HUNTER NEW ENGLAND
NSW HEALTH

The Alcohol Linking Program: Adoption by New South Wales Police

2009

ISBN: 978-0-646-50711-8

Hunter New England Area Health Service Population Health Unit
Locked Bag 10, Wallsend, New South Wales 2287
Office: Longworth Avenue, Booth Building, Wallsend, New South Wales 2287

Recommended citation:
Wiggers J, Radvan D, Dalton A, Valentine M, Nicholas C (2009). The Alcohol Linking Program: Adoption by New South Wales Police. Newcastle: Hunter New England Health.

Contributors

Associate Professor John Wiggers	Director, Hunter New England Population Health, Hunter New England Health School of Medicine and Public Health Faculty of Health University of Newcastle
Ms Deborah Radvan	Consultant in Health Promotion: Policy, Practice, Research, Teaching and Management
Ms Angela Dalton	Project Officer, Hunter New England Population Health, Hunter New England Health
Ms Megan Valentine	Statistician, Hunter New England Population Health, Hunter New England Health
Mr Craig Nichols	Statistician, Hunter New England Population Health, Hunter New England Health

Contents

Figures

Tables

Acknowledgments

The success of the Alcohol Linking Program can be attributed to a large number of people, too many to mention individually, who were involved in its initial conception in the mid 1990's through to the final analysis of its adoption into practice a decade later. These people contributed as staff of Hunter Health, Hunter New England Health, NSW Police, and the University of Newcastle.

The adoption of the Alcohol Linking Program was supported by funding and in-kind contributions by:

- NSW Health
- Hunter New England Health (formerly Hunter Health)
- NSW Police and NSW Police Drug and Alcohol Coordination Unit
- Alcohol Education and Rehabilitation Foundation
- University of Newcastle
- Hunter Medical Research Institute

Executive Summary

Background

Alcohol misuse is a significant cause of harm in most countries. The harms arising from alcohol misuse are diverse, and are associated with a variety of contexts of alcohol consumption, including the consumption of alcohol on licensed premises. As a consequence, liquor licensing provisions exist in many jurisdictions to facilitate the safe consumption of alcohol on licensed premises.

Various strategies are available to support the harm reduction objectives of liquor licensing laws as they relate to licensed premises. One strategy demonstrated to be effective is enforcement by regulatory agencies. Despite evidence of its effectiveness, limited enforcement of liquor licensing laws as they pertain to licensed premises has been reported.

The Alcohol Linking Program

The aim of the Alcohol Linking Program was to reduce the number of alcohol-related incidents through the achievement of two objectives: the implementation of an intervention to enhance police recording of alcohol intelligence information (Data Recording Intervention); and police delivery to licensees of an educational intervention based upon such information (Premises Intervention).

Incorporation of the Alcohol Linking Program into New South Wales Police practice

Initial research and development suggested that the Program interventions were feasible, efficacious and acceptable to stakeholders. Based on such findings, the New South Wales Government directed that the Program be incorporated into the routine practice of all police across the state. To meet this direction, an adoption model involving three elements: Intervention Design; Organisational Change; and Adoption resources was implemented.

The Program and adoption model were implemented sequentially in three separate geographic areas which, when combined, constitute the state of New South Wales. The adoption model was applied in full in the first two geographic areas. In the third area, the model was applied in a reduced fashion to facilitate the subsequent transfer of responsibility for Program management to New South Wales Police.

Evaluation Methods

Level of police recording of alcohol intelligence information

A multiple-baseline study involving the three geographic areas was undertaken to evaluate the impact of the Data Recording Intervention on police recording of alcohol intelligence information. Recording of such information was assessed over a period of up to 46 months for two categories of people: those involved in 32 types of incidents; and those involved in an assault incident. The intelligence information related to the following characteristics of each person involved in a police attended incident: whether they had consumed prior alcohol prior to the incident; their intoxication status; their last place of alcohol consumption; and if the last place

alcohol was consumed was a licensed premises, the name and address of the premises.

To demonstrate the ability of the Data Recording Intervention to provide intelligence information of relevance to policing practice, the proportions of people with each of the above characteristics are reported.

Police delivery of the intervention

Implementation of the Premises intervention was measured in terms of the number of licensees to whom the intervention was provided, the number of occasions on which the intervention was provided, and the number of premises audits undertaken.

