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Learning from alcohol (policy) reforms in the Northern Territory (LEARNT): protocol for a mixed-methods study examining the impacts of the banned drinker register

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ABSTRACT

Introduction The Banned Drinker Register (BDR) was reintroduced in the Northern Territory (NT) in September 2017. The BDR is a supply reduction measure and involves placing people who consume alcohol at harmful levels on a register prohibiting the purchase, possession and consumption of alcohol. The current study aims to evaluate the impacts of the reintroduction of the BDR, in the context of other major alcohol policy initiatives introduced across the NT such as Police Auxiliary Liquor Inspectors and a minimum unit price for alcohol of US$1.30 per standard drink.

Methods and analyses The Learning from Alcohol (policy) Reforms in the Northern Territory project will use a mixed-methods approach and contain four major components: epidemiological analysis of trends over time (outcomes include health, justice and social welfare data); individual-level data linkage including those on the BDR (outcomes include health and justice data); qualitative interviews with key stakeholders in the NT (n≥50); and qualitative interviews among people who are, or were previously, on the BDR, as well as the families and communities connected to those on the BDR (n=150). The impacts of the BDR on epidemiological data will be examined using time series analysis. Linked data will use generalised mixed models to analyse the relationship between outcomes and exposures, utilising appropriate distributions. Qualitative data will be analysed using thematic analysis.

Ethics and dissemination Ethics approvals have been obtained from NT Department of Health and Menzies School of Health Research Human Research Ethics Committee (HREC), Central Australia HREC and Deakin University HREC. In addition to peer-reviewed publications, we will report our findings to key organisational, policy, government and community stakeholders via conferences, briefings and lay summaries.

Strengths and limitations of this study

- The use of a mixed-methods approach, with a comprehensive set of multiple data sources, will allow triangulation of data at the individual, community and larger societal level.
- This study will directly capture the perspectives of people on the banned drinker register and their families/communities.
- Due to concurrent interventions, potential change in outcomes may not be due to the banned drinker register alone, rather change may be the result of the combination of interventions in a region.
- The Northern Territory has many small remote and very remote communities, in addition to a unique population of highly mobile people, this may make trends for some regions unstable.

INTRODUCTION

The Northern Territory (NT) has the highest per capita alcohol use in Australia[1] and 25% of NT adult residents consume alcohol at a level that puts them at risk of long-term harm, compared with 17.6% of other Australian adult residents.[2] In the 12 months ending June 2021, 51% of assaults recorded by the police in the NT were alcohol related.[3] Alcohol-attributable deaths occur in the NT at about 3.5 times the rate in Australia generally; rates in non-Aboriginal peoples were about double the national rate, and for NT Aboriginal and Torres Strait Islander peoples were 9–10 times higher compared with NT residents who were not of Aboriginal descent.[4]

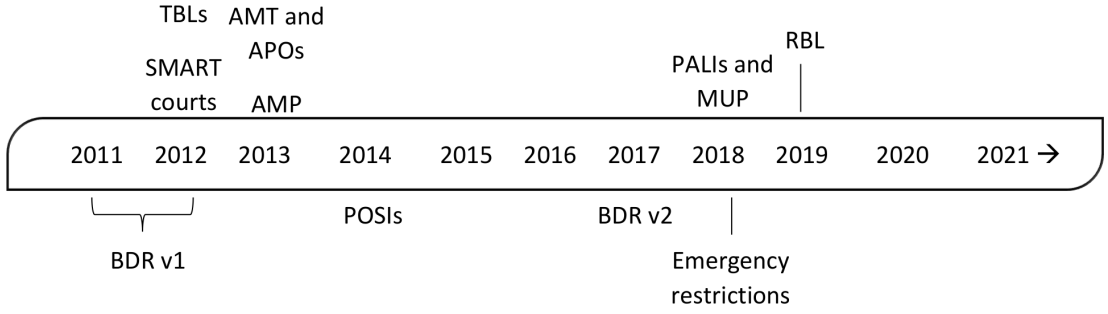

Figure 1 Timeline of key alcohol initiatives over the past 10 years in the Northern Territory, Australia. TBLs, temporary beat locations; SMART courts, substance misuse assessment and referral for treatment courts; AMT, alcohol mandatory treatment; APOs, alcohol protection orders; AMP, alcohol management plans (refreshed); BDR, banned drinker register; POSIs, point of sale interventions; PALIs, police auxiliary liquor inspectors; MUP, minimum unit price for alcohol; RBL, risk based licensing.

