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Banned Drinker Register: Interim summary report – Pilbara

Technology implementation and industry
perspective

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Executive Summary

Overview

Policy framework

The government of Western Australia is committed to policies and strategies that minimise the social harm associated with excessive alcohol consumption.

The Banned Drinkers Register (BDR) is a specific policy that the State Government is trialing within an overall alcohol harm mitigation strategy. Anyone registered on the BDR is prohibited from purchasing takeaway packaged alcohol.

The BDR trial started in the Pilbara region on 1 January 2021.

The BDR process

People are placed on the BDR because they have: (i) voluntarily elected to place themselves on the BDR, or (ii) they are subject to either a Prohibition Order or (iii) a Barring Notice. A Prohibition Order will typically prohibit a person from being employed at and/or attend a specific licensed premises. A Barring Notice is issued when there is evidence of a person being: violent, disorderly, engaged in indecent conduct, or contravening a specific written law at or in the vicinity of a licensed premises.

BDR technology

BDR scanners alert licensed premise retail staff when someone is on the BDR and is not permitted to purchase packaged liquor. The system works by comparing information from scanned identification documents (such as a driver's licence) to data held on the BDR. Retail staff receive an immediate indication if a customer is on the BDR upon scanning an ID, and that information determines whether the sale can proceed.

Report perspective

In this report the focus is on the perspective of the industry participants responsible for implementing the BDR in the Pilbara. It is recognised that industry perspectives may be different to those of other stakeholders, including government or consumers.

Report scope

The scope of this interim report is to consider the quality of the data collected from the BDR scanners; document the perspective of those operating the scanners on technology operation; identify potential issues the operation of the technology; present preliminary findings on impact; and identify any areas for potential improvement.

Industry perspective

Details on industry perspective were collected via an online survey. All participating stores were provided with an individual report with detailed data collected from the BDR scanners in their store, and given an opportunity to validate the data.

Key Findings

People on the BDR

Following six months of BDR operations in the Pilbara, the number of people on the BDR in the Pilbara stabilised at a relatively low number. This is likely to reflect the maximum reach of the policy.

In terms of pathways to the BDR, Prohibition Orders have been most prevalent, then Barring Notices, and finally the Voluntary pathway. Limited use of the Voluntary pathway is consistent with experience in the Northern Territory.

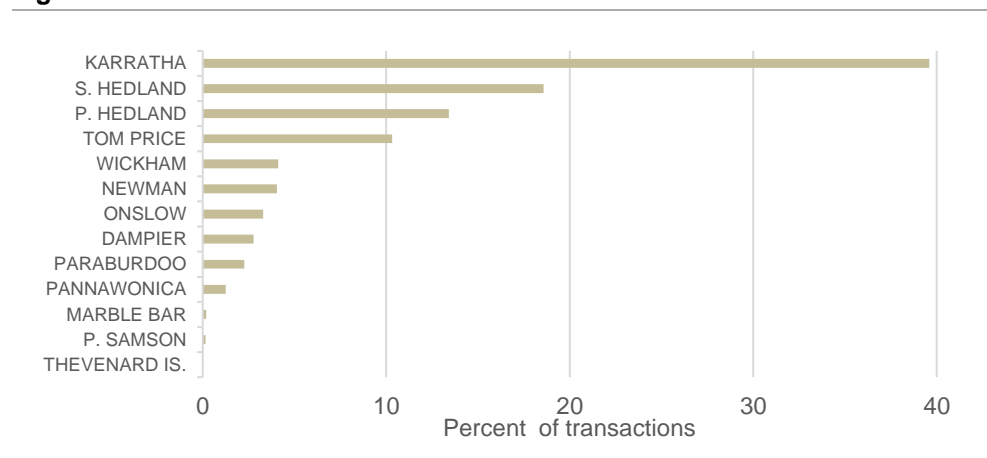
Support services

While outside the scope of this trial, it does not appear to be a strong link between a listing on the BDR and connection with support service providers.

