“It fits the needs of the community”: Long-term evaluation of the Norseman Voluntary Liquor Agreement

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menzies school of health research
CHARLES DARWIN UNIVERSITY
NDRI national drug research institute
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For over a decade, FARE has been working with communities, governments, health professionals and police across the country to stop alcohol harms by supporting world-leading research, raising public awareness and advocating for changes to alcohol policy. In that time FARE has helped more than 750 communities and organisations, and backed over 1,400 projects around Australia.

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Executive summary

In the early 2000s members of the Indigenous community in Norseman, in Western Australia's Goldfields region, became increasingly concerned that heavy alcohol consumption was the main cause of chronic health problems in their community (Schineanu, Velander, & Saggers, 2010). The Indigenous community in Norseman is distributed throughout the township, so the option of declaring themselves dry was not available. However, recognition that certain beverages were particularly associated with heavy drinking led the community to propose restricting the sale of these products (Schineanu et al., 2010).

The Norseman Voluntary Alcohol Agreement ('the Agreement'), was implemented on 1 March 2008. As part of the Agreement, the following restrictions were introduced between midday and 6pm Monday to Sunday:

- red and white Lambrusco wine was limited to one five litre case per person per day
- other non-fortified wine was limited to one four litre case per person per day
- port wine was limited to one two litre cask per person per day.

At all other times the sale of these products was not permitted. These restrictions were implemented by the one licensed premise in Norseman that is permitted to sell packaged alcohol.

The impact of these restrictions was evaluated in the following year. At that time, there was a decrease in consumption, particularly among Indigenous people and a decrease in a range of offending behaviour and alcohol-related morbidity. Reports from the community also indicated that there had been an increase in healthcare seeking behaviour, more participation in community activities and a decrease in public drunkenness and violence (Schineanu et al., 2010).

The restrictions were extended from 1 August 2009. In addition to the existing restrictions, people were also limited to purchasing one 750ml bottle of fortified wine and one 750ml bottle of full strength beer from Monday to Saturday, between midday and 6pm. These restrictions have remained in place to the present day.

This report builds on the original evaluation, to assess whether the Agreement has been able to maintain its initial benefits. A mixed methods approach has been employed, with secular (long-term), quantitative, alcohol consumption and harm data and qualitative interview data collected from a number of different sources. There is a gap in the alcohol data from May 2009 to October 2012 because of a change in wholesale supplier. This resulted in three distinct periods when data was reported:

- before the initial restrictions (December 2006 to February 2008)
- after the initial restrictions (March 2008 to May 2009)
- and follow-up (October 2012 to December 2014).

Accordingly, differences in consumption have been measured between these three periods. Beer consumption has not been included because the wholesale sales data was unreliable.

The consumption of cask wine declined significantly from before to after the initial restrictions and this difference remained at follow-up. The consumption of fortified wine did not change from before to after the initial restrictions. However, there was significant decline from both before and after the initial restrictions to follow-up. Spirit consumption, similarly, did not change from before to after the initial restrictions, but increased significantly from both before and after the initial restrictions to

follow-up. Total consumption of all beverages, measured by volume of pure alcohol, did not change at any point.

Alcohol harm data was collected from January 2004 to December 2014. All comparisons were made between the period before the initial restrictions and the period after the additional restrictions. There was a downward trend in the presentation rate of Indigenous people to the Norseman Hospital emergency department prior to the initial restrictions, which stabilised at a lower level subsequent to the additional restrictions. This was possibly due to the high profile community consultation process on restrictions influencing consumption patterns in anticipation of implementation. The difference was not significant. There was no discernible trend in the non-Indigenous presentations. There was a significant decrease in rates of burglary, domestic violence and assaults by Indigenous people between these two periods. Non-Indigenous burglary and assault rates also decreased significantly. Rates of driving under the influence did not change for either group. Police tasking rates (call outs), decreased significantly post restrictions. These changes suggest the restrictions have led to improved social behaviour, but it is less clear as to their impact on health.

The qualitative data from interviews with the community key informants and focus group participants indicated that the Indigenous community was the driving force for introducing the restrictions, in response to the domestic violence, chronic disease and death that was associated with heavy drinking. The reason given for not allowing alcohol sales, other than between midday and 6pm, was to limit the period of drinking so there was a break for heavy drinkers to sober up. There was almost universal agreement that the behaviour of drinkers, the amount of alcohol consumed and alcohol-related harms had all changed for the better since the introduction of restrictions. The common perspective was that street drinking had decreased and more drinking was occurring in homes during the evening. However, drinking parties at home in the evenings were affecting children's schooling. The health workers, in particular, considered that the health consequences of drinking had reduced. Community climate was better because of less public drunkenness. Family function had improved and domestic violence had decreased, with a number of comments that drunkenness at home has improved since the restrictions. There was general agreement that the restrictions should remain in place. Most of the suggestions for dealing with alcohol problems in the town in the future went beyond a focus on drinkers and drinking. The need for jobs, employment skills and education was repeatedly mentioned by the key informants and focus group participants.

On balance, the findings from the secular, quantitative data indicate there was improvement in the pattern of alcohol consumption and harm post the introduction of voluntary restrictions. This was reinforced by strong perceptions of improvement from within the community. These perceptions should be privileged because they represent the community voice, and add considerable detail as to what has changed and what problems remain. The other important consideration is that the restrictions have remained in place since their introduction at the behest of the community in March 2008 and are talked about with pride because of the manner of their genesis.

The initial evaluation of the Agreement stated it demonstrated that a community could achieve change and reduce harm from alcohol misuse through its own action. It was also unique in that government agencies worked with the Norseman community and the Hotel Licensee to enable these changes to occur without regulation or enforcement (Schineanu et al., 2010). Such a voluntary agreement would, however, be difficult to replicate in larger communities with several licensed premises, and the lack of reliable wholesale beer data means there is a gap in the overall profile of alcohol consumption in Norseman.

While it is important to acknowledge these limitations, the benefits for the Norseman community are clear. The restrictions are still in place; have increased social order; are still overwhelmingly supported

by the community, including the Licensee; and have remained effective in keeping in check those beverages identified from initial community discussions as problematic. This does not obviate the need for a reappraisal of the restrictions in light of changing patterns of alcohol consumption and harm, particularly the increase in consumption of spirits and the recent trend of increasing police call outs. These may be early signs that the effects of the restrictions are diminishing. However, any changes have to come with community support, as this underpins the current arrangements.

Introduction

The 2013 National Drug Strategy Household Survey indicated that the great majority of Australians had consumed alcohol in the past year (86.2 per cent aged 14 years or older). While most drank at low risk levels, 18.2 per cent drank at lifetime risk levels (more than two standard drinks a day on average) and 26.4 per cent drank at least monthly at single occasion risk levels (more than four standard drinks on one occasion) (Australian Institute of Health and Welfare, 2014; National Health and Medical Research Council, 2009).

These risky patterns of alcohol consumption are associated with both acute and chronic harms. In the short-term this generally involves injury to self or others, as in road traffic crashes, workplace accidents, violence and general anti-social behaviour. In the longer term, risky alcohol consumption is associated with dependence and a range of chronic health conditions, such as cardiovascular disease, cancer, diabetes, high blood pressure, obesity, cirrhosis of the liver and cognitive impairment (Laslett, Room, Ferris et al., 2011; National Health and Medical Research Council, 2009). These problems not only affect the individual and their families, but there are social costs borne by the community through lost productivity, increased healthcare, traffic crashes and crime. In 2010 the direct costs to the Australian society from alcohol use was estimated to be approximately $14.353 billion (Manning, Smith & Mazerolle, 2013). Accordingly, there is a considerable incentive to introduce alcohol prevention programs that not only reduce pain and suffering at the individual level, but also reduce the cost borne by communities.

In Australia, as in other countries where colonisation has occurred, Indigenous people have been socially disadvantaged in a multitude of ways. This social disadvantage has in turn been a determinant of Indigenous health disadvantage, including consequences in terms of harmful patterns of alcohol use (Saggers & Gray, 1998).

Overall, a greater proportion of Indigenous Australians abstain from drinking alcohol, than non-Indigenous Australians (28 per cent and 22 per cent respectively) (Australian Institute of Health and Welfare, 2014). However, this is not the positive statistic it first seems. Wilson and colleagues note the category is comprised of two groups: life-time abstainers and previous drinkers, who now abstain. It is the number of former drinkers in this category that boosts the proportion of Indigenous people who abstain above that for other Australians, and many have often stopped drinking alcohol because their health has been harmed (Wilson et al., 2010). Compared to non-Indigenous Australians, a greater proportion of Indigenous Australians who drink alcohol, drink at levels that risk both single occasion and lifetime harm (19.9 per cent compared to 14.1 per cent for weekly single occasion risk and 22.7 per cent compared to 18.1 per cent for lifetime risk) (Australian Institute of Health and Welfare, 2014). On the basis of a range of epidemiological evidence, the likely prevalence of risky alcohol use in the Indigenous population is twice that of the non-Indigenous Australian population (Wilson et al., 2010).