NT alcohol policies

The NT government has a substantial history of implementing policy with the goal of reducing alcohol use and related harms.[5 6] For example, the Living With Alcohol programme was implemented between 1991 and 2000.[7] This programme used three approaches—education, reduced alcohol availability and increased treatment and rehabilitation—to successfully reduce harmful alcohol use, acute alcohol harms, and deaths of Aboriginal peoples.[7–9] The current study will focus on more recent interventions, and figure 1 provides a timeline of alcohol policy initiatives in the NT over the past 10 years.

Due to the continued disproportionate rates of alcohol-related harms in the NT, in 2017 the NT Government commissioned a review of all aspects of current alcohol policy and legislation,[5] generally referred to as the Riley Review. This review proposed an Alcohol Harm Reduction Framework, including targeted initiatives to reduce alcohol-related harms.

In response to this review, in 2018 the NT government introduced the Alcohol Harm Minimisation Action Plan 2018–2019 and passed amendments to the Northern Territory Liquor Act 1978 (the Act; now superseded by the Northern Territory Liquor Act 2019). These two documents further reinforced the need for alcohol policy initiatives, such as the Banned Drinker Register (BDR), Police Auxiliary Liquor Inspectors (PALIs) and a minimum unit price for alcohol (MUP). Details on the implementation of each of these interventions are provided below.

Banned Drinker Register

The BDR was initially introduced during 2011. The BDR restricts supply of alcohol at an individual level by prohibiting those who are on the register from purchasing takeaway alcohol[10] and has international precedents.[11] This first BDR was repealed without formal evaluation with a change of government in 2012. After a further change in government, the BDR was reintroduced in September 2017. The BDR is a supply reduction measure and involves placing people who consume alcohol at levels that harm themselves or others on a register. Those on the register are prohibited from purchasing, possessing, and using alcohol. Purchase restrictions are enforced using ID scanners at all takeaway alcohol outlets.[10] As of 30 June 2021, 3494 individuals had an active ban on the BDR. People can be placed on the BDR for 3, 6 or 12 months. The length of time on the BDR can be reduced if a person undertakes voluntary therapeutic treatments.

An individual is placed on the BDR through a Banned Drinker Order (BDO). BDOs can be issued through a number of pathways:

- Police.
- Courts.
- Corrections.
- BDR Registrar (under the Registrar pathway, individuals may self-refer, be referred by family or be referred by an authorised person, including health professionals, social services and child protection workers).

The majority of bans are issued by police (approximately 65%) and approximately one-quarter issued through courts.[12 13] The following are triggers for a police-issued BDO: apprehension for an alcohol-related offence; a named defendant on a domestic violence order related to alcohol use; any combination of three alcohol-related protective custody episodes or alcohol infringement notices within 2 years.[12] A person may be placed on the BDR through the courts system by having an alcohol prohibition condition on a court order or parole orders.[12]

With the reintroduction of the BDR there was an explicit commitment by the NT Government to evaluate the effectiveness of the BDR.[14 15] This has included 6 months,[10] 12 months[12 16] and 24 months[13] evaluations. Emerging qualitative findings from industry and service stakeholders have also identified challenges associated with the BDR (such as increased supply of alcohol to people who are not permitted to purchase, referred to as 'secondary supply').[17 18] However, the initial 6 and 12 months evaluations of the BDR demonstrated the beginnings of declines in alcohol-related assaults after the BDR introduction,[12] with continued reductions in alcohol-related assault offences and alcohol-related emergency department (ED) presentations at 24 months.[13]

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Police Auxiliary Liquor Inspectors

The aim of PALIs is to prevent purchases of alcohol from bottle shops/takeaway alcohol venues for people who cannot provide a valid address (non-restricted; that is, an address in an area without alcohol prohibitions or other restrictions).[19] PALIs are uniformed inspectors organised in a separate unit to police officers, with enforcement powers limited to fulfilling their role as a PALI. PALIs perform the duties that were previously undertaken by police officers in Alice Springs, Katherine, and Tennant Creek. These Temporary Beat Locations/Point of Sale Interventions had involved police officers being stationed at takeaway liquor outlets asking people to show their ID and establishing where the purchased alcohol was to be consumed.[5] They had the power to confiscate the alcohol if no valid location could be provided, in order to deter consumption of and secondary supply of alcohol within 'dry' communities and alcohol free areas within a town, such as public parks.[20]

The first cohort of PALIs graduated in August 2018, and there are now 75 PALIs stationed across Alice Springs, Katherine and Tennant Creek. There has yet to be a formal evaluation of the impact of PALIs on alcohol use and related harms.

