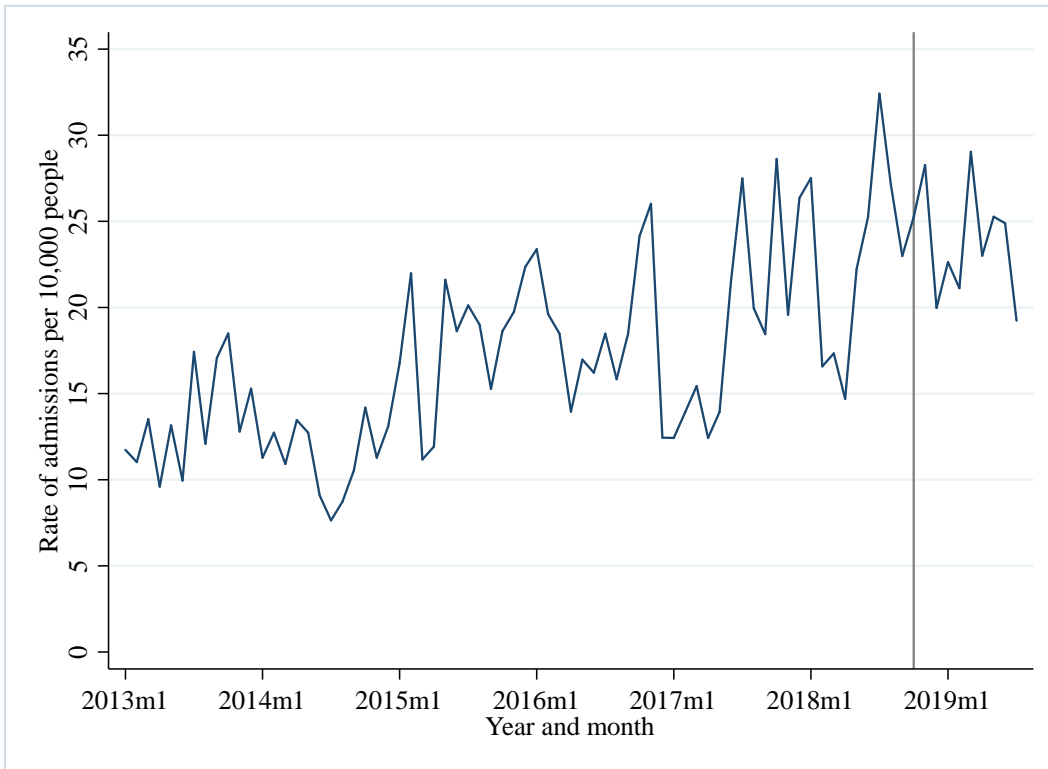


Figure 66 Rate of other substance use hospital admissions per 10,000 people, Alice Springs

Table 63 Time series models for rate of other substance use hospital admissions, Alice Springs

	β co-eff	95% CI	p-value
Time (slope)	0.14	0.06, 0.22	.001
MUP (step)	0.03	-6.04, 6.09	.993
Time X MUP (slope)	-0.34	-1.18, 0.50	.423

Note. Models control for seasonality and number of people on the BDR per month

4.1.3.5.3 FRACTURE OF SKULL AND FACIAL BONES

A total of 908 fracture of skull and facial bones-related hospital admissions were examined over the study period (Figure 67); 59% were male, 71% identified as Indigenous, and the average age was 33 years. The number of admissions for fracture of skull and facial bones were too small to conduct any further analysis.

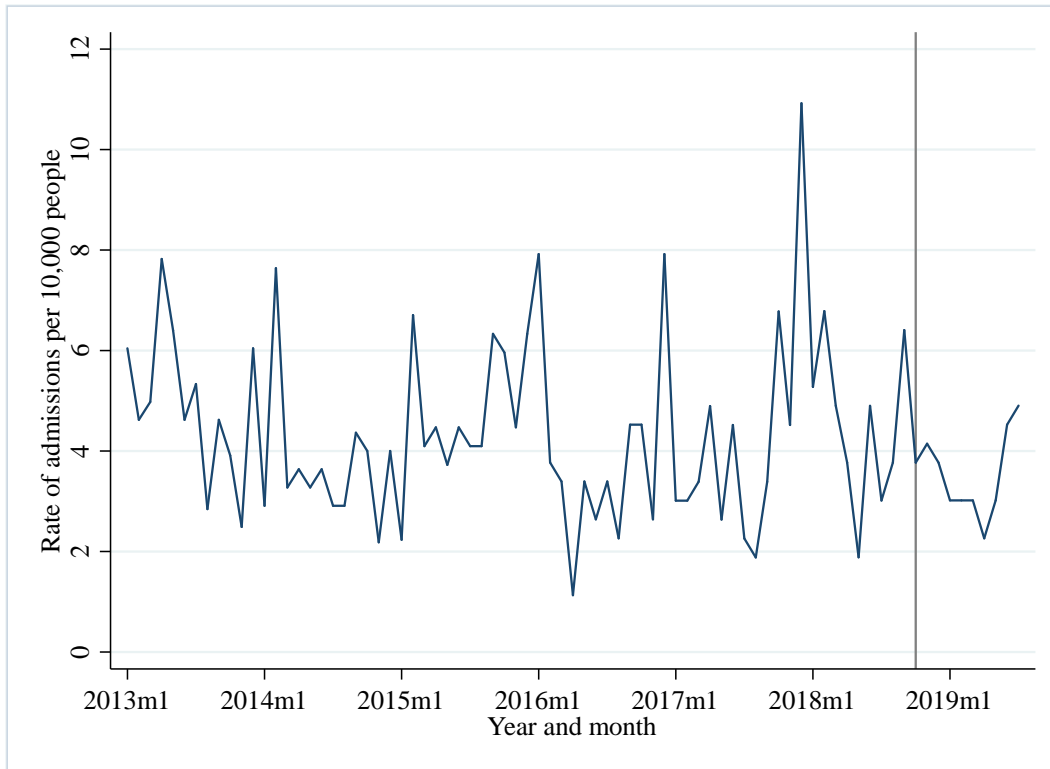


Figure 67 Rate of fracture of skull and facial bones-related hospital admissions per 10,000 people, Alice Springs

4.1.3.5.4 FRACTURE OF FOREARM

A total of 1,389 fracture of forearm bones-related hospital admissions were examined over the study period; 47% were male, 64% identified as Indigenous, and the average age was 32 years. Figure 68 shows that fracture of forearm bones-related hospital admission rates remained stable over the period examined. ITS modelling indicated that there were no significant changes after the introduction of the MUP (Table 64).

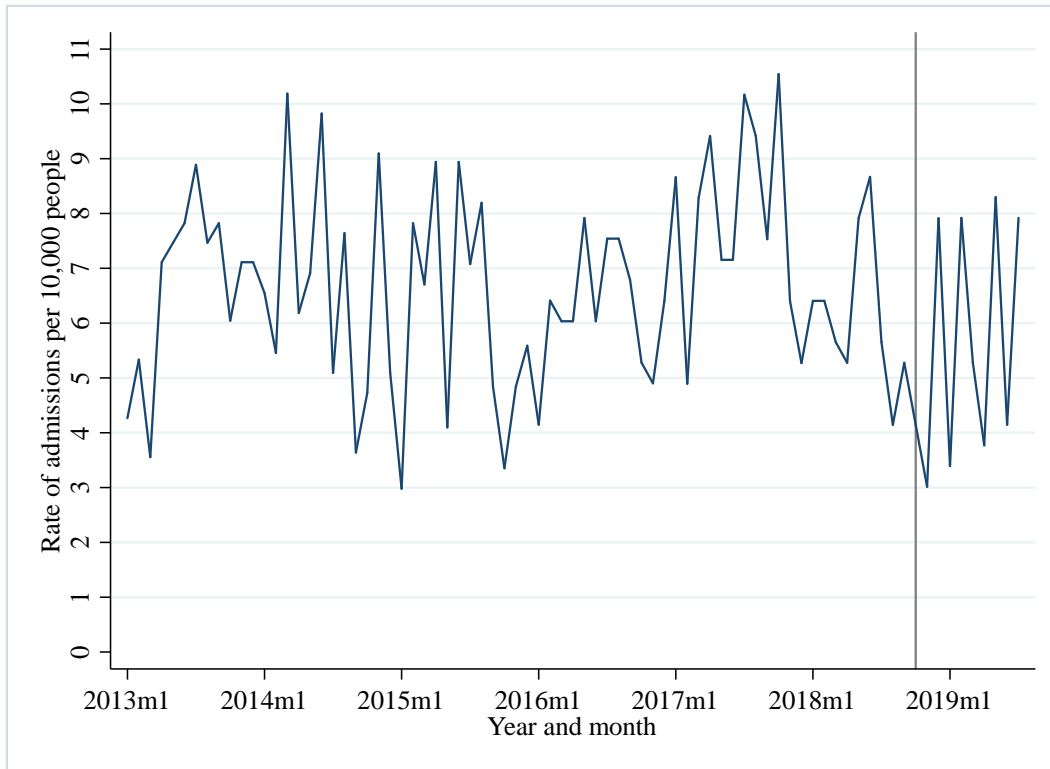


Figure 68 Rate of fracture of forearm hospital admissions per 10,000 people, Alice Springs

Table 64 Time series models for rate of fracture of forearm bones-related hospital admissions, Alice Springs

	β co-eff	95% CI	p-value
Time (slope)	0.02	-0.01, 0.04	.212
MUP (step)	-0.95	-3.39, 1.50	.443
Time X MUP (slope)	0.09	-0.28, 0.47	.615

Note. Models control for seasonality and number of people on the BDR per month

4.1.3.5.5 TOXIC EFFECT OF ALCOHOL

A total of 108 toxic effect of alcohol-related hospital admissions were examined over the study period; 47% were male, 34% identified as Indigenous, and the average age was 40 years. The number of admissions for toxic effect of alcohol were too small to conduct any further analysis.

4.1.3.5.6 MALTREATMENT SYNDROMES

A total of 162 maltreatment syndrome-related hospital admissions were examined over the study period; 20% were male, 94% identified as Indigenous, and the average age was 27 years. The number of admissions for maltreatment syndromes were too small to conduct any further analysis.

4.1.3.5.7 ASSAULT

A total of 1,997 assault-related hospital admissions were examined over the study period; 35% were male, 96% identified as Indigenous, and the average age was 33 years. Figure 69 shows that assault-related hospital admission rates fluctuated across the period examined. ITS modelling indicated that there was a significant step decrease in admissions post-MUP (Table 65).

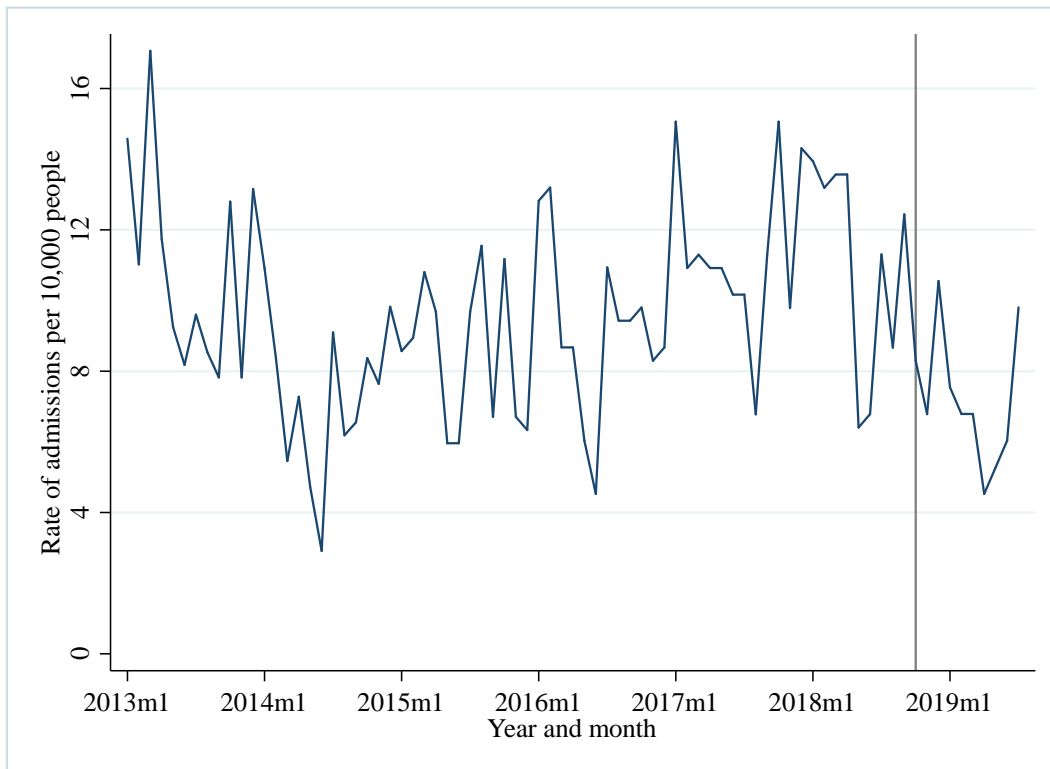


Figure 69 Rate of assault-related hospital admissions per 10,000 people, Alice Springs

Table 65 Time series models for rate of assault-related hospital admissions, Alice Springs

	β co-eff	95% CI	p-value
Time (slope)	0.01	-0.05, 0.06	.910
MUP (step)	-5.93	-9.21, -2.65	.001
Time X MUP (slope)	0.18	-0.44, 0.79	.569

Note. Models control for seasonality and number of people on the BDR per month

4.1.3.5.8 ASSAULT BY SHARP OBJECT

A total of 1,103 assault by sharp object-related hospital admissions were examined over the study period; 38% were male, 97% identified as Indigenous, and the average age was 33 years. Figure 70 shows that assault by sharp object-related hospital admission rates decreased over the period examined. ITS modelling indicated that there were no significant changes after the introduction of the MUP (Table 66).

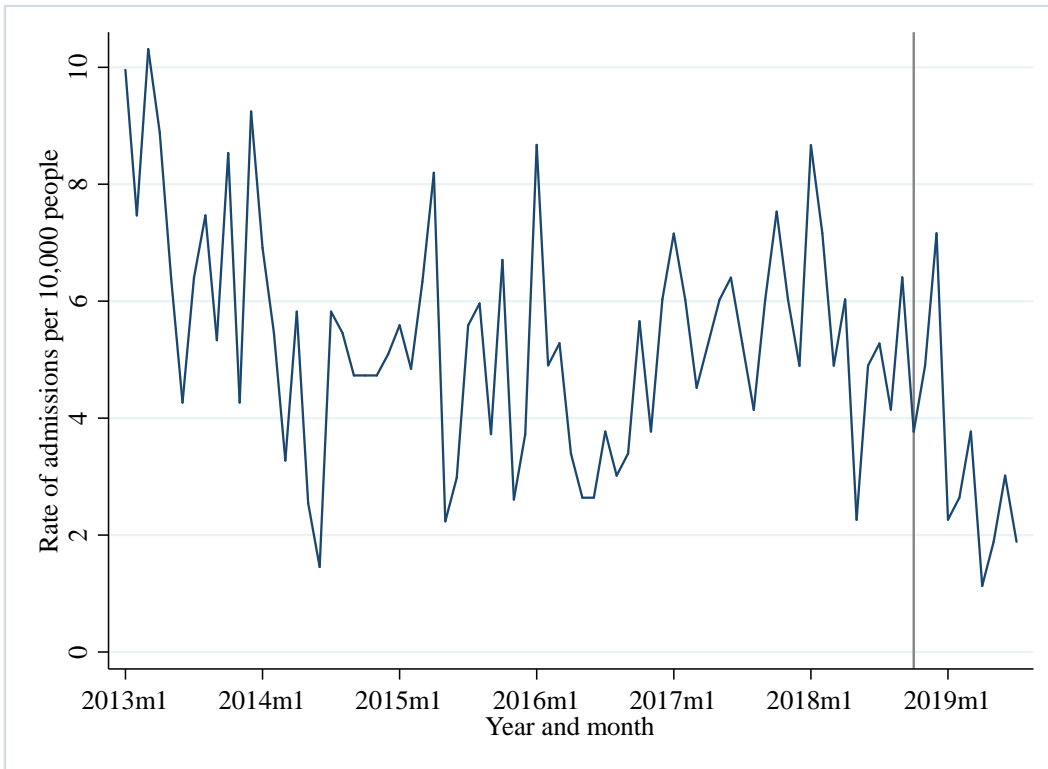


Figure 70 Rate of assault by sharp object-related hospital admissions per 10,000 people, Alice Springs

Table 66 Time series models for rate of assault by sharp object-related hospital admissions, Alice Springs

	β co-eff	95% CI	p-value
Time (slope)	-0.04	-0.07, -0.01	.025
MUP (step)	-2.14	-4.57, 0.28	.082
Time X MUP (slope)	-0.12	-0.46, 0.22	.470

Note. Models control for seasonality and number of people on the BDR per month

4.1.3.6 SOBERING UP SHELTERS

A total of 26,734 Sobering Up Shelter admissions were recorded across the time period; 49% were male, 99% identified as Aboriginal or Torres Strait Islander, and the average age was 43 years. As shown in Figure 71, the rate of Sobering Up Shelter admissions declined across the time period in Alice Springs. Post-MUP, the rate of admissions demonstrated a significant step decrease, with a significant slope change (increasing since the introduction of MUP; see Table 67). The addition of MUP has continued the significant downward trend apparent across the entire time period.

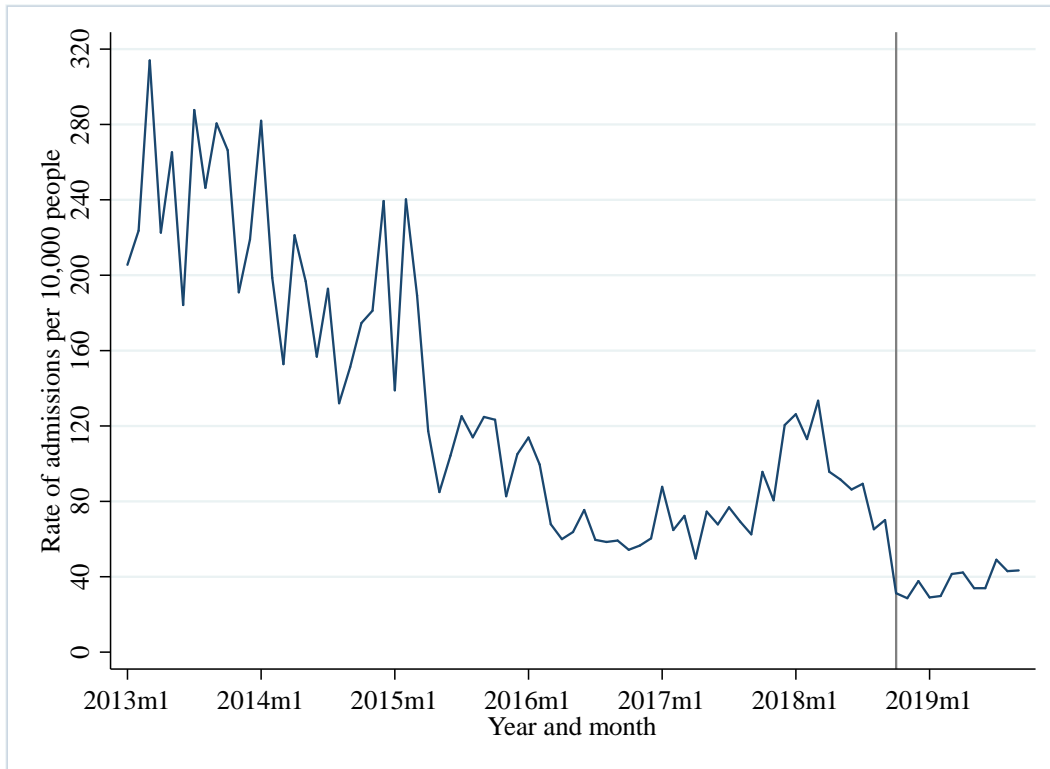


Figure 71 Rate of Sobering Up Shelter admissions per 10,000 people, Alice Springs

Table 67 Time series models for rate of Sobering Up Shelter admissions, Alice Springs

	β co-eff	95% CI	p-value
Time (slope)	-4.10	-4.79, -3.40	<.001
MUP (step)	-71.89	-93.13, -50.64	<.001
Time X MUP (slope)	6.99	4.57, 9.42	<.001

Note. Models control for seasonality and number of people on the BDR per month

4.1.3.7 TREATMENT DATA

A total of 4,319 substantive treatment episodes were recorded over the study period; 62% were male, 73% identified as Aboriginal or Torres Strait Islander, and the average age was 30 years. The majority of treatment episodes were for counselling (58%) or rehabilitation (32%). As shown in Figure 72, the rate of substantive treatment episodes in Alice Springs remained relatively stable over the study period. There was no significant step or slope change after the introduction of the MUP (see Table 68).

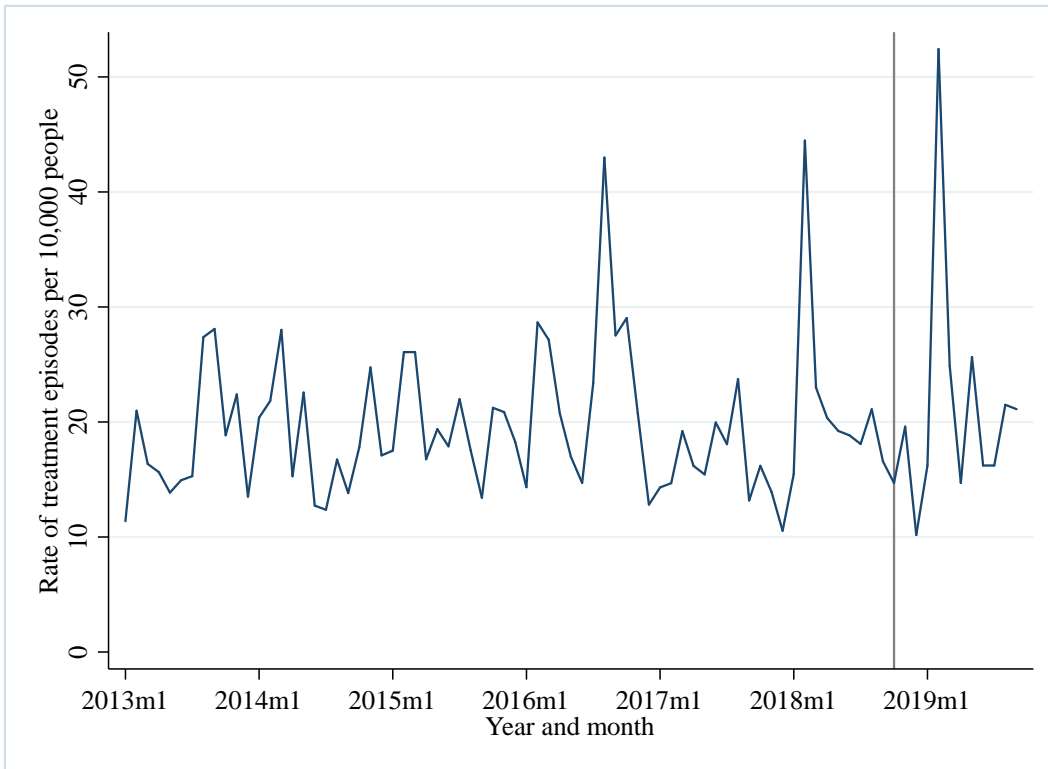


Figure 72 Rate of substantive treatment episodes per 10,000 people, Alice Springs

Table 68 Time series models for rate of substantive treatment episodes, Alice Springs

	β co-eff	95% CI	p-value
Time (slope)	0.05	-0.06, 0.16	.360
MUP (step)	0.91	-11.94, 13.75	.888
Time X MUP (slope)	0.03	-1.04, 1.09	.961

Note. Models control for seasonality and number of people on the BDR per month

4.1.3.8 ROAD TRAFFIC CRASH DATA

There were a total of 224 alcohol-related traffic crashes that resulted in injury or fatality in Alice Springs from January 1 2013 to June 30 2019 (Figure 73). The number of crashes were too small to conduct any further analysis.

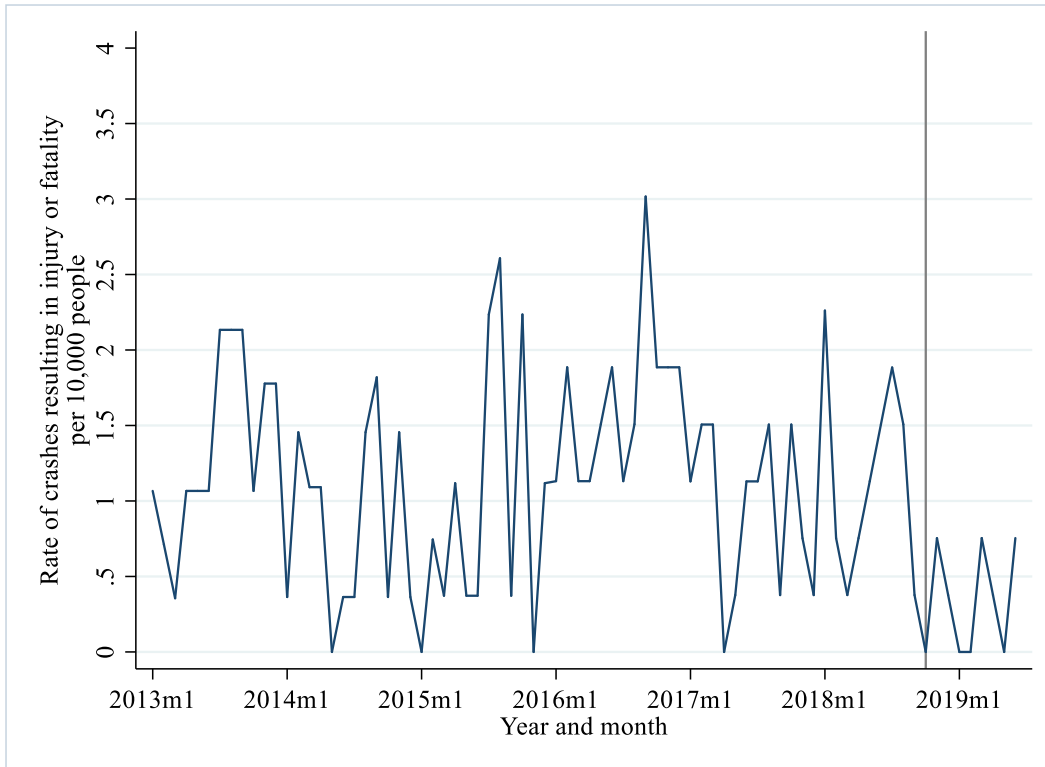


Figure 73 Rate of alcohol-related crash injuries and fatalities per 10,000 people, Alice Springs

4.1.4 KATHERINE

4.1.4.1 ALCOHOL WHOLESALE SUPPLY DATA

The total alcohol wholesale supply per capita for the Katherine region is shown in Figure 74. There was no significant change in the total alcohol wholesale supply after the introduction of the MUP.

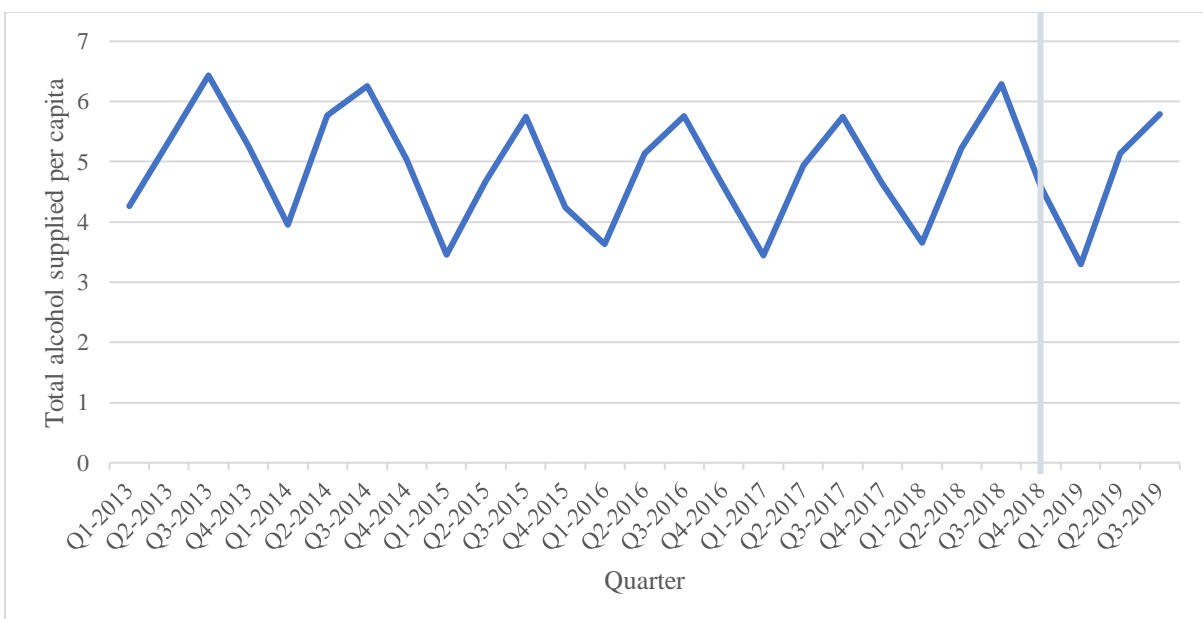


Figure 74 Total alcohol wholesale supply per capita, Katherine

The alcohol wholesale supply per capita by beverage type for the Katherine region is provided in Figure 75. As shown in Table 69, there was a significant step decrease in the supply of cask wine and bottled wine after the introduction of the MUP. However, there was a significant step increase in the supply of light beer. There was also a significant slope increase in the supply of bottled wine. No significant changes were found for the remaining beverage types (not shown Table 69).

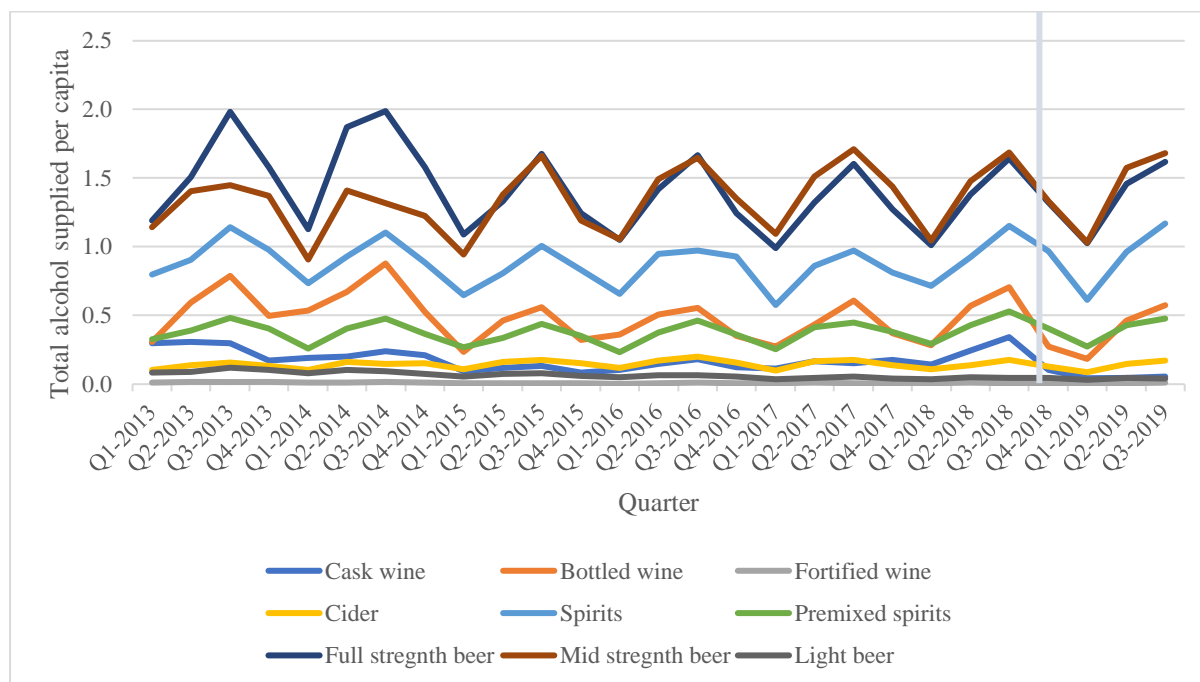


Figure 75 Alcohol wholesale supply per capita by beverage type, Katherine

Table 69 Time series models for per capita alcohol wholesale supply, Katherine

Cask wine	β co-eff	95% CI	p-value
Time (slope)	-0.01	-0.02, -0.004	.002
MUP (step)	-0.16	-0.23, -0.08	<.001
Time X MUP(slope)	-0.01	-0.04, 0.02	.629
Bottled wine	β co-eff	95% CI	p-value
Time (slope)	-0.01	-0.02, -0.004	.008
MUP (step)	-0.17	-0.28, -0.06	.004
Time X MUP(slope)	0.05	0.004, 0.09	.035
Light beer	β co-eff	95% CI	p-value
Time (slope)	-0.004	-0.005, -0.003	<.001
MUP (step)	0.01	0.001, 0.02	.028
Time X MUP(slope)	-0.001	-0.004, 0.002	.365

Note. Models control for seasonality and number of people on the BDR at the end of each quarter

4.1.4.2 POLICE ALCOHOL-RELATED ASSAULTS DATA

A total of 2,626 alcohol-related assault offences were recorded across the time period; 7% recorded victim alcohol involvement, 50% offender alcohol involvement, and 43% both victim and offender alcohol involvement. As shown in Figure 76 the rate of alcohol-related assault offences declined in Katherine from 2013 to 2015, after which it remained relatively stable, with some fluctuations. ITS modelling indicated a significant slope change, with a declining rate of offences post-MUP (see Table 70).

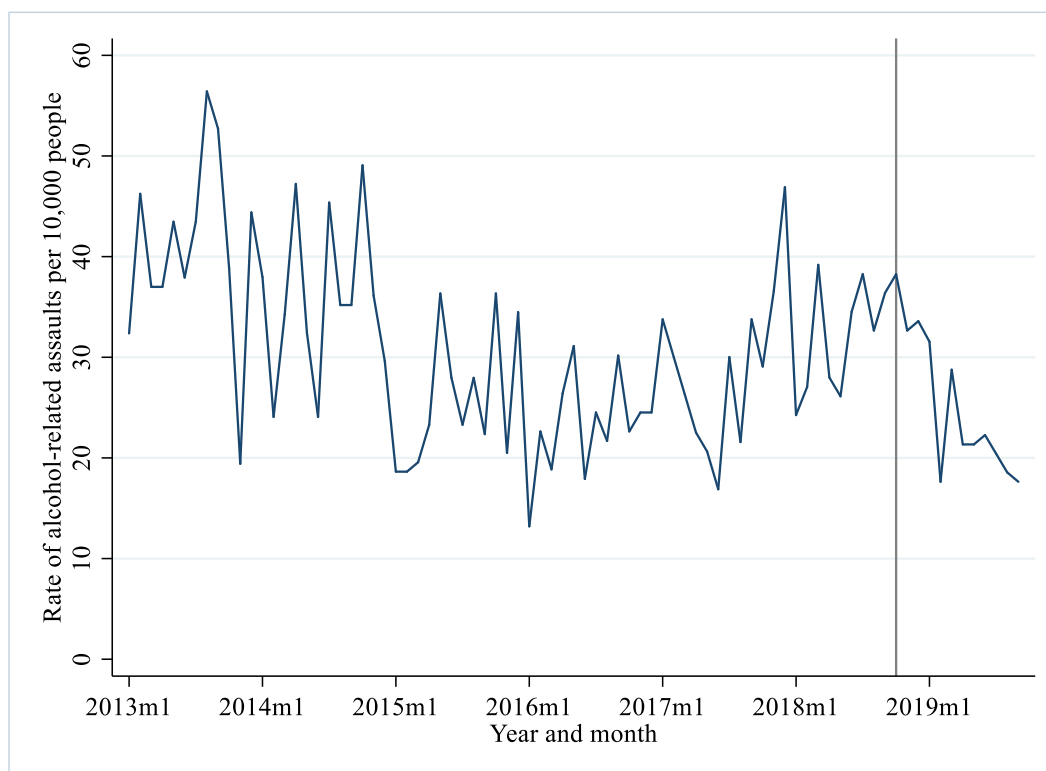


Figure 76 Rate of alcohol-related assault offences per 10,000 population, Katherine

Table 70 Time series models for rate of police recorded assault offences, Katherine

	β co-eff	95% CI	p-value
Time (slope)	-0.38	-0.51, -0.25	<.001
MUP (step)	-0.65	-7.56, 6.26	.852
Time X MUP (slope)	-1.26	-1.92, -0.60	<.001

Note. Models control for seasonality and number of people on the BDR per month

4.1.4.1 OFFENDERS – ALCOHOL-RELATED ASSAULTS

There were a total of 1,457 offenders involved in alcohol-related assault offences across the time period, with 80% of offenders male, 79% aged 18-44 years, and 95% identifying as Aboriginal. Figure 77 shows that rate of offenders in alcohol-related assault offences per 10,000 population fluctuated over the entire

time period. ITS modelling showed that there was a significant slope decrease in the rate of offenders post-MUP (Table 71).

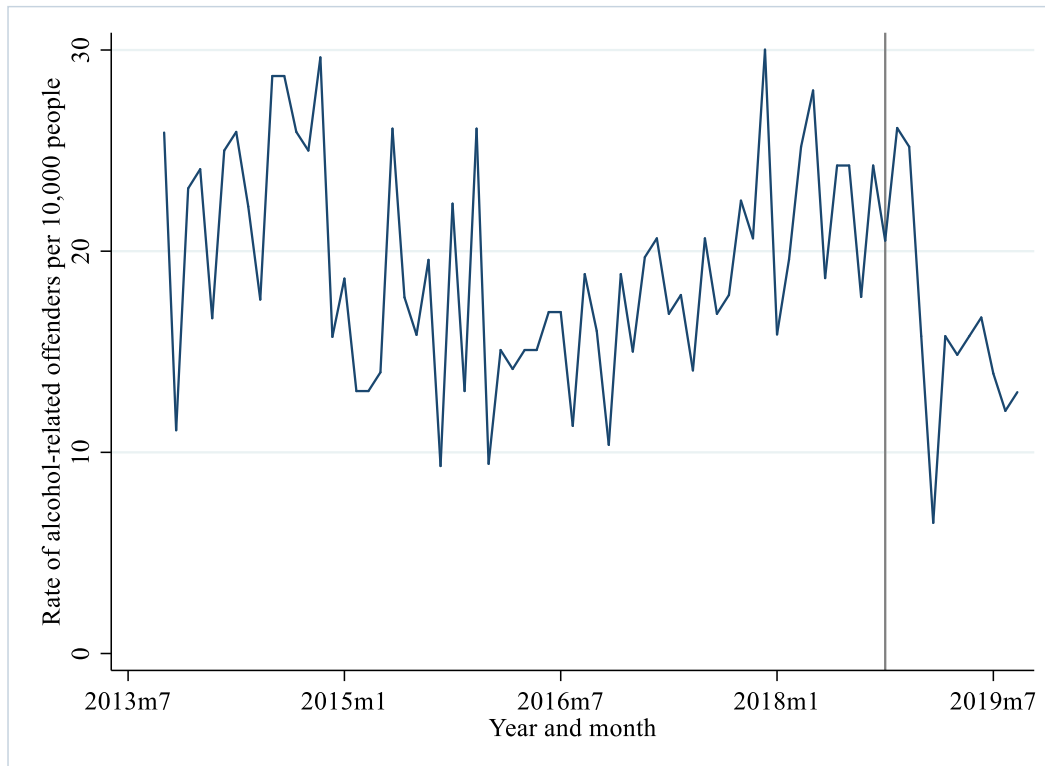


Figure 77 Rate of offenders in alcohol-related assault offences per 10,000 population, Katherine

Table 71 Time series models for rate of police recorded offenders, Katherine

	β co-eff	95% CI	p-value
Time (slope)	-0.16	-0.27, -0.05	.007
MUP (step)	-2.87	-8.84, 3.10	.340
Time X MUP (slope)	-0.64	-1.24, -0.05	.035

Note. Models control for seasonality and number of people on the BDR per month

4.1.4.1 VICTIMS – ALCOHOL-RELATED ASSAULTS

There were a total of 2,262 victims involved in alcohol-related assault offences across the time period, with 70% of victims female, 74% aged 18-44 years, and 82% identifying as Aboriginal. As demonstrated in Figure 78 the rate of victims in alcohol-related assault offences in Katherine remained relatively stable over time. ITS modelling indicated a significant slope change, with a decline in the rate of victims month to month since the introduction of MUP (Table 72).

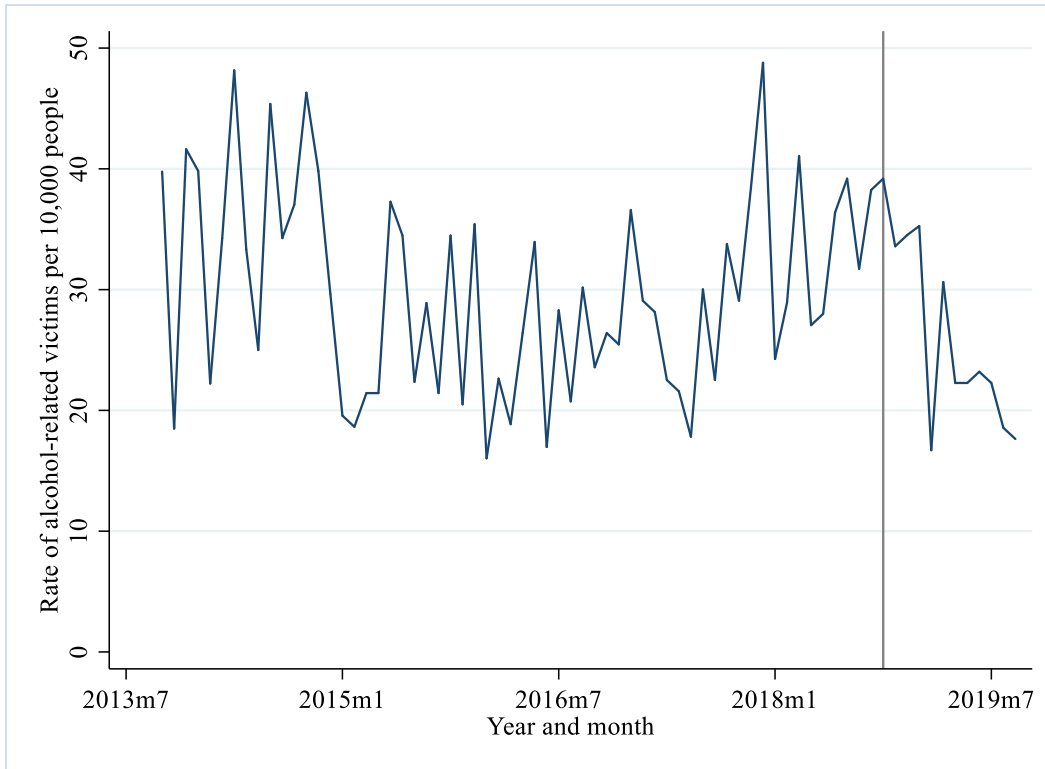


Figure 78 Rate of victims in alcohol-related assault offences per 10,000 population, Katherine

Table 72 Time series models for rate of police recorded victims, Katherine

	β co-eff	95% CI	p-value
Time (slope)	-0.25	-0.43, -0.07	.007
MUP (step)	-1.30	-8.85, 6.24	.731
Time X MUP (slope)	-1.31	-2.01, -0.62	<.001

Note. Models control for seasonality and number of people on the BDR per month

4.1.4.2 POLICE PROTECTIVE CUSTODY DATA

There were a total of 3,730 episodes of alcohol-related protective custody across the time period. As shown in Figure 79 the rate of alcohol-related protective custody episodes decline from late-2018 in Katherine. However, ITS modelling indicated no significant step or slope change in the rate of protective custody episodes (Table 73).

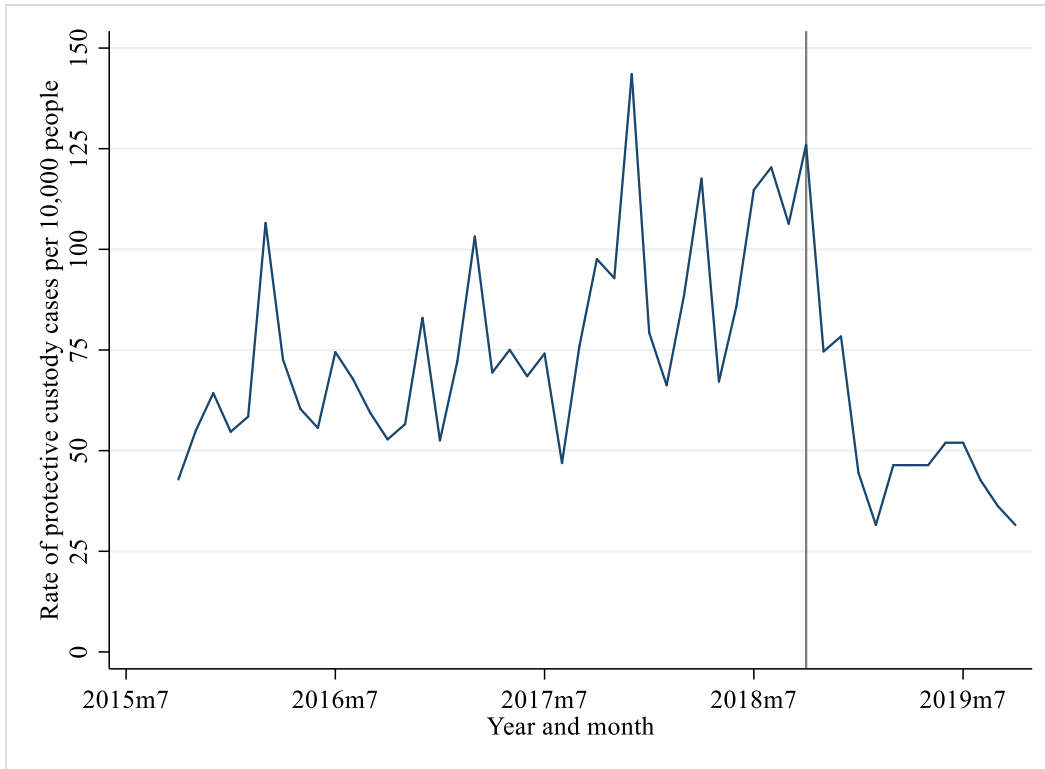


Figure 79 Rate of alcohol-related protective custody episodes per 10,000 population, Katherine

Table 73 Time series models for rate of alcohol-related protective custody episodes, Katherine

	β co-eff	95% CI	p-value
Time (slope)	0.89	-0.54, 2.33	.215
MUP (step)	-29.41	-71.73, 12.91	.168
Time X MUP (slope)	-4.66	-9.45, 0.13	.056

Note. Models control for seasonality and number of people on the BDR per month

4.1.1.4.3 AMBULANCE ATTENDANCES

A total of 3,641 alcohol-related ambulance attendances were recorded across the time period. As shown in Figure 80, the rate of alcohol-related ambulance attendances began to decline in Katherine after the introduction of the MUP. ITS modelling indicated significant step decrease and slope change (the rate of attendances declined over time) in the rate of alcohol-related ambulance attendances post-MUP (see Table 74).

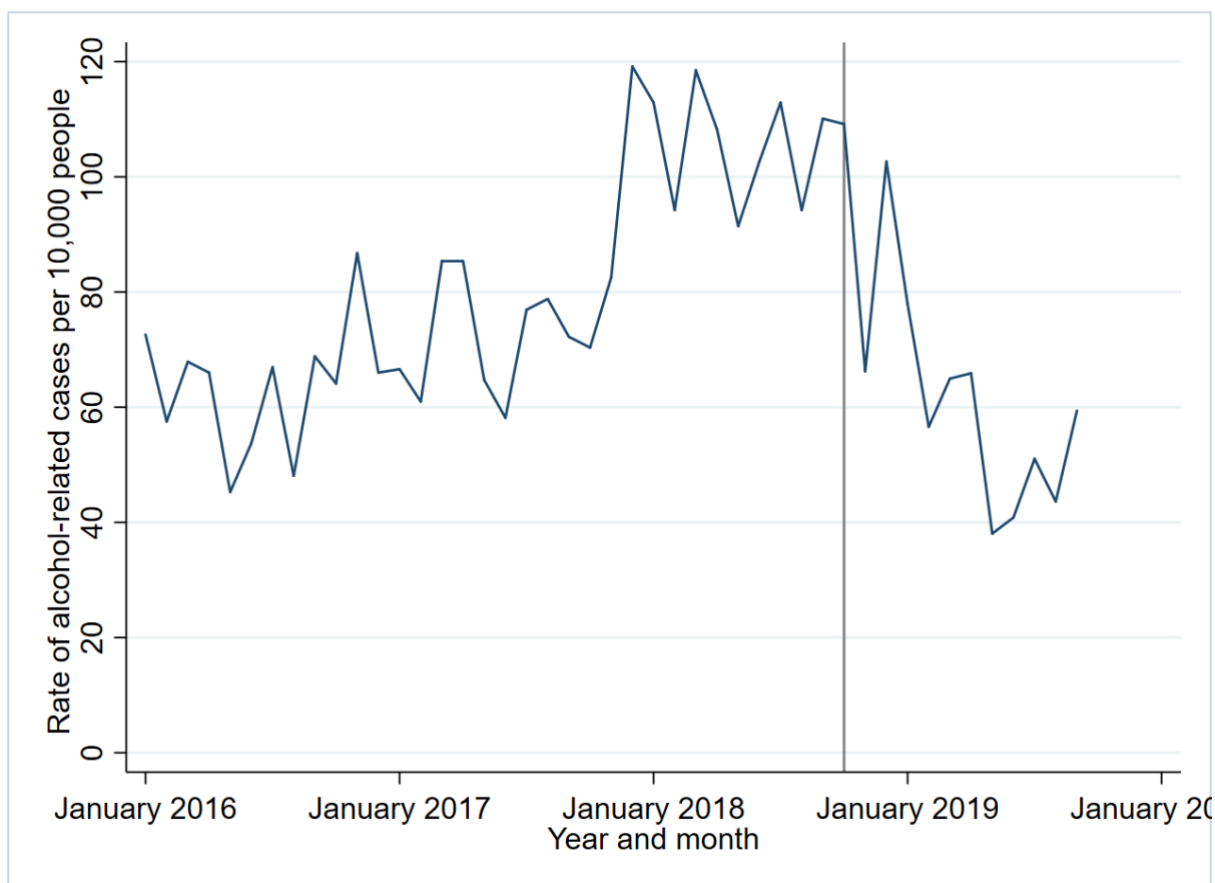


Figure 80 Rate of alcohol-related ambulance attendances per 10,000 population, Katherine

Table 74 Time series models for rate of alcohol-related ambulance attendances, Katherine

	β co-eff	95% CI	p-value
Time (slope)	1.00	0.35, 1.65	.003
MUP (step)	-31.33	-53.59, -9.08	.007
Time X MUP (slope)	-4.26	-7.26, -1.26	.007

Note. Models control for seasonality and number of people on the BDR per month

4.1.4.4 EMERGENCY DEPARTMENT PRESENTATIONS

4.1.4.4.1 ALCOHOL-RELATED PRESENTATIONS

A total of 2,406 alcohol-related ED presentations were examined over the study period; 45% were male, 93% identified as Indigenous, and the average age was 41 years. Figure 81 shows that alcohol-related ED presentation rates declined in 2014 and increased again in late 2017. ITS modelling indicated that there were no significant changes post-MUP (Table 75).

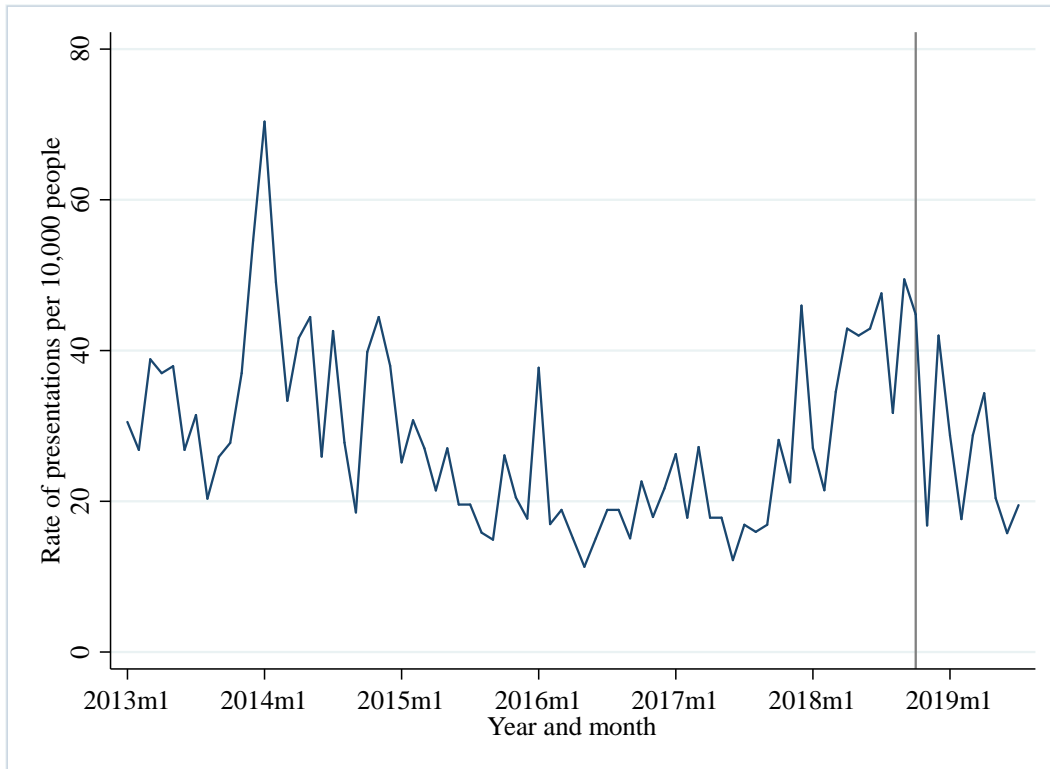


Figure 81 Rate of alcohol-related ED presentations per 10,000 people, Katherine

Table 75 Time series models for rate of alcohol-related ED presentations, Katherine

	β co-eff	95% CI	p-value
Time (slope)	-0.44	-0.61, -0.27	<.001
MUP (step)	-9.92	-28.18, 8.35	.283
Time X MUP (slope)	-0.60	-2.95, 1.75	.612

Note. Models control for seasonality and number of people on the BDR per month

4.1.4.4.2 MALTREATMENT SYNDROMES

A total of 1,526 maltreatment syndrome-related ED presentations were examined over the study period; 26% were male, 90% identified as Indigenous, and the average age was 34 years. Figure 82 shows that maltreatment syndrome-related ED presentation rates increased across the period before declining after the introduction of the MUP. ITS modelling indicated that there was a significant slope decrease after the introduction of the MUP (Table 76).

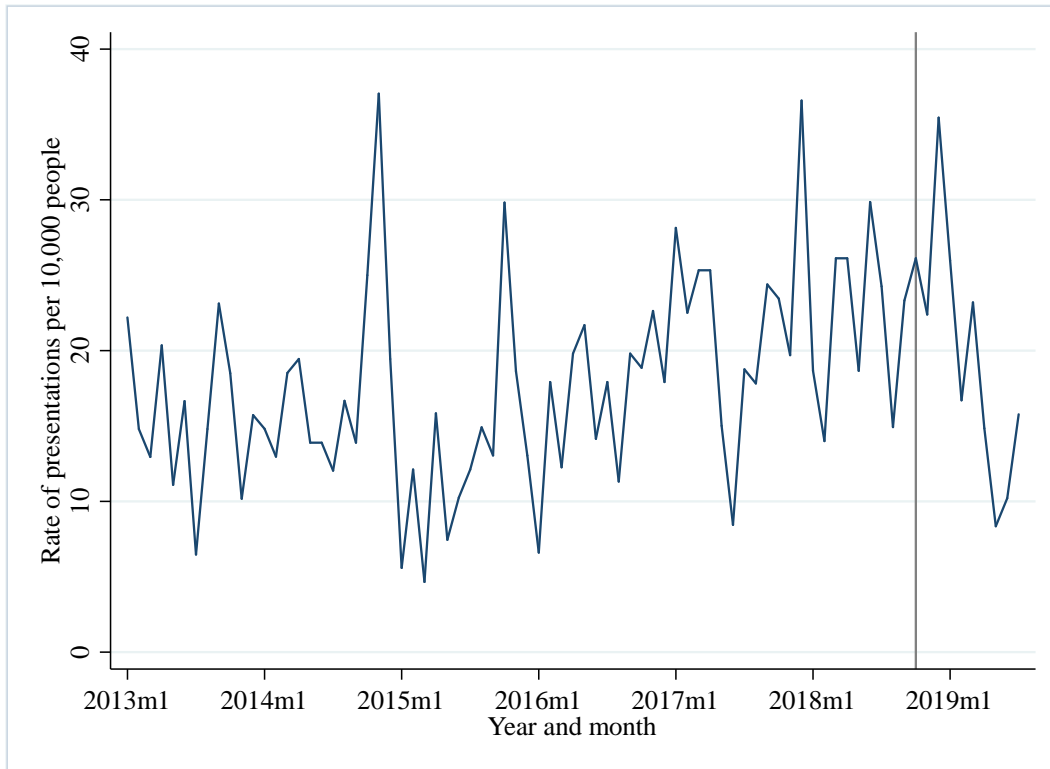


Figure 82 Rate of maltreatment syndrome-related-related ED presentations per 10,000 people, Katherine

Table 76 Time series models for rate of maltreatment syndrome-related-related ED presentations, Katherine

	β co-eff	95% CI	p-value
Time (slope)	0.07	-0.02, 0.17	.131
MUP (step)	-0.12	-8.59, 8.35	.978
Time X MUP (slope)	-1.28	-2.46, -0.10	.034

Note. Models control for seasonality and number of people on the BDR per month

4.1.4.4.3 OTHER EMERGENCY DEPARTMENT PRESENTATION TYPES

The following presentation types in Katherine did not have sufficient numbers across the time period for meaningful analyses. There were 349 other substance use ED presentations examined over the study period; 71% were male, 76% identified as Indigenous, and the average age was 24 years. A total of 153 fracture of skull and facial bones-related ED presentations were included over the study period; 56% were male, 48% identified as Indigenous, and the average age was 30 years. Across the time period, there were 379 fracture of forearm bones-related ED presentations; 50% were male, 64% identified as Indigenous, and the average age was 26 years. Lastly, a total of 159 assault by sharp object-related ED presentations were examined over the study period; 59% were male, 94% identified as Indigenous, and the average age was 35 years.

4.1.4.5 HOSPITAL ADMISSIONS

4.1.4.5.1 ALCOHOL-RELATED ADMISSIONS

A total of 2,585 alcohol-related hospital admissions were examined over the study period; 48% were male, 89% identified as Indigenous, and the average age was 44 years. As shown in Figure 83, the rate of hospital admissions in Katherine involving alcohol demonstrated a decline from late-2018. There was a significant slope decline in the rate of admissions after the introduction of MUP (see Table 77).

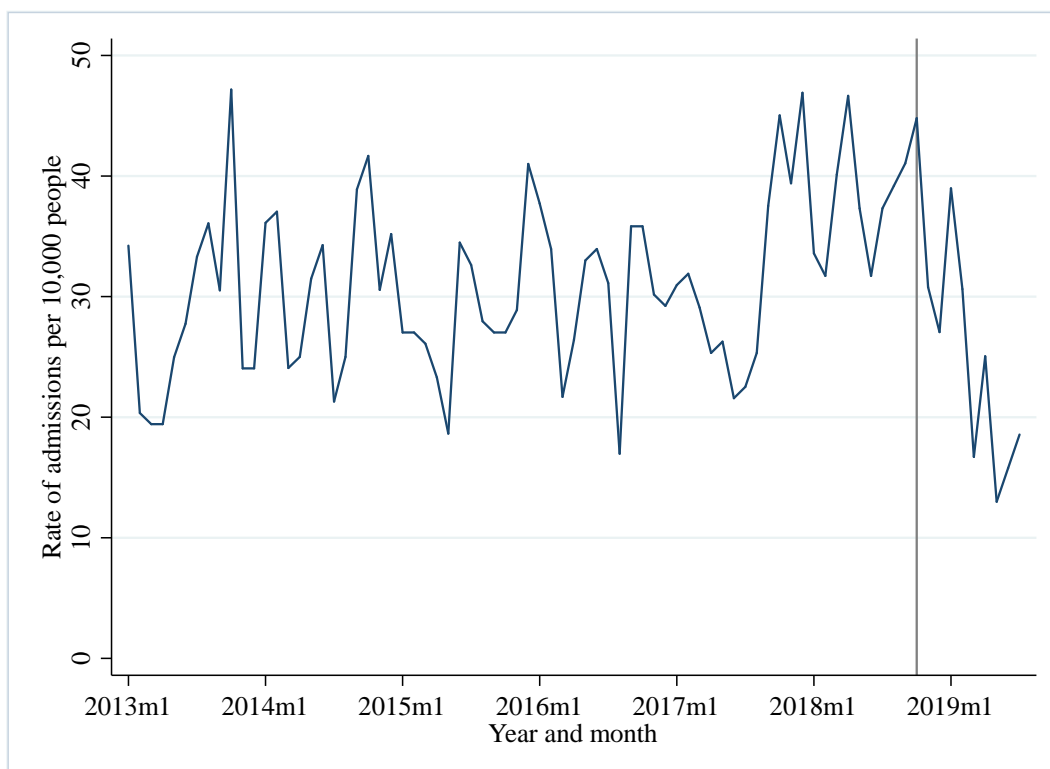


Figure 83 Rate of alcohol-related hospital admissions per 10,000 people, Katherine

Table 77 Time series models for rate of alcohol-related hospital admissions, Katherine

	β co-eff	95% CI	p-value
Time (slope)	-0.01	-0.12, 0.10	.856
MUP (step)	-5.66	-15.75, 4.44	.268
Time X MUP (slope)	-2.23	-3.69, -0.77	.003

Note. Models control for seasonality and number of people on the BDR per month

4.1.4.5.2 OTHER HOSPITAL ADMISSION TYPES

The following hospital admission codes within Katherine did not have sufficient numbers across the time period for meaningful analyses. A total of 331 other substance use hospital admissions were examined over the study period; 63% were male, 61% identified as Indigenous, and the average age was 42 years. There were 167 fracture of skull and facial bones-related hospital admissions; 59% were male, 85%

identified as Indigenous, and the average age was 34 years. A total of 177 fracture of forearm bones-related hospital admissions were included; 48% were male, 64% identified as Indigenous, and the average age was 31 years. Only 23 toxic effect of alcohol-related hospital admissions were coded; 26% were male, 39% identified as Indigenous, and the average age was 40 years. Further, a total of 16 maltreatment syndrome-related hospital admissions were examined over the study period; 13% were male, 88% identified as Indigenous, and the average age was 28 years. There were a total of 346 assault-related hospital admissions; 49% were male, 92% identified as Indigenous, and the average age was 35 years. Lastly, a total of 169 assault by sharp object-related hospital admissions were included; 60% were male, 91% identified as Indigenous, and the average age was 35 years.

4.1.4.6 SOBERING UP SHELTERS

A total of 9,666 Sobering Up Shelter admissions were recorded across the time period; 63% were male, 99% identified as Aboriginal or Torres Strait Islander, and the average age was 44 years. As shown in Figure 84, the rate of Sobering Up Shelter admissions declined across the time period in Katherine. There were no significant step or slope changes in the rate of admission after the introduction of the MUP (see Table 78). The addition of MUP has continued the significant downward trend apparent across the entire time period.

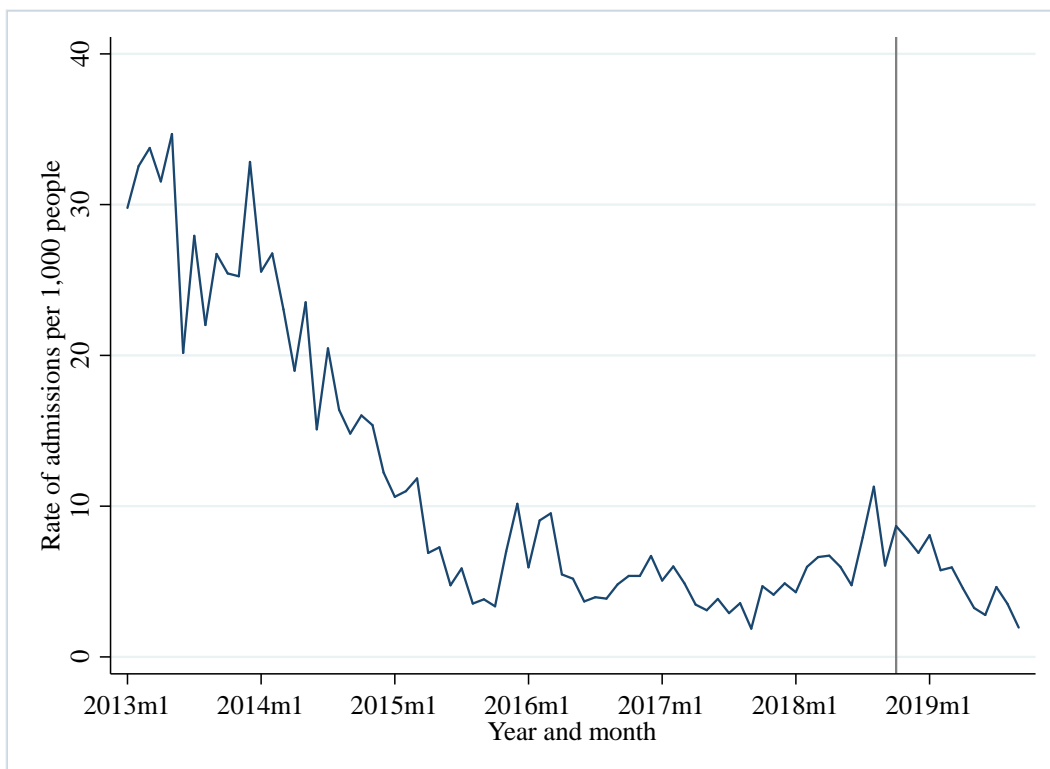


Figure 84 Rate of Sobering Up Shelter admissions per 10,000 people, Katherine

Table 78 Time series models for rate of Sobering Up Shelter admissions, Katherine

	β co-eff	95% CI	p-value
Time (slope)	-0.54	-0.68, -0.41	<.001
MUP (step)	2.58	-0.14, 5.29	.063
Time X MUP (slope)	0.13	-0.25, 0.52	.486

Note. Models control for seasonality and number of people on the BDR per month

4.1.4.7 TREATMENT DATA

A total of 1,105 substantive treatment episodes were recorded over the study period; 76% were male, 98% identified as Aboriginal or Torres Strait Islander, and the average age was 35 years. The majority of treatment episodes were for rehabilitation (94%). As shown in Figure 85, the rate of substantive treatment episodes in Katherine remained relatively stable over the study period. There was no significant step or slope change after the introduction of the MUP (see Table 79).

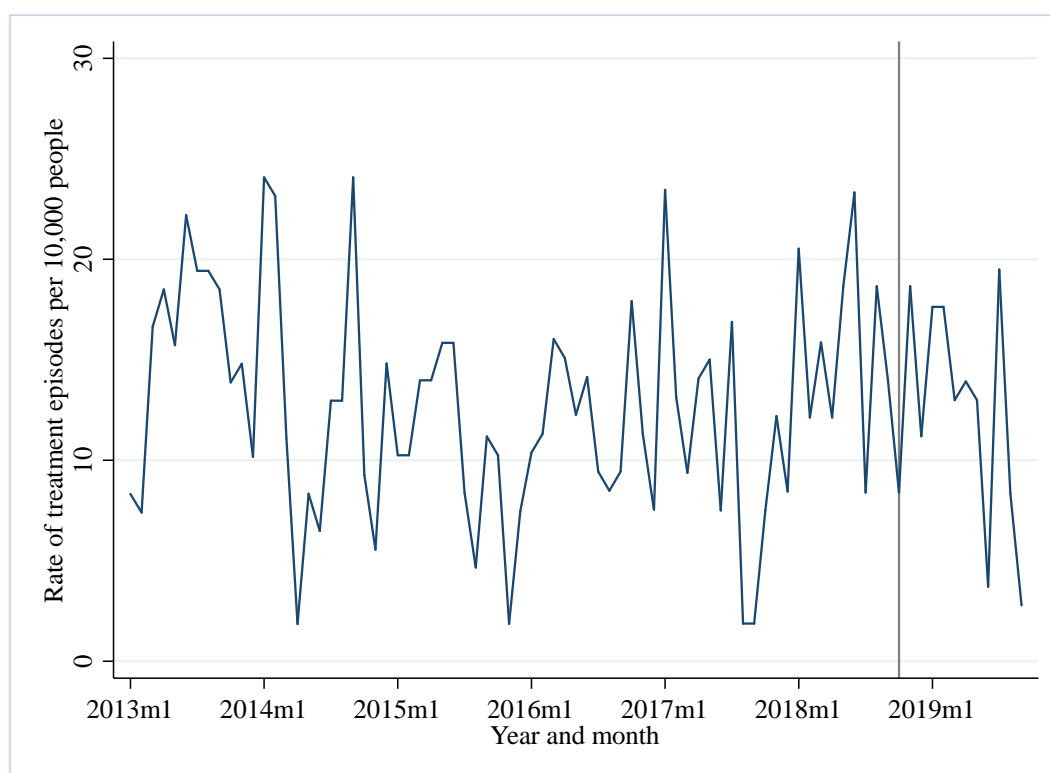


Figure 85 Rate of substantive treatment episodes type per 10,000 people, Katherine

Table 79 Time series models for rate of substantive treatment episodes, Katherine

	β co-eff	95% CI	p-value
Time (slope)	-0.09	-0.19, 0.02	.108
MUP (step)	2.30	-4.90, 9.50	.526
Time X MUP (slope)	-0.80	-1.90, 0.30	.151

Note. Models control for seasonality and number of people on the BDR per month

4.1.4.8 ROAD TRAFFIC CRASH DATA

There were a total of 61 alcohol-related traffic crashes that resulted in injury or fatality in Katherine from January 1 2013 to June 30 2019. The number of crashes were too small to conduct any further analysis.

4.1.5 TENNANT CREEK

4.1.5.1 ALCOHOL WHOLESALE SUPPLY DATA

The total alcohol wholesale supply per capita for the Tennant Creek region is shown in Figure 86. There was no significant step or slope change in total alcohol supply post-MUP.

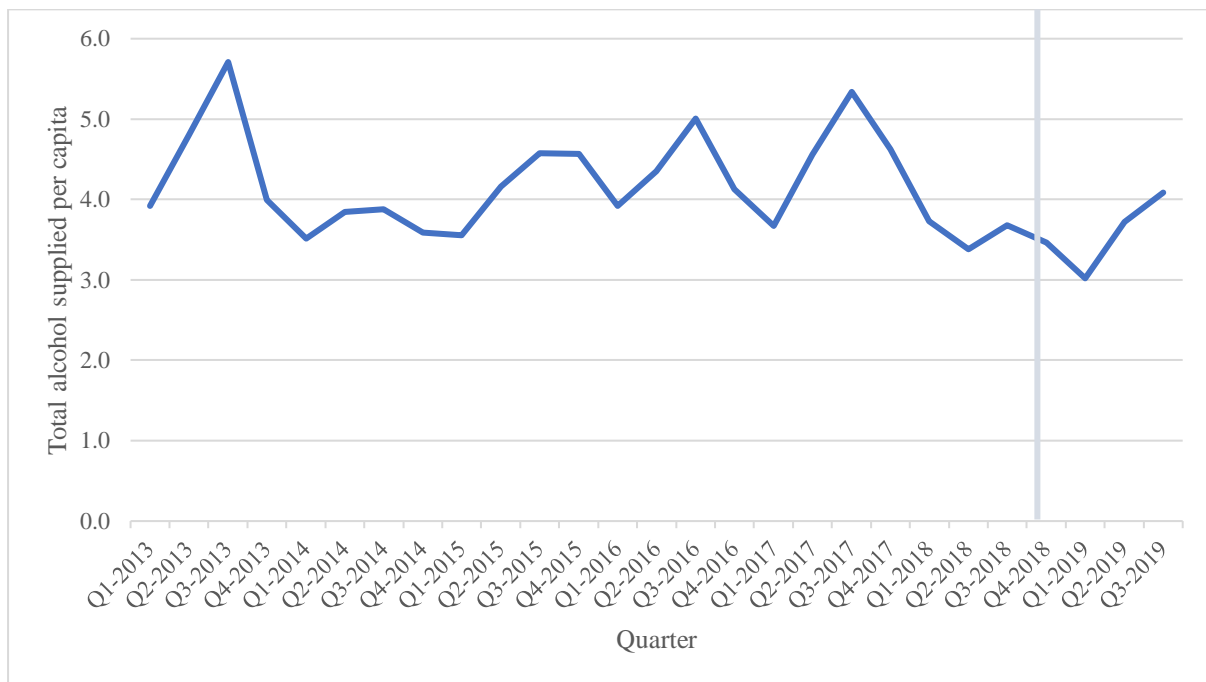


Figure 86 Total alcohol wholesale supply per capita, Tennant Creek

The alcohol wholesale supply per capita by beverage type for the Tennant Creek region is provided in Figure 87. As shown in Table 80, there was a significant slope increase in the supply of mid strength beer after the introduction of the MUP. No significant changes were found for the remaining beverage types (not shown in Table 80).

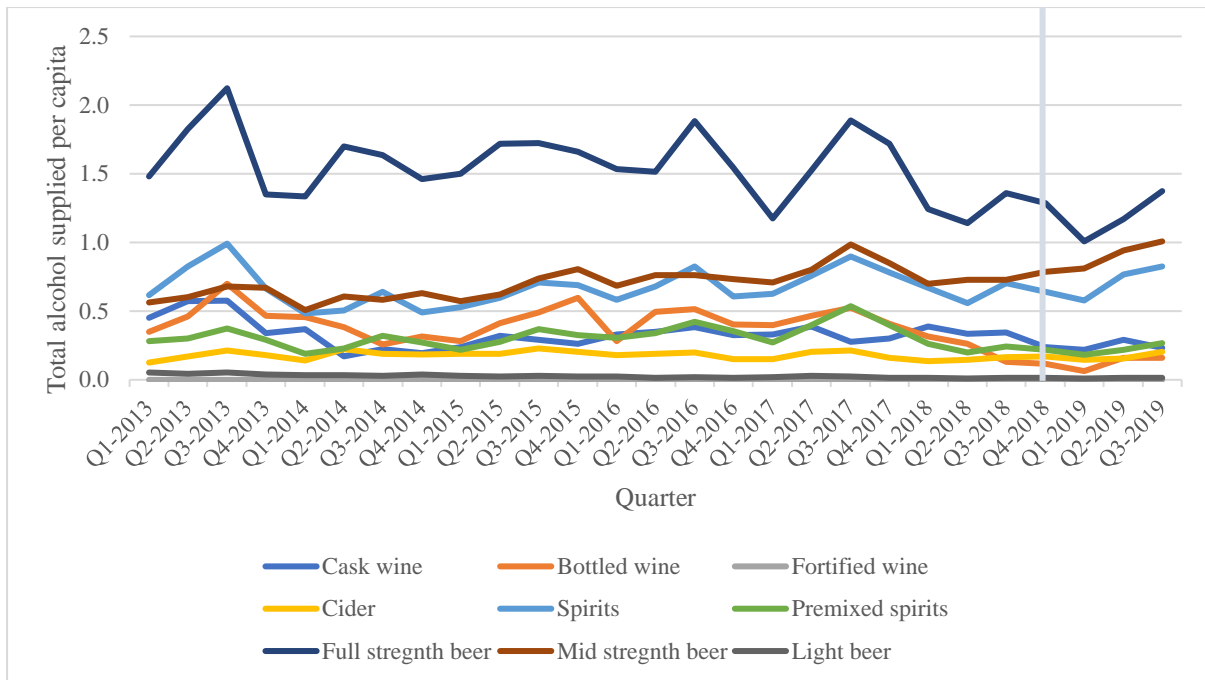


Figure 87 Alcohol wholesale supply per capita by beverage type, Tennant Creek

Table 80 Time series models for per capita alcohol wholesale supply, Tennant Creek

Mid strength beer	β co-eff	95% CI	p-value
Time (slope)	0.01	0.01, 0.02	<.001
MUP (step)	0.004	-0.09, 0.10	.923
Time X MUP(slope)	0.06	0.03, 0.09	.001

Note. Models control for seasonality and number of people on the BDR at the end of each quarter

4.1.5.2 POLICE ALCOHOL-RELATED ASSAULTS DATA

A total of 1,815 alcohol-related assault offences were recorded across the time period; 3% recorded victim alcohol involvement, 51% offender alcohol involvement, and 46% both victim and offender alcohol involvement. As shown in Figure 88 the rate of alcohol-related assault offences in Tennant Creek decreased from 2014 to late-2014, after which it was relatively stable. ITS modelling demonstrated no significant change in the rate of offences post-MUP (see Table 81).