Number of alcohol-related incidents

A quasi-experimental design was used to evaluate the impact of the Premises Intervention on the number of incidents recorded by police to be alcohol-related. For each geographic area, the number of such incidents that occurred in a three month period before the implementation of the intervention was compared with the number of incidents in a corresponding three months post-intervention period, and with equivalent data for a comparison area. Such analyses were undertaken in terms of the number of alcohol-related incidents occurring across 32 categories of incidents combined, and the number of alcohol-related assaults.

Evaluation Findings

Level of police recording of alcohol intelligence information

Following the implementation of the Data Recording intervention, the mean monthly proportion of people across the three areas for whom the information was recorded varied between 84% and 100%.

Based upon this information, 70% to 71% of people who reported they had consumed alcohol on a licensed premises prior to involvement in an assault were recorded to have been intoxicated.

Police delivery of the Premises Intervention

The Premises Intervention was delivered to all 3,865 licensees on up to three occasions.

Occurrence of alcohol-related incidents

A significantly greater reduction in the number of alcohol-related incidents and alcohol-related assaults was observed in Areas 1 and 2 relative to their comparison areas. No significant difference was found between Area 3 and its comparison area in either the number of alcohol-related incidents or the number of alcohol-related assaults.

Conclusion

Immediate and sustained high levels of police recording of all four measures of alcohol intelligence information followed the implementation of the Data Recording Intervention in each of the three areas. In the two areas where the adoption model was implemented in full, significantly greater reductions in alcohol-related incidents, and alcohol-related assaults were evident following the introduction of the Premises Intervention, relative to the comparison areas.

On the basis of these findings, the incorporation of the Program interventions into New South Wales policing practice appears to have provided police with the potential to reduce the number of alcohol related incidents. The number of people involved in such incidents and recorded as being intoxicated following the consumption of alcohol on licensed premises suggests a possible need for ongoing intervention in this setting.

1 Introduction

1.1 Alcohol-related harm and licensed premises

Alcohol misuse is a significant cause of harm in most countries (Babor et al 2003). Alcohol-related harms are diverse, and are associated with a variety of environmental contexts and determinants (Babor et al 2003). A considerable volume of literature suggests an association between the occurrence of alcohol-related harms and the consumption of alcohol on licensed premises (Babor et al 2003, Stockwell et al 1993, Ireland & Thommeny 1993, Lang et al 1989, Campbell & Greed 1997, Roche et al 2001, Briscoe and Donnelly 2001).

1.2 Alcohol licensing laws, compliance and enforcement

Harms associated with the consumption of alcohol on licensed premises are of public policy relevance as licensed premises are intended, through liquor licensing legislation, to provide an opportunity for the safe consumption of alcohol. Provisions within liquor licensing laws addressing pricing and promotion controls, enhanced responsible service practices, regulation of patron behaviour, and implementation of appropriate environmental and management practices have been shown to be effective in reducing alcohol-related harm in this setting (Babor et al 2003, National Drug Research Institute, 2007, Saltz & Hennessy 1990, Saltz 1997, Holder & Wagenaar 1994). In New South Wales, Australia, as in other jurisdictions, such licensing laws require licensees to not sell alcohol to persons who are intoxicated. Compliance by licensees with such provisions is reported to be low (Commissioners Drugs Committee 2004, Scott et al 2007, Rydon et al 1996, Andreasson et al 2000).

The effectiveness of any law is suggested to be dependent in part, on the perceived likelihood of non-compliance being detected, and on the perceived likelihood that detected non-compliance will result in punishment (Byleveld 1979). Despite this, and the existence of evidence supporting the efficacy of enforcement in reducing alcohol-related harms (Babor et al 2003; McKnight & Streff 1994, Jeffs & Saunders 1983), limited enforcement of the compliance of licensed premises with liquor licensing laws has been reported (Briscoe and Donnelly 2003). Barriers to the enforcement of such licensing laws are suggested to include:

- Inadequate availability of intelligence data regarding the involvement of alcohol consumption in incidents of crime (Briscoe and Donnelly 2003)
- Inadequate intelligence data regarding the last place of alcohol consumption of people involved in incidents of crime (Doherty and Roche 2003)
- System difficulties in retrieving alcohol-related intelligence data and in identifying high-risk premises (Doherty and Roche 2003)
- High cost of proven enforcement strategies (McKnight & Streff 1994, Jeffs & Saunders 1983).