MUP for alcohol

On 1 October 2018, the MUP was set at US$1.30 per standard drink,[21] defined as the volume of a liquor product that contains 10 g of ethyl alcohol when measured at 20°C.[22] The legislative amendment prohibits selling alcohol below this price as compared with the US$1.50 recommended by the Riley Review,[5] and imposes charging at least the minimum price as an automatic condition of a liquor licence. This minimum price is not a tax and any profits from the higher price are retained by retailers. In the year after the introduction of the MUP, the per capita consumption of cask wine (the cheapest form of alcohol available) declined by approximately 50%.[21 23]

Current study

The Learning from Alcohol (policy) Reforms in the Northern Territory (LEARNT) project aims to assess the impact of the re-introduction of the BDR on patterns of alcohol use and alcohol-related harms, in the context of the other key NT alcohol control initiatives. It also aims to investigate the ways in which the BDR intervention impacts on banned drinkers, their social networks and civil society.

These aims will be addressed using a mix of quantitative and qualitative approaches, providing a rigorous and detailed assessment of the effects of the BDR at the individual, family, community and territory level. Specifically, we will address four key research questions (RQs).

RQ1: What is the impact on individuals and on their extended kinship/social networks, in terms of treatment requirements, attitudinal and behavioural changes, including levels and types of substance use and social/family dynamics? Variables included in the analyses will include stigmatisation, recurrence of problems while being placed on the BDR, mental health status, family relations, and alcohol and other substance use.

RQ2: In what ways does the BDR affect an individual's interaction with health and justice systems (including serious outcomes like emergency department (ED) presentations, police recorded offences and sexually transmitted infection (STI) notifications)?

RQ3: How does the BDR impact on community members and response agencies (eg, police-recorded offences, ED and hospital admissions, child protection notices), and also cultural values, political resonance and social cohesion?

RQ4: What is the impact of the BDR on the Alcohol and Other Drug (AOD) treatment and rehabilitation sector in the NT, including: numbers seeking treatment; treatment types; 'success' rates; and implications for staff capacity building and training?

METHODS AND ANALYSIS

Study design

This study will employ a mixed-methods design involving collection and analysis of administrative data and complementary qualitative data.

The four key components to the study are:

1. Epidemiological administrative data analysis.
2. Data linkage
3. Key stakeholder interviews.
4. Qualitative study with people on the BDR and their families/communities.

Setting

The study will be undertaken across the NT. The NT has a population of 246 500,[24] of whom approximately 30% identify as an Aboriginal or Torres Strait Islander person.[25] The majority (56%) of people in the NT live in the greater Darwin (capital city) region, with the balance dispersed across what are classified as remote and very remote areas.[26] Due to the place-specific nature of some of the interventions, depending on data availability and data type, the policy impact in the following five broad regions will be examined: Darwin/Palmerston, Katherine, Barkly (including Tennant Creek), Alice Springs and East Arnhem. NT-wide effects will also be investigated. However, for other types of data (eg, qualitative), findings may also be aggregated for the Top End of the NT (northern area of the NT, including Greater Darwin, Arnhem Land and Katherine) and the Central Australia/Barkly region (the southern area, an area centred on Alice Springs and Tennant Creek).

Aboriginal and Torres Strait Islander governance and collaboration

This project will be conducted in collaboration with a LEARNT Aboriginal and Torres Strait Islander Leaders

Table 1 Epidemiological data to be included in the learnt project

Data	Time frame	Key variable/s of interest
Banned Drinker Register records	January 2013–December 2019	No of people on the BDR
Police offences data	January 2014–December 2019	Serious assaults
Police protective custody	January 2013–December 2019	No of episodes
Wholesale supply data	January 2013–December 2019	Litres of alcohol per capita
Licensing data	January 2013–December 2019	No of liquor licenses
Hospital admissions	January 2013–December 2019	Admissions relating to acute and chronic alcohol use
Emergency department presentations	January 2013–December 2019	Alcohol-related injuries and assaults
Ambulance attendances	January 2013–December 2019	All attendances
Alcohol and other drug treatment	January 2013–December 2019	No of treatment episodes
Sobering up shelters	January 2013–December 2019	No of attendances
Sexually transmitted infections	January 2013–December 2019	Incidence of common infections
Perinatal data	January 2013–December 2019	Alcohol use during pregnancy and infant outcomes at birth
Serious road injuries	January 2013–December 2019	Alcohol-related traffic crashes resulting in injury or fatality
Child protection records	January 2013–December 2019	No of notifications, investigations, substantiations and out of home care
Safe houses	January 2013–December 2019	No of women and accompanying children using services
School attendance	January 2013–December 2019	No of student absences