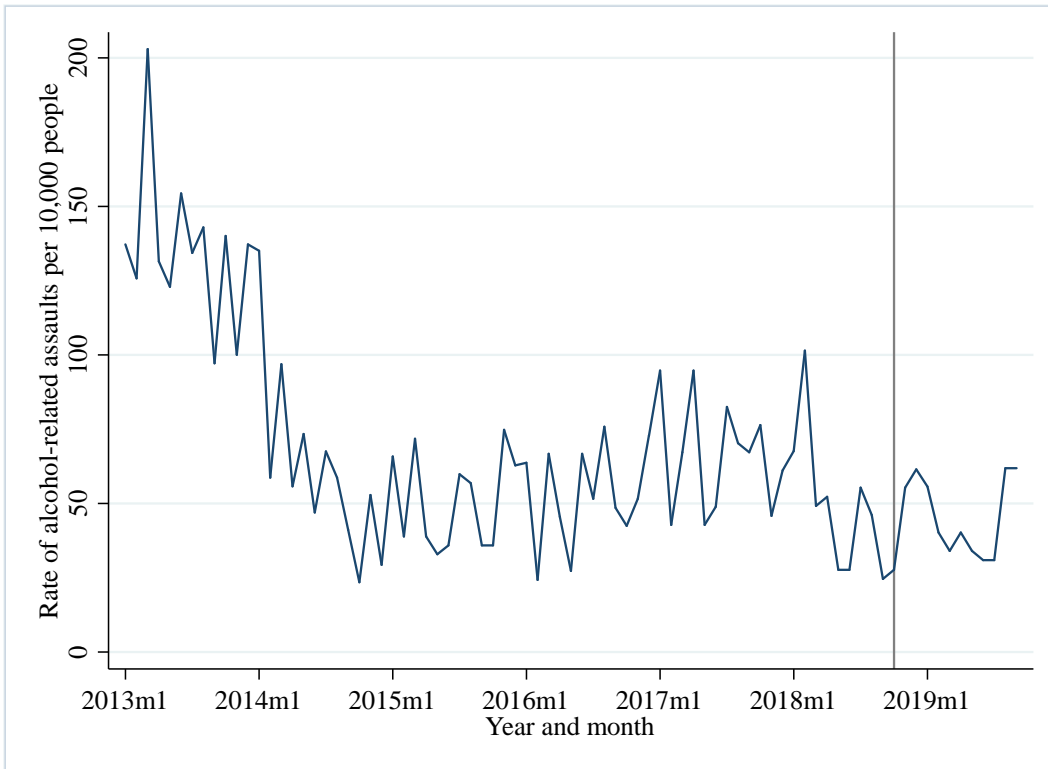


Figure 88 Rate of alcohol-related assault offences per 10,000 population, Tennant Creek

Table 81 Time series models for rate of police recorded assault offences, Tennant Creek

	β co-eff	95% CI	p-value
Time (slope)	-1.35	-2.27, -0.44	.004
MUP (step)	-7.72	-33.69, 18.25	.556
Time X MUP (slope)	2.86	-0.95, 6.68	.139

Note. Models control for seasonality and number of people on the BDR per month

4.1.5.1 OFFENDERS – ALCOHOL-RELATED ASSAULTS

There were a total of 1,007 offenders involved in alcohol-related assault offences across the time period, with 81% of offenders male, 86% aged 18-44 years, and 93% identifying as Aboriginal. Figure 89 shows that the number of offenders in alcohol-related assaults offences per 10,000 people in Tennant Creek declined from 2013 to approximately 2015. ITS modelling indicated no significant changes in the rate of offenders after the introduction of MUP (Table 82).

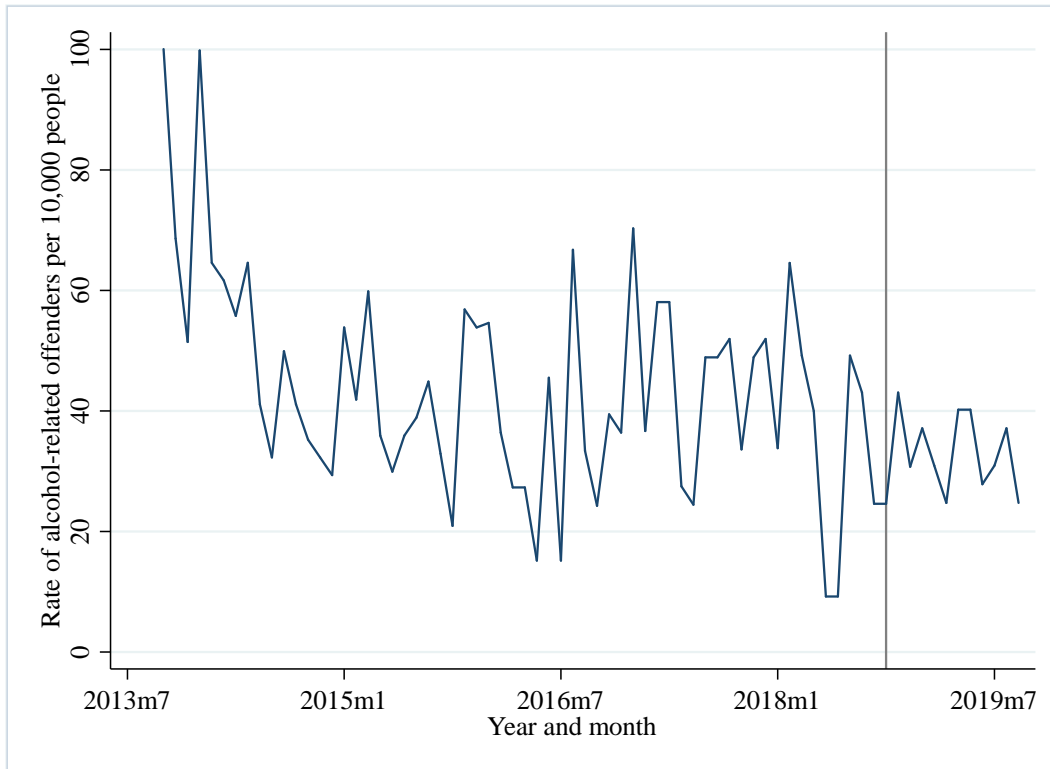


Figure 89 Rate of offenders in alcohol-related assault offences per 10,000 population, Tennant Creek

Table 82 Time series models for rate of police recorded offenders, Tennant Creek

	β co-eff	95% CI	p-value
Time (slope)	-0.05	-0.10, 0	.045
MUP (step)	-0.73	-2.38, 0.92	.380
Time X MUP (slope)	0.10	-0.09, 0.29	.301

Note. Models control for seasonality and number of people on the BDR per month

4.1.5.1 VICTIMS – ALCOHOL-RELATED ASSAULTS

There were a total of 1,414 victims involved in alcohol-related assault offences across the time period, with 71% of victims female, 79% aged 18-44 years, and 86% identifying as Aboriginal. As demonstrated in Figure 90 the rate of victims in alcohol-related assault offences in Tennant Creek decreased between 2013 and 2015. ITS modelling indicated no significant change in the rate of victims post-MUP (Table 83).

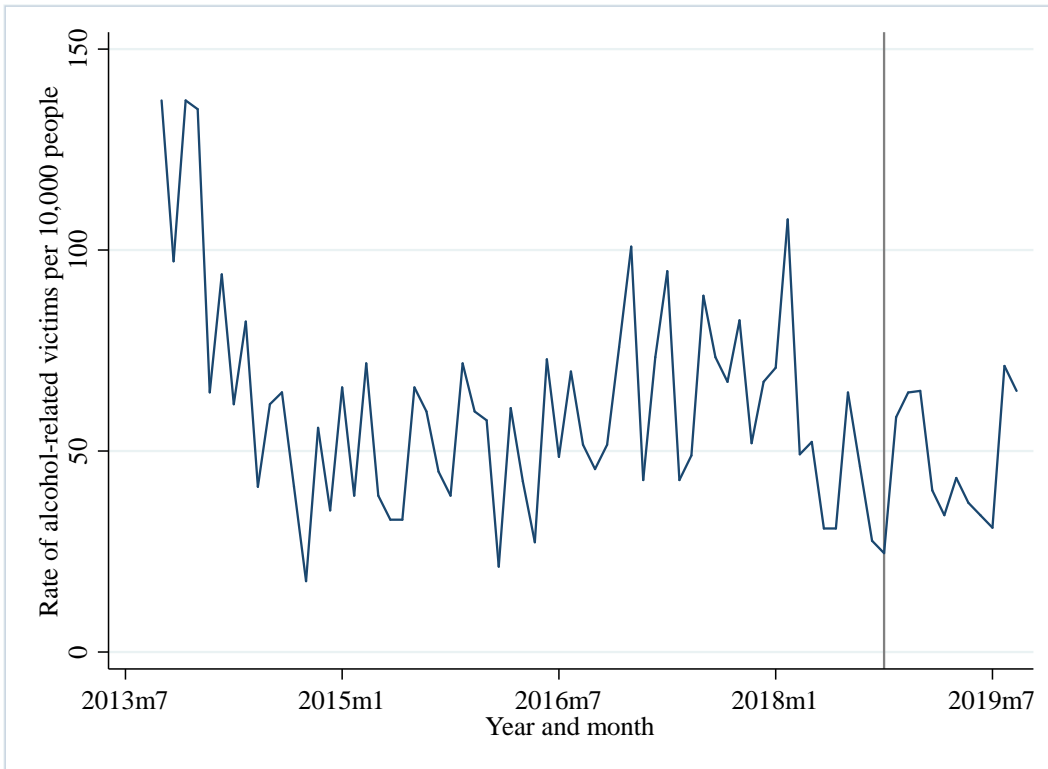


Figure 90 Rate of victims in alcohol-related assault offences per 10,000 population, Tennant Creek

Table 83 Time series models for rate of police recorded victims, Tennant Creek

	β co-eff	95% CI	p-value
Time (slope)	-0.05	-0.14, 0.05	.352
MUP (step)	-1.75	-4.71, 1.21	.243
Time X MUP (slope)	0.26	-0.15, 0.67	.212

Note. Models control for seasonality and number of people on the BDR per month

4.1.5.2 POLICE PROTECTIVE CUSTODY DATA

There were a total of 1,416 episodes of alcohol-related protective custody across the time period. Figure 91 shows that the rate of alcohol-related protective custody episodes in Tennant Creek fluctuated over the time period. ITS modelling no significant changes in the rate of protective custody episodes after the introduction of MUP (see Table 84).

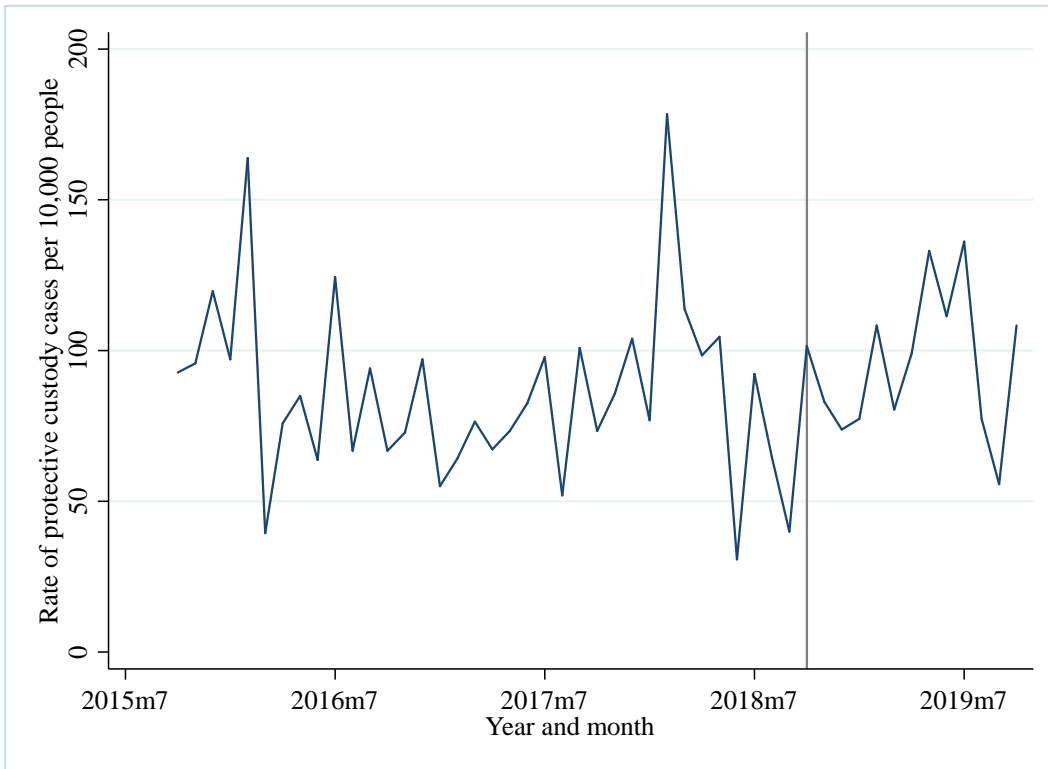


Figure 91 Rate of alcohol-related protective custody episodes per 10,000 people, Tennant Creek

Table 84 Time series models for rate of alcohol-related protective custody episodes, Tennant Creek

	β co-eff	95% CI	p-value
Time (slope)	-1.70	-3.44, -0.03	.054
MUP (step)	3.89	-33.88, 41.66	.836
Time X MUP (slope)	2.55	-2.68, 7.77	.330

Note. Models control for seasonality and number of people on the BDR per month

4.1.5.3 AMBULANCE ATTENDANCES

A total of 1,336 alcohol-related ambulance attendances were recorded across the time period. As shown in Figure 92, the rate of alcohol-related ambulance attendances began to decline in Tennant Creek after the introduction of the MUP. ITS modelling indicated a significant step decrease and a significant slope change (the rate of attendances have been increasing since October 2018) in the rate of ambulance attendances post-MUP (see Table 74).

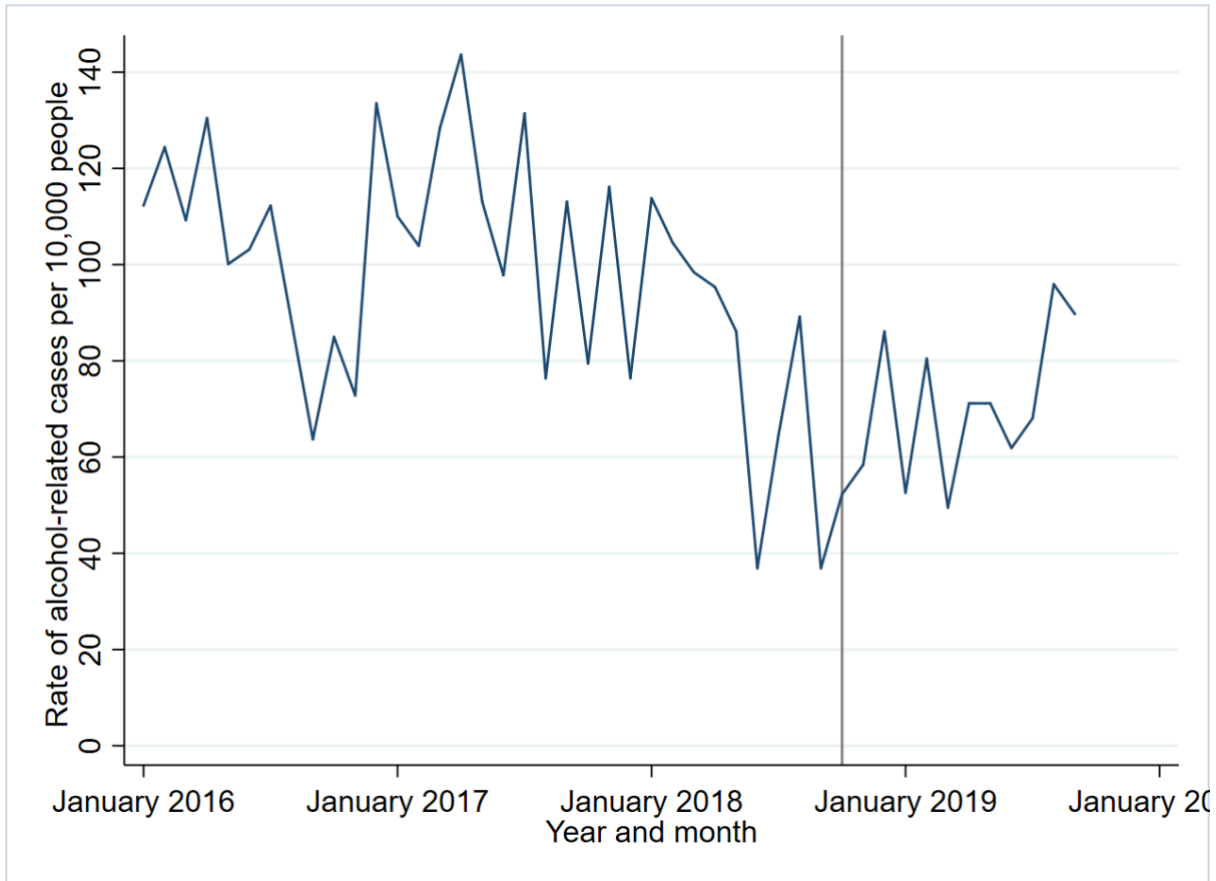


Figure 92 Rate of alcohol-related ambulance attendances per 10,000 population, Tennant Creek

Table 85 Time series models for rate of alcohol-related ambulance attendances, Tennant Creek

	β co-eff	95% CI	p-value
Time (slope)	0.58	-0.57, 1.74	.313
MUP (step)	-30.25	-52.57, -7.94	.009
Time X MUP (slope)	3.26	0.17, 6.37	.039

Note. Models control for seasonality and number of people on the BDR per month

4.1.5.4 EMERGENCY DEPARTMENT PRESENTATIONS

4.1.5.4.1 ALCOHOL-RELATED PRESENTATIONS

A total of 2,686 alcohol-related ED presentations were examined over the study period; 49% were male, 95% identified as Indigenous, and the average age was 39 years. Figure 93 shows alcohol-related ED presentation rates began increasing in 2014 before declining in late 2017. ITS modelling indicated that there was a significant step decrease in presentation rates after the introduction of the MUP (Table 86).

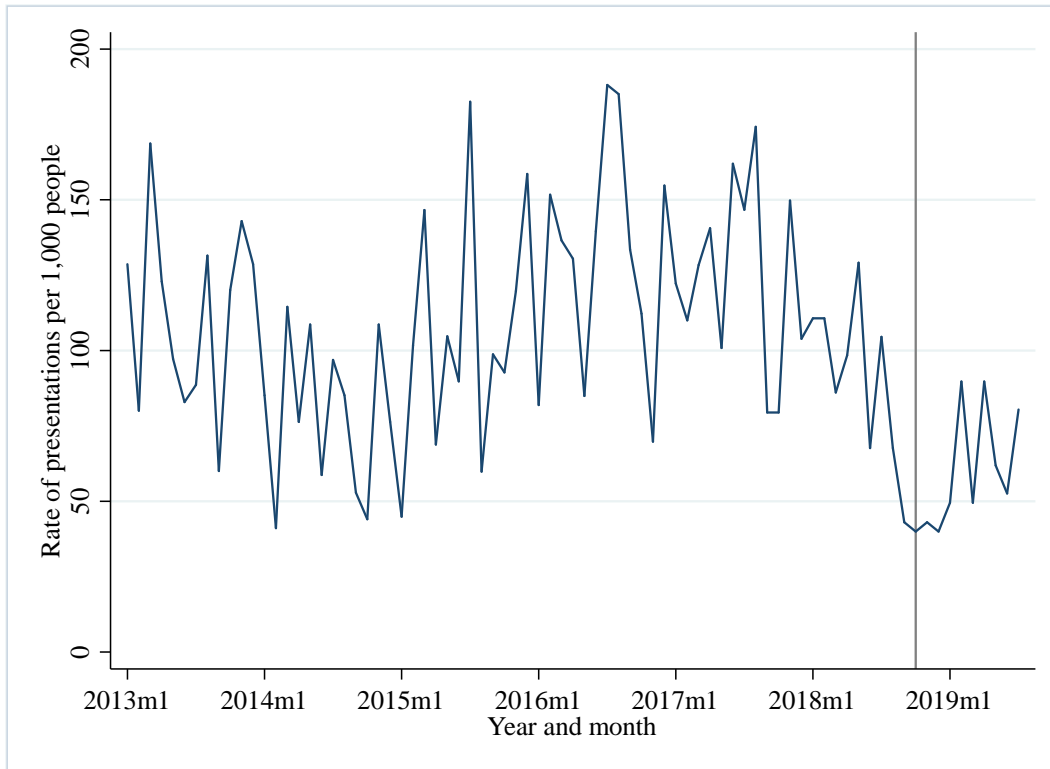


Figure 93 Rate of alcohol-related ED presentations per 10,000 people, Tennant Creek

Table 86 Time series models for rate of alcohol-related ED presentations, Tennant Creek

	β co-eff	95% CI	p-value
Time (slope)	0.83	0.27, 1.39	.004
MUP (step)	-44.76	-72.94, -16.62	.002
Time X MUP (slope)	3.16	-0.57, 6.89	.096

Note. Models control for seasonality and number of people on the BDR per month

4.1.5.4.2 MALTREATMENT SYNDROMES

A total of 1,831 maltreatment syndrome-related ED presentations were examined over the study period; 31% were male, 95% identified as Indigenous, and the average age was 32 years. Figure 94 shows that maltreatment syndrome-related ED presentation rates fluctuated across the period examined, with a sharp decrease in 2018. ITS modelling indicated that there were no significant changes after the introduction of the MUP (Table 87).

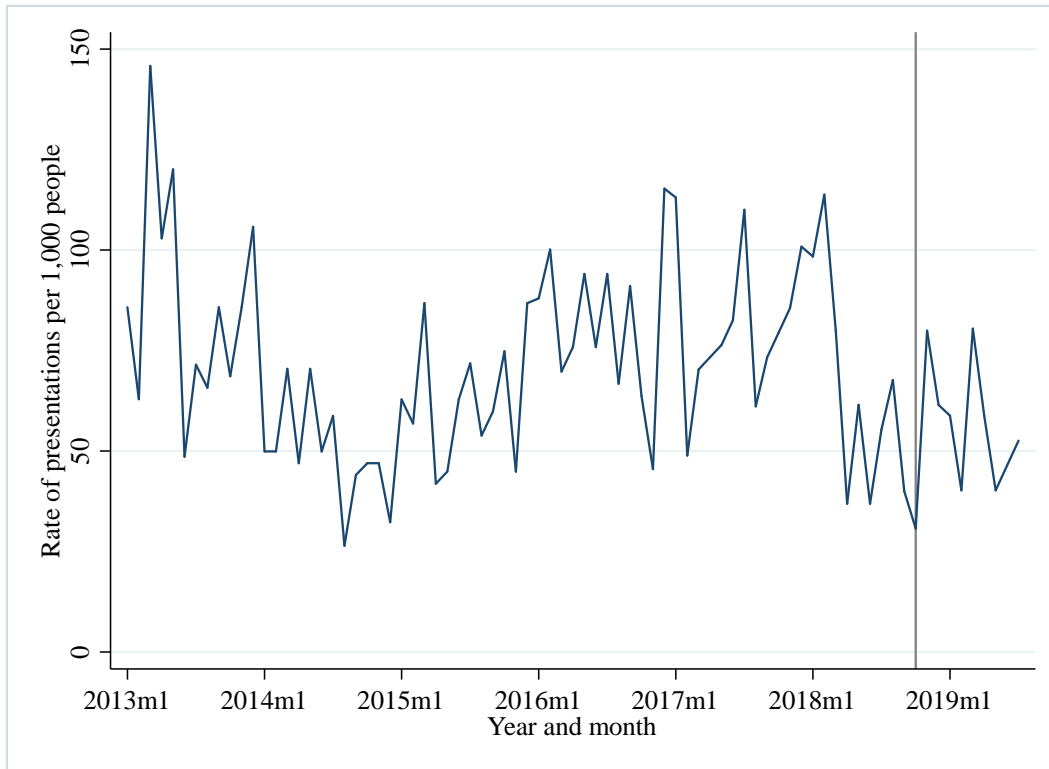


Figure 94 Rate of maltreatment syndrome-related ED presentations per 10,000 people, Tennant Creek

Table 87 Time series models for rate of maltreatment syndrome-related ED presentations, Tennant Creek

	β co-eff	95% CI	p-value
Time (slope)	0.01	-0.05, 0.07	.744
MUP (step)	-1.36	-4.93, 2.20	.448
Time X MUP (slope)	-0.01	-0.47, 0.44	.949

Note. Models control for seasonality and number of people on the BDR per month

4.1.5.4.3 OTHER EMERGENCY DEPARTMENT PRESENTATION TYPES

The following presentation types in Tennant Creek did not have sufficient numbers across the time period for meaningful analyses. A total of 219 other substance use ED presentations were examined over the study period; 66% were male, 83% identified as Indigenous, and the average age was 23 years. There were 76 fracture of skull and facial bones-related ED presentations; 46% were male, 74% identified as Indigenous, and the average age was 29 years. Additionally, a total of 134 fracture of forearm bones-related ED presentations were examined; 51% were male, 83% identified as Indigenous, and the average age was 31 years. Lastly, a total of 108 assault by sharp object-related ED presentations were included; 57% were male, 90% identified as Indigenous, and the average age was 33 years.

4.1.5.5 HOSPITAL ADMISSIONS

4.1.5.5.1 ALCOHOL-RELATED ADMISSIONS

A total of 2,349 alcohol-related hospital admissions were examined over the study period; 48% were male, 93% identified as Indigenous, and the average age was 40 years. As shown in Figure 95, the rate of hospital admissions in Tennant Creek involving alcohol began to decline from mid-2016, with a levelling out from early 2018. There were no significant step or slope changes after the introduction of MUP (see Table 88).

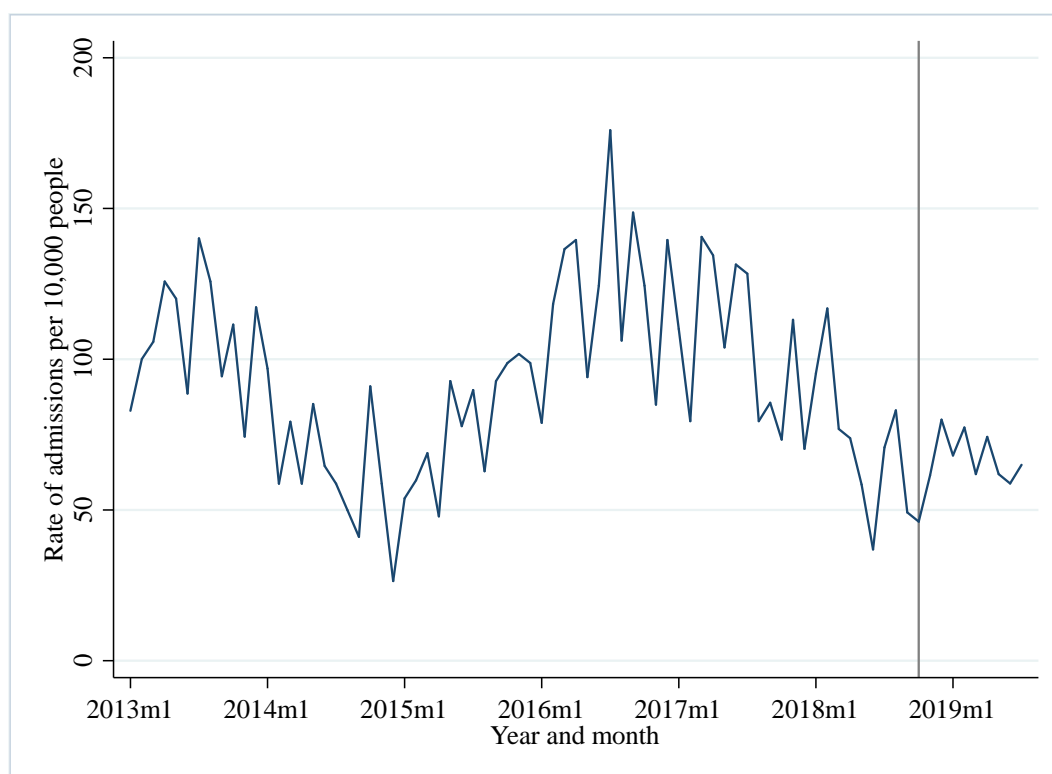


Figure 95 Rate of alcohol-related hospital admissions per 10,000 people, Tennant Creek

Table 88 Time series models for rate of alcohol-related hospital admissions, Tennant Creek

	β co-eff	95% CI	p-value
Time (slope)	0.55	-0.19, 1.30	.144
MUP (step)	-0.90	-37.56, 19.61	.533
Time X MUP (slope)	-0.03	-3.11, 3.77	.848

Note. Models control for seasonality and number of people on the BDR per month

4.1.5.5.2 OTHER HOSPITAL ADMISSION TYPES

The following hospital admission codes within Tennant Creek did not have sufficient numbers across the time period for meaningful analyses. A total of 196 other substance use hospital admissions were examined over the study period; 67% were male, 58% identified as Indigenous, and the average age was 42 years. There were 71 fracture of skull and facial bones-related hospital admissions; 55% were male, 87% identified as Indigenous, and the average age was 31 years. Further, 84 fracture of forearm bones-

related hospital admissions were included; 43% were male, 79% identified as Indigenous, and the average age was 31 years. A total of 30 toxic effect of alcohol-related hospital admissions were examined over the study period; 43% were male, 67% identified as Indigenous, and the average age was 38 years. In addition, 74 maltreatment syndrome-related hospital admissions included; 36% were male, 97% identified as Indigenous, and the average age was 10 years. There were also 256 assault-related hospital admissions; 36% were male, 97% identified as Indigenous, and the average age was 32 years. Lastly, a total of 115 assault by sharp object-related hospital admissions were examined over the study period; 43% were male, 94% identified as Indigenous, and the average age was 32 years.

4.1.5.6 TREATMENT DATA

A total of 1,036 substantive treatment episodes were recorded over the study period; 61% were male, 96% identified as Aboriginal or Torres Strait Islander, and the average age was 35 years. The majority of treatment episodes were for rehabilitation (75%) or support and case management (16%). As shown in Figure 96, the rate of substantive treatment episodes in Tennant Creek increased early to mid-2017. There was a significant slope decline in the rate of treatment episodes after the introduction of MUP (see Table 89).

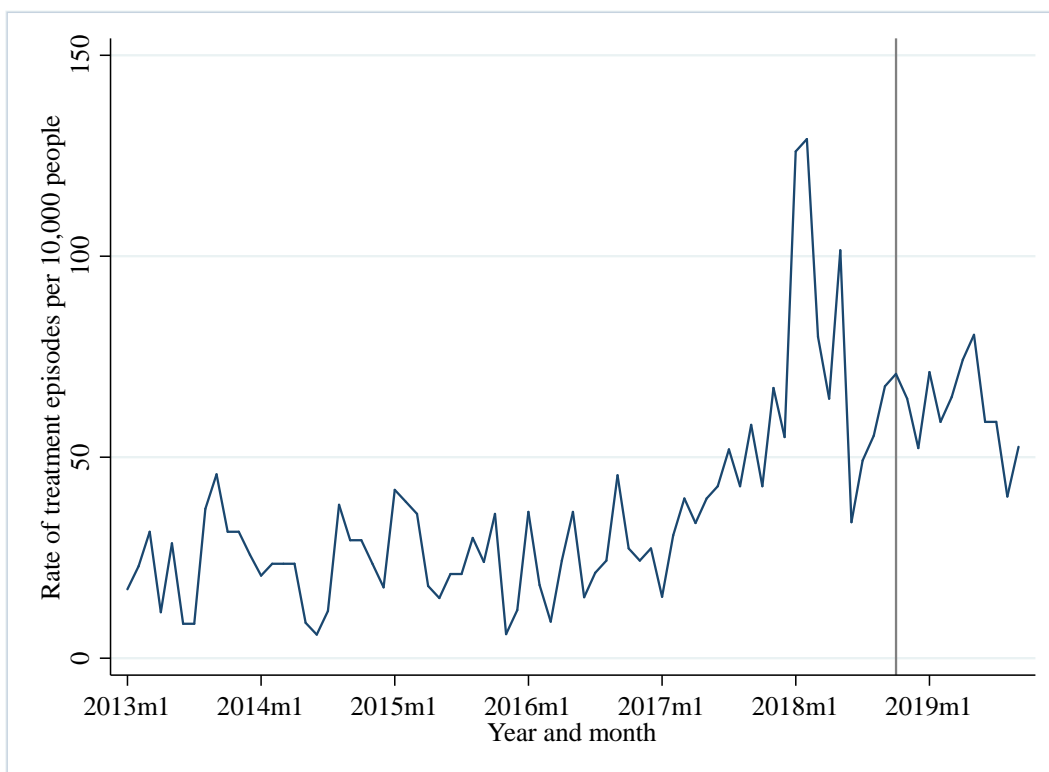


Figure 96 Rate of substantive treatment episodes per 10,000 people, Tennant Creek

Table 89 Time series models for rate of substantive treatment episodes, Tennant Creek

	β co-eff	95% CI	p-value
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Time (slope)	0.25	-0.02, 0.52	.069
MUP (step)	-5.95	-31.76, 19.87	.648
Time X MUP (slope)	-2.32	-4.60, -0.05	.045

Note. Models control for seasonality and number of people on the BDR per month

4.1.5.7 ROAD TRAFFIC CRASH DATA

There were a total of 19 alcohol-related traffic crashes that resulted in injury or fatality in Tennant Creek from January 1 2013 to June 30 2019. The number of crashes were too small to conduct any further analysis.

4.1.6 REST OF NORTHERN TERRITORY

4.1.6.1 ALCOHOL WHOLESALE SUPPLY DATA

The total alcohol wholesale supply per capita for the rest of the Northern Territory is shown in Figure 97. There was no significant step or slope change in the total supply of alcohol post-MUP.

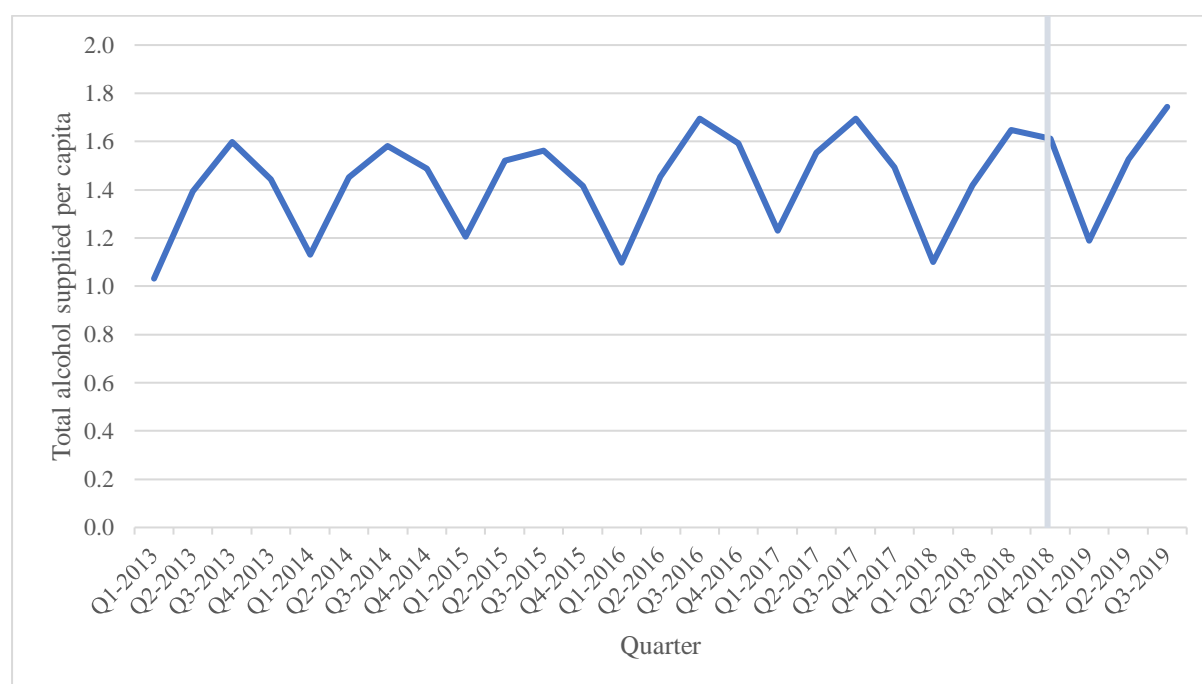


Figure 97 Total alcohol wholesale supply per capita, Rest of Northern Territory

The alcohol wholesale supply per capita by beverage type for the rest of the Northern Territory is provided in Figure 98. As demonstrated in Table 90, there was a significant step decrease in the supply of cask wine after the introduction of the MUP. There was a small, but significant significant step increase in the supply of cider, premixed spirits, full strength beer, and light beer post-MUP. No significant changes were found for the remaining beverage types (not shown in Table 90).

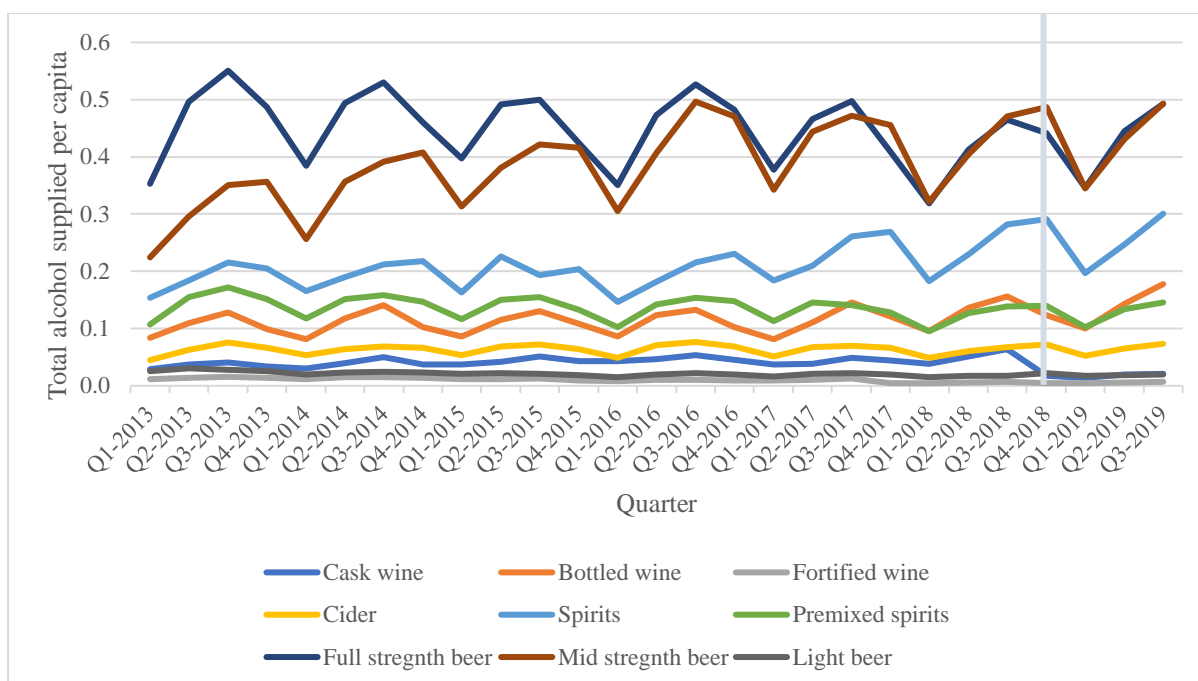


Figure 98 Alcohol wholesale supply per capita by beverage type, Rest of Northern Territory

Table 90 Time series models for per capita alcohol wholesale supply, Rest of Northern Territory

Cask wine	β co-eff	95% CI	p-value
Time (slope)	0.001	-0.00002, 0.001	.057
MUP (step)	-0.03	-0.04, -0.02	<.001
Time X MUP(slope)	-0.001	-0.003, 0.001	.391
Cider	β co-eff	95% CI	p-value
Time (slope)	0.0002	-0.0002, 0.001	.241
MUP (step)	0.006	0.0003, 0.01	.042
Time X MUP(slope)	-0.001	-0.005, 0.002	.472
Premixed spirits	β co-eff	95% CI	p-value
Time (slope)	-0.001	-0.001, 0.0001	.097
MUP (step)	0.01	0.005, 0.02	.005
Time X MUP(slope)	-0.001	-0.01, 0.004	.682
Full strength beer			
Time (slope)	-0.001	-0.004, 0.001	.364
MUP (step)	0.04	0.0004, 0.08	.048
Time X MUP(slope)	0.0003	-0.02, 0.02	.977
Light beer			
Time (slope)	-0.0001	-0.001, -0.0003	<.001

MUP (step)	0.01	0.004, 0.01	<.001
Time X MUP(slope)	-0.001	-0.002, 0.001	.397

Note. Models control for seasonality and number of people on the BDR at the end of each quarter

4.1.6.2 POLICE ALCOHOL-RELATED ASSAULTS DATA

A total of 5,656 alcohol-related assault offences were recorded across the time period; 5% recorded victim alcohol involvement, 55% offender alcohol involvement, and 40% both victim and offender alcohol involvement. As shown in Figure 99 alcohol-related assault offences remained relatively stable in the remaining regions of the Northern Territory. ITS modelling indicated no significant change in the rate of offences post-MUP (see Table 91).

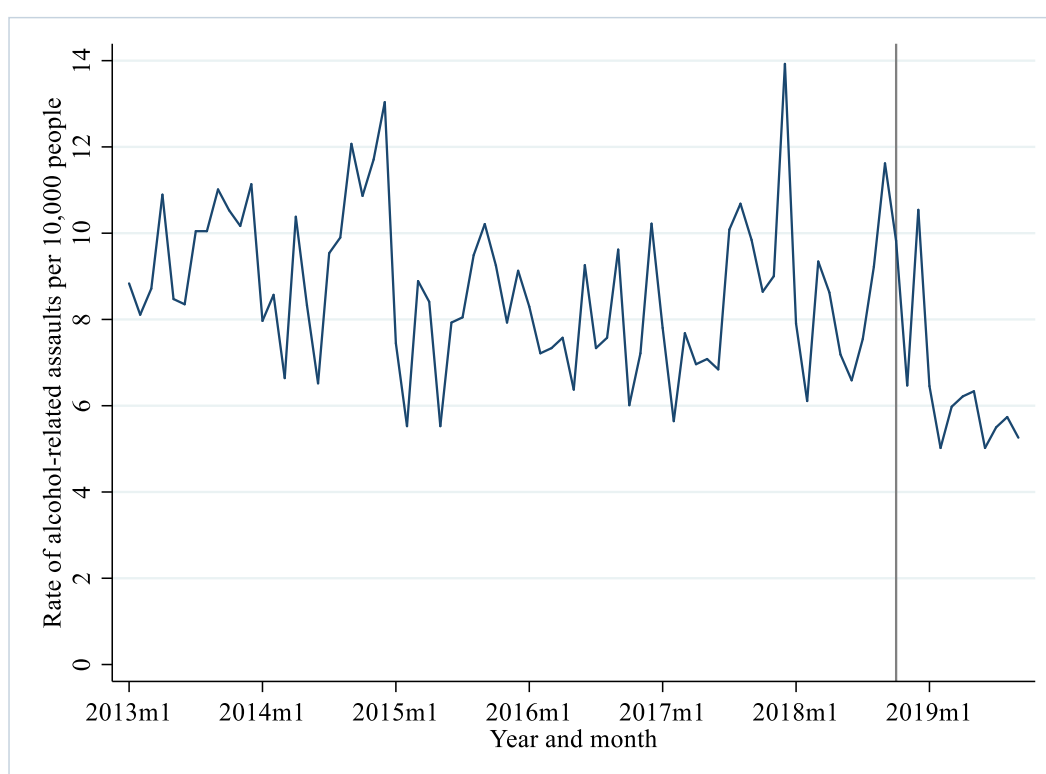


Figure 99 Rate of alcohol-related assault offences per 10,000 population, rest of the Northern Territory

Table 91 Time series models for rate of police recorded assault offences, rest of the Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	-0.04	-0.06, -0.01	.002
MUP (step)	-1.23	-3.59, 1.12	.300
Time X MUP (slope)	-0.19	-0.42, 0.04	.100

Note. Models control for seasonality and number of people on the BDR per month

4.1.6.1 OFFENDERS – ALCOHOL-RELATED ASSAULTS

There were a total of 2,447 offenders involved in alcohol-related assault offences across the time period, with 88% of offenders male, 87% aged 18-44 years, and 93% identifying as Aboriginal. Figure 100 shows that the number of offenders in alcohol-related assault offences in the rest of the Northern Territory slowly declined over time. ITS modelling demonstrated a significant slope change in the rate of offenders, with a gradual decline since the introduction of MUP (Table 92).

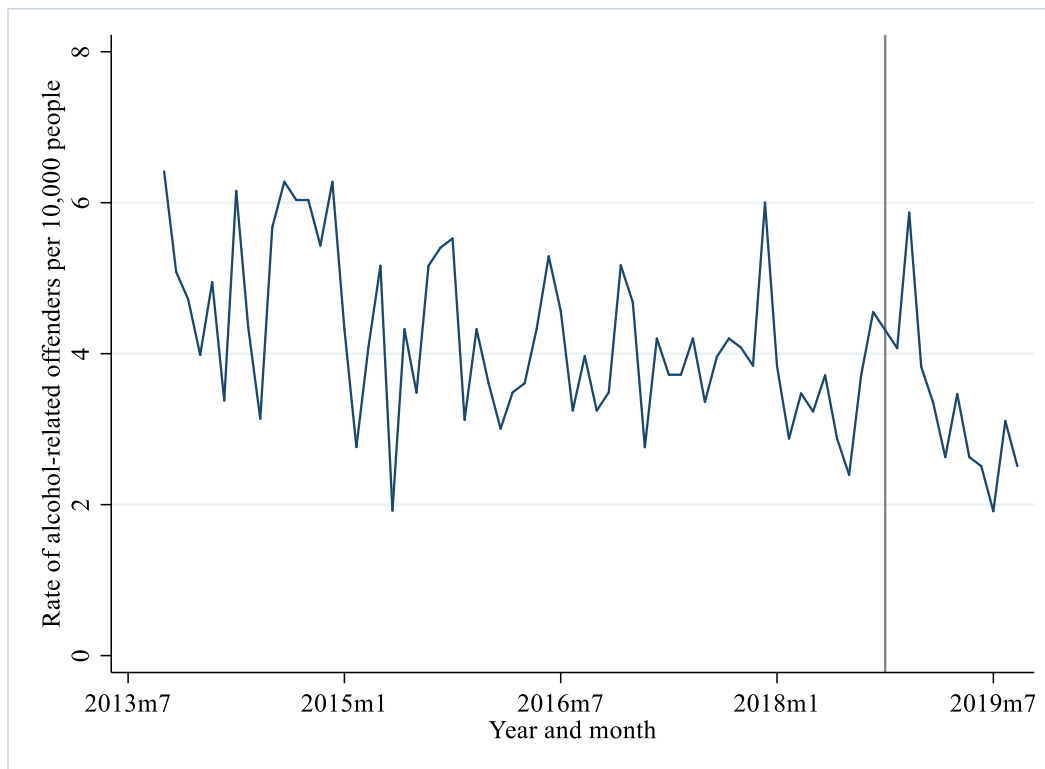


Figure 100 Rate of offenders in alcohol-related assault offences per 10,000 population, rest of Northern Territory

Table 92 Time series models for rate of police recorded offenders, rest of Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	-0.03	-0.05, -0.01	.004
MUP (step)	0.74	-0.37, 1.85	.185
Time X MUP (slope)	-0.15	-0.28, -0.23	.021

Note. Models control for seasonality and number of people on the BDR per month

4.1.6.1 VICTIMS – ALCOHOL-RELATED ASSAULTS

There were a total of 5,084 victims involved in alcohol-related assault offences across the time period, with 70% of victims female, 78% aged 18-44 years, and 84% identifying as Aboriginal. As indicated in Figure 101 the number of victims involved in alcohol-related assaults remained relatively stable in the

remaining regions of the Northern Territory. However, ITS modelling showed a no change after the introduction of MUP (Table 93).

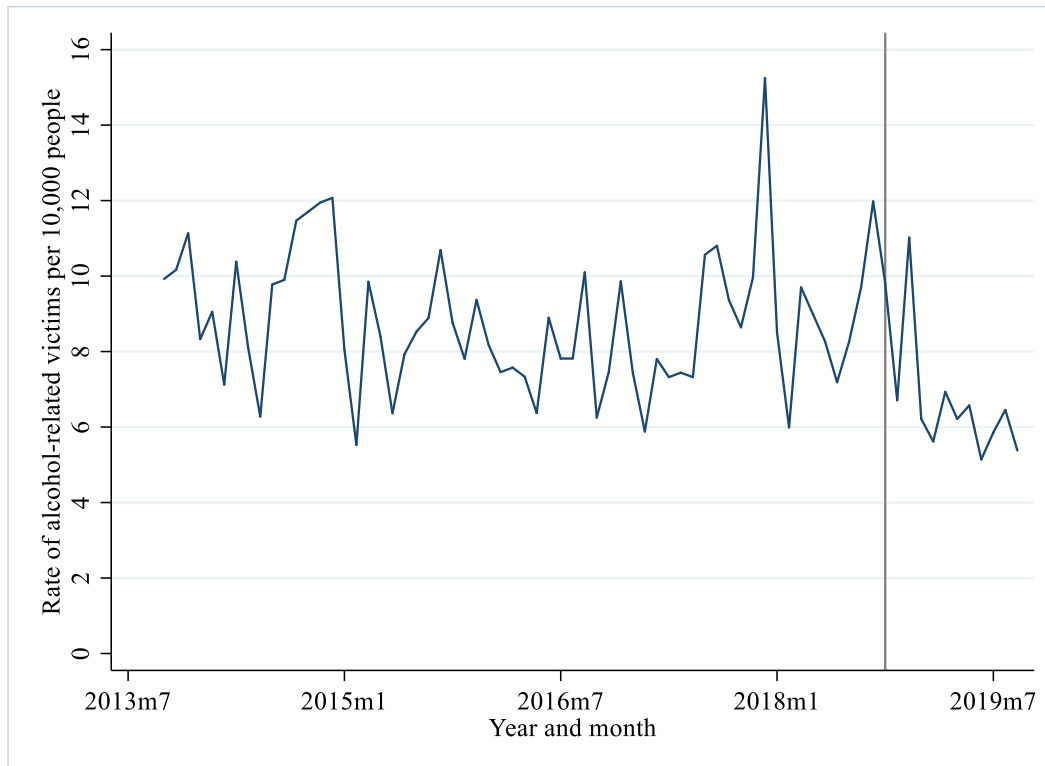


Figure 101 Rate of victims in alcohol-related assault offences per 10,000 population, rest of Northern Territory

Table 93 Time series models for rate of police recorded victims, rest of Northern Territory

	β co-eff	95% CI	p-value
Time (slope)	-0.03	-0.07, 0	.069
MUP (step)	-1.63	-4.16, 0.90	.203
Time X MUP (slope)	-0.18	-0.43, 0.06	.135

Note. Models control for seasonality and number of people on the BDR per month

4.1.6.2 POLICE PROTECTIVE CUSTODY DATA

There were a total of 901 episodes of alcohol-related protective custody across the time period (see Figure 102). The number of police protective custody episodes were too small to conduct any further analysis.

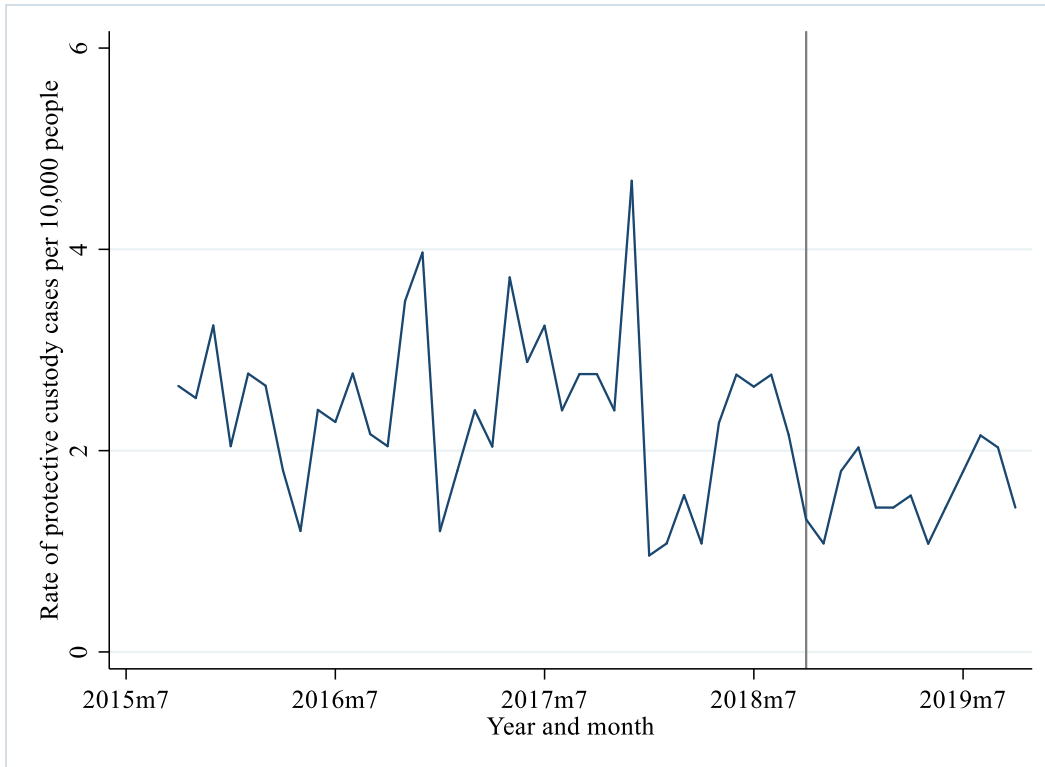


Figure 102 Rate of alcohol-related protective custody episodes, rest of Northern Territory

4.1.6.3 AMBULANCE ATTENDANCES

A total of 1,564 alcohol-related ambulance attendances were recorded across the time period. As shown in Figure 103, the rate of alcohol-related ambulance attendances did not show any specific trend in the Rest of NT after the introduction of the MUP. ITS modelling indicated no significant step or slope change in the rate of ambulance attendances post-MUP (see Table 94).

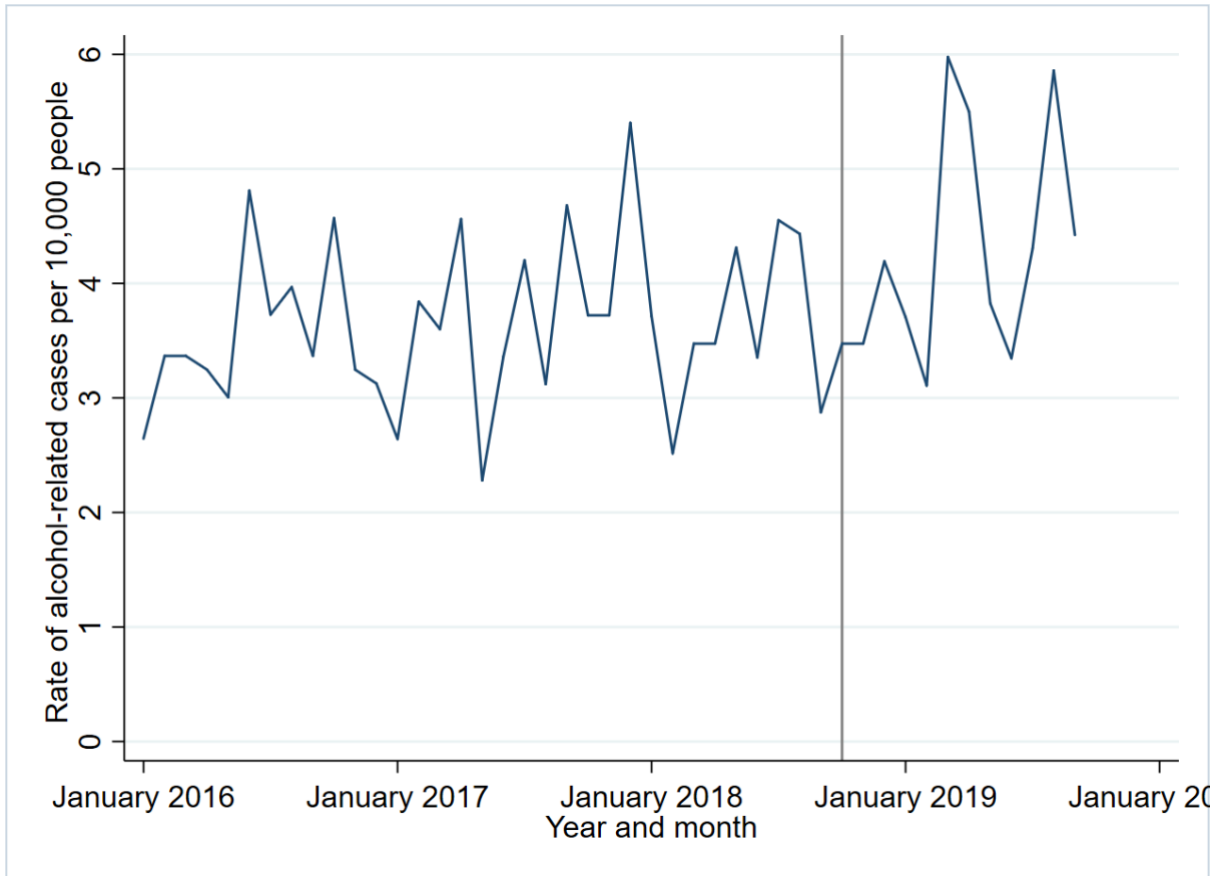


Figure 103 Rate of alcohol-related ambulance attendances per 10,000 population, Rest of NT

Table 94 Time series models for rate of alcohol-related ambulance attendances, Rest of NT

	β co-eff	95% CI	p-value
Time (slope)	0.01	-0.04, .06	.769
MUP (step)	-0.44	-1.41, 0.54	.371
Time X MUP (slope)	0.13	-0.00, 0.27	.052

Note. Models control for seasonality and number of people on the BDR per month

4.1.6.4 ROAD TRAFFIC CRASH DATA

There were a total of 409 alcohol-related traffic crashes that resulted in injury or fatality in the Rest of the NT from January 1 2013 to June 30 2019 (Figure 104). The number of crashes were too small to conduct any further analysis.

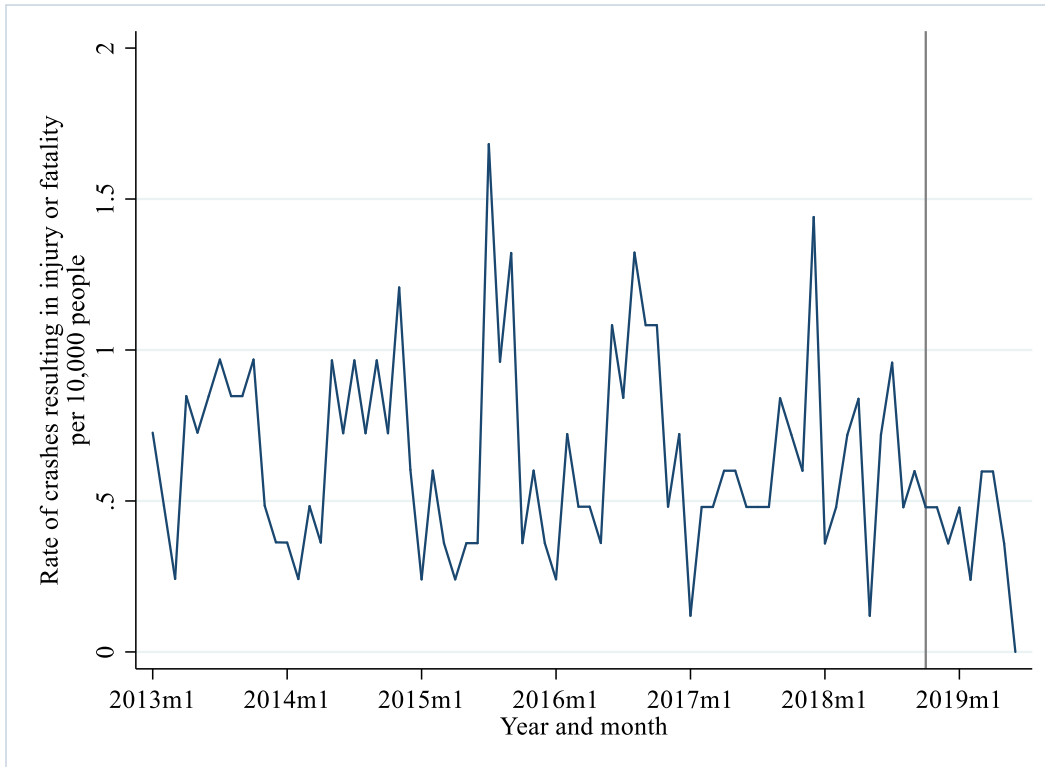


Figure 104 Rate of alcohol-related crash injuries and fatalities per 10,000 people, Rest of NT

4.1.7 OTHER NORTHERN TERRITORY REGIONS

4.1.7.1 EMERGENCY DEPARTMENT PRESENTATIONS – EAST ARNHEM AND NHULUNBUY

4.1.7.1.1 ALCOHOL-RELATED PRESENTATIONS

A total of 720 alcohol-related ED presentations were examined over the study period (Figure 105); 48% were male, 90% identified as Indigenous, and the average age was 41 years. The number of alcohol-related presentations were too small to conduct any further analysis.

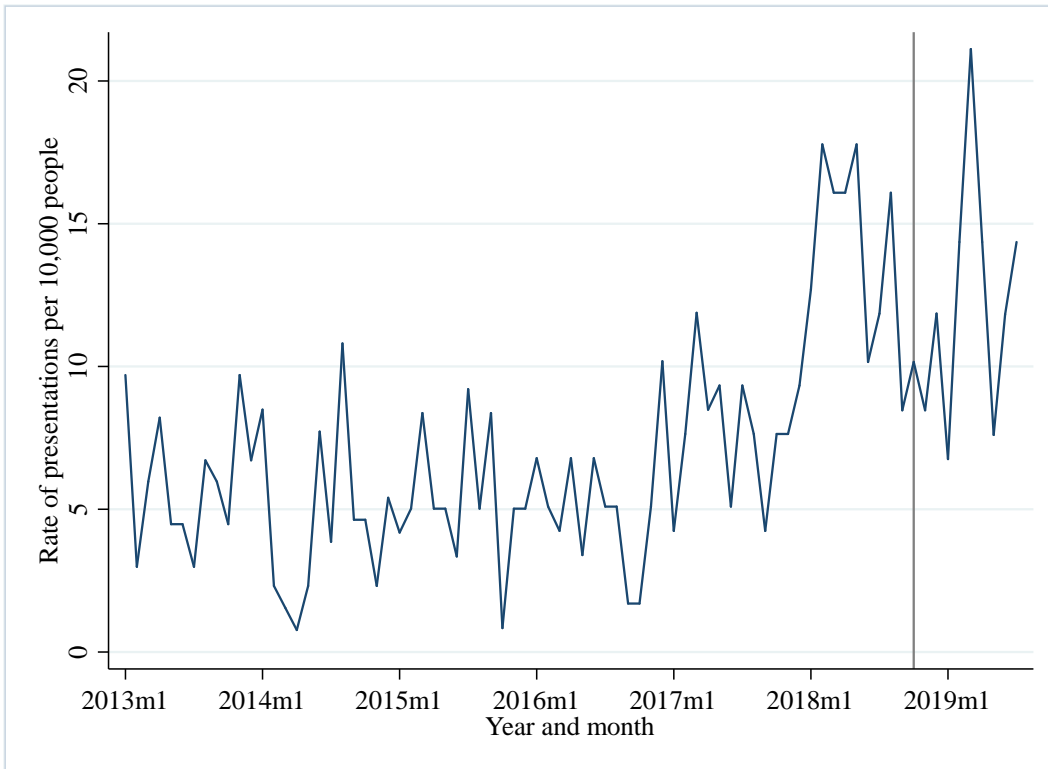


Figure 105 Rate of alcohol-related ED presentations per 10,000 people, East Arnhem and Nhulunbuy

4.1.7.1.2 MALTREATMENT SYNDROMES

A total of 519 maltreatment syndrome-related ED presentations were examined over the study period (Figure 106); 32% were male, 89% identified as Indigenous, and the average age was 33 years. The number of presentations with maltreatment syndromes were too small to conduct any further analysis.

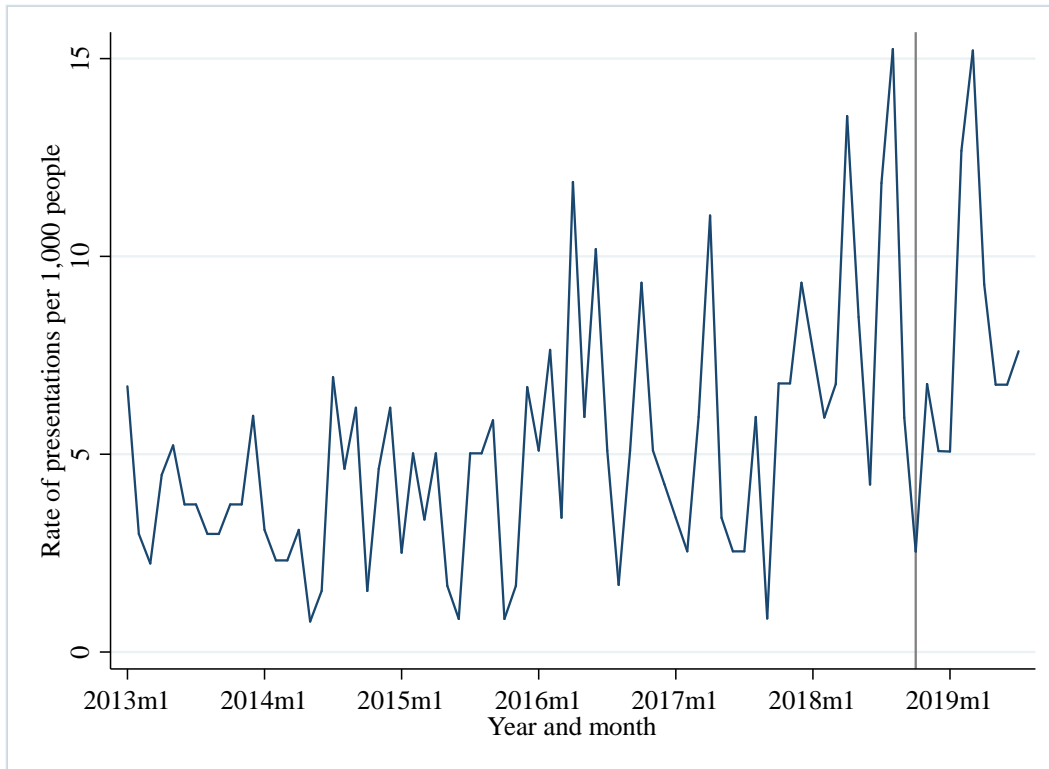


Figure 106 Rate of maltreatment syndrome-related ED presentations per 10,000 people, East Arnhem and Nhulunbuy

4.1.7.1.3 OTHER EMERGENCY DEPARTMENT PRESENTATION TYPES

The following presentation types in East Arnhem and Nhulunbuy did not have sufficient numbers across the time period for meaningful analyses. A total of 106 other substance use ED presentations were examined over the study period; 78% were male, 80% identified as Indigenous, and the average age was 23 years. In addition, there were 89 fracture of skull and facial bones-related ED presentations; 64% were male, 43% identified as Indigenous, and the average age was 29 years. There were 141 fracture of forearm bones-related ED presentations; 55% were male, 72% identified as Indigenous, and the average age was 20 years. Lastly, a total of 49 assault by sharp object-related ED presentations were examined over the study period; 73% were male, 96% identified as Indigenous, and the average age was 31 years.

4.1.7.2 HOSPITAL ADMISSIONS – EAST ARNHAM AND NHULUNBUY

4.1.7.2.1 ALCOHOL-RELATED ADMISSIONS

A total of 898 alcohol-related hospital admissions were examined over the study period (Figure 107); 54% were male, 88% identified as Indigenous, and the average age was 42 years. The number of alcohol-related admissions were too small to conduct any further analysis.

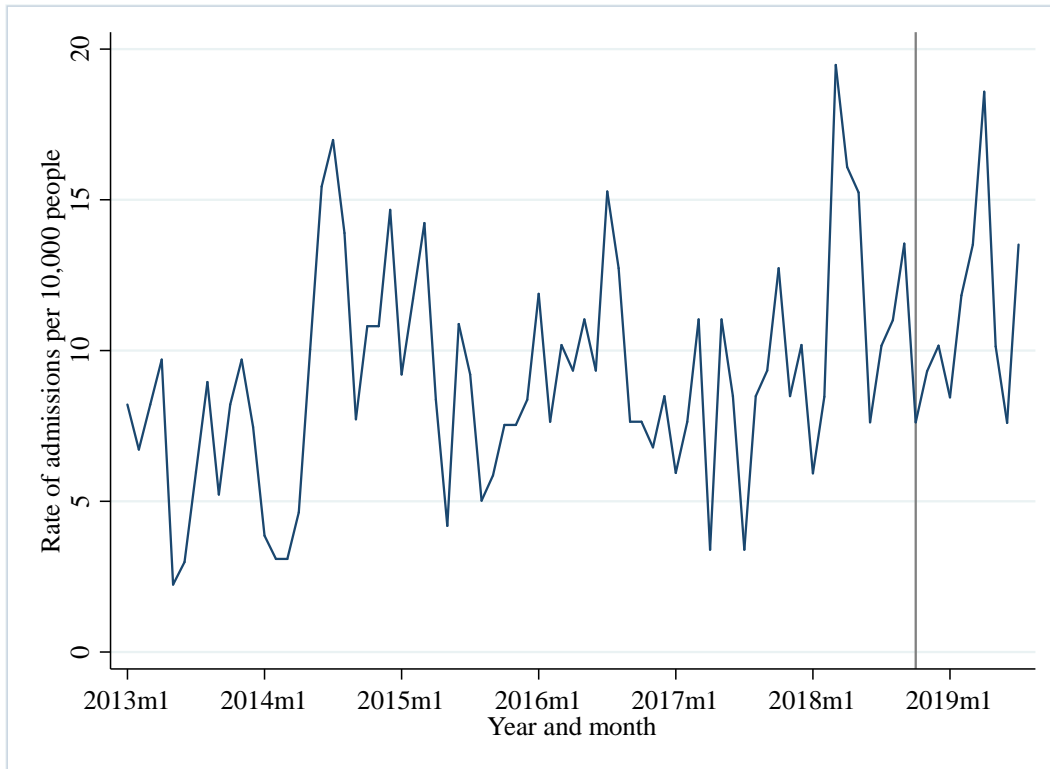


Figure 107 Rate of hospital admissions per 10,000 people, East Arnhem and Nhulunbuy

4.1.7.2.2 OTHER HOSPITAL ADMISSION TYPES

The following hospital admission codes within East Arnhem and Nhulunbuy did not have sufficient numbers across the time period for meaningful analyses. A total of 128 other substance use hospital admissions were examined over the study period; 74% were male, 70% identified as Indigenous, and the average age was 34 years. There were 53 fracture of skull and facial bones-related hospital admissions; 70% were male, 81% identified as Indigenous, and the average age was 31 years. Additionally, a total of 100 fracture of forearm bones-related hospital admissions were included; 62% were male, 77% identified as Indigenous, and the average age was 19 years. Only 11 toxic effect of alcohol-related hospital admissions were coded; 36% were male, 82% identified as Indigenous, and the average age was 32 years. Further, seven maltreatment syndrome-related hospital admissions were included; 0% were male, 86% identified as Indigenous, and the average age was 16 years. A total of 139 assault-related hospital admissions were examined; 59% were male, 96% identified as Indigenous, and the average age was 32 years. Lastly, there were 93 assault by sharp object-related hospital admissions; 65% were male, 98% identified as Indigenous, and the average age was 30 years.

4.1.7.3 SOBERING UP SHELTERS - NHULUNBUY

A total of 1,511 Sobering Up Shelter admissions were recorded across the time period; 61% were male, 99% identified as Aboriginal or Torres Strait Islander, and the average age was 43 years. As shown in Figure 108, the rate of Sobering Up Shelter admissions in Nhulunbuy declined mid-2015, after which is

generally remained at this decreased rate. After the introduction of MUP there was no significant step or slope change in the rate of admissions (see Table 95).

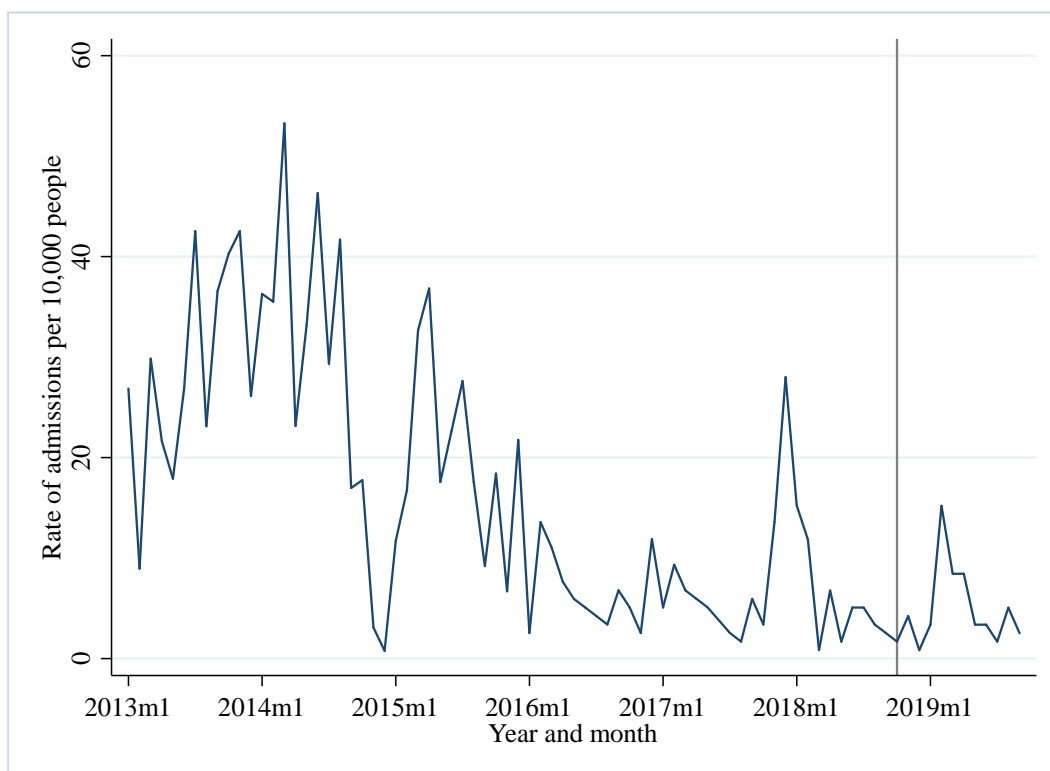


Figure 108 Rate of Sobering Up Shelter admissions per 10,000 people, Nhulunbuy

Table 95 Time series models for rate of Sobering Up Shelter admissions, Nhulunbuy

	β co-eff	95% CI	p-value
Time (slope)	-0.58	-0.80, -0.37	<.001
MUP (step)	-2.19	-10.85, 6.47	.616
Time X MUP (slope)	0.69	-0.09, 1.47	.083

Note. Models control for seasonality and number of people on the BDR per month

4.1.7.4 TREATMENT DATA – EAST ARNHEM

A total of 189 substantive treatment episodes were recorded over the study period; 68% were male, 68% identified as Aboriginal or Torres Strait Islander, and the average age was 39 years. The majority of treatment episodes were for counselling (37%), rehabilitation (32%), and withdrawal management (28%). The number of treatment episodes were too small to conduct any further analysis.