These higher levels of risky consumption are reflected in poorer morbidity and mortality outcomes. Australian Indigenous males are hospitalised for conditions, to which alcohol makes a significant contribution, at rates between 1.2 and 6.2 times those of non-Indigenous males, and Indigenous

females at rates between 1.3 and 33.0 times greater; the latter rate pertaining to assault injuries (Australian Institute of Health and Welfare & Australian Bureau of Statistics, 2008). Similarly, Indigenous deaths from various alcohol-related causes are five to 19 times greater than those of non-Indigenous Australians (Steering Committee for the Review of Government Service Provision, 2009; Vos et al., 2007). In addition to health problems, alcohol is linked to a broad range of social problems experienced by Indigenous people, such as homelessness, unemployment and imprisonment (National Indigenous Drug and Alcohol Committee, 2009). It has a substantial impact on people other than the users themselves, with high levels of alcohol-related violence experienced by females as an example, and intergenerational effects through the teratogenic effect of alcohol on the developing human fetus (Ornoy & Ergaz, 2010; Vos et al., 2007). Whether or not they drink, all Indigenous Australians are impacted by alcohol to a much greater extent than non-Indigenous Australians, creating an obvious need to address the problem.

Reviews of alcohol prevention measures consistently identify community wide supply restrictions as highly effective (Babor et al., 2010; National Drug Research Institute, 2007; Stockwell, 2006). Sweden, among a number of Nordic countries, has controlled the supply of alcohol to reduce high levels of alcohol consumption and related harms since the mid-nineteenth century through state-controlled alcohol monopolies (National Drug Research Institute, 2007). In the United States a number of states maintain some form of state-controlled alcohol monopoly, and where controls have been relaxed consumption has increased (Wagenaar & Holder, 1991). In Alaska, Native communities can choose to restrict the local availability of alcohol, and there are a number of research studies that indicate rates of various alcohol-related harms were higher in 'wet' as compared to 'dry' communities (Berman, Hull, & May, 2000; Landen, Beller, Funk et al., 1997).

In Australia many remote Indigenous communities have declared themselves dry using provisions of various pieces of state and territory legislation, and research with some of these communities indicated that both levels of consumption and alcohol-related harms declined, at least in the short-term. Importantly, dry community declarations are also an expression of community self-determination and will, such that addressing alcohol-related harm also creates capacity to tackle other social problems (National Drug Research Institute, 2007).

In the early 2000s members of the Indigenous community in Norseman in Western Australia became increasingly concerned that heavy alcohol consumption was the main cause of chronic health problems in their community. The community, in collaboration with local Health Department officers, worked with individuals and their families to prevent harmful drinking, but were not able to sustain a change to low risk drinking, and so decided that a different approach was needed (Schineanu et al., 2010).

The Indigenous community in Norseman is not geographically discrete, rather it is distributed throughout the township. Consequently, the option used by many Indigenous communities, of declaring themselves dry was not available. However, there was clear recognition within the Indigenous community that certain beverages were particularly associated with heavy drinking. In an effort to reduce the amount of alcohol consumed, in particular the packaged liquor most linked to heavy drinking, the community proposed restricting the quantity and the hours of sale of these products (Schineanu et al., 2010).

The Norseman Hotel is the only outlet in town with a licence to sell packaged liquor to the general public, and at a meeting on 13 November 2007 with local community and agency representatives, the local Licensee agreed to voluntarily restrict the hours of sale and quantities sold to any one individual of products nominated by the Indigenous community.

The Norseman Voluntary Alcohol Agreement ('the Agreement'), with the following restrictions, came into effect on 1 March 2008.

> *Between 12 midday and 6pm, Monday to Sunday, red and white Lambrusco wine was limited to one 5 litre cask per person per day, port wine was limited to one 2 litre cask per person per day and non fortified wine was limited to one 4 litre cask per person per day. No sales of the above mentioned products were permitted at any other time (Schineanu et al., 2010, p.8.).*

The impact of these restrictions was evaluated using a mixed methodology in the year following their introduction. The evaluation concluded that there was a decrease in per capita alcohol consumption, measured by volume of pure alcohol, of just under ten per cent, with much of the decrease occurring in beverages consumed almost exclusively by Indigenous drinkers. There was also a decrease in a range of offending behaviour and alcohol-related morbidity. Reports from key informants and members of the Indigenous community, including drinkers, indicated that there had been an increase in healthcare seeking behaviour, more participation in community activities and a decrease in public drunkenness and violence (Schineanu et al., 2010).

In light of these findings and consultation between the Licensee and the Indigenous community the restrictions were extended as follows from 1 August 2009.

> *1x 750ml bottles of fortified wine and the 1x 750mL bottles of full strength beer (King Brown) per person per day during 12-6pm (Schineanu et al., 2010, p. 45).*

These extended restrictions have remained in place to the present day.

What was introduced in Norseman was essentially an 'Alcohol Accord'. This is characterised by Manton (2014) as a voluntary agreement between stakeholding parties such as Licensees, police, local government, relevant state government agencies, business owners, and representatives of a community group(s) with an interest in alcohol-related harm. Alcohol Accords are popular, but evaluations of Accords show only limited positive outcomes, with no evidence to suggest any long-term impact on levels of alcohol-related problems (Manton, 2014).

The Norseman Agreement was evaluated very soon after it came into force and demonstrated positive results in terms of consumption, harm and community function. This challenges the first part of Manton's conclusion, namely that Alcohol Accords achieve little benefit. However, the fact that the agreement has remained in place for over six years presents a unique opportunity to test the second part of the conclusion, namely that there is no evidence to suggest Accords have any long-term impact on local alcohol problems (Manton, 2014). This study is a long-term evaluation, designed to assess whether the Agreement has been able maintain the initial benefits it achieved in terms of consumption, harm and community function.

Methodology

This study employed a mixed methods approach, with secular quantitative data and qualitative interview data collected from a number of different sources. This combines the benefits of quantitative and qualitative approaches and counters the weaknesses of each when used separately. The method is particularly applicable in community settings where an understanding of both the scale and context of the issue being investigated is important (Creswell, 2013).

Quantitative data

The secular quantitative alcohol sales and harm data are described in Table 1. The Analysis of Variance (ANOVA) statistical technique was used to assess whether there was a significant difference on these

measures from before the initial voluntary restrictions in March 2008 to after the additional voluntary restrictions in August 2009. ANOVA analyses and compares the variability of scores within and between two or more groups to test whether the mean group scores are significantly different from one another. Longitudinal analysis models were investigated. Autoregressive integrated moving average (ARIMA) modelling, which provides time series forecasting where data is not stationary, gave low levels of autocorrelation and no evidence of seasonality in the data. Segmented linear regression models (separate pre/post intervention analysis), which can be used to identify the impact of an intervention in cases where trend is important, showed little evidence of trends, except as noted. These findings justify the use of the ANOVA methodology reported.

Table 1. Norseman alcohol consumption and related harm data

Alcohol consumption	Period	Source
Alcohol wholesale sales data for cask wine, fortified wine and spirits	December 2007-May 2009 October 2012-December 2014	Norseman Hotel Licensee (previous evaluation report, and current wholesale supplier)
Alcohol-related harm	**Period**	**Source**
Indigenous and non-Indigenous presentations to the Norseman Hospital emergency department	2004-2014	WA Country Health Services (Goldfields)
Indigenous and non-Indigenous burglary offences	2004-2014	WA Police
Indigenous and non-Indigenous domestic violence offences	2004-2014	WA Police
Indigenous and non-Indigenous assault offences	2004-2014	WA Police
Indigenous and non-Indigenous drink driving offences	2004-2014	WA Police
Police tasking (call outs)	2004-2014	WA Police

Alcohol wholesale sales data

Data on wholesale cask wine, fortified wine and spirits sales (December 2007 to May 2009) were sourced from the first evaluation report, and through the Licensee, from the current wholesale supplier (October 2012 to December 2014) (Schineanu et al., 2010). The gap is a consequence of data not being available from the previous wholesale supplier. Beer wholesale sales have not been reported as the data supplied were incomplete and unreliable due to supplies from some wholesalers not being recorded. This is a limitation in terms of providing a comprehensive profile of alcohol consumption in Norseman. However, it is not a great concern in terms of evaluating the impact of the Agreement. Beer was not the preferred beverage of heavy drinkers because of difficulties with sharing, and consequently was not considered particularly problematic by the community. All beverage volume data were converted into litres of pure alcohol using the percentage guide contained in the *Australian guidelines to reduce health risks from drinking alcohol* (National Health and Medical Research Council, 2009). The conversion fractions used are presented in Table 2.