group. This group consists of stakeholders from key organisations in the NT in addition to investigators who identify as Aboriginal and/or Torres Strait Islander. This group will provide advice on cultural considerations relating to project protocols, processes, and the interpretation of findings.

This project will also use a strengths-based approach to interpret findings relating to Aboriginal peoples.[27 28] Strengths-based approaches move away from traditional problem-based framing to offer differing language and thinking about issues, such as alcohol-related harms. By acknowledging the disproportionate social, political and economic disadvantage experienced by Aboriginal and Torres Strait Islander peoples, we seek to move past problematising outcomes and to work with together with Aboriginal and Torres Strait Islander peoples to provide a sensitive and thoughtful narrative on issues and solutions.[27]

Procedures

Epidemiological administrative data

In order to isolate the effects of the re-introduced BDR, data from January 2013 onwards will be analysed. Where possible, data will be aggregated by month. Demographic subgroups (by age, gender, Aboriginal and Torres Strait Islander status) will also be examined. Table 1 provides an outline of the epidemiological data that will be utilised for the study.

BDR records

Data for the number of people on the BDR as of the end of each month will be used. The number of bans by pathway (ie, police, courts, corrections or BDR registrar framework) and duration (3 months, 6 months or 12 months) will be obtained. The number of people who have self-referred onto the BDR will also be collated. These data will be used as a predictor variable when modelling outcomes.

Police recorded incidents/offences

As in previous studies,[29 30] de-identified unit records of police-recorded crimes (including offender and victim datasets) most likely to be related to alcohol will be used. Serious assaults will be the primary focus, as they are less likely to be influenced by other policing activity and strategies, thus making them a more reliable outcome measure.[23 31 32] A secondary focus will be the rate of domestic violence incidents, as flagged by the attending police officers. Other offences such as driving offences, theft, unlawful entry and property damage will also be examined.

Police protective custody events

Individuals who experience three episodes of Protective Custody within a 2 year period are placed on the BDR. Protective custody is apprehension, without arrest, of an individual who appears to be intoxicated to the point of potentially harming themselves or others in a public place. Intoxicated individuals are held in a jail cell until they are no longer intoxicated or until 7:00 hour if the protective custody episode commenced after 12:30 hour.[33]

Wholesale supply data

Alcohol wholesale supply data are collected by the NT Government and will be used to provide key context to our analyses of alcohol-related harm.[24] The amount of

alcohol sold will be converted to a per-capita consumption measure of beer, spirits, wine, cask wine and premixed drinks.

Licensing data

The impacts on licences will be measured, in part, through examining the number of licenses by region over time. Licenses will be grouped into the following broad categories: on-premise (consumption of alcohol allowed on premises only), off-premise (take away alcohol purchases only), general (selling alcohol both for consumption on-premise and for takeaway) and clubs (such as sporting clubs).

Health data

Health data can provide insight into trends and patterns of alcohol-related harms at a population level. These administrative data have different limitations and capacities to capture a spectrum of harms from those that occur in the community, but do not receive further treatment (eg, handling by ambulance staff) through to admitted-patient data that captures those who have serious enough related harms to require admission to hospital for treatment. The details of how we will use these data are provided below.

Hospital admissions

Use of admissions data will also allow examination of trends in alcohol-related harms resulting in hospitalisation, thus providing a comprehensive picture of the impact of acute alcohol-related harm on the health system.[34] Admissions related to alcohol intoxication, skull and facial fractures, and hand and wrist fractures will be examined. Admissions for chronic conditions with a high alcohol aetiological fraction will also be included, such as cancer (eg, liver cancer, oesophageal cancer), liver cirrhosis and pancreatitis.[4 35] Focusing on specific types of injury (eg, S & T ICD-10 codes) and illness admissions (eg, C22.8 and F10.20 codes) will provide a more accurate representation of cases that are alcohol-related than relying on alcohol flags alone.