4.1.8 CHILD PROTECTION DATA

4.1.8.1 GREATER DARWIN

Figure 109 shows the number of active cases for investigations of a notification (mean = 244 per month), care and protection orders (mean = 452 per month), and out-of-home care cases (mean = 421 per month) in the Greater Darwin area each month from July 2014 to August 2019. ITS analysis indicated a significant step decline in the number of investigations of a notification (see Table 96), a significant slope decline in the number of care and protection orders (Table 97), and a significant step and slope decline in the number of out of home care cases after the MUP introduction (Table 98).

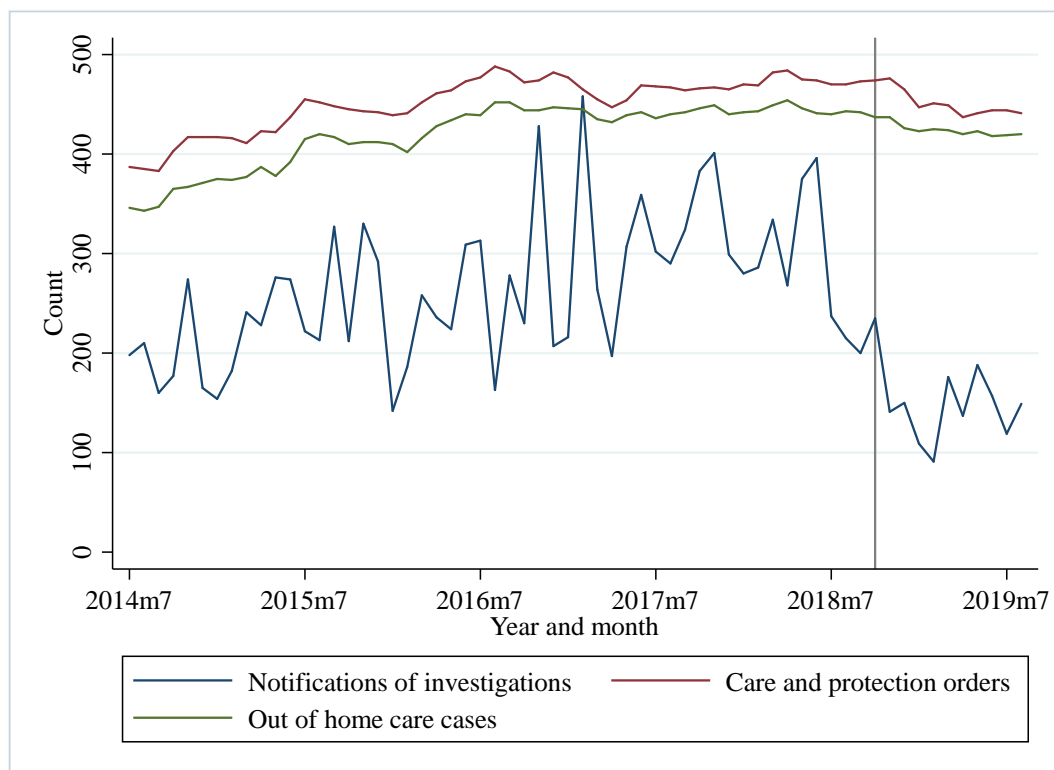


Figure 109 Count of active cases for each child protection category, Greater Darwin

Table 96 Time series model for count of investigations of a notification, Greater Darwin

	β co-eff	95% CI	p-value
Time (slope)	3.40	1.81, 4.99	<.001
MUP (step)	-168.53	-234.23, -102.84	<.001
Time X MUP (slope)	-2.74	-10.00, 4.51	.452

Note. Models control for seasonality and number of people on the BDR per month

Table 97 Time series model for count of care and protection orders, Greater Darwin

	β co-eff	95% CI	p-value
Time (slope)	1.59	0.70, 2.48	.001
MUP (step)	-4.98	-12.74, 2.78	.204
Time X MUP (slope)	-5.62	-8.89, -2.34	.001

Note. Models control for seasonality and number of people on the BDR per month

Table 98 Time series model for count of out-of-home care, Greater Darwin

	β co-eff	95% CI	p-value
Time (slope)	1.88	0.99, 2.77	<.001
MUP (step)	-9.42	-16.62, -2.21	.011
Time X MUP (slope)	-4.34	-7.18, -1.50	.003

Note. Models control for seasonality and number of people on the BDR per month

4.1.8.2 NORTHERN REGION

Figure 110 shows the number of active cases for investigations of a notification (mean = 170 per month), care and protection orders (mean = 325 per month), and out-of-home care cases (mean = 309 per month) in the Northern Region of the NT each month from July 2014 until August 2019. ITS analysis indicated no significant step or slope change in the number of investigations of notifications (Table 99), a significant step increase in the number of care and protection orders (Table 100), and a significant step increase in the number of out of home care cases after the MUP introduction (Table 101).

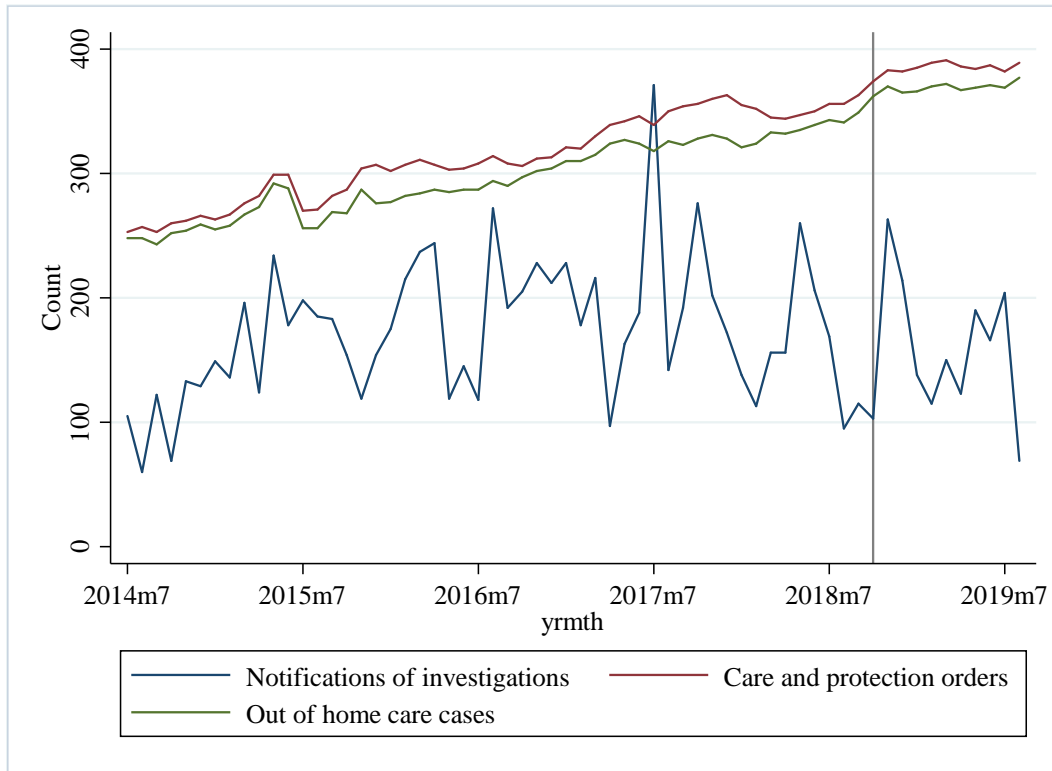


Figure 110 Count of active cases for each child protection category, Northern Region

Table 99 Time series model for count of investigations of a notification, Northern Region

	β co-eff	95% CI	p-value
Time (slope)	1.01	-0.13, 2.15	.082
MUP (step)	-21.97	-110.88, 66.94	.623
Time X MUP (slope)	-4.84	-19.04, 9.37	.498

Note. Models control for seasonality and number of people on the BDR per month

Table 100 Time series model for count of care and protection orders, Northern Region

	β co-eff	95% CI	p-value
Time (slope)	2.24	1.96, 2.52	<.001
MUP (step)	7.51	0.09, 14.92	.047
Time X MUP (slope)	-1.05	-2.61, 0.51	.182

Note. Models control for seasonality and number of people on the BDR per month

Table 101 Time series model for count of out-of-home care cases, Northern Region

	β co-eff	95% CI	p-value
Time (slope)	2.01	1.81, 2.20	<.001
MUP (step)	13.25	5.61, 20.90	.001
Time X MUP (slope)	-0.66	-1.85, 0.52	.268

Note. Models control for seasonality and number of people on the BDR per month

4.1.8.3 SOUTHERN REGION

Figure 111 shows the number of active cases for investigations of a notification (mean = 210 per month), care and protection orders (mean = 307 per month), and out-of-home care cases (mean = 421 per month) in the Southern Region of the NT from July 2014 until August 2019. ITS analysis indicated a no significant step or slope change in the number of investigations of a notifications (Table 102), care and protection orders (Table 103), or out-of-home care cases after the introduction of the MUP (Table 104).

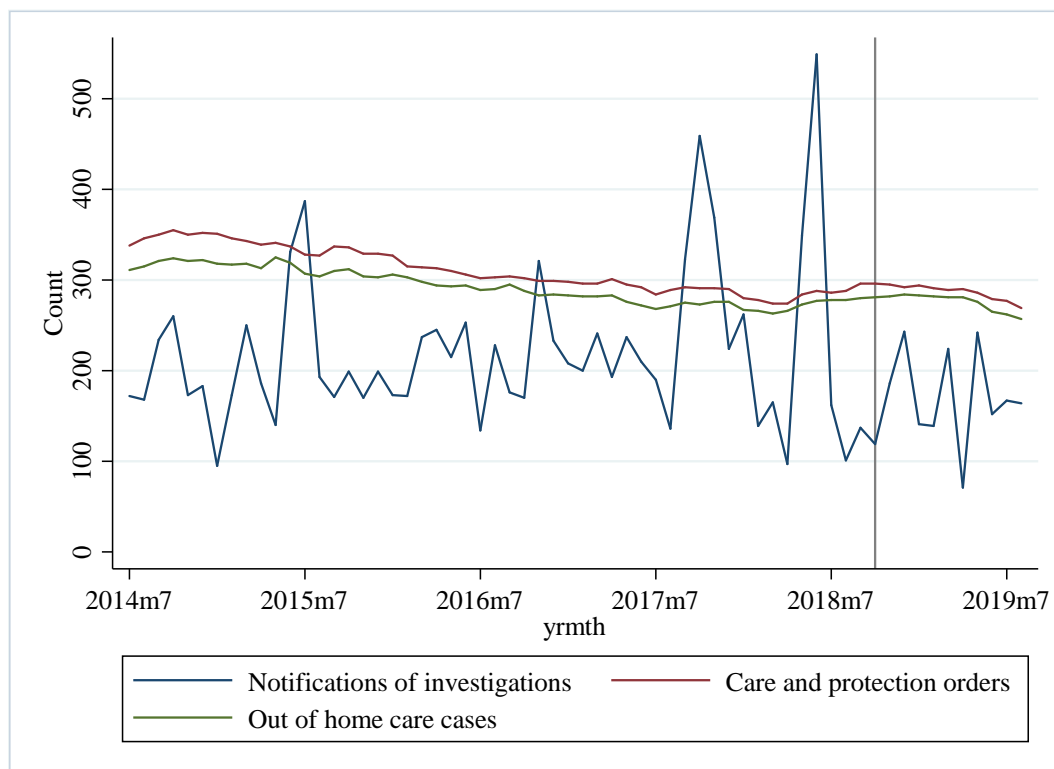


Figure 111 Count of active cases for each child protection category, Southern Region

Table 102 Time series model for count of investigations of a notification, Southern Region

	β co-eff	95% CI	p-value
Time (slope)	1.08	-1.32, 3.47	.372
MUP (step)	-84.09	-185.41, 17.24	.102
Time X MUP (slope)	0.25	-12.25, 12.76	.968

Note. Models control for seasonality and number of people on the BDR per month

Table 103 Time series model for care and protection orders, Southern Region

	β co-eff	95% CI	p-value
Time (slope)	-1.07	-1.58, -0.56	<.001
MUP (step)	1.43	-1.99, 4.85	.407
Time X MUP (slope)	-0.96	-3.37, 1.45	.429

Note. Models control for seasonality and number of people on the BDR per month

Table 104 Time series model for in out-of-home care cases, Southern Region

	β co-eff	95% CI	p-value
Time (slope)	-0.84	-1.20, -0.47	<.001
MUP (step)	3.90	-0.63, 8.42	.090
Time X MUP (slope)	-1.05	-3.23, 1.12	.336

Note. Models control for seasonality and number of people on the BDR per month

4.1.1 SCHOOL ATTENDANCE DATA

Figure 112 shows the school attendance rate by term across the six reporting regions. School attendance has been declined in all regions across the study period. Compared the average attendance rate during Term 1-3 2018 (prior to MUP), the average attendance rate in Term 4 2018 to Term 2 2019 remained relatively stable in Darwin, Palmerston, Alice Springs, Arnhem, and Katherine regions; attendance rates declined by 1% at most (Alice Springs). Within the Barkly region, average attendance rates in Term 4 2018 to Term 2 2019 increased by 2.2% compared to Term 1-3 2018.

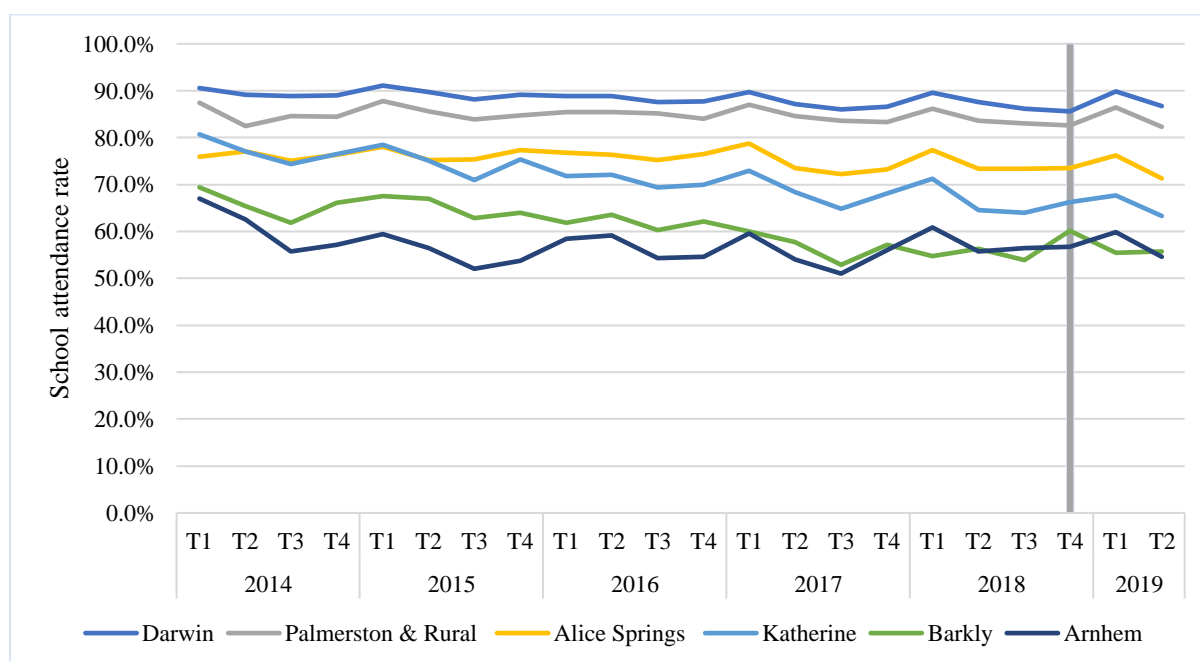


Figure 112 School attendance by term, by region

4.1.2 TOURISM DATA

Figure 113 provides the number of domestic visitors to NT tourism regions. As shown, there has been no discernible decrease in the number of domestic tourists across the NT since the introduction of the MUP.

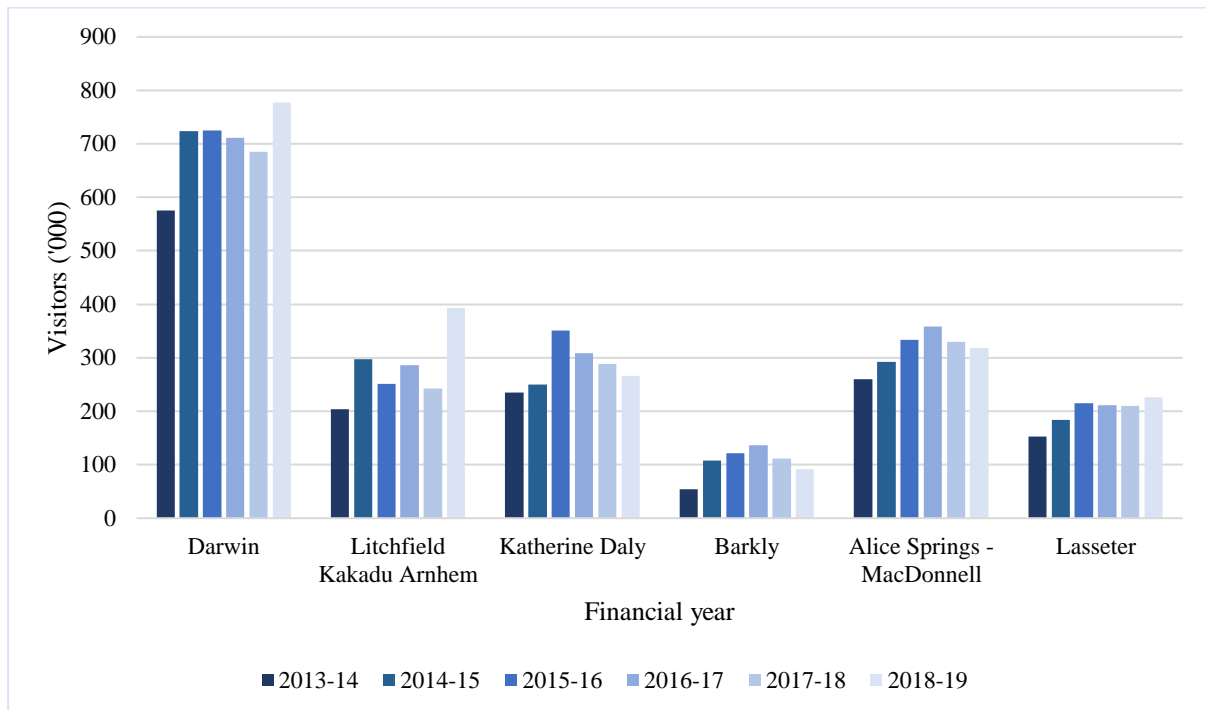


Figure 113 Number of domestic visitors, by tourism region

Figure 114 provides the number of international visitors to NT tourism regions. As demonstrated, there has not been any systematic changes in the number of international tourists since the introduction of MUP.

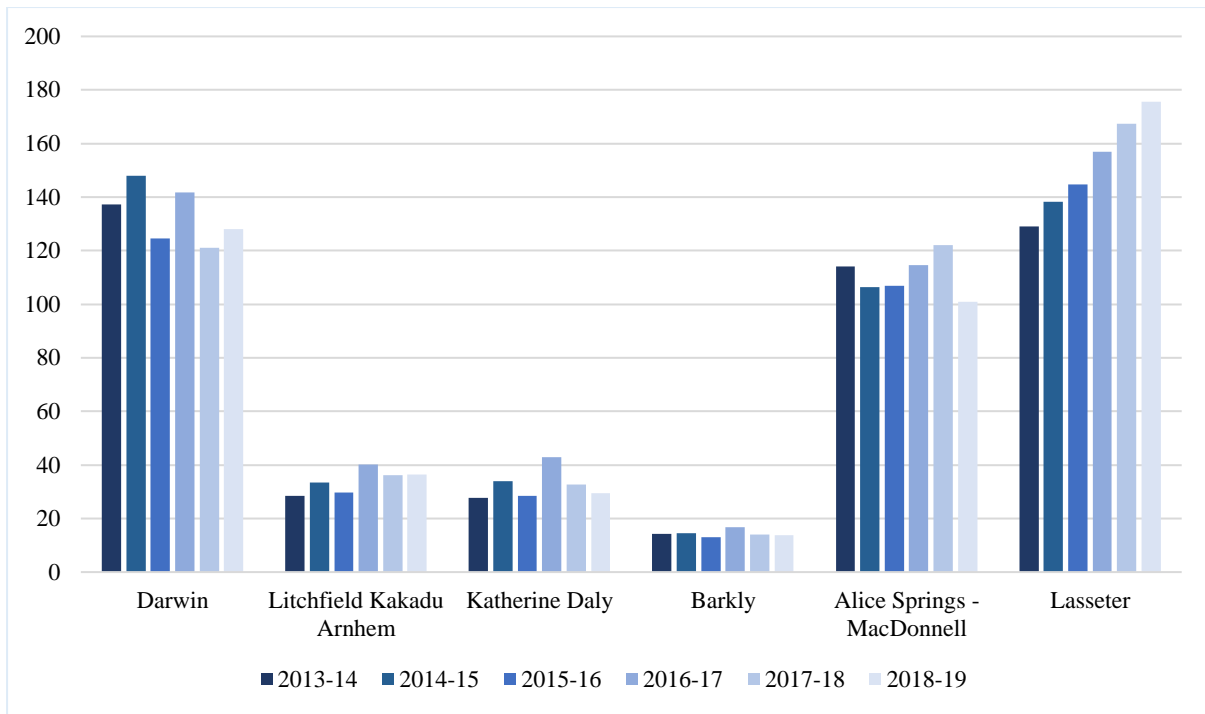


Figure 114 Number of international visitors, by tourism region

Figure 115 shows domestic and international visitor expenditure in the NT tourism regions. As shown, the total expenditure has fluctuated over the reporting time period, with no clear changes since the introduction of the MUP.

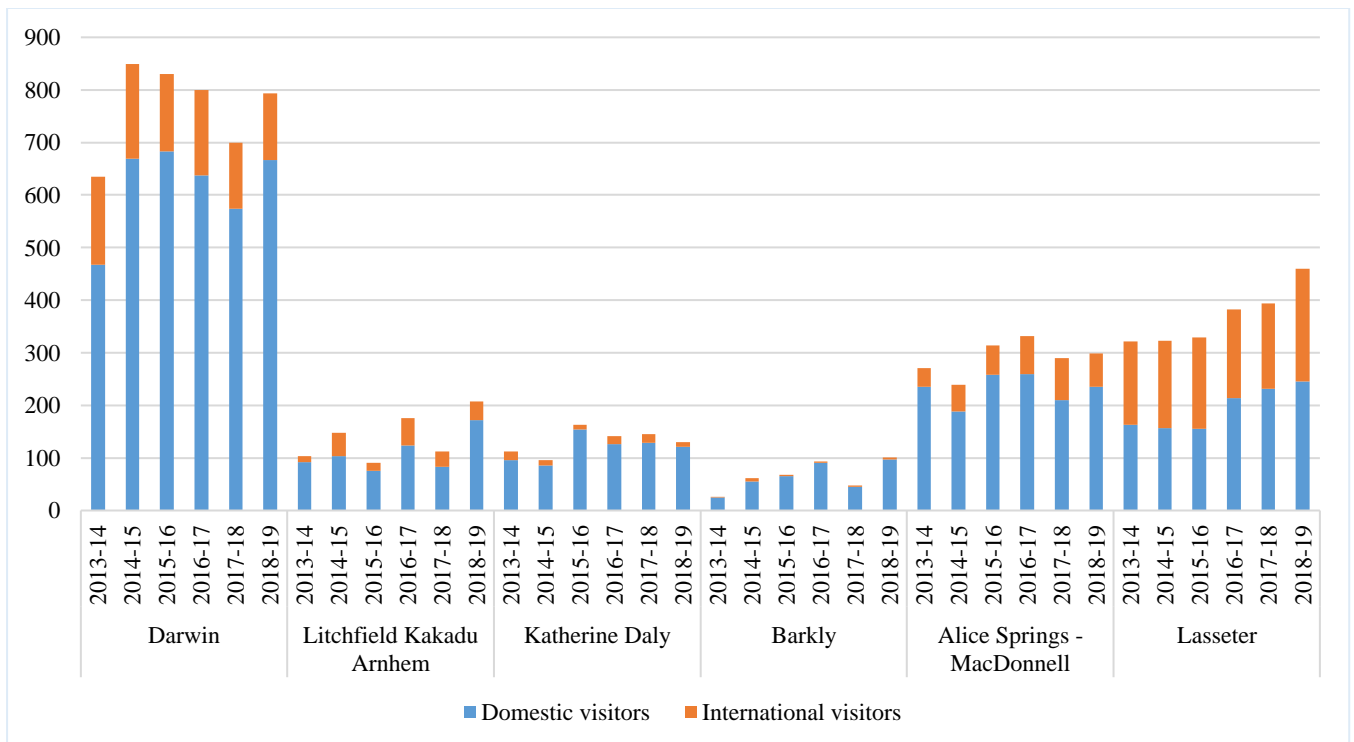


Figure 115 Tourist expenditure (\$M), by domestic and international visitors

4.1.3 EXTERNAL DISPLACEMENT – MT ISA

The following figures summarise the total number of offences committed in Mt Isa between 2013 and 2019. The following data was sourced from publicly available data, via the Queensland myPolice website (<https://mypolice.qld.gov.au/mountisa/queensland-crime-statistics/>).

As demonstrated in Figure 116, there does not appear to be any overall increase in committed offences in Mt Isa since the commencement of the minimum unit price.

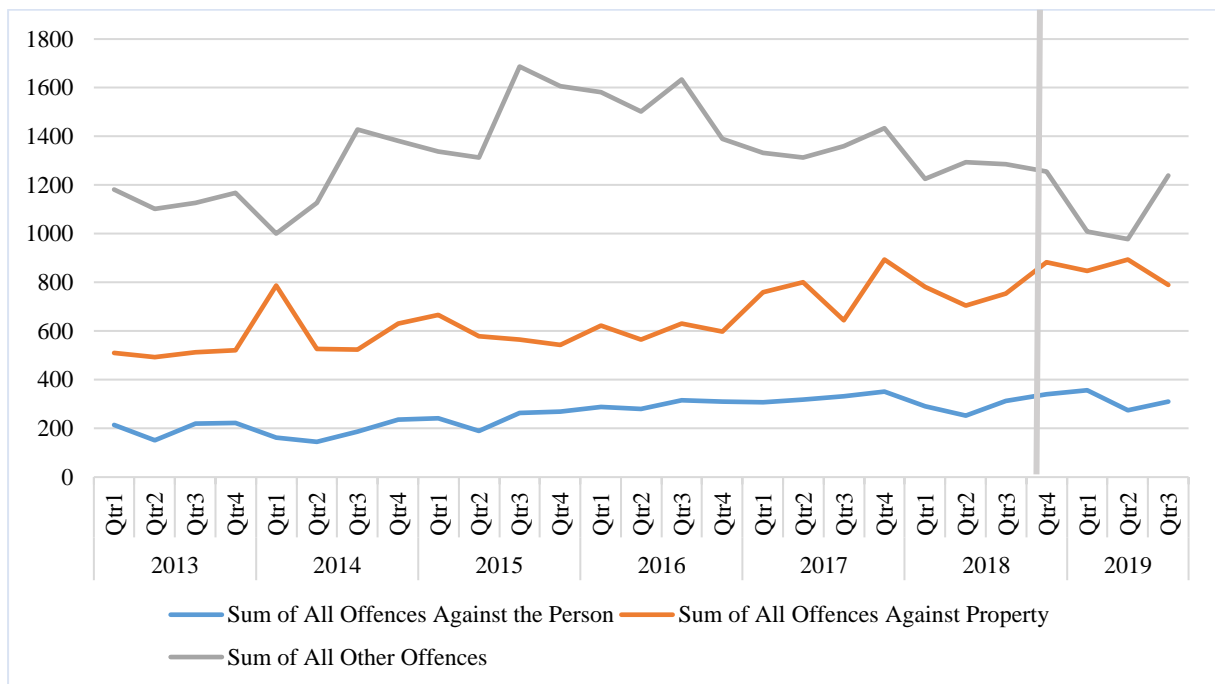


Figure 116 Total number of offences in Mt Isa 2013 - 2019

As seen in Figure 117, there was an increase in the frequency of serious assaults in the first quarter of 2019, however this was followed by an equivalent decline in the follow quarter. The frequency of all other offences against the person appear to have remained consistent, and/or declined.

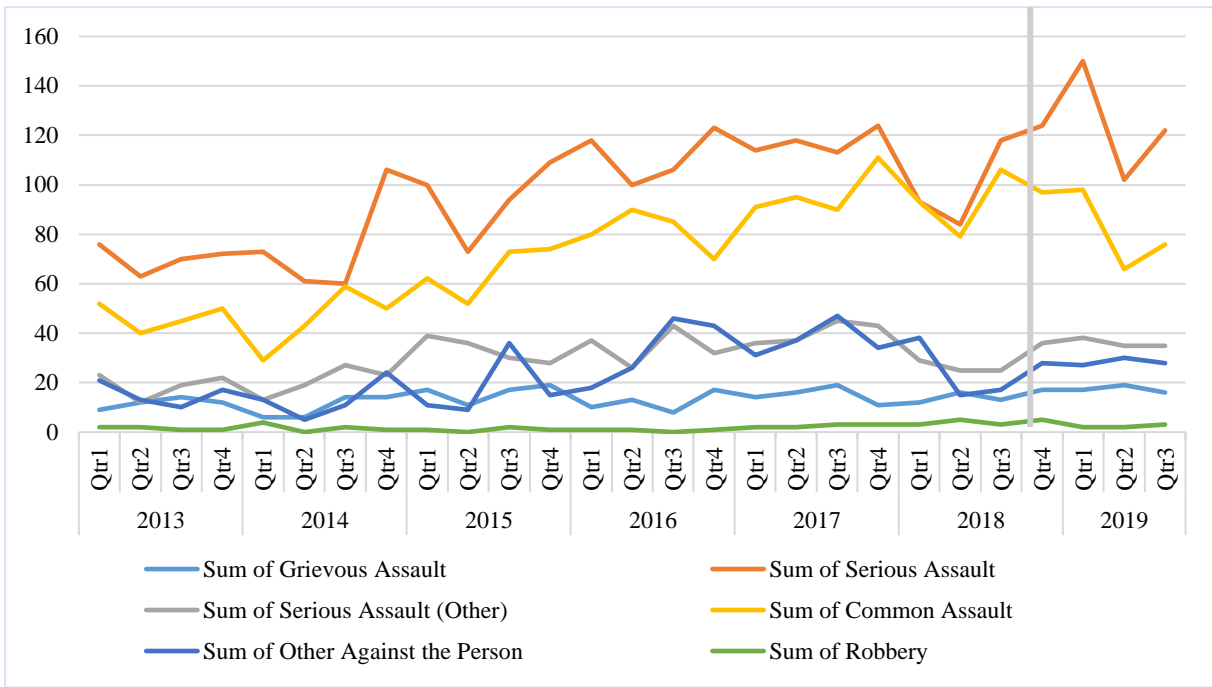


Figure 117 Summary of offences against the person in Mt Isa 2013 - 2019

Figure 118 demonstrates there was a gradual increase in “Other Thefts (excluding Unlawful Entry)” after October 2018, this was mirrored by a gradual decline in both “Other Property Damage” and “Unlawful Entry”.

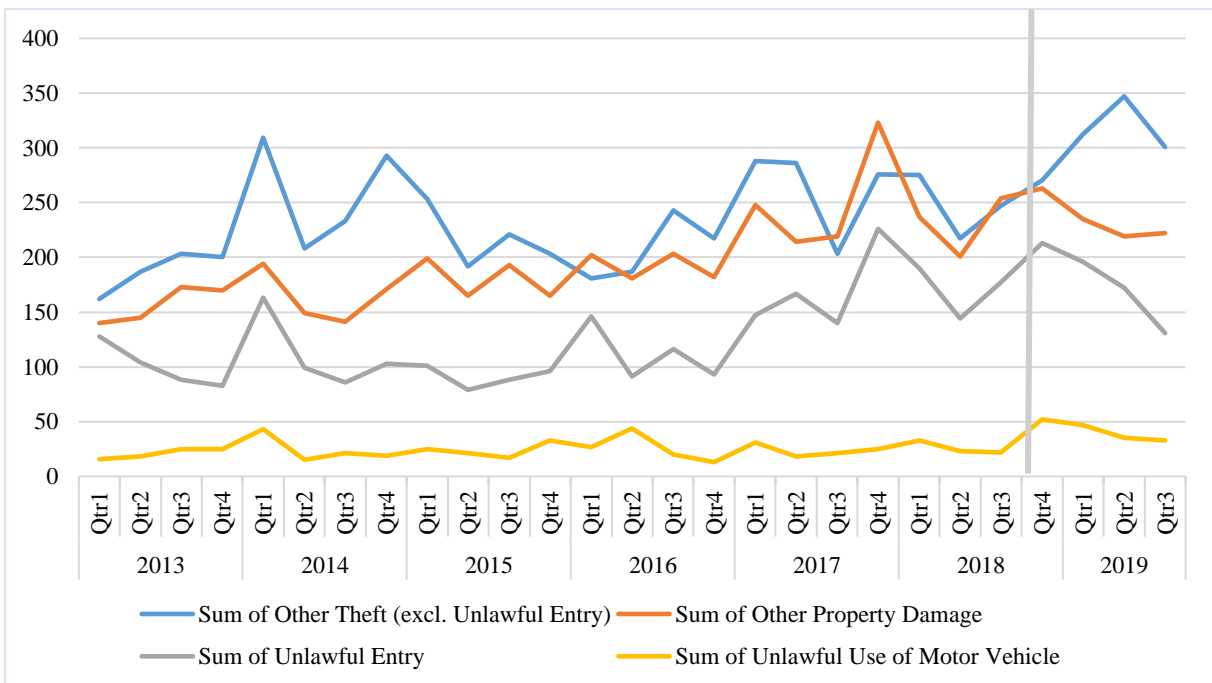


Figure 118 Summary of offences against property in Mt Isa 2013 – 2019

Figure 119 shows the frequency of “Other Offences” to have remained consistent after the commencement of the minimum unit price legislation.

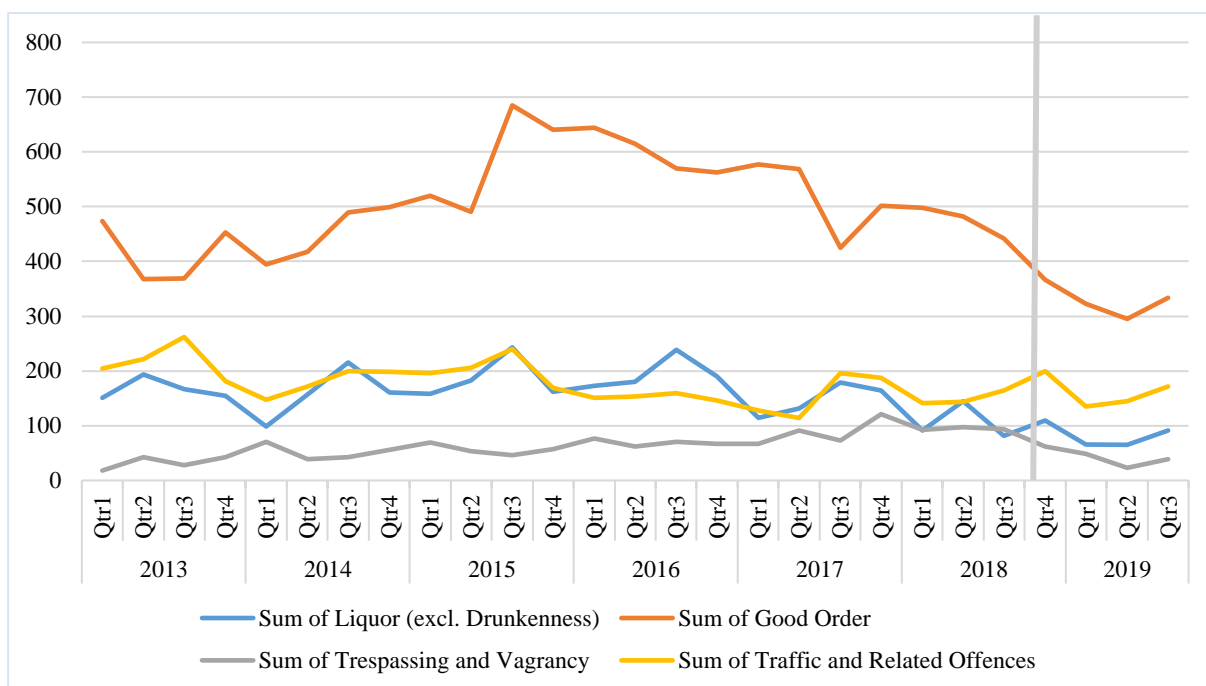


Figure 119 Summary of other offences in Mt Isa 2013 – 2019

4.2 POPULATION TELEPHONE SURVEY

This section of the report summarises some self-reported data on alcohol consumption, attitudes and experiences of alcohol-related harm. As outlined earlier, we rely on two surveys: a telephone survey of 1,000 Northern Territory residents conducted in mid-2019 and the Northern Territory sample of the 2016 wave of The National Drug Strategy Household Survey (NDSHS). While we have endeavoured to ensure reasonable comparisons on key measures are possible, the different sampling approaches and survey designs mean that any comparison between the two remains potentially problematic.

Furthermore, population surveys like these are likely to under-represent Indigenous populations in their sampling and rely on measures that may not best measure drinking in these groups (Chikritzhs, Chikritzhs, & Brady, 2006; Lee et al., 2019). Thus, the results presented should be interpreted cautiously.

We start by presenting some descriptive statistics from the 2019 data on drinking practices, attitudes to policy and alcohol-related problems, before presenting a few key comparisons between the 2016 and 2019 estimates. The sample composition for the telephone survey is shown in Table 105.

Table 105 Final sample for population telephone survey

	n (%)
Men	482 (48.2%)
Women	518 (51.8%)
Indigenous	81 (8.1%)

Non-Indigenous	919 (91.1%)
18-34 years	174 (17.4%)
35-49 years	323 (32.3%)
50-64 years	333 (33.3%)
65+ years	170 (17.0%)
Darwin/Palmerston	638 (63.8%)
Alice Springs	185 (18.5%)
Katherine	50 (5.0%)
Rest of the NT	127 (12.7%)

4.2.1 DRINKING PATTERNS

The prevalence of various drinking patterns for population sub-groups are presented in Table 106. Men were much more likely to be risky, heavy and heavy-episodic drinkers than women. The prevalence of heavy drinking (4 or more drinks per day on average) was relatively even across age groups, while heavy episodic drinking (drinking occasions of 5 or more drinks at least monthly) and binge drinking (11+ drinks) were more common among younger adults than older people. Our sample produced some major regional differences, with all measures of drinking except for non-risky drinking markedly higher in Darwin than Alice Springs.

Table 106 Self-reported drinking patterns in the Northern Territory, 2019, 95% CIs in parentheses

	Non-drinkers (%)	Non risky drinkers (<2 drinks per day) (%)	Risky drinkers (2-4 drinks per day) (%)	Heavy drinkers (4+ drinks per day) (%)	Heavy episodic drinker (5+ at least monthly) (%)	Binge drinker (11+ at least once) (%)
Men (n = 482)	27.3 (18.4, 38.5)	38.1 (31.4, 45.3)	17.0 (13.0, 22.0)	17.6 (13.5, 22.5)	52.6 (44.2, 60.9)	35.8 (29.2, 42.9)
Women (n = 518)	27.7 (21.9, 34.5)	56.0 (49.1, 62.6)	7.9 (4.6, 13.1)	8.4 (4.9, 14.2)	38.6 (32.2, 45.5)	18.3 (13.6, 24.1)
Indigenous (n = 81)	47.6 (30.7, 65.1)	35.4 (22.4, 50.9)	5.9 (1.6, 19.6)	11.1 (4.8, 23.8)	34.0 (20.8, 50.4)	17.5 (9.2, 31.1)
Non-Indigenous (n = 919)	20.9 (17.8, 24.5)	50.5 (46.5, 54.5)	14.8 (12.1, 18.0)	13.8 (11.3, 16.8)	49.6 (45.6, 50.4)	30.4 (26.7, 34.4)
18-34 years (n = 174)	33.9 (22.0, 48.2)	40.2 (30.5, 50.8)	13.3 (8.0, 21.3)	12.6 (7.5, 20.4)	50.2 (38.7, 61.7)	33.2 (24.5, 43.2)
35-49 years (n = 323)	21.5 (16.0, 28.2)	53.5 (46.3, 60.6)	11.2 (8.0, 15.5)	13.9 (9.5, 19.7)	53.1 (45.9, 61.7)	32.2 (26.0, 39.1)
50-64 years (n = 333)	25.1 (19.2, 32.0)	47.1 (40.5, 53.7)	15.1 (11.1, 20.1)	12.8 (9.2, 17.6)	36.7 (30.8, 43.0)	18.4 (14.0, 23.8)
65+ years (n = 170)	26.5 (17.5, 38.1)	51.5 (41.6, 61.2)	8.1 (4.5, 14.3)	13.9 (8.9, 21.1)	25.9 (18.9, 34.3)	8.0 (4.3, 14.6)
Darwin/Palmerston (n = 638)	21.2 (17.5, 25.3)	50.0 (45.3, 54.6)	14.5 (11.5, 18.3)	14.3 (11.4, 18.0)	51.2 (46.5, 55.8)	32.2 (28.0, 37.0)
Alice Springs (n = 185)	42.2 (26.2, 60.1)	44.9 (30.9, 59.7)	7.0 (3.8, 12.6)	5.9 (3.1, 11.0)	28.0 (18.7, 39.6)	15.0 (8.9, 24.0)
Rest of the NT (n = 177)	33.1 (17.9, 52.9)	39.1 (26.0, 54.1)	11.8 (5.3, 24.4)	15.9 (8.0, 29.4)	46.0 (30.8, 61.9)	23.3 (23.5, 37.1)

Note. The first four columns are mutually exclusive (and therefore sum to 100%) whereas the latter two groups are different categorisations of the whole population

In Table 107, we present a brief summary of the beverage type that respondents reported drinking most often. Due to very low numbers of respondents (n=5), cask wine was combined with bottled and fortified wine (n=2) into a single category (similarly we include 7 respondents who report 'home-brewed beer' in 'regular beer' and 5 who report 'other pre-mixed drinks' into 'alcopops'). Men were more likely to drink beer and women to drink wine. Wine was more commonly drunk by older drinkers, while young adults disproportionately reported regular strength beer and alcopops as their main drink. There were no major regional differences.

Respondents were also asked if they had changed their main drink in the past year. Only a small proportion (7.1%, n=49) reported switching drinks – there were no striking patterns in the beverages these respondents changed from and to.

Table 107 Self-reported main drink type among current drinkers, Northern Territory, 2019, 95% CIs in parentheses

	Wine (%)	Regular beer (%)	Mid/light beer (%)	Alcopops (%)	Spirits (%)	Cider (%)
Men (n = 482)	14.2 (10.8, 18.6)	35.0 (29.2, 41.3)	32.3 (26.8, 38.3)	3.3 (1.7, 6.3)	12.9 (9.2, 17.8)	2.3 (1.1, 4.7)
Women (n = 518)	46.3 (39.0, 53.8)	5.1 (2.9, 8.7)	10.3 (6.9, 15.3)	9.3 (4.9, 16.9)	21.2 (15.2, 28.7)	7.8 (4.4, 13.3)
Indigenous (n = 81)	19.9 (8.9, 38.9)	13.9 (6.3, 27.9)	15.5 (7.6, 28.8)	11.7 (3.4, 33.3)	32.1 (18.1, 50.4)	6.8 (1.7, 23.6)
Non-Indigenous (n = 919)	31.8 (27.9, 36.0)	22.1 (18.4, 26.3)	23.1 (19.4, 27.3)	5.0 (3.3, 7.4)	13.5 (10.9, 16.6)	4.5 (2.9, 6.8)
18-34 years (n = 174)	25.7 (17.7, 35.8)	26.8 (19.3, 35.8)	18.7 (12.4, 27.2)	12.1 (6.1, 22.5)	12.5 (6.4, 22.8)	4.2 (1.8, 9.3)
35-49 years (n = 323)	24.8 (18.9, 31.9)	19.9 (14.2, 27.2)	21.7 (16.0, 28.6)	2.1 (0.9, 4.7)	23.7 (17.1, 31.9)	7.8 (3.7, 15.6)
50-64 years (n = 333)	33.5 (27.1, 40.5)	16.2 (11.4, 22.4)	25.5 (19.2, 33.0)	3.5 (1.8, 6.7)	18.3 (13.4, 24.5)	3.0 (1.5, 5.9)
65+ years (n = 170)	50.9 (41.1, 60.7)	10.7 (6.1, 18.1)	24.1 (16.5, 33.8)	4.4 (1.6, 11.4)	7.3 (3.4, 15.1)	2.6 (0.8, 8.3)
Darwin/Palmerston (n = 638)	33.0 (28.5, 37.9)	22.5 (18.2, 27.4)	21.6 (17.6, 26.2)	4.8 (2.8, 8.0)	14.3 (11.1, 18.1)	3.9 (2.3, 6.3)
Alice Springs (n = 185)	28.6 (19.4, 40.1)	23.2 (14.4, 35.3)	20.6 (12.6, 31.9)	4.9 (2.3, 10.2)	15.7 (8.7, 26.7)	6.9 (1.9, 21.6)
Rest of the NT (n = 177)	18.8 (9.1, 35.0)	12.2 (6.2, 22.7)	23.0 (14.0, 35.5)	12.1 (4.1, 30.9)	26.8 (14.7, 43.5)	7.0 (2.4, 18.7)

Note. 18 people were coded as missing (can't say = 3 & no main drink = 15). The other category was also excluded (n=8)

The survey asked where respondents usually purchased their alcohol. BWS was the most commonly mentioned retailer (25%), while around 10% usually bought their alcohol at bars, pubs or taverns. A wide range of other retailers were also nominated (Table 108).

Table 108 Self-reported venue where alcohol is usually purchased, Northern Territory, 2019, 95% CIs in parentheses

Place of purchase	Proportion (95% CI)
Major retailers	
BWS	24.9 (20.9, 29.4)
Woolworths liquor	7.9 (5.9, 10.5)
Liquorland	6.5 (4.7, 8.8)
The bottle-o	5.8 (3.3, 9.8)
Coles liquor	4.8 (3.3, 6.8)
Other liquor retailer	3.8 (2.3, 6.3)
Thirsty camel	2.6 (1.6, 4.4)
Other supermarket liquor department	2.2 (1.2, 4.0)
Cellarbrations	1.4 (0.7, 2.7)
IGA liquor	1.5 (0.9, 2.5)
Bottlemart	0.7 (0.1, 3.4)
Cellarmasters	0.1 (0.04, 0.4)
On licence	
Bar/tavern/pub	9.7 (7.4, 12.7)
Café/restaurant that sells alcohol	3.0 (2.0, 4.4)
Nightclub	0.3 (0.1, 1.3)
Other	
Online liquor retailer	2.2 (1.1, 4.4)
Hotel bottle shop	0.7 (0.4, 1.5)
Other entertainment venue where alcohol is sold	0.5 (0.2, 1.2)
Sports club/RSL/stadium/racetrack/arena	0.3 (0.1, 1.1)
Event/festival where alcohol is sold	0.2 (0.04, 0.7)

Respondents were also asked four questions about whether they had reduced or stopped drinking (Table 109). Over one-third of respondents had made some attempt to reduce their alcohol consumption in the past 12 months. Around one-in-six respondents reported that they had entirely stopped drinking alcohol in the past year.

Table 109 Self-reported changes to drinking behaviour, Northern Territory, 2019, 95% CIs in parentheses

	Proportion (95% CI)
Reduced the amount of alcohol you drank at any one time	35.5 (30.9, 40.3)
Reduced the number of times you drank	33.2 (28.8, 37.8)
Switched to drinking more low-alcohol drinks than you used to	9.8 (7.0, 13.6)
Stopped drinking alcohol	16.0 (12.8, 19.9)
Any of these four changes	37.8 (33.2, 42.6)

Respondents who reported any of these changes were asked why they had made them – the overall results for this item are presented in Table 110. The main reasons were related to health and lifestyle issues, with few respondents specifying financial (4%) or price-related (3%) reasons.

Table 110 Reasons for reducing or stopping alcohol consumption, Northern Territory, 2019, 95% CIs in parentheses

Reasons	Proportion (95% CI)
Health reasons (e.g. Weight, diabetes, avoid hangover)	52.4 (45.5, 59.2)
Life style reasons (e.g. Work/study commitments, less opportunity, young family)	30.4 (23.9, 37.9)
Social reasons (e.g. Believe in moderation, concerned about violence, avoid getting drunk)	11.9 (7.5, 18.4)
Financial reasons	4.0 (2.5, 6.5)
Pregnant and/or breastfeeding	3.9 (2, 7.3)
The price of the alcohol I drink/drank has increased	2.6 (1.2, 5.5)
Local/community laws ban alcohol	1.5 (0.3, 6.7)
Adult/parent pressure	1.1 (0.4, 3.1)
Taste/enjoyment (e.g. Prefer low alcohol beer, don't get drunk)	0.8 (0.3, 2.2)
Drink driving regulations	0.7 (0.2, 2.3)
Peer pressure	0.4 (0.1, 1.4)
Other	9.9 (6.4, 15.2)
Can't say/can't recall	5.3 (2.9, 9.5)

Finally, respondents were asked where they usually drank alcohol. Responses across key socio-demographic categories are presented in Table 111. Multiple responses were permitted, so the percentages may add to more than 100. Most respondents reported that they drank at home, with young adults the most likely to report drinking on licensed premises (other than restaurants and cafes). There were no major differences by socio-demographics.

Table 111 Usual locations of alcohol consumption, Northern Territory, 2019, 95% CIs in parentheses

	Own/spouse's/partner's house (%)	Friend's house (%)	Restaurants/Cafes (%)	Licensed premises (%)	Party at someone's house (%)	Public places (%)
Men (n = 482)	79.2 (73.6, 83.9)	15.7 (11.6, 20.9)	9.9 (6.9, 13.9)	24.7 (19.7, 30.6)	6.0 (3.5, 10.1)	3.3 (1.7, 6.4)
Women (n = 518)	70.1 (62.3, 76.9)	12.6 (9.3, 16.9)	16.3 (12.3, 21.3)	21.6 (15.2, 29.8)	6.7 (3.0, 14.3)	1.7 (0.6, 4.5)
Indigenous (n = 81)	64.8 (45.9, 80.0)	12.8 (6.0, 25.5)	6.4 (2.0, 18.7)	26.0 (12.3, 46.8)	12.3 (3.6, 34.5)	3.2 (0.8, 12.4)
Non-Indigenous (n = 919)	76.9 (72.9, 80.4)	14.5 (11.7, 17.8)	14.4 (11.7, 17.6)	22.6 (18.9, 26.8)	5.1 (3.5, 7.3)	2.4 (1.3, 4.3)
18-34 years (n = 174)	67.8 (56.8, 77.1)	12.4 (7.6, 19.5)	7.2 (3.8, 13.4)	33.9 (24.5, 44.8)	7.5 (2.7, 19.1)	3.0 (1.1, 8)
35-49 years (n = 323)	81.3 (75.0, 86.3)	15.1 (10.6, 21.2)	15.2 (10.5, 21.5)	19.6 (14.3, 26.2)	6.6 (3.4, 12.2)	2.6 (1.2, 5.8)
50-64 years (n = 333)	73.9 (66.6, 80.1)	15.7 (11.0, 21.8)	17.9 (13.4, 23.6)	15.8 (11.0, 22.3)	4.2 (2.3, 7.7)	2.1 (0.6, 7.2)
65+ years (n = 170)	80.1 (70.9, 86.9)	14.0 (8.6, 22.0)	14.4 (8.7, 23.0)	14.4 (8.6, 23.0)	6.5 (3.0, 13.4)	1.6 (0.3, 7.7)
Darwin/Palmerston (n = 638)	76.1 (71.5, 80.2)	15.4 (12.1, 19.5)	14.7 (11.6, 18.5)	21.4 (17.3, 26.2)	5.9 (3.9, 8.8)	2.6 (1.3, 5.2)
Alice Springs (n = 185)	74.5 (62.6, 83.6)	13.6 (7.1, 24.7)	14.5 (7.7, 25.5)	26.0 (16.9, 37.9)	5.6 (1.5, 19.0)	0.5 (0.1, 2.3)
Rest of the NT (n = 177)	74.5 (52.6, 83.4)	10.3 (5.7, 18.0)	5.8 (2.8, 11.5)	27.2 (14.4, 45.3)	8.4 (1.8, 31.3)	3.8 (1.3, 10.3)

4.2.2 CHANGES OVER TIME

This section presents comparisons between the 2019 survey data and the NT component of the 2016 NDSHS. Table 112 shows changes over time in overall past-year drinking behaviour by key socio-demographic variables.

Table 112 Trends in drinking behaviour by sex, Indigenous status, age group, and location for the 2016 NDSHS and 2019 NT MUP survey

	Non-drinkers (%)		Non risky drinkers (<2 drinks per day) (%)		Risky drinkers (2-4 drinks per day) (%)		Heavy drinkers (4+ drinks per day) (%)	
	2016	2019	2016	2019	2016	2019	2016	2019
Men (n = 482)	18.8 (14.4, 24.2)	27.3 (18.4, 38.5)	41.1 (35.7, 46.7)	38.1 (31.4, 45.3)	19.7 (15.8, 24.4)	17.0 (13.0, 22.0)	20.3 (16.2, 25.2)	17.6 (13.5, 22.5)
Women (n = 518)	24.6 (20.3, 29.3)	27.7 (21.9, 34.5)	57.8 (52.7, 62.7)	56.0 (49.1, 62.6)	8.7 (6.5, 11.6)	7.9 (4.6, 13.1)	8.9 (6.2, 12.6)	8.4 (4.9, 14.2)
Indigenous (n = 81)	35.6 (23.8, 49.5)	47.6 (30.7, 65.1)	35.6 (25.1, 47.8)	35.4 (22.4, 50.9)	13.7 (7.2, 24.5)	5.9 (1.6, 19.6)	15.1 (8.1, 26.4)	11.1 (4.8, 23.8)
Non-Indigenous (n = 919)	19.1 (16.3, 22.4)	20.9 (17.8, 24.5)	51.1 (47.2, 55.0)	50.5 (46.5, 54.5)	14.8 (12.3, 17.7)	14.8 (12.1, 18.0)	15 (12.3, 18.1)	13.8 (11.3, 16.8)
18-34 years (n = 174)	21.7 (15.8, 29.2)	33.9 (22.0, 48.2)	49.3 (42.0, 56.6)	40.2 (30.5, 50.8)	15.2 (10.8, 21.1)	13.3 (8.0, 21.3)	13.7 (9.3, 19.8)	12.6 (7.5, 20.4)
35-49 years (n = 323)	20.1 (15.3, 26.1)	21.5 (16.0, 28.2)	54 (47.5, 60.3)	53.5 (46.3, 60.6)	14.9 (11.0, 19.9)	11.2 (8.0, 15.5)	11 (7.6, 15.7)	13.9 (9.5, 19.7)
50-64 years (n = 333)	19.8 (14.8, 25.8)	25.1 (19.2, 32.0)	44.7 (38.0, 51.5)	47.1 (40.5, 53.7)	12.5 (8.9, 17.5)	15.1 (11.1, 20.1)	23 (17.2, 30.1)	12.8 (9.2, 17.6)
65+ years (n = 170)	28.1 (20.8, 36.6)	26.5 (17.5, 38.1)	42.2 (33.8, 51.0)	51.5 (41.6, 61.2)	15.5 (10.4, 22.6)	8.1 (4.5, 14.3)	14.2 (9.2, 21.3)	13.9 (8.9, 21.1)
Darwin/Palmerston (n = 638)	18.9 (15.5, 22.8)	21.2 (17.5, 25.3)	49.4 (44.7, 54.1)	49.9 (45.3, 54.6)	16.9 (13.7, 20.6)	14.5 (11.5, 18.3)	14.9 (11.8, 18.6)	14.4 (11.4, 18)
Rest of the NT (n = 362)	25.4 (19.8, 32.1)	37.4 (25.7, 50.8)	48.2 (42.0, 54.6)	41.8 (32.0, 52.4)	11.2 (7.8, 15.8)	9.6 (5.4, 16.3)	15.2 (11.0, 20.6)	11.2 (6.5, 18.6)

Due to limitations in the NDSHS data, our regional comparisons are limited to Darwin versus the rest of the NT (i.e. Alice Springs cannot be separated out). There were no significant changes in drinking behaviour for any of our measures, although this may partly relate to the small sample sizes. There were potential increases in non-drinking for young adults and Indigenous respondents, but the wide confidence intervals mean that these changes may be due to chance variations in our sample.

Similar trends for our two measures of episodic heavy drinking are provided in Table 113.

Table 113 Trends in drinking patterns by sex, Indigenous status, age group, and location for the 2016 NDSHS and 2019 NT MUP survey, with 95% confidence intervals in parentheses

	Heavy episodic drinker (5+ at least monthly)		Binge drinker (11+ at least once)	
	2016 NT NDSHS (%)	2019 NT MUP (%)	2016 NT NDSHS (%)	2019 NT MUP (%)
Men (n = 482)	56.1 (50.4, 61.6)	52.6 (44.2, 60.9)	34.0 (28.8, 39.6)	35.8 (29.2, 42.9)
Women (n = 518)	30.9 (26.4, 35.8)	38.6 (32.2, 45.5)	17.0 (13.5, 21.2)	18.3 (13.6, 24.1)
Indigenous (n = 81)	52.9 (40.1, 65.4)	34.0 (20.8, 50.4)	33.1 (22.7, 45.6)	17.5 (9.2, 30.6)
Non-Indigenous (n = 919)	42.9 (39.1, 46.9)	49.6 (45.6, 50.4)	24.8 (21.4, 28.5)	30.4 (26.7, 34.4)
18-34 years (n = 174)	51.9 (44.6, 59.2)	50.2 (38.7, 61.7)	36.0 (29.3, 43.2)	33.2 (24.5, 43.2)
35-49 years (n = 323)	45.1 (38.8, 51.5)	53.1 (45.9, 61.7)	25.6 (20.5, 31.5)	32.2 (26.0, 39.1)
50-64 years (n = 333)	41.1 (34.3, 48.2)	36.7 (30.8, 43.0)	18.0 (13.0, 24.4)	18.4 (14.0, 23.8)
65+ years (n = 170)	21.7 (15.5, 29.6)	25.9 (18.9, 34.3)	8.7 (4.3, 16.7)	8.0 (4.3, 14.6)
Darwin/Palmerston (n = 638)	43.5 (38.9, 48.3)	51.2 (46.5, 55.8)	25.2 (21.1, 29.7)	32.3 (28.0, 37.0)
Rest of the NT (n = 362)	45.4 (39.1, 51.8)	37.4 (27.9, 47.9)	27.4 (22.0, 33.5)	19.3 (13.1, 27.5)

The data are indicative of reductions in episodic and binge drinking among Indigenous people, but confidence intervals are too large for differences to be significant. Similarly, the regional differences are suggestive – heavy episodic and binge drinking increased non-significantly in Darwin and decreased non-significantly in the rest of the NT.

In Table 114, the overall prevalence of self-reported harms related to drinking are compared between 2016 and 2019. There was little change in the proportion of people reporting being verbally abused by someone else affected by alcohol or injured while under the influence of alcohol, but the prevalence of self-reported physical abuse fell by around half, from 12% in 2016 to 7% in 2019.

Table 114 Prevalence of self-reported harms related to alcohol, 2016 NDSHS and 2019 NT MUP survey, with 95% confidence intervals in parentheses

	2016 NT NDSHS (%)	2019 NT MUP (%)
Verbally abused by someone affected by alcohol	31.8 (28.4, 35.3)	32.3 (28.0, 36.9)
Physically abused by someone affected by alcohol	12.2 (9.9, 14.9)	6.8 (4.7, 9.7)*
Injury requiring medical attention while under the influence of alcohol	3.2 (2.0, 5.0)	2.9 (1.7, 4.9)

Note. * 95% confidence intervals do not overlap with 2016 confidence intervals

Trends in the prevalence of verbal and physical abuse across key socio-demographics are presented in Table 115. The patterns were broadly similar across demographic groups – physical abuse had declined in all sub-groups (although these differences were not always statistically significant).

Table 115 Trends in self-reported experience of alcohol-related harm in the past 12 months, 2016 NDSHS and 2019 NT MUP survey, with 95% confidence intervals in parentheses

	Verbally abused by someone affected by alcohol		Physically abused by someone affected by alcohol	
	2016 NT NDSHS (%)	2019 NT MUP (%)	2016 NT NDSHS (%)	2019 NT MUP (%)
Men (n = 482)	35.1 (29.9, 40.6)	34.7 (28.3, 41.7)	11.6 (8.1, 16.3)	5.9 (3.8, 9.1)
Women (n = 518)	29.9 (25.5, 34.7)	29.7 (24.0, 36.2)	18.2 (14.7, 22.3)	7.7 (4.4, 13.2)*
Indigenous (n = 81)	35.3 (24.4, 48)	32.7 (20.2, 48.4)	16.7 (9.6, 27.4)	8.9 (3.4, 21.1)
Non-Indigenous (n = 919)	32.3 (28.7, 36.2)	32.2 (28.6, 36.0)	14.4 (11.6, 17.6)	6.1 (4.4, 8.4)*
18-34 years (n = 174)	35.6 (29, 42.8)	29.4 (21.1, 39.4)	18.3 (13.2, 24.8)	8.4 (4.2, 16.0)
35-49 years (n = 323)	31.9 (26.2, 38.2)	37.6 (30.9, 44.8)	11.3 (7.9, 15.8)	5.6 (3.5, 8.8)
50-64 years (n = 333)	33.3 (26.9, 40.4)	33.4 (27.4, 40.0)	15.8 (11.4, 21.6)	6.0 (3.5, 10.1)*
65+ years (n = 170)	22.5 (16.4, 30.1)	24.5 (16.7, 34.4)	7.9 (4.2, 14.6)	6.0 (1.7, 19.1)
Darwin/Palmerston (n = 638)	30.3 (26.1, 35.0)	31.3 (27.2, 35.7)	13.3 (10.0, 17.3)	6.7 (4.7, 9.5)*
Rest of the NT (n = 362)	36.1 (30.3, 42.3)	33.9 (25.1, 43.9)	16.7 (12.7, 21.7)	7.0 (3.2, 14.3)

Note. * 95% confidence intervals do not overlap with 2016 confidence intervals

Table 116 shows the trends in other risky behaviours across socio-demographic groups.

Table 116 Trends in self-reported risky behaviours undertaken whilst under the influence of alcohol in the past 12 months, 2016 NDSHS and 2019 NT MUP survey, with 95% confidence intervals in parentheses

	Drove a motor vehicle		Operated a boat		Verbally abused someone		Went swimming	
	2016 NT NDSHS (%)	2019 NT MUP (%)	2016 NT NDSHS (%)	2019 NT MUP (%)	2016 NT NDSHS (%)	2019 NT MUP (%)	2016 NT NDSHS (%)	2019 NT MUP (%)
Men (n = 482)	15.4 (11.8, 19.8)	14.7 (10.8, 19.7)	8.0 (5.4, 11.8)	11.5 (8.1, 16.2)	4.5 (2.4, 8.1)	4.8 (2.8, 8.3)	14.2 (10.5, 18.9)	9.2 (6.1, 13.5)
Women (n = 518)	6.3 (4.0, 9.8)	7.8 (3.8, 15.1)	1.5 (0.7, 2.9)	3.3 (0.7, 14.0)	2.6 (1.4, 4.5)	8.0 (3.3, 18.2)	7.7 (5.3, 11.1)	10.2 (5.0, 19.6)
Indigenous (n = 81)	8.0 (3.1, 19.4)	13.3 (4.6, 32.7)	1.6 (0.3, 6.9)	8.7 (1.9, 32.0)	4.4 (1.2, 15.3)	16.1 (5.3, 39.8)	14.9 (6.8, 29.4)	14.0 (3.9, 39.4)
Non-Indigenous (n = 919)	11.6 (9.2, 14.5)	11.0 (8.3, 14.3)	5.4 (3.7, 7.7)	7.3 (5.1, 10.3)	3.5 (2.2, 5.6)	4.2 (2.6, 6.6)	10.7 (8.4, 13.5)	8.7 (6.3, 11.9)
18-34 years (n = 174)	11.8 (8.0, 17.0)	15.6 (8.9, 26.0)	6.0 (3.3, 10.7)	11.9 (5.9, 22.6)	3.8 (1.7, 8.2)	12.7 (5.7, 25.7)	17.2 (12.3, 23.4)	19.1 (11.1, 30.9)
35-49 years (n = 323)	10.2 (7.0, 14.8)	8.6 (5.6, 12.9)	5.4 (3.0, 9.4)	6.2 (3.7, 10.2)	4.9 (2.6, 9.3)	4.0 (2.1, 7.6)	9.2 (6.0, 13.9)	6.2 (3.8, 10.1)
50-64 years (n = 333)	13.6 (8.5, 21.1)	9.9 (6.0, 16.0)	4.2 (2.1, 8.3)	5.3 (2.9, 9.4)	3.2 (1.3, 7.5)	2.1 (0.8, 5.2)	7.5 (4.3, 12.7)	4.1 (2.1, 7.9)
65+ years (n = 170)	6.5 (3.5, 11.7)	9.1 (4.7, 16.7)	1.3 (0.3, 5.1)	1.8 (0.4, 7.8)	0 (0, 0)	1.8* (0.4, 7.8)	2.8 (1.0, 7.7)	0.5 (0.1, 3.8)
Darwin/Palmerston (n = 638)	10.4 (7.8, 13.6)	11.0 (8.0, 14.9)	6.2 (4.1, 9.4)	8.0 (5.4, 11.8)	4.3 (2.6, 7.1)	4.8 (2.9, 7.9)	11.1 (8.4, 14.5)	8.5 (5.9, 12.2)
Rest of the NT (n = 362)	12.3 (8.5, 17.6)	12.2 (6.4, 21.9)	3.0 (1.5, 5.8)	6.6 (2.2, 18.1)	2.4 (0.9, 6.4)	9.4 (3.3, 24.0)	11.3 (7.4, 16.9)	11.9 (5.1, 25.0)

4.2.3 POLICY ATTITUDES

Figure 120 summarises the level of policy support for twelve different policy options aimed at reducing alcohol-related harm. Of the 12 policy options for reducing alcohol-related harm, there was greatest support for: stricter enforcement of the laws prohibiting supply of alcohol to minors (with 85% endorsing either ‘support’ or ‘strongly support’), the BDR (82%), mandatory ID scanners in both bottle shops (73%) and pubs and nightclubs (65%) and mandatory rehabilitation programs (74%). Around half of respondents either strongly supported or supported a minimum unit price for alcohol, markedly higher than the proportion supporting general policies to increase the price of alcohol more broadly. A similar level of support was found for the stationing police or liquor inspectors within packaged liquor outlets (PALIs). Other evidence-based approaches such as restricting trading hours or reducing the number of alcohol outlets were supported by less than half of the population. Confidence intervals around the percentage support for policy measures are shown in Appendix 4; it must be noted that the confidence intervals around the percentages are quite wide, therefore, patterns must be interpreted with some caution.

In Table 117 the levels of support for four key policies relevant to recent developments in the Northern Territory are examined across various population sub-groups. There were no major differences in levels of support for any of the four policies by sex or age group. None of the differences in support levels between Indigenous and non-Indigenous Territorians were significant, but the results are suggestive of lower support for the BDR and PALIs and potentially higher levels of support for MUP among Indigenous respondents.

The level of support for MUP was markedly higher for non-drinkers (71%) compared with risky (32%) or heavy (27%) drinkers. Similar patterns were evident for PALIs and the BDR, although the differences were less stark (and mostly non-significant). Support for mandatory treatment was relatively even across drinking categories. Regional differences were generally non-significant, although the point estimates for support for MUP and the BDR were higher in Alice Springs than in Darwin.

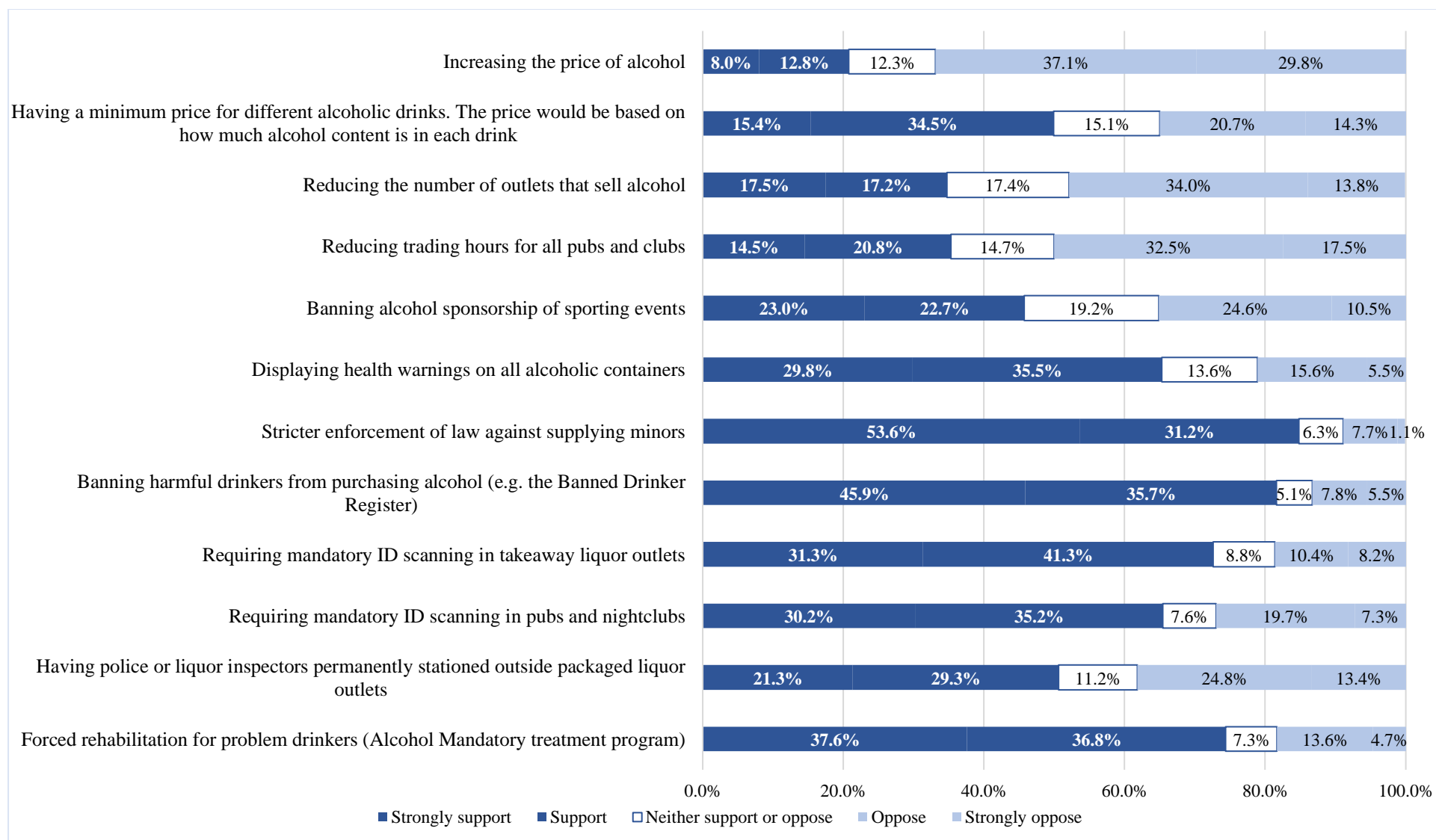


Figure 120 Public support for alcohol policies in the Northern Territory, 2019

Table 117 Overall support for key alcohol policies in the Northern Territory, by socio-demographic and drinking variables, 95% CIs in parentheses

	Support for MUP (%)	Support for BDR (%)	Support for PALIs (%)	Support for mandatory treatment (%)
Men (n = 482)	47.2 (40.0, 55.5)	80.6 (71.0, 87.5)	45.4 (37.7, 53.2)	73.6 (64.5, 81.0)
Women (n = 518)	52.9 (46.1, 59.7)	82.6 (76.1, 87.6)	56.3 (49.5, 62.8)	75.3 (68.7, 80.9)
Indigenous (n = 81)	55.8 (37.2, 72.9)	72.6 (51.6, 86.8)	38.5 (24.3, 54.9)	69.0 (48.7, 84.0)
Non-Indigenous (n = 919)	48.0 (44.0, 52.1)	84.4 (81.5, 86.9)	54.6 (50.6, 58.5)	76.1 (72.7, 79.3)
18-34 years (n = 174)	50.4 (38.7, 62.4)	81.5 (66.4, 90.7)	47.4 (36.1, 58.9)	75.1 (61.5, 85.1)
35-49 years (n = 323)	48.7 (41.4, 56.0)	80.6 (74.1, 85.8)	56.3 (49.1, 63.2)	78.4 (71.8, 83.9)
50-64 years (n = 333)	49.9 (43.1, 56.6)	83.9 (78.7, 88.0)	50.7 (44.1, 57.4)	66.5 (59.8, 72.6)
65+ years (n = 170)	51.9 (42.0, 61.7)	78.9 (70.8, 85.3)	45.6 (36.3, 55.3)	78.1 (69.9, 84.6)
Non-drinkers (n = 211)	70.9 (54.0, 83.5)	80.0 (61.3, 90.9)	49.5 (35.4, 63.6)	70.2 (53.5, 82.8)
Non risky drinkers (<2 drinks per day) (n = 522)	49.0 (43.1, 55.0)	85.1 (79.4, 89.4)	54.8 (48.9, 60.5)	78.7 (74.0, 82.8)
Risky drinkers (2-4 drinks per day) (n = 126)	32.4 (22.9, 43.6)	88.8 (81.7, 93.4)	53.5 (41.4, 65.2)	76.0 (65.6, 84.1)
Heavy drinkers (4+ drinks per day) (n = 130)	27.1 (18.0, 38.7)	67.3 (53.5, 78.6)	36.3 (26.0, 48.1)	66.2 (51.5, 78.3)
Heavy episodic drinkers (5+ at least monthly) (n = 433)	38.5 (32.4, 44.9)	79.2 (72.4, 84.7)	46.8 (40.4, 53.4)	76.3 (70.0, 81.6)
Darwin/Palmerston (n = 638)	46.5 (41.8, 51.3)	83.3 (79.8, 86.3)	48.9 (44.2, 53.6)	76.7 (72.7, 80.2)
Alice Springs (n = 185)	57.5 (39.8, 73.5)	70.7 (48.9, 85.9)	55.9 (38.7, 71.7)	61.1 (42.2, 77.0)
Rest of the NT (n = 177)	53.0 (36.7, 68.7)	86.2 (69.6, 94.5)	50.8 (34.7, 66.8)	79.8 (64.1, 89.7)

Note. The prevalences of 'strongly support' and 'support' have been combined for this table.