Table 2. Pure alcohol conversion fractions for cask wine, fortified wine and spirits

Beverage	Percentage of alcohol
Cask wine	12.5%
Fortified wine	17.5%
Spirits	40%

The differences in beverage consumption between the periods immediately before (Period 1, December 2006 to February 2008) and after (Period 2, March 2008 to May 2009) the introduction of the initial voluntary restrictions and between the most recent period (Period 3, October 2012 to December 2014) were analysed using ANOVA.

Presentations to the Norseman Hospital emergency department for all causes

These data covered an 11 year period from 1 January 2004 to 31 December 2014. This indicator, while not alcohol specific, has been included because it was employed in the initial evaluation, and is a good proxy measure of alcohol harm; as a considerable proportion of presentations at hospital emergency departments are alcohol-related (Cherpitel, 2007; World Health Organization, 2000). This is likely to be an even more sensitive measure of alcohol harm in communities with high levels of consumption (Gray & Wilkes, 2011). The raw numbers were converted to rates per 100 per quarter, using 2001, 2006 and 2011 Census derived numbers of people that usually reside in Norseman as the denominator (City Population, No date). The ANOVA test was used to assess whether there was a significant difference in the emergency department presentations from before the initial voluntary restrictions in March 2008 to after the additional voluntary restrictions in August 2009.

Offence data

Burglary, domestic violence, assault, drink driving offence data, and police tasking (call outs) are reported as rates per 100 per quarter for the 11 year period from 1 January 2004 to 31 December 2014. These measures have been included because they were part of the initial evaluation, and because research indicates they are good direct or proxy measures of alcohol harm (Midford et al, 2010; Symons et al, 2012; World Health Organization, 2000). The ANOVA test was used to assess whether there was a significant difference from before the initial restrictions to after the additional voluntary restrictions.

Qualitative data

Ten key informants from the Norseman community were interviewed. These were representatives from the Indigenous community, health services, education, police, shire council and the liquor sectors. All interviews were conducted using the same semi-structured protocol so that the salient issues were covered in a comparable manner. The core questions were based on those used in the initial evaluation (Schineanu et al., 2010). The following topics were covered:

- the rationale for restricting certain alcoholic beverages
- changes, if any, in individual and communal alcohol use patterns
- individual and community climate before and after the restrictions
- the impact of restrictions on relationships, children, employment, health, schooling, and law and order
- future plans with respect to the restrictions.

Detailed notes were taken during the course of each interview, and when permission was given, the conversation was also recorded and transcribed. The interview transcripts were coded for reoccurring patterns and then analysed thematically to identify key issues and the frequency with which they were raised by the different interviewees (Braun & Clarke, 2006).

A series of informal focus groups were also conducted with members of Norseman's Indigenous community during the course of a barbeque lunch in the town's main park. Approximately 25 attended, mainly Indigenous people, including five who identified themselves as drinkers. The barbeque lasted for just over an hour and those who attended congregated in small groups that exchanged members during the course of the event. The focus group interviews were conducted with these small groups. The same questions asked of the key stakeholders were put to each of these groups. Responses tended to come in the form of broad ranging group discussion, generally producing a consensus perspective. The amount of information that was being offered during these discussions meant that note taking prioritised perspectives that were informative in terms of how drinking had changed since the restrictions and the impact of this on the community, particularly if these perspectives had the weight of group consensus. Using a barbeque setting to conduct focus group interviews had its limitations, but was recommended by community advisors as the best way of accessing a large number of people from, or associated with, Norseman's Indigenous community.

Results

Qualitative data

Alcohol wholesale sales data

The wholesale sales volume of cask wine, fortified wine and spirits, converted to litres of pure alcohol, is presented in Table 3 and Figure 1 for the quarters December 2007/February 2008 to March/May 2009 and October/December 2012 to October/December 2014.

The consumption of cask wine declined significantly from immediately before (Period 1) to immediately after (Period 2) the initial voluntary restrictions and this decline remained at recent follow-up (Period 3). The consumption of fortified wine did not change from before (Period 1) to after the restrictions (Period 2). However, there was significant decline from both before and after the restrictions to the recent follow-up (Period 3). Spirit consumption, similarly, did not change from before (Period 1) to after (Period 2) the restrictions, but it increased significantly from both before and after the restrictions to the recent follow-up (Period 3). Total consumption of all recorded beverages, as measured by volume of pure alcohol, did not decline at any point. The results of the ANOVA tests for significance are presented in Table 4.

Figure 1. Wholesale sales of cask wine, fortified wine and spirits in litres of pure alcohol December 2007 to May 2009 and October 2012 to December 2014

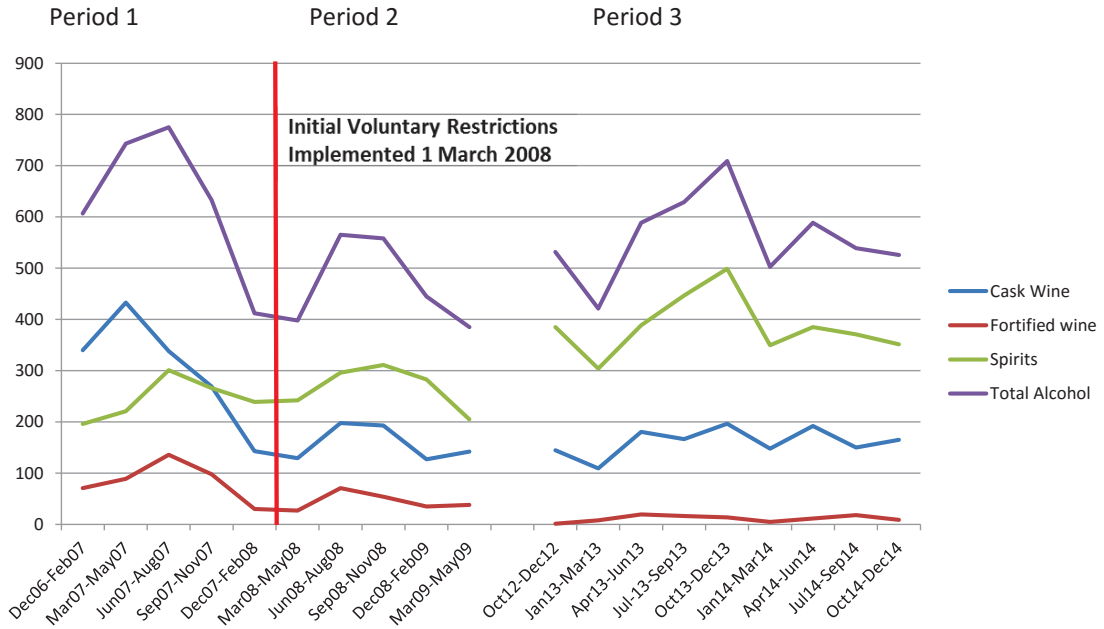


Table 3. Wholesale sales of cask wine, fortified wine and spirits in litres of pure alcohol from December 2006/February 2007 to March/May 2009 and October/December 2012 to October/December 2014

Quarter	Cask wine	Fortified wine	Spirits	Total alcohol
Dec 06 – Feb 07	340	71	196	607
Mar 07 – May 07	433	89	221	743
Jun 07 – Aug 07	338	136	301	775
Sep 07 – Nov 07	269	98	266	633
Dec 07 – Feb 08	143	30	239	412
Initial voluntary restrictions implemented 1 March 2008				
Mar 08 – May 08	129	27	242	398
Jun 08 – Aug 08	198	71	296	565
Sep 08 – Nov 08	193	54	311	558
Dec 08 – Feb 09	127	35	283	445
Mar 09 – May 09	142	38	205	385
Oct 12 – Dec 12	145	2	385	531
Jan 13 – Mar 13	109	8	304	421
Apr 13 – Jun 13	180	19	389	589
Jul 13 – Sep 13	166	16	446	629
Oct 13 – Dec 13	197	14	499	709
Jan 14 – Mar 14	148	5	350	503
Apr 14 – Jun 14	192	11	385	589
Jul 14 – Sep 14	150	18	371	539
Oct 14 – Dec 14	165	9	352	526

Note: Data from December 2006 to May 2009 were sourced from the original Restrictions report (Schineanu et al., 2010), and have retained the same, non-standard, quarterly reporting period.