ED presentations

Our previous work[29 36] highlights the value of ED records for monitoring alcohol-related injuries in Australia. ED data captures a broad spectrum of alcohol-related injuries (eg, minor fractures from falls and assaults) which are often not serious enough to result in admission to a hospital ward, but they occur relatively frequently among high-risk population groups.[37] The same injury and illness ICD-10 codes as those used for the inpatient data will be used for the ED presentation outcome measures.

Ambulance attendances

Ambulance attendance data can provide useful information regarding the identification of trends in alcohol use and aggression or violence within at-risk groups,[38–41] in addition to information that is not available through ED data (eg, geographical location where an incident occurred).[42 43] Trends in all ambulance attendances by demographics will be investigated.

Alcohol and other drug treatment episodes

Data on all episodes of care within the NT alcohol and other drug (AOD) treatment sector will be collected. Analyses will provide an overview of the impacts of the BDR on the treatment system in the NT as a whole and regionally. Data on treatment episodes by primary substance used, treatment type (eg, rehabilitation, withdrawal management or counselling) and demographics will be analysed.

Sobering up shelters

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 are in need of immediate care in a safe environment.[44 45]

Sexually transmitted infections

Sexually transmitted infection data will be accessed and analysed from the NT Notifiable Diseases Surveillance System. Due to low rates of incidence, data on the incidence of common infections (ie, chlamydia, gonorrhoea, syphilis and trichomonas) will be collated and analysed as a single series rather than by demographics.

Perinatal data

Alcohol use during pregnancy is associated with a range of adverse outcomes for the developing fetus.[46] One in 8 Aboriginal women and 1 in 16 non-Aboriginal women in the NT report alcohol use at their first antenatal appointment.[47] Therefore, birth outcomes will be tracked over the study period. The project will examine alcohol use during pregnancy, birth weight, birth status (live or stillborn) and APGAR scores (at 1 min and 5 min).

Serious road injuries

Total alcohol-related crashes resulting in injury or fatality, as indicated by a blood alcohol content measure of ≥0.03 g/100 mL, will be examined, with sub-analyses by number of people in the car, vehicle type and severity.

Child protection records

Alcohol is a major factor in child abuse and neglect.[48] Child protection services intervene when children under the age of 18 are found to have been harmed or be at risk of harm due to abandonment, neglect or maltreatment.[49] Child protection services contacts include reports (notifications), investigations, substantiations and issue of child protection orders. Data describing the number of reports and type of report (eg, neglect, emotional abuse, physical abuse), number and type of substantiations, and number and type of child protection orders will be analysed. Where possible, data on family reunifications will also be considered.

NT government-run safe houses data

Alcohol has been found to play a substantial role in family and domestic violence, with 55%–67% of police-reported incidents recording alcohol-involvement.[50] Safe houses are for women and children at immediate risk of harm due to family and domestic violence, and do not include sexual assault referral centres. Safe houses are available in many remote Aboriginal communities, and offer short-term crisis accommodation in communities that lack other forms of housing support.[51] The number of women and accompanying children using these services will be examined.

School attendance

The BDR has a role in potentially reducing alcohol use among parents, relatives, and the wider community. This reduced alcohol use may then facilitate better childhood educational outcomes for children of those on the BDR. In addition, higher rates of school attendance has the potential to further increase notifications of child maltreatment.[52 53] Therefore, school attendance data (as represented by percentage of days attended each school term), is an important contextual outcome measure to facilitate a comprehensive evaluation of the wider effects of the BDR. Attendance rates by demographics will also be examined.

Data linkage

This component of the project will use linked individual-level records from multiple administrative datasets to examine the impact of the BDR across a range of outcomes. Linked data will be examined for the period 1 September 2014 to 31 August 2020; 36 months prior to the introduction of the BDR and 36 months post BDR introduction. Datasets to linked include health datasets (hospital admissions, ED presentations, selected notifiable diseases, death registration) and justice datasets (police apprehensions, justice records and corrections).

The primary study for the data linkage component will use data for a study cohort of individuals aged 18 years and over who have a recorded alcohol-related harm event (from interactions with health and/or justice services) prior to the introduction of the BDR in the NT. Some of the individuals within the study cohort will have been placed on the BDR, while others will have not. Outcomes across these two groups will be compared. Key outcomes are: police apprehensions; offence charges; corrections orders; emergency department presentations; hospital admissions; and, deaths.