Alcohol sales distribution consistent with expectations

At an aggregate level, the BDR reported transactions show a pattern consistent with the population distribution in the Pilbara, with the four largest population centres: Karratha, Port Hedland, South Hedland, and Tom Price accounting for over 80 percent of sales transactions. The overall pattern suggests no obvious systematic flaw in the data collection process or obvious operator compliance issue.

Figure ES 1: Alcohol sales distribution transactions 2021



Scanner technology

The BDR scanners generally work as intended, although in around 7 percent of cases it is necessary to rescan the ID. The number of people on the BDR that present to stores is relatively low.

In a small number of locations there are issues with scanners not working and or not connecting to the internet.

Table ES 1: Outcomes of scanning activity in the Pilbara: 2021

	Accept	Banned	Deny	Expired	Invalid	Not Acc.	Rescan	S115
No.	1,166,334	128	1,934	20,406	3,730	3,098	88,568	438
Percent	90.79	0.01	0.15	1.59	0.29	0.24	6.89	0.03

Industry perceptions

A wide variety of views were expressed by industry. Some key points are:

- The BDR has been implemented as expected
- Using the BDR scanners is an extra business cost (staff time), but it can be managed, in most locations
- Industry expected more people to be on the BDR, and believes the BDR would be successful if more people were registered

- The BDR places an extra cost on the entire community, and the focus should be on relevant individuals only who should be targeted directly for interventions
- There are some issues with tourists not understanding the system.

Measurable impact on crime

Alcohol consumption is only one of many factors associated with crime incidents. Following the introduction of the BDR, and controlling for other regional effects, there is no evidence of a reduction in crime for major crime categories of crime, in the Pilbara, relative to other regional locations in Western Australia that did not introduce a BDR. The sample period is relatively short.

Recommendations

Technology monitoring and maintenance

Current practice is to compile data at 12 months for an interim report and at 24 months for a final report. There is evidence that the scanner technology can be offline at individual stores for extended periods. A standardised store level reporting framework, that is largely automated should be established. If this report is run at regular intervals, it would ensure problems with technology are identified and resolved in a timely manner. This is relevant to all trial jurisdictions.

New pathways to the BDR

The overall effectiveness of the BDR initiative is limited due to the low number of people registered on the BDR. The framework outlined in the Northern Territory *Alcohol Harm Reduction Bill 2017* could be used to expand the pathways to the BDR in WA. In this framework there are additional options for police and court related pathways to the BDR, and also an expansion of the range of people that can seek to place a person on the BDR.

Liquor restricted premises

Part 5B of the *Liquor Control Act 1988* provides for the creation of Liquor restricted premises. Increased engagement with such premises could be used to create an additional pathway to the BDR.

Service provider engagement

A harm minimisation approach requires involvement and engagement with support services. The link between support services and those placed on the BDR should be strengthened.

Potential store hopping

Analysis of time stamp data identified a small number of cases that may represent store hopping. Although the potential issue is minor, this is an area that could be further investigated with store owners.

Costs and benefits

Implementation and management of the BDR trial involves costs to society through the direct cost of the technology and through government staff time involved to manage and operate the BDR. There are also costs to store owners through the extra staff time required to make a sale. Finally, there are costs to some consumers, especially tourists, when they do not have appropriate identification at the time of purchase.

The potential benefits of the BDR include a reduction in social harm, and lower costs to government through lower policing and legal system costs.

At the end of the 24-month trial period a full benefit-cost assessment of the BDR should be undertaken, where both direct and indirect costs are measured.

1 Overview

The Government of Western Australia is committed to policies that minimise the harms associated with excessive alcohol consumption.

The Banned Drinkers Register (BDR) is a specific policy mechanism that the Government is trialing within an overall alcohol harm mitigation framework. The BDR is designed to assist licensees in addressing alcohol-related harm by enabling them to identify people prohibited from purchasing takeaway alcohol due to being listed on the BDR.

The BDR is a mechanism used to alert retail staff working in liquor sales when someone is on the BDR and is not permitted to be served packaged liquor. The system works by comparing information from scanned identification documents such as a driver license to data held on the BDR. Retail staff receive an immediate indication if a customer is on the BDR, and that information determines whether the sale can proceed.