Table 4. Significance of changes in beverage consumption from Period 1, immediately before the introduction of the initial voluntary restrictions to Period 2, immediately after and to Period 3, the most recent period

Period comparison for beverage	ANOVA df	ANOVA F	ANOVA significance
Cask wine			
1-2	F(1, 8)	8.43	.0198*
1-3	F(1,12)	15.17	.0021*
2-3	F(1,12)	0.05	.8332
Fortified wine			
1-2	F(1, 8)	4.38	.0698
1-3	F(1, 12)	32.99	.0001*
2-3	F(1, 12)	28.55	.0002*
Spirits			
1-2	F(1, 8)	0.74	.4153
1-3	F(1, 12)	24.11	.0004*
2-3	F(1, 12)	16.52	.0016*
Total alcohol			
1-2	F(1, 8)	4.81	.0596
1-3	F(1, 12)	1.58	.2324
2-3	F(1, 12)	3.69	.0788

*p<.05

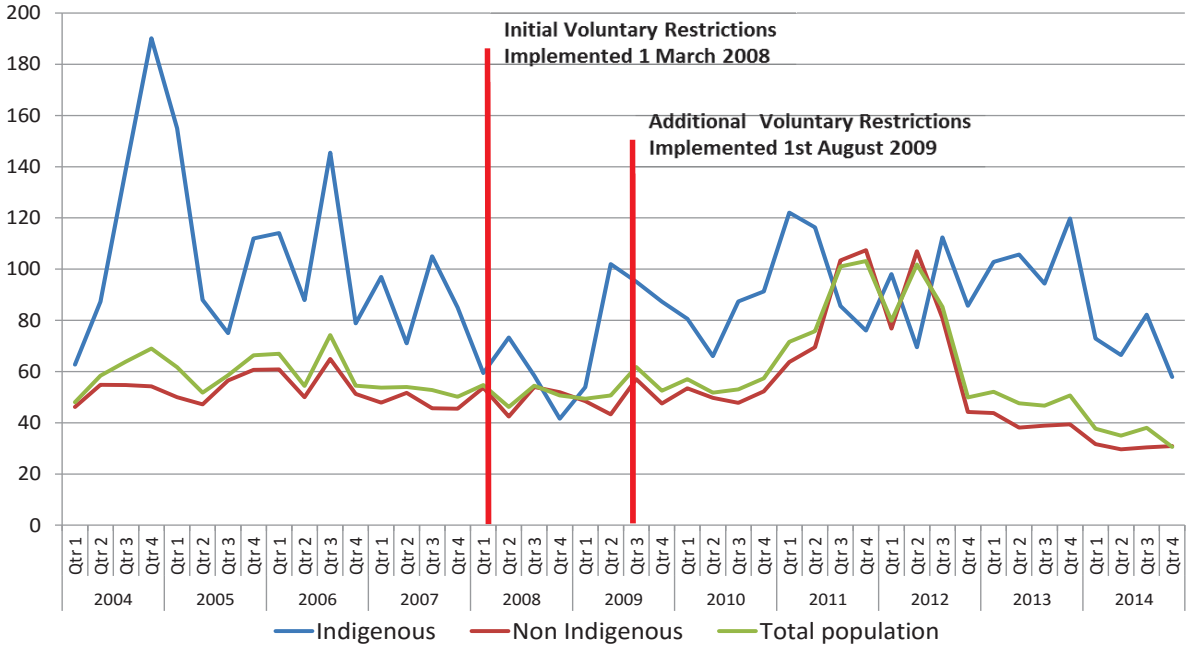
Presentations to the Norseman Hospital emergency department for all causes

Indigenous, non-Indigenous and total population presentation rates from the first quarter of 2004 to the last quarter of 2014 are provided in Table 5 and Figure 2.

Table 5. Presentations to the Norseman Hospital emergency department for all causes 2004-2014; rate per 100 population

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Quarter 1	Indigenous	62.7	155.0	114.1	97.0	59.4	53.9	80.6	122.1	98.1	102.8	72.9
	Non-Indigenous	46.2	50.0	60.8	47.9	53.7	48.5	53.5	63.7	76.8	43.8	31.7
	Total population	48.0	61.7	67.0	53.7	54.4	49.4	57.0	71.6	79.8	52.1	37.7
Quarter 2	Indigenous	87.3	88.0	87.9	71.0	73.3	102.0	66.0	116.3	69.5	105.7	66.4
	Non-Indigenous	54.8	47.2	50.0	51.7	42.4	43.3	49.7	69.5	107.0	38.1	29.6
	Total population	58.4	51.8	54.4	54.0	46.2	50.7	51.8	75.8	101.8	47.6	35.0
Quarter 3	Indigenous	139.2	75.0	145.5	105.0	58.4	95.1	87.4	85.6	112.4	94.3	82.2
	Non-Indigenous	54.7	56.5	64.9	45.7	54.0	57.0	47.8	103.4	80.9	38.9	30.4
	Total population	63.9	58.6	74.2	52.8	54.5	61.8	53.0	101.0	85.3	46.7	38.0
Quarter 4	Indigenous	190.2	112.0	78.8	85.0	41.6	87.3	91.3	76.0	85.7	119.8	57.9
	Non-Indigenous	54.2	60.7	51.3	45.5	51.9	47.5	52.3	107.4	44.2	39.4	30.9
	Total population	69.0	66.4	54.5	50.2	50.7	52.5	57.4	103.2	49.9	50.7	30.6

Figure 2. Presentations to the Norseman Hospital emergency department for all causes 2004-2014; rate per 100 population



There was a downward trend in Indigenous presentation rates prior to the initial restrictions, which levelled off subsequent to the additional restrictions. The difference was not significant ($F(1, 37) = 3.12$, $p = .0864$). There was no discernible trend in non-Indigenous presentation rates, although there was a distinct, but temporary increase from the third quarter of 2011 to the third quarter of 2012. The explanation offered for this phenomenon by several key informants was that a large number of people were made redundant by local mines during this period, causing considerable social upheaval.

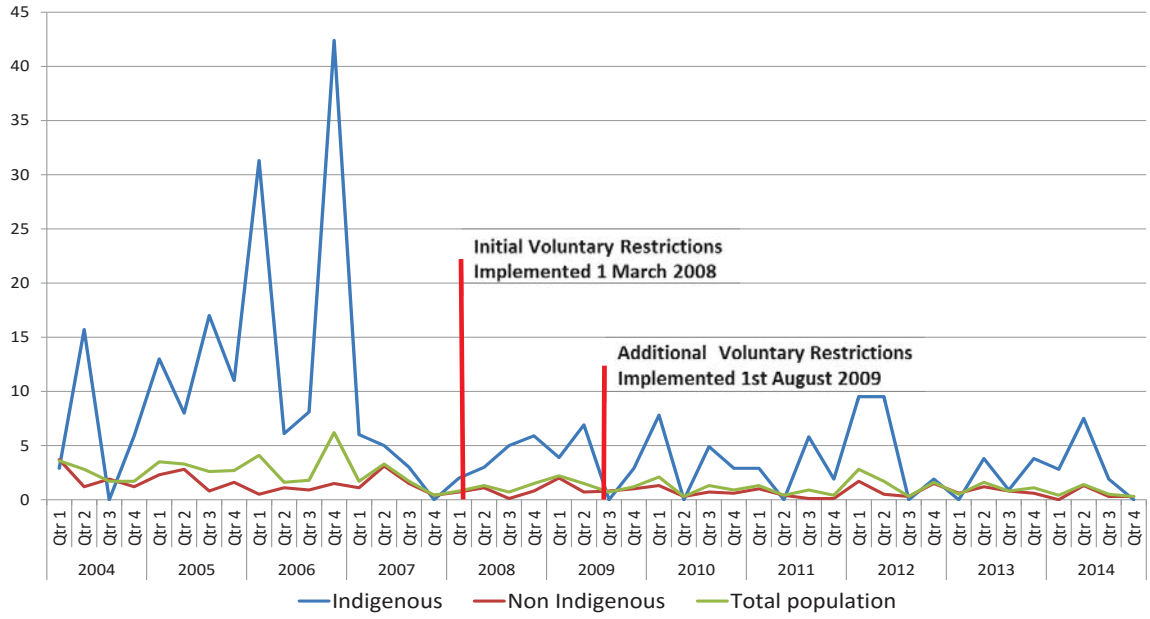
Burglary offence data

Indigenous, non-Indigenous and total population burglary offence rates from the first quarter of 2004 to the last quarter of 2014 are presented in Table 6 and Figure 3.