1.3 Intelligence-led policing

Intelligence-led policing (Goldstein 1990; Ratcliffe 2003) represents one possible approach to addressing the identified barriers to enforcement of liquor licensing laws. Such an approach involves the systematic collection of intelligence information regarding incidents and causes of crime, and the use of such information to identify high risk locations, offenders, and types of crime for appropriate police response. This approach to policing has been shown to be effective in reducing a range of crimes, including homicide and other violence, antisocial behaviour, car theft and drug dealing (Braga et al 2001; Braga et al 1999; Barclay et al 1996; Hope, 1994).

One potential means of implementing an intelligence-led approach to reducing alcohol-related harms involves the collection of intelligence information regarding the 'last place of alcohol consumption' of people involved in incidents (Wood et al 1995; Lang et al 1991, Gruenewald et al 1999). Through such information collection, associations between incidents and excessive alcohol consumption in specific locations are able to be identified, enhancing the capacity of police to appropriately focus subsequent responses on high-risk locations.

A continuum of actions is available to police to reduce alcohol-related harms associated with licensed premises. The actions range from the provision of information to groups of licensees, to actions with individual licensees that include the provision of educational advice and guidance, the conduct of premises walkthroughs and audits, the deployment of drink-driving prevention initiatives, the issuing of infringement notices, the undertaking of formal proceedings, and the imposition of penalties including changes to operating conditions.

An intelligence-based approach using 'last place of alcohol consumption data' has previously been applied to aid the deployment of drink-driving prevention initiatives (Lang et al 1991, Gruenewald et al 1999). A similar opportunity exists for such intelligence information to be used in the low cost delivery of information and guidance to licensees. Such an opportunity is supported by theory and evidence that suggest that the provision of information and performance feedback can be effective in changing individual and organisational behaviours (Green & Kreuter 1991, Homel 1988). By providing intelligence information to licensees regarding incidents reported to follow the consumption of alcohol on their premises, the potential exists to improve licensee compliance with licensing laws (Wood et al 1995, Burns et al 1995, Homel et al 1998, Conway & McTaggart 2002). The provision of intelligence information in this manner has the additional benefit of procedural fairness in that licensees are given the opportunity to rectify service and management deficits in a non-punitive environment (Makkai & Braithwaite 1994). The provision of such information also serves to demonstrate to licensees the capacity of police to detect non-compliance, and includes an implied threat of punishment, a threat shown to be effective in reducing alcohol-related crime (Campbell & Greed 1997).

1.4 Purpose of the report

This report describes the adoption and effectiveness of a program designed to enhance the recording of alcohol intelligence information by police and, through the application of such information, to reduce the number of alcohol-related incidents responded to by police (the Alcohol Linking Program). The report commences with a description of the program rationale, aims and objectives. A summary of the findings of previously conducted program feasibility, efficacy and acceptability studies follows.

The strategies used to implement the program into the practice of all police in New South Wales, Australia are then described, as are the findings of an evaluation of the effectiveness of this implementation. The report concludes with a discussion of the evaluation findings and the implications for future alcohol harm reduction practice and research.

2 Program Aim and Objectives

The aim of the Alcohol Linking Program was to reduce incidents of alcohol-related crime through the achievement of two objectives:

1 Implementation of an intervention to improve police recording of alcohol intelligence information (Data Recording Intervention) (Figure 1).

2 Police delivery of an educational intervention to licensees (Premises Intervention) (Figure 1).

3 Program Interventions

3.1 Data Recording Intervention

The Data Recording Intervention was designed to enhance police recording of the alcohol intelligence information regarding the alcohol consumption characteristics of people involved in incidents. All operational police were required to collect and record up to four items of information regarding each person involved in an incident:

- ***Item 1***: Whether the person involved had consumed alcohol prior to the incident occurring, based upon either direct observation or questioning at the scene of the incident

- ***Item 2****:* For those persons identified as having consumed alcohol prior to the incident, their level of intoxication, based on a police assessment of behavioural indicators (Chesher et al, 1989, Teplin and Lutz, 1985)

- ***Item 3****:* For those persons identified as having consumed alcohol prior to the incident, their reported last place of alcohol consumption.

- ***Item 4****:* For those persons reporting to have consumed alcohol on a licensed premises, the reported name and address of that premises.

3.2 Premises Intervention

The Premises Intervention was designed to provide police with a relatively low cost mechanism for providing information and educational feedback to licensees. The intervention involved all licensed premises receiving at least one of three types of intelligence-based educational police response:

- **Letter:** A letter from police that informed the licensee of the alcohol intelligence information system (the Data Recording Intervention), and that intelligence reports relating to their premises may be forthcoming. The letter further suggested that the licensee consider reviewing their responsible service and management practices.

