Welcome to the second issue of CentreLines from NDRI in 2001. During August the Western Australian Government convened the WA Community Drug Summit to canvas community views on drug use and ways of dealing with the problems. So with this topic naturally high on the NDRI agenda, in this issue we look at prevention with an emphasis on high risk behaviour and preventing harm.

Tim Stockwell raises the question ‘…what exactly is the risk or the problem we are aiming to prevent – is it drug use? Is it risky drug use? Or is it harm?’. He suggests that we should not focus solely on prevention of drug use, but incorporate the many opportunities for harm reduction in law enforcement, education and other arenas for prevention work. He suggests that the main yardsticks for evaluating success and justification for allocation of resources should include reductions in risky patterns of use and levels of harm.

In Issuing Forth Richard Midford talks about his study undertaken for the School Drug Education Project, that highlights high risk behaviour among young school leavers on Rottnest Island in WA. The introduction of a comprehensive prevention intervention appears to have made an impact on the reduction of harm associated with the consumption of large amounts of alcohol and high risk behaviour during the school leaver celebrations.

The issue then presents a number of prevention research projects that include: looking at the use of a community mobilisation framework to reduce alcohol-related harm associated with drinking in private settings; the high incidence of male mortality in the Gascoyne region of WA and alcohol-related harm; and the impact of education in schools on alcohol use by 13 to 17 year olds.

I hope you enjoy this issue of CentreLines and that it continues to be of use to you and your work in the drugs field.

Fran Davis
Editor
Can we fit harm reduction into prevention?

Prevention activity has traditionally been classified in terms of whether it is primary, secondary or tertiary – respectively whether it aims to prevent problems starting, to respond to the early consequences or to minimise consequences once a problem has developed. In contemporary literature prevention is also often defined in terms of whether the target group is universal, targeted (increased risk) or indicated (high risk). Whatever terms we prefer, there is the still this inescapable question: what exactly is the risk or the problem we are aiming to prevent – is it drug use? Is it risky drug use? Or is it harm?

The Schoolies Week Project discussed by Richard Midford in Issuing Forth epitomises an approach which clearly incorporates harm reduction principles into a community-based prevention project. The project followed students celebrating the end of their exams and school careers on Rottnest Island were provided with a safer environment within which to drink alcohol excessively. For example, cheap food was available (food will reduce blood alcohol levels) and a chill-out area was created where students suffering from the effects of excess alcohol and/or drug use could be tended to. There were also ‘use reduction’ strategies in place including the banning of alcohol home deliveries, the creation of alcohol free entertainment areas and planning of various alternative activities. There was certainly no encouragement of excessive drinking but an acceptance that while it could be minimised it would still occur and had to be planned for.

I suggest that we must try not to just focus on the prevention of drug use, important as that can be. There are major opportunities for harm reduction in the spheres of law enforcement and education as well as other arenas for prevention work. Further, many early intervention prevention programs have only been evaluated in terms of their impact on delaying or preventing the uptake of drugs – whether legal or illegal. This is not sufficient: we know that experimental drug use may only be weakly related to subsequent serious problems and that, in the law enforcement context, targeting use alone may sometimes even exacerbate harm for some existing users. Reductions in risky patterns of use and in levels of harm should be the main success and justify allocation of resources.

The need to reduce the incidence of alcoholic poisoning and aspiration is a case in point. Estimates of the amount of alcohol-caused mortality in Australia (e.g. Chikritzhs et al, 2000) suggest that alcoholic ‘overdose’ in its various forms accounts for about 100 deaths each year, mostly of young people. A recent survey of WA university students (Pollizotto et al, 1999) found that 89% had witnessed a fellow student lose consciousness after drinking and most were then left alone to sleep off the effects. This scenario should be alarming to drug educators and the community at large. I do not know how many of those students would have left someone with a drug overdose to sleep off the effects – probably not nearly as many. In any case there is a pressing need for harm reduction strategies to be taught routinely to young people, both universally and selectively to high risk groups.