Table 6. Burglary offences 2004-2014; rate per 100 population

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Quarter 1	Indigenous	2.9	2.0	2.0	2.0	1.0	0.0	3.9	0.0	1.9	0.0	0.0
	Non-Indigenous	3.7	0.8	0.3	0.1	1.0	0.7	0.4	0.9	0.9	0.2	0.0
	Total population	3.6	0.9	0.5	0.4	1.0	0.6	0.9	0.8	1.1	0.1	0.0
Quarter 2	Indigenous	15.7	1.0	2.0	0.0	0.0	2.0	1.9	0.0	0.0	0.0	1.9
	Non-Indigenous	1.2	0.1	0.1	0.5	0.1	0.3	0.6	0.0	0.2	1.2	0.0
	Total population	2.8	0.2	0.4	0.5	0.1	0.5	0.8	0.0	0.1	1.1	0.3
Quarter 3	Indigenous	0.0	1.0	3.0	0.0	0.0	2.0	1.0	0.0	0.0	0.0	0.0
	Non-Indigenous	1.9	0.3	0.5	0.7	0.1	0.1	0.6	0.0	0.2	0.8	0.6
	Total population	1.7	0.3	0.8	0.6	0.1	0.4	0.6	0.0	0.1	0.7	0.5
Quarter 4	Indigenous	5.9	3.0	5.1	1.0	1.0	0.0	1.9	0.0	1.9	1.9	0.0
	Non-Indigenous	1.2	0.3	0.9	0.0	0.6	0.3	0.3	0.0	0.2	0.0	1.0
	Total population	1.7	0.6	1.4	0.1	0.6	0.2	0.5	0.0	0.4	0.3	0.8

Figure 3. Burglary offences 2004-2014; rate per 100 population



The reduction in the rate of burglaries from before the initial restrictions to after the additional restrictions was significant for both Indigenous and non-Indigenous offenders. The results of the ANOVA tests for the significance of change in burglaries are presented in Table 11.

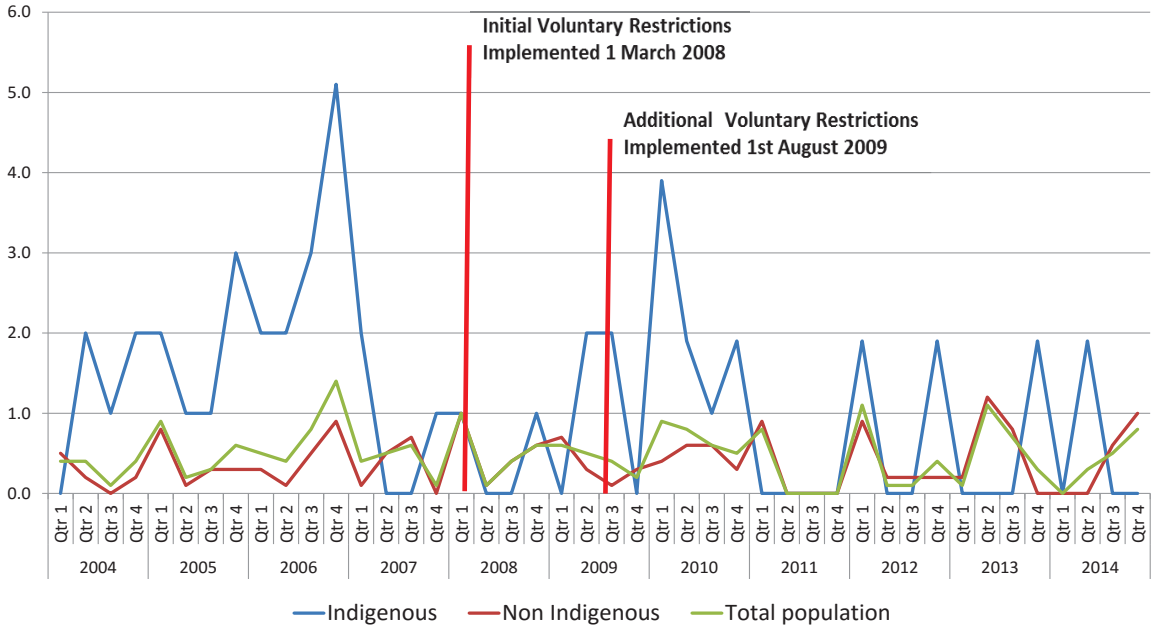
Domestic violence offence data

Indigenous, non-Indigenous and total population domestic violence offence rates from the first quarter of 2004 to the last quarter of 2014 are presented in Table 7 and Figure 4.

Table 7. Domestic violence offences 2004-2014; rate per 100 population

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Quarter 1	Indigenous	0.0	2.0	2.0	2.0	1.0	0.0	3.9	0.0	1.9	0.0	0.0
	Non-Indigenous	0.5	0.8	0.3	0.1	1.0	0.7	0.4	0.9	0.9	0.2	0.0
	Total population	0.4	0.9	0.5	0.4	1.0	0.6	0.9	0.8	1.1	0.1	0.0
Quarter 2	Indigenous	2.0	1.0	2.0	0.0	0.0	2.0	1.9	0.0	0.0	0.0	1.9
	Non-Indigenous	0.2	0.1	0.1	0.5	0.1	0.3	0.6	0.0	0.2	1.2	0.0
	Total population	0.4	0.2	0.4	0.5	0.1	0.5	0.8	0.0	0.1	1.1	0.3
Quarter 3	Indigenous	1.0	1.0	3.0	0.0	0.0	2.0	1.0	0.0	0.0	0.0	0.0
	Non-Indigenous	0.0	0.3	0.5	0.7	0.4	0.1	0.6	0.0	0.2	0.8	0.6
	Total population	0.1	0.3	0.8	0.6	0.4	0.4	0.6	0.0	0.1	0.7	0.5
Quarter 4	Indigenous	2.0	3.0	5.1	1.0	1.0	0.0	1.9	0.0	1.9	1.9	0
	Non-Indigenous	0.2	0.3	0.9	0.0	0.6	0.3	0.3	0.0	0.2	0.0	1
	Total population	0.4	0.6	1.4	0.1	0.6	0.2	0.5	0.0	0.4	0.3	0.8

Figure 4. Domestic violence offences 2004-2014; rate per 100 population



The reduction in the rate of domestic violence from before the initial restrictions to after the additional restrictions was significant for Indigenous offenders, but not for non-Indigenous offenders, which remained the same. The results of the ANOVA tests for the significance of change in domestic violence are presented in Table 11.

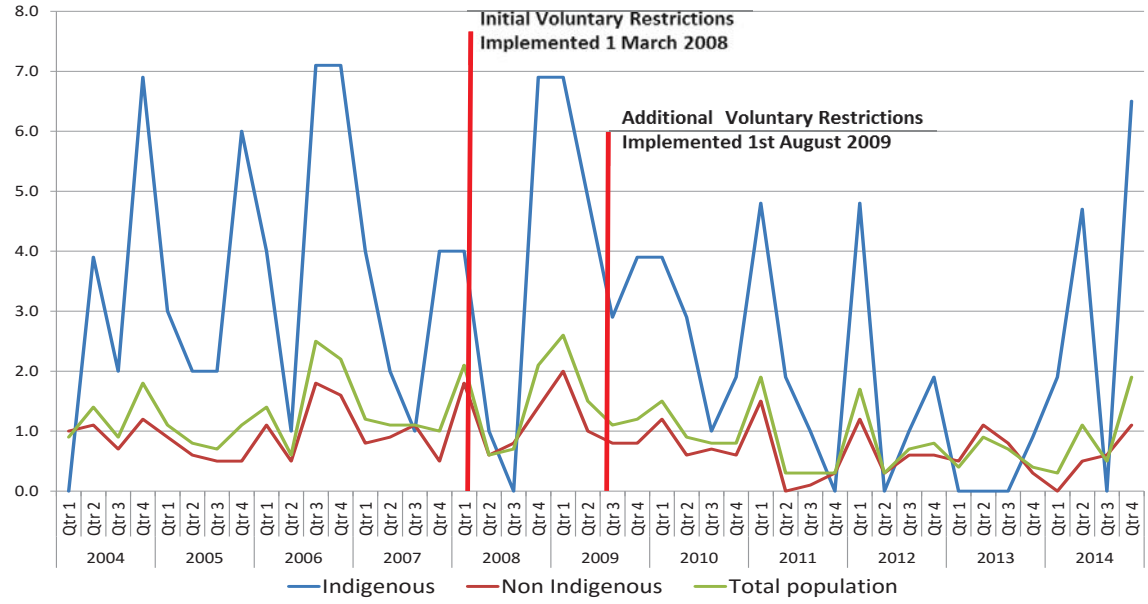
Assault offence data

Indigenous, non-Indigenous and total population assault offence rates from the first quarter of 2004 to the last quarter of 2014 are presented in Table 8 and Figure 5.