- **Letter and Report:** The above letter, together with a report that provided details of all incidents over a defined period that involved persons who reported the premises to be their last place of alcohol consumption. The report included the date and time of incidents, the incident type, the sex and age of the person(s) involved, and their recorded level of intoxication.

- **Letter, Report and Audit/feedback:** The above letter and report, together with the conduct by police of an audit of the premise's responsible service of alcohol and management practices (Daly et al, 2002), followed by feedback from police regarding the results of the audit, recommended changes in management practices, and the provision of advice.

Allocation of a licensed premises to a type of police response was a function of its recorded association with people involved in incidents (e.g. number of people associated over a specified period of time). The level of association that warranted allocation to a particular type of response was a function of various contextual factors such as the overall level of alcohol-related harm in an area, and the resource capacity of police to support the intervention. The period over which intelligence information data is analysed to determine the level of association, and the frequency of delivery of the intervention (e.g. one-off, periodic basis, ongoing) can also be varied according to local factors.

The manner in which the Premises Intervention was delivered in the adoption of the Program by New South Wales Police is described in Sections 5 and 6 of this report.

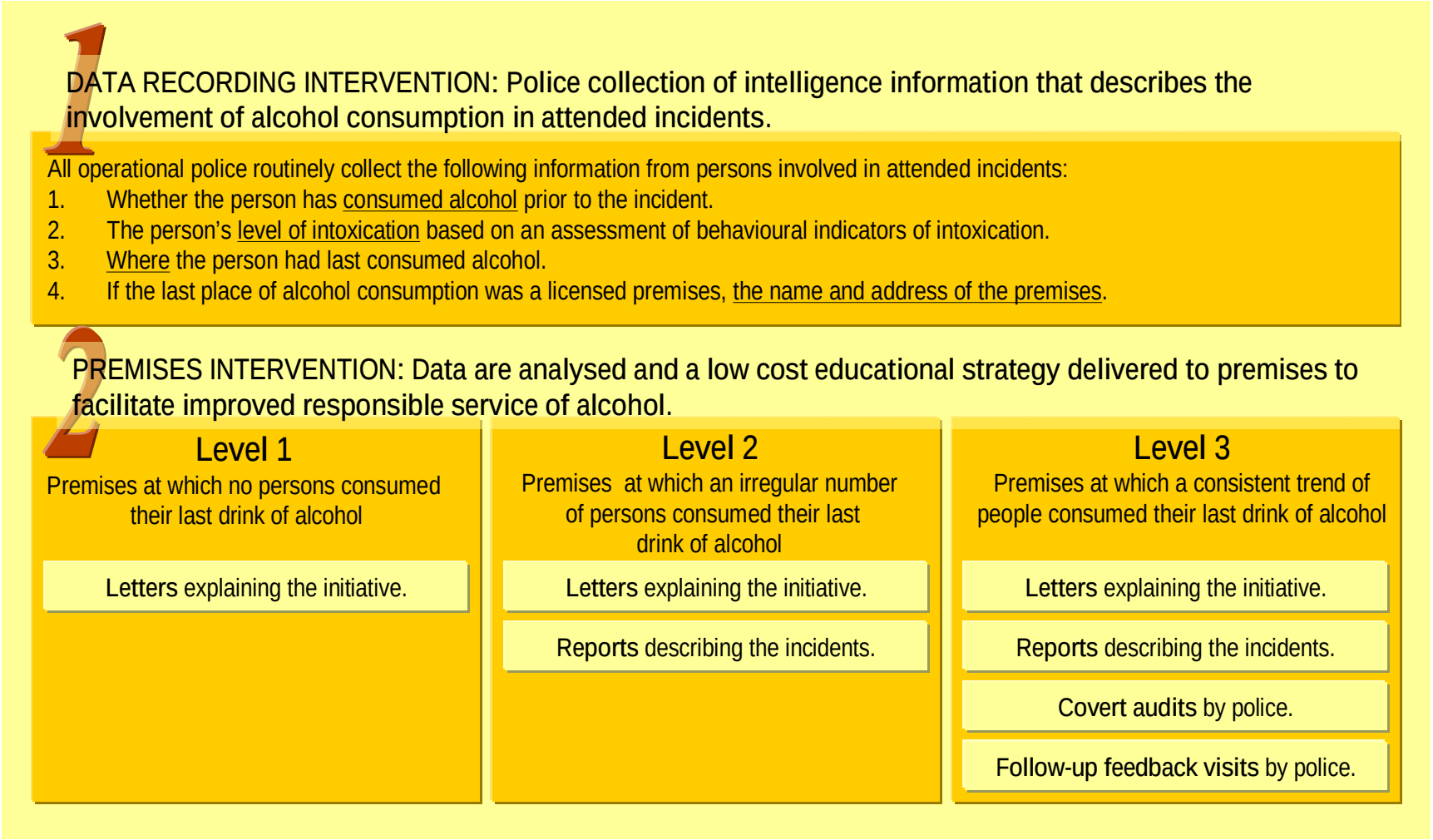


Figure 1: Components of the Alcohol Linking Program

4 Program Research and Development

A number of research and development initiatives were undertaken prior to the incorporation of the Program into New South Wales Police practice to determine its feasibility, efficacy and acceptability. The results of these initiatives are summarised below.

4.1 Feasibility of data recording

As the Program was founded on police collection and recording of intelligence information, an assessment of the feasibility of such collection and recording using non-routine police data collection and recording processes was undertaken over a 6 month period in one police command. The results indicated that the data were able to be collected by police, and were able to be collated and analysed such that an association could be made between people involved in incidents and their reported prior consumption of alcohol on a licensed premises.

4.2 Efficacy of the premises intervention

The efficacy of the Premises Intervention in reducing alcohol-related crime was subsequently assessed in a randomised controlled trial involving 398 hotels, registered clubs and nightclubs (Wiggers et al 2004). Half of the premises were randomly allocated to receive the Premises Intervention, and half received normal policing practices.

The alcohol intelligence information was recorded by police using non-routine data collection, recording and analysis processes (i.e. a project specific recording card and computer software). Each premises allocated to receive the Premises Intervention received on one occasion, either the letter if they had no recorded association with a person involved in an incident in the preceding four months period, or the letter, report and audit/feedback combined if at least one person was associated with the premises in the preceding four month period.