People listed on the BDR are prohibited from purchasing takeaway alcohol because they have either voluntarily elected to be on the BDR, or they are subject to a current Prohibition Order¹ or a Barring Notice². Voluntary applications require a person to contact the department directly.

The BDR targets the heavy and or binge drinker cohort only. The policy avoids placing a cost on moderate drinkers, which is a strength.

This first interim report focuses on understanding the way the technology is working, and documents the perspective of those serving takeaway alcohol.

Industry participation in the program is voluntary, but industry sector engagement is essential if the BDR is to be successful. The technology and industry focus of this report is to allow the identification of potential improvements that can be made during the trial, that might also apply in other regions, and identify any issues with system use. It is explicitly acknowledged that the survey responses represent a specific interest group, and there are many other stakeholders.

The scope of this summary report provides:

- background to the rationale for the policy;
- a preliminary analysis of crime activity trends before and after the introduction of the introduction of the BDR;
- evaluation of the BDR policy implementation relative to industry expectations the identification of operational issues; and

¹ Prohibition Order - issued by the Director of Liquor Licensing on application by the Commissioner of Police (Part 5A of the Liquor Control Act 1988).

² Barring Notice - issued by the Commissioner of Police (or Delegate) (s. 115AA or the Liquor Control Act 1988).

- recommendations on how to improve the operation of the BDR in practice, to ensure the policy better meets its purpose.

2 Background and context

2.1 The Pilbara region

The Pilbara region is comprised of four local government areas in the North of Western Australia: Ashburton, East Pilbara, Port Hedland, and Karratha. The Mineral and energy sector is the largest contributor to economic value in the region, and accounts for approximately 80 percent of the economic output in the Pilbara. The region is highly productive, with State Government estimates suggesting that although the region accounts for approximately five percent of employment in Western Australia, the region accounts for approximately 15 percent of output.³ In addition to the local Pilbara population, there is a substantial fly-in-fly-out workforce that works in the iron ore and natural gas sectors.

2.2 Alcohol consumption

High levels of alcohol consumption, and in particular, binge drinking, result in significant additional costs to government through the health, legal, and social security systems. The World Health Organisation estimates that for developed countries the cost of excessive alcohol consumption is typically around 2.0 percent of GDP (WHO 2011).

The social cost of excessive alcohol consumption in Australia has been estimated at \$66.8 billion, or around 3.6 percent of GDP (Whetton et al. 2021). Premature mortality and morbidity account for the largest share of costs, and the Pilbara, along with most of the North of Australia, has been identified as an alcohol related suicide hotspot (Hurzeler et al. 2021).

The large social cost associated with excessive alcohol consumption means that there is a sound case for government intervention in the alcohol market. Intervention can be via alcohol specific taxes or other restrictions on alcohol purchases.

2.3 Alcohol consumer behaviour

Both price (tax) measures and other restrictions such as the BDR result in an increase to the full cost of alcohol, where cost includes all activities required to source alcohol. For example, where restrictions on takeaway alcohol are in place, higher cost alcohol can still be purchased at licensed premises. Similarly, removing from availability four-litre cask wine (a non-price restriction) means that the effective cost of a unit of alcohol increases because although the cheapest product,

³ Department of Primary Industries and Regional Development data [accessed 22 May 2022]

in terms of price per unit of alcohol, is not available, the next cheapest product is still available.

Where someone is restricted from purchasing alcohol, that person can invest time and effort to ensure another person purchases alcohol for them. To the extent that the time invested in such activities is a cost, this extra activity increases the effective price of alcohol.

As such, most non-price restrictions can also be framed as price increases. Understanding consumer responses to price changes therefore provides a framework to understand both direct price (tax) policy changes and non-price policy changes.

The way alcohol consumers respond to price changes can be described by either the standard consumption good model, or the addiction model.

2.3.1 Consumer response to price changes

The standard consumption model

The standard consumption model treats alcohol as an ordinary consumer product. Using this model the evidence suggests that when prices increase by one percent, alcohol consumption falls by around half of one percent, on average. The consumption response varies by beverage type and is lowest for beer, followed by wine, and highest for spirits (Fogarty 2006; Selvanathan 1991; Selvanathan and Clements 1995; Selvanathan and Selvanathan 2004; Selvanathan and Selvanathan 2005).