4.3 KEY INFORMANT INTERVIEWS

This results section outlines the responses from the key informants, grouped together by topic area and response category. Where relevant the key informant narratives have been presented in their question response entirety.

4.3.1 PERCEPTIONS OF THE MUP (AND OTHER POLICIES) AND ITS IMPACTS ON INTOXICATION AND VIOLENCE

This section details the responses from key informants when asked about the MUP and its effects on intoxication and violence. Overall, informants reported reduced harm across the community, but found it difficult to attribute change to specific policies because they were implemented around the same time in many areas. A service provider reported that they have seen a positive improvement in the areas of intoxication and alcohol-related violence in Alice Springs and Tennant Creek:

We have seen a remarkable improvement in central Australia, so Alice Springs and Tennant Creek...hard to know which had the most impact, all came in together...think that the police have made the biggest impact...when we first had ... significant issues and requested help from the government but they police in all the bottle shops...and what we noticed at that point is that it was like turning off the tap, it was amazing... (SP 2)

4.3.2 THE IMPACT OF THE MUP ON SERVICES/CLIENTS/BUSINESS

The majority of interviewees had a good knowledge of current NT alcohol policies and the social support services associated with alcohol-related harm. Interviewees were asked about the general impact that they have seen on their service/business in relation to the implementation of the MUP.

Some interviewees began by discussing the MUP in conjunction with other current alcohol policies in place in the NT. For example one key informant said:

We're still seeing people who do come here who do access [our services] still reporting, you know the usual usage is what I'm going to say. I don't know, while we've had a reduction maybe it is that those people do drop off and may use other substances or may cease using, but there are people who are still coming to us who may be drinking the cheap wine or whatever, there's still higher levels of harm there, you know. (SP 15)

Similarly:

From the agencies I've met and people I've been exposed to that I would say that there has been a reduction, even socially people have said that their consumption have been reduced, because they can't afford, they can't afford as much alcohol as they used to ... the conversations are around that there is less street drinking, and that's the thing, you know, even socially people have said, ohh their favourite cheap wine or whatever the prices have gone up but they still buy it (SP 04a)

Industry informants reported that there was not a huge impact on their business overall with the roll out of the MUP, beyond some initial hesitancy by retailers and some concerns around the extra work it would involve initially.

...meeting the requirements by critical times, was probably the hardest part....the mechanical side of it, of going around and visiting the licensees and engaging with the licensees, and the coordination of the visits...was actually okay...I know a lot of the licensees, particularly the small stores and what not, [were] very very concerned about ita lot of the licensees... particularly the smaller sort of mum and dad operations...but it was easily managed, because then we actually just spent the time and work with them and explained things and , I think that put a lot more people at ease... (PI 10)

In Darwin, a liquor store retailer also suggested little impact.

In terms of our volume of sales, there hasn't been any significant reduction since the introduction of the floor price. And you know, it's the same with the BDR I guess, you know, we haven't seen a massive drop in sales or anything. (PI 50)

Another informant noted little impact for the on-premise trade, after an initial concern.

Minimum pricing for on premise...the retail prices that they charge on premises are already, you know are already above it,...there was the initial you know hue and cry ...but yeah, you know unless you specifically raise the subject at the moment , nothing, not, I've not heard a peep out of anybody (PI 10)

Responses to the MUP were not consistent across NT regions. Regional differences are apparent. One industry informant in Katherine for example was positive about the impact of the MUP on business:

I think it's great because we're making more money out of it, but we're not selling any...the bottles went up in price as well. So you're paying the price of a cask for what you get two bottles for, but you're getting more in the cask. So there's still a lot of cask, it's only the bottle if they don't have enough money. (PI 42)

In Alice Springs, existing measures meant there was little change:

No, in Alice we already had a floor price, we already had a dollar ten as the standard unit anyway, and that was voluntary. So it hasn't really altered what people purchase because their product of choice was already over the floor price anyway. (PI 5 +6]

In all remote locations freight costs had already ensured prices were well above the minimum price.

We're remote, so all our transport costs were too high anyway. (PI 11)

This report of little change due to the MUP was also noted by a licensee based in Tennant Creek.

No, it didn't affect us at all...The only thing we had to really change, was just one of our wines; that was it. It was only up 50 cents, so it didn't affect us at all. (PI 21)

A second Tennant Creek licensee stated that although the MUP had some effect on bottled wine prices, this was not reflected in sales data:

The costs are high anyway. The only – well it's had effect on – it's sort of had an effect on the bottled wine that we do...That all depends on how many standard units are in those bottled wine anyway...It raised the price of the cask wines a little bit, not that much, when it comes to the fruity white, ... the lowest alcohol per volume cask wine there is, apart from moscatos that I can get. (PI 20)

4.3.3 PUBLIC PERCEPTIONS OF THE MUP

This section asked key informants about their observations concerning public perceptions of the MUP policy. In the main, the observation from key informants seems to be that they see the impact on the public as being minimal. Several service providers suggesting that consumers have not felt much of an impact:

It hasn't, even as a consumer I would say it hasn't really had a huge impact if you're not regularly purchasing very cheap alcohol. If it's your usual stuff like your beers or your spirits, you're not going to see much of a difference there (SP 15)

Similarly:

We don't hear any complaints from patients relating to alcohol floor prices, so it may well be and we don't hear complaints from our Indigenous patients as well but it's not something that that they'd actually talk about...(SP 03)

An interviewee suggest that the public are starting to see the MUP as a normalised 'community strategy' (SP 04).

I think after it's gone through, you know the media hype and everything, I think that it's starting to just be a...normal community strategy, I think that one of the issues that I've heard multiple times is that alcohol prices went up, but they went up across the board they didn't just go up for the min, for the cheap alcohol....basically the public believe that it's the minimum floor price that's increased everything (SP 04)

When asked, industry informants offer a range of regionally specific observations on public perceptions of the MUP. An industry informant based in Katherine for example states that the MUP does have an impact on the public but that people do understand the need for the policy.

...I mean people understand that the government are trying something as part of their – it's like trying to help with the issues of alcohol in the Territory. (PI 40)

A Darwin industry key informant proposes that the MUP has a number of positive aspects.

On a store level. It's doing two things. So the people who were verging on the edge of becoming alcoholics, just normal people, business people et cetera, and things like that, they have cut back their drinking because of the increase. So I think it's a better thing for the community as a whole. And I also think the people who were drinking cheap shit before are now drinking better quality stuff as well. So they're actually not complaining about it all the time. (Licensee 1)

Another informant states that it is difficult to assess the impact of the MUP over such a short period of time:

Policing availability in particular areas was going on at the time up here...even the weather has an affect because the roads aren't open for example for particular communities...and that has an effect up here as well. So, it's quite a bit of a rollercoaster it's very hard to attribute what I'm seeing over a particular short period of time and one year is probably not enough I would think to look at the minimum floor price effect (Police 06)

4.3.4 ALCOHOL POLICIES AND GEOGRAPHIC DISPLACEMENT/MIGRATION

Some key informants believed that the current alcohol policies in the NT have contributed to geographic displacement, although this appears to be in contrast to the available data for rehabilitation treatment in Darwin and offences in Mt Isa. It may be that this informant is describing a different group of people.

People got to travel and move wherever they want, that's fine, they should be encouraged to, you know, get around and have a look but the displacement of those communities. The short term gains that happened by getting problem drinkers out of the community and there seems considerable decreases in the offences against the person and hospitalisation rates, that's all fantastic but the fabric of those communities is getting, getting absolutely smashed and you know, large portions of their people are living up here and inevitably the husband or wife might come up to Darwin and in the relationship and then the other partner in that relationship comes looking for them (Police PI 08)

Or a movement from Alice Springs to towns such as Port Augusta or Mt Isa, as suggested by this informant.

...yeah I mean there, on a smaller scale so the way, the movement we've seen, it that people move away from bottle shops take-away to on-license... But in terms of movement; people in and out of region, yes the BDR and everything else sort of pushed people to, you know out of Alice Springs to Port Augusta and Mount Isa, depends on which community they come from. I don't think it's pushed people like Alice Springs residents... I don't think many of them have been displaced, but it's the people from the communities so if they come from communities south of Alice Springs usually they have links, ties, family ties with South Australia. So I think Port Augusta you know that's where they go, if they from north, east of Alice Springs they go to Mount Isa...just because it's easier to get alcohol now. (PI 09)

As the informant suggests, there has always been a degree of movement between these areas, especially in relation to visiting family. The currently available data (beyond Mt Isa crime data and

rehabilitation treatment data) is not able to tell us if there has been a change over time and this obviously requires more information from a range of other sources to paint the whole picture.

4.3.5 ALCOHOL POLICIES AND SECONDARY SUPPLY

Accessing alcohol via friend, family, community or other networks has been highlighted in previous evaluations of the BDR and especially within the context of PALIs. On the whole, key informants did not report that secondary supply was impacted by MUP, but rather the impacts of all of the supply reduction measures, of which MUP is the latest. Secondary supply in Tennant Creek came mostly from people accessing alcohol from Mt Isa, Queensland. Rather than moving to Mt Isa or elsewhere, people were simply willing to travel long distances (around a 12 hour return drive) to purchase alcohol:

...and it's so much so Tennant Creek people are prepared to drive to Mount Isa to access alcohol....and then as far- I was saying earlier there doesn't appear to be too much coordinated secondary supply, those sorts of places have a little bit more and so far that people are prepared to drive to Mount Isa and do a load up and drive back to the community and off-lay it. But it's not a huge issue, people don't have to care what they pay, if it means husband and wife sacrifice....they'll mean to by the drink, they'll buy, they don't care. It doesn't matter what you put the figure to, if they can access that amount of money, they'll purchase it (PI 08)

Some key informants note that alcohol is sometimes obtained through a secondary supplier. For example:

Secondary supply occurs in- your mate goes to the bottle shop and gets a carton of beer and you share that and you know that's – people think that there's these people going out there and-and reversing up with trailer loads and going out and selling it on the sly (PI 08)

Others were aware of larger scale secondary supply. A service provider reports:

Definitely out in the [remote] community we see a lot of grog running. That's the big issue. Huge issue. Because they're dry areas....a lot of it comes from Adelaide River or Darwin...So you know there already a lot of them are related and there's a community economy there. So while it may reduce maybe one bottle less that they can buy with their pay there's still going to be someone's payday the next day who can buy more. (SP 15)

4.3.6 ALCOHOL POLICIES AND USE OF OTHER DRUGS

Some service provider interviewees noted a recent increase in methamphetamine use among their client group, however, they did not explicitly link this change to recent alcohol policy changes in the NT. One service provider reported that although there is some discussion of other drug substitution, they are not seeing this.

... and again that sort of very anecdotally but a bunch of colleagues and peers in a range of social work services all talk about the increase in the use of those sort of stimulant drugs, the Ice, the speedy stuff....people aren't switching from alcohol to other drugs... .. not really what people are telling us... (SP 12)

However, a different service provider mentions a rise in methamphetamine use and an increase in clients presenting for that:

We've definitely seen a rise in methamphetamine use it's not to the point the media would have you believe, it's not to the point where it's an epidemic or anything. The harms have certainly increased, looking at the populations that we're servicing. And our service...does focus on providing services to people with methamphetamine issues. We are seeing an increase in people presenting for that. (SP 15)

Indeed, the only available data from the Illicit Drug Reporting System suggests that there is an increase in reported methamphetamine use in the injecting cohort they normally interview, almost none of whom are daily drinkers.

For service providers this drug substitution is considered to be a complex issue:

But we do know when we're looking at methamphetamine use that other substance use typically will reduce. There's some conflicting stuff around alcohol, now I've seen studies that say alcohol use can, there's like a positive correlation between alcohol use and methamphetamine use and there's a negative correlation between cannabis use and methamphetamine use. But I'm not sure because a lot of people that we do assessments for who have indicated that methamphetamine is their main drug of choice have reported their past history that they used to drink, they used to smoke cannabis. It's not what they're doing now, so there seems to be a bit of anecdotal evidence. (SP 12)

4.3.7 KEY INFORMANT INTERVIEWS SUMMARY

Overall, key informants report strong impacts across the Territory from the three main policy supply reduction interventions (MUP, PALIs/POSIs and the BDR). However, most cultural behaviours, such as alcohol, takes time to change. Smoking trends took over 60 years to reach current levels. In this context, this one year point after the MUP implementation and two years since BDR, means that it is still early in the culture-change timeline and some of the apparent trends might change in the mid-term. It was also clear that the measures are having a different impact in different areas, especially because of the different laws and conditions in Darwin meaning that PALIs have not been implemented there. This ultimately means that alcohol is much more available at population level. Key informants generally reported that the MUP was accepted by the NT community and that the vast majority of alcohol sales/customers are unaffected.

5 SUMMARY AND DISCUSSION

This section summarises and discusses the findings relating to the introduction of the alcohol minimum unit price in the Northern Territory. It synthesises and triangulates the epidemiological, survey, and interview data to provide an overview of how the MUP may have impacted on alcohol consumption and its related behaviour, including the harm to others from problem drinking. We also discuss the key issues which might be affecting apparent trends in the data such as changes in service delivery, other government policy or broader social trends. We will also consider the important interactions with other alcohol reform measures across the NT and especially the combined impacts of such reforms.

The below discussion is structured around four key elements: data and intervention considerations; impacts of the minimum unit price in differing regional contexts; potential confounding issues, and; considerations for the long-term MUP evaluation.

5.1 IMPACTS OF THE MINIMUM UNIT PRICE IN DIFFERING REGIONAL CONTEXTS

For all of the reported findings, it is worth considering these were achieved by the addition of successive elements (i.e., BDR, POSIs/PALIs, MUP). This is in line previous public health programmes such as those for anti-smoking and drink-driving where downward trends were continued and bolstered by adding interventions to achieve continued success. While specific interventions might begin a downward trend, it is reasonable to expect that all interventions have a limited effect/duration and that achieving a longer term trend, rather than a simple step effect, requires ongoing intervention.

5.1.1 NORTHERN TERRITORY

5.1.1.1 ADMINISTRATIVE DATA

The data presented above shows a number of trends which have coincided with the implementation of the MUP in October 2018. While it is expected that trends will settle over the next two years, these findings identify potential benefits from the MUP which may be either in concert with or adding to the whole supply reduction package. The MUP has coincided with statistically significant reductions in:

- cask wine per capita being consumed in the NT
- alcohol-related assaults per 10,000 people
- protective custody episodes per 10,000 people
- alcohol-related ambulance attendances per 10,000 people
- alcohol-related hospital admissions per 10,000 people

- Sobering Up Shelter admissions (an initial decrease, followed by a gradual increase over time) per 10,000 people
- alcohol-related crash injuries and fatalities per 10,000 people
- the investigations of child protection notifications
- the number of child protection orders
- the number of out of home care cases

Further findings include stable territory wide trends for school attendance, liquor licence numbers, and tourism. While there has been some shifting to other beverages, the overall trend continues to be a significant decline in use across the territory. There was also some evidence of a temporary increase in the rate of other substance use ED presentations. However, this increase was very small in relation to the decrease in rate of alcohol-related ED presentations and the rate of other substance use presentations exhibited a continued decline over time after that initial increase.

There were reductions in the number of cases per month for child protection data (investigations, protection orders, and out of home care). However, reporting systems for child protection have changed (see <https://www.abc.net.au/news/2019-10-24/territory-families-report-shows-spike-in-child-investigations/11635664>). The system now has one investigation listed for multiple issues relating to one child/case rather than opening a new investigation each time, resulting in fewer notifications being investigated.

The territory wide findings are influenced to a degree by the deployment of PALIs and the introduction of the BDR within the previous year. However, within Darwin, PALIs cannot be used because there are no relevant alcohol bans in place from the Federal government. Therefore, we are able to get a sense of the impact of the MUP without PALIs in place, although there are a number of other important considerations: 1) the BDR is still in place in Darwin, but can be assumed to be a relatively stable influence; 2) as a much larger city with tourism, the ability to control alcohol supply is a much greater challenge – even for people on the BDR; 3) in addition to the regular flow of tourists and people from remote communities throughout the year, some people may have visited Darwin because of the absence of PALIs.

5.1.1.2 PRICE MONITORING DATA

Based on the price monitoring data presented (Mojica-Perez et al., in press), the MUP policy in the NT appeared to largely only affect prices of the targeted beverages (i.e., those sold below \$1.30 per standard drink prior to the intervention). Few changes were observed in any of the higher priced beverage groups likely to be attributable to the MUP. In general, the MUP appears to be working as planned – prices for most categories of beverages were unaffected, but the prices of cheap beer, bottled wine, and cider all shifted to or above the \$1.30 per standard drink minimum.

5.1.1.3 TELEPHONE SURVEY

The data presented here provide the first representative survey estimates of public support for major Northern Territory alcohol policies, finding high levels of support for MUP and PALIs and very high levels of support for the BDR and mandatory treatment. This fits in with the broader literature that suggests that policies targeting ‘problem’ populations (young people, dependent drinkers) are more popular than policies likely to be experienced by broader groups of the population (Callinan, Room, & Livingston, 2014). This is further illustrated by the stronger levels of opposition to MUP from respondents more likely to be affected by it (heavy drinkers). In terms of alcohol consumption, we found relatively unsurprising estimates of various drinking practices in the NT, with rates consistently higher than reported for other jurisdictions in national surveys (Australian Institute of Health and Welfare, 2016). The only striking socio-demographic difference was the markedly higher levels of drinking in Darwin compared with Alice Springs. Future research to confirm these differences is necessary. Our findings may represent vagaries of our particular sample, especially as the number of respondents interviewed in Alice Springs was relatively low (n=185). This is reflected in the very wide confidence intervals for prevalence estimates for Alice Springs. Additionally, our final consent rate for the telephone survey was 15.1%, reflecting the ongoing challenges of recruiting survey samples via telephone. Future research should consider the household sampling approach used in the NDSHS, but given the time constraints of this initial evaluation, a phone survey was all that was feasible.

When looking at change over time, we found little evidence of a major effect of MUP on drinking in this sample at this early stage. This is broadly in line with expectations – MUP affected a relatively small range of products including those favoured particularly by heavy drinkers, who are generally difficult to recruit into population surveys (e.g., Meiklejohn, Connor, & Kypri, 2012). We did find evidence of a sharp decline in the experience of physical abuse from people affected by alcohol, which is suggestive of improvements in alcohol-related violence since 2016. These changes occurred in both Darwin and the rest of the Northern Territory, meaning that the MUP may have played a role rather than regionally-specific policies like PALIs. The three year evaluation will be able to show if this downward trend remains.

In general, these findings provide a useful set of baseline measures on alcohol consumption, attitudes and experience of alcohol-related harms to allow us to continue to monitor changes over time as the effects of the various NT policies take effect. We present some illustrative comparisons here with 2016 NDSHS data, but these results need to be treated with extreme caution – although the two surveys provide overall alcohol consumption estimates broadly consistent with sales data (see methods chapter), there are likely other variations in samples between a household recruitment approach and a telephone approach that mean comparisons are problematic, particularly within sub-populations (e.g. young people, Indigenous people). In general, these results should be seen as useful

contextual information alongside the more detailed analyses presented of administrative data sources in the rest of this report.

5.1.1.4 DISCUSSION OF TERRITORY WIDE FINDINGS

The data presented show that the trends for alcohol consumption and related harms are mostly demonstrating significant reductions, although there are some variables where there is no change. It is also clear from the range of data presented that at this one year point, while trends are mostly promising, more time is required for trends to settle down following the introduction of so many measures in the past two years.

These findings are consistent with those from other countries where a MUP has been introduced, despite this being a much smaller population, with substantially more complex problems over a much more geographically diverse area. Further, the reality that the BDR and PALIs are also in place means that the MUP has cemented or enhanced the downward trends started by these supply reduction interventions. As reported in the introduction, evidence from Canada has shown that adjustments to minimum alcohol prices in British Columbia, saw significantly reduced consumption, alcohol attributable deaths and other harms.

5.1.2 DARWIN AND PALMERSTON

As outlined in the logic map (see Table 2), while there are a number of confounding elements at play, Darwin and Palmerston are two sites where the impacts of the MUP are likely to be mostly due to its impact alone, although it is crucial to recall that it has an additional impact in all of the other sites and it may well be that MUP has more impact as a part of a package, than on its own. It is also important to remember that as the territory capital and main port, there are many more sources of alcohol and types of alcohol consumption which may be more or less amenable to change. Finally, it is also valuable to remember that the population movement due to extreme seasonal weather that has traditionally occurred means some trends may not become apparent for two or more years.

Considering the above qualifications, there a number of positive signs related to the introduction of the MUP. There were significant declines in:

- wholesale supply of cask wine and cider per capita
- alcohol-related assault offences per 10,000 people
- protective custody episodes per 10,000 people
- alcohol-related ambulance attendances per 10,000 people
- alcohol-related hospital admissions per 10,000 people, and
- police protective custodies per 10,000 people

There was no apparent reduction in the rate of alcohol-related ED presentations, but this may be attributable to the new Palmerston Hospital ED opening in late 2018. It may be that the addition of a second ED in the Darwin and Palmerston region has reduced waiting times and increased access, and therefore, more people are now going to the ED. However, this is difficult to ascertain and other possibilities are equally plausible.

Darwin as a whole has also seen a gradual decline in the rate of treatment episodes. This would indicate that there are perhaps fewer people requiring such treatment.

Of relevance, there was no observable specific impact beyond the continuing trends for wholesale alcohol supply per capita within nightlife venues of Darwin; usual seasonal trends continued. This is in line with the logic model and previous research into nightlife as a small increase in the price of the cheapest alcohol available is not likely to impact nightlife (Miller et al., 2019) due to venues usually selling at a much higher cost than packaged liquor outlets (Miller et al., 2012).

In summary, while trends are less pronounced than the rest of the Territory, there have been a substantial number of significant improvements in alcohol-related harm in the Darwin-Palmerston region which coincide with the implementation of the MUP.

5.1.3 ALICE SPRINGS

The combined suite of alcohol policies introduced in the NT have seen a significant step decrease in overall alcohol wholesale supply per capita, and an unprecedented reduction in the rate of alcohol-related harm in Alice Springs. While the introduction of BDR and PALIs have been major factors in this, our analysis demonstrates that the MUP has also made a significant added improvement, further reducing harm associated with alcohol consumption. Specifically, since October 2018 there have been declines in:

- total wholesale supply of alcohol, bottled wine, and mid strength beer per capita
- alcohol-related assault offences per 10,000 people
- protective custody episodes per 10,000 people
- alcohol-related ambulance attendances per 10,000 people
- alcohol-related ED presentations per 10,000 people
- alcohol-related hospital admissions per 10,000 people
- assault-related hospital admissions per 10,000 people
- Sobering Up Shelter admissions (initial decrease, followed by a gradual increase) per 10,000 people, and
- the number of homicides.

5.1.4 KATHERINE

The combined suite of alcohol policies introduced in the NT have seen a significant decrease in overall alcohol wholesale supply per capita, and some reductions in alcohol-related harm in Katherine. There was a decrease in the wholesale supply of cask wine per capita, but an increase in light beer. Specific reductions in harm included:

- alcohol-related assault offences per 10,000 people,
- alcohol-related ambulance attendances per 10,000 people, and
- alcohol-related hospital admissions per 10,000 people.

It may be that proximity to Darwin and greater access to alcohol may be reducing the comparative impact of measures in Katherine, but the policy changes are having a discernible positive impact and it remains to be seen whether the gains made will be consolidated or increased as the community adapts to the policies.

5.1.5 TENNANT CREEK

Tennant Creek has suffered extraordinary levels of challenges in recent times, of which alcohol plays a significant part. The scale of alcohol-related harm in Tennant Creek has seen much more stringent restrictions put in place than most communities in the NT. As of February 2018, takeaway alcohol is only allowed to be sold for three hours per day (with limits on the amount that can be purchased), and not at all on Sunday (see <https://nt.gov.au/law/alcohol/buying-alcohol/buying-takeaway-alcohol/takeaway-alcohol-in-tennant-creek>). Despite this, very substantial alcohol sales still occur every day and consumption and harm remains disproportionately high, although there have been some improvements. This is reflected in the lack of change in the overall per capita wholesale supply of alcohol per capita, with a gradual increase in the supply of mid strength beer per capita noted.

The introduction of the MUP coincided with decreases in the rate of alcohol-related ambulance attendances with a subsequent rebound, and a decrease in the rate of alcohol-related ED presentations. Other indicators of harm have been stable or continue a gradual downward trend.

Key informants suggested that a substantial part of the picture in Tennant Creek is grog running from Mt Isa, whereby people drive there to purchase alcohol and bring it back. They identified that a load of alcohol arriving in town has a clear impact on the levels of domestic violence, school attendance and ED attendances. It is reported that most of this is more based on friendship networks, rather than being a commercial operation. While some people have suggested that there is longer term migration to Mt Isa, there is no available evidence of such a pattern and crime levels there have been stable or decreasing, suggesting that it is not enough to impact on those trends.

5.1.6 REST OF NORTHERN TERRITORY

Trends across the rest of the Northern Territory vary substantially and are usually too small to conduct reliable statistical analyses. Further, as mentioned previously, there are a great many conditions in place in different jurisdiction in addition to the recent policy changes, including the MUP, which affect the amount of alcohol people can purchase, and often also limit the strength of that alcohol as well. In what may be a promising trend, there were declines in the supply of cask wine per capita a, but an increase in the supply of cider, premixed drinks, full strength beer, and light beer per capita. Despite the wide variability of context and harm, the introduction of the MUP has coincided with reductions in the rate of alcohol-related assault offences, however all other outcomes were either stable or too small to be statistically analysed.

These trends are in line with expectations outlined in the logic model as the MUP only affected the very cheapest alcohol available, and the price of alcohol in smaller, more remote communities in the NT was already much higher and therefore unaffected. Despite this, the positive outcome are promising and more time and new data sources are required to gain further understanding of what has occurred in these communities.

5.2 DATA AND INTERVENTION CONSIDERATIONS

Data presented in this report provide an important initial examination of the effects of introducing a MUP in the Northern Territory. However, with only 12 months of data post-MUP (with some data sources not available up to the 12 month point), findings presented in this report must be considered preliminary for the reasons outlined below.

Seasonal effects: One of the very strong findings in this report is that alcohol sales have very consistent seasonal trends, with sales peaking in the third quarter of each year and being lowest in the first quarter. This reinforces the importance of considering longer term trends, especially for those datasets where less than twelve months data post-MUP is available (such as the sales data), or that were conducted at a specific time of year (such as the household surveys). Some of this seasonal variation may be related to long-standing seasonal population movement around the wet and dry seasons, especially in the Top End. Key informant interviews suggest that there is some displacement of people due to MUP or seasonal effects, but we require objective data to confirm if this is apparent.

Multiple interventions: The MUP was introduced in the context of other, ongoing interventions across the Territory (such as the BDR and PALIs) and local initiatives (e.g., The Plan to fix Antisocial Behaviour in Darwin). For instance, the PALIs may confiscate alcohol from people who do not have a legal place in which to drink it, thus operating on people who have purchased takeaway alcohol regardless of how much they purchased. As such, accounting for interventions such as PALIs/POSIs using NT Police coverage data (which provides roll-out times and coverage within each location) is ideal, however, we did not receive the data in time for inclusion in this report. Addressing alcohol consumption is a complex process which the evidence base has consistently shown requires multiple

responses across different populations to reduce the global burden of harm in communities. In line with this, the range of responses will affect different groups of drinkers in different communities in different ways.

Administrative data reporting practices: While administrative data provide a rich source of information, there are some limitations to their use. For instance, alcohol-related assaults are defined as alcohol-related by police at the time of the incident. The way in this occurs may vary from incident to incident and across time, although the strong role of alcohol in crime in the Northern Territory means that the flag is more likely than other jurisdictions to be filled in consistently. Further, emergency department and hospital admissions ICD-10 coding systems may underrepresent the problems within the wider community (for instance T74, maltreatment syndromes). In addition, new reporting systems (such as the new ambulance reporting system introduced in April 2018) can make examinations of trends across time more complex.

Community-specific factors: The unique geography and weather of the NT bring with it a number of challenges. In particular, the NT has many remote and very small communities. Small populations could result in unstable trends and rates, and some communities can be heavily influenced by the existence of one rogue trader or strong community leadership. Examples of both were discussed by key informants.

Subjectivity: Key informant interviews are an informative element that have been a core component of previous successful projects (Miller et al., 2019; Miller et al., 2012). They enable insight into potential benefits and side-effects of policy which are not apparent from other data sources (Miller et al., 2010). By its very nature however, interview data is experience; opinion; and perception based. While we have made efforts to report on experiences only, the possible reliance of key informants on opinion and anecdote has to be considered.

5.3 POTENTIAL CONFOUNDING ISSUES

The size and complexity of intervening in alcohol policy across an entire jurisdiction and with multiple interventions in place, often varying by site means that there are some important issues which have been identified in this study and which will inform the larger three-year evaluation. For example, the NT Alcohol Harm Minimisation Action Plan 2018-2019 which extends beyond the policies to include responses to other Riley Review recommendations.

Intersecting NT policies that may have an impact include:

- *NT Domestic, Family and Sexual Violence Reduction Framework 2018-2028*
- *Safe, Thriving and Connected: Generational Change for Children and Families 2018-2023*
- *NT Suicide Prevention Framework 2018-2023*
- *Addressing Fetal Alcohol Spectrum Disorder (FASD) in the Northern Territory 2018-2024*

- *NT Chronic Conditions Prevention and Management Strategy 2010-2020*
- *Pathways out of Homelessness: NT Homelessness Reduction Strategy 2018-2023*

There are also other strategies relating to early childhood and education that may also have an impact.

5.3.1 DISRUPTED TRENDS AND CONSIDERING A PACKAGE RESPONSE

A vast body of evidence has shown that there are no silver bullets to reducing alcohol-related harm. This evidence consistently recommends that governments implement a range of measures to de-normalise risky drinking and act on people in different settings and on different behavioural cues. Interventions also need to target people who drink for different reasons and those who come from different socio-economic backgrounds.

The MUP has been in place for one year and was the third of four major changes made in liquor policy in the NT. The subsequent re-writing to the NT Liquor Act will have further implications in terms of the supply of alcohol. Similarly, Policy changes in other jurisdictions may also impact the availability of alcohol in the NT.

The ongoing evaluation of these supply reduction interventions will assess not only whether each individual measure achieves a single decline, but whether they achieve an ongoing or downward slope trajectory, and what factors might limit the impact of each measure, or the combined impact of the measures over time. While it is likely that the supply reduction interventions will ultimately have their own floor effect, it is important that future evaluations use appropriate modelling to determine whether there is an additional benefit to having multiple interventions and whether such programs of change have an added benefit in terms of community responses. Thereby a package of policy interventions may achieve more than the sum of its parts and act as culture change mechanisms by signalling the importance of such issues to the wider community.

5.3.2 DISPLACEMENT

Several key informants believed that there has been some displacement of drinkers to either Darwin, Mt Isa or further afield, but also highlighted that there has always been some migration between these different areas. None of the informants could supply data which had tracked this issue over time. The project investigated a number of available datasets to see if some indication of this trend was observable. Both police-recorded offences from Mt Isa, and rehabilitation clinic data from across the NT suggests there has been no observable changes in crime in Mt Isa, nor any change in where people have come from to access rehabilitation treatment. However, it is possible that these trends do not describe the groups of people that might be moving due to differences in their socioeconomic or drinking profiles. It is important to consider that displacement is unlikely to be related to the MUP alone, because the cost of alcohol is an incremental cost compared to the upheaval of moving towns. .

There is a need for further information around the movement of people before and after the implementation of the MUP and how it works in with the other measures in place in the NT.

5.3.3 SUBSTITUTION

While there has been some moves by desperate drinkers to the use of non-liquor alcohol products (such as methylated spirits or mouthwash), there is unfortunately no data available to document these trends and when they started occurring. The level of desperation in drinking such products does not generally fit with the price of liquor however, rather it suggests these are people who are searching for any liquor. As such, we conclude that the MUP is unlikely to have impacted upon this behaviour, but that it is more likely to come from the BDR and PALIs. Unfortunately, research from overseas does not seem to have identified this as an issue, although a certain amount of beverage change is well-documented and fits with the logic model.

Although some key informants, industry and media commentators have proposed that drinkers might move to other substances, there is no reliable evidence currently available to support this. While there have definitely been increases in cannabis use and methamphetamine use in the most recent Illicit Drug Reporting System injecting users cohort (see <https://ndarc.med.unsw.edu.au/project/illicit-drug-reporting-system-idrs>), there remains no other signs of increased drug use including data from the population surveys, and indeed there have been significant declines in other substance use admissions at hospitals across the NT.

Finally, another issue which was reported as impacting the effectiveness of the MUP was secondary supply and grog running from other states, or indeed sometimes venues from neighbouring sites which have less restrictions. The NT government has responded to these challenges by specific policing and licensing responses and it will be important to document the impact of these in the three year evaluation.

5.4 CONSIDERATIONS FOR FUTURE RESEARCH

Throughout this report we have identified a range of issues where there is incomplete or missing data. Looking ahead to the three-year evaluation, there are a number of key questions to be addressed.

The survey methods used on this study, along with the NDSHS, provided a baseline of drinking behaviour in the NT which contains important information for understanding the mid and long term impacts of the MUP. It is recommended that the telephone survey be replicated in 2020 to provide a comparative dataset.

As discussed above, while it is unlikely that the MUP is a major factor in displacement of drinkers, it is important to gather evidence to be confident this is the case. Such evidence should include quantitative data on people's movement within and out of the NT, as well as qualitative interviews

with people attending services around the NT to assess how their behaviour has been impacted by the MUP. Quantitative data should ideally be drawn from social housing, Centrelink, support agencies and police in Queensland and Western Australia.

6 CONCLUSIONS

This report has documented a wide range of benefits to the community which have coincided with the implementation of the MUP in the NT. The MUP has complemented the BDR and PALIs in the NT, significantly adding to the impact of these measures to further reduce harm in many communities. The research found evidence of a sharp decline in the experience of physical abuse from people affected by alcohol, which is suggestive of improvements in alcohol-related violence since 2016. These changes occurred in both Darwin and the rest of the Northern Territory, suggesting that the MUP may have played a role rather than regionally-specific policies like PALIs.

The evaluation of each stand-alone policy initiative in a comprehensive response can pose challenges in terms of the introduction of multiple policy initiatives concurrently and/or within quick succession. However, the methods used have allowed for an assessment of changes across a range of outcomes and the staggered implementation of different policy elements in different locations allows for some teasing out of differential impacts, if they exist.

Per capita alcohol wholesale supply data and surveys highlight that the MUP achieved its goal of specifically targeting cask wine in many towns. Most other beverages were not affected.

Business generally reported that implementation of the legislation was straightforward and that turnover/business has improved or remained stable. Tourism in the NT has not been affected by the introduction of the MUP, nor has the wholesale supply to nightlife venues in Darwin, holding important information for other jurisdictions in terms of understanding the benefits of the legislation for the community.

This evaluation of one-year impact has highlighted the need for more in-depth data collection from a range of data sources, but has also highlighted that currently available data can paint a strong picture of the impacts across the Northern Territory.

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8 APPENDIX 1: SOBERING UP SHELTER – DARWIN AND TENNANT CREEK

A total of 43,761 Sobering Up Shelter admissions in Darwin were recorded across the time period; 62% were male, 99% identified as Aboriginal or Torres Strait Islander, and the average age was 44 years.

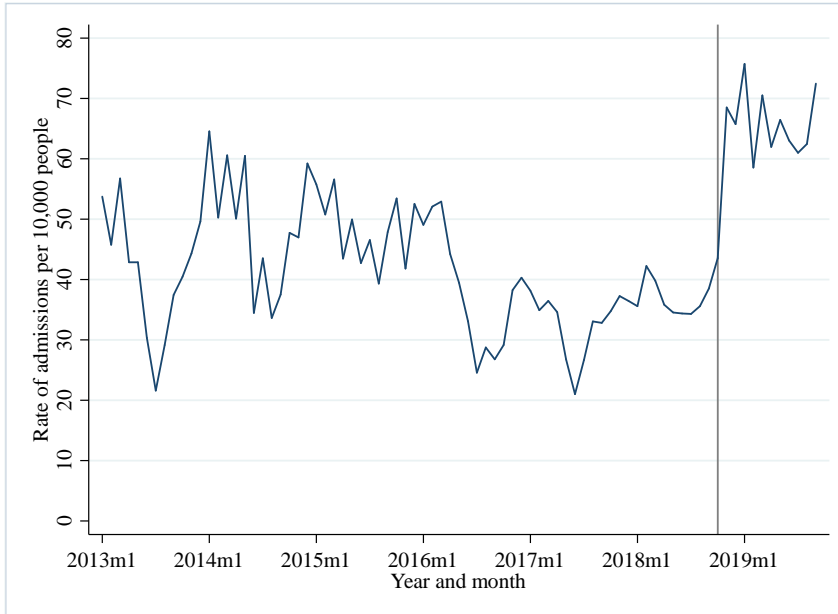


Figure 121 Rate of Sobering Up Shelter admissions per 10,000 people, Darwin

A total of 10,185 Sobering Up Shelter admissions in Tennant Creek were recorded across the time period; 68% were male, 99% identified as Aboriginal or Torres Strait Islander, and the average age was 43 years.

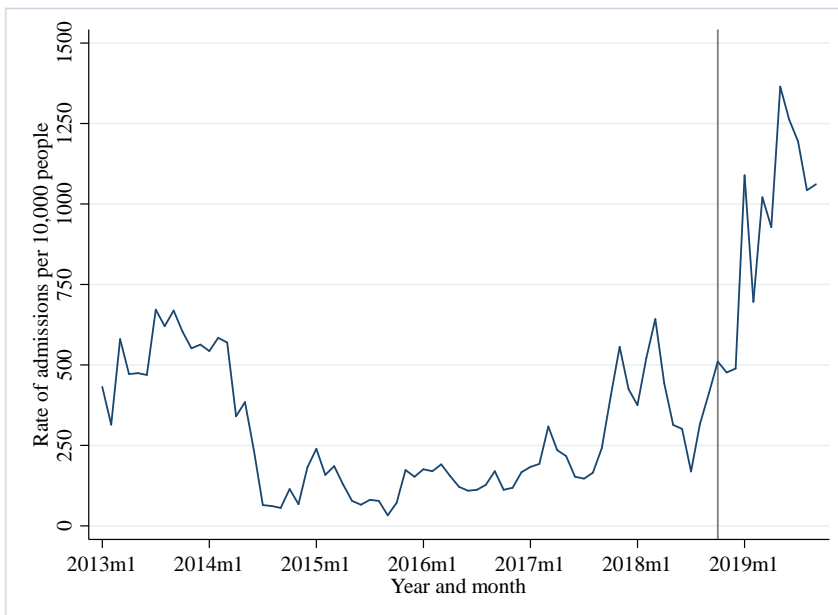


Figure 122 Rate of Sobering Up Shelter admissions per 10,000 people, Tennant Creek

9 APPENDIX 2: POPULATION TELEPHONE SURVEY

INTRODUCTION

Landline introduction – Landline sample

Good [morning/afternoon/evening]. This is [name] from Roy Morgan Research calling on behalf of Deakin University. We are conducting a study into an important health and wellbeing issue in the NT.

May I speak to the person in your household, 18 years or older, who had the most recent birthday.

Mobile introduction – Mobile sample

Good [morning/afternoon/evening]. This is [name] from Roy Morgan Research calling on behalf of Deakin University. We are conducting a study into an important health and wellbeing issue in the NT and are speaking to adults aged 18 years and older.

Is it convenient to talk now?

If agreed

Thanks. Your responses are strictly confidential and the survey will take between 10 and 15 minutes on average to complete, depending on your answers.

SCREENING AND QUOTA BUILDING

ASK ALL:

[Single]

Q1. May I just confirm you are currently living in the Northern Territory?

1. YES
2. NO

IF NOT LIVING IN NT (Code 2 on Q1) SAY:

Thanks but this survey is for Northern Territory residents only. Thank you for your time.

[Record sample disposition as Non-Northern Territory resident]

[00-999]

Q2. What is your current age? (i.e. the age you turned at your last birthday)

Record Number

(998 REFUSED, 999 DON'T KNOW)

IF UNDER 18:

I'm sorry but we need to speak with people aged 18 years and over for this study.

[Record sample disposition as Under 18]

IF EXACT AGE NOT PROVIDED (Code 998 or 999 on Q2) ASK:

[Single]

Q2a No worries, could you indicate whether you fall into any of the following broad age categories?

READ OUT

1 Under 18

2 18-24

3 25-29

4 30-34

5 35-39

6 40-44

7 45-49

8 50-54

9 55-59

10 60-64

11 65 or more

IF REFUSED ENTER CODE 98. IF DON'T KNOW ENTER CODE 99

IF UNDER 18:

I'm sorry but we need to speak with people aged 18 years and over for this study.

[Record sample disposition as under 18)]

IF DON'T KNOW/REFUSED (Code 98 or 99 on Q2a) SAY:

Thank you for your time, but we need this information to continue with this survey.

[Record sample disposition as age not provided]

HIDDEN VARIABLE

AGE_RANGE

- 1 18-34
- 2 35-49
- 3 50-64
- 4 65+

[Display as quota variable]

SECTION A: DEMOGRAPHICS

ASK ALL:

[Single]

Q3 Record Sex

- 1 MALE
- 2 FEMALE

[Display as quota variable]

HIDDEN VARIBALE

AGE_SEX

- 1. Male 18-34
- 2. Male 35-49
- 3. Male 50-64
- 4. Male 65+
- 5. Female 18-34
- 6. Female 35-49
- 7. Female 50-64
- 8. Female 65+

[Display as quota variable]

[Single]

Q4. Which one of the following best describes your present marital status?

READ OUT

1. Never married
2. Widowed
3. Divorced
4. Separated but not divorced
5. Married (including de facto, or living with life partner)

[Single]

Q5. Are you of Aboriginal or Torres Strait Islander origin?

1. NO
2. YES, ABORIGINAL
3. YES, TORRES STRAIT ISLANDER
4. YES, BOTH ABORIGINAL AND TORRES STRAIT ISLANDER

HIDDEN VARIABLE

ATSI

1. ATSI (codes 2-4 on Q5)
2. Not ATSI (code 1 on Q5)

[Display as quota variable]

[00-99]

Q6. Including yourself, how many people aged 18 and over live in this household?

Record Number: (1-25)

IF REFUSED ENTER CODE 98. IF DON'T KNOW ENTER CODE 99

IF DON'T KNOW/REFUSED (Code 98 OR 99 on Q6) SAY:

Thank you for your time, but we need this information to continue with this survey.

[Single]

Q7. Are there any dependent children in this household? (Dependent children are defined as children aged 0 – 17, or older children who are still financially dependent, such as full-time students)

1. YES

2. NO

IF CALLED ON LANDLINE ASK:

[0-99]

Q8a Apart from this line that I'm calling you on, how many other telephone landlines are there in this household?

Record Number (0-9)

IF REFUSED ENTER CODE 98. IF DON'T KNOW ENTER CODE 99

[Single]

Q8b Do you personally have a mobile phone?

1 YES

2 NO

IF REFUSED ENTER CODE 98. IF DON'T KNOW ENTER CODE 99

IF DON'T KNOW/REFUSED (Code 98 OR 99 on Q8b) SAY:

Thank you for your time, but we need this information to continue with this survey.

IF CALLED ON MOBILE ASK:

[Single]

Q8c Does your household have a landline telephone?

1 YES

2 NO

IF REFUSED ENTER CODE 98. IF DON'T KNOW ENTER CODE 99

IF DON'T KNOW/REFUSED (Code 98 OR 99 on Q8c) SAY:

Thank you for your time, but we need this information to continue with this survey.

IF HAS A LANDLINE (CODE 1 ON Q8c) ASK:

[0-99]

Q8d How many land telephone lines does your household have?

Record Number (1-9)

IF REFUSED ENTER CODE 98. IF DON'T KNOW ENTER CODE 99

IF DON'T KNOW/REFUSED (Code 98 OR 99 on Q8d) SAY:

Thank you for your time, but we need this information to continue with this survey.

HIDDEN VARIABLE

LANDLINE_NO

Record number on Q8a+1

If code 98 or 99 on Q6a – Record number as 1

If code 2 on Q8c – Record number as 0

If code 1 on Q8c – Record number on Q8d

HIDDEN VARIABLE

MOBILE_NO

If called on mobile – Record number as 1

If called on landline – Record 1 if Q8b code 1; Record 0 if Q8b code 2

HIDDEN VARIABLE

PHONE_STATUS

Mobile only – MOBILE_NO =1 and LANDLINE_NO = 0

Landline only – MOBILE_NO = 0 and LANDLINE_NO >=1

Both Mobile and Landline – MOBILE_NO =1 and LANDLINE_NO >=1

[Display as quota variable]

[Single]

Q9 What town/suburb in NT do you live in?

INSERT PULL DOWN LIST OF NORTHERN TERRITORY LOCALITIES [Provided in separate spreadsheet – NT Drug & Alcohol Survey 2019 – Quotas.xlsx]

997 OTHER - Specify

998 REFUSED

999 DON'T KNOW

IF OTHER/DON'T KNOW/REFUSED SUBURB/LOCALITY (codes 997-999 on Q9), ASK:

[0000-9999]

Q9a What is the postcode where you live?

RECORD POSTCODE [Provided in separate spreadsheet - legal postcodes for NT commence 08__ or 4825 – NT Drug & Alcohol Survey 2019 – Quotas.xlsx]

9998 REFUSED

9999 DON'T KNOW

IF DON'T KNOW/REFUSED (Code 9998 or 9999 on Q9a) SAY:

Thank you for your time, but we need this information to continue with this survey.

HIDDEN VARIABLE

QUOTA_AREA

1. Darwin/Palmerston
2. Alice Springs
3. Katherine
4. Rest of NT

[Display as quota variable]

QUESTIONNAIRE BODY

SECTION B: ALCOHOL QUESTIONS

ASK ALL:

[Single]

Q10. Have you ever had a full serve of alcohol? (e.g. a glass of wine, a whole shot/nip of spirits, a glass of beer, etc.)

1. YES
2. NO

IF HAD A FULL SERVE OF ALCOHOL (Code 1 on Q10), ASK:

[Single]

Q11. Have you had an alcoholic drink of any kind in the last 12 months?

1. YES
2. NO

IF HAD ALCOHOL IN LAST 12 MTHS (Code 1 on Q11), ASK:

[Single]

Q12. In the last 12 months, how often did you have an alcoholic drink of any kind?

READ OUT

1. Every day
2. 5 to 6 days a week
3. 3 to 4 days a week
4. 1 to 2 days a week
5. 2 to 3 days a month
6. About 1 day a month
7. Less often
8. No longer drink

IF Q12=8, GO TO Q22

IF STILL DRINK ALCOHOL (codes 1-7 in Q12), ASK:

[Single]

Q13. What type of alcohol is your main drink, the one you drink most often?

READ OUT IF NECESSARY

1. Cask wine
 2. Bottled wine
 3. Regular strength beer (greater than 4% Alc/Vol)
 4. Mid strength beer (3% to 3.9% Alc/Vol)
 5. Low alcohol beer (1% to 2.9% Alc/Vol)
 6. Home-brewed beer
 7. Pre-mixed spirits in a can (e.g. UDL, Jim Beam & Cola, Woodstock)
 8. Pre-mixed spirits in a bottle (e.g. Bacardi Breezer, Vodka Cruiser, Smirnoff Ice)
 9. Bottled spirits and liqueurs (e.g. scotch, brandy, vodka, rum, Kahlua, Midori, Baileys, etc.)
 10. Cider
 11. Fortified wine, port, vermouth, sherry, etc.
 12. Other pre-mixed drinks (e.g. beer and wine based)
 13. Other alcoholic drinks - specify
98. [DO NOT READ] CAN'T SAY
99. [DO NOT READ] NO MAIN DRINK

IF STILL DRINK ALCOHOL (codes 1-7 in Q12), ASK:

USE DYNAMIC TEXT (codes 1-13 on Q13/codes 98-99 on Q13):

[Single]

Q14. [What brand of alcohol is your main drink, the one you drink most often?/ Which brand of alcohol do you drink most often?]

IF NECESSARY READ: For example, VB, Tooheys, Strongbow, Jim Beam, UDL

Provided in separate spreadsheet - Alcohol Brand List.xlsx

IF STILL DRINK ALCOHOL (codes 1-7 in Q12), ASK:

[Multiple]

Q15. What other types of alcohol do you usually drink?

READ OUT IF NECESSARY

1. Cask wine
 2. Bottled wine
 3. Regular strength beer (greater than 4% Alc/Vol)
 4. Mid strength beer (3% to 3.9% Alc/Vol)
 5. Low alcohol beer (1% to 2.9% Alc/Vol)
 6. Home-brewed beer
 7. Pre-mixed spirits in a can (e.g. UDL, Jim Beam & Cola, Woodstock)
 8. Pre-mixed spirits in a bottle (e.g. Bacardi Breezer, Vodka Cruiser, Smirnoff Ice)
 9. Bottled spirits and liqueurs (e.g. scotch, brandy, vodka, rum, Kahlua, Midori, Baileys, etc.)
 10. Cider
 11. Fortified wine, port, vermouth, sherry, etc.
 12. Other pre-mixed drinks (e.g. beer and wine based)
 13. Other alcoholic drinks - specify
98. [DO NOT READ] CAN'T SAY
99. [DO NOT READ] NO OTHER TYPES OF ALCOHOL USUALLY DRUNK

IF STILL DRINK ALCOHOL (codes 1-7 in Q12), ASK:

[Multiple]

Q16. In the last 12 months have you changed your main drink, the one you drink most often; either brand or type?

1. YES, TYPE OF DRINK
2. YES, BRAND OF DRINK
3. NO

IF CHANGED TYPE OF DRINK IN LAST 12 MTHS (Code 1 on Q16), ASK:

[Single]

Q17. Which type of alcohol used to be your main drink?

READ OUT IF NECESSARY

1. Cask wine
 2. Bottled wine
 3. Regular strength beer (greater than 4% Alc/Vol)
 4. Mid strength beer (3% to 3.9% Alc/Vol)
 5. Low alcohol beer (1% to 2.9% Alc/Vol)
 6. Home-brewed beer
 7. Pre-mixed spirits in a can (e.g. UDL, Jim Beam & Cola, Woodstock)
 8. Pre-mixed spirits in a bottle (e.g. Bacardi Breezer, Vodka Cruiser, Smirnoff Ice)
 9. Bottled spirits and liqueurs (e.g. scotch, brandy, vodka, rum, Kahlua, Midori, Baileys, etc.)
 10. Cider
 11. Fortified wine, port, vermouth, sherry, etc.
 12. Other pre-mixed drinks (e.g. beer and wine based)
 13. Other alcoholic drinks - specify
98. [DO NOT READ] CAN'T SAY
99. [DO NOT READ] NO OTHER TYPE OF ALCOHOL WAS MAIN DRINK

IF CHANGED BRAND OF DRINK IN LAST 12 MTHS (Code 2 on Q16), ASK:

[Single]

Q18. What brand of alcohol used to be your main drink?

IF NECESSARY READ: For example, VB, Tooheys, Strongbow, Jim Beam, UDL

Provided in separate spreadsheet - Alcohol Brand List.xlsx

IF STILL DRINK ALCOHOL (codes 1-7 in Q12), ASK:

[Multiple]

Q19. Where do you usually drink alcohol?

1. IN MY OWN/SPOUSE'S/PARTNER'S HOME
2. AT A FRIEND'S HOUSE
3. AT A PARTY AT SOMEONE'S HOUSE
4. AT RAVES/DANCE PARTIES
5. AT RESTAURANTS/CAFES
6. AT LICENSED PREMISES (E.G. PUBS, CLUBS)
7. AT SCHOOL, TAFE, UNIVERSITY ETC.
8. AT MY WORKPLACE
9. IN PUBLIC PLACES (E.G. PARKS, BEACHES)
10. IN A CAR OR OTHER VEHICLE
11. SOMEWHERE ELSE

98. CAN'T SAY

IF STILL DRINK ALCOHOL (codes 1-7 in Q12), ASK:

[Single]

Q20. Where do you usually obtain your alcohol?

1. PURCHASE IT MYSELF TO DRINK AT THAT VENUE (E.G. PUB, CAFÉ)
2. PURCHASE IT MYSELF TO TAKE AWAY AND DRINK ELSEWHERE
3. STEAL IT
4. FRIEND OR ACQUAINTANCE
5. BROTHER OR SISTER
6. PARENT
7. SPOUSE OR PARTNER
8. OTHER RELATIVE
9. GET STRANGER/SOMEONE NOT KNOWN TO ME TO GET IT
10. BREW/DISTIL IT MYSELF
11. OTHER

98. CAN'T SAY

IF STILL DRINK ALCOHOL (codes 1-7 in Q12), ASK:

[Single]

USE DYNAMIC TEXT (codes 1, 2, 3, 10, 11, 20 or 98 on Q20/codes 4-9 on Q20)

Q21. What venue or store do [you/they] normally obtain [your alcohol from/it from]?

1. BAR/TAVERN/PUB
2. CAFÉ/RESTAURANT THAT SELLS ALCOHOL
3. NIGHTCLUB
4. SPORTS CLUB/RSL/STADIUM/RACETRACK/ARENA
5. EVENT/FESTIVAL WHERE ALCOHOL IS SOLD
6. OTHER ENTERTAINMENT VENUE WHERE ALCOHOL IS SOLD
7. COLES LIQUOR
8. IGA LIQUOR
9. WOOLWORTHS LIQUOR
10. OTHER SUPERMARKET LIQUOR DEPARTMENT
11. HOTEL BOTTLE SHOP
12. BOTTLEMART
13. BWS
14. CELLARBRATIONS
15. CELLARMASTERS
16. LIQUORLAND
17. THE BOTTLE-O
18. THIRSTY CAMEL
19. OTHER LIQUOR RETAILER
20. WINE CLUB
21. ONLINE LIQUOR RETAILER
22. OTHER

98. CAN'T SAY

IF HAD ALCOHOL IN LAST 12 MTHS (Code 1 on Q11), ASK:

[Multiple]

Q22. In the last 12 months have you . . . ?

READ OUT

1. Reduced the amount of alcohol you drink at any one time
2. Reduced the number of times you drink
3. Switched to drinking more low-alcoholic drinks than you used to
4. Stopped drinking alcohol
5. [DO NOT READ] NONE OF THE ABOVE

IF REDUCED, SWITCHED OR STOPPED DRINKING (Codes 1-4 on Q22), ASK:

[Multiple]

Q23. What were the reasons for doing that?

1. HEALTH REASONS (E.G. WEIGHT, DIABETES, AVOID HANGOVER)
 2. LIFE STYLE REASONS (E.G. WORK/STUDY COMMITMENTS, LESS OPPORTUNITY, YOUNG FAMILY)
 3. SOCIAL REASONS (E.G. BELIEVE IN MODERATION, CONCERNED ABOUT VIOLENCE, AVOID GETTING DRUNK)
 4. PREGNANT AND/OR BREASTFEEDING
 5. TASTE/ENJOYMENT (E.G. PREFER LOW ALCOHOL BEER, DON'T GET DRUNK)
 6. DRINK DRIVING REGULATIONS
 7. FINANCIAL REASONS
 8. ADULT/PARENT PRESSURE
 9. PEER PRESSURE
 10. THE PRICE OF THE ALCOHOL I DRINK/DRANK HAS INCREASED
 11. I AM ON THE BANNED DRINKERS REGISTER
 12. LOCAL/COMMUNITY LAWS BAN ALCOHOL
 13. OTHER
98. CAN'T SAY/CAN'T RECALL

IF STILL DRINK ALCOHOL (codes 1-7 in Q12), ASK:

[Single]

Q24. On a day that you have an alcoholic drink, how many standard drinks do you usually have?

READ OUT

1. 20 or more standard drinks
2. 11 – 19 standard drinks
3. 9 – 10 standard drinks
4. 5 – 8 standard drinks
5. 3 – 4 standard drinks
6. 1-2 standard drinks
7. Less than 1 standard drink
9. [DO NOT READ] CAN'T SAY

READ OUT: The following set of questions ask about amounts of alcohol you might consume during one drinking occasion and how often you have done this in the past 12 months. There are up to six questions in this section depending on your answers. We appreciate your patience as we go through this section.

IF HAD ALCOHOL IN LAST 12 MTHS (Code1 on Q11), ASK:

[Single]

Q25a. In the last 12 months, how often have you had 20 or more standard drinks in a day?

If necessary READ OUT

1. Everyday
2. 5-6 days a week
3. 3-4 days a week
4. 1-2 days a week
5. 2-3 days a month
6. About 1 day a month
7. Less often
8. Never

IF DON'T DRINK 20 OR MORE STANDARD DRINKS EVERY DAY (Code 1 on Q25a), ASK:

[Single]

Q25b. In the last 12 months, how often have you had 11-19 standard drinks in a day?

If necessary READ OUT

1. Everyday
2. 5-6 days a week
3. 3-4 days a week
4. 1-2 days a week
5. 2-3 days a month
6. About 1 day a month
7. Less often
8. Never

IF DON'T DRINK 11-19 STANDARD DRINKS EVERY DAY (Code 1 on Q25b), ASK:

[Single]

Q25c. In the last 12 months, how often have you had 7-10 standard drinks in a day?

If necessary READ OUT

1. Everyday
2. 5-6 days a week
3. 3-4 days a week
4. 1-2 days a week
5. 2-3 days a month
6. About 1 day a month
7. Less often
8. Never

IF DON'T DRINK 7-10 STANDARD DRINKS EVERY DAY (Code 1 on Q25c), ASK:

[Single]

Q25d. In the last 12 months, how often have you had 5-6 standard drinks in a day?

If necessary READ OUT

1. Everyday
2. 5-6 days a week
3. 3-4 days a week
4. 1-2 days a week
5. 2-3 days a month
6. About 1 day a month
7. Less often

8. Never

IF DON'T DRINK 5-6 STANDARD DRINKS EVERY DAY (Code 1 on Q25d), ASK:

[Single]

Q25e. In the last 12 months, how often have you had 3-4 standard drinks in a day?

If necessary READ OUT

1. Everyday
2. 5-6 days a week
3. 3-4 days a week
4. 1-2 days a week
5. 2-3 days a month
6. About 1 day a month
7. Less often
8. Never

IF DON'T DRINK 3-4 STANDARD DRINKS EVERY DAY (Code 1 on Q25e), ASK:

[Single]

Q25f. In the last 12 months, how often have you had some alcohol, but no more than 2 standard drinks in a day?

If necessary READ OUT

1. Everyday
2. 5-6 days a week
3. 3-4 days a week
4. 1-2 days a week
5. 2-3 days a month
6. About 1 day a month
7. Less often
8. Never

IF DON'T DRINK 2 OR FEWER STANDARD DRINKS EVERY DAY (Code 1 on Q25f), ASK:

[Single]

Q25g. In the last 12 months, how often have you had no alcohol at all in a day?

If necessary READ OUT

1. Everyday
2. 5-6 days a week
3. 3-4 days a week
4. 1-2 days a week
5. 2-3 days a month
6. About 1 day a month
7. Less often
8. Never

SECTION C: ALCOHOL HARMS

IF HAD ALCOHOL IN LAST 12 MTHS (Code 1 on Q11), ASK:

[Single]

Q26. During the last 3 months, have you tried to cut down, control your drinking or stop drinking but were unsuccessful?

1. YES
2. NO

[Single]

Q27. During the last 3 months, has anyone expressed concern about your drinking?

1. YES
2. NO

[Multiple]

Q28. In the last 12 months, did you undertake any of the following activities while under the influence of or affected by alcohol?

READ OUT

1. Went to work
2. Went swimming

3. Operated a boat
 4. Drove a motor vehicle
 5. Operated hazardous machinery
 6. Created a public disturbance or nuisance
 7. Caused damage to property
 8. Stole money, goods or property
 9. Verbally abused someone
 10. Physically abused someone
 11. Engaged in unwanted sexual attention (e.g., groping, pinching, prolonged staring)
99. None of these

[Multiple]

Q29. In the last 12 months, have any of the following happened to you while under the influence of or affected by alcohol?

READ OUT

1. Injury requiring medical attention
2. Injury requiring admission to hospital
3. Intoxication requiring medical attention
4. Intoxication requiring admission to hospital
5. None of these

IF EVER HAD A FULL SERVE OF ALCOHOL (code 1 on Q10),ASK:

[Single]

Q30. Has someone else, been injured because of your drinking?

IF YES, INTERVIEWER PROBE FOR IN LAST 12 MONTHS OR NOT

1. YES, IN THE LAST 12 MONTHS
2. YES, BUT NOT IN THE LAST 12 MONTHS
3. NO

[Single]

Q31. Have you ever been on the banned drinkers register?

IF YES, INTERVIEWER PROBE FOR IN LAST 12 MONTHS OR NOT

1. YES, IN THE LAST 12 MONTHS
2. YES, BUT NOT IN THE LAST 12 MONTHS
3. NO

ASK ALL:

[Multiple]

Q32. In the last 12 months, did any other person under the influence of or affected by alcohol . . . ?

READ OUT

1. Verbally abuse you
2. Physically abuse you
3. Engage in unwanted sexual attention (e.g., groping, pinching, prolonged staring)
4. None of these

SECTION D DRUGS (EXAMPLES NOT TO BE READ OUT UNLESS NECESSARY)

READ OUT: I would like to remind you that your answers are completely confidential and protected by law (Privacy Act 1988). Your responses are for research purposes and you will never be identified. Accurate and honest answers to the following survey questions are important and appreciated.

[Single]

Q33. Have you used Pain-killers/Pain-relievers (e.g. Aspirin, Paracetamol, Mersyndol, Panadeine Forte, Nurofen Plus) for non-medical purposes in the last 12 months?

IF NECESSARY READ: By non-medical purposes we mean that the drug is used to induce a drug experience or feeling, that the drug is used with other drugs to enhance a drug experience, that the drug is used for performance enhancement (e.g. to enhance athletic performance), or the drug is used for cosmetic purposes (i.e. for body shaping).

1. YES
2. NO

[Single]

Q34. Have you used Meth/amphetamine (e.g. Speed, Ice, Crystal, Whizz, Ritalin, Pseudoephedrine based cold and flu tablets) **for non-medical purposes in the last 12 months?**

IF NECESSARY READ: By non-medical purposes we mean that the drug is used to induce a drug experience or feeling, that the drug is used with other drugs to enhance a drug experience, that the drug is used for performance enhancement (e.g. to enhance athletic performance), or the drug is used for cosmetic purposes (i.e. for body shaping).

1. YES
2. NO

[Single]

Q35. Have you used Marijuana/Cannabis in the last 12 months?

1. YES
2. NO

[Single]

Q36. Have you used Cocaine in the last 12 months?

1. YES
2. NO

[Single]

Q37. Have you used Ecstasy in the last 12 months?

1. YES
2. NO
- 3.

SECTION E: POLICY ATTITUDES

READ OUT: The question is about how strongly you support or oppose some policies.

[Single Response for each Statement – Randomise]

Q38. To reduce the problems associated with excessive alcohol use, to what extent would you support or oppose . . . ?

IF NECESSARY: Read out answer code options

	Strongly support	Support	Neither support nor oppose	Oppose	Strongly oppose	Don't know enough to say
Increasing the price of alcohol						
Having a minimum price for different alcoholic drinks. The price would be based on how much alcohol content is in each drink						

Reducing the number of outlets that sell alcohol						
Reducing trading hours for all pubs and clubs						
Banning alcohol sponsorship of sporting events						
Displaying health warnings on all alcoholic containers						
Stricter enforcement of law against supplying minors						
Banning harmful drinkers from purchasing alcohol (e.g. the Banned Drinker Register)						
Requiring mandatory ID scanning in takeaway liquor outlets						
Requiring mandatory ID scanning in pubs and nightclubs						
Having police or liquor inspectors permanently stationed outside packaged liquor outlets						
Forced rehabilitation for problem drinkers (Alcohol Mandatory treatment program)						

DEMOGRAPHICS

READ OUT: Finally, I am now going to ask you a few questions to ensure we survey a good cross-section of the community.

[Single]

Q39. In which country were you born?

1. AUSTRALIA
 2. CHINA
 3. ENGLAND
 4. GERMANY
 5. GREECE
 6. INDIA
 7. IRELAND
 8. NEPAL
 9. NEW ZEALAND
 10. PHILIPPINES
 11. SOUTH AFRICA
 12. USA
97. OTHER - SPECIFY

IF BORN OVERSEAS (Codes 2-97 on Q39), ASK:

[1900-2019]

Q40. In what year did you first arrive in Australia to live here for one year or more?

Record Year: _____

9998 CAN'T RECALL

9999 NOT APPLICABLE – WILL BE IN AUSTRALIA FOR LESS THAN ONE YEAR

ASK ALL:

[Single]

Q41. What is the main language spoken at home?

1. ENGLISH
2. ABORIGINAL AND/OR TORRES STRAIT ISLANDER LANGUAGES
3. LANGUAGE OTHER THAN ENGLISH

[Single]

Q42. Which of the following best describes your main current employment status?

READ OUT

1. Working full-time for an employer
2. Working part-time for an employer
3. Self employed
4. Looking for work
5. Unemployed
6. A student
7. Retired or on a pension
8. Volunteer/charity work
9. Unable to work
10. Solely engaged in home duties
11. Other

[Single]

Q43. What is the highest qualification that you have obtained?

READ OUT

1. Primary school
2. Secondary school
3. Certificate I or Certificate II
4. Certificate III or Certificate IV
5. Associate Diploma

6. Undergraduate Diploma
7. Bachelor Degree
8. Master's Degree, Postgraduate Degree or Postgraduate Diploma
9. Doctorate

[Single]

Q44. Which of the following groups would represent your personal annual income, before tax, from all sources?

READ OUT

1. Less than \$20,000 (less than \$769 per fortnight)
2. \$20,000 - \$29,999 (\$770 – \$1,154 per fortnight)
3. \$30,000 - \$49,999 (\$1,155 – \$1,884 per fortnight)
4. \$50,000 - \$69,999 (\$1,885 – \$2,654 per fortnight)
5. \$70,000 - \$99,999 (\$2,655 – \$3,808 per fortnight)
6. \$100,000- \$119,999 (\$3,809 – \$4,615 per fortnight)
7. \$120,000 or more (\$4,615 or more per fortnight)

98. [DO NOT READ] CAN'T SAY

99. [DO NOT READ] REFUSED

[Single]

Q45. Which of the following groups would represent the combined household annual income, before tax, from all sources?

READ OUT

1. Less than \$20,000 (less than \$769 per fortnight)
2. \$20,000 - \$29,999 (\$770 – \$1,154 per fortnight)
3. \$30,000 - \$49,999 (\$1,155 – \$1,884 per fortnight)
4. \$50,000 - \$69,999 (\$1,885 – \$2,654 per fortnight)

- 5. \$70,000 - \$99,999 (\$2,655 – \$3,808 per fortnight)
- 6. \$100,000- \$119,999 (\$3,809 – \$4,615 per fortnight)
- 7. \$120,000 or more (\$4,615 or more per fortnight)
- 98. [DO NOT READ] CAN'T SAY
- 99. [DO NOT READ] REFUSED

CLOSING SCRIPTS

This completes the survey. Thank you very much for your time and assistance. Your co-operation is greatly appreciated.

This market research is carried out in compliance with the Privacy Act, and the information you provided will be used only for research purposes.

If you would like any more information about this project or Roy Morgan Research, you can phone us on 1800 337 332.

Would you like any numbers for NT Alcohol and Drug Information services or Lifeline?