Secondary studies from the data linkage component will include a descriptive analysis of the characteristics of the cohort on the BDR and an assessment of the population-level impact of the BDR on alcohol-related harm.

Key stakeholder interviews

Key stakeholder interviews have been a particularly informative element of previous projects conducted by the research team in the area of alcohol policy evaluation.[10 16–18 21 29 54] They enable substantial insight into potential benefits and side-effects of alcohol control policies which are not apparent from other data sources. Therefore, the key stakeholder interviews conducted as part of the current project will provide important information regarding stakeholder attitudes toward, and experience of, the legislative changes in relation to the BDR in the NT. At least 50 key informant interviews will be conducted across the following groups:

- Health workers.
- Police.
- ED staff.
- Treatment providers
- Community service providers.
- Social workers
- Child protection workers.
- Education staff
- Court staff
- Government/policy staff
- Licensees/retailers.

Participants can opt to take part in a one-on-one interview or a small group interview (if they are from the same organisation). Interviews will be conducted using teleconferencing software and be approximately 45–60 min long. Participants will be asked questions based on a series of prompts, rather than a strict set of questions. Interviewees will be asked about their views on NT alcohol policies and impacts on crime, alcohol-related harms and consumption behaviours, their direct experience of the legislation introduced in the NT, and their thoughts on other ways in which AOD-related harm and violence can be reduced. Alcohol licensees and retailers will also be asked about their direct experience implementing the BDR. They will also be asked about these topics in the context of the COVID-19 pandemic.

Qualitative study with people on the BDR and their families/communities

One qualitative component of the LEARNT project aims to assess the impact of the BDR on participants, families, and communities across urban and remote locations of the NT. In recognition of the need to engage in culturally safe and respectful qualitative research protocols among participants who are Aboriginal and Torres Strait Islander, we are partnering with the Aboriginal Medical Services Alliance Northern Territory (AMSANT—for Top End) and Central Australia Aboriginal Congress (Congress—for Central/Barkly), placing joint research personnel within each organisation. This approach will involve codesigning and coleading all aspects of the study, including planning, recruitment, data collection, analysis and reporting.

Participants will be recruited Territory-wide. We aim to recruit 150 participants across the NT who meet the following criteria:

1. People who have been on the BDR at some stage since its reintroduction in September 2017 or people who

are family or community members of someone who has been placed on the BDR.,
2. Are aged 18 years and over.

We will recruit participants (both Aboriginal and Torres Strait Islander and non-Indigenous) through convenience sampling. The BDR Registrar of the NT will include a flyer and information about the study in letters sent to people referred to the BDR. Congress and AMSANT will also engage with health services and community programmes across the NT to promote the study to service/programme users. We will also use snowball sampling to allow participants to pass on information about the study to people that they know who meet the eligibility criteria. Efforts will also be made to recruit participants that represent the range of people on the BDR with respect to race, ethnicity, age, gender, and geographical location. Research conducted in the Top End will include provisions for interpreters and community-based researchers to be inclusive of people who speak a primary language other than English. Congress has determined that the use of interpreters is not feasible in Central/Barkly, therefore, participants will only be included if they are able to communicate in English. Participants in both regions will also be excluded if a mental disability precludes their ability to participate.

A flexible and adaptive approach will be taken to data collection, and depending on the preferences of participants, they will have the option to partake in a semi-structured interview, focus group and/or yarning circle (a research method involving on open discussion aimed at sharing experiences, knowledge and/or ideas). The interview guide focuses on participants' experiences of being on BDR and perceptions about how the recent alcohol policy interventions impact on their alcohol use behaviours, family relationships, crime, alcohol-related harms and sense of well-being.

Each interview, yarning circle, or focus group will be approximately 45–60 min long. The interview guide has been codeveloped with the input of AMSANT, Congress, the LEARNT Steering Committee and the LEARNT Aboriginal Leadership Group. Participants will be offered a US$50 gift voucher for their time.

To ensure cultural safety is maintained, discussions with Aboriginal and Torres Strait Islander participants in central Australia and the Top End will be conducted by a bicultural pair of researchers consisting of one Aboriginal researcher and one non-Indigenous researcher. Efforts will be made to accommodate participants who prefer to be interviewed by someone of the same gender. All interviews will be audiorecorded. English language data will be transcribed verbatim by a professional transcription service. Aboriginal community-based researchers who facilitate data collection in Aboriginal languages in the Top End will participate in reflection and analysis of participant data alongside AMSANT researchers. In instances where interviews are audiorecorded, the three researchers will listen back to recordings together and discuss the context, key themes and meanings of the data; in these instances, this recording of reflection will form the unit of analysis.