The standard consumption model allows for consumer heterogeneity, and so although on average, a one percentage point increase in the price of alcohol results in a consumption decrease of half of one percent, moderate drinkers tend to be relatively responsive to price changes, and heavy drinkers tend to be unresponsive to price changes (Manning et al. 1995; Nelson 2013). As such, problem drinkers may not change the quantity of alcohol consumed when faced with either a direct or indirect price increase.

The addiction model

One reason that heavy drinkers may not change consumption following a price change is addiction. The Chicago School of Economics model of addiction suggests that addictive goods are characterised by: (i) *Reinforcement*, which implies past use raises the marginal satisfaction of current consumption; (ii) *Tolerance*, which implies that higher consumption in the past will lower the level of satisfaction gained from a given unit of consumption in the current period; and (iii) *Withdrawal*, which involves substantial temporary (but perhaps long lasting) negative effect for consumers that stop using the good (Becker and Murphy 1988). The addiction model also allows for consumer heterogeneity across addicted consumers.

In this model the positive effect from an increase in consumption today must be greater than the negative effect of higher consumption in the future. Dynamics

necessarily play a part in the model, and so the long-run impact of a change in policy can only be assessed once a reasonable period-of-time has passed.

The implications of the Chicago model are follows. First, although total heavy drinking might change little with an effective price change, some heavy drinkers might transition from heaving drinking to no drinking. Second, the extent of heavy drinking can be impacted via the level of support services (lower withdrawal costs). Third, if future prospects (employment/income opportunities) improve, or a person can see greater value in future states of happiness, they are more likely to quit drinking (policies unrelated to alcohol have an impact). Fourth, from a policy evaluation perspective, it may take some time to see the full impact of a policy change.

2.4 The banned drinker register

People registered on the BDR are prohibited from purchasing takeaway alcohol because they have either voluntarily elected to be on the BDR through self-referral, or they are subject to a current Prohibition Order or Barring Notice.

The BDR was implemented in the Pilbara region in January 2021 as part of a two-year trial to help minimise the harmful impact of alcohol consumption on communities and individuals. As part of the BDR program, individuals must present an eligible ID when purchasing takeaway alcohol. The BDR scanners alert retail staff when an individual is listed on the BDR, and the sale cannot proceed.

A strength of the BDR is that it targets those with alcohol use problems and does not impact moderate alcohol consumers.

The BDR can have a direct impact and an indirect impact. The direct impact is through raising the effective full price of alcohol for those on the register. The extent of the increase in the effective full price depends on how well the system works. If the technology is often not working, then the increase in the full price is low. More generally, the greater the system compliance, the greater the increase in the effective price, for those on the register.

The BDR indirect impact is through the program influencing the broader community discussion about alcohol use. This involves the BDR raising community awareness of the potential costs of excessive alcohol consumption through increased discussion and through this process creating behaviour change. The process can impact both heavy drinkers and moderate drinkers, and the change in behaviour effect can be substantial. This pathway to impact changes the level of alcohol consumption regardless of price level.

3 Operational data

The following is a summary of the operational data from the interim evaluation.

a. Scans of ID – options: accept/banned/deny/expired/invalid/not accurate/rescan/s115: 91 per cent Accept; 7 per cent Rescan.

Comment: A rescan can be required for a number of reasons, including:

- The ID may not have been placed correctly on the machine or may have moved at the time of scanning;
- The ID presented may not be clear; or
- The ID may be of a type that is difficult for the technology to evaluate, for example, an ID where the age appears in a clear section of the scanned ID, which is the case for some interstate driver licences.

Although the per cent of rescans is modest, approximately 80 per cent of sales venues reported that rescans were required at least several times a day (see Table 1).