Lifeline 13 11 14

Counselling Online 1800 888 236

National Alcohol and Other Drug Hotline 1800 250 015

Northern Territory Mental Health Line 1800 682 288

10 APPENDIX 3: INTERRUPTED TIME SERIES ANALYSIS GRAPHS

10.1 ALCOHOL WHOLESALE SUPPLY MODELS

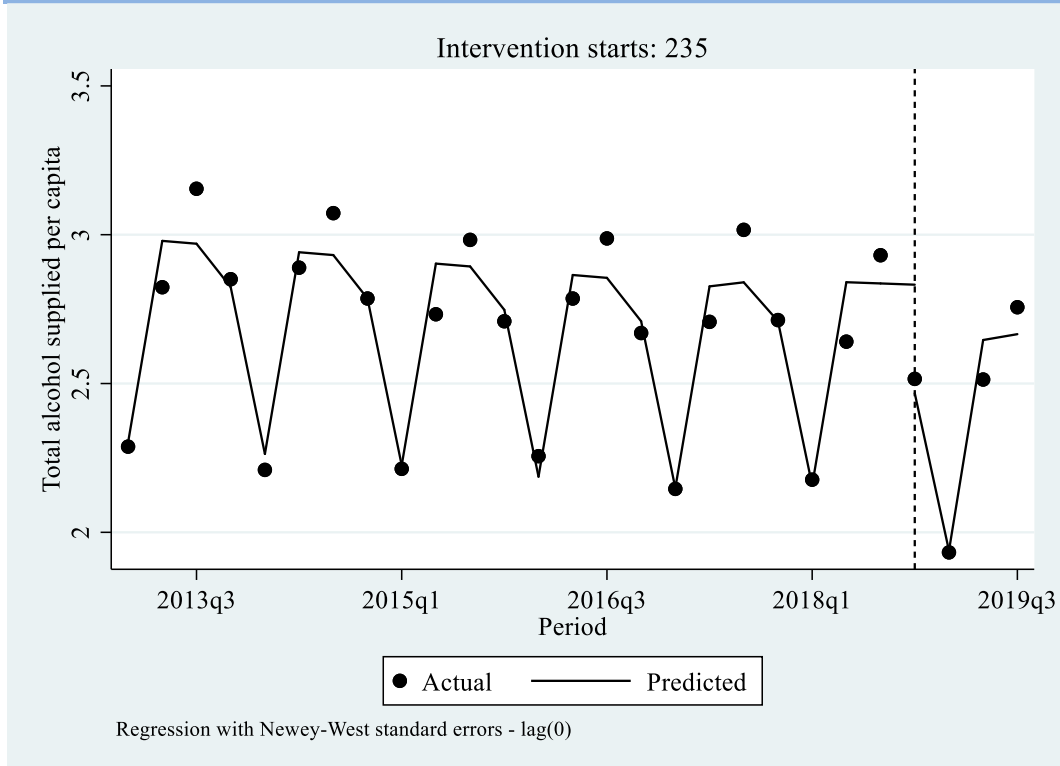


Figure 123 ITS total alcohol supplied per capita, Northern Territory

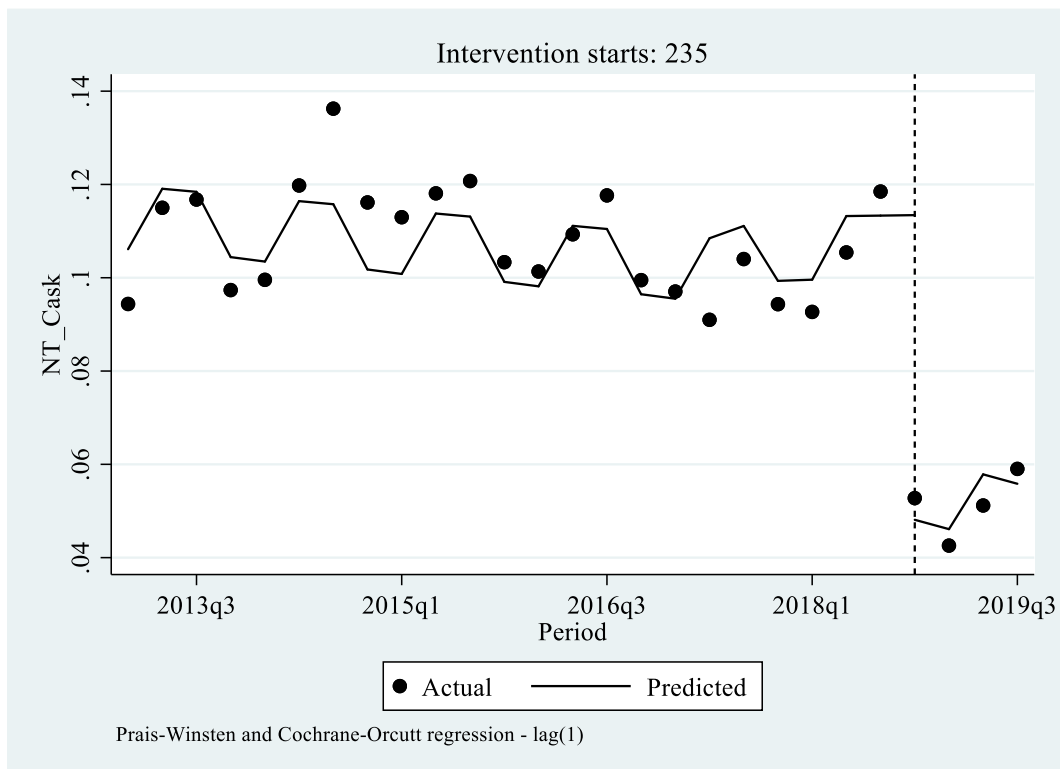


Figure 124 ITS cask wine supplied per capita, Northern Territory

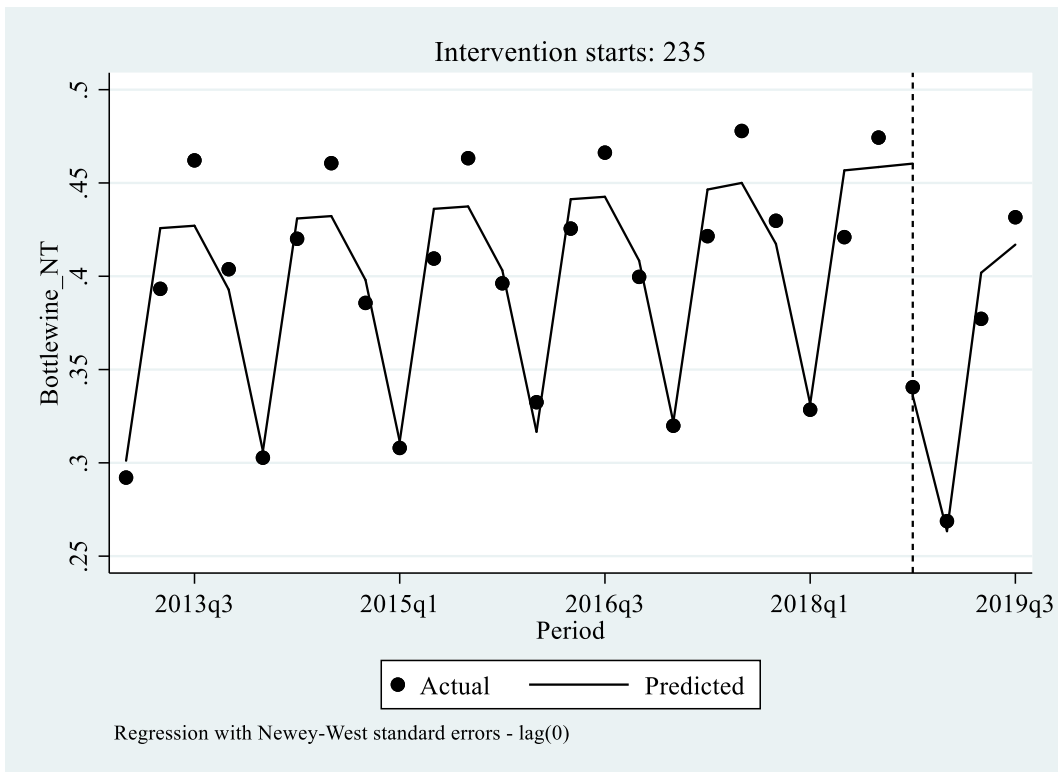


Figure 125 ITS bottled wine supplied per capita, Northern Territory

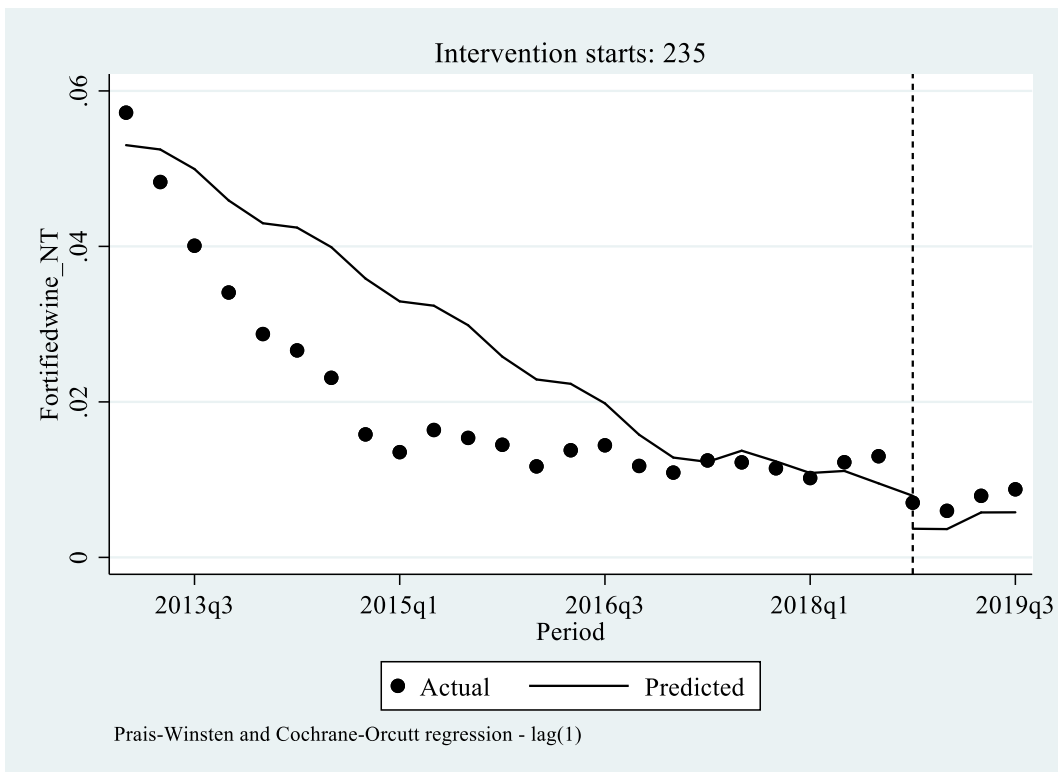


Figure 126 ITS fortified wine supplied per capita, Northern Territory

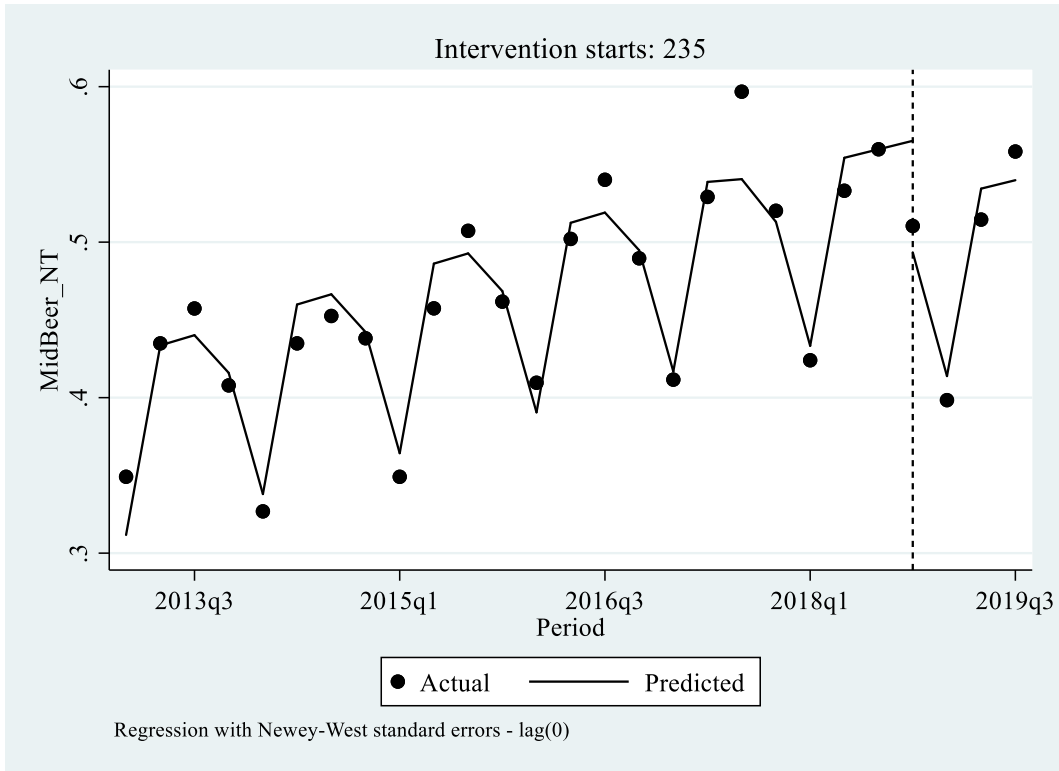


Figure 127 ITS mid strength beer supplied per capita, Northern Territory

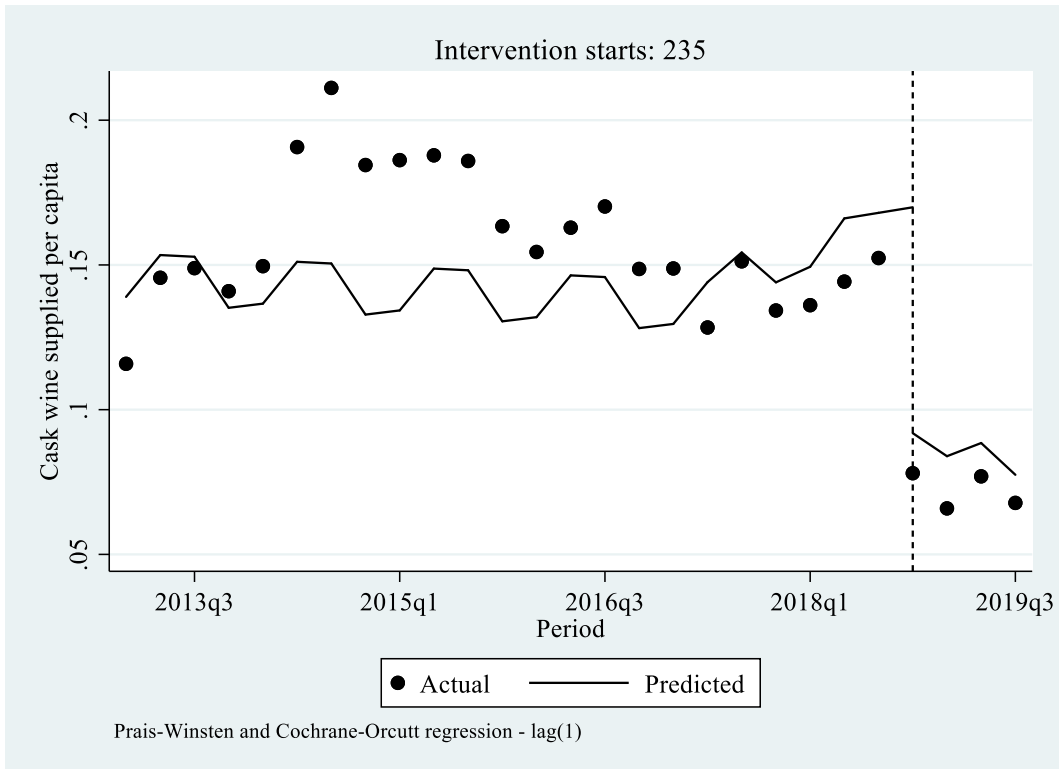


Figure 128 ITS cask wine supplied per capita, Darwin and Palmerston

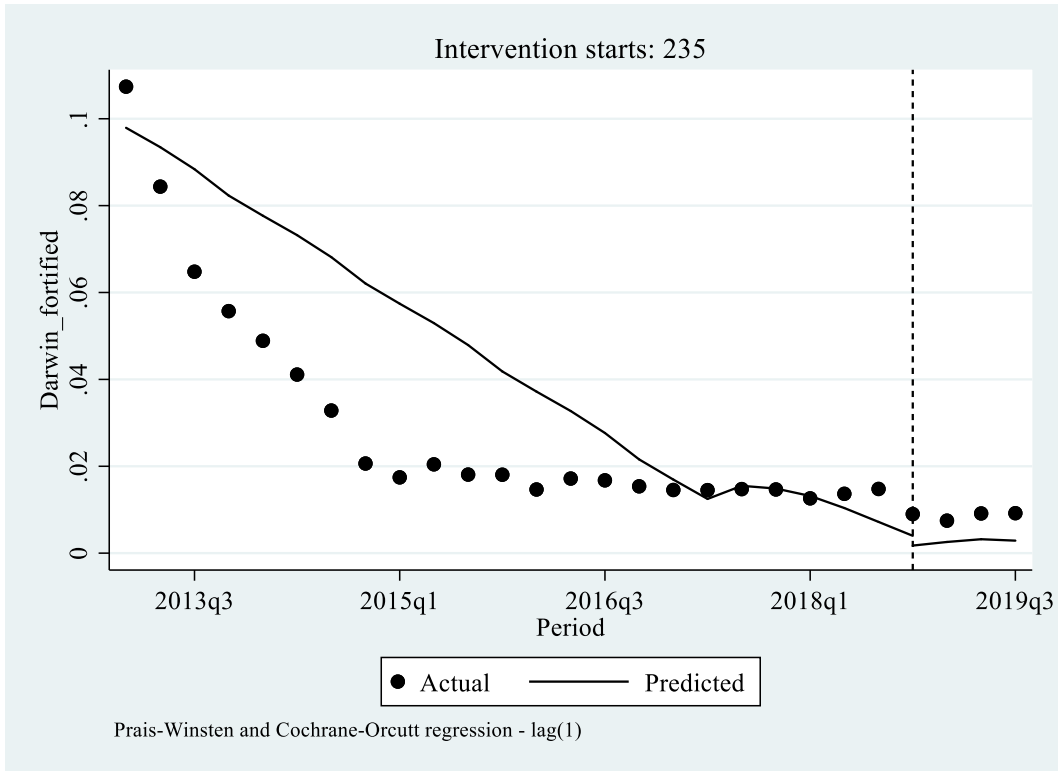


Figure 129 ITS fortified wine supplied per capita, Darwin and Palmerston

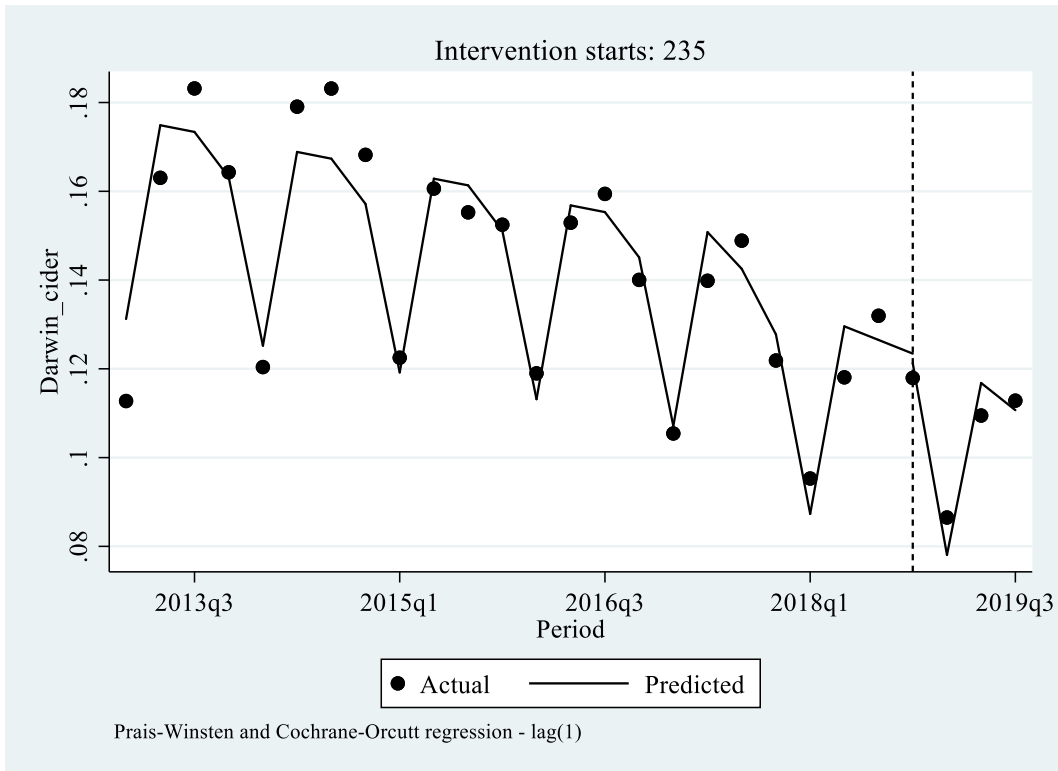


Figure 130 ITS cider supplied per capita, Darwin and Palmerston

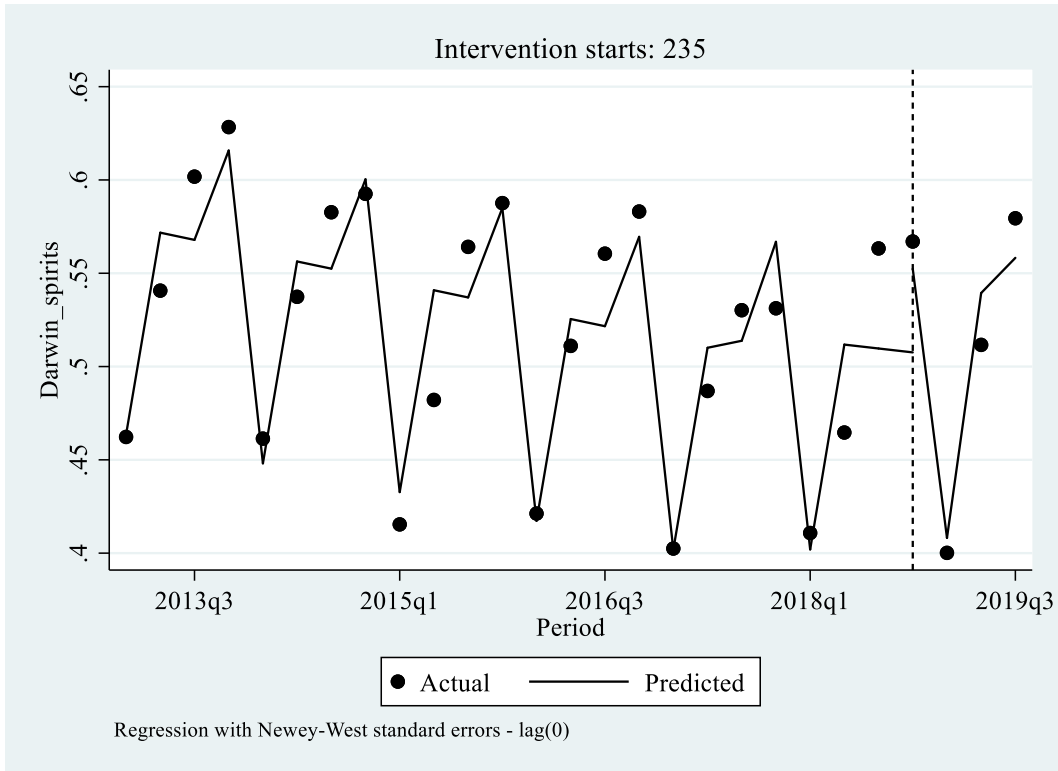


Figure 131 ITS spirits supplied per capita, Darwin and Palmerston

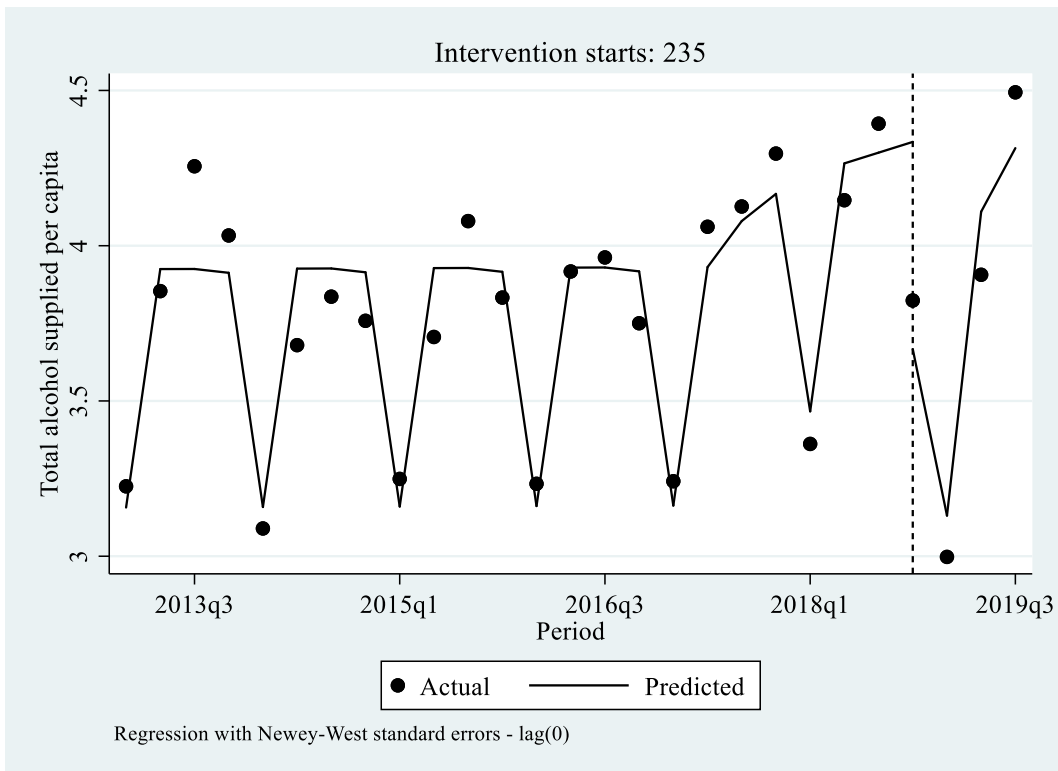


Figure 132 ITS total alcohol supplied per capita, Alice Springs

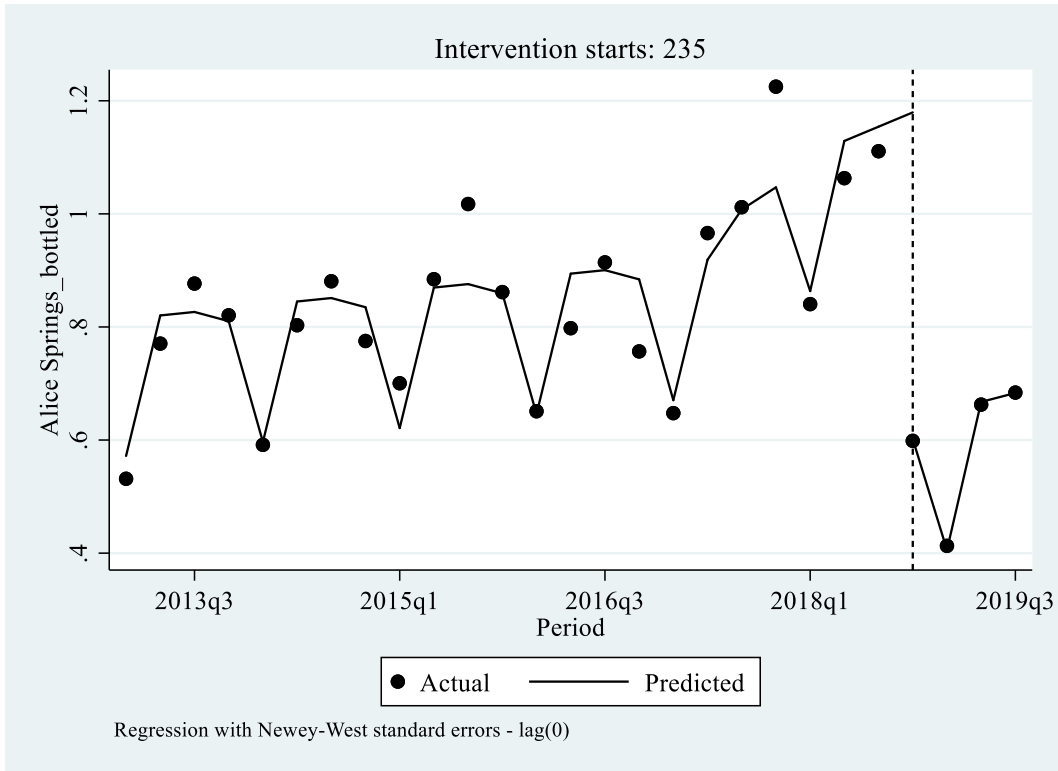


Figure 133 ITS bottled wine supplied per capita, Alice Springs

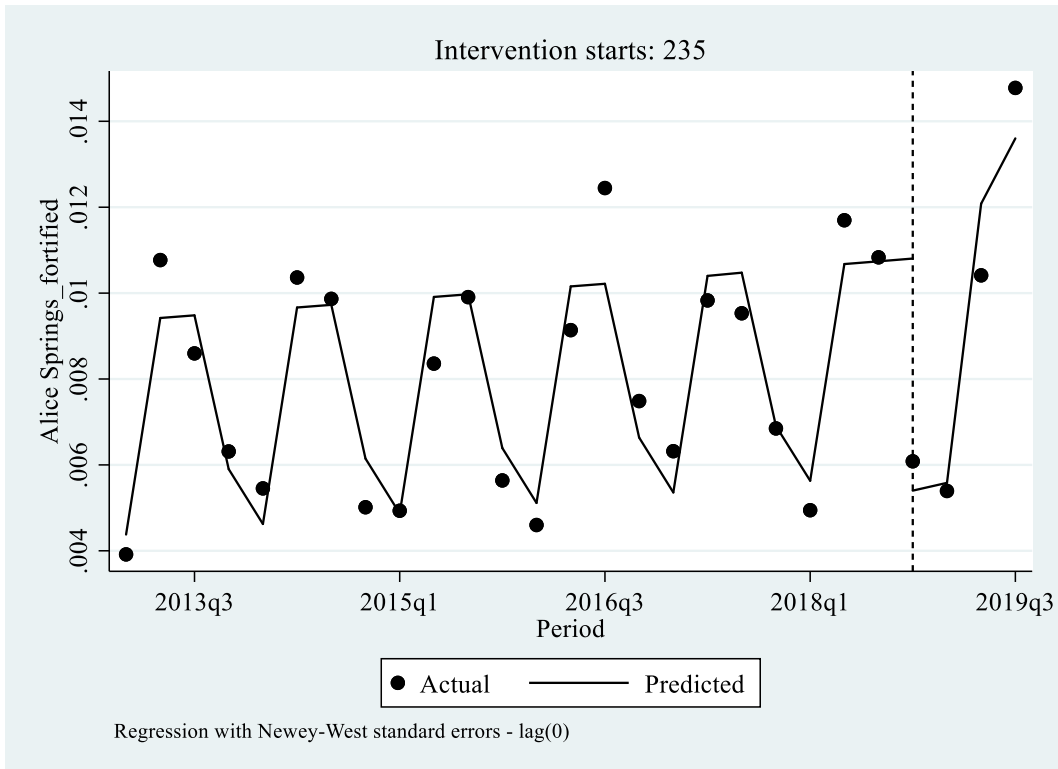


Figure 134 ITS fortified wine supplied per capita, Alice Springs

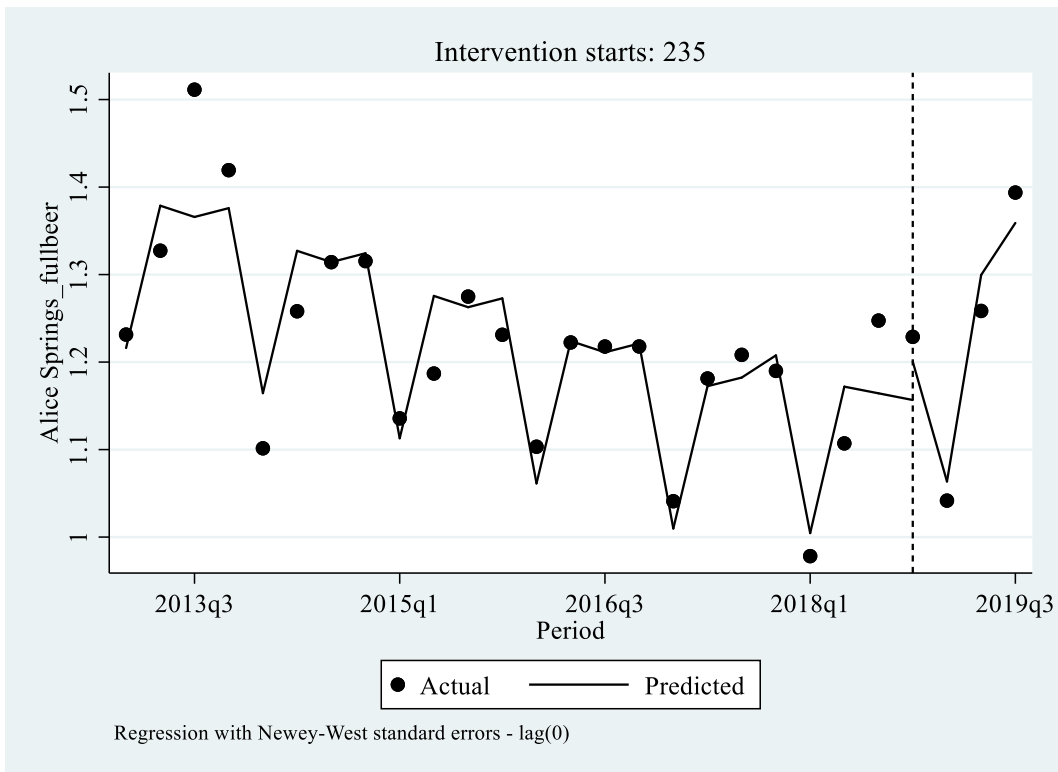


Figure 135 ITS full strength beer supplied per capita, Alice Springs

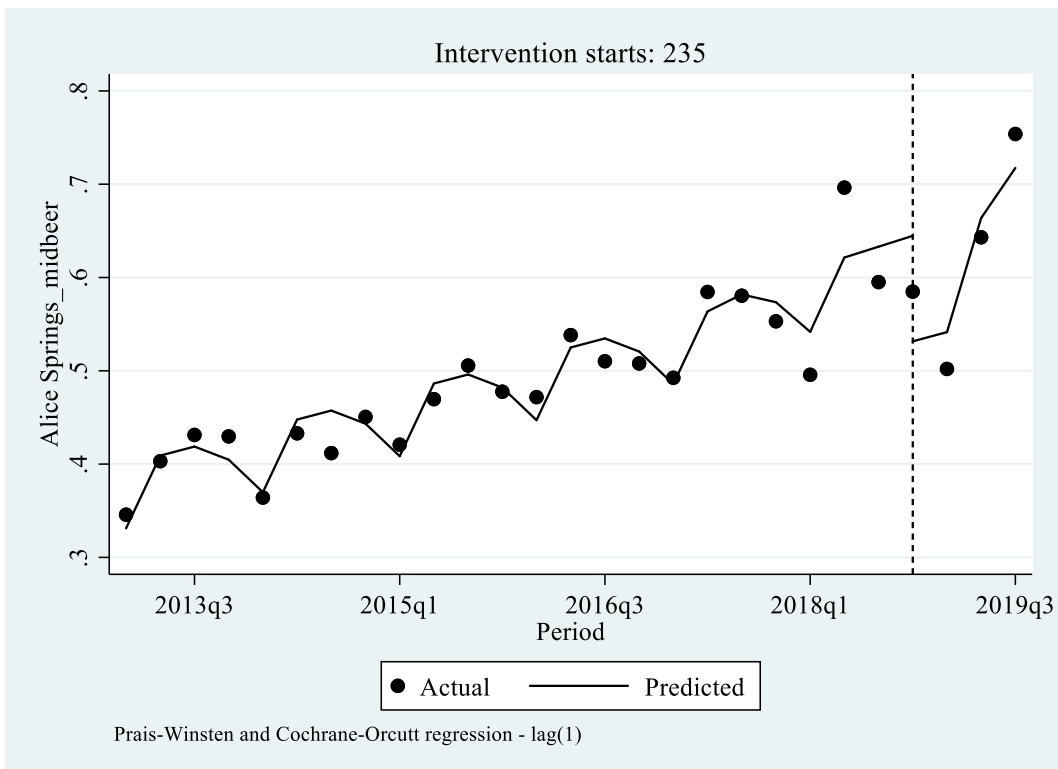


Figure 136 ITS mid strength beer supplied per capita, Alice Springs

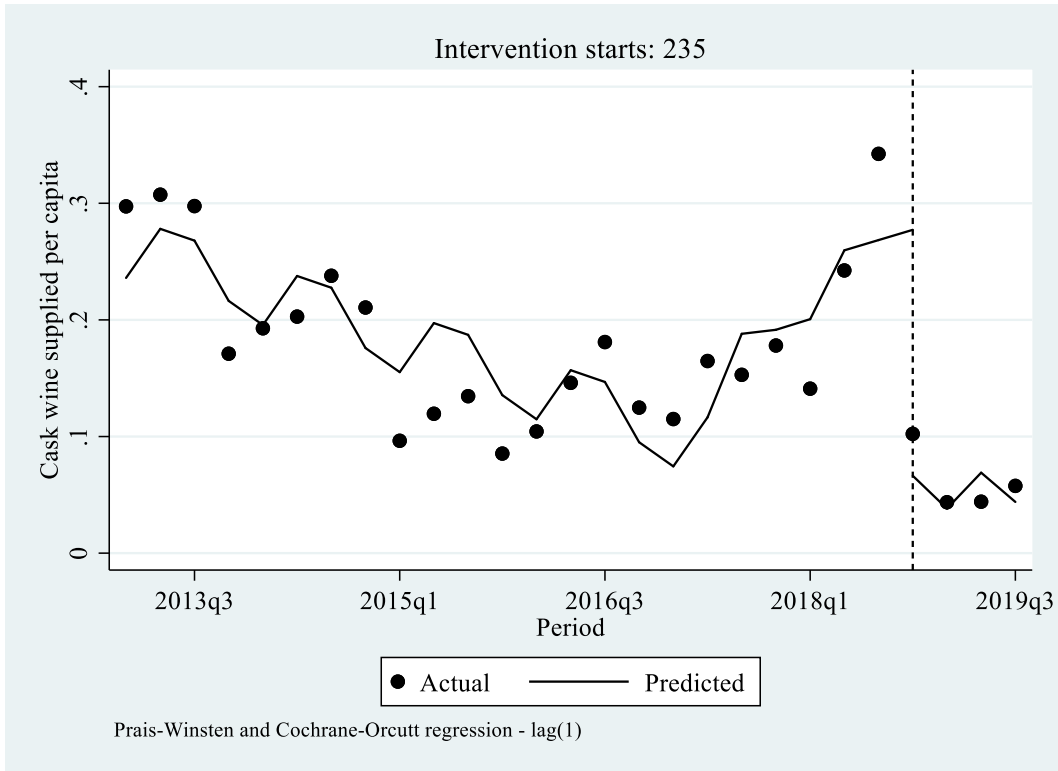


Figure 137 ITS cask wine supplied per capita, Katherine

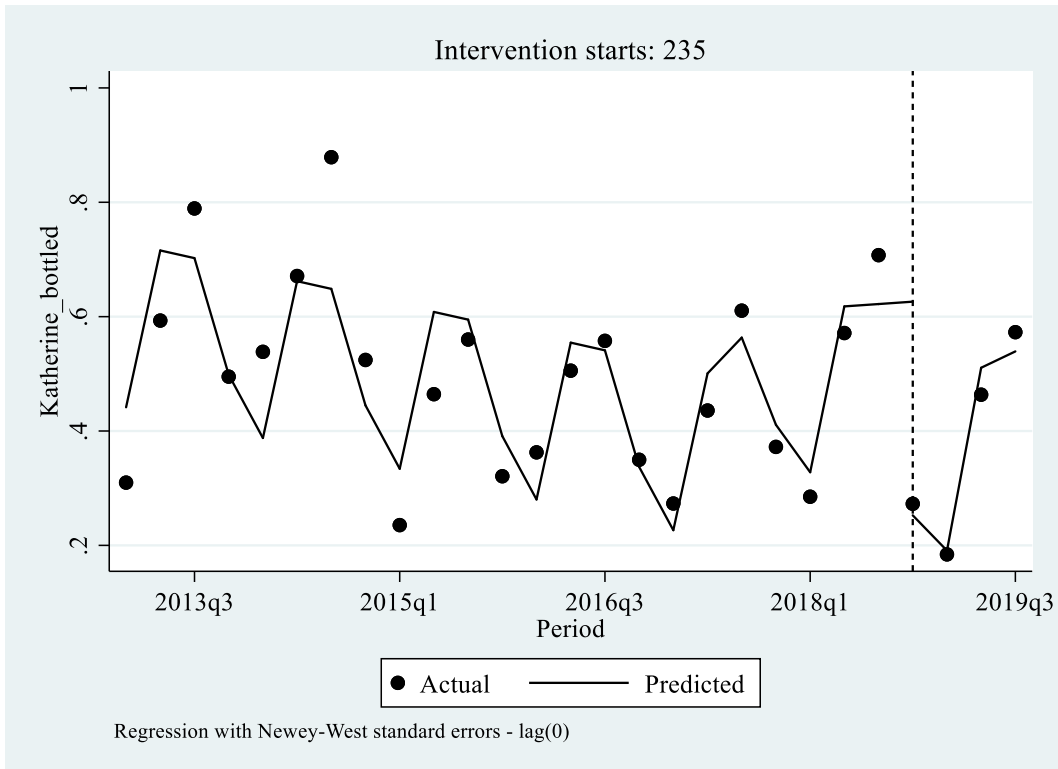


Figure 138 ITS bottled wine supplied per capita, Katherine

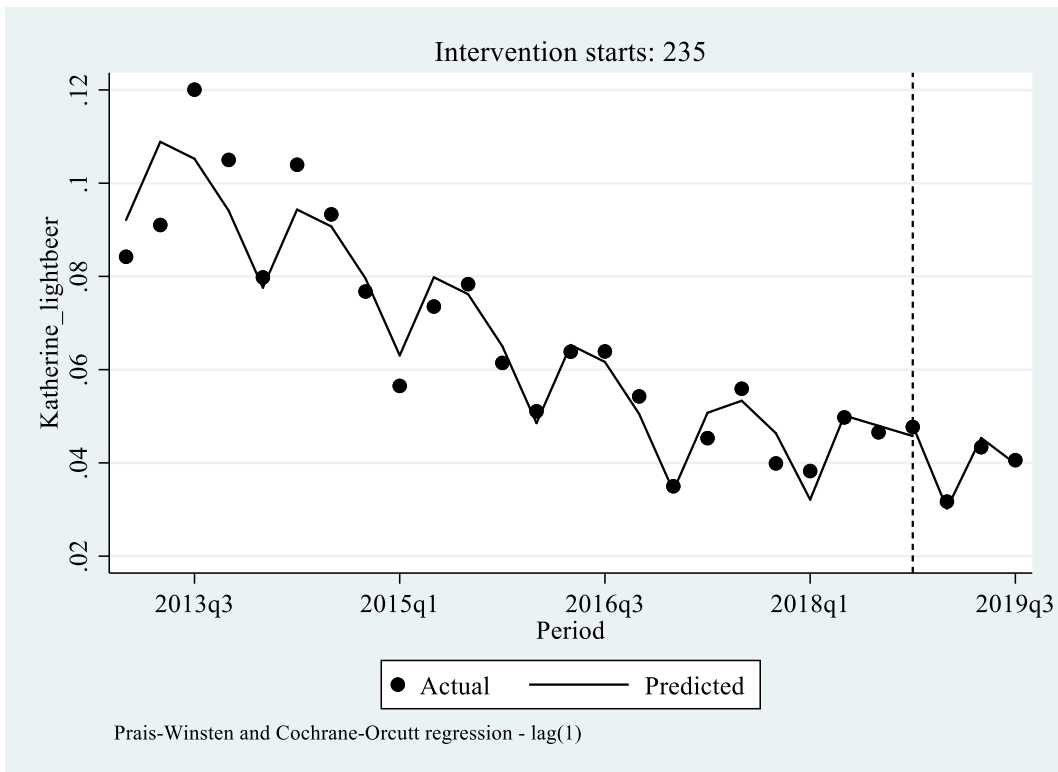


Figure 139 ITS light beer supplied per capita, Katherine

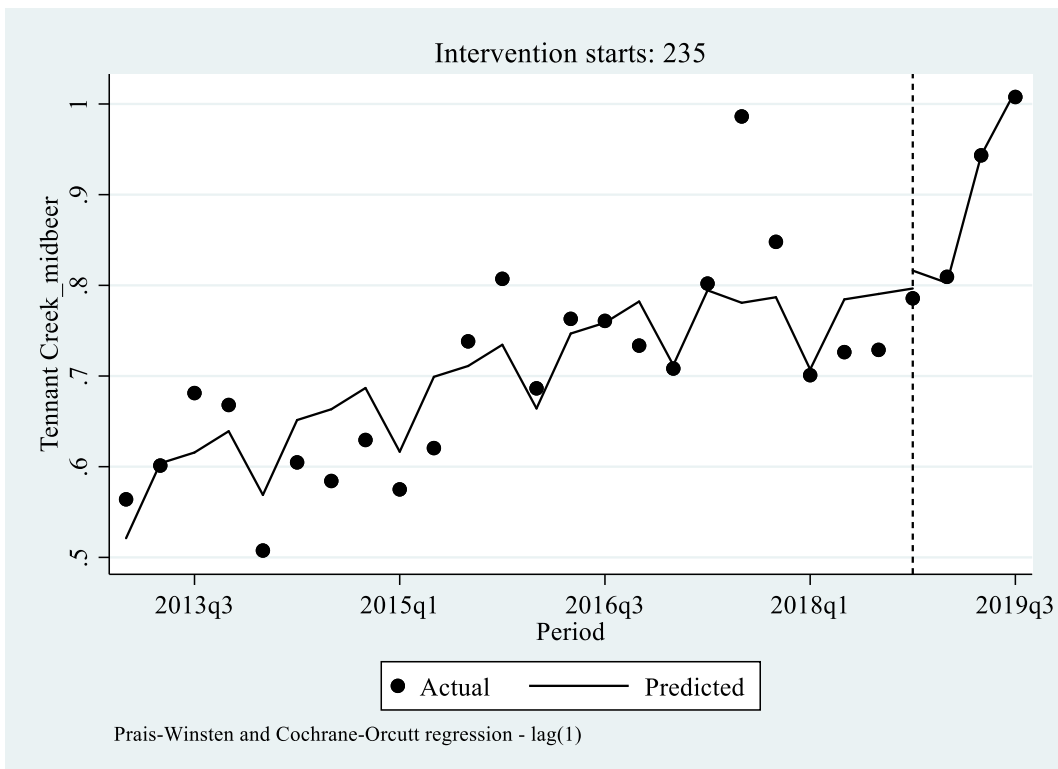


Figure 140 ITS mid strength beer supplied per capita, Tennant Creek

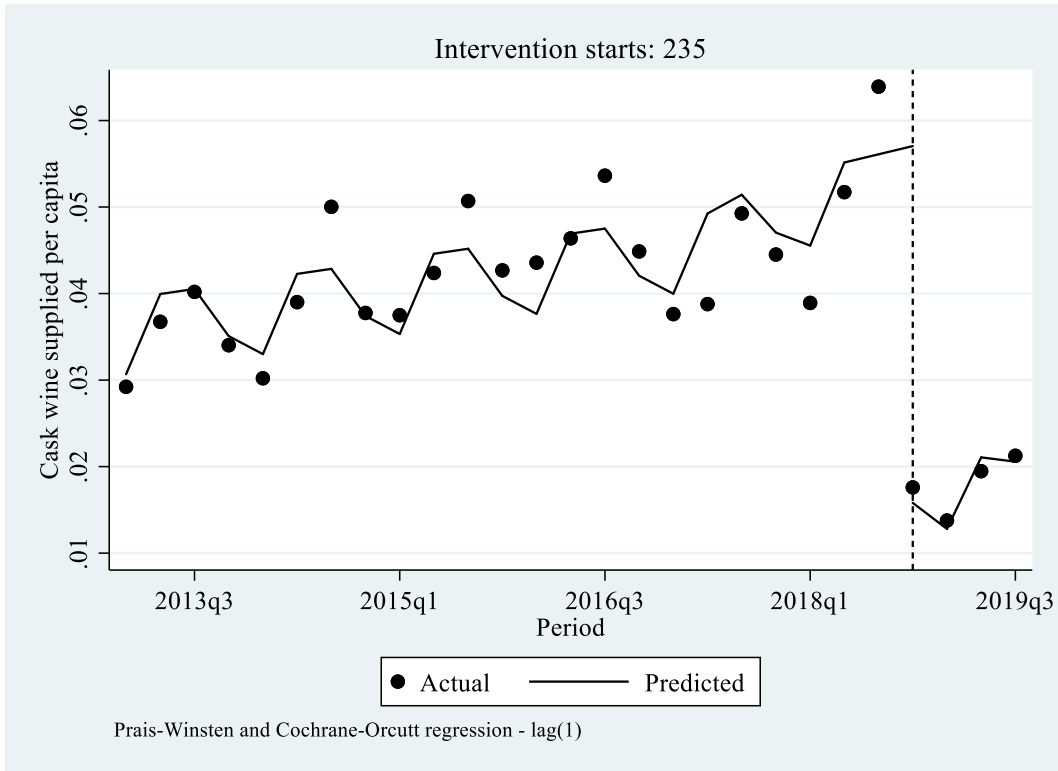


Figure 141 ITS cask wine supplied per capita, Rest of Northern Territory

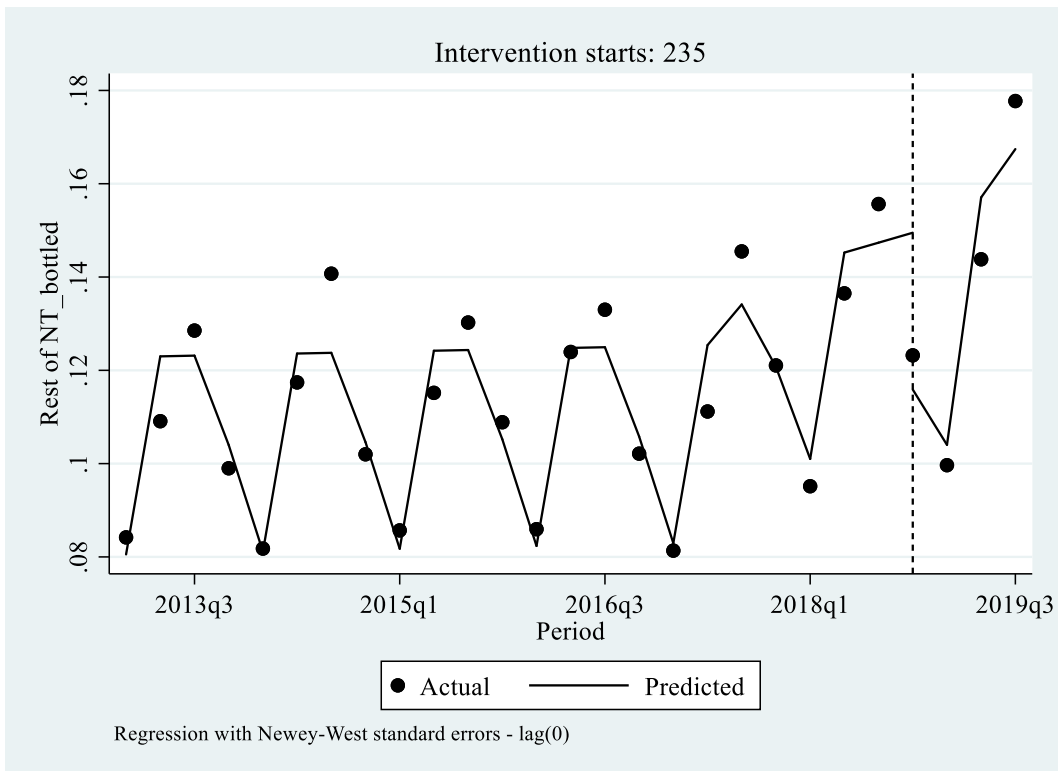


Figure 142 ITS bottled wine supplied per capita, Rest of Northern Territory

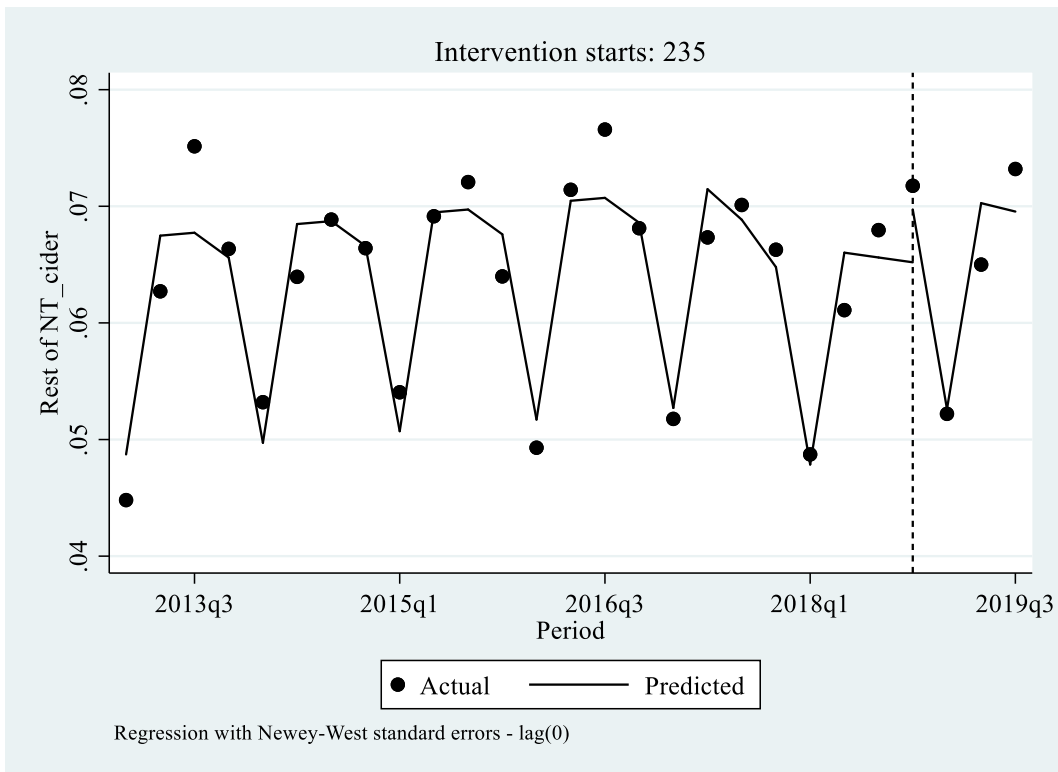


Figure 143 ITS cider supplied per capita, Rest of Northern Territory

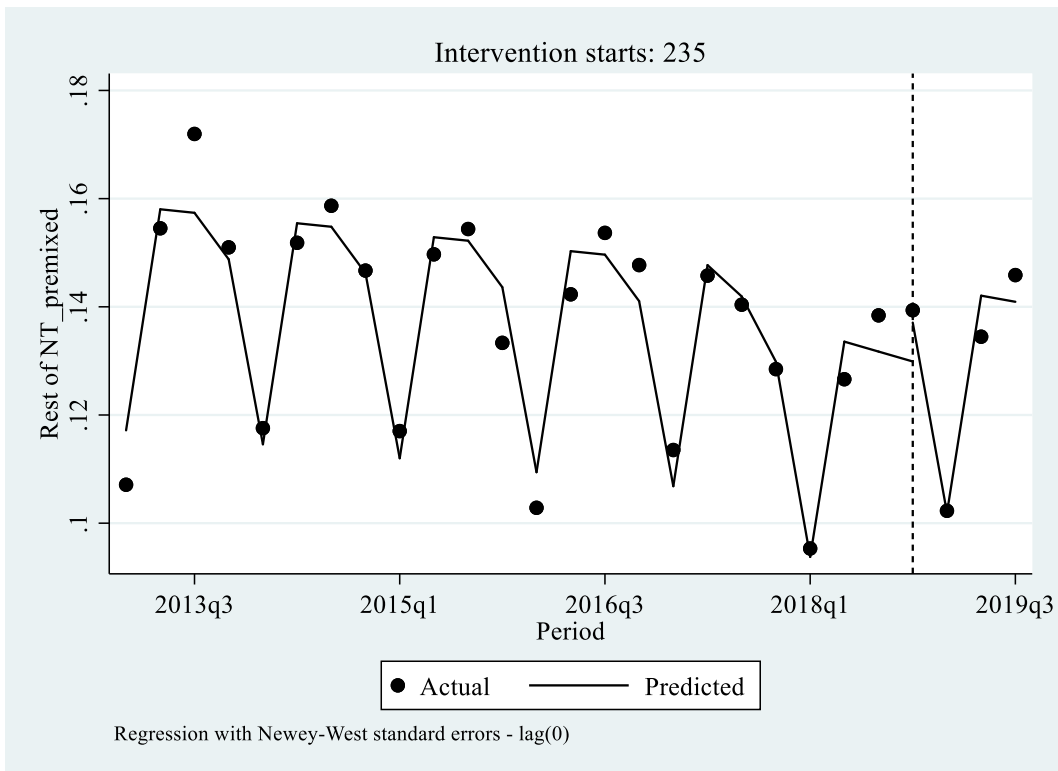


Figure 144 ITS premixed spirits supplied per capita, Rest of Northern Territory

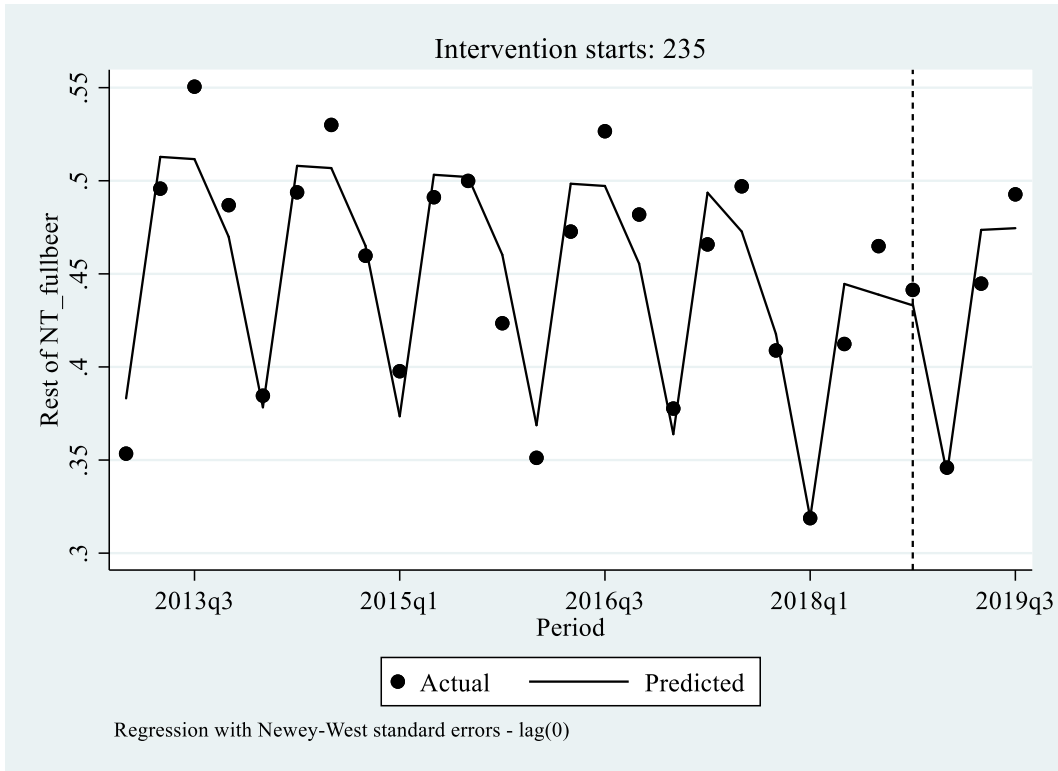


Figure 145 ITS full strength beer supplied per capita, Rest of Northern Territory

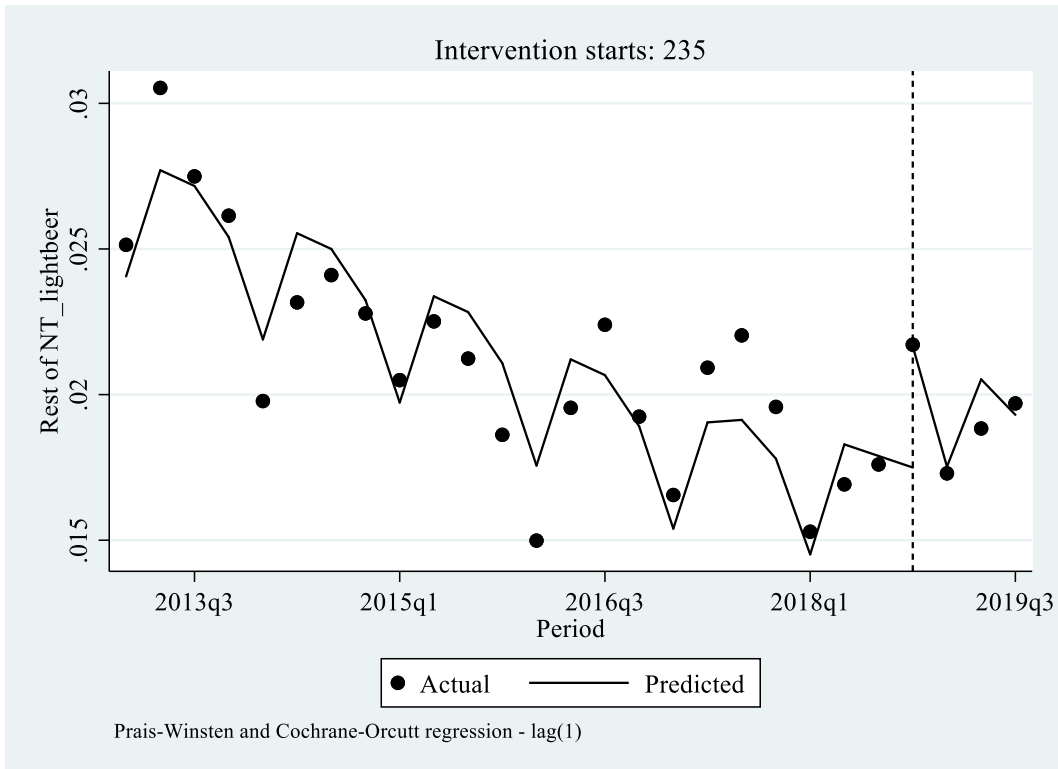


Figure 146 ITS light beer supplied per capita, Rest of Northern Territory

10.1.1 NIGHTLIFE VENUE MODELS

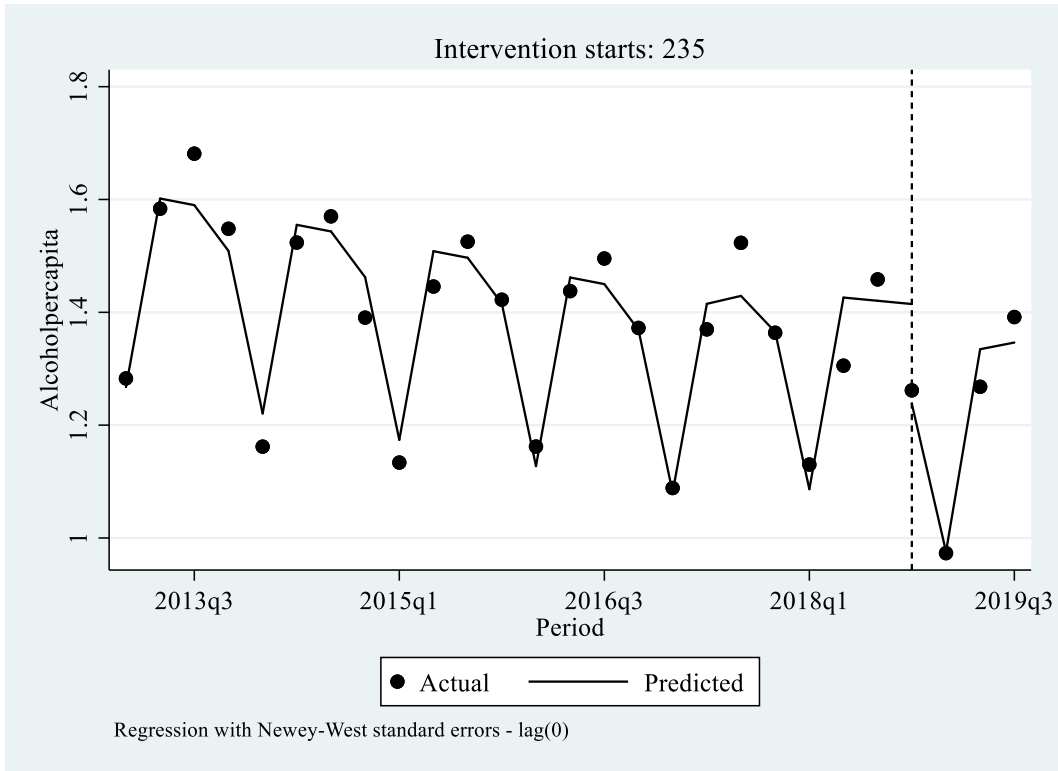


Figure 147 ITS Nightlife venue wholesale alcohol supply per capita, Darwin

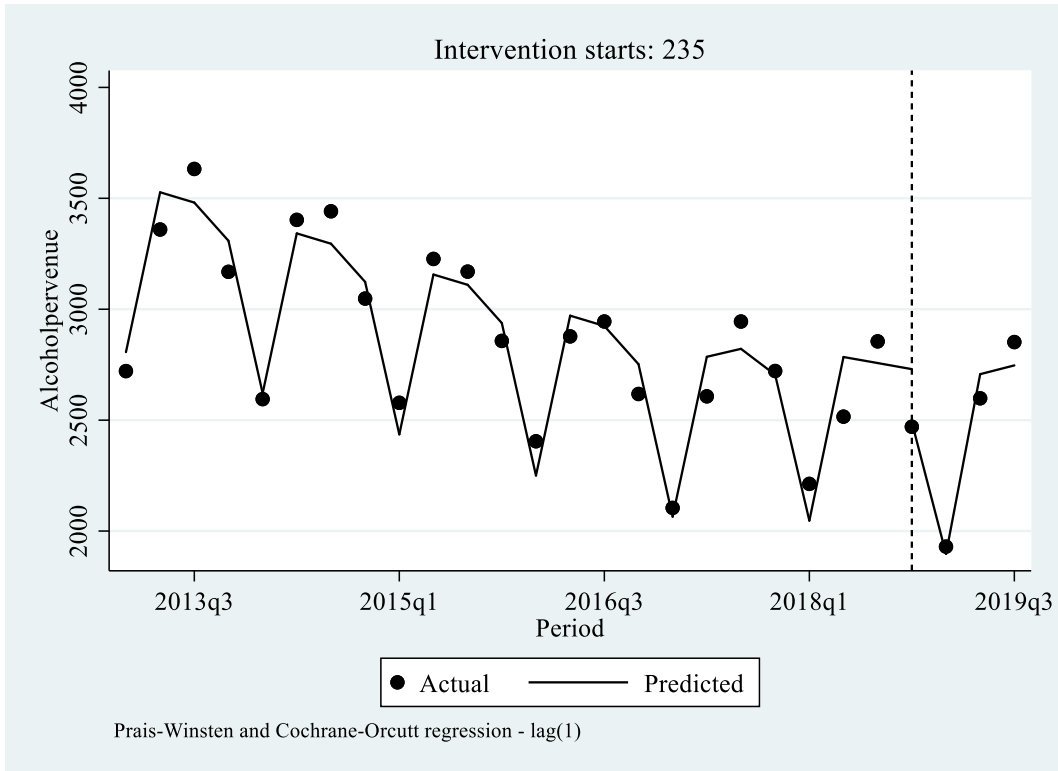


Figure 148 ITS Nightlife venue wholesale alcohol supply per venue, Darwin

10.2 POLICE ASSAULT OFFENCES MODELS

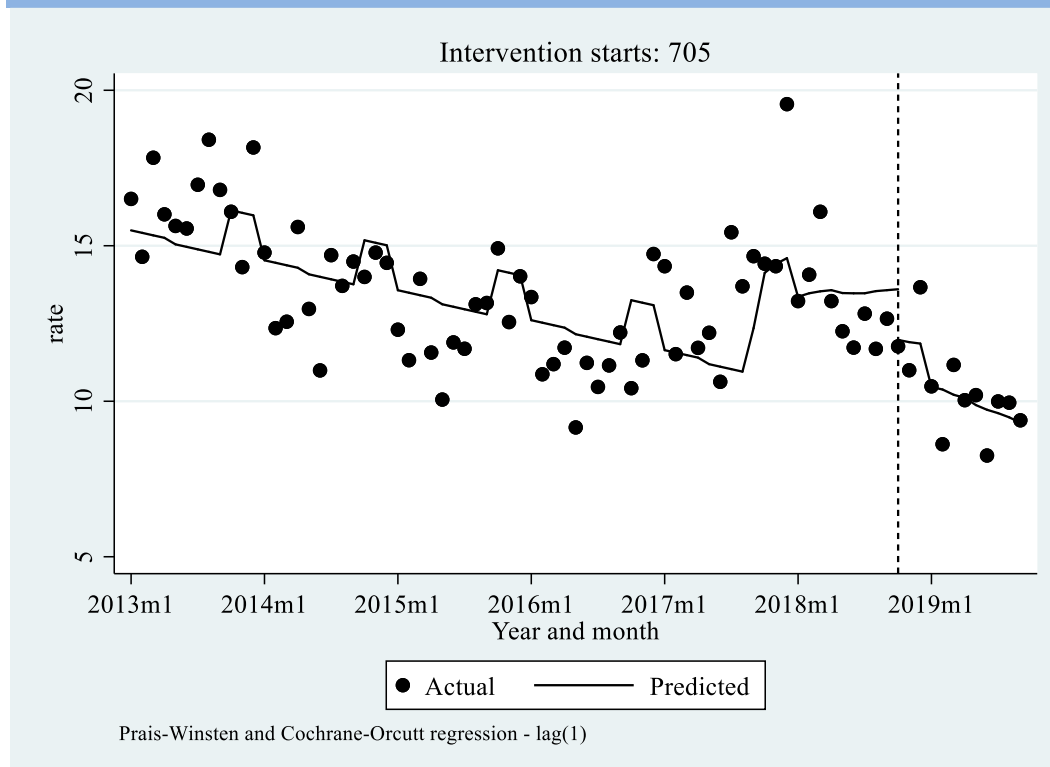


Figure 149 ITS Rate of alcohol-related assault offences per 10,000 population, Northern Territory

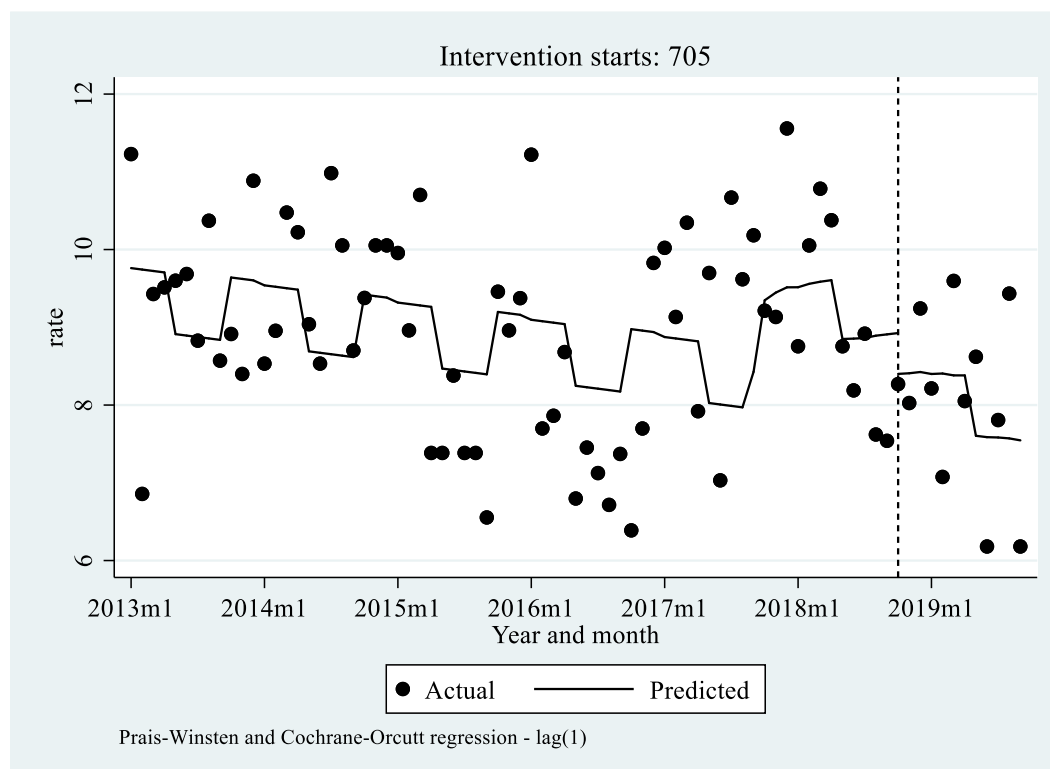


Figure 150 ITS Rate of alcohol-related assault offences per 10,000 population, Darwin and Palmerston

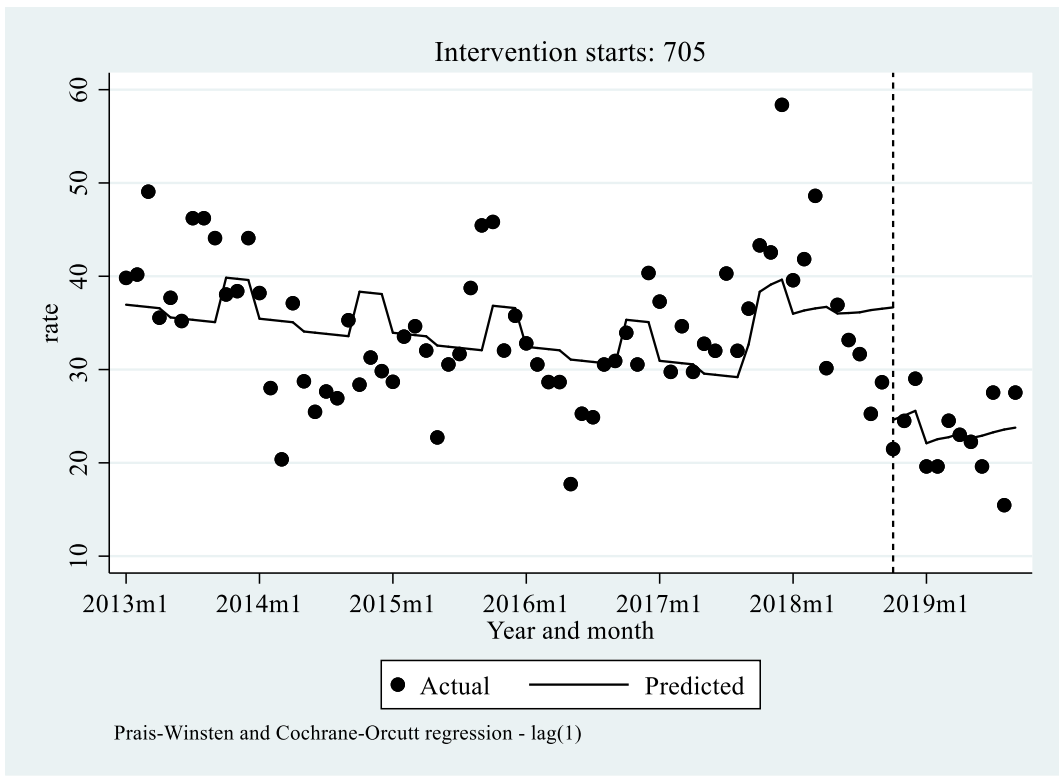


Figure 151 ITS Rate of alcohol-related assault offences per 10,000 population, Alice Springs

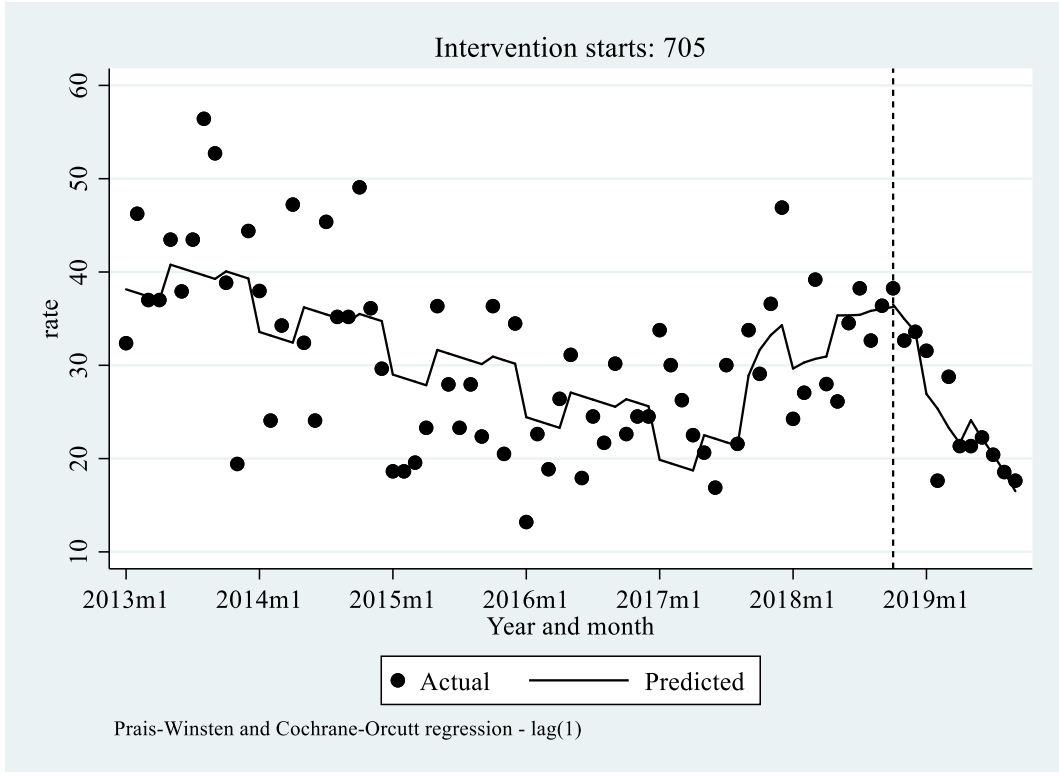


Figure 152 ITS Rate of alcohol-related assault offences per 10,000 population, Katherine

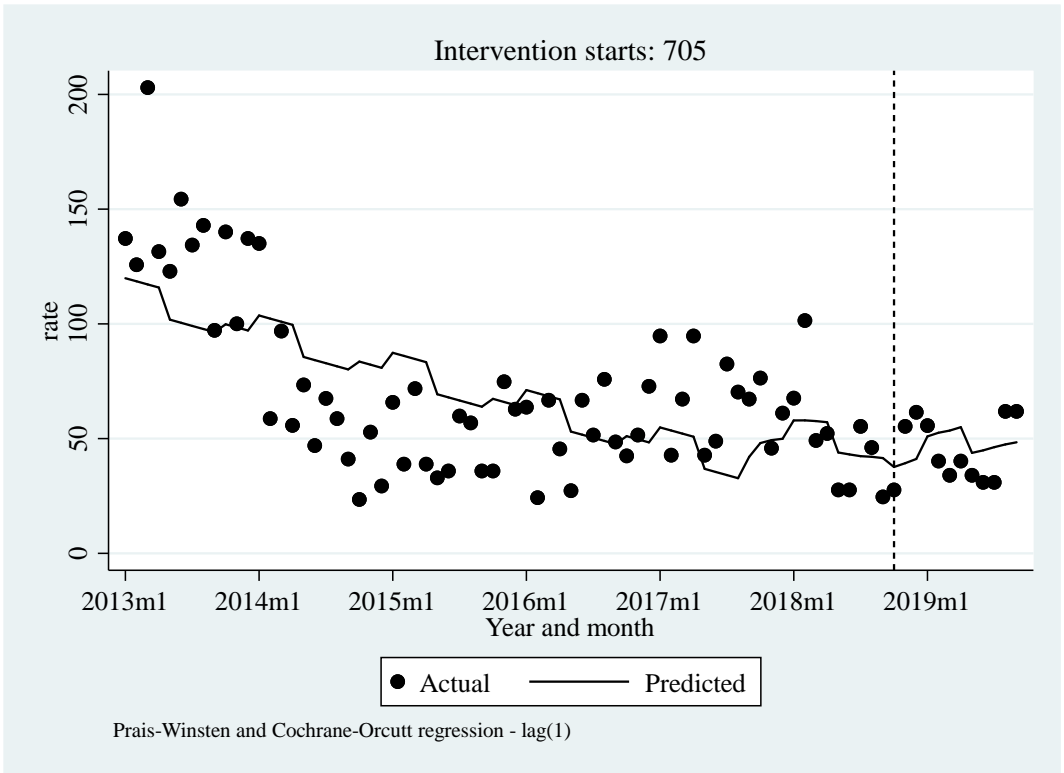


Figure 153 ITS Rate of alcohol-related assault offences per 10,000 population, Tennant Creek

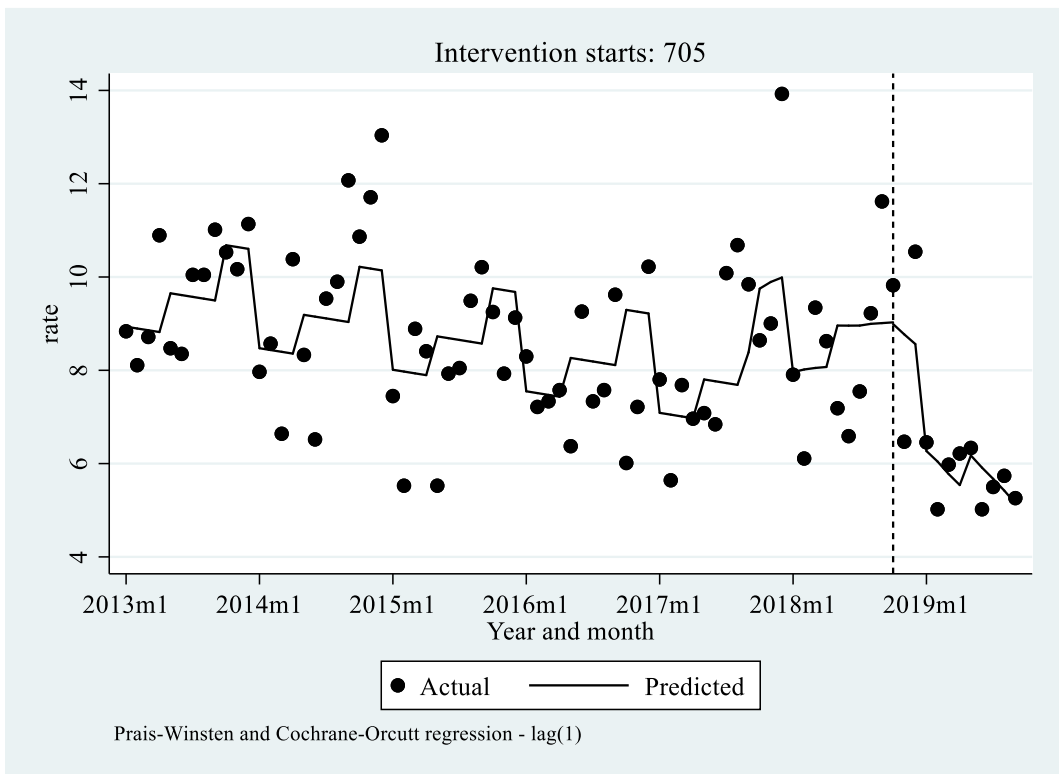


Figure 154 ITS Rate of alcohol-related assault offences per 10,000 population, Rest of the Northern Territory