Table 8. Assault offences 2004-2014; rate per 100 population

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Quarter 1	Indigenous	0.0	3.0	4.0	4.0	4.0	6.9	3.9	4.8	4.8	0.0	1.9
	Non-Indigenous	1.0	0.9	1.1	0.8	1.8	2.0	1.2	1.5	1.2	0.5	0.0
	Total population	0.9	1.1	1.4	1.2	2.1	2.6	1.5	1.9	1.7	0.4	0.3
Quarter 2	Indigenous	3.9	2.0	1.0	2.0	1.0	4.9	2.9	1.9	0.0	0.0	4.7
	Non-Indigenous	1.1	0.6	0.5	0.9	0.6	1.0	0.6	0.0	0.3	0.0	0.5
	Total population	1.4	0.8	0.6	1.1	0.6	1.5	0.9	0.3	0.3	1.1	1.1
Quarter 3	Indigenous	2.0	2.0	7.1	1.0	0.0	2.9	1.0	1.0	1.0	0.0	0.0
	Non-Indigenous	0.7	0.5	1.8	1.1	0.8	0.8	0.7	0.1	0.6	0.8	0.6
	Total population	0.9	0.7	2.5	1.1	0.7	1.1	0.8	0.3	0.7	0.7	0.5
Quarter 4	Indigenous	6.9	6.0	7.1	4.0	6.9	3.9	1.9	0.0	1.9	0.9	6.5
	Non-Indigenous	1.2	0.5	1.6	0.5	1.4	0.8	0.6	0.3	0.6	0.3	1.1
	Total population	1.8	1.1	2.2	1.0	2.1	1.2	0.8	0.3	0.8	0.4	1.9

Figure 5. Assault offences 2004-2014; rate per 100 population



The reduction in the rate of assaults from before the initial restrictions to after the additional restrictions was significant for both Indigenous and non-Indigenous offenders. The results of the ANOVA tests for the significance of change in assaults are presented in Table 11.

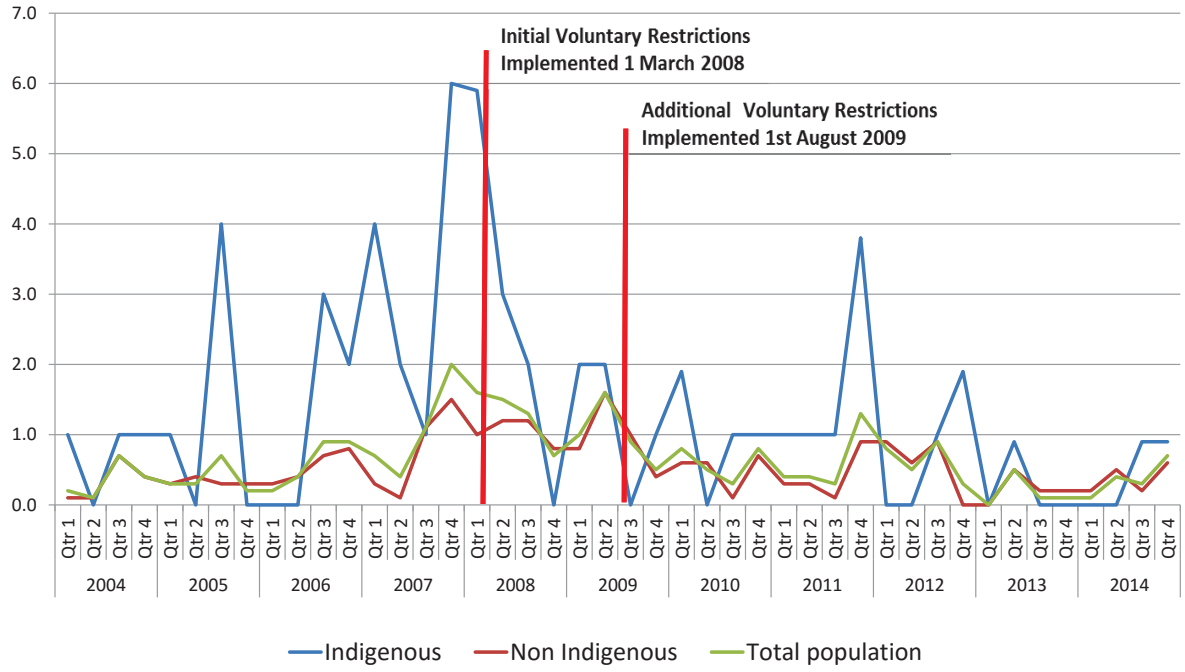
Driving under the influence offence data

Indigenous, non-Indigenous and total population driving under the influence offence rates from the first quarter of 2004 to the last quarter of 2014 are presented in Table 9 and Figure 6.

Table 9. Driving under the influence offences 2004-2014; rate per 100 population

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Quarter 1	Indigenous	1.0	1.0	0.0	4.0	5.9	2.0	1.9	1.0	0.0	0.0	0.0
	Non-Indigenous	0.1	0.3	0.3	0.3	1.0	0.8	0.6	0.3	0.9	0.0	0.2
	Total population	0.2	0.3	0.2	0.7	1.6	1.0	0.8	0.4	0.8	0.0	0.1
Quarter 2	Indigenous	0.0	0.0	0.0	2.0	3.0	2.0	0.0	1.0	0.0	0.9	0.0
	Non-Indigenous	0.1	0.4	0.4	0.1	1.2	1.6	0.6	0.3	0.6	0.5	0.5
	Total population	0.1	0.3	0.4	0.4	1.5	1.6	0.5	0.4	0.5	0.5	0.4
Quarter 3	Indigenous	1.0	4.0	3.0	1.0	2.0	0.0	1.0	1.0	1.0	0.0	0.9
	Non-Indigenous	0.7	0.3	0.7	1.1	1.2	1.0	0.1	0.1	0.9	0.2	0.2
	Total population	0.7	0.7	0.9	1.1	1.3	0.9	0.3	0.3	0.9	0.1	0.3
Quarter 4	Indigenous	1.0	0.0	2.0	6.0	0.0	1.0	1.0	3.8	1.9	0.0	0.9
	Non-Indigenous	0.4	0.3	0.8	1.5	0.8	0.4	0.7	0.9	0.0	0.2	0.6
	Total population	0.4	0.2	0.9	2.0	0.7	0.5	0.8	1.3	0.3	0.1	0.7

Figure 6. Driving under the influence offences 2004-2014; rate per 100 population



The reduction in the rate of driving under the influence from before the initial restrictions to after the additional restrictions was not significant for Indigenous and non-Indigenous offenders. The results of the ANOVA tests for the significance of change in driving under the influence are presented in Table 11.

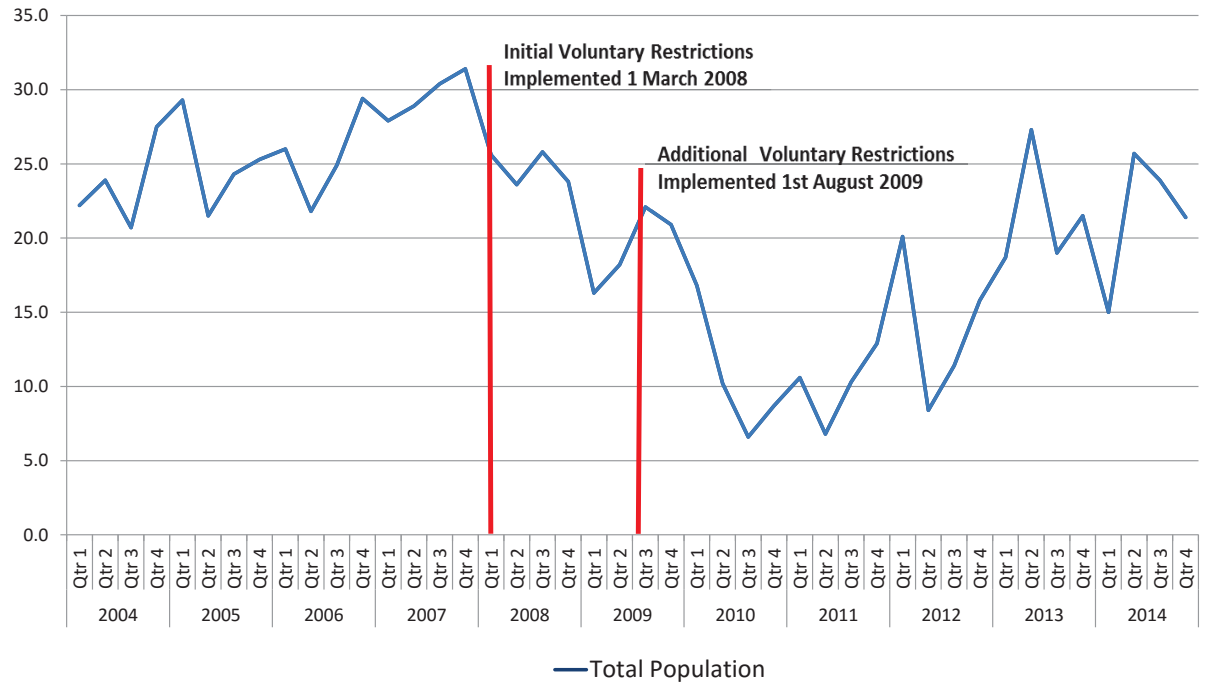
Police tasking (call outs)

Total population police tasking rates from the first quarter of 2004 to the last quarter of 2014 are presented in Table 10 and Figure 7.