Table 1: Survey data on need to rescan ID

Frequency of action	Percent
Many times per day	36.84
Several times per day	42.11
Once or twice per day	10.53
Once or twice per week	0.00
Once or twice per month	0.00
It is hardly ever necessary to rescan an ID	10.53

b. Numbers of people on the BDR presenting to purchase alcohol: approximately 0.01 percent of all transactions.

Although the number is low, this is not surprising. People on the BDR may try to purchase alcohol at a store at one point in time to see if the system works, or may try when their period on the BDR has nearly ended to check that they are still on the register, but it is not expected that those on the BDR would regularly try to purchase takeaway alcohol, once they see the system is working.

c. Unacceptable ID: Slightly more than 40% of operators found that unacceptable ID was at least several times a day.

Table 2: Survey data on unacceptable ID

Frequency	Percent
Many times per day	15.79
Several times per day	26.32
Once or twice per day	15.79
Once or twice per week	15.79
Once or twice per month	0.00
Unacceptable ID is hardly ever presented	26.32

d. Verification of data with operators: Overall, 72 percent of survey respondents agreed that the data distribution of actions reported to the Department was accurate; six percent disagreed; and 22 percent were unsure.

Overall, the data provided and validated by stores suggests the machines are generally operating as expected, but that further operating improvements are possible.

e. Routes to BDR and number of banned drinkers: Most people came onto the BDR via a prohibition order. The number of people on the BDR stabilised in the second half of 2021, suggesting that there is unlikely to be a substantial increase in future, with the current policy setting.

f. Distribution of transactions and sales: The distribution of transactions across months is consistent with increases in tourism in the Pilbara. The distribution of sales also corresponds with expected peaks for weekends.

g. Same store repeat scans: there are instances of up to 13 accepted scans for an individual ID on a single day at a single venue (Table 3). For simple repeat transactions it may be the case that individuals purchase some alcohol for immediate consumption and then purchase some additional alcohol later in the day. When there are many scans it may be the case that testing is taking place.

h. multiple store repeat scans: From the 937,605 individual × date combinations of accepted scans, there are 17,151 (1.83%) combinations that have accepted scans at multiple venues on the date.

There are 16,569 instances of an individual having accepted scans at two venues; 545 at three venues; 30 at four venues; and seven at five venues on the same date.

Table 3: Accepted scans recorded for same person and same day at more than one venue

Number of venues	Two	Three	Four	Five
Frequency	16,569	545	30	7

3.1 Industry perspective on BDR

Each store registered as participating in the BDR was sent a store specific summary report, and a unique link to an online survey to complete. Follow-up correspondence was then sent to each store to encourage survey completion. The results are set out below.

3.1.1 BDR implementation

The majority of industry respondents (68 percent) indicated that the BDR has been implemented as they expected. Only 11 percent of industry respondents indicated that the BDR has not been implemented as expected, and 21 percent of respondents indicated they were unsure. There were comments regarding scanning of IDs causing dissatisfaction among customers; wanting education of customers; and problems with implementation.

3.1.2 Impact on society

Participants were asked whether they thought the BDR has had an impact on:

- reducing problem drinking in your local area/in the Pilbara

- reducing anti-social behaviour in your local area
- reducing social harm due to excessive alcohol consumption in your local area/in the Pilbara.

The responses included concerns that friends and family were buying alcohol for banned persons; that not enough people were on the BDR; and that there needed to be stronger links with police. Specific comments included:

- *The key benefit of the BDR is that it targets the problem drinkers as opposed to extensive restrictions that impact all people. Our business fully supports the trial of the BDR and believes that this is the most targeted and potentially the most sustainable approach to the management of the misuse and abuse of alcohol in the Pilbara. However it will function most effectively if individuals are added to the BDR in a timely manner. For example, note the extensive policy adopted in the Northern Territory with routine processes providing local police with the ability to add people to the BDR with immediate effect. Also, broadening the reasons for someone to be placed on the BDR may also have a positive impact. Additional reasons to add people to the BDR could also include the unacceptable behaviour causing disruption to the community, including drug related incidents and other serious criminal offences; drink driving offences; to enforce bail conditions; etc. All of this being said, it has been quite some time since Police have requested that we implement temporary voluntary restrictions on products or trade due to a community issue in the South Hedland area.*
- *The key benefit of the BDR is that it targets the problem drinkers as opposed to extensive restrictions that impact all people. Our business fully supports the trial of the BDR and believes that this is the most targeted and potentially the most sustainable approach to the management of the misuse and abuse of alcohol in the Pilbara*
- *While I understand the intention of the program, I believe it has not had the intended impact. I have still witnessed behaviour unbecoming in my local area.*
- *We continue to fail to address the fundamental causes, striking instead at the symptoms.*