10.3 POLICE ASSAULTS (OFFENDERS) MODELS

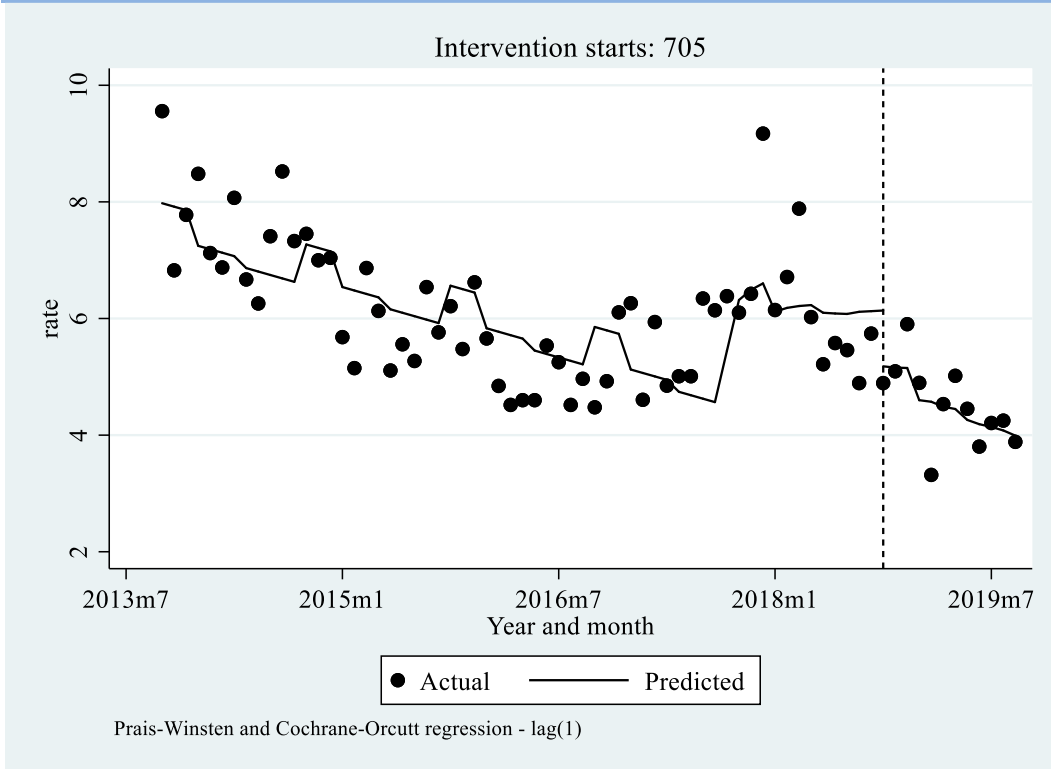


Figure 155 ITS Rate of offenders in alcohol-related assault offences per 10,000 population, Northern Territory

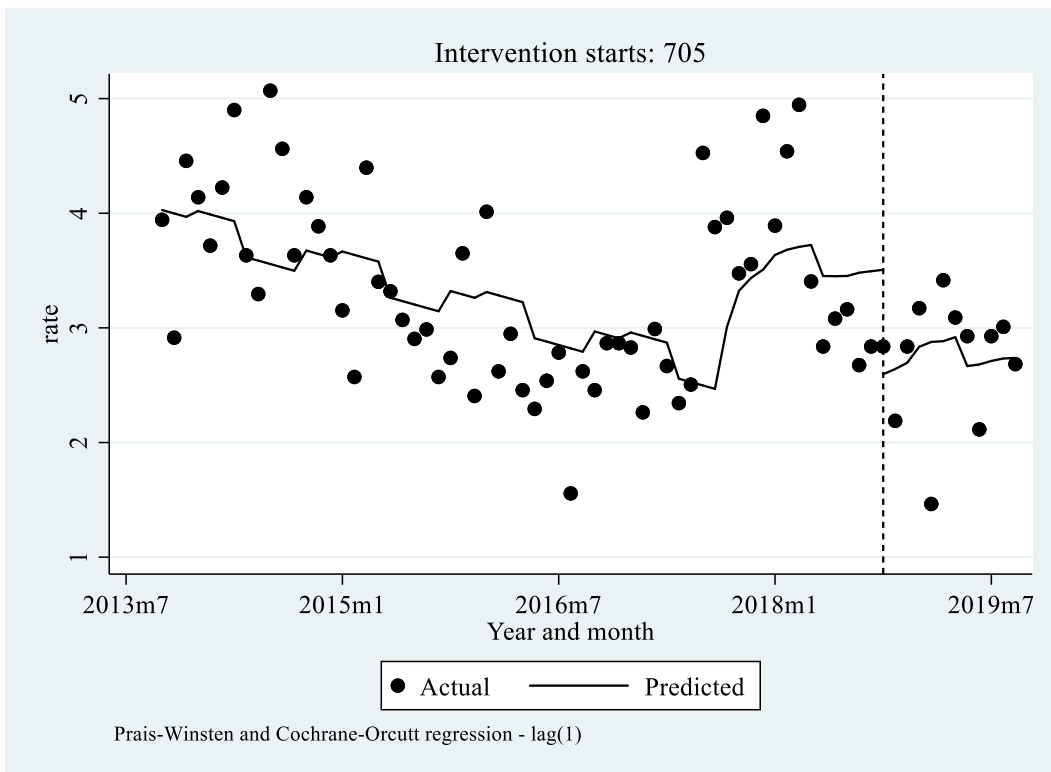


Figure 156 ITS Rate of offenders in alcohol-related assault offences per 10,000 population, Darwin and Palmerston

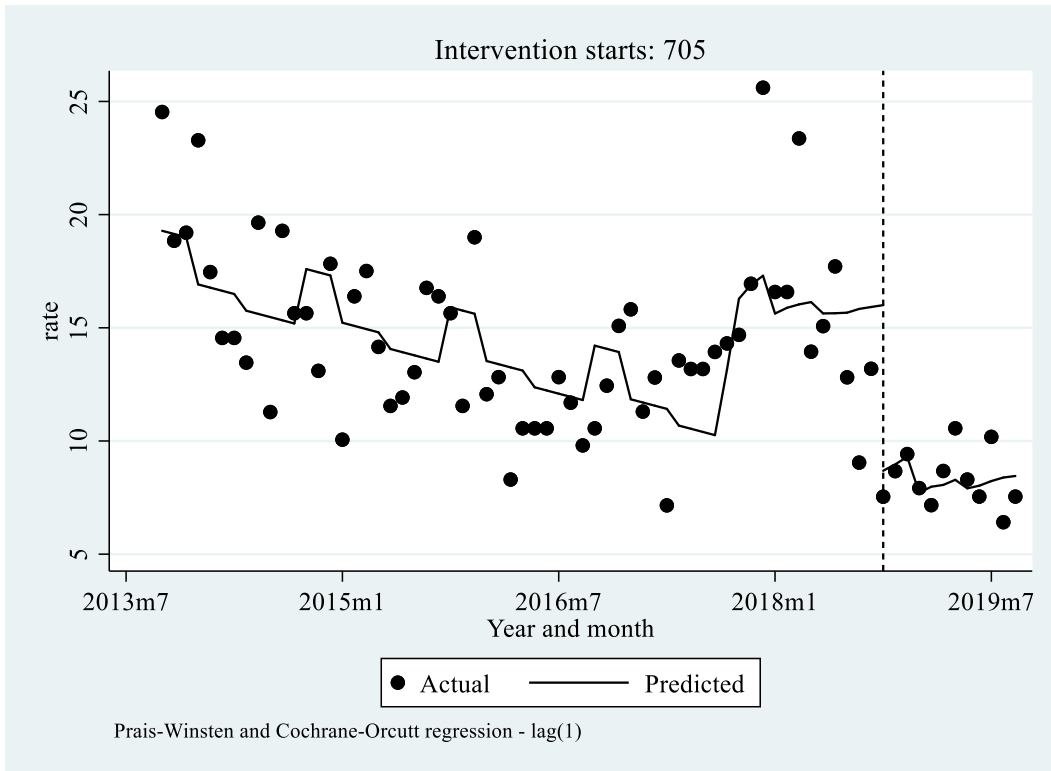


Figure 157 ITS Rate of offenders in alcohol-related assault offences per 10,000 population, Alice Springs

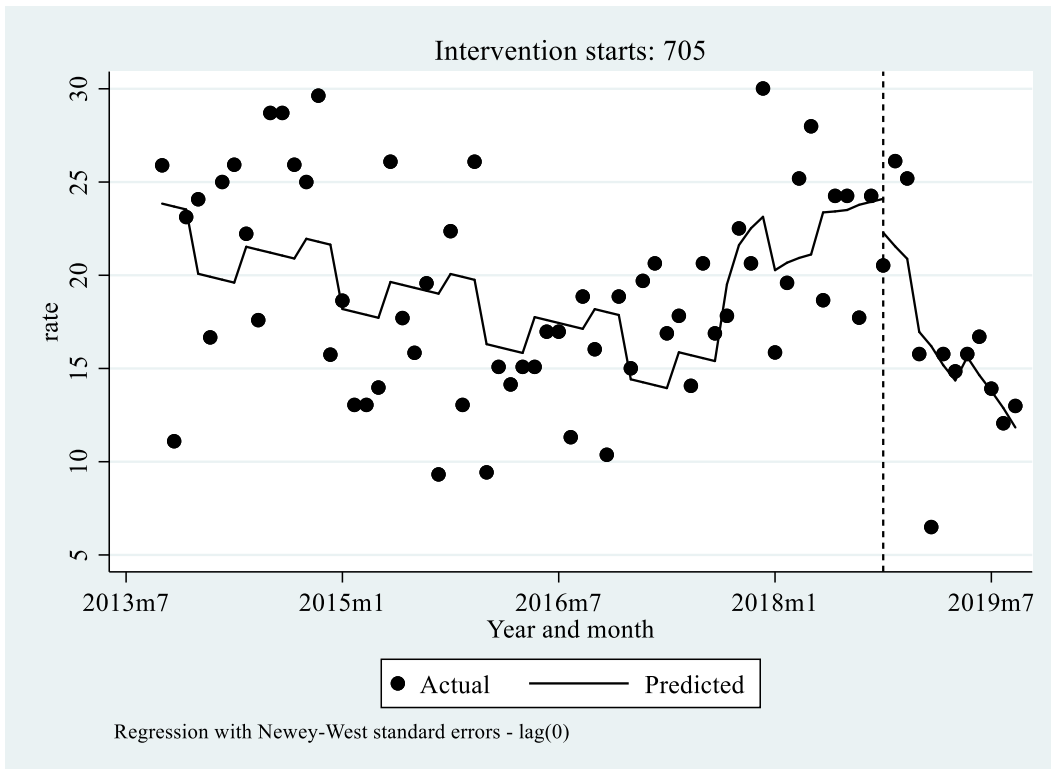


Figure 158 ITS Rate of offenders in alcohol-related assault offences per 10,000 population, Katherine

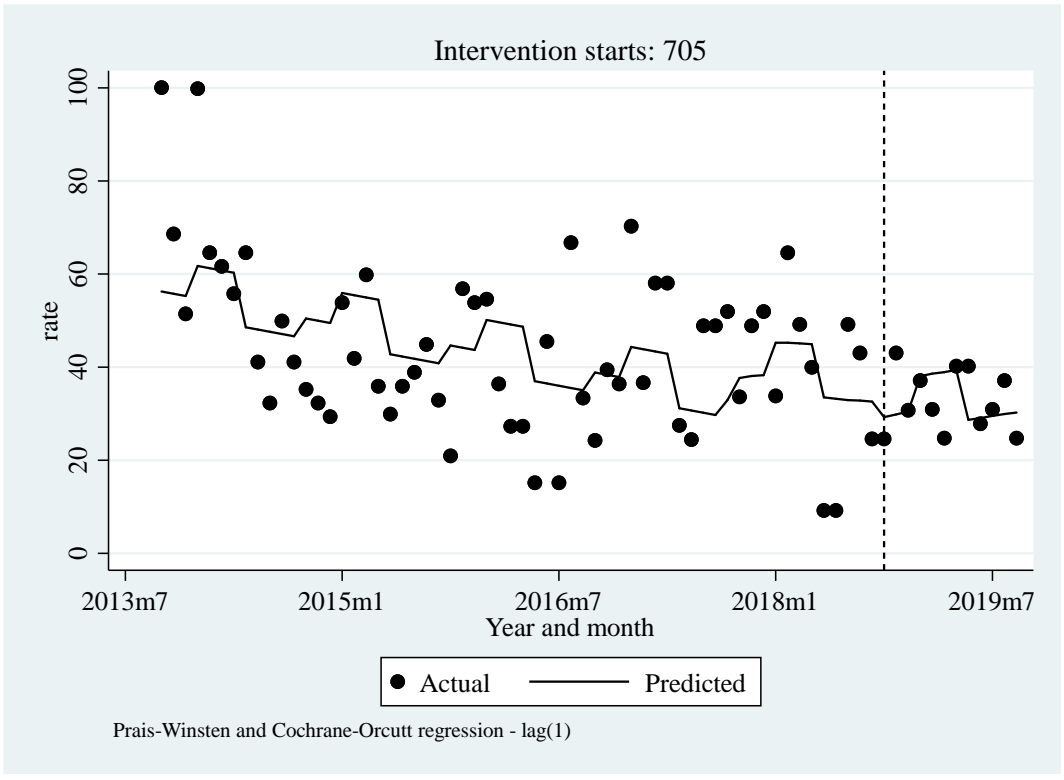


Figure 159 ITS Rate of offenders in alcohol-related assault offences per 10,000 population, Tennant Creek

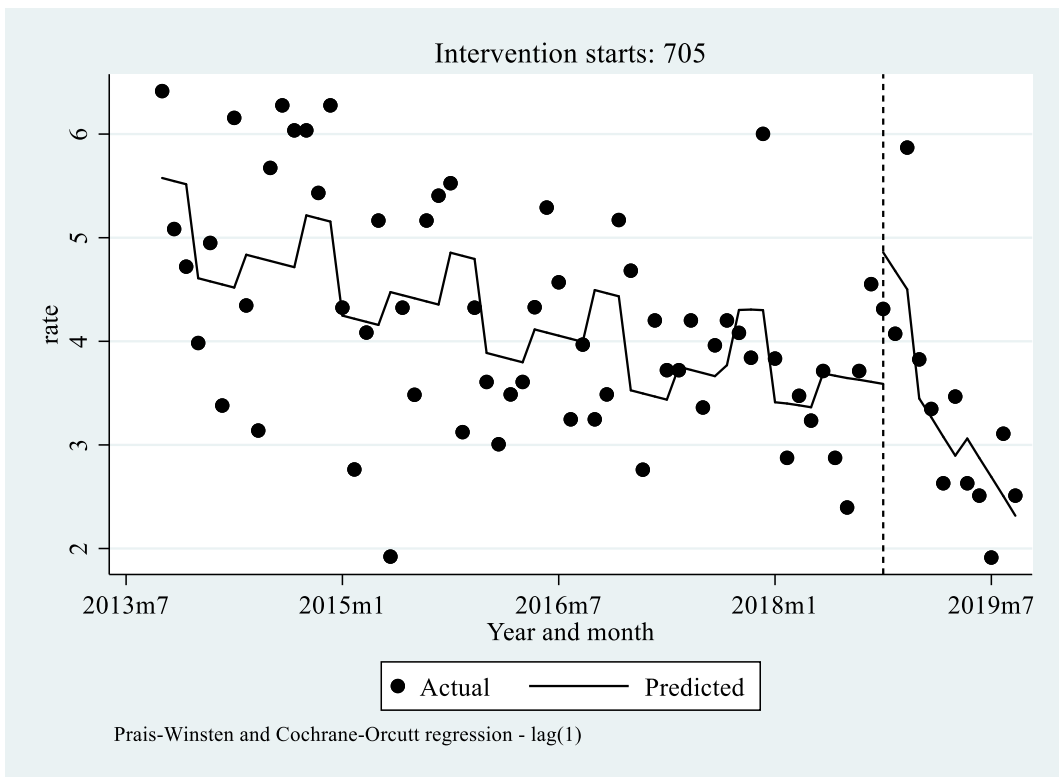


Figure 160 ITS Rate of offenders in alcohol-related assault offences per 10,000 population, Rest of Northern Territory

10.4 POLICE ASSAULTS (VICTIMS) MODELS

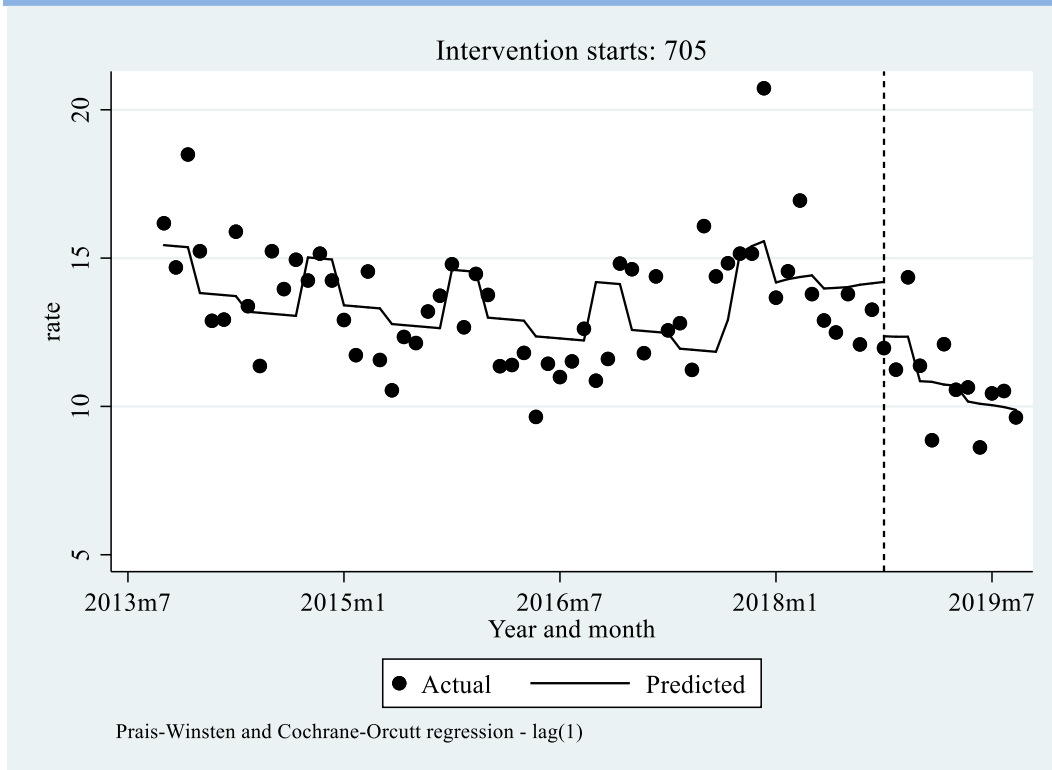


Figure 161 ITS Rate of victims in alcohol-related assault offences per 10,000 population, Northern Territory

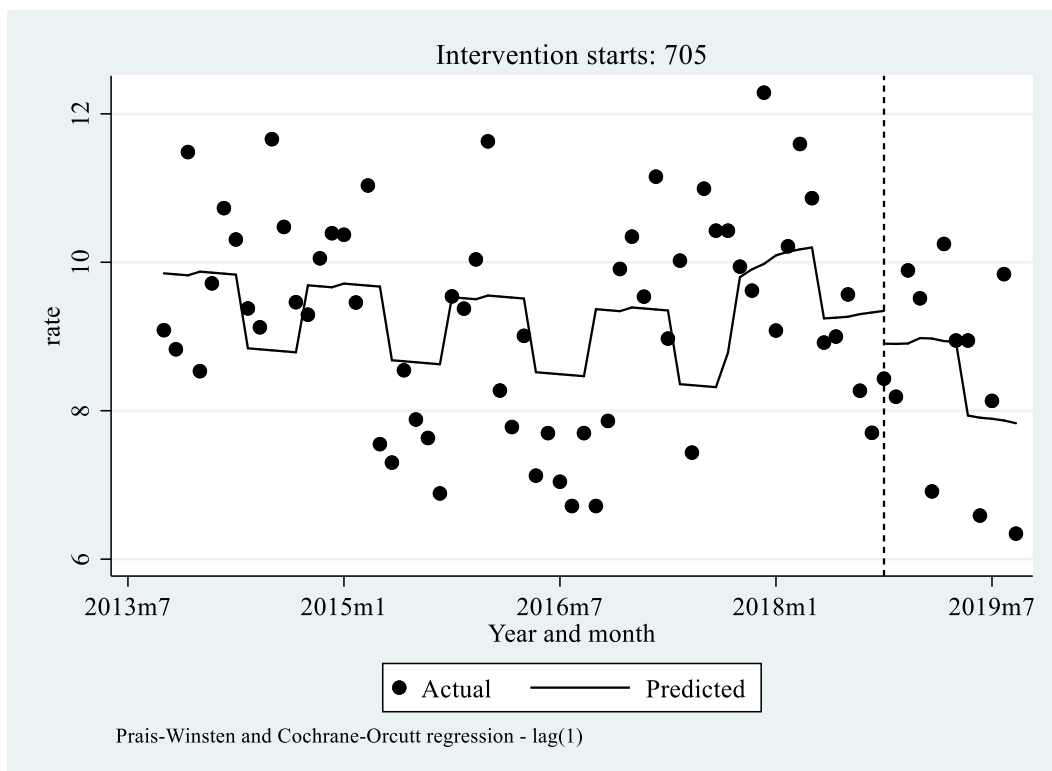


Figure 162 ITS Rate of victims in alcohol-related assault offences per 10,000 population, Darwin and Palmerston

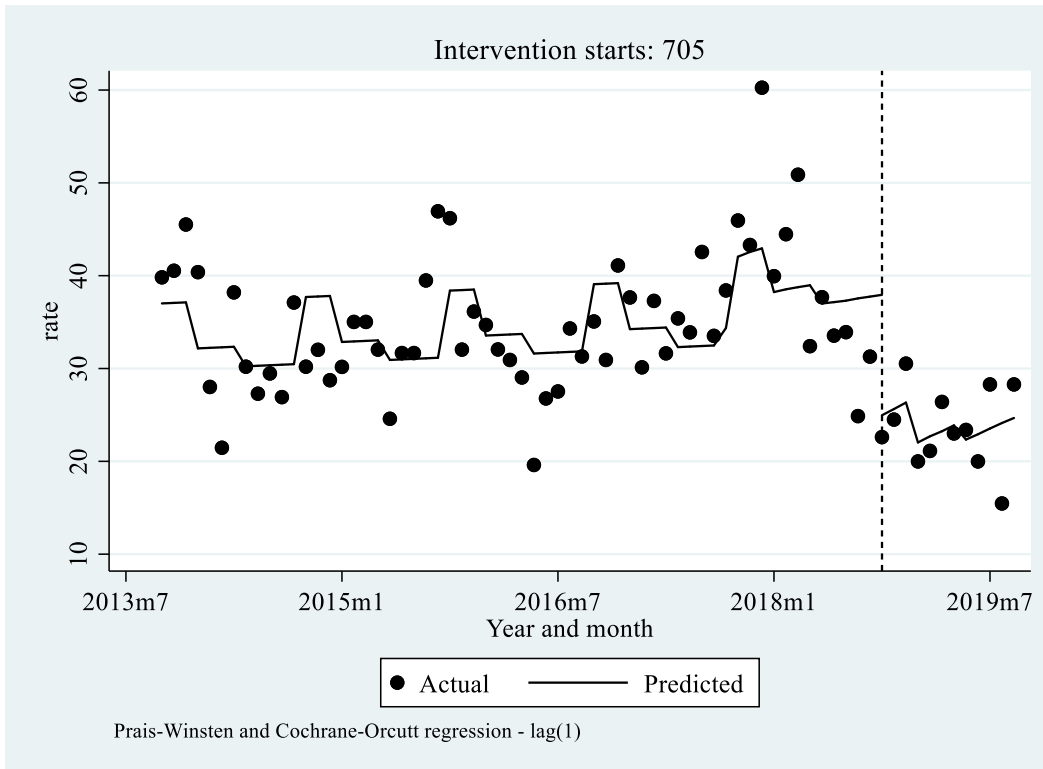


Figure 163 ITS Rate of victims in alcohol-related assault offences per 10,000 population, Alice Springs

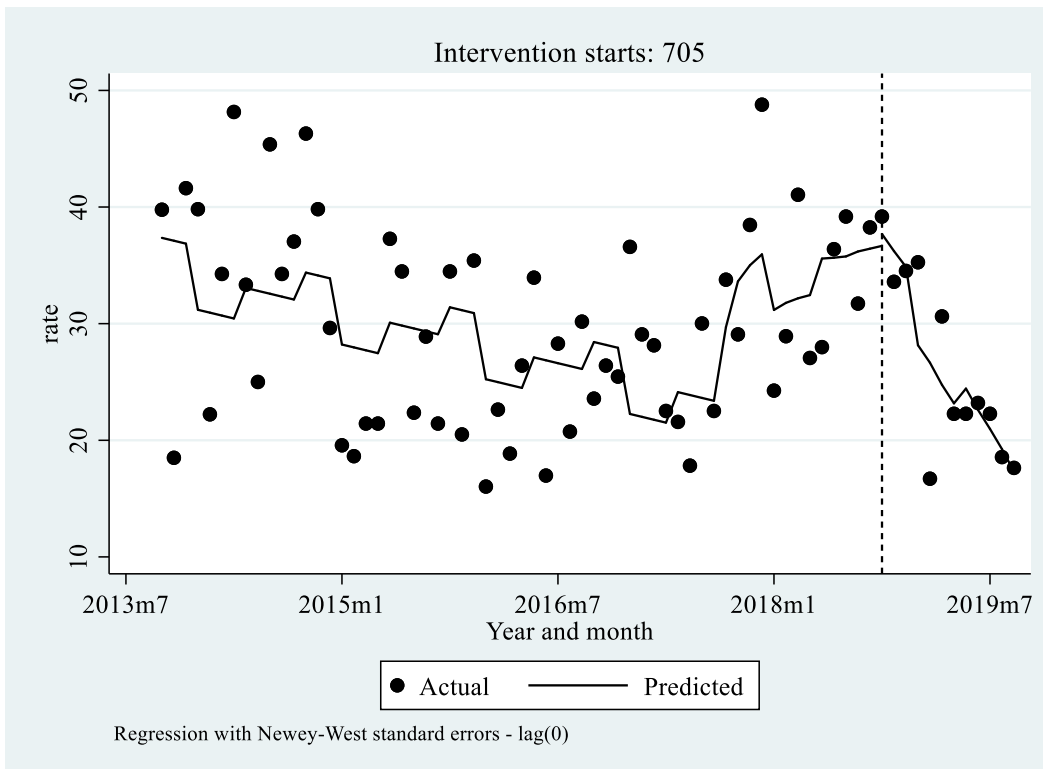


Figure 164 ITS Rate of victims in alcohol-related assault offences per 10,000 population, Katherine

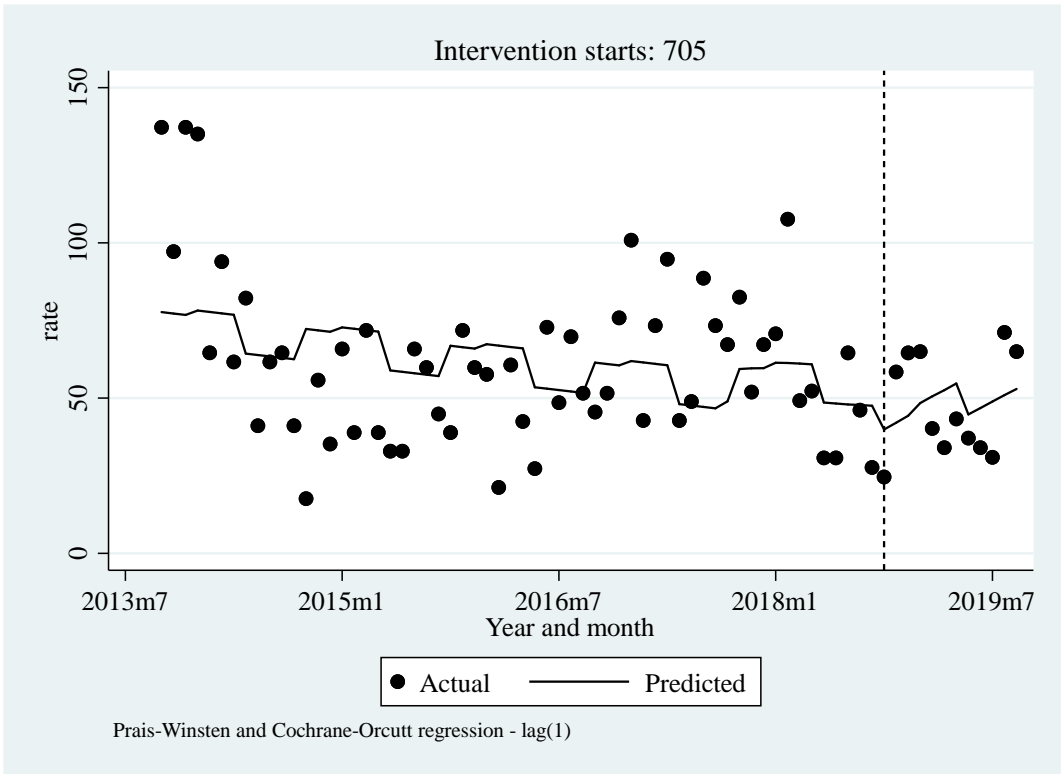


Figure 165 ITS Rate of victims in alcohol-related assault offences per 10,000 population, Tennant Creek

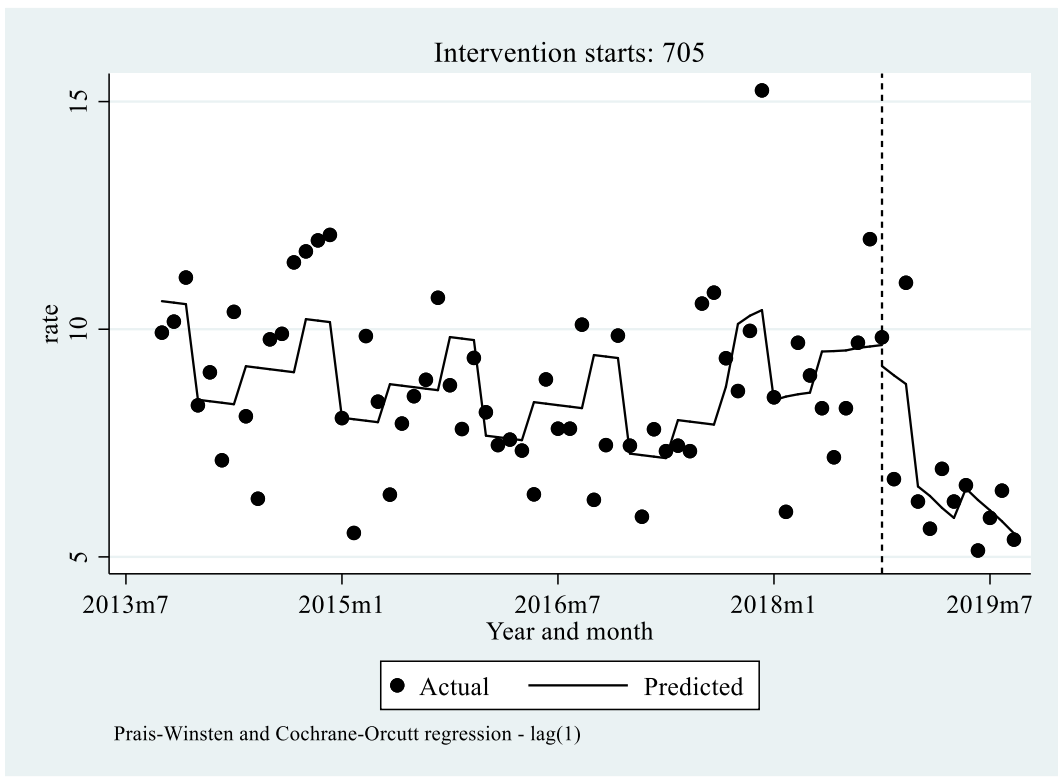


Figure 166 ITS Rate of victims in alcohol-related assault offences per 10,000 population, Rest of Northern Territory

10.5 POLICE PROTECTIVE CUSTODY MODELS

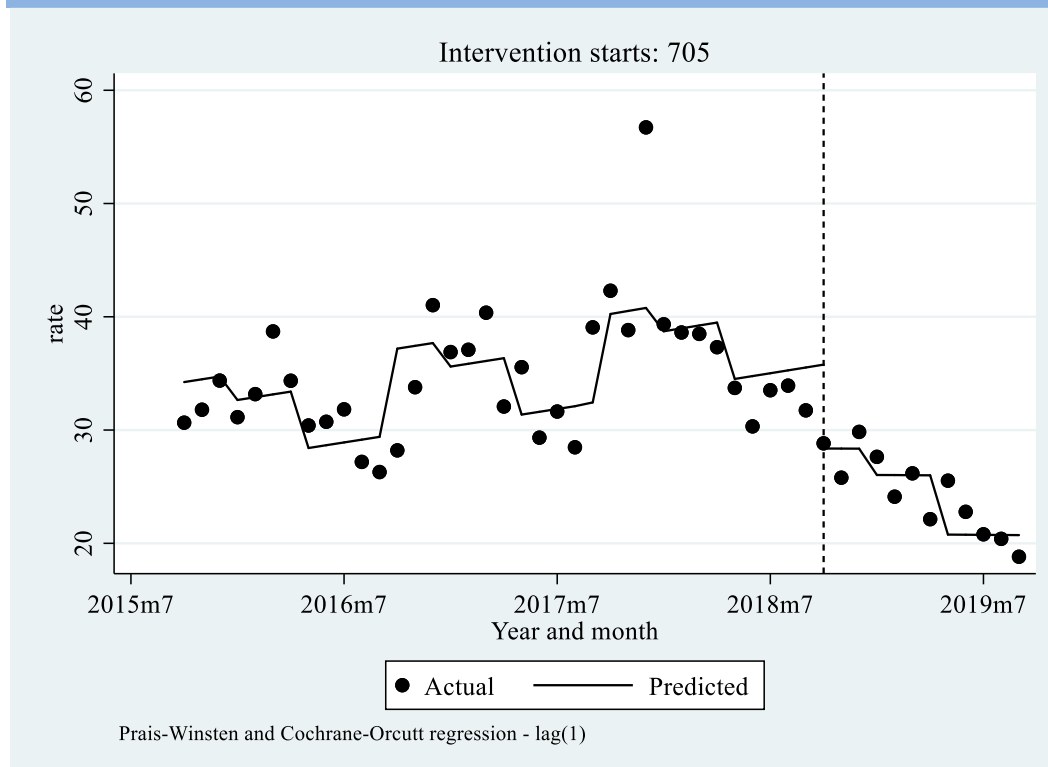


Figure 167 ITS Rate of alcohol-related protective custody episodes, Northern Territory

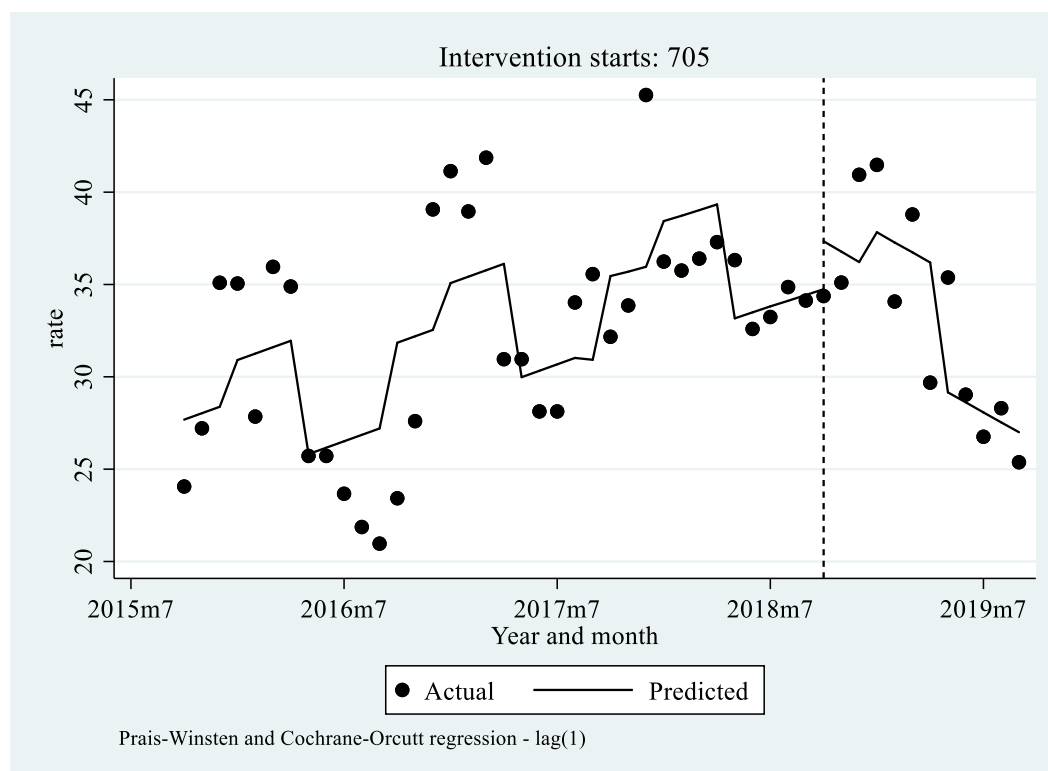


Figure 168 ITS Rate of alcohol-related protective custody episodes, Darwin and Palmerston

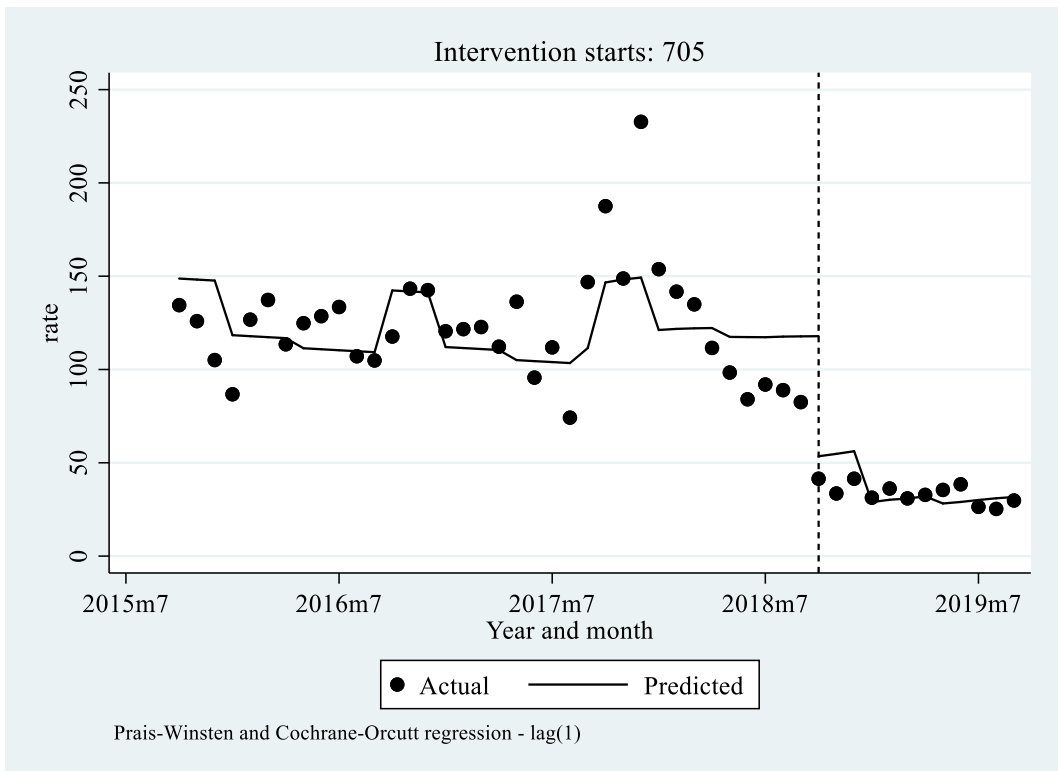


Figure 169 ITS Rate of alcohol-related protective custody episodes, Alice Springs

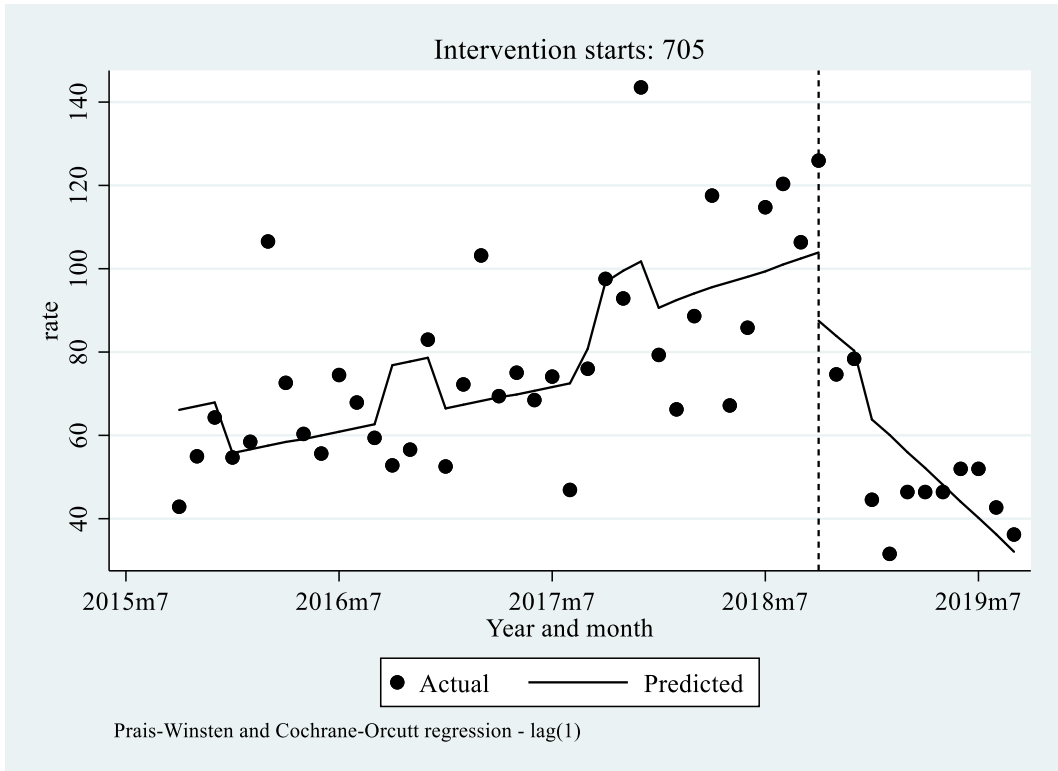


Figure 170 ITS Rate of alcohol-related protective custody episodes, Katherine

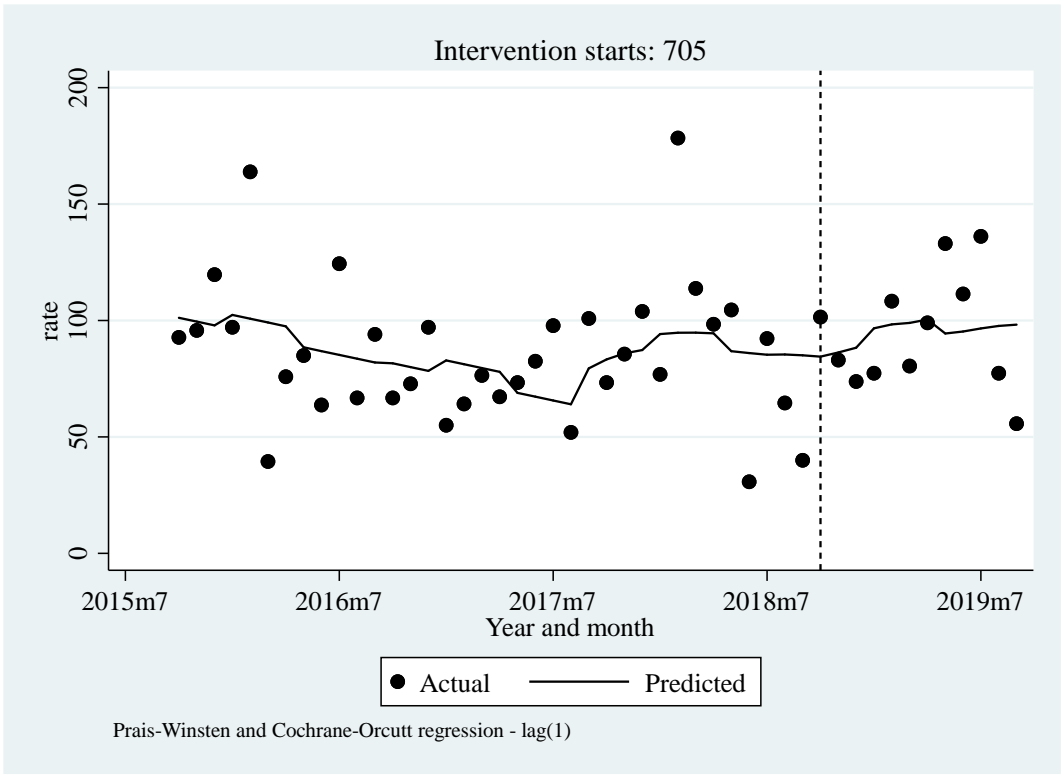


Figure 171 ITS Rate of alcohol-related protective custody episodes, Tennant Creek

10.1 AMBULANCE ATTENDANCE MODELS

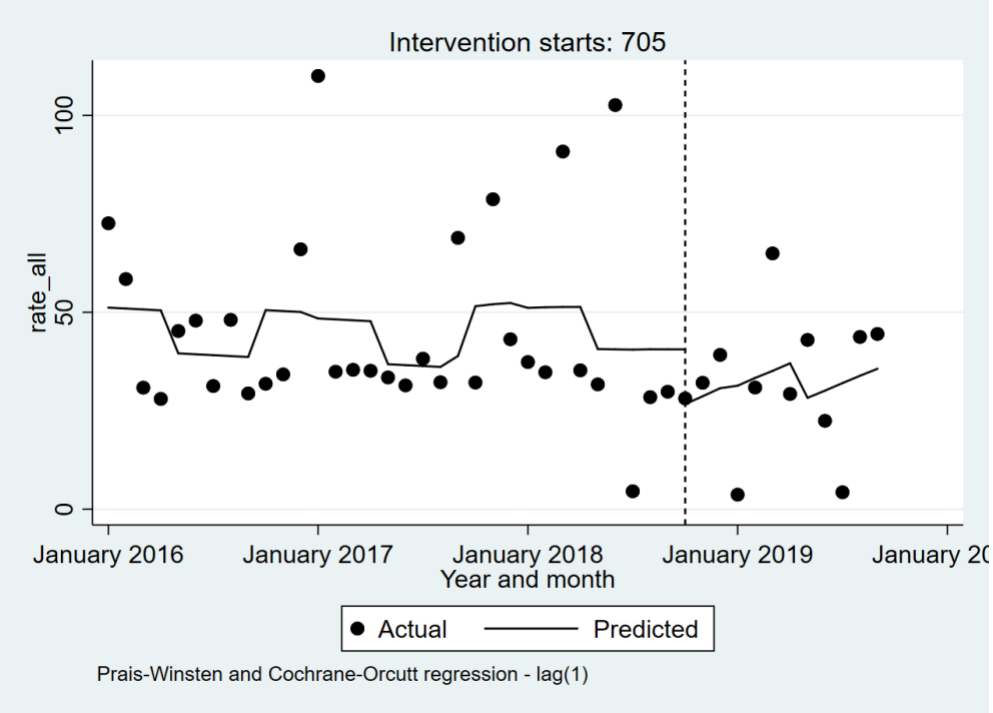


Figure 172 ITS Rate of alcohol-related ambulance attendances per 10,000 population, Northern Territory

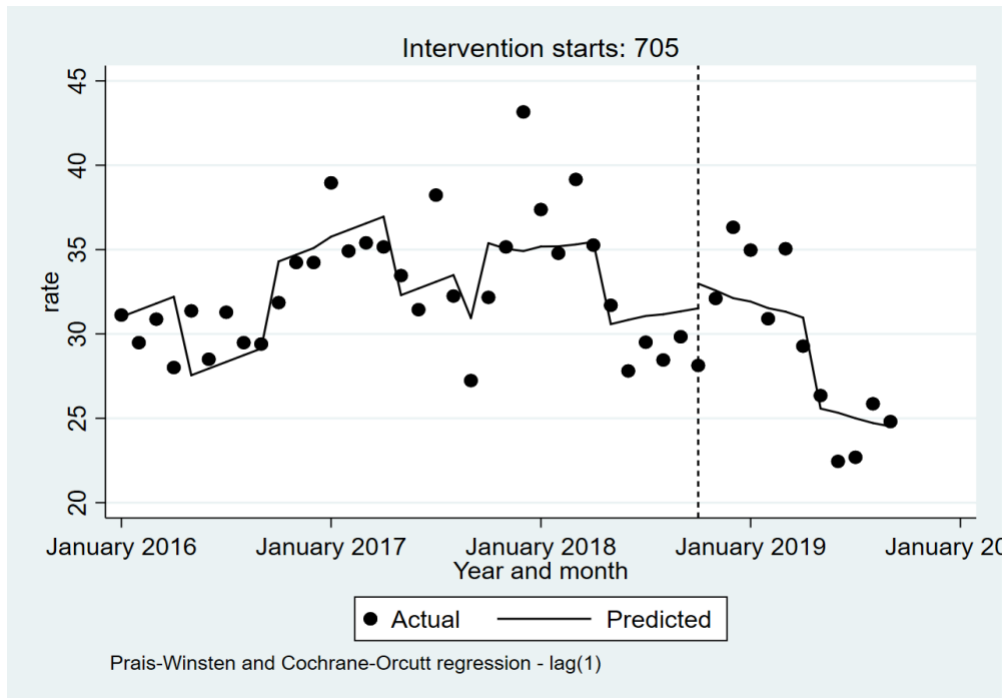


Figure 173 ITS Rate of alcohol-related ambulance attendances per 10,000 population, Darwin and Palmerston

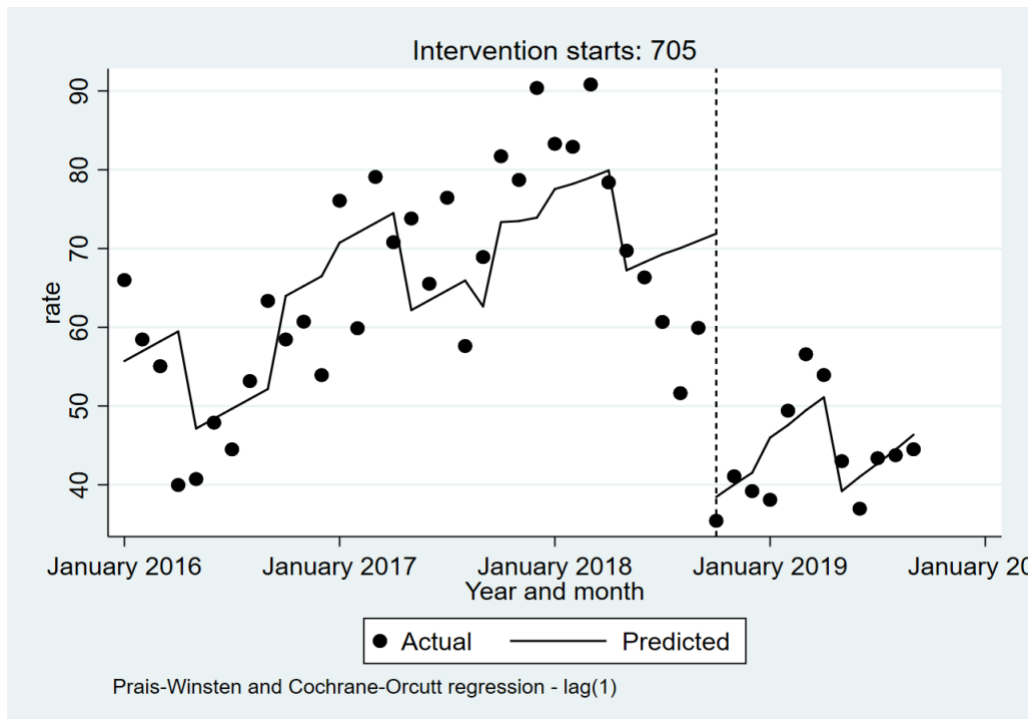


Figure 174 ITS Rate of alcohol-related ambulance attendances per 10,000 population, Alice Springs

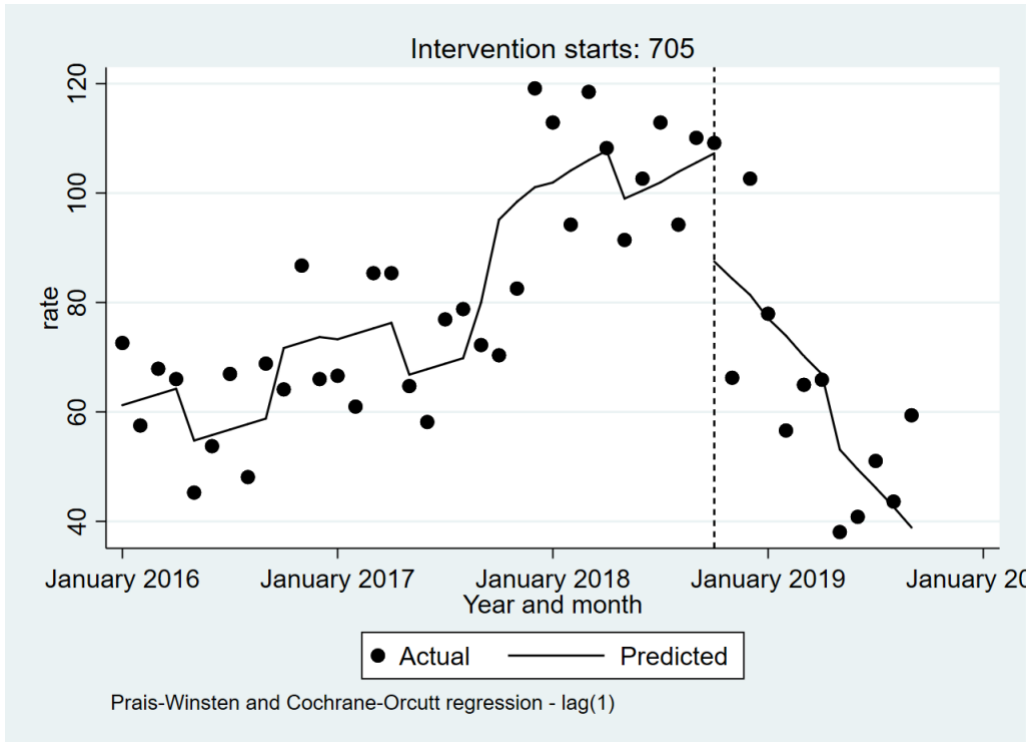


Figure 175 ITS Rate of alcohol-related ambulance attendances per 10,000 population, Katherine

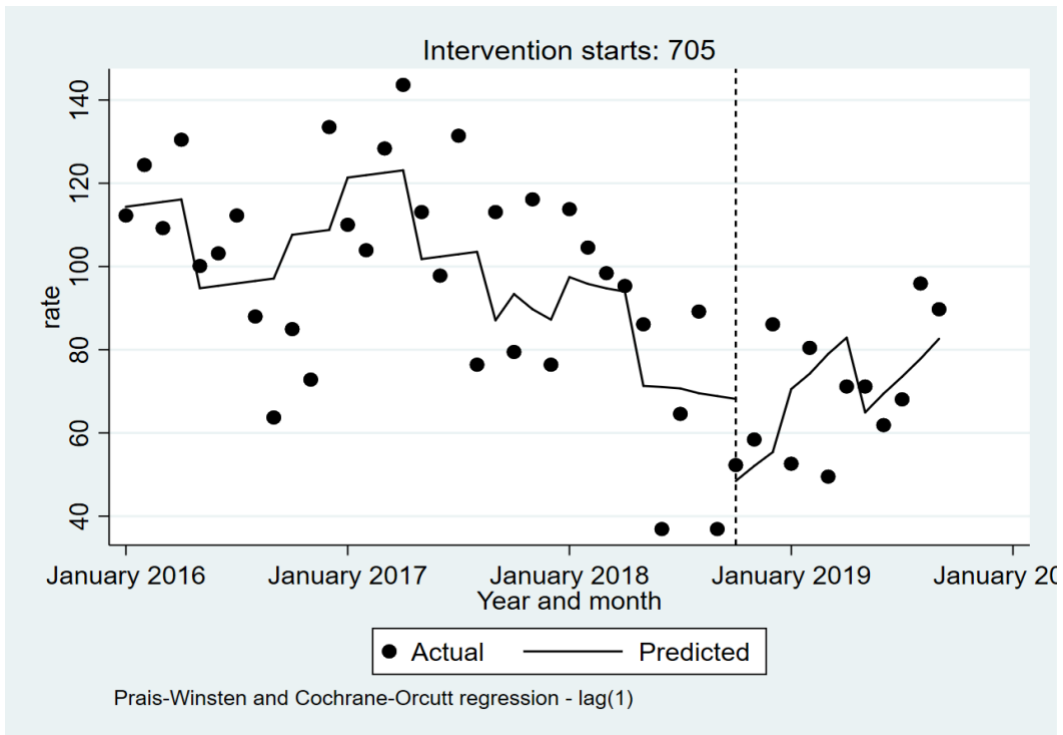


Figure 176 ITS Rate of alcohol-related ambulance attendances per 10,000 population, Tennant Creek

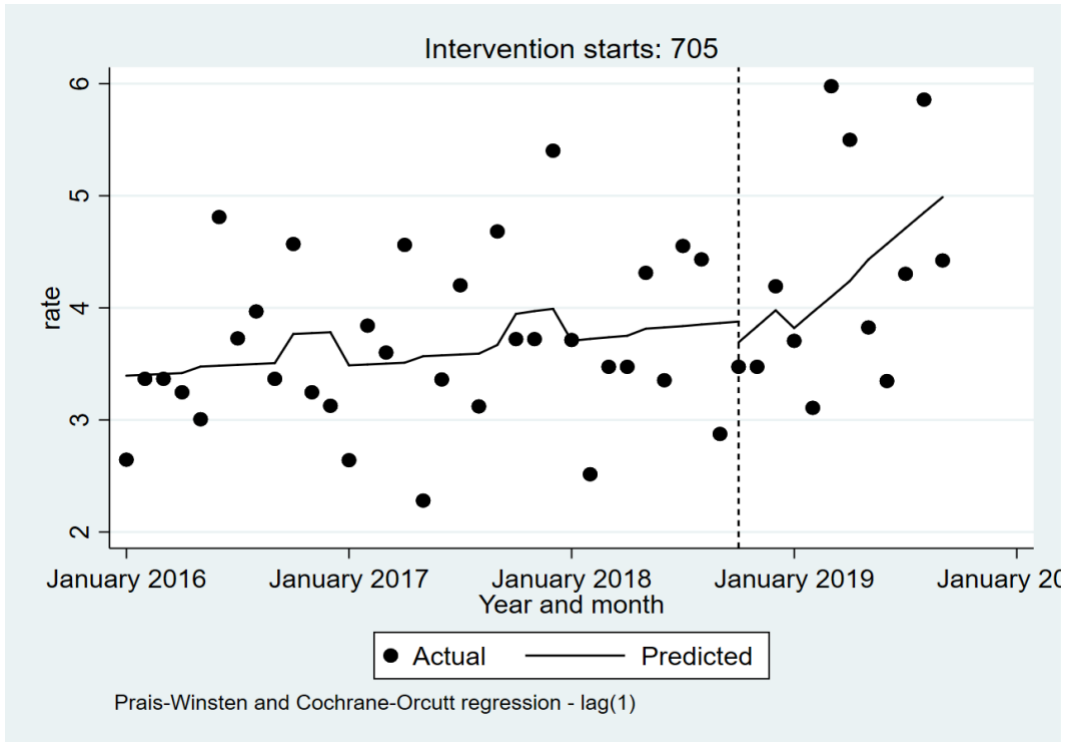


Figure 177 ITS Rate of alcohol-related ambulance attendances per 10,000 population, Rest of NT

10.2 EMERGENCY DEPARTMENT PRESENTATIONS MODELS

10.2.1 ALCOHOL-RELATED PRESENTATIONS

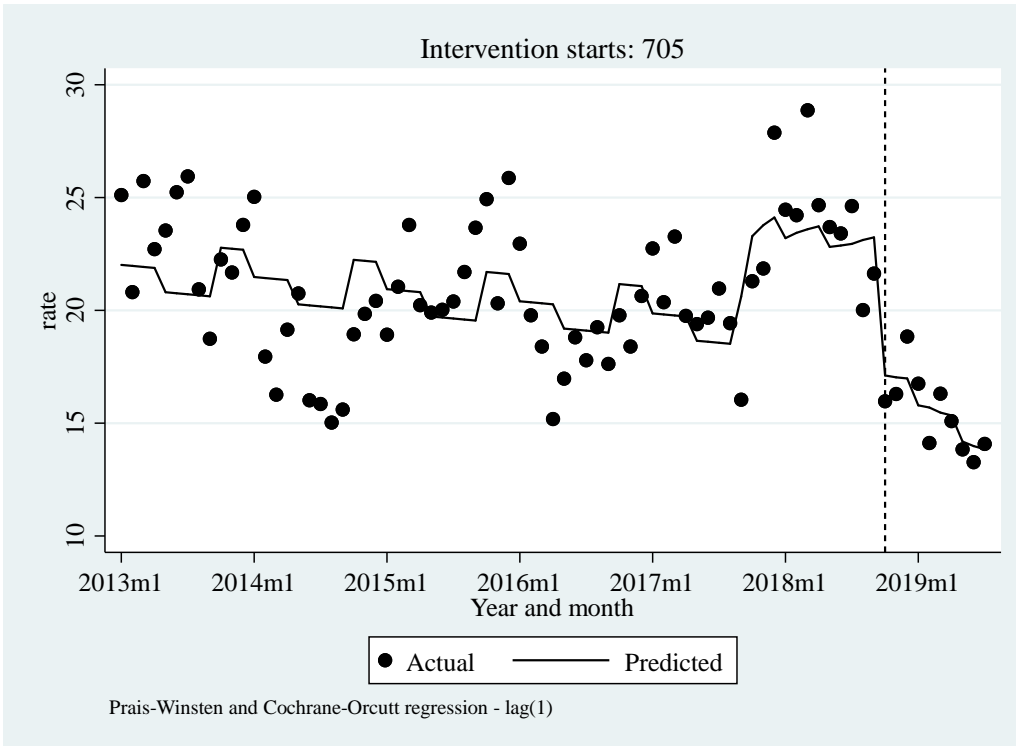


Figure 178 ITS Rate of alcohol-related ED presentations per 10,000 people, Northern Territory

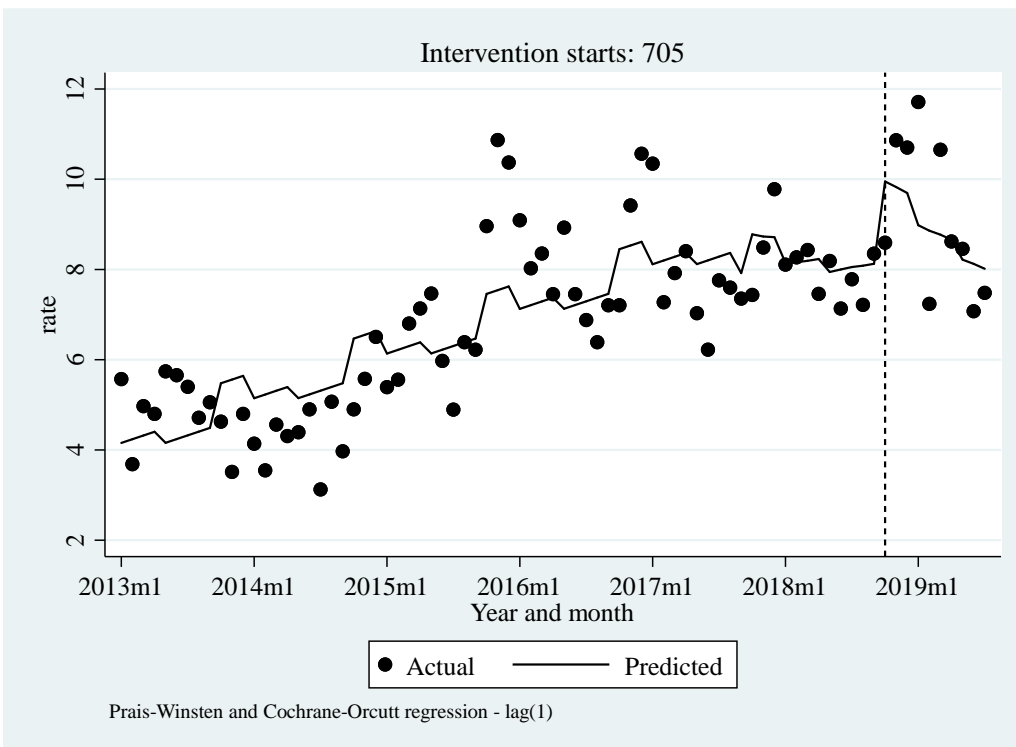


Figure 179 ITS Rate of alcohol-related ED presentations per 10,000 people, Darwin

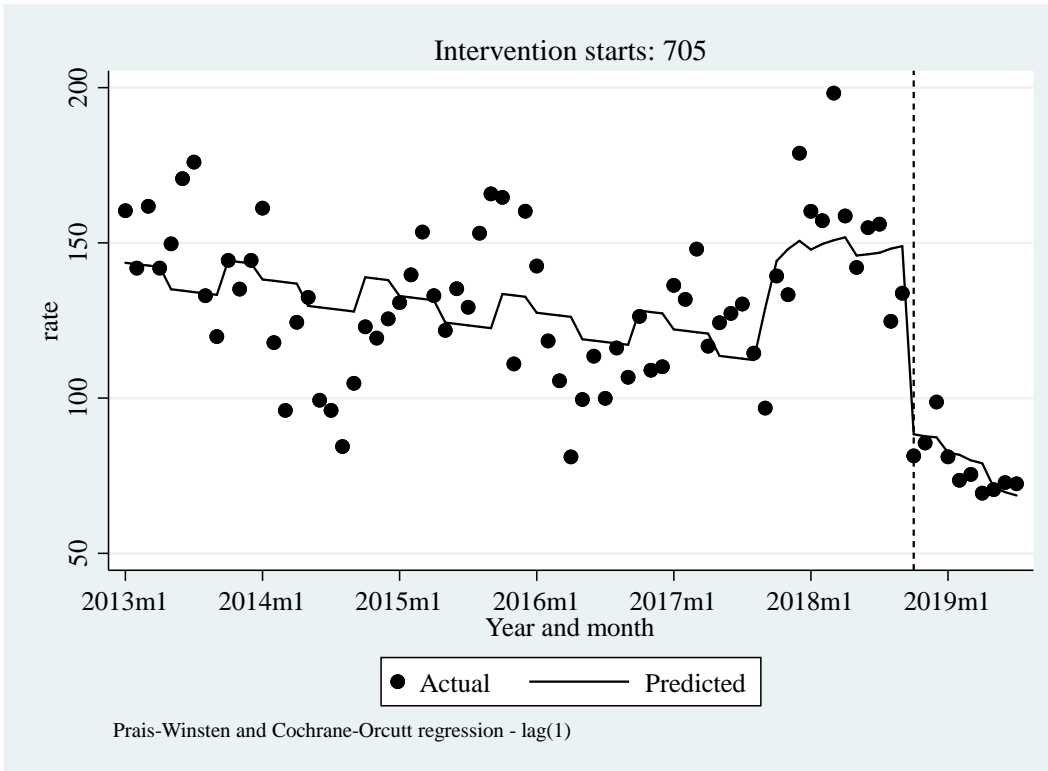


Figure 180 ITS Rate of alcohol-related ED presentations per 10,000 people, Alice Springs

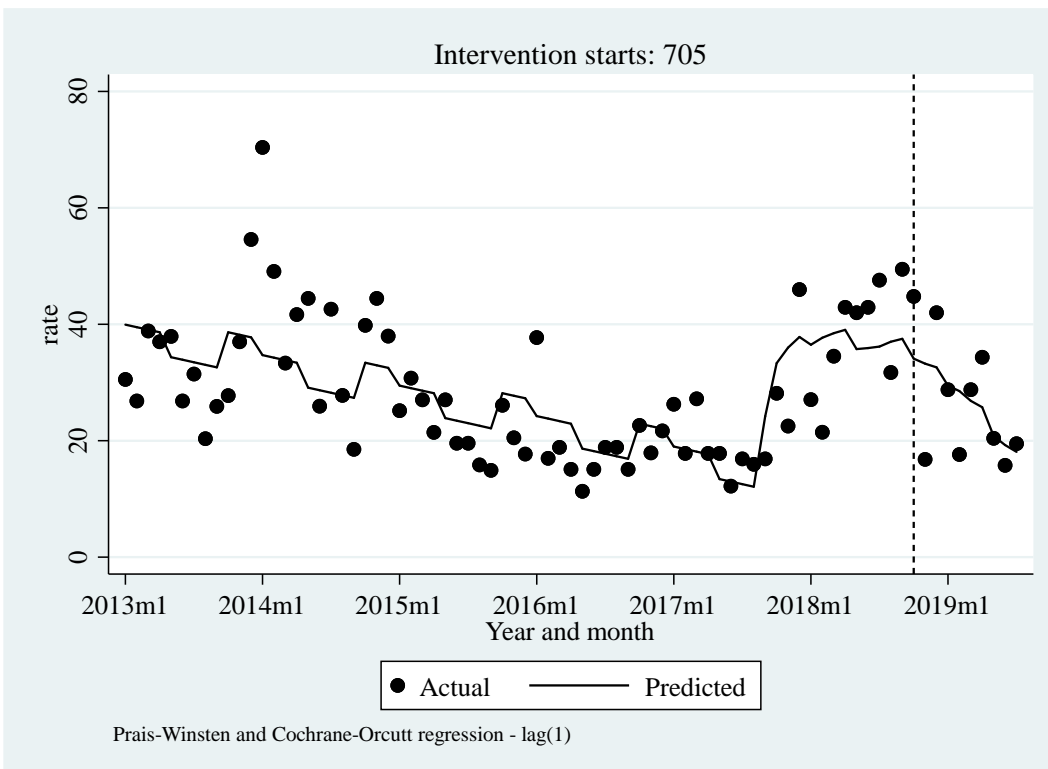


Figure 181 ITS Rate of alcohol-related ED presentations per 10,000 people, Katherine

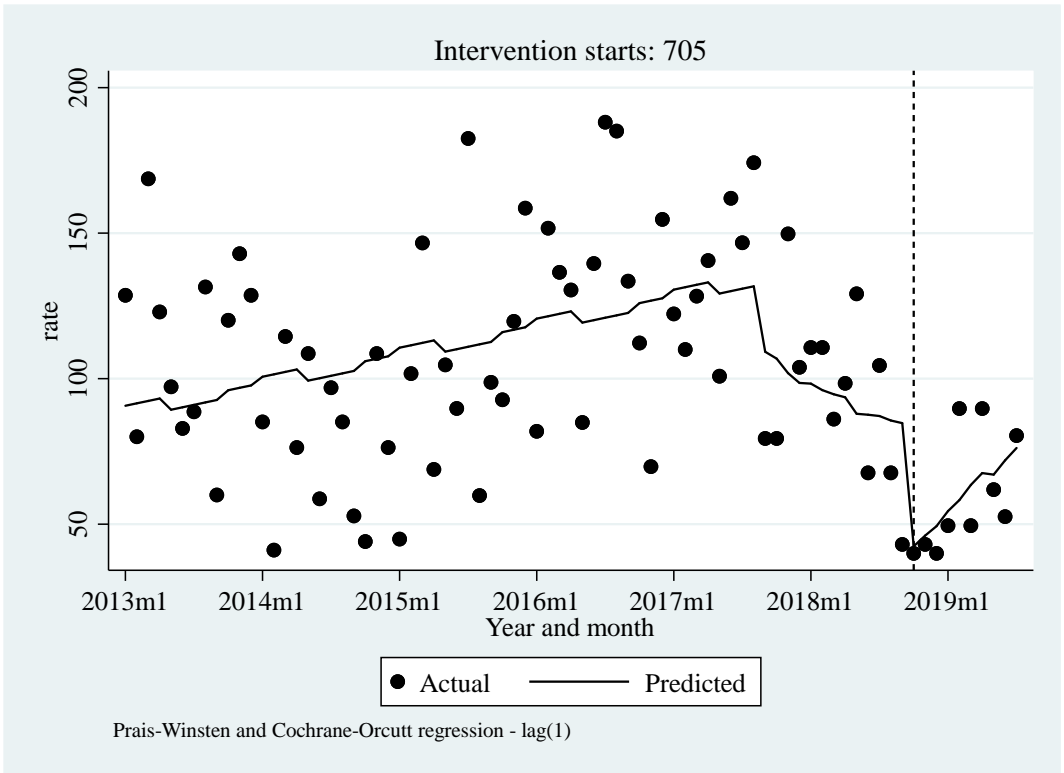


Figure 182 ITS Rate of alcohol-related ED presentations per 10,000 people, Tennant Creek

10.2.2 OTHER SUBSTANCE USE

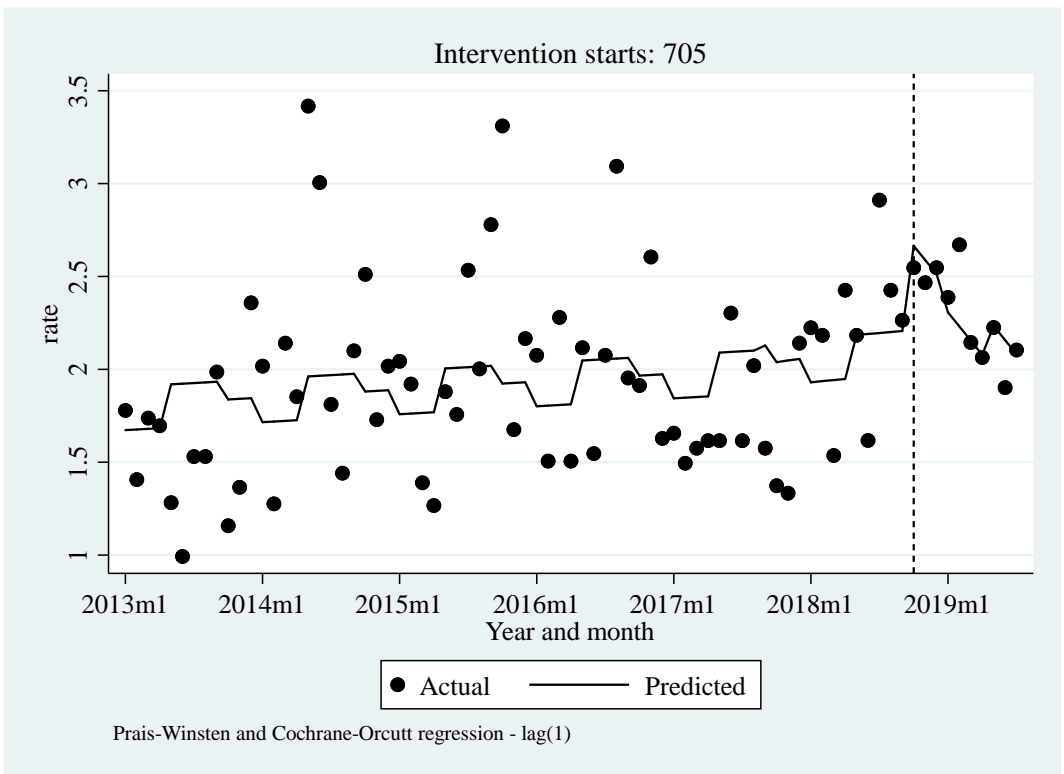


Figure 183 ITS Rate other substance use ED presentations per 10,000 people, Northern Territory