The inclusion of the principles and practice of harm reduction has been influential in much of the work of the National Drug Research Institute down the years. I gave some examples of this approach recently at the WA Community Drug Summit which were also designed to illustrate the many levels in society at which prevention must operate in a consistent fashion for maximum effect:

- An examination of the legal options for cannabis in order to minimise harm and costs (Lenton et al, 2000)
- Regulation of licensed premises in Aboriginal communities in order to minimise alcohol-related harm (Gray, 2000)
- The School Health and Alcohol Harm Reduction Project (McBride et al, 2000)
- The impact of late night trading for hotels on local levels of violence and drink-driving (Chikritzhs et al, 1997)
- Identification of risky injecting practices for transmission of blood-borne viruses (Caruthers, 2000)

I am pleased that NDRI was able to make a number of contributions to the WA Drug Summit. We were extensively involved in the preparation of the background discussion papers, in the planning, in providing technical advice throughout, making separate submissions and presenting in the debating chamber and to the working groups. Two of our specific recommendations were to amend the cannabis laws and to incorporate harm reduction principles into school programs for both legal and illegal drugs. There was a strong spirit of cooperation across many sectors in evidence and it is to be hoped that the summit will mark a significant move towards more effective drug policies in WA which succeed in reducing risky drug use and harm.

Tim Stockwell

References


TRENDS IN PER CAPITA ALCOHOL CONSUMPTION IN AUSTRALIA 1990/91 - 1998/99

For the first time trends in per capita alcohol consumption are reported for all Australian states and territories. Data on alcohol sales from ABS, liquor licensing and industry sources were compiled by the National Alcohol Indicators Project. Population rates are for the ‘service population’ of each region taking account of tourism, patterns of work and incarceration.

This publication can be ordered through NDRI for a cost of $27.50 (inclusive of GST). To obtain an order form please phone: (08) 9426 4200 or email: enquiries@ndri.curtin.edu.au. A free summary Bulletin may also be ordered.
Leavers on Rottnest: A glimpse of how a community managed mayhem

Richard Midford, Fiona Farringdon, Nicole Young

Why Rottnest?
The intense and typically chaotic week-long celebrations to mark the end of school, variously known as ‘Schoolies’ Week’ or ‘Leavers’ Week’, seem to be a distinctly Australian phenomenon. In Queensland, this event has a long and notorious history (Ballard, Curd & Roche, 1998; Smith & Rosenthal, 1997). Here, large numbers of local and interstate school leavers congregate at well-known holiday spots, such as the Gold Coast and Sunshine Coast where they consume large quantities of alcohol and engage in a range of risky behaviours (Zinkiewicz, Davey & Curd, 1999). In Western Australia the number of celebrating school leavers is less but there is still a distinct preference for certain well-known holiday locations, large amounts of alcohol and high-risk behaviour.

Rottnest Island is a particularly attractive destination. It is close to Perth and is perceived as a safer environment for celebratory behaviour, because no driving is involved. This means that there are fewer inhibitions about excessive alcohol consumption, which then does create greater problems. In recent years there has been growing recognition among a broad range of stakeholding agencies that the harms associated with the celebratory activities on Rottnest have grown to unacceptable levels and that a comprehensive prevention intervention would benefit both the leavers and the local community. Such an intervention could also serve as a model to other holiday communities that play host to such an intervention could also serve as a model to other holiday communities that play host to

Understanding the problem
This article discusses the main findings from the harm reduction program initiated by the School Drug Education Project (SDEP) and developed by a consortium of agencies and the Rottnest Island community over the course of two successive celebratory weeks in 1999 and 2000. In the first year the National Drug Research Institute (NDRI) conducted a formative evaluation of school leaver celebrations on Rottnest (Bogaards, Midford & Farringdon, 2000). Several complementary data gathering methods were used to suit respondents and gauge the strength of findings. School leavers were interviewed in groups about their intentions, behaviour, safety concerns and recommendations for improvement of the Leavers’ Week experience. Major business and service providers on the Island were also interviewed individually. Official harm data were collected for the period of the celebrations. A researcher also spent the week living on the Island observing the celebratory activities first hand.

The leavers’ survey responses clearly identified socialising with other leavers as the main purpose of going to Rottnest. Other frequently mentioned reasons were relaxing and unwinding after exams and having a good time. Drinking and getting drunk were mentioned in their own right less often, although there was an implicit assumption that the three highest priorities involved substantial consumption of alcohol. Observation confirmed the heavy consumption of alcohol during Leavers’ Week. This started in the afternoon and in the case of many of the young people developed into drinking games and provocative confrontations between drinking groups during the evening. Survey comments and direct observation both indicated that there was little in the way of organised entertainment and as a consequence many of the leavers roamed around while they drank, looking for something to happen. This combination of anticipation, boredom and heavy drinking created the conditions for problems to develop, and fights, sexual harassment, and property damage were regular occurrences in the evening.