3.1.3 Efficiency and effectiveness of the BDR technology

Participants were asked about specific aspects of the BDR technology, e.g. ease of use, connectivity, technical issues.

The responses indicated improvements are required regarding connectivity, functionality of the scanner, and scanning interstate licences.

4 Policy impact modelling

The impact of a policy intervention cannot usually be measured by looking directly at trend changes in the target variable. This is because there can be many underlying contributing factors impacting trend variable changes.

The policy impact of the BDR on crime can however be estimated using a difference-in-difference approach. The difference-in-difference approach considers changes to crime metrics in the Pilbara over the period of the

introduction of the BDR, and compares these values to the change in crime metrics in other jurisdictions that either have no BDR or have had no operating BDR for the period of interest.

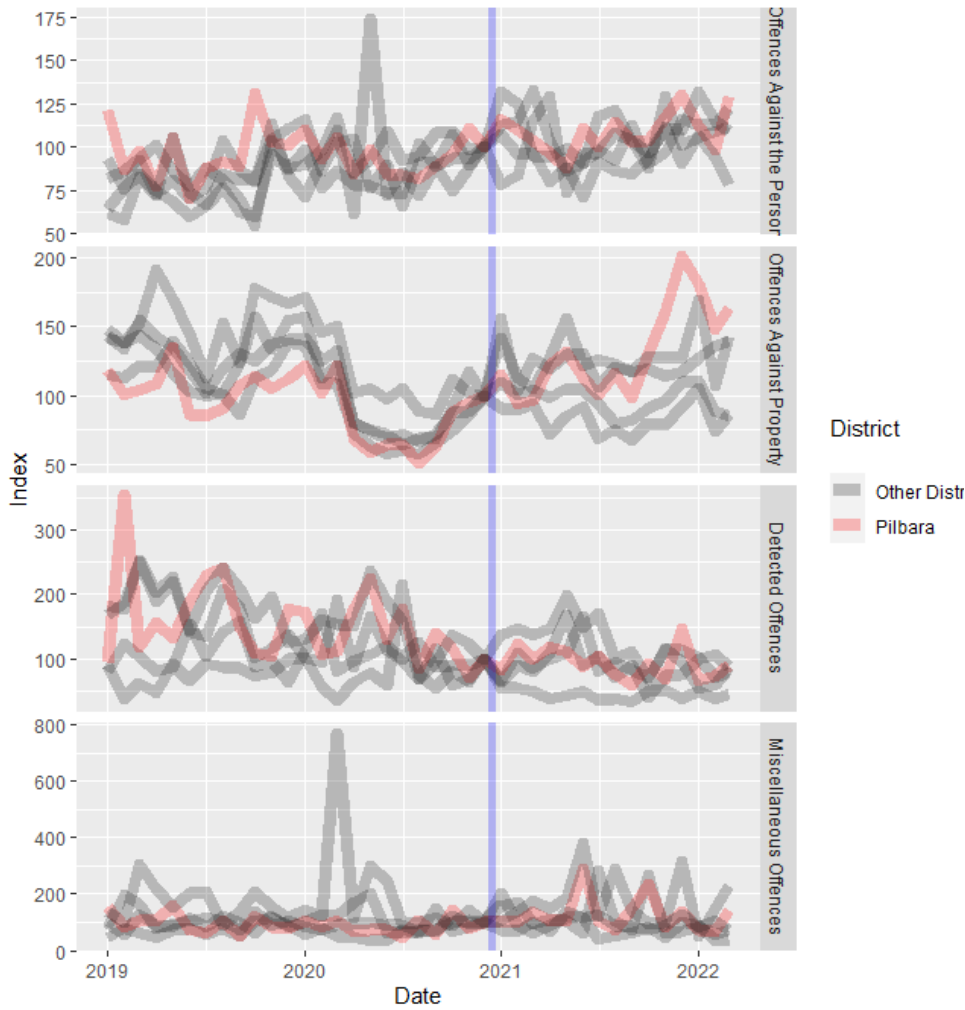
The idea is that by looking at the difference between the changes in crime statistics in the target region and changes in crime statistics in control regions that did not have a BDR it is possible to separate out the actual policy effect from underlying general trend changes impacting the State.