For the Top End component of the qualitative study, the AMSANT researchers are developing a culturally responsive, trauma-informed research protocol to guide their approach to engaging with participants. This protocol draws on Utnenge Rlterrke (Strong Spirit): A Culturally Responsive Trauma Informed Research Practice in Central Australia, a research manual being developed by Congress and AMSANT.

Analysis

Epidemiological administrative data

Our analyses will use data from 1 January 2013 (where available) to 31 December 2019 to avoid complicating the effects of the COVID-19 pandemic on the alcohol policy effects of interest. This approach will also preclude inclusion of more recent interventions, such as risk based licensing. Seasonal autoregressive integrated moving average (SARIMA) models will be used to measure monthly trends over time and the impact of the BDR (and other alcohol policy initiatives) on these trends. Such models allow for the identification and adjustment for underlying, long-term trends in the data, seasonal variation and serial autocorrelation. A time series design is a commonly used approach for the evaluation of policies implemented in entire jurisdictions where suitable control sites are lacking.[55] The impact of the BDR will be modelled using both a 0/1 ('off'/'on') approach and the number of people on the BDR each month. This is to capture the wider effects of the BDR beyond those people who have a BDO. The two other major interventions—MUP and PALIs (where analyses include Tennant Creek, Alice Springs and Katherine)—will also be included in the modelling. These two covariates will be modelled as 0/1 ('off/'on').

Data linkage

These retrospective cohort analyses will use generalised mixed models to analyse the relationship between multiple outcomes and exposures within the same individual over time and between the BDR and control cohorts. Distributions used in modelling will include negative binomial (eg, number of arrests while on/off BDR; number of ED presentations while on/off BDR), logit (eg, never vs ever received a correction order) and survival models (eg, time to first arrest of after coming on/off BDR) along with other appropriate methods. The primary analyses will use linked data to select individuals with a record of alcohol-related harm during the pre-BDR intervention period (Cohort 1) to determine whether being on the BDR led to increases or decreases in interactions with health and justice agencies. The secondary analyses will use all individuals registered on the BDR (Cohort 2) and use individual-level linked data to report both patterns of service, through time, and population impact of the BDR.

Key stakeholder interviews

In line with our previous research,[10 56] thematic analysis will used to interpret key stakeholder interviewee responses.[57]

Thematic 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. In this analysis, once a theme becomes evident, all transcripts are reanalysed for appearances of the theme. Categorisation is not exclusive, and some narratives appear in many themes. Categories are added to reflect as many of the nuances in the data as possible, rather than reducing the data to a few numerical codes.[58] All data relevant to each category are identified and examined using a process called constant comparison, in which each item is checked or compared with the rest of the data to establish analytical categories. An explicit strengths-based reporting model will be adopted in close consultation with Aboriginal investigators and partners. This approach is consistent with contemporary Aboriginal data sovereignty practices, and the promotion of culturally responsive Aboriginal research narratives.[28 59]

BDR qualitative data

The data will be interpreted through a thematic analysis approach.[57] This approach includes six steps including: (1) Familiarising oneself with the data; (2) Generating initial codes; (3) Searching for themes; (4) Reviewing themes; (5) Defining and naming themes and (6) Producing the report. NVivo software package will be used as a tool to sort, code and analyse the qualitative data. University-based researchers will lead the analysis process with researchers from AMSANT and Congress involved in each stage of the process. This codesigned approach will serve the purpose of building capacity and to ensure that cultural and local contextual insights are captured in the fieldwork and articulated in the analysis.

PATIENT AND PUBLIC INVOLVEMENT

All components of this study were developed in collaboration with key organisations in the NT, including Aboriginal and Torres Strait Islander health organisations. This approach will ensure a culturally sensitive approach to recruitment, participation, and distribution of findings. All participants taking part in the qualitative aspects of this study will be provided with detailed information on what their involvement entails, including the time required and any possible distress they may experience. If they opt to do so, participants can review their transcripts prior to analyses and provide further clarification or context if they choose. Lay summaries of findings will be provided to all participants, and these will also be distributed to all services and programmes who participated in the study.