 Provision of entertainment and organised venues for socialising was the strongest theme in the leavers’ recommendations for improvement. While there is a pub on the island most of the school leavers are under 18 years of age and cannot legally gain entry. Other components of the formative evaluation supported the need to cater for this underage group, who were drinking to some degree because there was little else to do. The other strong recommendation that came from the leavers was for provision of cheap convenient food, particularly at night when they were drinking/socialising and in the morning when they were recovering.

Interviews with the police and the nurses who manned the island’s medical facility, and the official data from these sources, emphasised the amount of work generated by the leavers’ excessive alcohol consumption. The health facility dealt with 50 incidents over a period of 6 days. None involved serious injury, but all were alcohol related. These data and the success of safety facilities provided during “Schoolies Week” on the Sunshine Coast in Queensland (Ballard, Curd & Roche, 1998), made a good case for a non medical sobering up facility on Rottnest during leavers’ celebrations to relieve pressure on these other services.

The formative evaluation generated a detailed list of 16 recommendations for intervention activities likely to reduce harm, but the core of these pertained to: provision of activities that promoted social interaction between leavers; provision of cheap convenient food; and setting up a readily accessible sobering up facility for the duration of the celebratory week.

Developing the Intervention
In 2000 the SDEP, the Rottnest Island community and collaborating agencies developed a broad-based intervention program. All major stakeholders were involved in obtaining the necessary funds and putting together an intervention that drew strongly on the recommendations from the formative study. All major recommendations were implemented in one form or another. The activities are summarised in the list below:

- Police visit schools and talk to year twelve students about expected behaviour during leavers’ week
- Information on accommodation and leavers week activities sent out by Rottnest Island Authority (RIA) to all leavers holding bookings
- Extensive day activities program developed by collaborating agencies
- $1000 deposit required to book accommodation
- Information tape with music for ferry trip
- Chillout Tent (Sobering up facility) coordinated by Rottnest Island Nursing Post and RIA and staffed by volunteers with first aid training
- Rottnest Island Rangers brief of all visiting leavers about their responsibilities in regard to the island’s environment
- Discounted $5 ‘Recovery Breakfasts’ at the tearooms
- De-licensing of section of the Rottnest Hotel to form an underage dance area where bands and DJs performed during the afternoon and evening
- Coloured wrist bands for over 18’s entering the licensed area of the Rottnest Hotel
- Stopping all alcohol home deliveries on the Island
- Increased security staff at Rottnest Hotel
- Extended trading hours for many Rottnest food outlets
- Late Night sausage sizzle in settlement area
- Rottnest Island Police and Rangers Sausage Sizzle with food donated by local businesses

NDRI was again involved in the evaluation, although on this occasion the priority was to document the implementation process and assess the impact of
the intervention on the school leavers and the Rottnest community. As in the previous year, the 2000 evaluation comprised the same range of complementary data gathering methods.

What did the intervention achieve?

The leavers’ expectations about the end of school celebrations on Rottnest were much the same as in 1999: to socialise, have fun, relax and unwind after a hectic exam period and to celebrate the milestone of school graduation. Although the intention to drink to excess was expressed by both males and females, alcohol consumption featured far less frequently in the 2000 responses than in 1999. This may be an indication that intervention strategies in 2000 were successful in de-emphasising alcohol as a key component in the celebration process. In addition when asked generally about their previous nights’ activities far fewer leavers in 2000 indicated they consumed alcohol or spent the night just walking around than did their 1999 predecessors. Again this suggests that the intervention activities were engaging and may have offered ways of socialising and celebrating that did not involve excessive drinking. This is further supported by responses identifying the best part of the night. In both years a similar number of leavers identified socialising, but in 2000 far fewer identified drinking. Perhaps most notably, none of the 2000 respondents reported that they were bored during the evening. This marked a substantial change from 1999 and again supports the success of the intervention in engaging the leavers.

As was the case in 1999 the harm reduction strategies articulated by the 2000 leavers were generally not well considered, with both sexes relying almost solely on their friends to afford them protection. However, in 2000 leavers appeared to experience less violence and sexual harassment. It is not clear why this occurred, although the combination of preparatory police visits to schools, their pro-active approach on the island and the high profile intervention activities may have better prepared leavers and given them a greater sense that their behaviour was being monitored. In addition, less emphasis on celebration requiring excessive alcohol use may have been a contributory factor.