Table 10. Police tasking (call outs) 2004-2014; rate per 100 population

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Quarter 1: Total population	22.2	29.3	26.0	27.9	25.6	16.3	16.8	10.6	20.1	18.7	15.0
Quarter 2: Total population	23.9	21.5	21.8	28.9	23.6	18.2	6.8	6.8	8.4	27.3	25.70
Quarter 3: Total population	20.7	24.3	24.9	30.4	25.8	22.1	10.3	10.3	11.4	19.0	23.9
Quarter 4: Total population	27.5	25.3	29.4	31.4	23.8	20.9	12.3	12.9	15.8	21.50	21.4

Figure 7. Police tasking (call outs) 2004-2014; rate per 100 population



The reduction in total population police tasking rates from before the initial restrictions to after the additional restrictions was significant. However, this comparison of means does not take into account trends within each data period and the upward trend since 2011 runs counter to the overall reduction between the two measurement periods. The results of the ANOVA tests for the significance of change in police tasking are presented in Table 11.

Table 11. Significance of changes in burglaries, domestic violence, assaults, driving under the influence and police tasking (call outs) from before the introduction of the initial voluntary restrictions to after the introduction of the additional restrictions

Comparison pre initial/post additional restrictions	ANOVA df	ANOVA F	ANOVA significance
Burglaries			
Indigenous burglaries	F(1, 37)	9.26	.0044*
Non-Indigenous burglaries	F(1, 37)	14.91	.0005*
Domestic violence			
Indigenous domestic violence	F(1, 37)	4.70	.0369*
Non-Indigenous domestic violence	F(1, 37)	0.14	.7059
Assaults			
Indigenous assaults	F(1, 37)	4.20	.0478*
Non-Indigenous assaults	F(1, 37)	4.60	.0388*
Driving under the influence			
Indigenous driving under the influence	F(1, 37)	3.60	.0660
Non-Indigenous driving under the influence	F(1, 37)	0.14	.7118
Police tasking (call outs)	F(1,37	33.90	<.001*

*p<.05

Qualitative data

The key informants, understandably, tended to provide responses as to how the restrictions had changed patterns of drinking and harm in Norseman according to their role and responsibilities in the town. However, across these role-defined perspectives a number of themes emerged. Many of these same themes also emerged from focus group interviews.

Background to the restrictions

In terms of the rationale for the restrictions, the nature of the restrictions, and how long they had been in place, responses varied considerably depending as to when the person moved to Norseman. Key informants who were living in town when the restrictions were introduced had detailed knowledge of the restrictions and the community processes that brought about their introduction. Those who had moved into the town since the introduction of the restrictions were generally aware that they existed, but were not conversant with the detail as to the quantities of particular beverages that could be purchased and the hours when purchase was permitted. The pre-restrictions residents indicated that the Indigenous community, including drinkers in that community, was the driving force for the introduction of the restrictions because of the domestic violence, chronic disease and death associated with heavy drinking. The Licensee, the General Practitioner and the focus group respondents added considerable detail on the rationale and processes involved in deciding upon the nature of the restrictions. The reasons given for not allowing alcohol sales other than between midday and 6pm was to limit the period of drinking, particularly morning drinking which tended to occur in public, to reduce heavy drinking and to provide a break for drinkers to sober up. One self-identified

drinker in the focus groups, when asked why the purchase of 750ml full strength beer was limited to one bottle per person per day while there were no limitations on canned beer, indicated that drinkers tended not to buy cartons as there would be 'a race to the last can'. This meant that people were forced to drink quickly or not get a fair share of the carton. Restricting a drinker to one large bottle meant there was no obligation to share and no pressure to drink quickly.

Changes in drinking patterns

Here there was almost universal agreement that the behaviour of drinkers, the amount of alcohol consumed and alcohol-related harms had all changed for the better since the introduction of restrictions. The common perspective was that street drinking had decreased and more drinking was occurring in homes during the evening.

> *"Previously there was a lot more drinking in the streets" – Shire CEO.*

> *"Now the Pepper tree has gone they are drinking more in their homes" – previous community nurse.*

There was also a perception that drinking stated later, with longer periods of no drinking because of the limitations as to when preferred beverages could be purchased.

> *"More alcohol during the evening" – OIC, Norseman police.*

> *"Not as much continuous drinking" – local GP.*

However, consequences of having drinking parties at home in the evenings included underage teenagers having access to alcohol and children not attending school the next day, or attending and being too tired to learn.

> *"Partying does affect the children… tired and not ready to learn" – school principal.*

There was agreement among those key informants who deal with the health consequences of drinking that harms had reduced, although several key informants considered there had been little change.

> *"Violence and injury are much reduced… 10 to 20 percent of what it was previously" – local GP.*

> *"Not as many binge drinking presentations, more chronic problems" – hospital DoN.*

Community climate

All the key informants and many of the focus group respondents gave examples of how the community climate had improved since the introduction of the restrictions. The main improvement was less street drinking and associated public drunkenness.

> *"No question today that we see that level of public drunkenness" – local GP.*

> *"Very little drinking in the streets, most drink in the park or in homes" – Hotel Licensee.*

Other improvements in community climate that were repeatedly mentioned were: a greater spirit of cooperation; greater influence of Indigenous elders on drinking; policing was more proactive; less anti-social behaviour; less rubbish around town; and better community amenity.

> *"Things have calmed down since the restrictions have been in place. They have to wait till 12 to start drinking" – female focus group participant.*

> *"Much less anti-social behaviour in the street" – Shire President when restrictions were introduced.*

Impact on families and children

The strong themes running through the comments from the key informants and the focus group participants was that family function had improved and domestic violence had decreased.

> *"Parents are spending more time with their kids" – female focus group participant.*

> *"DV and hospital admissions… saw big changes" – previous community nurse.*

The issue of drinking and partying at home was still a major concern in terms of keeping children awake so they were not fit for school the next day and in terms of modelling heavy drinking behaviour.

> *"Children don't have a routine… truancy, not concentrating at school because of parties in the home" – Previous community nurse*

> *"The kids are seeing drinking behaviour and they fall into it" – community officer.*

However, there was a body of opinion that drunkenness at home has improved since the restrictions.

> *"The environment in which the younger kids are growing up now is not coloured by open drunkenness to the same extent" – local GP.*

Suggestions for the future

Most of the suggestions for dealing with alcohol problems in the town went beyond a focus on drinkers and drinking. The need for jobs, employment skills and education was repeatedly mentioned by the key informants and focus group participants.

> *"…programs in town to give people employment skills" – Shire President when restrictions were introduced.*

> *"Need more employment and education. Need to break the cycle" – Aboriginal health worker.*

There was a strong secondary theme that focused on the restrictions. A number of key informants and focus group members, who were long-term residents, pointed out that the restrictions only came about because of community action, particularly from the Indigenous community. They indicated that this history of community led change means that the community should also be involved in any future decisions about the restrictions. They indicated that there were some objections to the restrictions when they were first applied, but they said they were now well accepted and there had been no recent complaints. There was general agreement that the restrictions, in their current form, should remain in place. However, the reasons for this differed.

> *"Community involvement is the reason it has been successful. It fits the needs of the community" – local GP.*

> *"The restrictions are a good tool" – OIC, Norseman police.*

> *"Problem of increasing the level of restriction is that more alcohol may be brought in" – previous community nurse.*

> *"Nobody said the restrictions should be taken away…they die from the casks" – female focus group participant.*

Some respondents did indicate that the restrictions should be re-examined and updated to deal with the changing nature of the community's alcohol problems.

> *"What has changed? And updating the restrictions to respond to changed drinking patterns" – community officer.*

Summary of findings

There was a downward trend in the presentation rate of Indigenous people to the Norseman Hospital emergency department prior to the initial restrictions, which stabilised at a lower level subsequent to the additional restrictions. This was possibly due to the high profile community consultation process on restrictions influencing consumption patterns in anticipation of implementation. The difference was not significant. There was no discernible trend in the non-Indigenous presentations. There was a significant decrease in rates of burglary, domestic violence and assaults by Indigenous people between these two periods. Non-Indigenous burglary and assault rates also decreased significantly. Rates of driving under the influence did not change for either group. Police tasking rates (call outs) decreased significantly post restrictions. These changes suggest the restrictions have led to improved social behaviour, but it is less clear as to their impact on health.