The districts of the Kimberley and Goldfields-Esperance commenced a BDR trial during the analysis period, or will do so in the ultimate sample period, and so we do not consider these districts to be free of a potential BDR effect and therefore these regions will not be used as comparison districts.

Figure 1 plots crime data from WA Police by region, normalised such that all region by crime series have an index value of 100 at the time of BDR introduction. The partition between pre- and post-BDR introduction is shown as a vertical blue line.

The formal difference-in-difference statistical model found no evidence that the introduction of the BDR has led to reduction in reported crime in the Pilbara, across all major crime categories considered. The sample time period is however relatively short.

Figure 1: Monthly crime data as an index by type and region



Note: Blue line indicates the introduction of the BDR

5 Discussion and recommendations

<i>Implementation</i>	The evidence suggests that the BDR has been implemented as expected by industry, but there is also evidence in the feedback from industry of an expectation that there would be a greater number of individuals on the BDR.
<i>Pathways to the BDR</i>	The number of people on the register is low because the pathways to being listed on the BDR are limited. The effectiveness of the BDR is related to the number of people on the BDR. The framework outlined in the <i>Alcohol Harm Reduction Bill 2017 (NT)</i> provides a framework that could be used to expand the pathways to the BDR. In this framework there are additional options for police and court related pathways to the BDR, including offence types and also an expansion of the range of people that can seek to place a person on the BDR, subject to a review process.
<i>Liquor restricted premises</i>	The number of self-referrals to the BDR is low. Part 5B of the <i>Liquor Control Act 1988</i> provides for the creation of Liquor restricted premises. Increased engagement with residents of such premises could be used to create an additional pathway to the BDR, and engage with the community more generally regarding the BDR.
<i>Support services</i>	Heavy drinking is a complex problem, and management of heavy drinking requires a wholistic approach. It is possible to strengthen the link between support service providers and those placed on the BDR.
<i>Policy impact</i>	Across the major crime categories of offences against persons, property crime, drug, stolen goods and weapons, and other major crimes, there is no evidence that since the introduction of the BDR crime rates in the Pilbara have fallen. The sample period available to evaluate is however short.
<i>Technology monitoring</i>	Although the scanning technology generally works well, there have been extended periods when the technology has not been in operation at individual stores. A reporting protocol could be developed so that individual store level reports of scanner usage can be reviewed and issues detected quickly. If the protocol is largely automated then weekly or monthly level store reports could be prepared and reviewed. Issues can then be resolved with individual stores.
<i>Purchase restriction avoidance</i>	Across the entire database, a very small number of cases of what might be store hopping were identified. The extent of the issue seems to be small, and because quantity purchased is not known it is not possible to reach a definite conclusion on the motivation for visiting more than one store to purchase alcohol. The extent of store hopping is an area that could be studied in further detail and discussed with relevant store owners. There is no evidence of a widespread problem.
<i>Costs and benefits</i>	Implementation and management of the BDR trial involves costs to society, via the direct cost of the trial, and via the Government staff time involved to manage and operate the BDR. There are also costs to store owners via the extra staff time required to make a sale. Finally, there are some costs to consumers, especially tourists, when they do not have appropriate identification at the time of purchase.

The potential benefits of the BDR include a reduction in social harm, and lower costs to government through lower policing and legal system costs. At the end of the 24-month trial period a full benefit-cost assessment of the BDR should be undertaken, where both direct and indirect costs are measured.

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