Leavers were generally appreciative of the efforts made as part of the 2000 intervention program. Even most criticisms and suggestions for improvement were well considered and constructive. The de-licensing of part of the Rottnest Hotel and provision of bands was not as well received as had been hoped, with both stakeholders and leavers suggesting it was a good idea but needed modification. As one leaver stated:

I went to the pub and watched a band from the licensed area. It was quite good actually.

I think it was a good idea. I’m not sure about the underage part though – being segregated you feel a bit stupid – they called it a crèche

Food initiatives were very well received with the sausage sizzle being appreciated as a low cost option for eating while drinking in the evening. Eating while drinking would have reduced effects of alcohol, but the process of providing the food may have been more potent again. There was a lot of evidence to suggest that the sausage sizzles conducted by the police did much to foster a spirit of respect and cooperation between the leavers and authorities on the Island. The recovery breakfasts were also very well patronised and commented on in a positive manner.

The Chill Out Tent was regarded as the highlight of the intervention by leavers, stakeholders and the field researcher. Only positive comments were recorded about it. Leavers felt comfortable about using the facility; the volunteers who staffed it were consistently patient and compassionate and the nurse’s station was relieved of the burden of dealing with numerous minor alcohol related problems. The importance of this facility in terms of reducing potential harms can not be overstated. It offered a friendly, supervised place to gather. Staff provided informal advice on a range of alcohol, drug and safe sex matters. A large number of heavily intoxicated leavers were monitored while they sobered up, where in other circumstances they may have been left by themselves. As one stakeholder commented:

"I did expect the hotel to be better but the Chill Out Tent exceeded all expectations."

Other components of the intervention such as the beach activities, police visits, rangers’ talks, competitions, advertising and promotions contributed to reducing boredom and providing activity other than drinking. Most young people were appreciative of the efforts made, but even those who were critical were still clearly aware of the work undertaken. The very act of providing extra activities meant there was greater interaction with the leavers and more opportunities to influence their behaviour. Many stakeholders had high expectations of the intervention and felt disappointed that the considerable community effort had not produced better results. However, when questioned specifically on what had occurred and how the 2000 celebrations compared with previous years their responses consistently indicated that the leavers’ behaviour was at least no worse and in many cases better than in previous years. The consistent theme in the stakeholder responses was that proceedings were better managed because of community collaboration. The process of preparation and collaboration seemed to have been well managed and gave the local stakeholders a greater sense of control. In turn this seemed to foster a greater degree of tolerance and an emphasis on mutual obligation as a way of reducing excessive behaviour and making the week an enjoyable and safe celebration.

What was learned

The Rottnest Leavers intervention seemed to work at two levels. Component strategies such as the Chill Out Tent and provision of cheap convenient food at critical times worked in a targeted manner to reduce particular alcohol related harms associate with the leaver celebrations. These strategies were developed using conventional Action Research processes and their impact was relatively easy to identify (Wadsworth, 1991). However, the overall impact of the intervention seemed to be greater than the sum of each individual component. Here the process of developing and implementing the intervention seemed to be the added factor.

Involving stakeholders in the development process was important because it gave them a sense that the leaver celebrations could be managed rather than simply endured. Getting disparate groups involved in the planning meant that a range of concerns were catered for and a variety of skills were contributed. Additionally, the joint process meant that each stakeholder was in a better position to appreciate and contribute to the overall program goal of reducing harm.

This collaborative approach did produce a well rounded multi-faceted intervention. Some components worked better than others, but here again the process of trying to make the celebrations safer and more enjoyable was a powerful factor in achieving these aims. Providing services meant that the school leavers were seen as more worthy and in return the leavers got a sense that the community were concerned about them. The act of conducting the intervention seemed to build a relationship between the leavers and the Rottnest community, which acted to curb excesses. This in some ways was the most important lesson learned from the intervention and something that would be important to replicate in other interventions in other communities dealing with the same issues.

Communities are likely to make mistakes in their initial efforts and need to be realistic as to the improvements than can be achieved in one year. Programs can always be refined with experience. However, a development and implementation process that involves all relevant stakeholders, including young people will generate a sense of reciprocal regard and mutual obligation and is the best foundation for a relevant ongoing program.