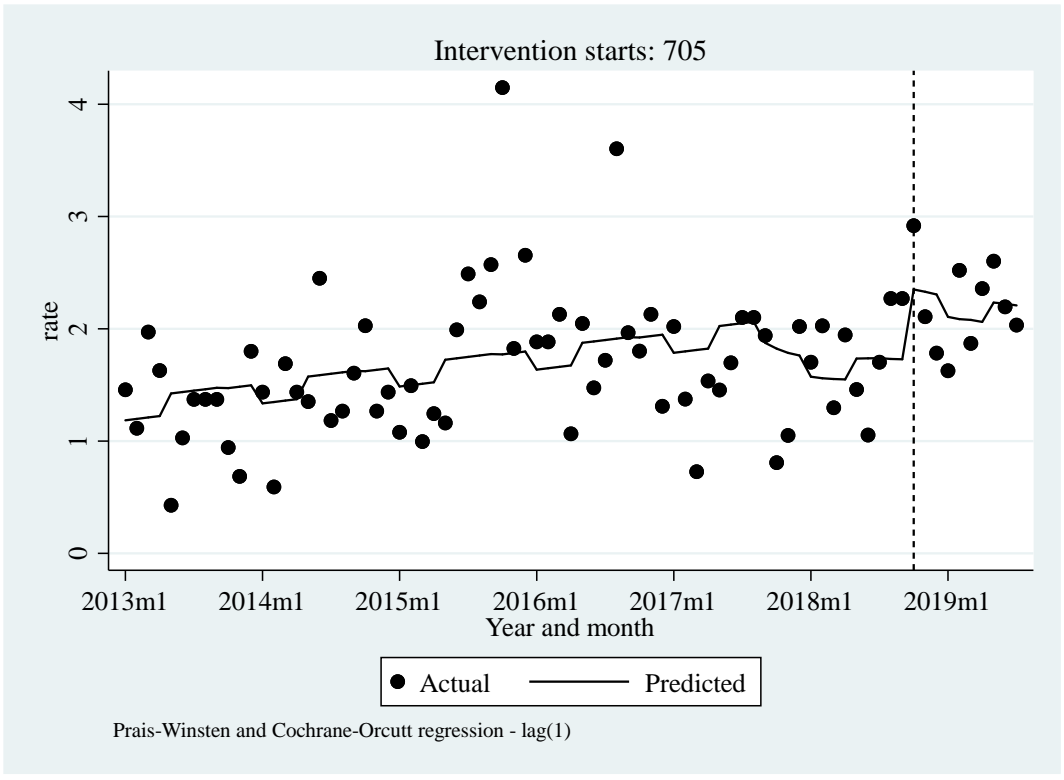


Figure 184 ITS Rate other substance use ED presentations per 10,000 people, Darwin

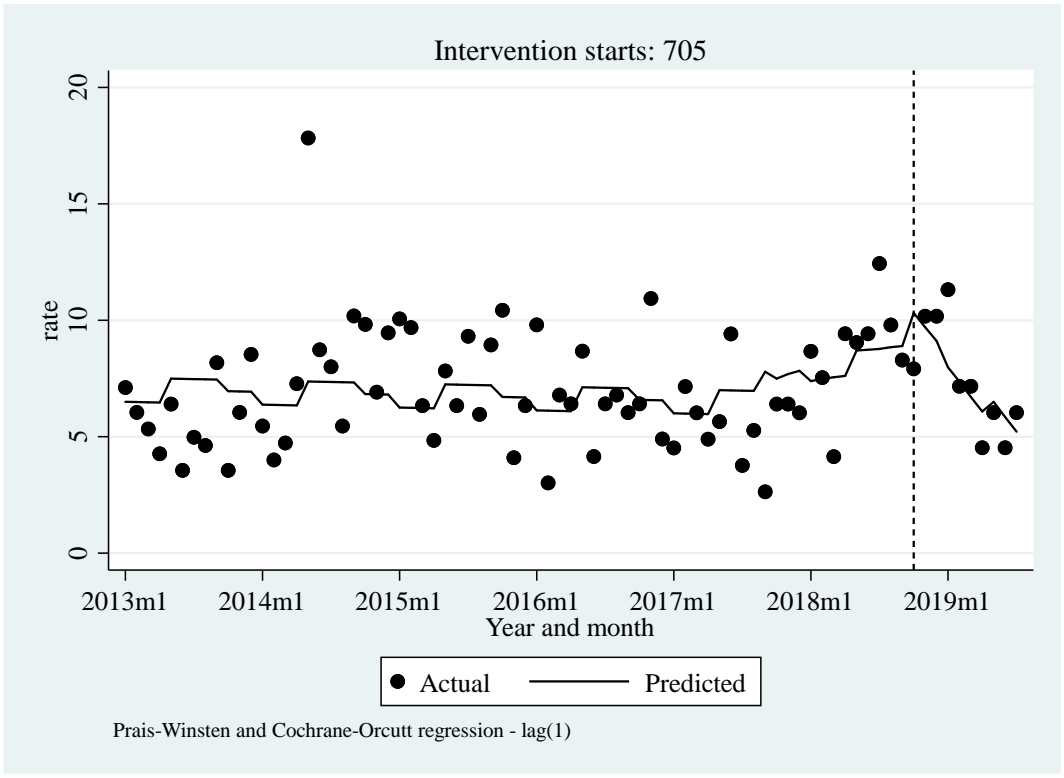


Figure 185 ITS Rate other substance use ED presentations per 10,000 people, Alice Springs

10.2.3 FRACTURE OF SKULL AND FACIAL BONES

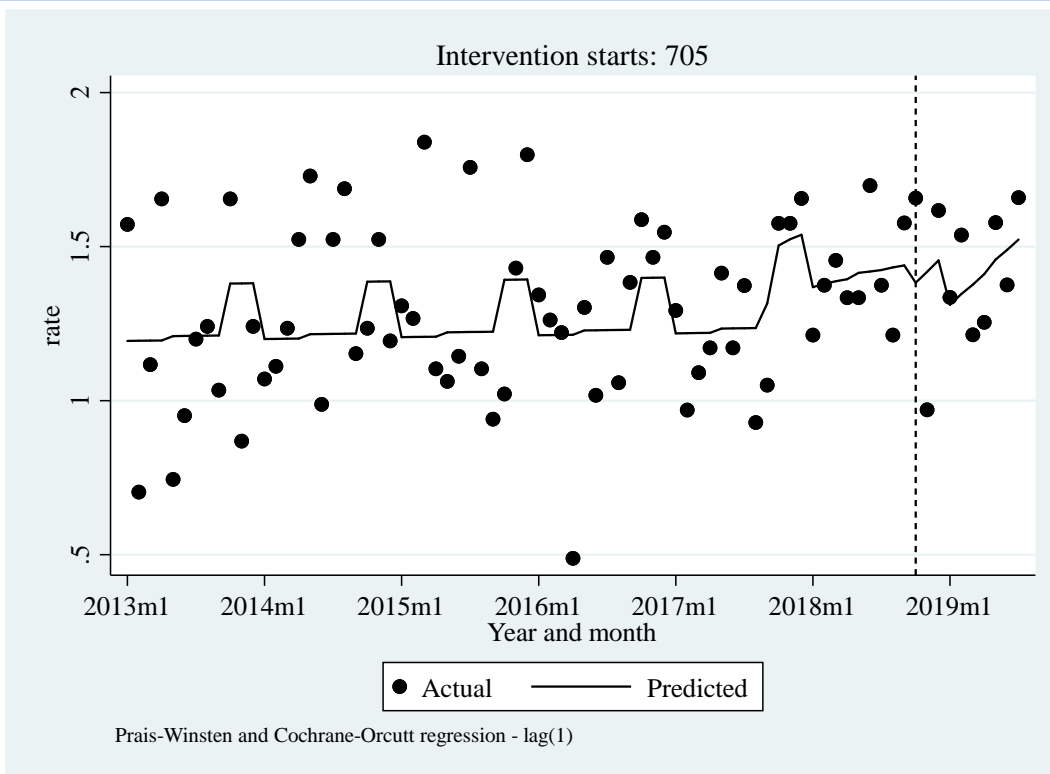


Figure 186 ITS Rate of fracture of skull and facial bones-related ED presentations per 10,000 people, Northern Territory

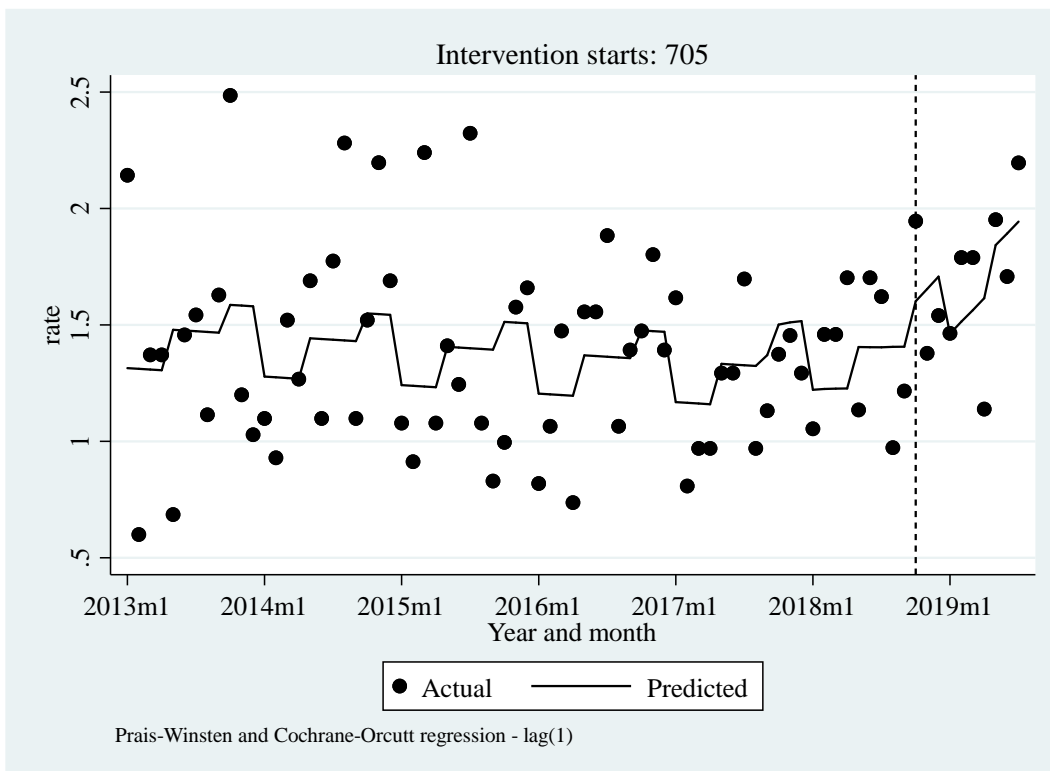


Figure 187 ITS Rate of fracture of skull and facial bones-related ED presentations per 10,000 people, Darwin

10.2.4 FRACTURE OF FOREARM BONES

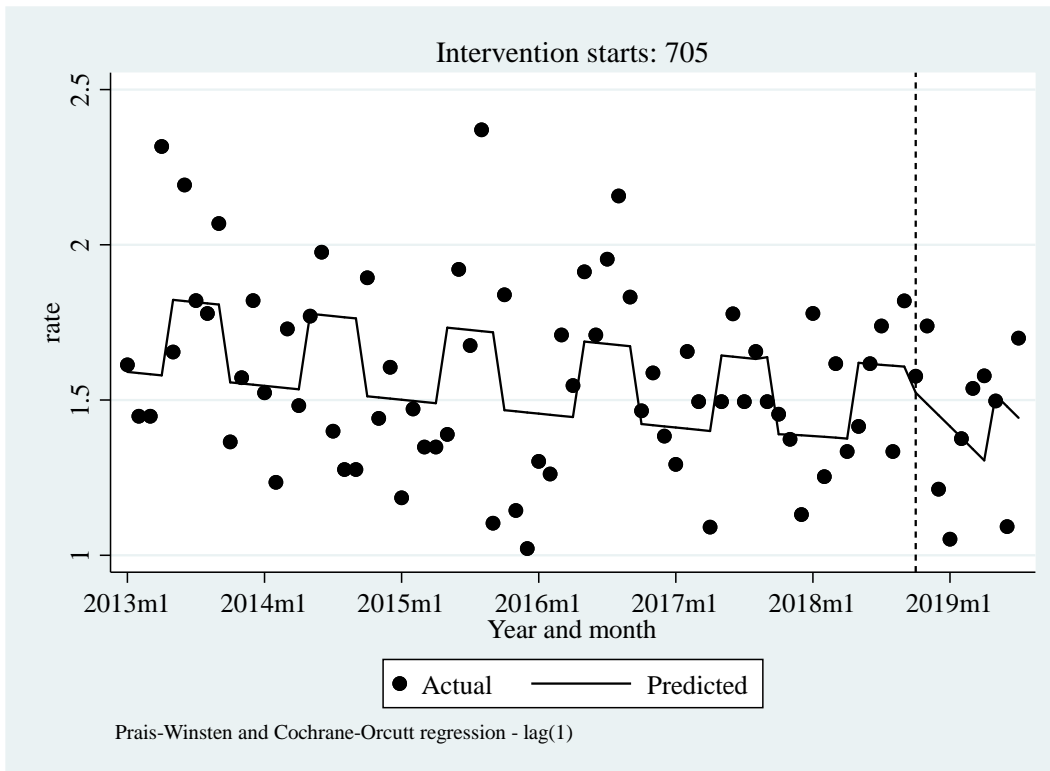


Figure 188 ITS Rate of fracture of forearm bones-related ED presentations per 10,000 people, Northern Territory

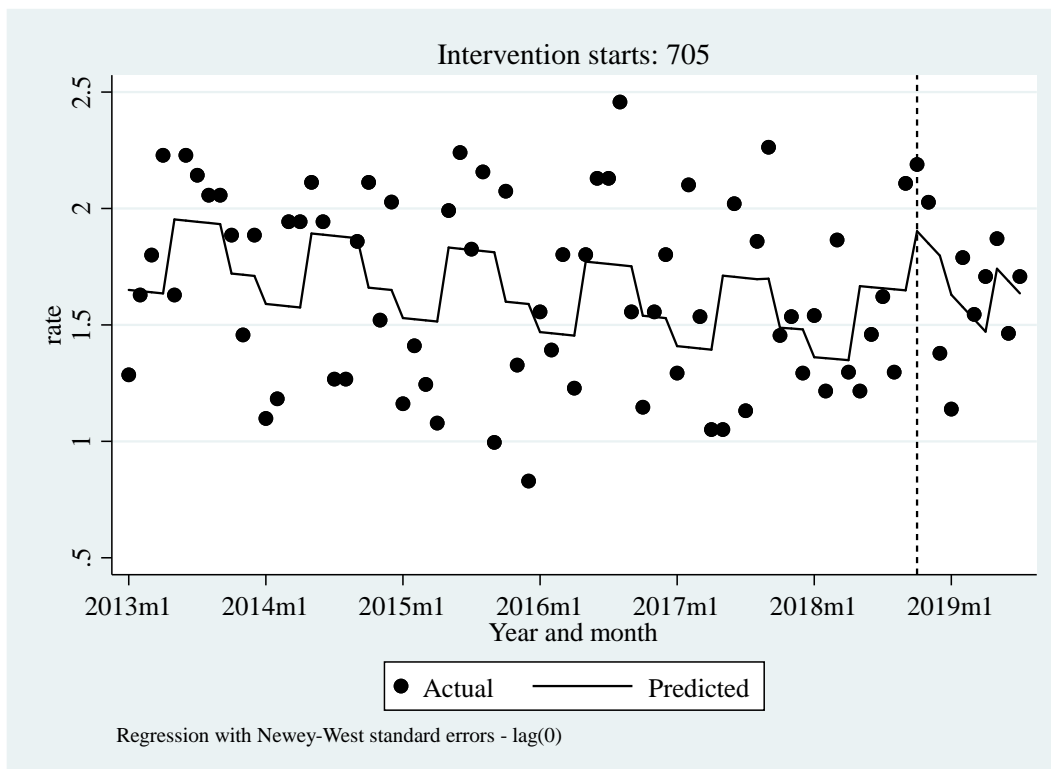


Figure 189 ITS Rate of fracture of forearm bones-related ED presentations per 10,000 people, Darwin

10.2.5 MALTREATMENT SYNDROMES

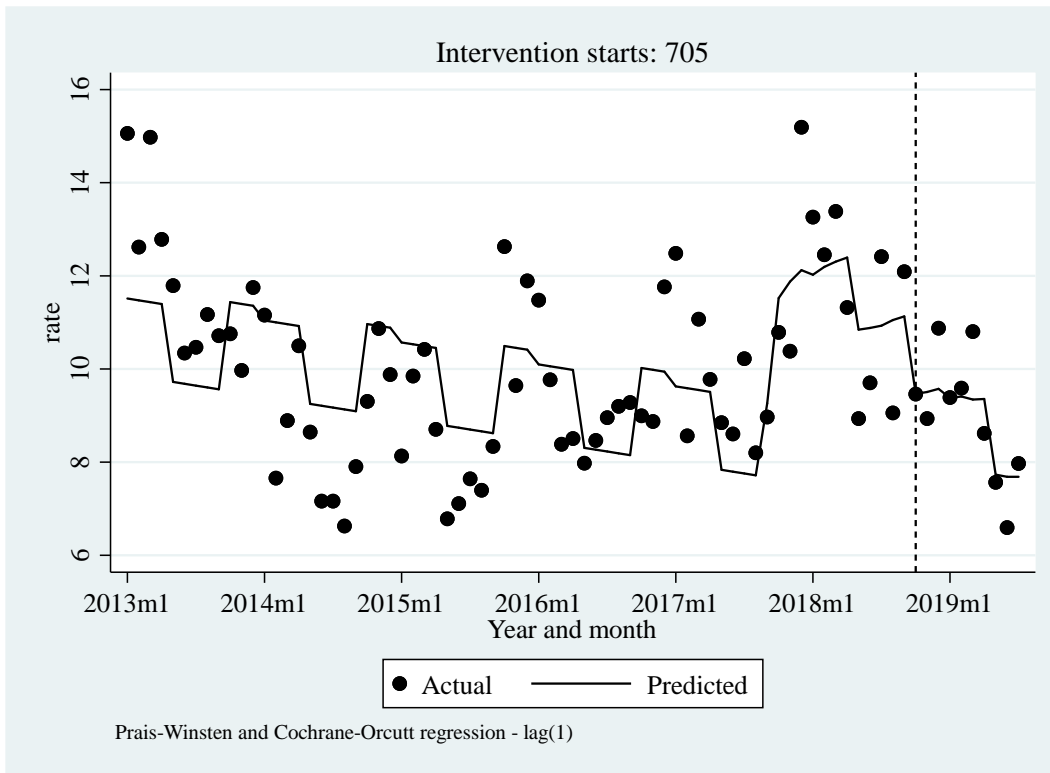


Figure 190 ITS Rate of maltreatment syndrome-related ED presentations per 10,000 people, Northern Territory

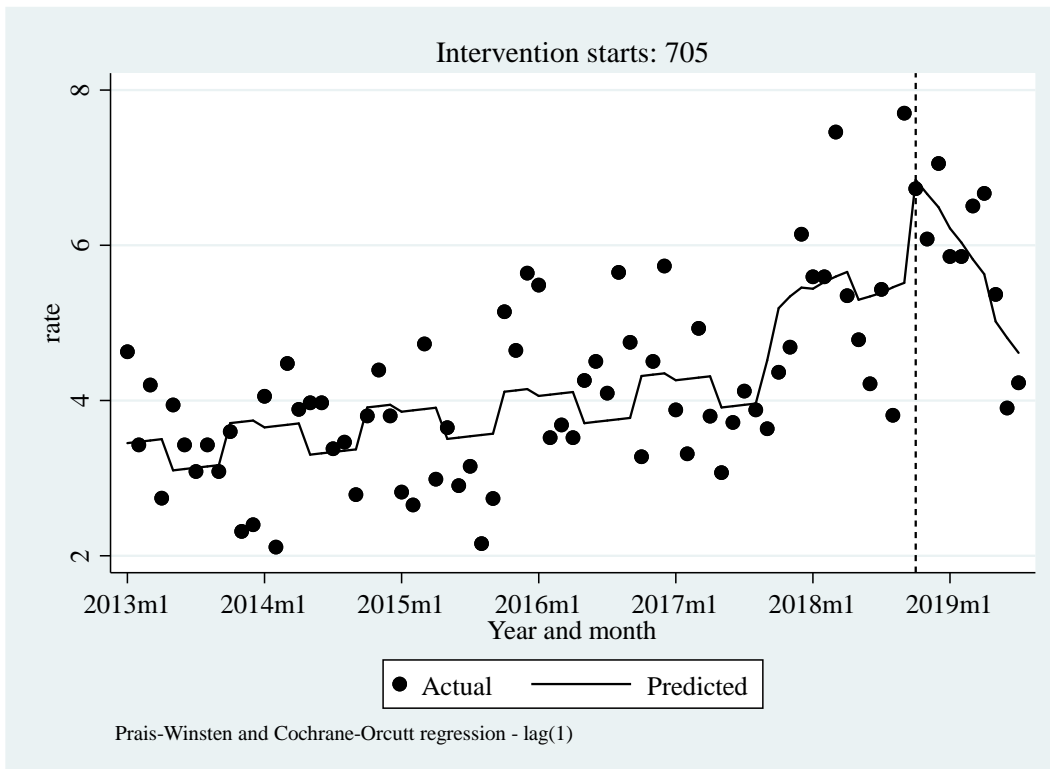


Figure 191 ITS Rate of maltreatment syndrome-related ED presentations per 10,000 people, Darwin

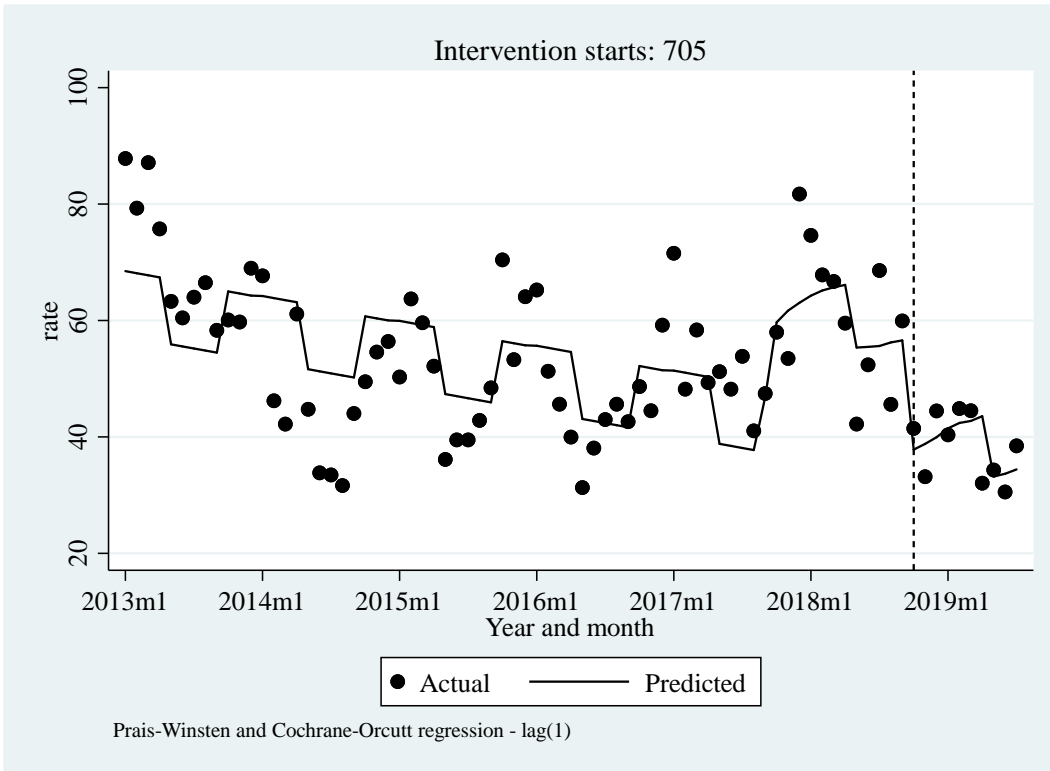


Figure 192 ITS Rate of maltreatment syndrome-related ED presentations per 10,000 people, Alice Springs

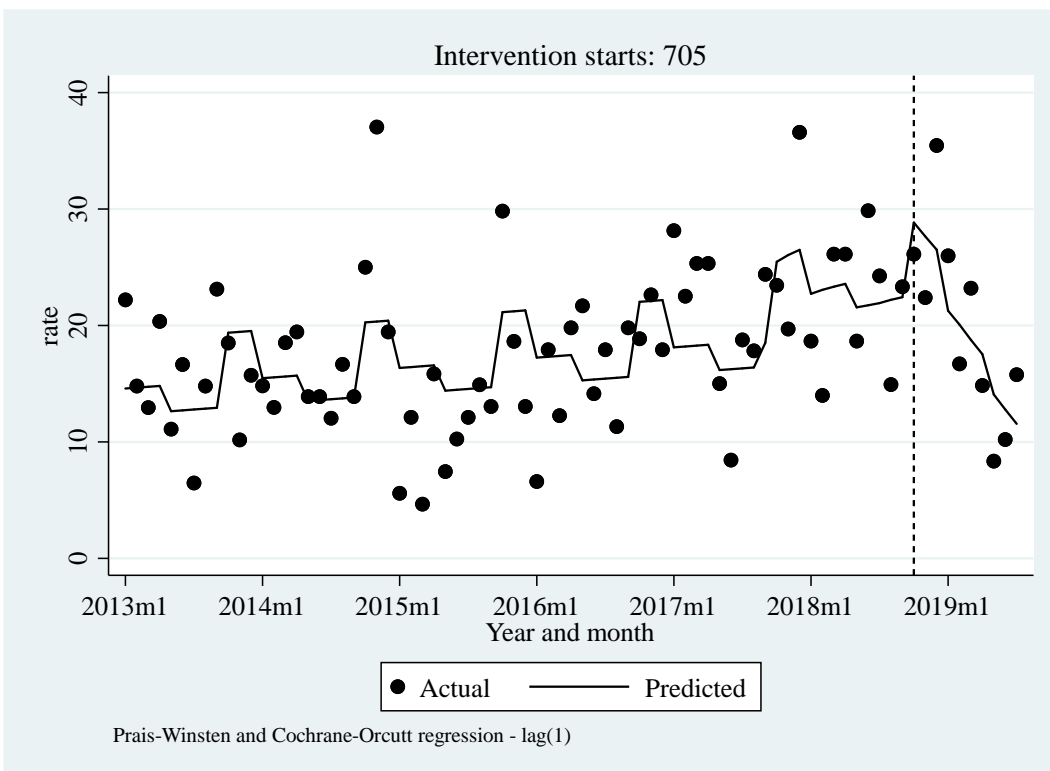


Figure 193 ITS Rate of maltreatment syndrome-related ED presentations per 10,000 people, Katherine

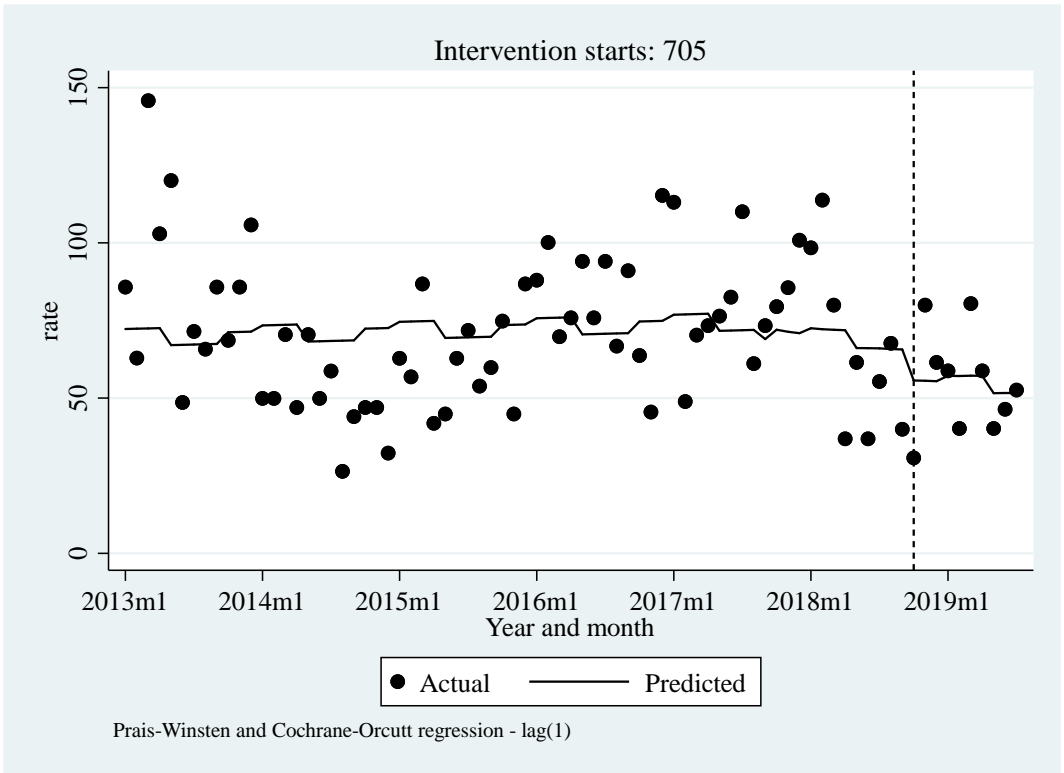


Figure 194 ITS Rate of maltreatment syndrome-related ED presentations per 10,000 people, Tennant Creek

10.2.6 ASSAULT BY SHARP OBJECT

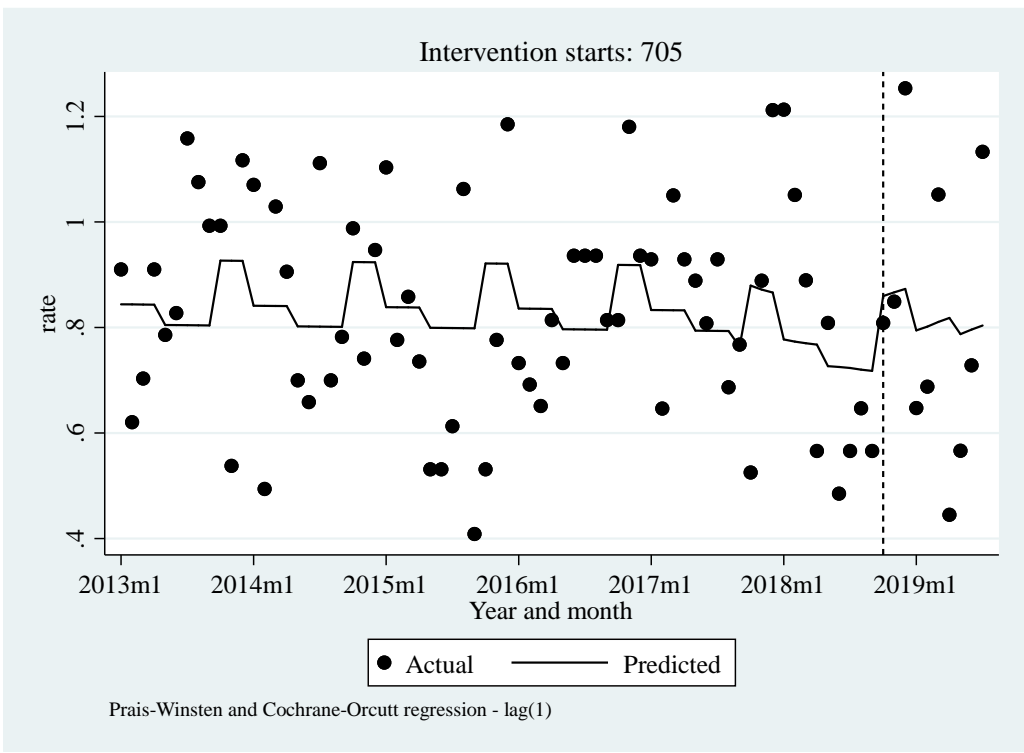


Figure 195 ITS Rate of assault by sharp object-related ED presentations per 10,000 people, Northern Territory

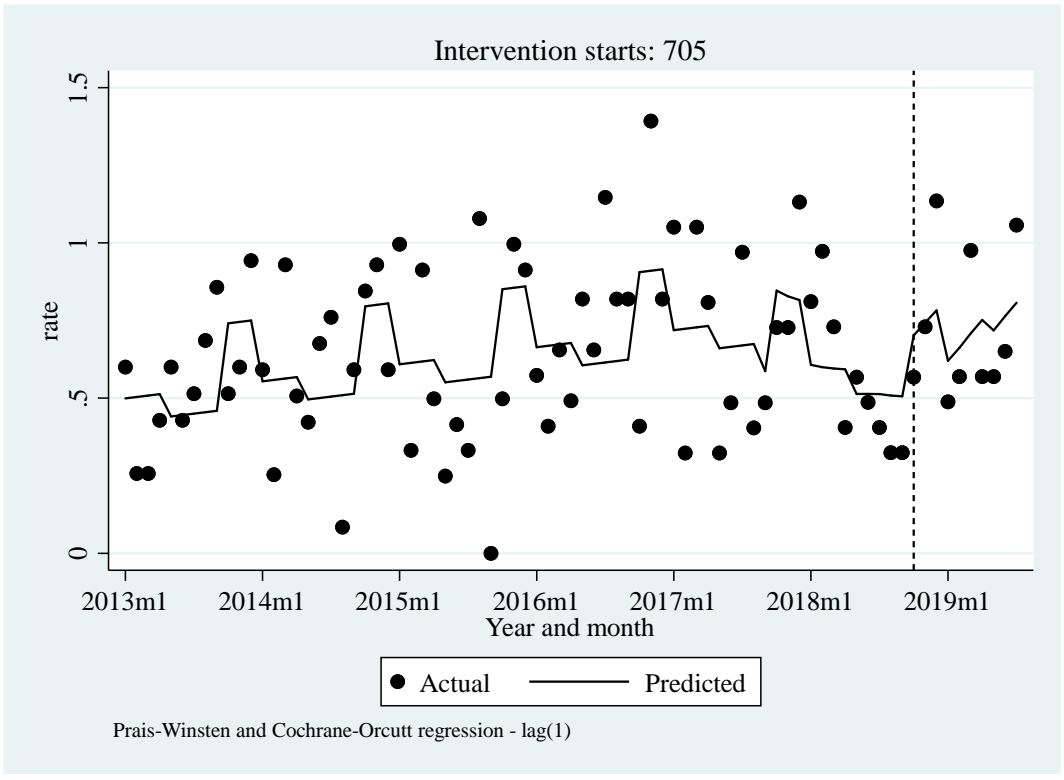


Figure 196 ITS Rate of assault by sharp object-related ED presentations per 10,000 people, Darwin

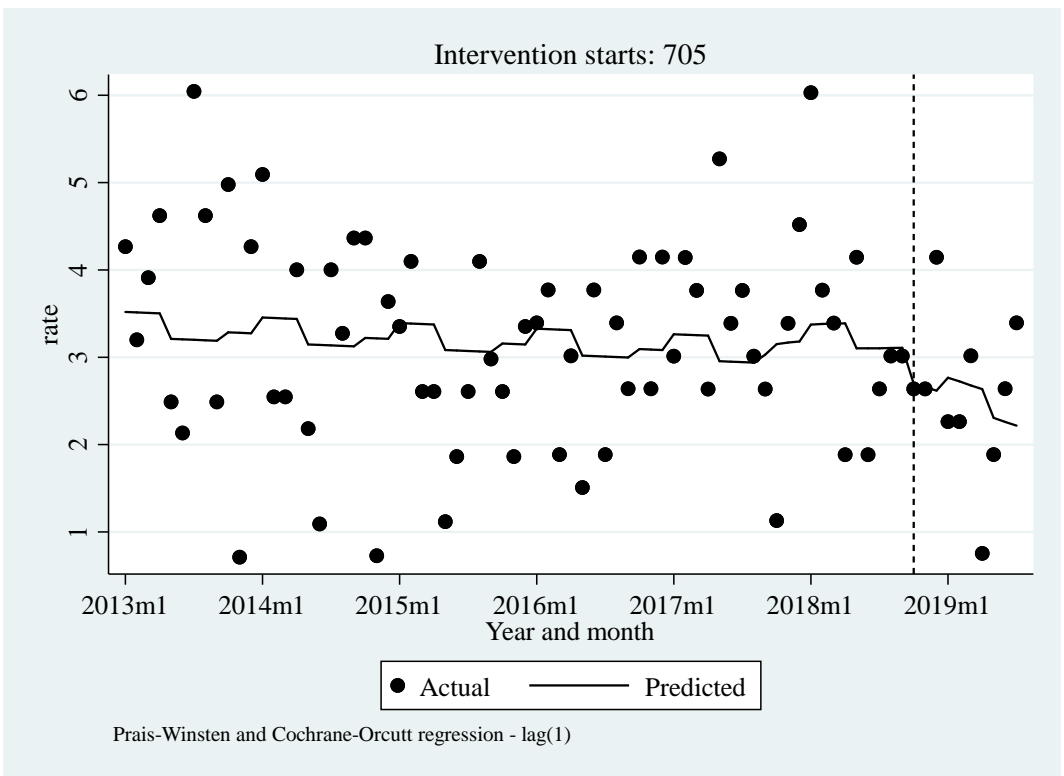


Figure 197 ITS Rate of assault by sharp object-related ED presentations per 10,000 people, Alice Springs

10.3 HOSPITAL ADMISSIONS MODELS

10.3.1 ALCOHOL-RELATED ADMISSIONS

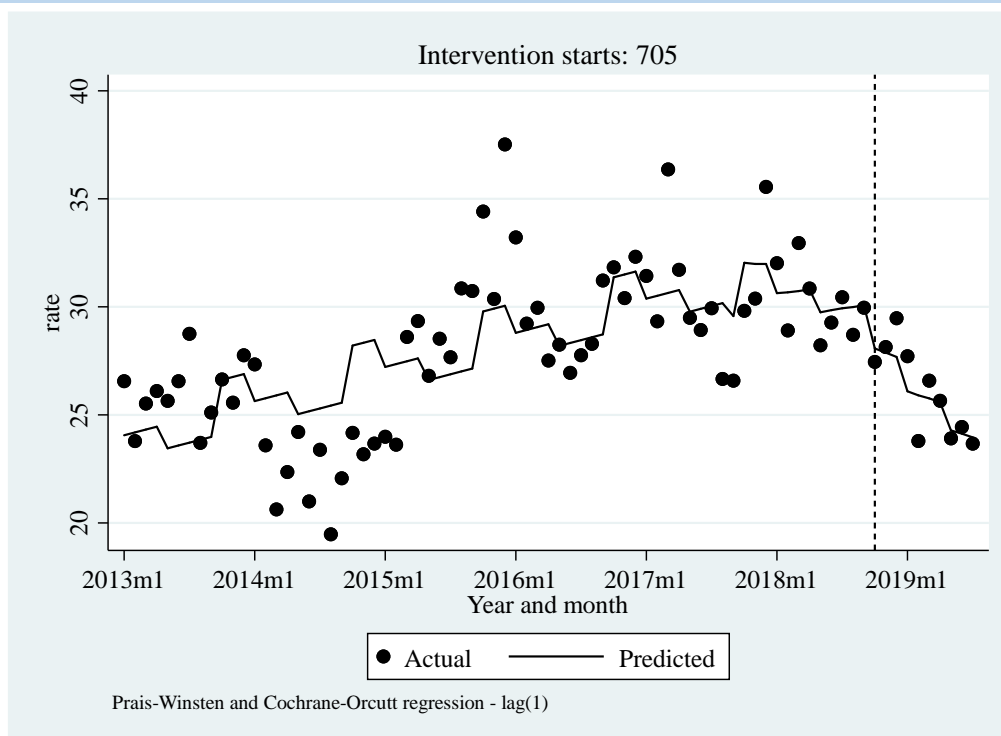


Figure 198 ITS Rate of alcohol-related hospital admissions per 10,000 people, Northern Territory

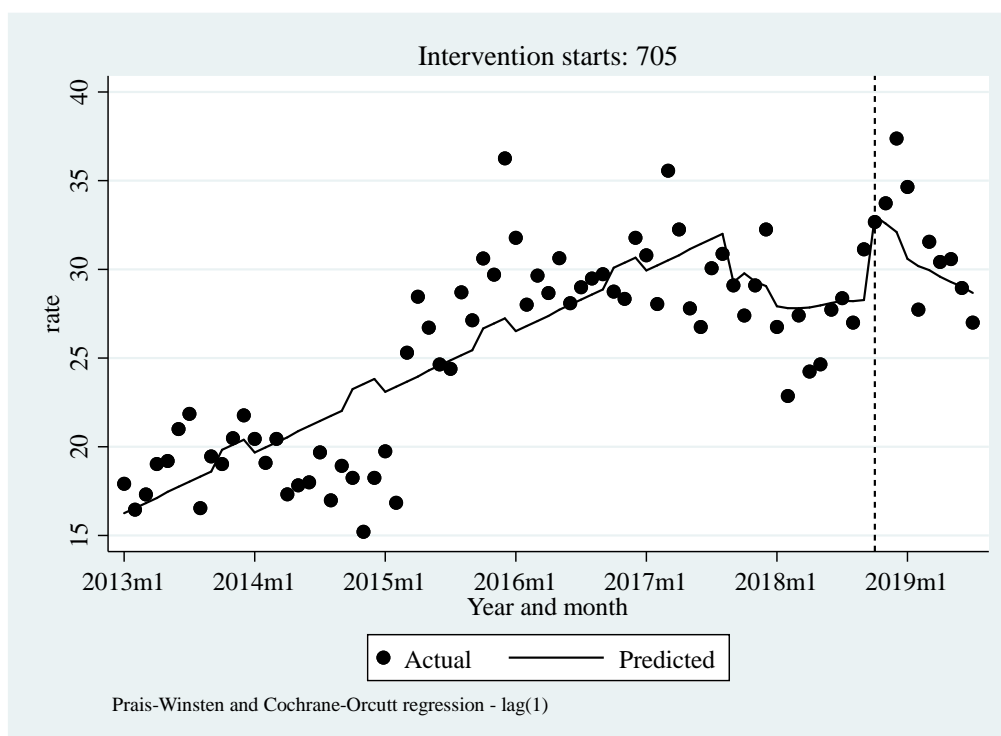


Figure 199 ITS Rate of alcohol-related hospital admissions per 10,000 people, Darwin

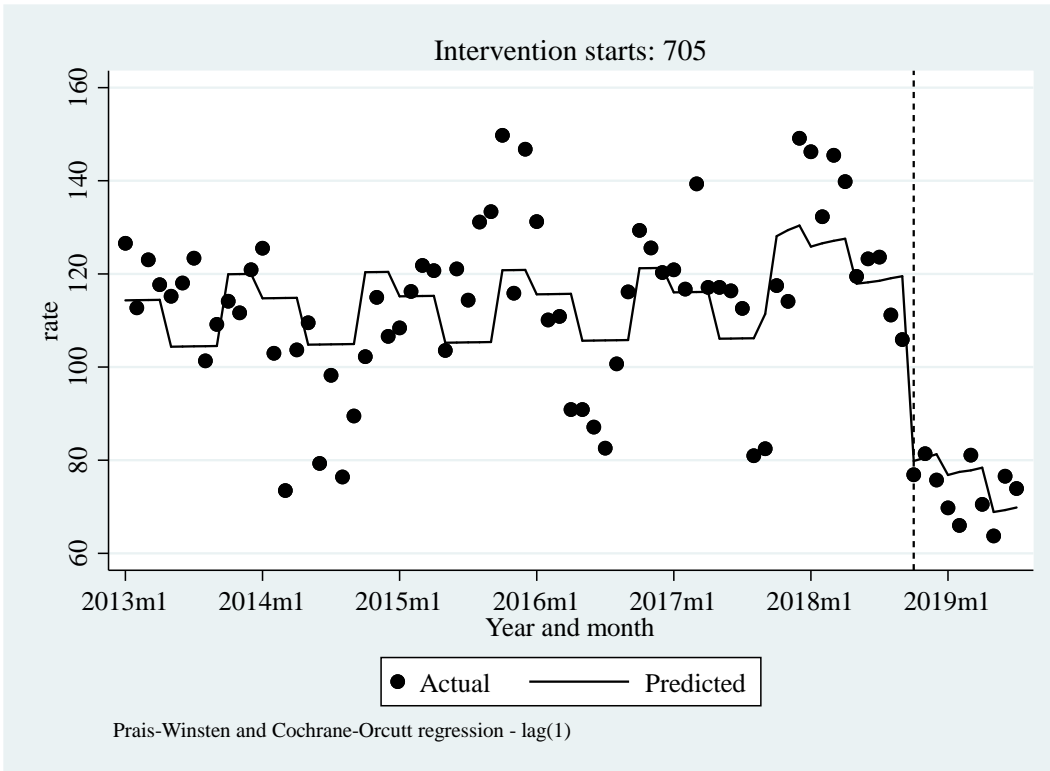


Figure 200 ITS Rate of alcohol-related hospital admissions per 10,000 people, Alice Springs

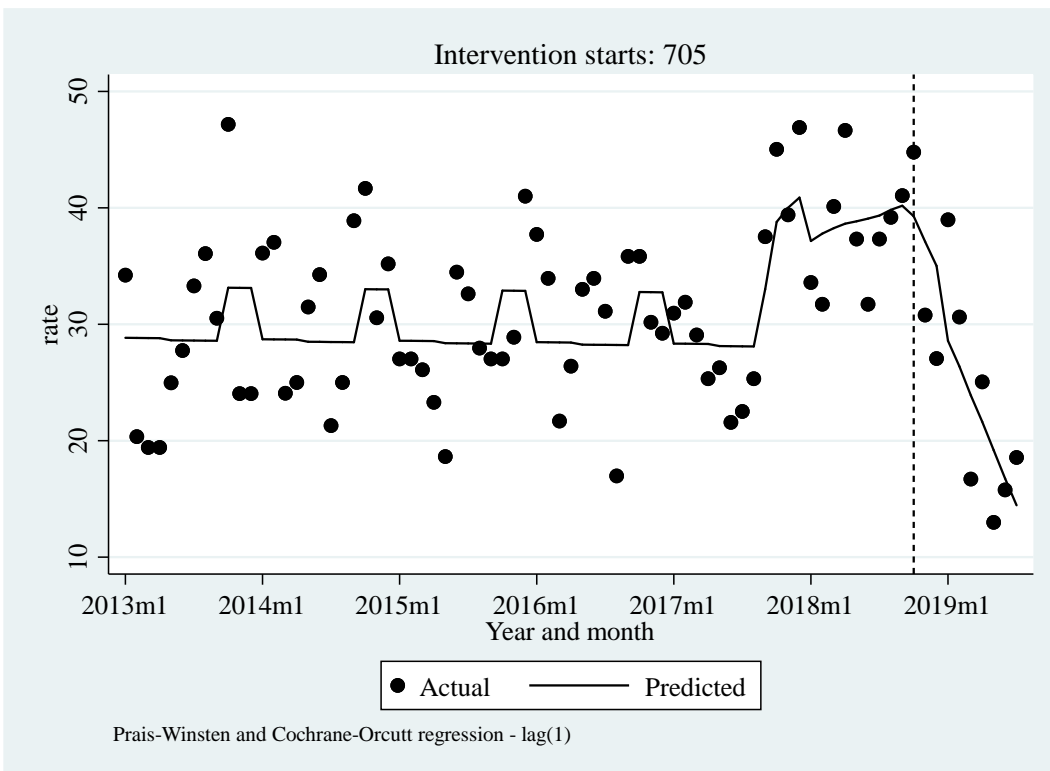


Figure 201 ITS Rate of alcohol-related hospital admissions per 10,000 people, Katherine

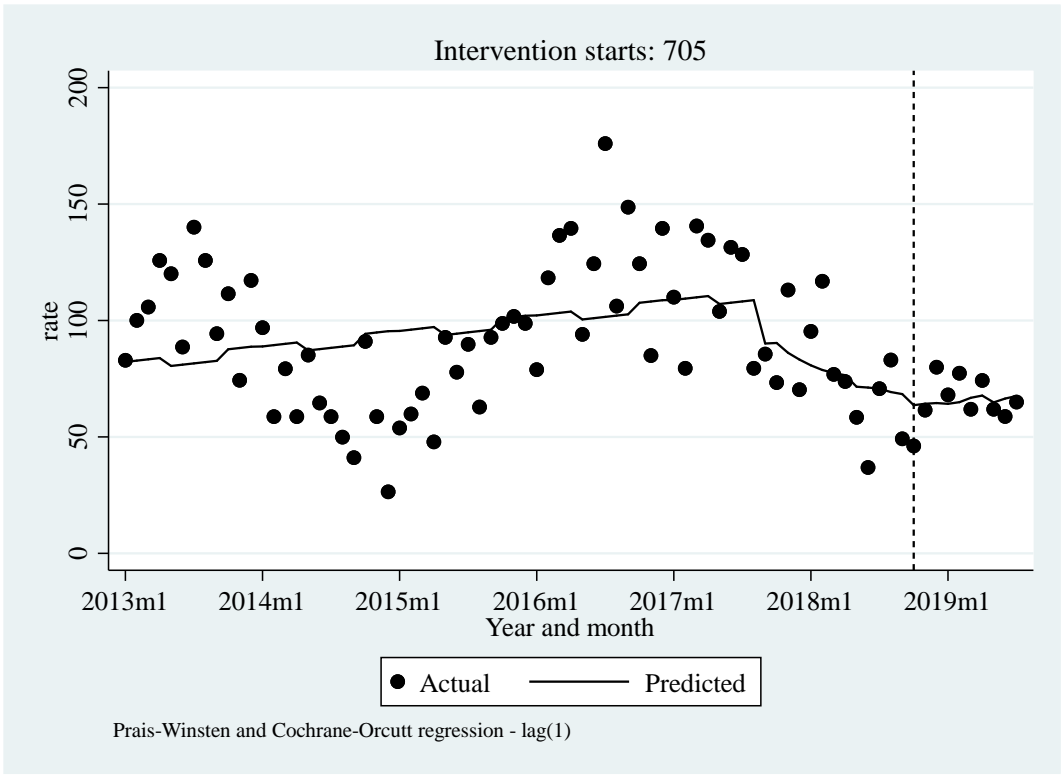


Figure 202 ITS Rate of alcohol-related hospital admissions per 10,000 people, Tennant Creek

10.3.2 OTHER SUBSTANCE USE

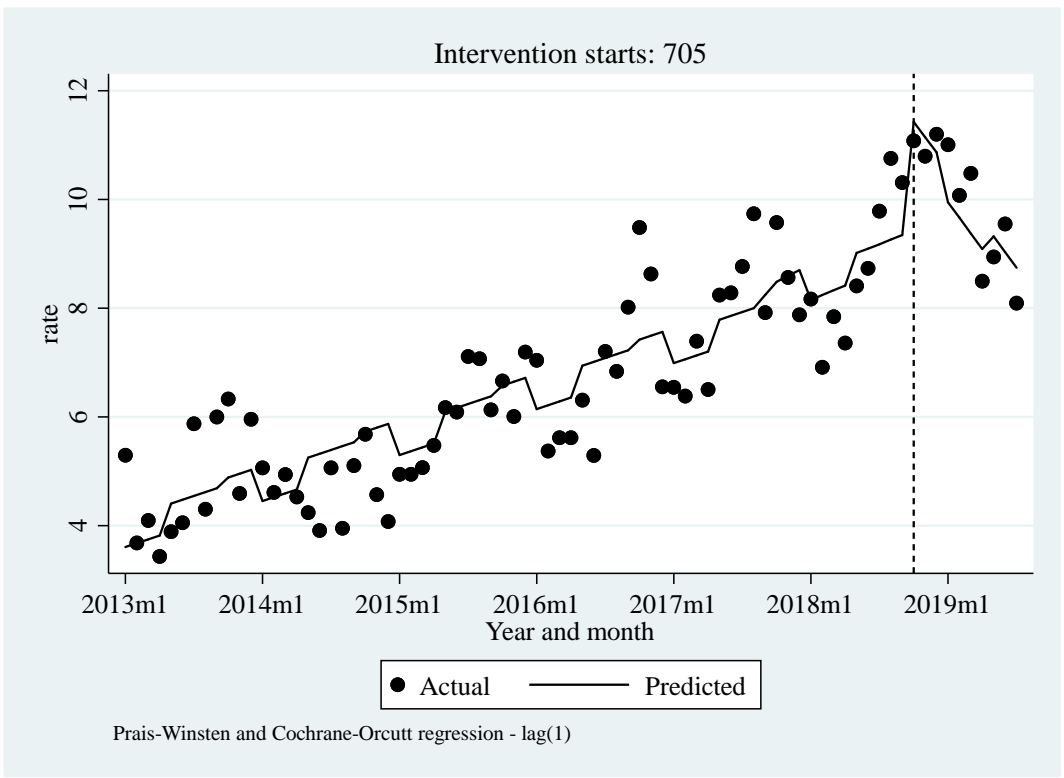


Figure 203 ITS Rate other substance use hospital admissions per 10,000 people, Northern Territory

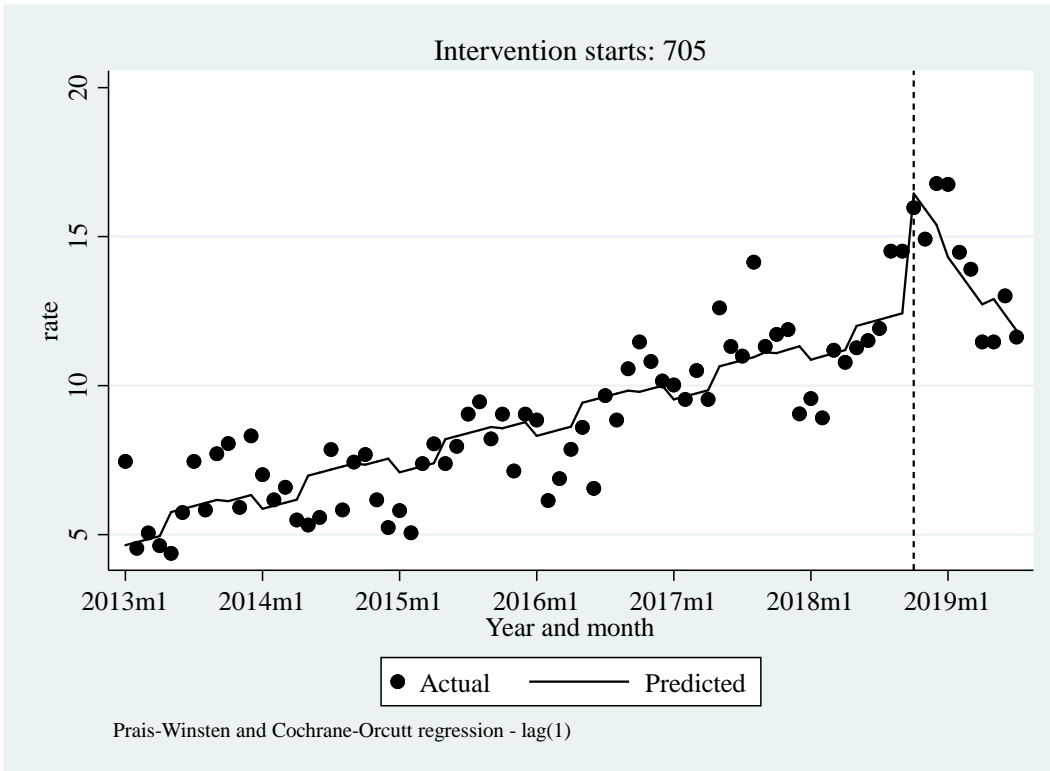


Figure 204 ITS Rate other substance use hospital admissions per 10,000 people, Darwin

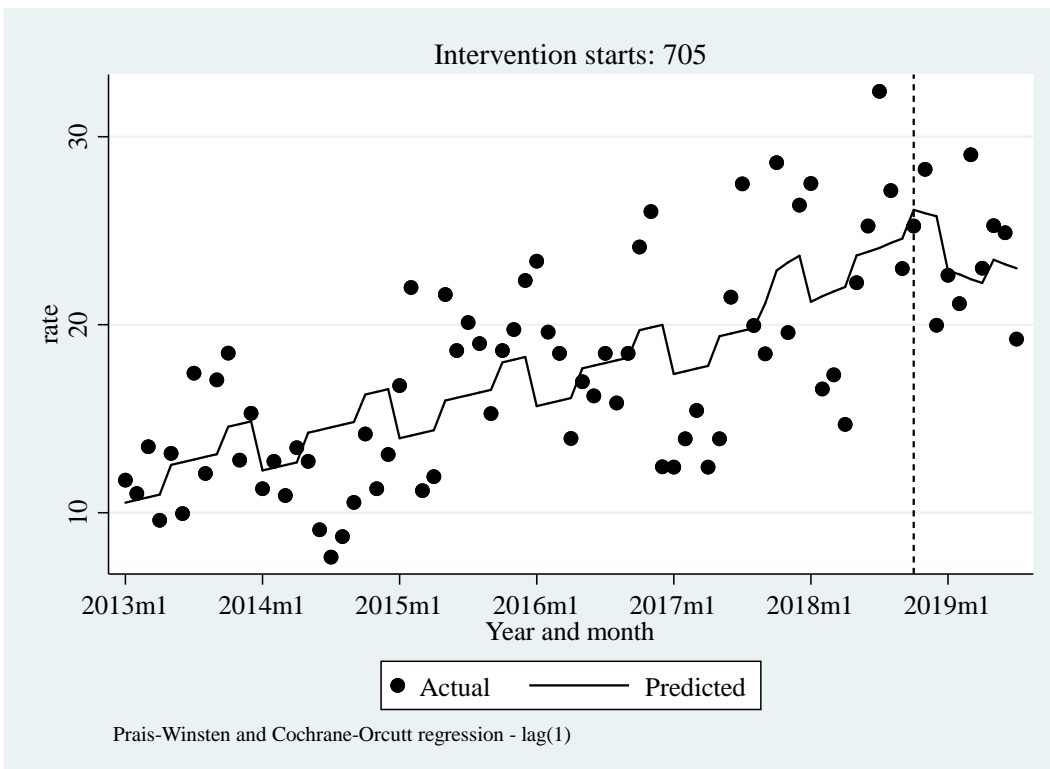


Figure 205 ITS Rate other substance use hospital admissions per 10,000 people, Alice Springs

10.3.3 FRACTURE OF SKULL AND FACIAL BONES

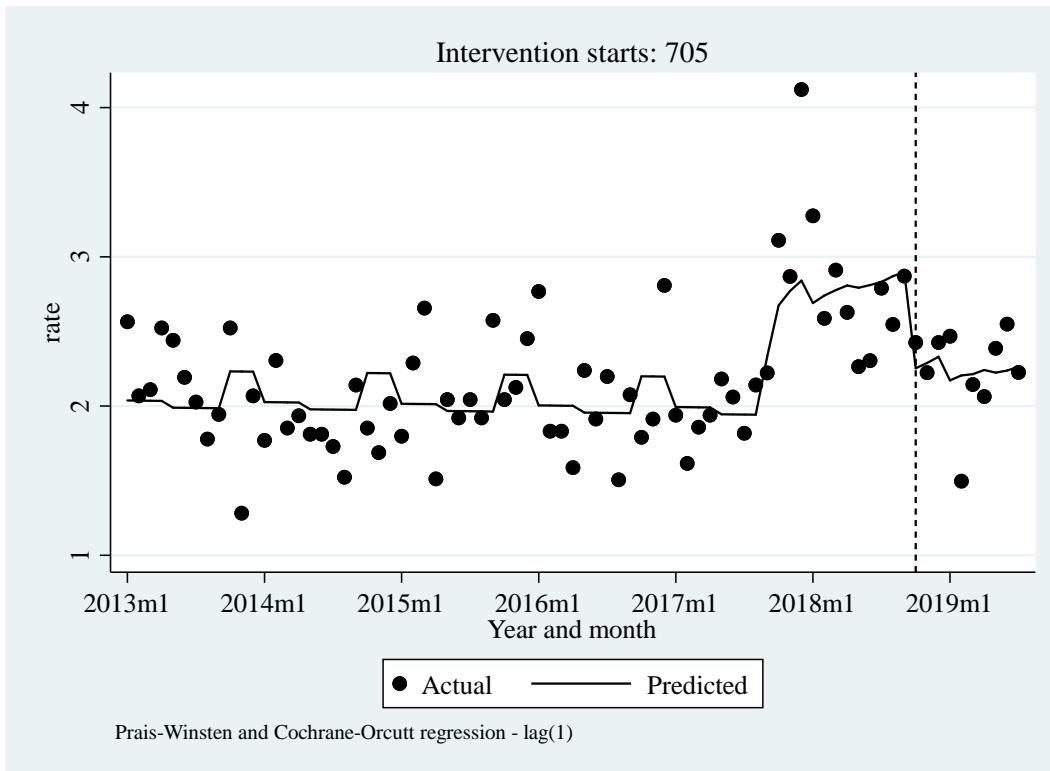


Figure 206 ITS Rate of fracture of skull and facial bones-related hospital admissions per 10,000 people, Northern Territory

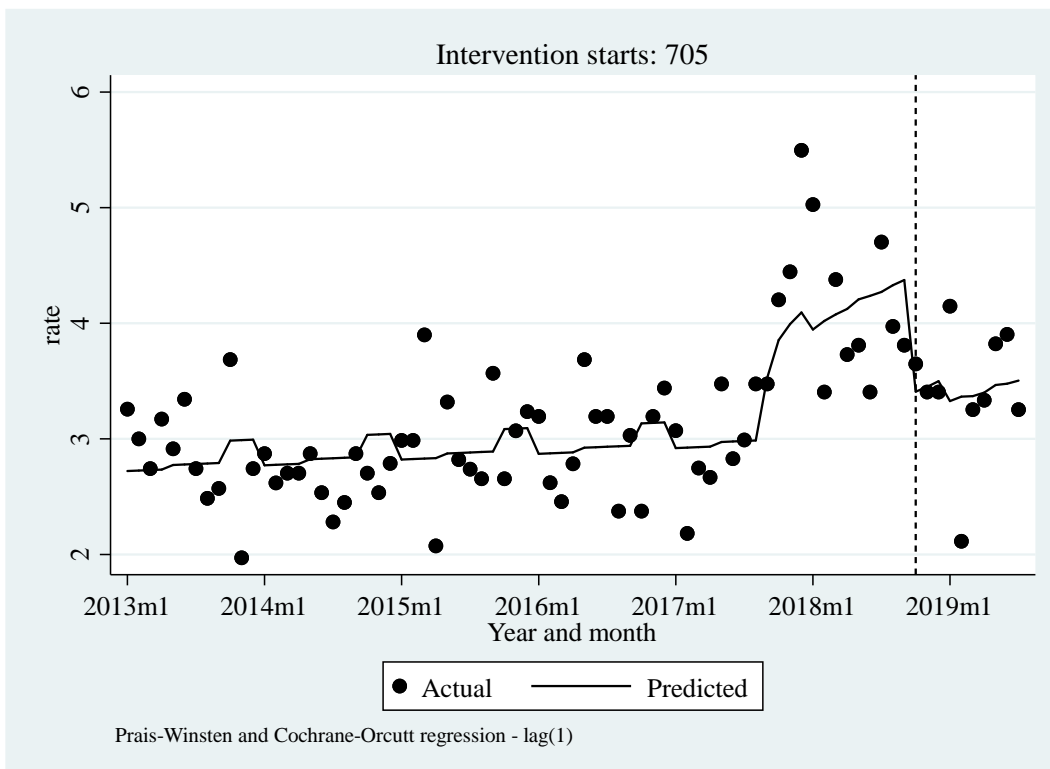


Figure 207 ITS Rate of fracture of skull and facial bones-related hospital admissions per 10,000 people, Darwin

10.3.4 FRACTURE OF FOREARM BONES

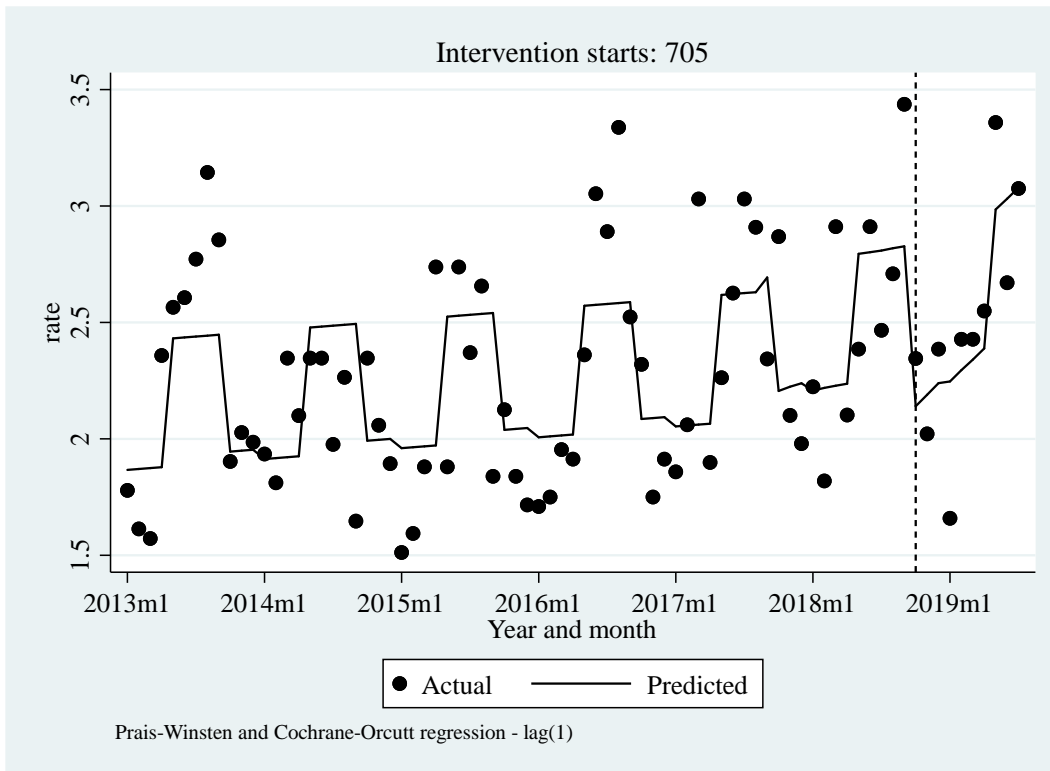


Figure 208 ITS Rate of fracture of forearm bones-related hospital admissions per 10,000 people, Northern Territory

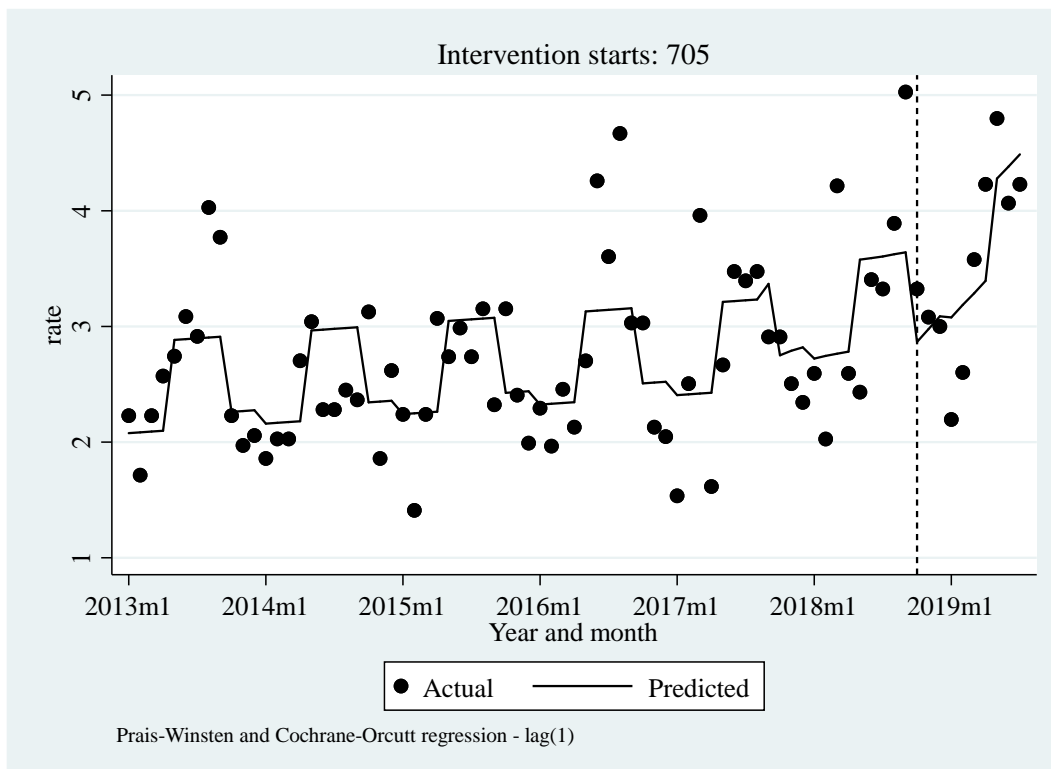


Figure 209 ITS Rate of fracture of forearm bones-related hospital admissions per 10,000 people, Darwin

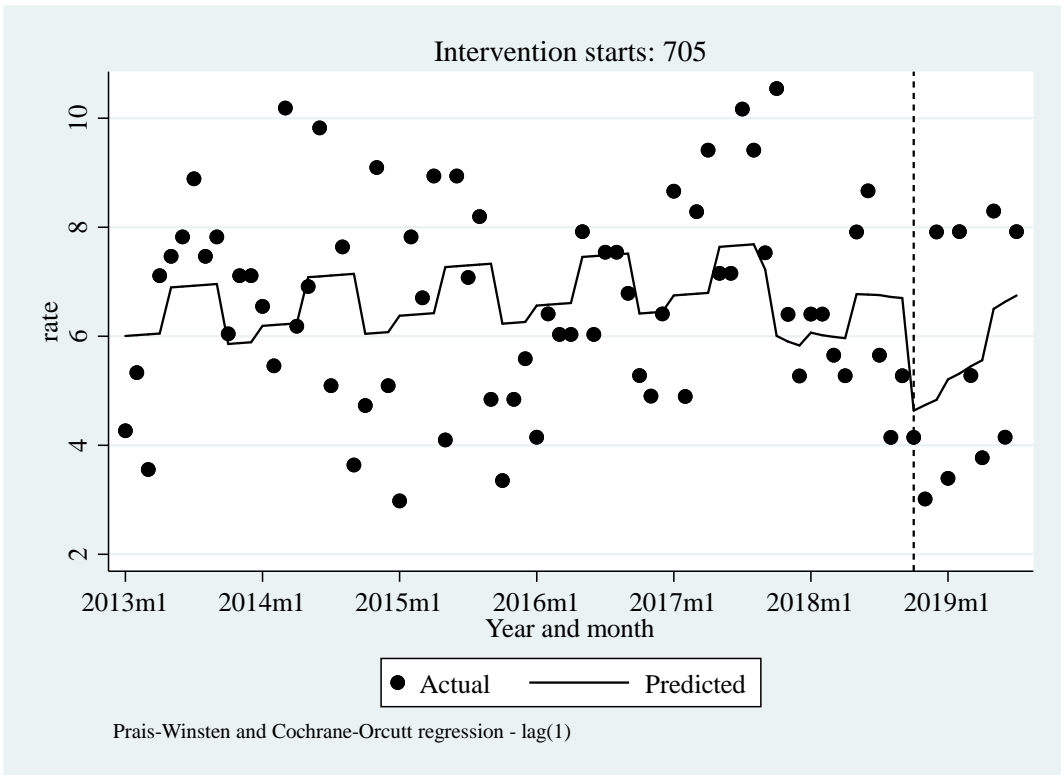


Figure 210 ITS Rate of fracture of forearm bones-related hospital admissions per 10,000 people, Alice Springs

10.3.5 MALTREATMENT SYNDROMES

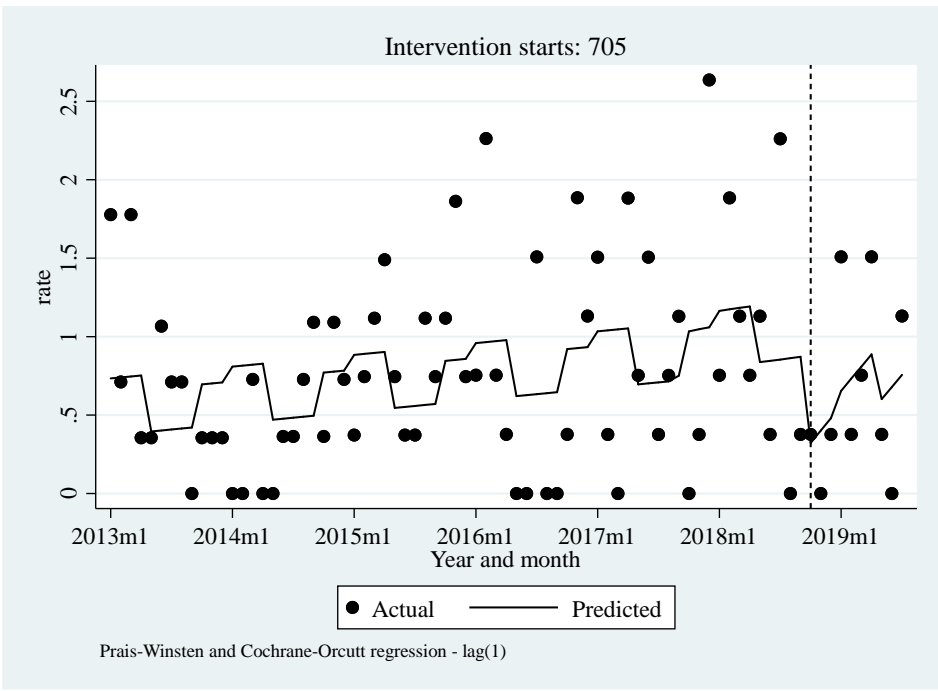


Figure 211 ITS Rate of maltreatment syndrome-related hospital admissions per 10,000 people, Alice Springs

10.3.6 ASSAULT

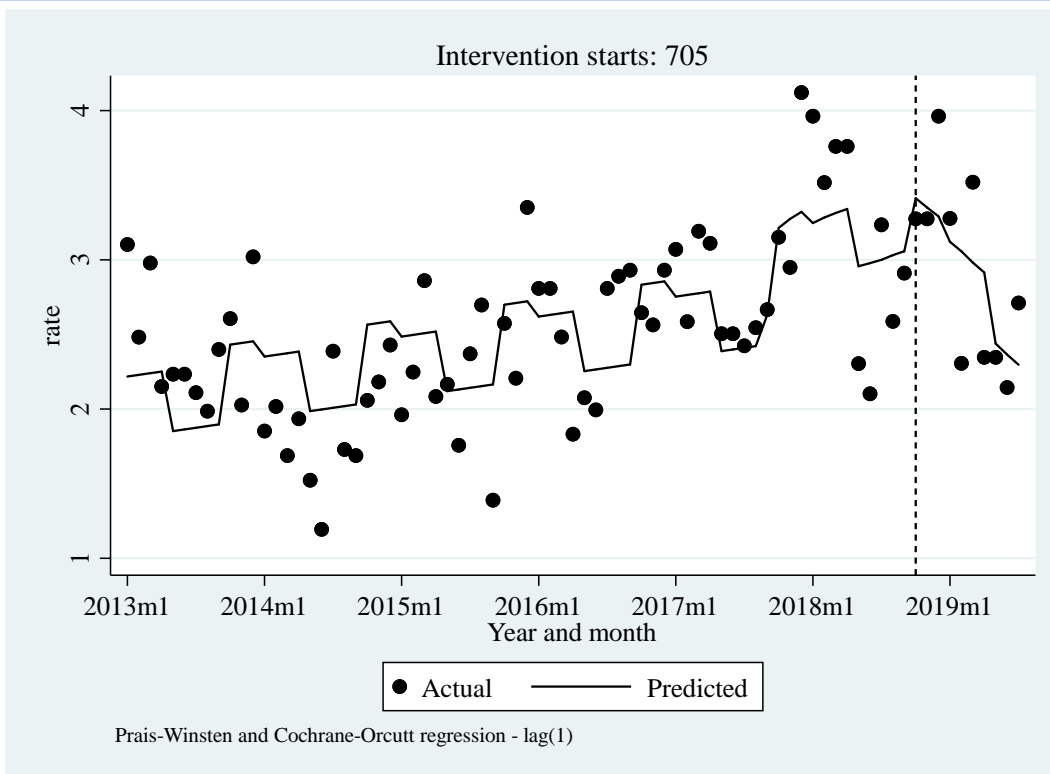


Figure 212 ITS Rate of assault-related hospital admissions per 10,000 people, Northern Territory