ETHICS AND DISSEMINATION

Ethics approval for all components of the project have been obtained from NT Department of Health and Menzies School of Health Research Human Research Ethics Committee, Central Australia Human Research Ethics Committee, and Deakin University Human Research Ethics Committee. Participants in the key stakeholder interviews and BDR qualitative component will provide full informed consent. A waiver of consent for the epidemiological administrative data and linkage data components has been sought as this consists of anonymous, routinely collected data only. The research team is cognisant that the research findings may have the potential to perpetuate negative stereotypes among Aboriginal and Torres Strait Islander people if they are not presented in an appropriate way that takes account of the ongoing effects of colonisation, intergenerational trauma and socioeconomic factors impacting on the lives of Aboriginal and Torres Strait Islander people in the NT. Therefore, any reports or publications arising from this study will be carefully considered and reviewed by the Aboriginal Leadership Group, Congress, and AMSANT to ensure that the underlying situational context are appropriately considered in relation to the findings.

It is planned that quantitative papers will begin to be published from the first half of 2022, with qualitative papers to be published late-2022. In addition to peer reviewed publications, we aim to report our findings to key organisational, policy, and government stakeholders via conferences and briefings. Further, through the use of a knowledge translation plan, we will engage with local communities and Aboriginal and Torres Strait Islander stakeholders to ensure that information is fed back to relevant individuals and organisations in a culturally sensitive manner.

CONCLUSION

Evidence of changes (or not) in outcomes measured both quantitatively and qualitatively at the individual and population levels will inform the implementation of the BDR in the NT and contribute to the evidence base on measures to reduce alcohol-related harms. These findings can also be used to inform other states in Australia, and other countries globally, in deciding whether to adopt such measures to reduce alcohol-related harms.

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Competing interests PM has received funding from Australian Research Council (ARC) and Australian National Health and Medical Research Council (NHMRC), grants from NSW Government, National Drug Law Enforcement Research Fund, Foundation for Alcohol Research and Education (FARE), Cancer Council Victoria, Central Australian Aboriginal Congress, Northern Territory Government (NTG), Australian Rechabites Foundation, Northern Territory Primary Health Network (NTPHN), Lives Lived Well, Queensland Government and Australian Drug Foundation (ADF), travel and related costs from Queensland Police Service, Queensland Office of Liquor Gaming and Racing and the Australasian Drug Strategy Conference. He has acted as a paid expert witness on behalf of a licensed venue and a security firm. KC has received funding from the ARC, Queensland Government, Northern Territory Government, FARE, Australian Rechabites Foundation, Lives Lived Well, and Victorian Commission for Gambling and Liquor Regulation. JS has received funding from ARC, NHMRC, ADF, NTPHN, NTG, Australian Government Department of Health, National Centre for Student Equity in Higher Education, Movember and NT Mental Health Coalition. He is the Deputy Chair of the NTPHN Community Advisory Council and has acted as an unpaid Expert Witness to the NT Liquor Commission. ML has received funding from the ARC, NHMRC, FARE, VicHealth, the Western Australian Mental Health Commission, Systembolaget (the Swedish alcohol monopoly), The Sax Institute and The Victorian Responsible Gambling Foundation. He is a board member of the Australian Rechabites Foundation. MS has received funding from the NTG, the NTG Community Benefit Fund which receives money through a hypothecated tax on Electronic Gambling Machines in the NT. He has also received money from the NHMRC, the NSW Office of Liquor, Gaming and Racing, the Victorian Responsible Gambling Foundation, and Gambling Research Australia. SG has received funding from ARC and NTG. RR has received funding from ARC, NHMRC, FARE, VicHealth, the US Institutes of Health and the World Health Organisation. CJCW has received funding from ARC, NHMRC, FARE, VicHealth, Australian Government Department of Health, Alcohol and Drug Foundation, Gandel Philanthropy, Victorian Transport Accident Commission, the Jack Brockhoff Foundation and the Australian Government eSafety Commissioner. SD has received funding from ARC and NTG. KEG has received funding from the ARC, NHMRC, Medical Research Futures Fund (MRFF), Australian Government Department of Health, Australian Government National Indigenous Australian Agency, Perpetual (Ramaciotti Foundations), Cardiovascular Research Network & National Heart Foundation, The Lowitja Institute. SC is supported by an Australian Government Research Training Program (RTP) Scholarship and a Menzies School of Health Research Top-Up Scholarship DS has received funding from the ARC, Victorian Department of Health, Australian Institute of Health and Welfare, Traffic Accident Commission.

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