References


Carnarvon Health and Men Project (CHAMP)

Martin Cooper & Richard Midford

The Carnarvon Health and Men Project is funded by Healthway and the Gascoyne Public Health Unit and will address the following issues related to men's health:

- Shorter life expectancy for men; with its corollary, higher mortality rates in specific age groups, and for specific disease conditions.
- Higher rates of injury (notably occupational injury and motor vehicle injury) among men.
- Higher rates of alcohol abuse and suicide among men.
- Higher rates of certain disease conditions among men, such as heart disease and HIV infection.
- Different patterns of use of health services, including a lower use of primary health care by men.

There is a growing understanding that the variance between male and female health statistics is not just the result of biological differences. Hence, the project will investigate how men understand their masculinity within the culture of the Gascoyne region. This will be done particularly in relation to historically established community social norms and the regions implicit conceptualisation of masculinity. It is intended that this understanding will lead to locally relevant initiatives that focus on developing strategies and providing skills that enable men to more effectively manage their health. The framework for these initiatives will be that of a gendered approach. That is, an approach that acknowledges the interactive nature of gender and does not contribute to an unhelpful polarisation of masculinity and femininity.

In keeping with the local nature of the project, it will involve the collaboration of a number of community-based and other organisations. Initially these will include the Gascoyne Public Health Unit, Mental Health and Drugs Policy Branch, COMPARI Drug Service Team, National Drug Research Institute, Gascoyne Development Commission, and General Practitioners. Importantly, effective cooperation between research professionals and community-based health promotion professionals will be utilised in the design, execution, and dissemination of the research.

CHAMP is due to begin its interventions in the last quarter of 2001 and run as a one year pilot prior to application for continuing funding.

School Health and Alcohol Harm Reduction Project (SHAHRP) 2000

Nyanda McBride & Fiona Farringdon

Australian prevalence studies indicate that a rapid increase in alcohol use occurs between the ages of 13 to 14 years and again at the age of 16. Given that young people are likely to drink at hazardous or high risk levels, and that the harms experienced by young people are relatively high, there are strong arguments for incorporating well planned alcohol programs into the school curriculum. Currently the majority of alcohol education resources are designed for lower secondary school students. Resources available for upper secondary students tend to be one-off, short duration videos that have limited basis in research evidence or input from the target audience.

SHAHRP 2000 aims to develop an evidence-based, student-focused, alcohol harm minimisation education program for senior secondary school that will provide students with skills to minimise potential alcohol-related harms which they identify as commonly encountered or of particular relevance. Given the target age group, potential harms may include issues related to drink-driving, getting home safely from parties and drinking in public places such as nightclubs and pubs. The study has undertaken formative development of a curriculum package for senior secondary school students that has a sound basis in behaviour change theory, evidence of change, and is considered relevant by the student population it is designed to influence. Twelve focus groups were conducted with 17 year old students. These focus groups provided invaluable information about young people's alcohol use experiences, alcohol-related harms that are of particular concern to young people, harm reduction strategies used by young people and educational approaches likely to be effective with young people. These insights were incorporated into the development of the curriculum, ensuring it has a basis in situations experienced by young people. The intervention will then be implemented with students. Baseline and subsequent measures will assess knowledge, attitude, patterns of use, context of use, harms experienced through own use and harms experienced through others use of alcohol.

This study builds upon the earlier School Health and Alcohol Harm Reduction Project conducted over a four year period (1996-2001) which achieved knowledge, attitude and behaviour change in the intervention group. In addition to the development of a well considered alcohol intervention for upper secondary school students, SHAHRP 2000 will extend the pre-existing study for a further two years thereby providing valuable longitudinal intervention research data about young Australians alcohol-related experiences. SHAHRP 2000 is funded by Healthway.

Monitoring of alcohol-related violence and crime in NSW

Neil Donnelly & Suzanne Briscoe of the NSW Bureau of Crime Statistics and Research, NSW Health Department & Tim Stockwell of NDRI

This collaborative venture represents a commitment to a 3 year program of research to establish policy relevant, monitoring and evaluation procedures with particular reference to alcohol violence and other crime.

The expertise developed by working on the Measurement of Alcohol Problems for Policy project, the WA Liquor Licensing Demonstration project and the National Alcohol Indicators project will be made available to the NSW Bureau of Crime Statistics and Research (BOCSAR), with a focus on local and regional areas of NSW. A preliminary stage will involve the identification and collection of appropriate data sets following the model used in Western Australia and Victoria which provides local data on serious alcohol-related violence and crime. Reports will be prepared on these but the underlying objective will be to develop and define indicators to be applied in the NSW context for the evaluation of policy initiatives such as the enforcement of licensing laws, changes in trading hours, the introduction of Accords and so on.