The qualitative data from interviews with the community key informants and focus group participants indicated that the Indigenous community was the driving force for introducing the restrictions, in response to the domestic violence, chronic disease and death that was associated with heavy drinking. The reasons given for not allowing sales, other than between midday and 6pm, was to limit the period of drinking so there was break for heavy drinkers to sober up. There was almost universal agreement that the behaviour of drinkers, the amount of alcohol consumed and alcohol-related harms had all changed for the better since the introduction of restrictions. The common perspective was that street drinking had decreased and more drinking was occurring in homes during the evening. However, drinking parties at home in the evenings were affecting children's schooling. The health workers, in particular, considered that the health consequences of drinking had reduced. Community climate was better because of less public drunkenness. Family function had improved and domestic violence had decreased, with a number of comments that drunkenness at home has improved since the restrictions. There was general agreement that the restrictions should remain in place. Most of the suggestions for dealing with alcohol problems in the town in the future went beyond a focus on drinkers and drinking. The need for jobs, employment skills and education was repeatedly mentioned by the key informants and focus group participants.

Discussion

The introduction of restrictions on the sale of certain packaged alcoholic beverages in Norseman was motivated by concern within the local Indigenous community that the major cause of serious health problems for some of their members was long-term, heavy drinking, and that the best way to tackle the problem was to reduce access to their preferred beverages. The scope of the restrictions was decided upon through an extensive process of community consultation, and most importantly, received support from the sole Licensee selling packaged liquor (Schineanu et al., 2010). The nature of the Norseman Voluntary Liquor Agreement, and the process whereby it was established, has some similarities to other alcohol restrictions in Australia. As with a number of other 'Alcohol Accords' it was a voluntary agreement between the community and the local Licensee, rather than enforced though legislation (Manton, 2014). However, it has a number of characteristics that set it apart. It has remained in place for over seven years without funding, whereas other Accords have ceased functioning when funding for project officers was exhausted (Manton, 2014). It was evaluated positively 16 months subsequent to its introduction on a number of consumption and harm measures, so it has demonstrably benefited the Norseman community (Schineanu et al., 2010). The findings from

this follow on, long-term evaluation add a further dimension to these achievements in that they identify how the Agreement continues to benefit the community.

Alcohol sales data have been reported selectively for cask wine, fortified wine and spirits. The data for beer sales were unreliable and have not been reported. There was also a gap in the sales data due to a change in the wholesale supplier to the hotel. The missing data cannot be accessed from the previous wholesaler. The available data is, however, informative. The sales of cask wine declined significantly subsequent to the initial restrictions. Sales of fortified wine declined in the longer term, which is likely a consequence of the restrictions only being extended to 750ml bottles from the 1 August 2009. This suggests the restrictions, which focused on these beverages, were effective. Interestingly, restrictions were not applied to the sale of spirits because they were not considered the beverage of choice of the heavy drinkers. Average sales of spirits were not significantly different from pre to post restrictions, but then went up significantly from the post restrictions period (267 litres per quarter) to the most recent follow-up data collection period (387 litres per quarter). This pattern of beverage sales indicates that while the restrictions were successful in reducing cask and fortified wine sales there was a transfer of consumption to spirits, such that the overall level of sales remained much the same from the pre to the most recent follow-up data collection period. This suggests that the restrictions were successful in terms of their original intent, but need to be reconsidered in light of changing purchase preferences.

There was a declining trend in the rate of hospital emergency department occasions of service for Indigenous patients prior to the introduction of the initial restrictions. This may have been due to the high profile community consultation process on restrictions influencing consumption patterns in anticipation of implementation. Subsequent to the additional restrictions, the rate remained essentially flat. The difference was not significant, but the measure could be a useful indicator of harm associated with cask wine consumption as it tracked the decline in sales of this beverage. Interestingly, this measure does not appear to be a good indicator of harm associated with the consumption of spirits for either the Indigenous or non-Indigenous communities in town, as occasions of service did not change in response to the increase in wholesale sales.

The selected offence measures were more sensitive to the change in alcohol availability, particularly in the case of Indigenous offenders. There was a significant decrease in Indigenous rates of burglary, domestic violence and assaults. Police tasking (call outs) is a good proxy measure of alcohol problems and, while not Indigenous specific, involved greater numbers. This made the measure less susceptible to random variation and consequently a better indicator of secular trend (Midford et al, 2010). The call out rate decreased significantly post restrictions. Overall, this consistent pattern of fewer law and order incidents provides a strong indication that the voluntary restrictions have had beneficial impact on Indigenous drinking in the Norseman community. However, the distinct upward trend in police call outs since 2011 (see Figure 7) may be an early indicator that alcohol problems in the town are now increasing.

The interview data from community key informants and the focus groups with community members provide additional detail as to alcohol consumption and harm in Norseman, and how this has changed over time. A number of themes emerged from these data. There was strong agreement that drinking in public had noticeably decreased since the introduction of the restrictions, as had the harms associated with that form of drinking. Improvement in social amenity was a notable theme. There was no strong opinion that drinking per se had decreased, rather it was being managed better by the individual drinkers and the community as a whole. Drunkenness was less obvious, and family life had improved, but drinking in the home, particularly that associated with partying, was still considered a problem because of the effect it had on children's readiness for school the next day.

In terms of recommendations for the future there was consensus that the restrictions had benefitted the community and should remain. This perspective was associated with pride that the restrictions had been initiated by the community and that any change also had to come from within the community. There was not one voice that they should be abolished, although several respondents said that if change was to be considered the consequences had to be thought through carefully. On the one hand, the view was that tightening the restrictions may result in more alcohol being brought in from outside. On the other hand, there was recognition that alcohol problems remained, and updating the restrictions to better target the beverages associated with these problems would likely enhance community benefit. The other strongly expressed perspective was that a focus on drinkers and restrictions would not solve excessive alcohol use and the associated problems going into the future. There needed to be a greater focus on the social determinants that underpinned problematic drinking, particularly education, job skills and employment opportunities.

Law and order data were comprehensive and complete, and consistently reflected a change post the introduction of the voluntary restrictions. However, there are a number of limitations to other study measures that need to be acknowledged. The one measure of health harm included in this report, Norseman Hospital emergency department occasions of service, is only a proxy alcohol measure. It was included because there were no suitable direct measures of alcohol-related health harm. It was informative because it was included in the initial evaluation report, and several health workers indicated that it was sensitive to both acute and chronic harm associated with heavy alcohol use (Schineanu et al., 2010). The available alcohol wholesales sales data also presented problems in that data for beer sales were both incomplete and unreliable, while data for cask wine, fortified wine and spirits were not continuous. The available data were, however, informative in terms of the effects of the restrictions. The data covered the beverages considered to cause the most harm when the community drew up the restrictions, and demonstrated that sales of these beverages decreased post restrictions. The data also showed that there was a compensatory increase in spirit sales.

On balance, the findings from this study indicated there was improvement in the pattern of alcohol consumption and harm post the introduction of voluntary restrictions, and this was reinforced by the interview data, which indicated strong perceptions of improvement from within the community. The secular data were important because they provided objective evidence of change. However, individual perceptions should be privileged because they represent the community voice, and provided additional detail as to what has changed in Norseman since the introduction of the voluntary restrictions and what problems remain. The other factor that needs to be considered in the whole equation of benefit is that the restrictions have remained in place since their introduction in March 2008 at the behest of the community, and were talked about with pride because of the manner of their genesis.

The initial evaluation of the Agreement stated it demonstrated that a community could achieve change and reduce harm from alcohol misuse through its own action. It was also unique in that government agencies worked with the Norseman community and the hotel Licensee to enable these changes to occur without regulation or enforcement. Such a voluntary agreement would, however, be difficult to replicate in larger communities with several licensed premises, and the lack of reliable wholesale beer data means there is a gap in the overall profile of alcohol consumption in Norseman. While it is important to acknowledge these limitations, the benefits for the Norseman community are clear. The restrictions are still in place, have increased social order, are still overwhelmingly supported by the community including the Licensee, and have remained effective in keeping in check those beverages identified from initial community discussions as problematic. These findings indicate that contrary to Manton's (2014) conclusions, an Accord, which is fashioned by key stakeholders, and supported by the whole community, can have a long-term impact on local alcohol problems. This does

not obviate the need for a reappraisal of the restrictions in light of changing patterns of consumption and harm. The increasing consumption of spirits and higher police call out rates in the two most recent years may be early signs that the effect of the restrictions are diminishing. However, any changes have to come with complete community support as this is what underpins the effectiveness and longevity of the current arrangements.

Recommendations

The Norseman community should be encouraged and supported to revisit their alcohol restrictions in light of current drinking patterns and associated harms. In particular, the ramifications of increased spirit sales should be considered.

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