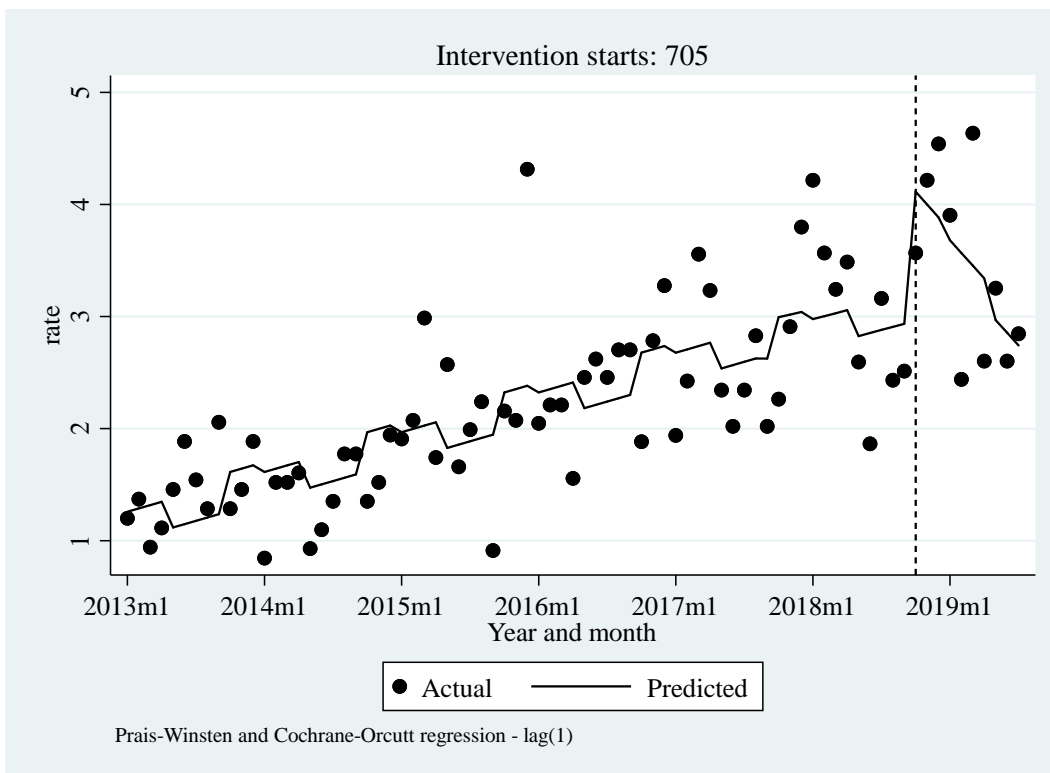


Figure 213 ITS Rate of assault-related hospital admissions per 10,000 people, Darwin

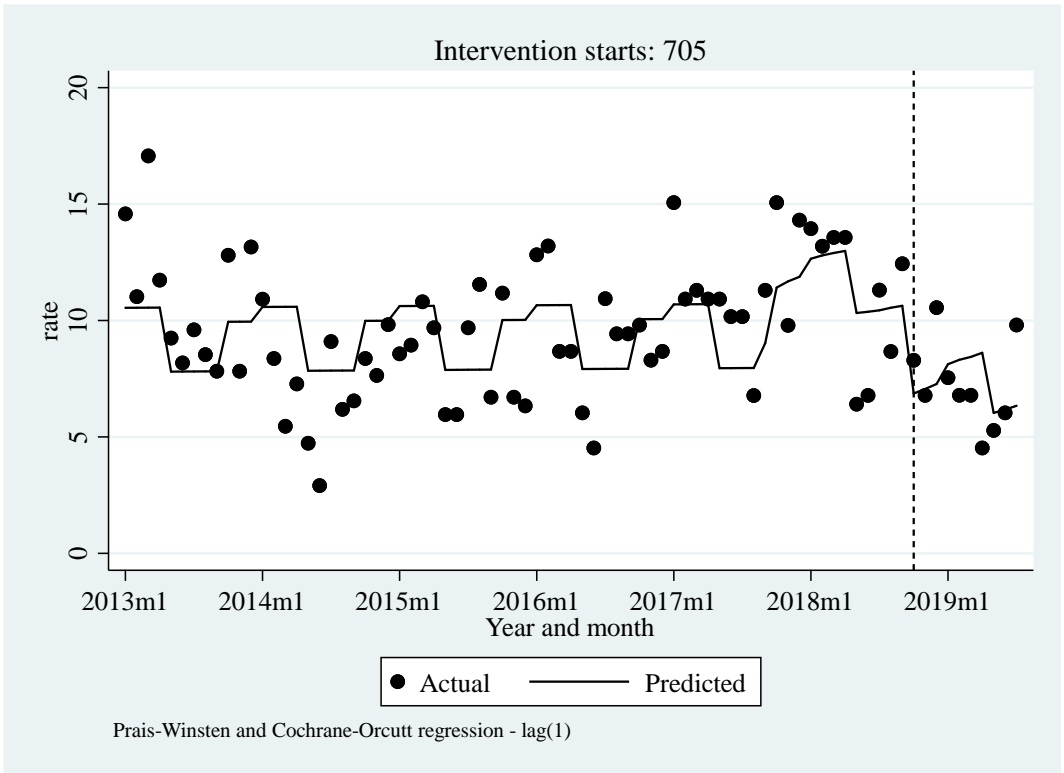


Figure 214 ITS Rate of assault-related hospital admissions per 10,000 people, Alice Springs

10.3.7 ASSAULT BY SHARP OBJECT

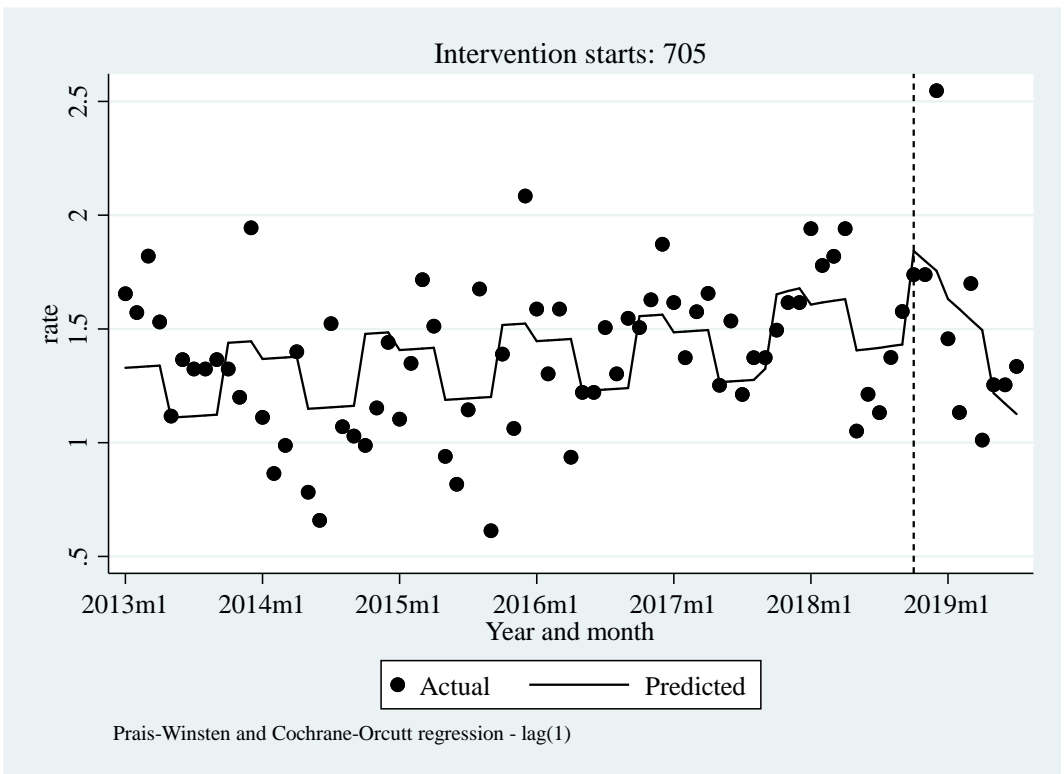


Figure 215 ITS Rate of assault by sharp object-related hospital admissions per 10,000 people, Northern Territory

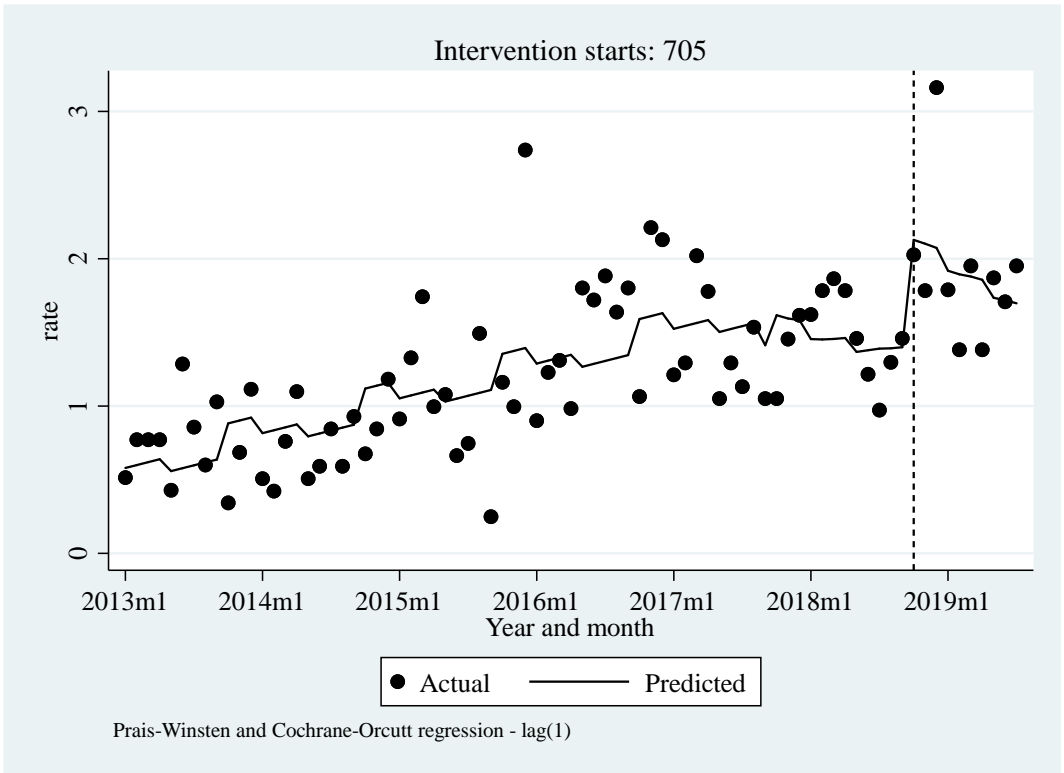


Figure 216 ITS Rate of assault by sharp object-related hospital admissions per 10,000 people, Darwin

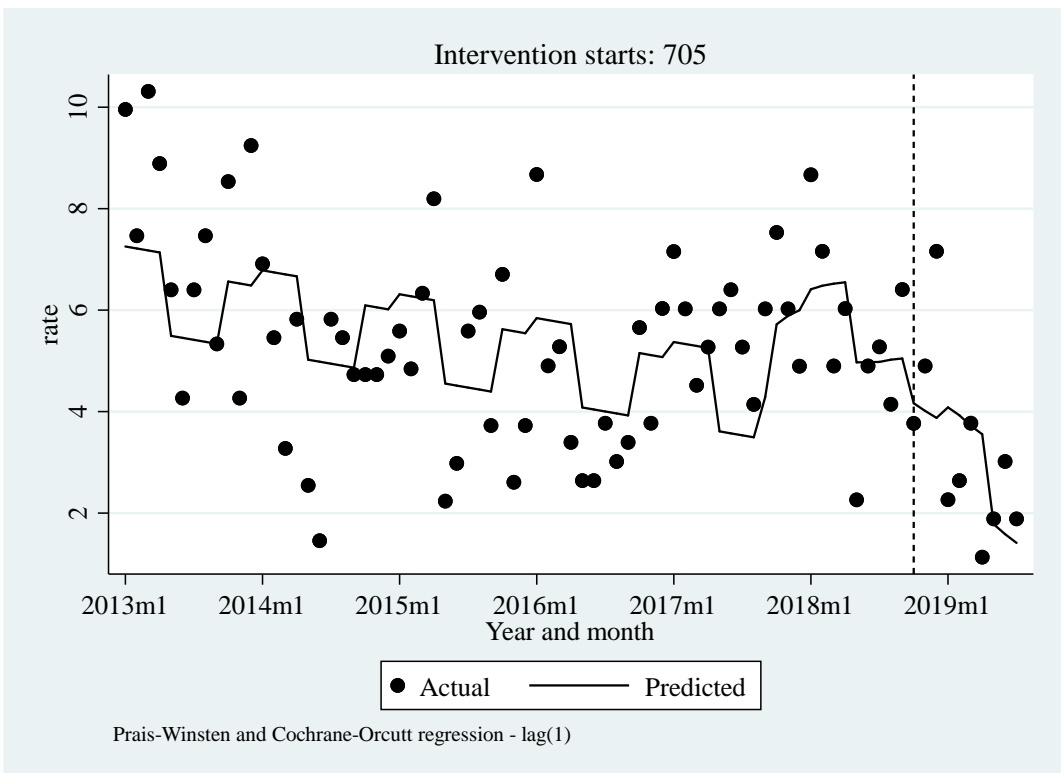


Figure 217 ITS Rate of assault by sharp object-related hospital admissions per 10,000 people, Alice Springs

10.4 SOBERING UP SHELTERS MODELS

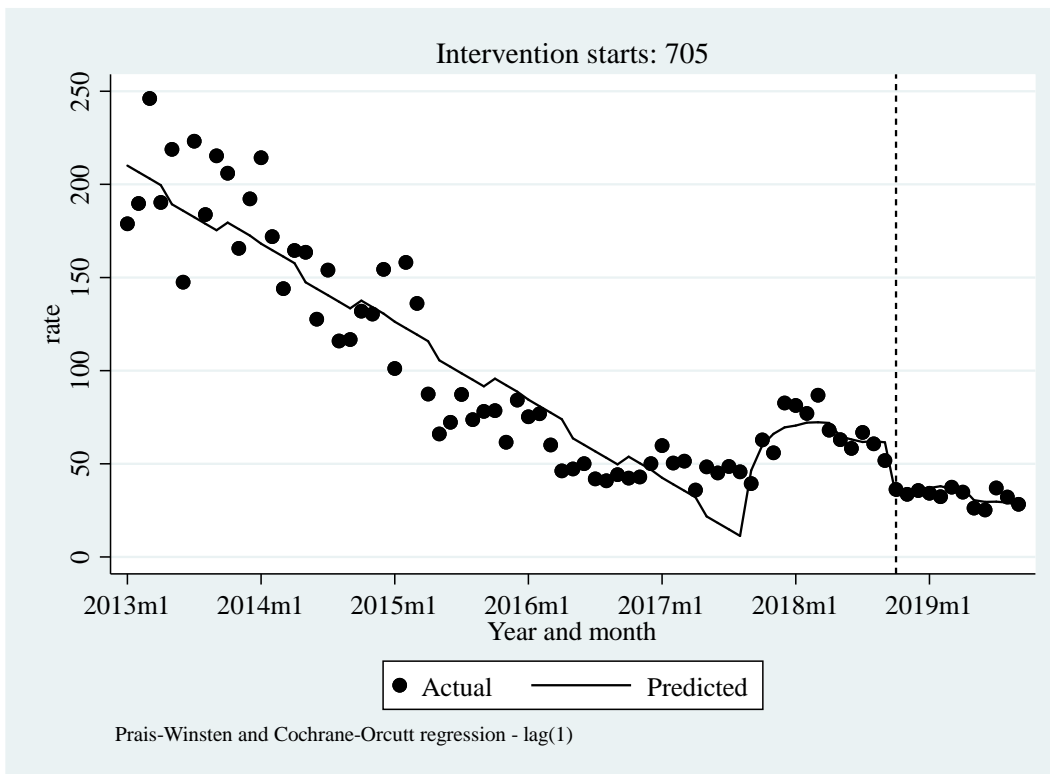


Figure 218 ITS Rate of Sobering Up Shelter admissions per 10,000 people, Alice Springs, Katherine, and Nhulunbuy

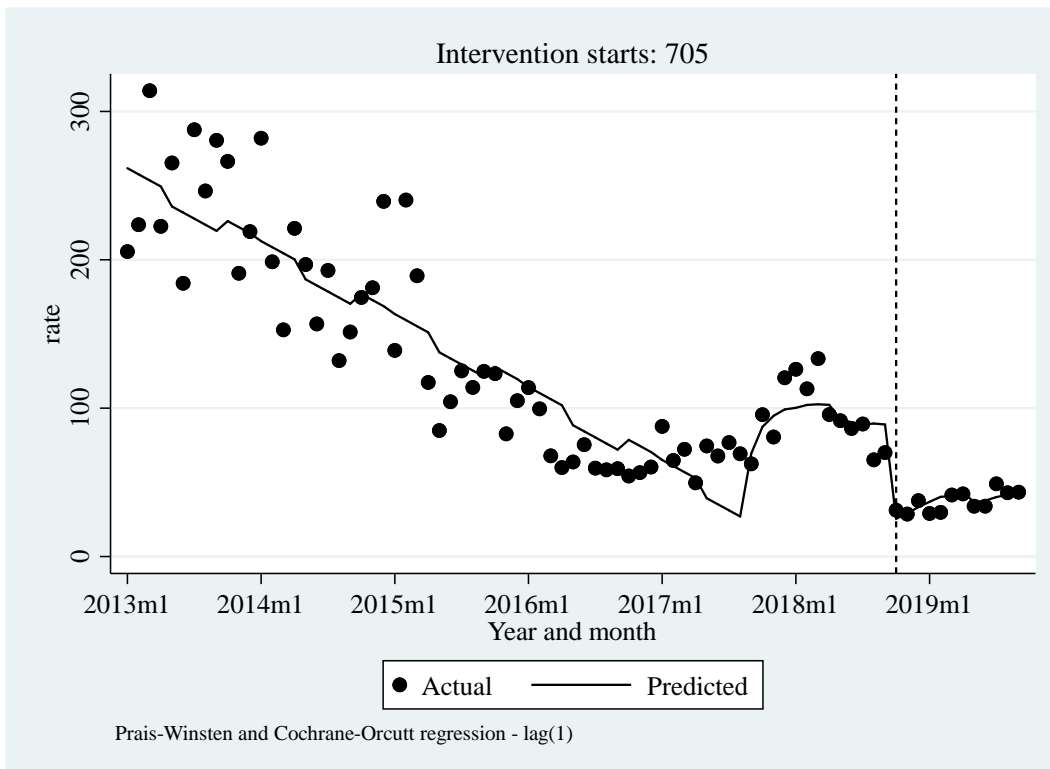


Figure 219 ITS Rate of Sobering Up Shelter admissions per 10,000 people, Alice Springs

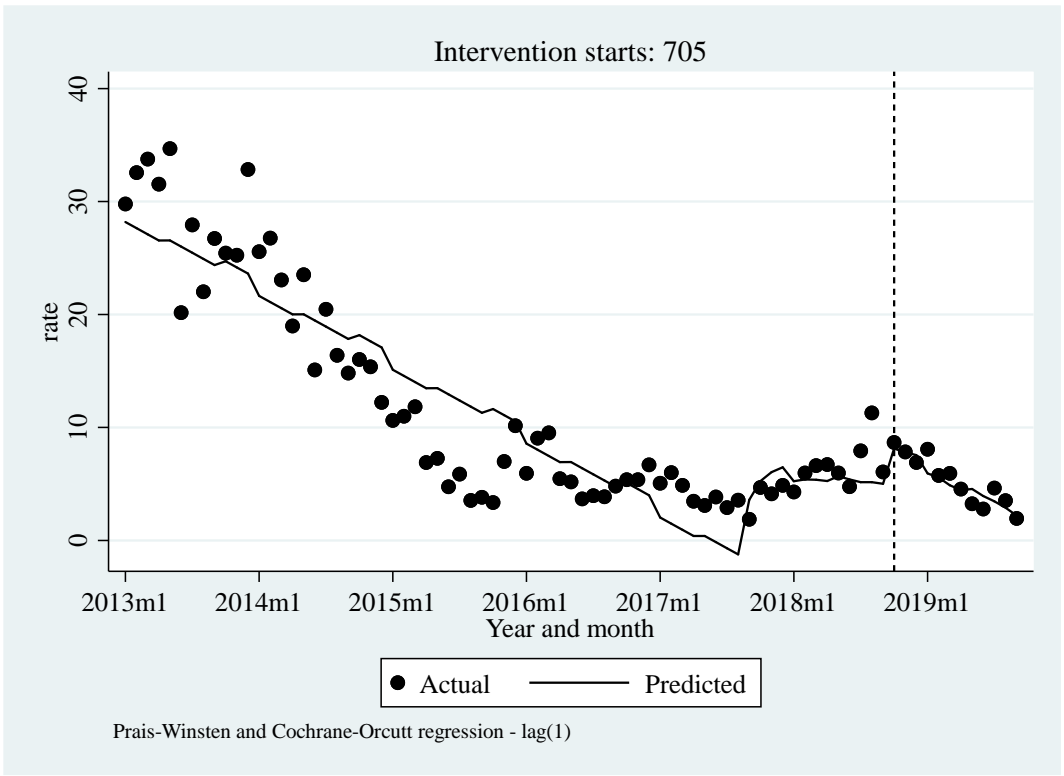


Figure 220 ITS Rate of Sobering Up Shelter admissions per 10,000 people, Katherine

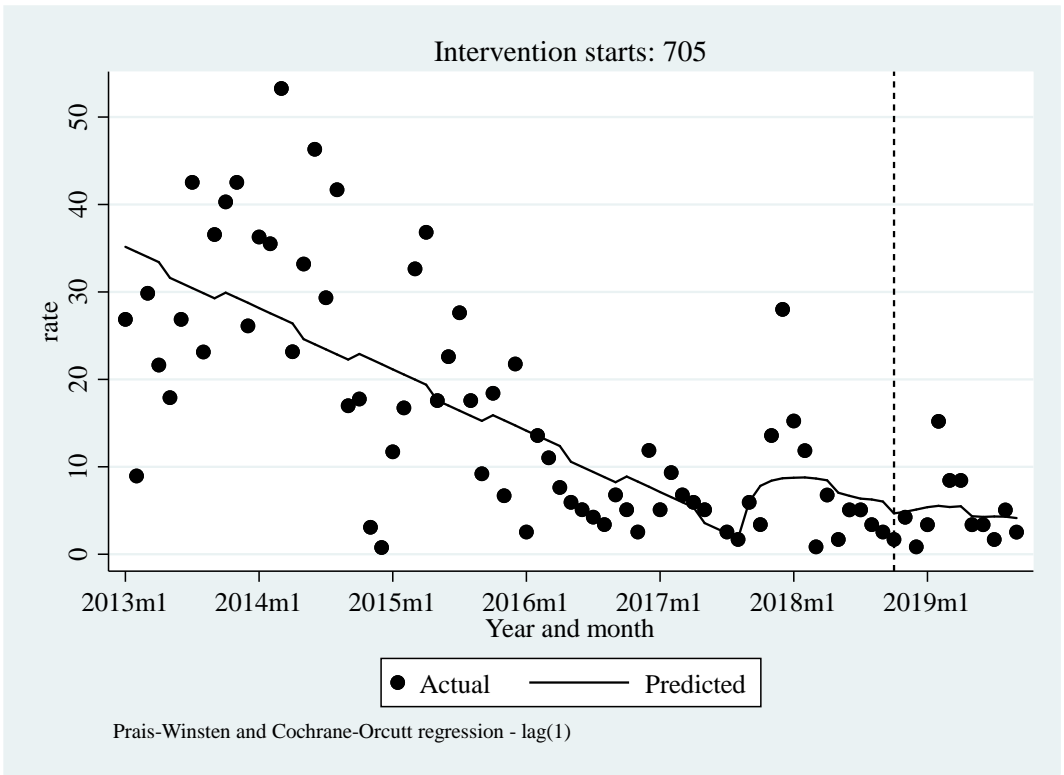


Figure 221 ITS Rate of Sobering Up Shelter admissions per 10,000 people, Nhulunbuy

10.5 TREATMENT ATTENDANCES MODELS

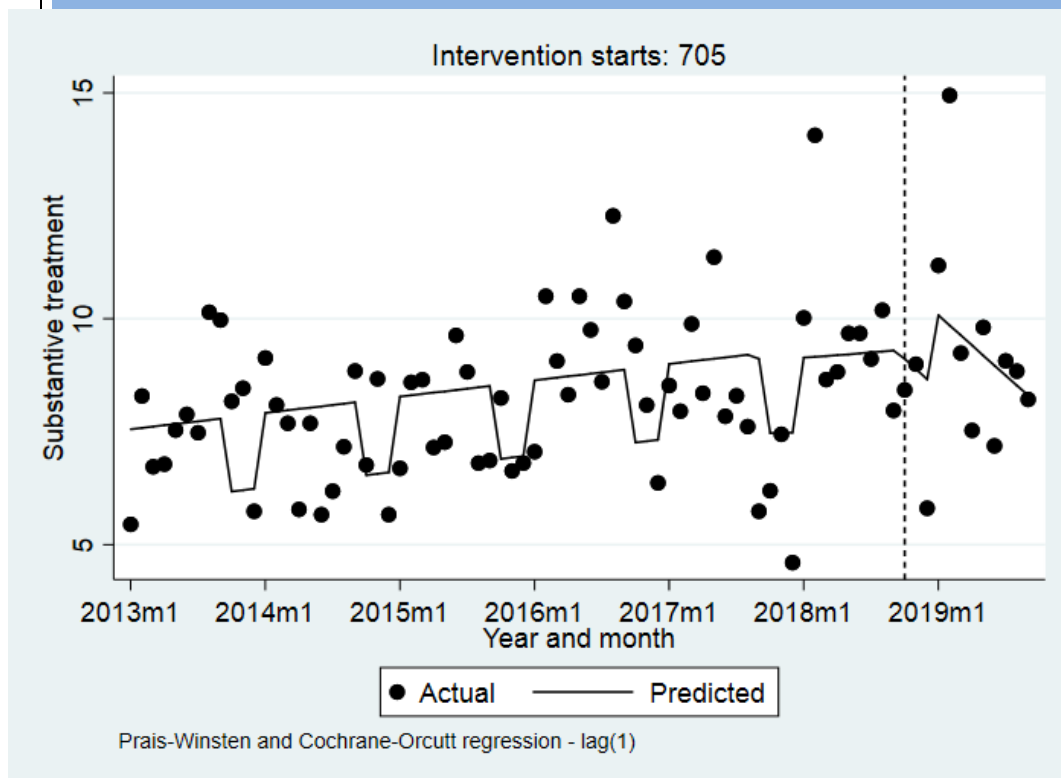


Figure 222 ITS Rate of substantive treatment episodes per 10,000 people, Northern Territory

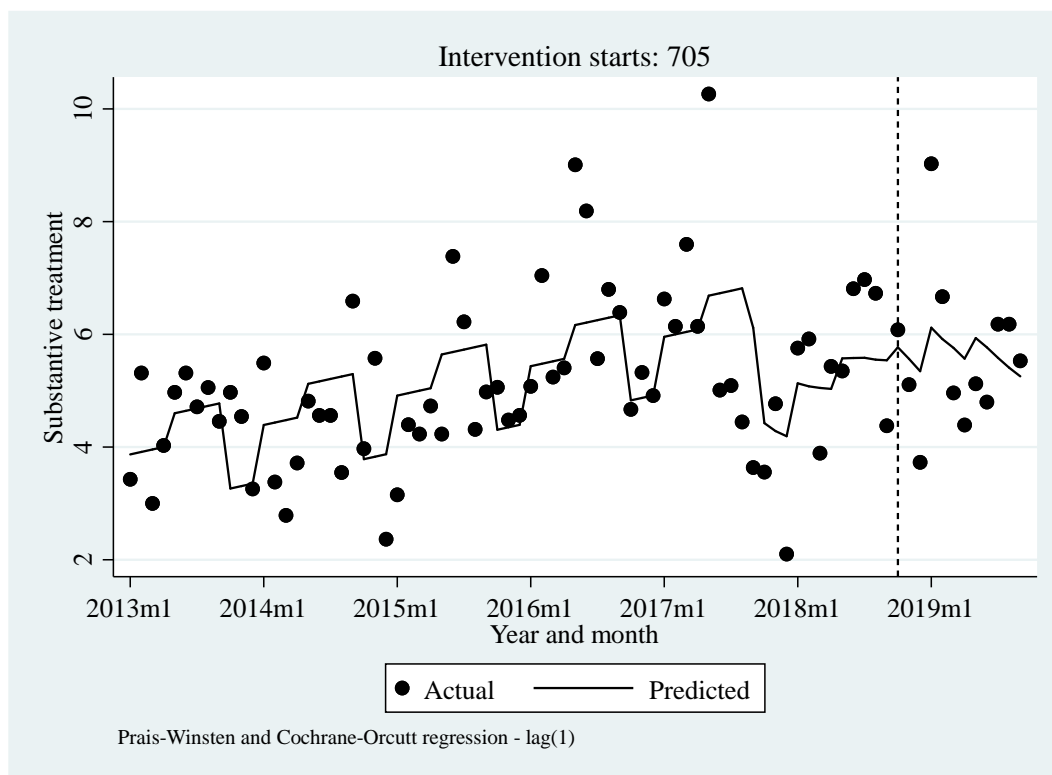


Figure 223 ITS Rate of substantive treatment episodes per 10,000 people, Darwin

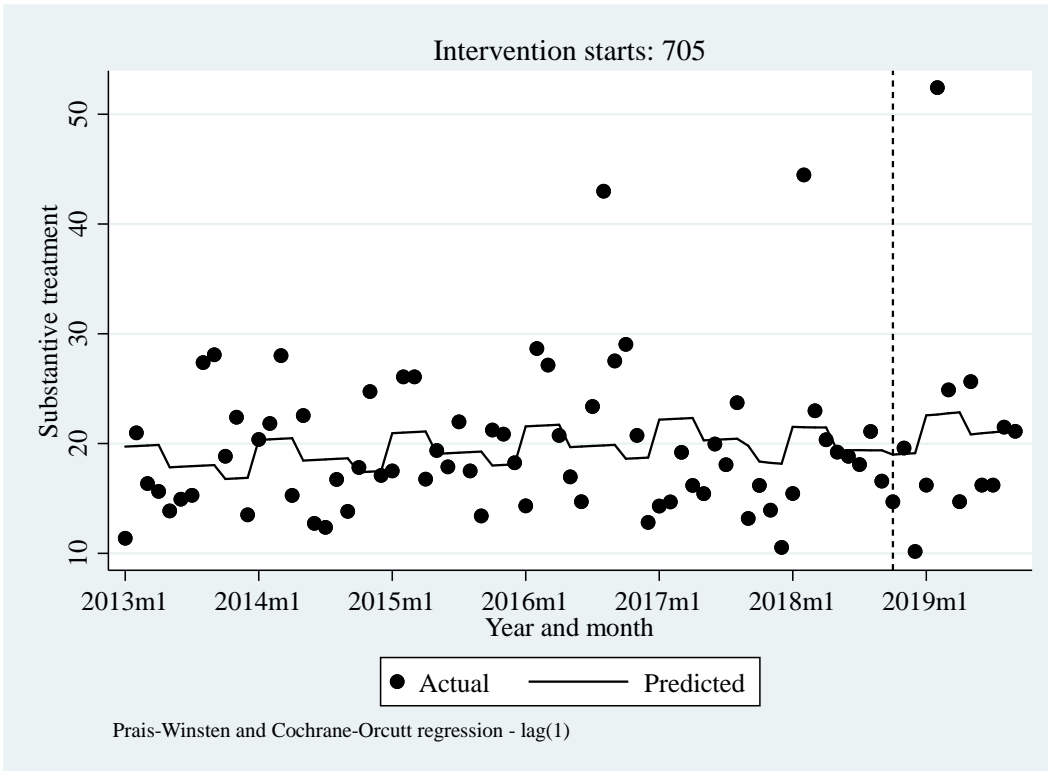


Figure 224 ITS Rate of substantive treatment episodes per 10,000 people, Alice Springs

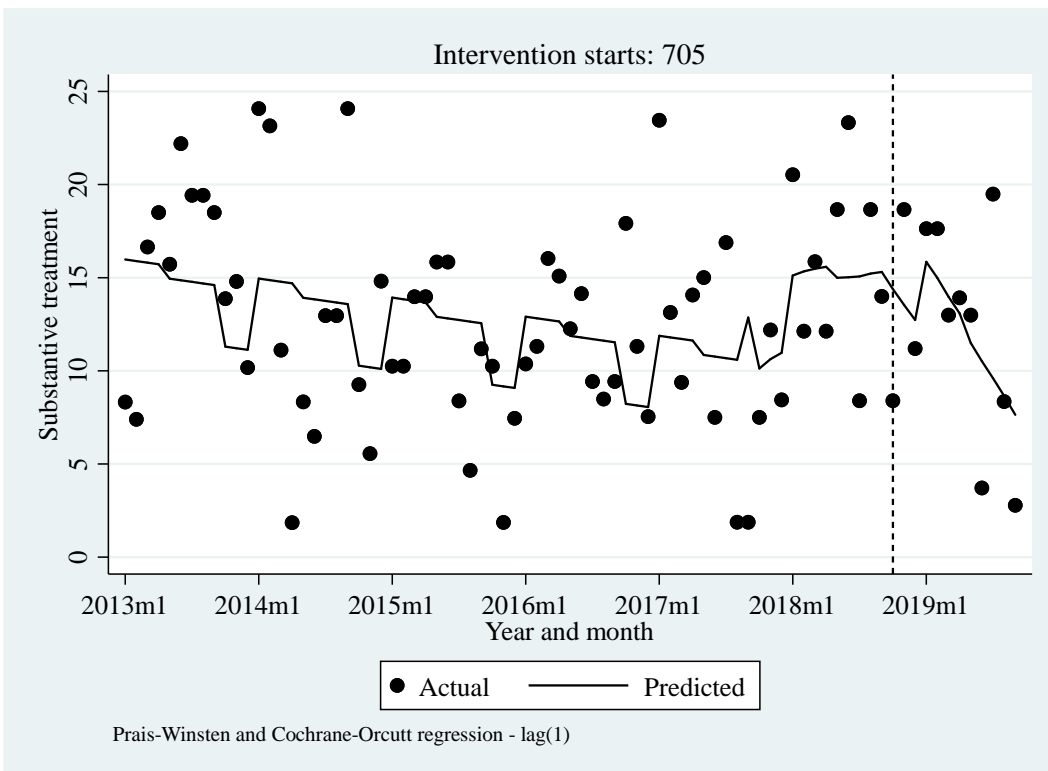


Figure 225 ITS Rate of substantive treatment episodes per 10,000 people, Katherine

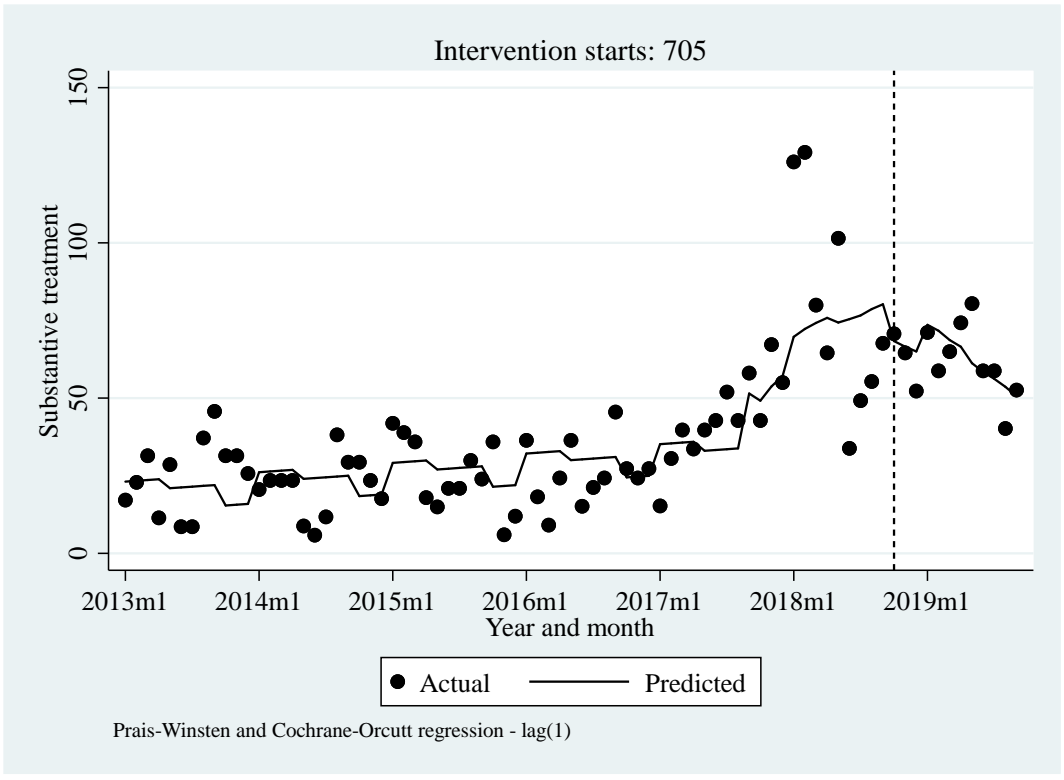


Figure 226 ITS Rate of substantive treatment episodes per 10,000 people, Tennant Creek

10.6 CHILD PROTECTION MODELS

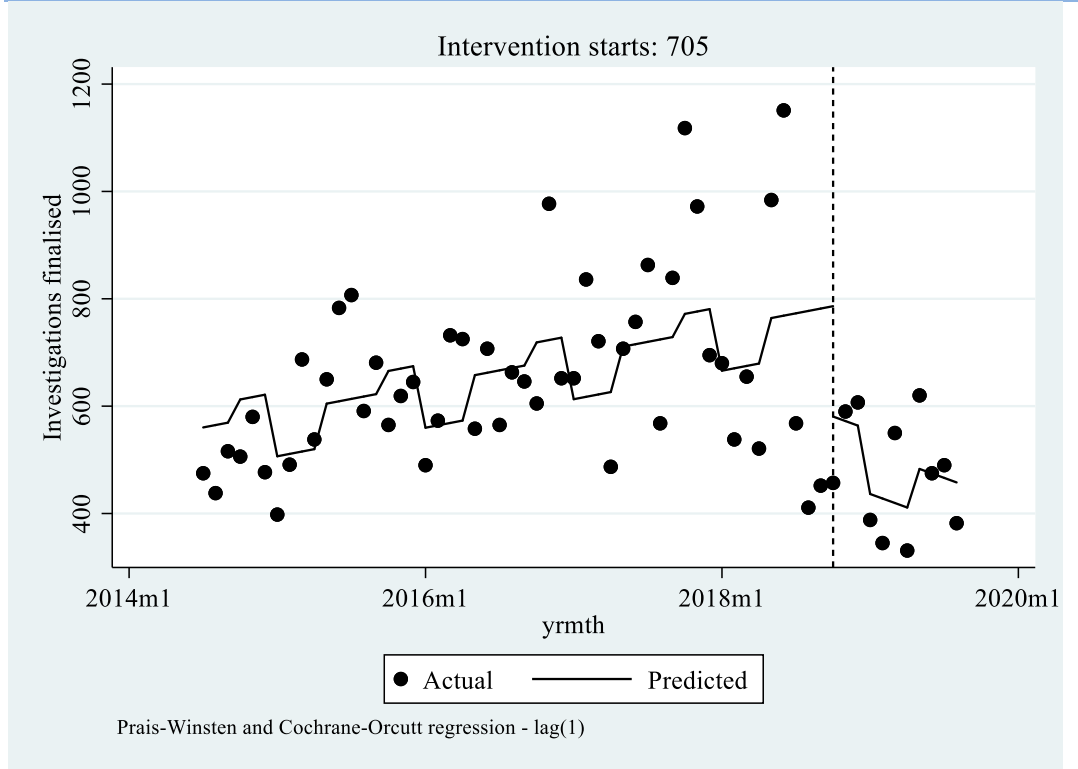


Figure 227 ITS Count of investigation of a notification, Northern Territory

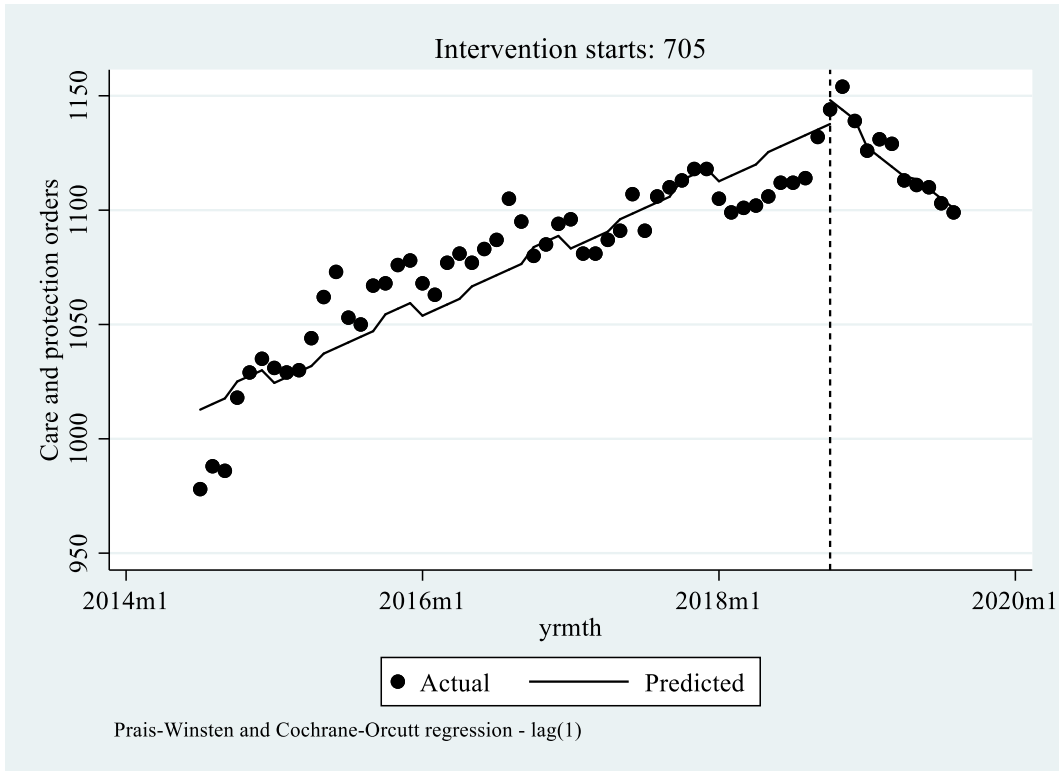


Figure 228 ITS Count of care and protection orders, Northern Territory

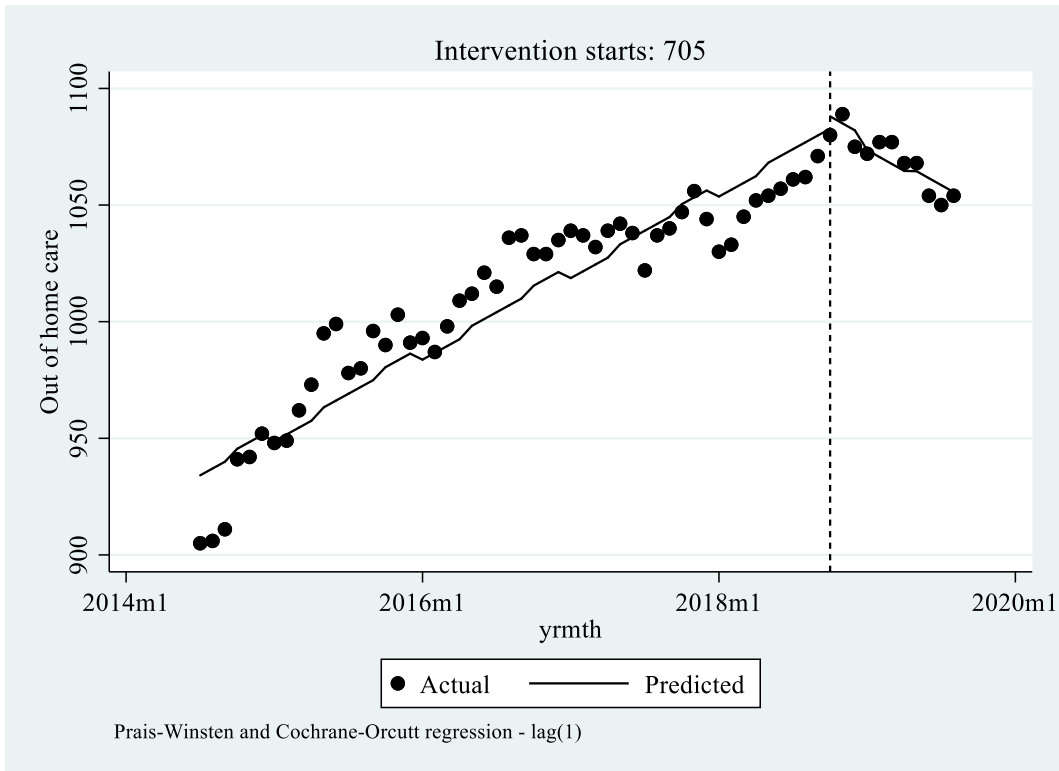


Figure 229 ITS Count of out-of-home care, Northern Territory

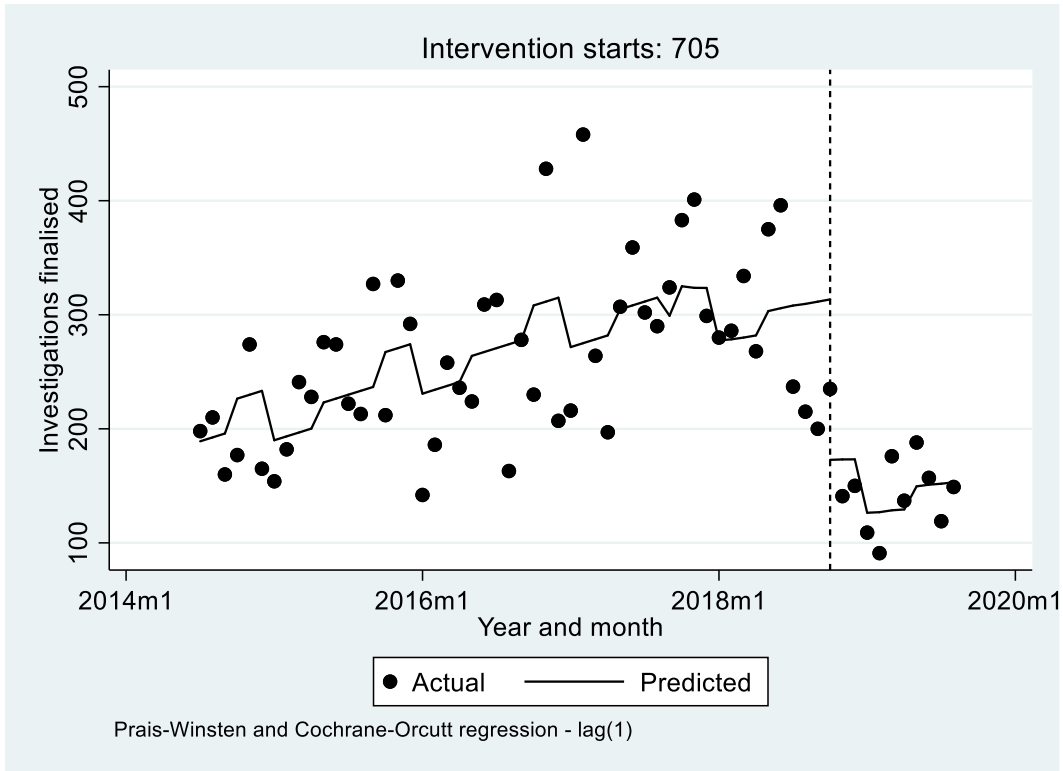


Figure 230 ITS Count of investigation of a notification, Greater Darwin

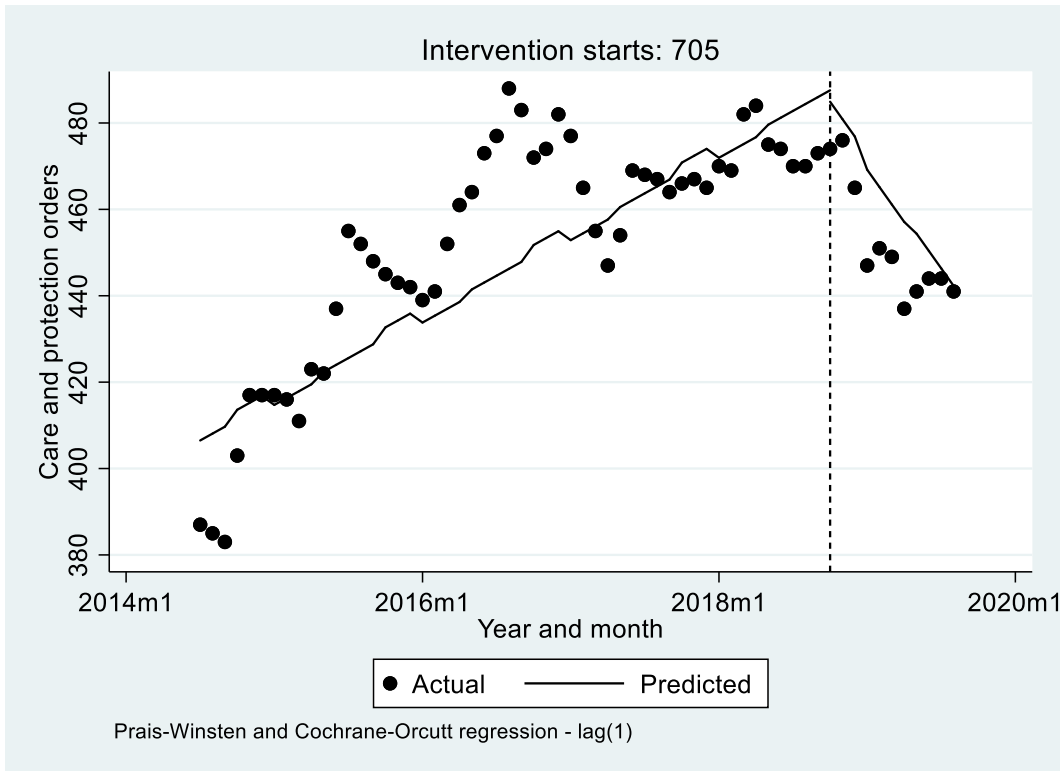


Figure 231 ITS Count of care and protection orders, Greater Darwin

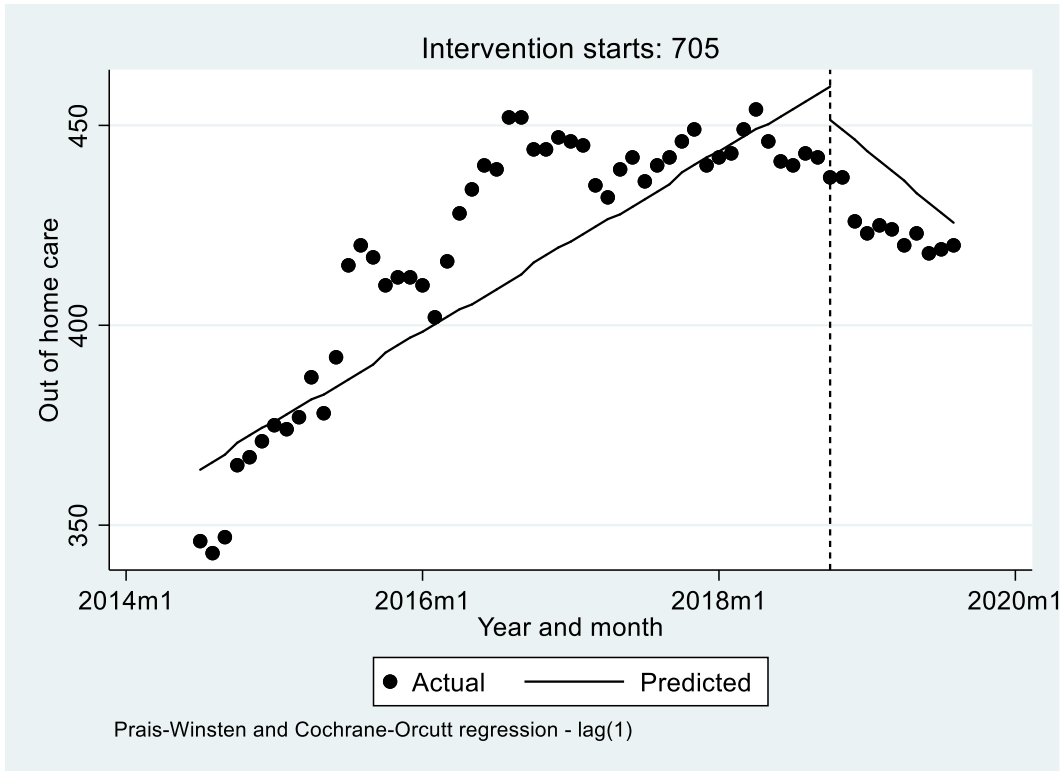


Figure 232 ITS Count of out-of-home care, Greater Darwin

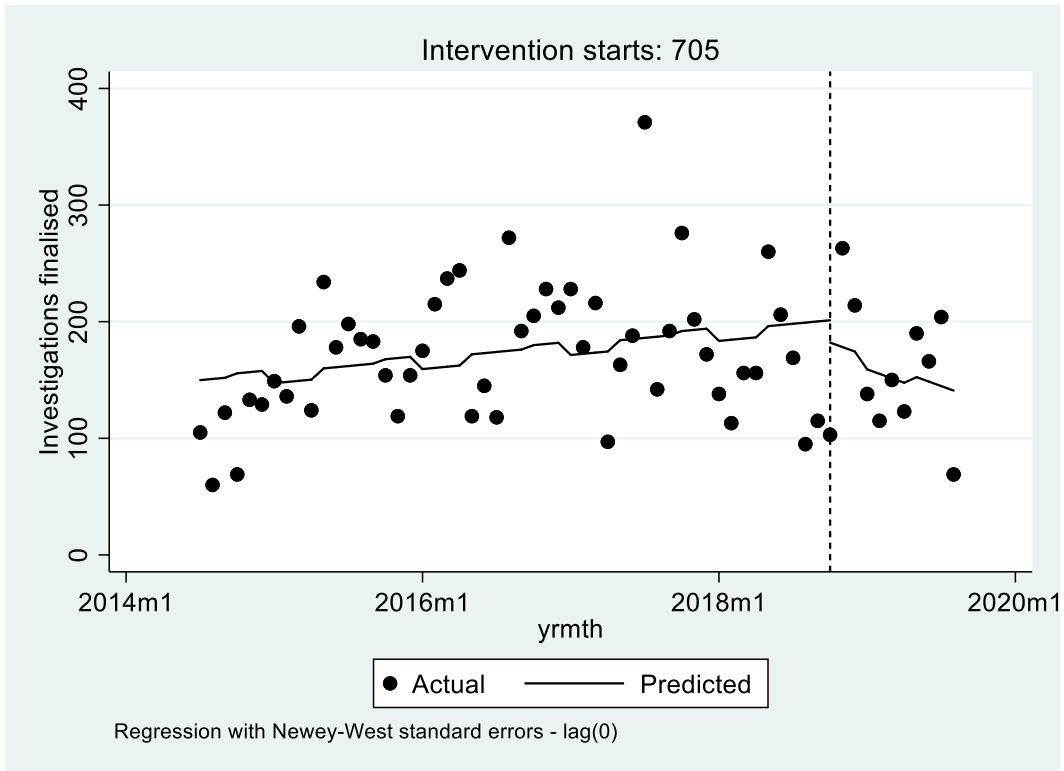


Figure 233 ITS Count of investigation of a notification, Northern Region

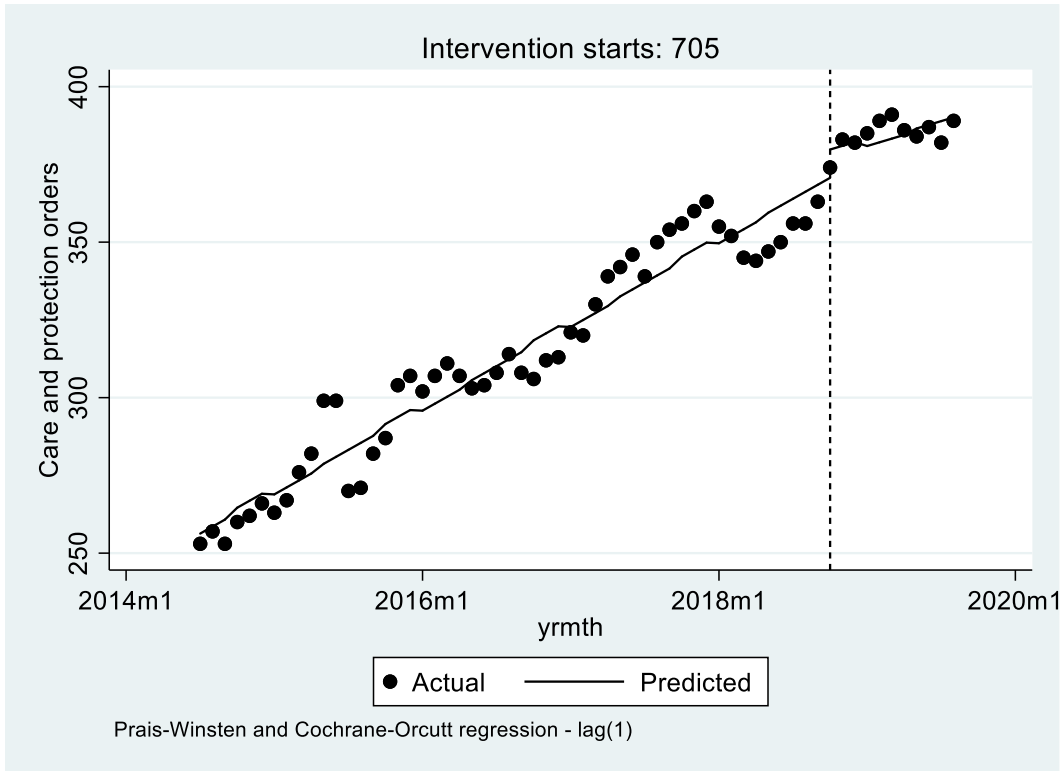


Figure 234 ITS Count of care and protection orders, Northern Region

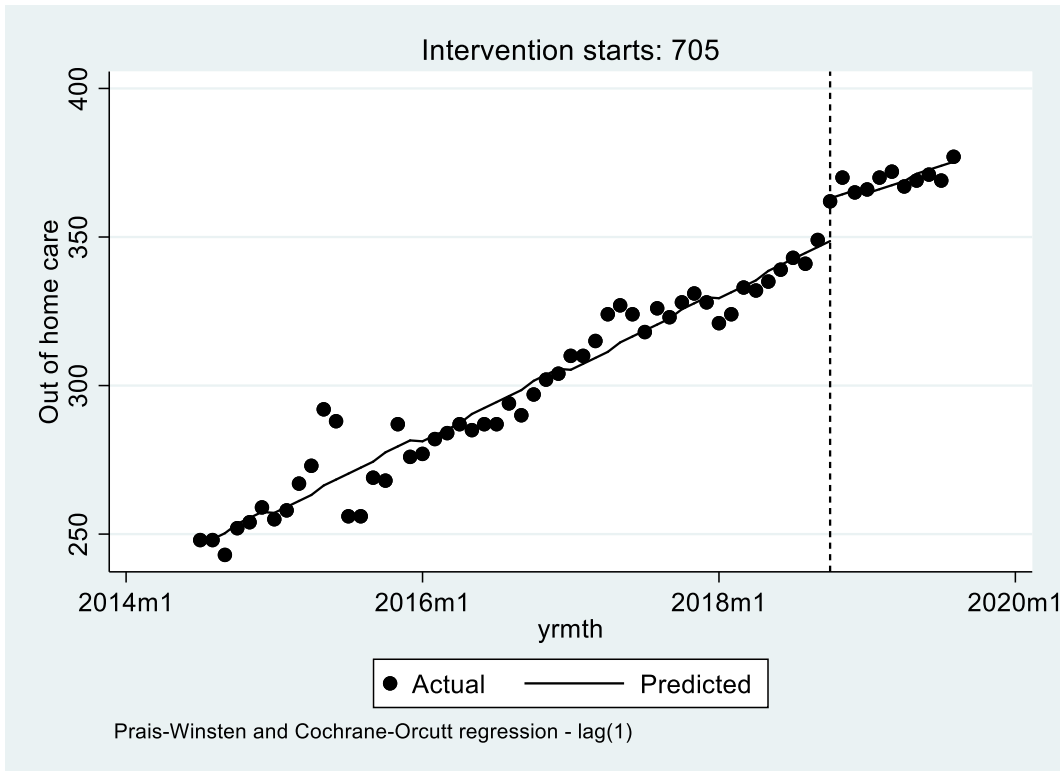


Figure 235 ITS Count of out-of-home care, Northern Region

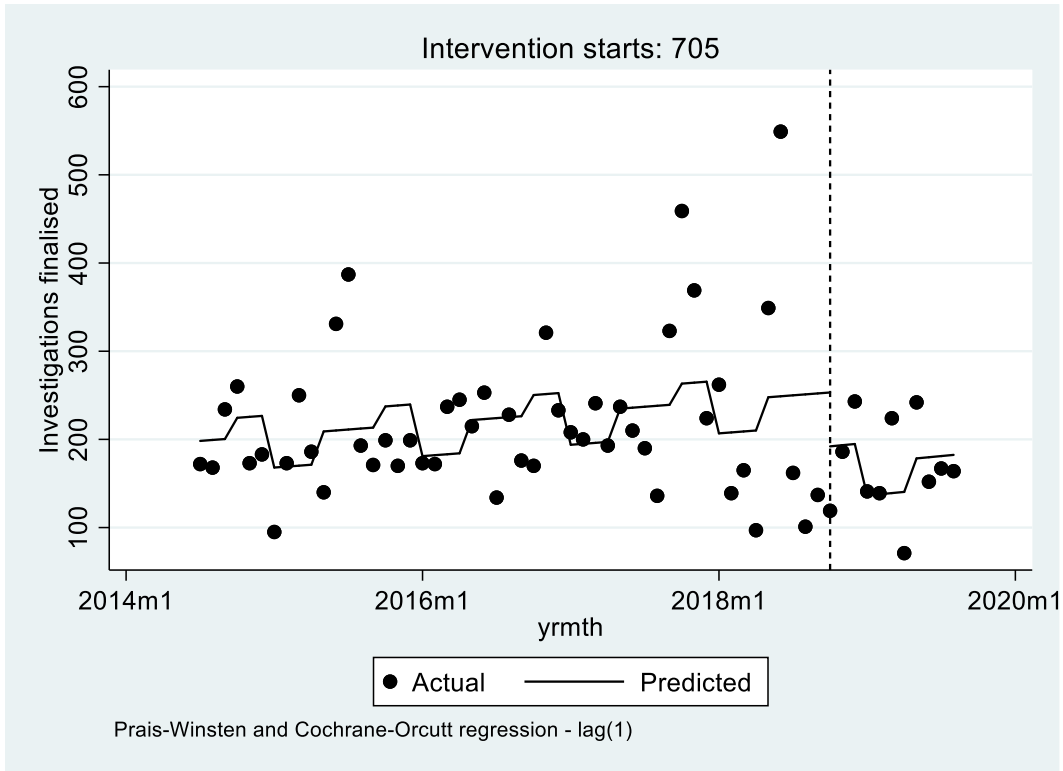


Figure 236 ITS Count of investigation of a notification, Southern Region

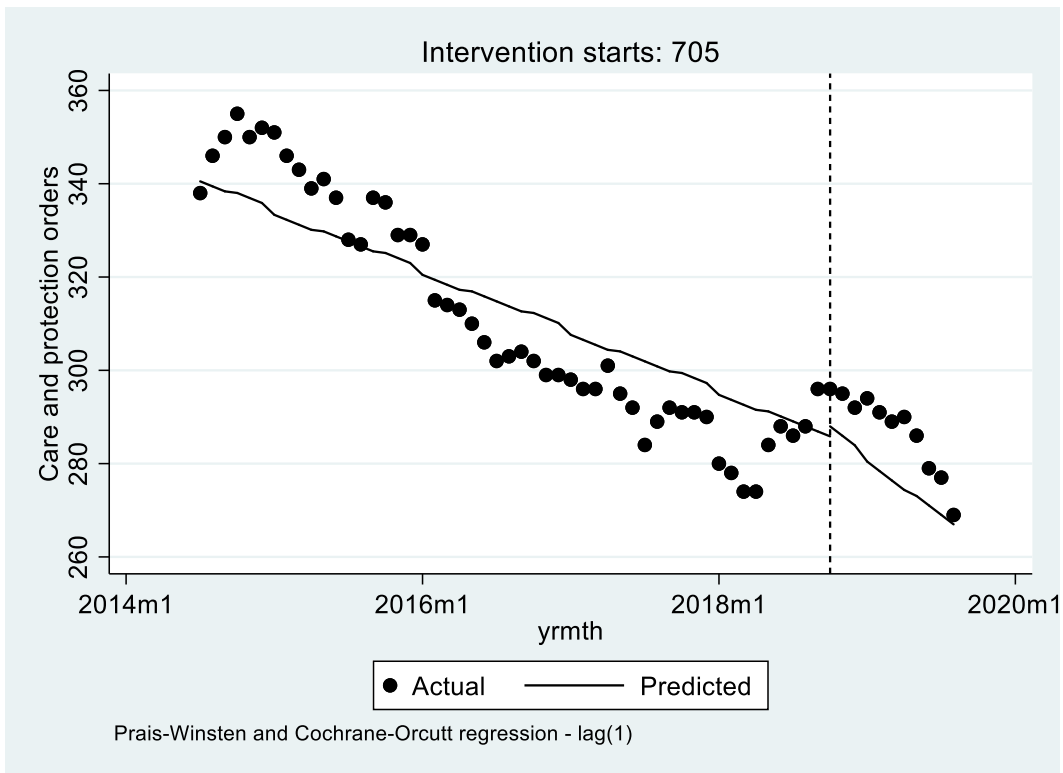


Figure 237 ITS Count of care and protection orders, Southern Region

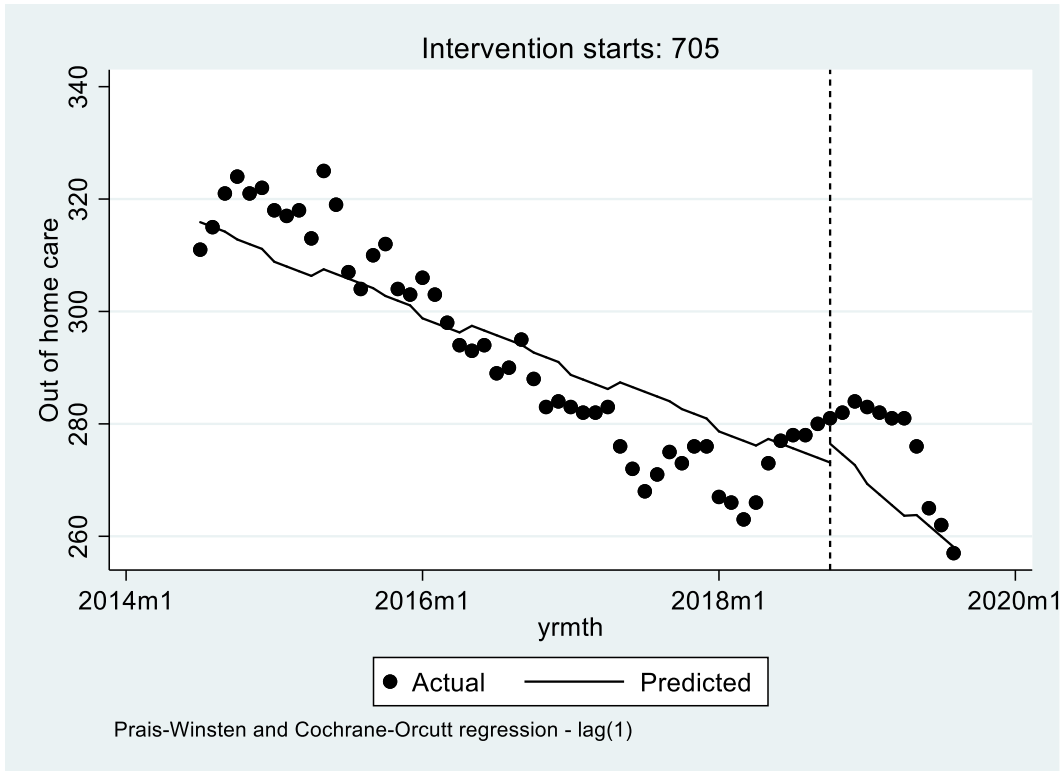


Figure 238 ITS Count of out-of-home care, Southern Region

10.7 ROAD TRAFFIC CRASH MODELS

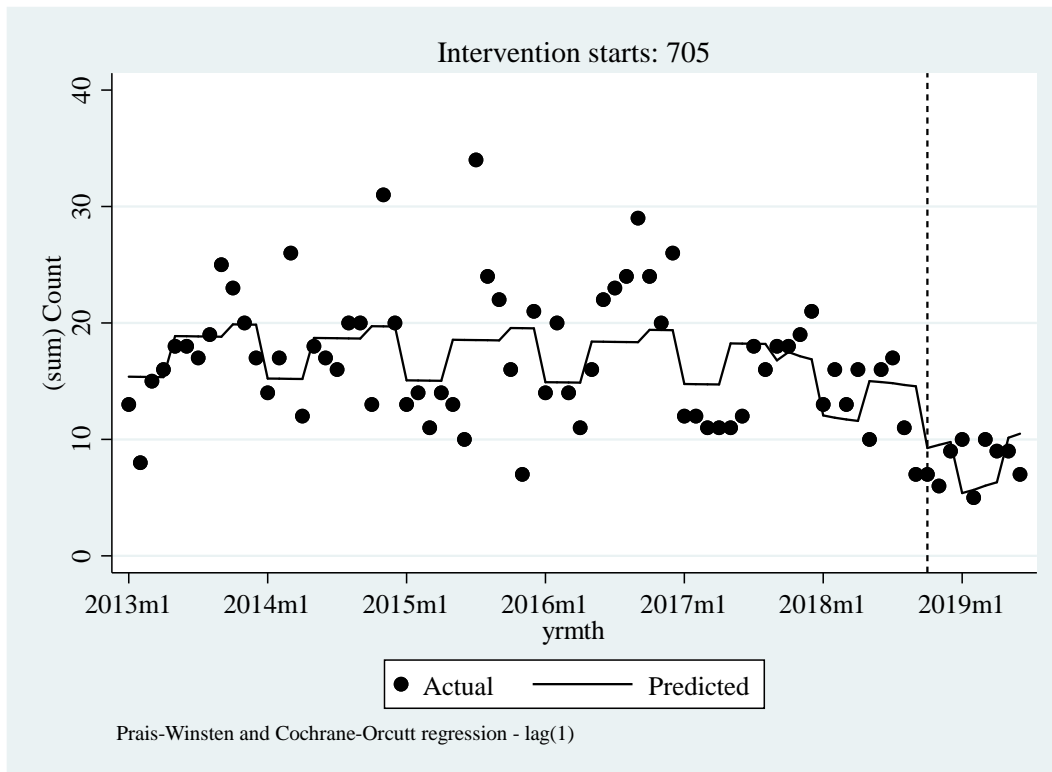


Figure 239 ITS Rate of alcohol-related crash injuries and fatalities per 10,000 people, Northern Territory

11 APPENDIX 4: POPULATION TELEPHONE SURVEY: SUPPORT FOR POLICIES

Table 118 Public support for alcohol policies in the Northern Territory, 2019, with 95% confidence intervals in parentheses

Policy	Strongly support (%)	Support (%)	Neither support or oppose (%)	Oppose (%)	Strongly oppose (%)
Increasing the price of alcohol	8.0 (6.1, 10.5)	12.8 (9.7, 16.6)	12.3 (8.3, 17.9)	37.1 (31.9, 42.6)	29.8 (25.9, 34.0)
Having a minimum price for different alcoholic drinks. The price would be based on how much alcohol content is in each drink	15.4 (12.5, 18.8)	34.5 (29.3, 40.1)	15.1 (10.6, 21.0)	20.7 (17.1, 24.9)	14.3 (11.8, 17.2)
Reducing the number of outlets that sell alcohol	17.5 (14.0, 21.7)	17.2 (14.3, 20.6)	17.4 (14.5, 20.8)	34.0 (28.4, 40.0)	13.8 (11.0, 17.2)
Reducing trading hours for all pubs and clubs	14.5 (11.3, 18.3)	20.8 (17.0, 25.2)	14.7 (12.0, 17.9)	32.5 (27.0, 38.6)	17.5 (14.7, 20.9)
Banning alcohol sponsorship of sporting events	23.0 (19.4, 27.1)	22.7 (18.9, 27.1)	19.2 (14.7, 24.6)	24.6 (19.8, 30.1)	10.5 (8.3, 13.2)
Displaying health warnings on all alcoholic containers	29.8 (25.6, 34.4)	35.5 (31.0, 40.3)	13.6 (9.6, 18.9)	15.6 (11.2, 21.2)	5.5 (3.7, 8.3)
Stricter enforcement of law against supplying minors	53.6 (48.2, 59.0)	31.2 (26.4, 36.5)	6.3 (4.8, 8.3)	7.7 (4.0, 14.6)	1.1 (0.5, 2.2)
Banning harmful drinkers from purchasing alcohol (e.g. the Banned Drinker Register)	45.9 (40.8, 51.0)	35.7 (30.6, 41.1)	5.1 (3.8, 6.9)	7.8 (5.3, 11.5)	5.5 (2.4, 12.3)
Requiring mandatory ID scanning in takeaway liquor outlets	31.3 (27.1, 35.8)	41.3 (36.1, 46.7)	8.8 (6.5, 11.9)	10.4 (6.5, 16.3)	8.2 (6.3, 10.5)
Requiring mandatory ID scanning in pubs and nightclubs	30.2 (25.9, 34.9)	35.2 (30.7, 39.9)	7.6 (5.9, 9.8)	19.7 (14.2, 26.7)	7.3 (5.5, 9.7)

Having police or liquor inspectors permanently stationed outside packaged liquor outlets	21.3 (17.8, 25.3)	29.3 (25.2, 33.7)	11.2 (8.9, 13.9)	24.8 (19.2, 31.4)	13.4 (10.5, 16.9)
Forced rehabilitation for problem drinkers (Alcohol Mandatory treatment program)	37.6 (33.0, 42.5)	36.8 (31.7, 42.2)	7.3 (5.4, 9.7)	13.6 (9.3, 19.3)	4.7 (3.0, 7.5)