The first joint publication of NDRI and BOCSAR has been released documenting time-and-place aspects of alcohol-related crime in NSW. Additional funding has been obtained from the Drug Programs Bureau, NSW Health to conduct a study investigating repeat offending and enforcement issues in licensed premises. One component of this study, which involves as analysis of the frequency of assaults on individual licensed premises in inner urban areas of NSW has been completed. A report detailing the findings of this analysis is currently being prepared by Suzanne Briscoe and Neil Donnelly and will be publicly released at a later date as the second in the Alcohol Studies Bulletin series.
The focus of this paper is on describing the drug use, intoxication and withdrawal in the six hours prior to the most recent alleged offence(s). The relationship between use of specific drug classes, intoxication and withdrawal in the six hours before the most recent alleged offence and the nature of those offences was assessed with bivariate analyses. It was found that the majority of such relationships were between heroin and property offences.

The results are discussed in terms of the representativeness of the study groups, and the need for replication with larger and more representative samples is emphasised.

Supply and demand for alcohol in Australia: relationships between industry structures, regulation and the marketplace.


**Stockwell, T.R. and Crosbie, D.**

Aspects of alcohol supply and demand relationships are examined in relation to the two main beverage varieties in Australia: wine and beer. It is argued that this case study illustrates how the ‘supply side’ is able to create and protect demand for alcohol through both taking advantage of and influencing government regulation of the market for alcohol. In relation to low alcohol beer the impact on public health and safety has been extremely positive. In relation to the creation of cask wine in the late 1960s there have been demonstrably deleterious effects. Preferential taxation arrangements for the Australian wine industry have dramatically increased both exports and home consumption. One unintended consequence has been the creation of a major new market for cheap bulk wines that have had a devastating public health impact, particularly on Aboriginal communities, and also the invention of ‘alco-pops’. Two-thirds of all table wine consumed in Australia now comes in a cask and 90% of this product is manufactured by three multi-national companies that wield enormous power and political influence to maintain the status quo. The Australian beer industry is well known internationally for its export of ‘full strength’ (around 5% by volume) beers. What is less well known is its commercial success in the development of low and mid-strength varieties for home consumption. In some States these now comprise 40% by volume of the beer market. This development can largely be attributed to State taxation arrangements, to drink-driving law enforcement, marketing strategies and to a decade of intense competition between several major brewers.

Issues for future research to address regarding alcohol policy, supply and demand will be suggested.

The public health and safety benefits of the Northern Territory’s Living With Alcohol program.


**Stockwell, T.R., Chikritzhs, T., Hendrie, D., Fordham, R., Ying, F., Phillips, M., Cronin, J. and O’Reilly, B.**

An evaluation is presented of the estimated impact of a comprehensive population-based alcohol harm-reduction program in the Northern Territory and funded by a levy of 5 cents per standard drink which took effect from April 1992. The proceeds of the levy supported increased prevention activities. Towards the end of the study period (the first four years) other positive initiatives were introduced: the lowering of the legal limit for drivers to 0.05 mg/ml and a special levy on cask wine.

Indicators of alcohol-related harm were tracked from 1980 to June 30 1996 and developed from hospital, mortality and road crash data. In each case appropriate control data from the same source that was much less alcohol-related was employed to control for other possible confounding effects. Alcohol aetiologic fractions for major alcohol-related causes of death were estimated taking account of the level of high risk alcohol use in the Northern Territory.
linear regression and time series analyses were employed to test for any effect coinciding with the introduction of LWA.

There were reductions in estimated alcohol caused deaths from acute conditions (road deaths 34.5%, other 23.4%) and in road crash injuries requiring hospital treatment (28.3%). In addition there were substantial reductions in per capita alcohol consumption and self-reported hazardous and harmful consumption via surveys. These reductions were evident immediately from the outset of the introduction of LWA and were largely sustained throughout the four years studied.

The data reported here suggest that significant health and safety benefits accrued to the people of the Northern Territory during the first four years of the Living With Alcohol program. This benefit is likely to be due to several factors: the effect of the levy on alcohol consumption, other factors depressing alcohol consumption and the effect of the LWA program itself.

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