Over a 3-month follow-up period, alcohol-related incidents associated with premises receiving the Premises Intervention declined by 36%, compared with a 21% decline for those premises that did not.

4.3 Acceptability of the program

To assess the acceptability of the Program, surveys were conducted with police (n=298), licensees (n=239) and a randomly selected sample of households (n=864) in the Hunter Valley Region. Two-thirds or more of police respondents considered the approach to be acceptable, appropriate and more effective than conventional enforcement approaches in increasing licensee compliance (Smith et al 2001). Almost all licensees (92%) found the audit visit acceptable, and approximately half found the feedback report and police audit useful in aiding the modification of their service practices. Approximately three-quarters of the community sample indicated that police adoption of an educational policing approach was acceptable.

5 Incorporation of the Alcohol Linking Program into New South Wales Police practice

5.1 Adoption of innovations into practice

The likelihood of a new initiative being successfully incorporated into the routine practice of a service delivery organisation has been suggested to be a function of a number of determinants (Holder et al 1999, Nutbeam 1996, Haines & Jones 1994, Berwick 2003, Glasgow et al 2003, Green & Johnson 1996, Johnson et al 1996, Orlandi 1996, Potvin 1996, King et al 1996, Crosswaite & Curtis 1994). Diffusion of innovations theory suggests for example, that the likelihood of an innovation being successfully adopted is influenced by its design being perceived by the user to be of benefit, and its perceived simplicity, compatibility, and cost of use (Orlandi 1986). In addition, the capacity for an innovation to be applied in a flexible manner in order to accommodate agency and local circumstances is suggested to be an important determinant of successful adoption into practice (Orlandi). Similarly, it is proposed that an innovation is more likely to be adopted if it addresses limitations of existing service delivery practice (Dash 2003), and hence is more likely to be accepted by both service providers and clients.

Behavioural and organisational change evidence further suggests that successful adoption of an innovation by an organisation requires a multi-strategic organisational change approach that addresses a number of determinants of professional behaviour. Such determinants are suggested to include organisational leadership and support for the innovation, availability of enabling systems, adequate staff skills, and existence of supportive performance management procedures (Green & Kreuter 1991, Moulding et al 1999, Oxman et al 1995, Hulscher et al 2003) (Barton and Evans, 1999; Doherty & Roche, 2003; Fowler et al, 2000; Leigh et al, 1998; Scott, 2000).

The implementation of an organisational change program can require a considerable investment of resources over and above those required for routine service delivery. As a consequence, the capacity of existing service delivery staff and systems to successfully adopt innovations at the same time as maintaining service delivery standards is suggested to be limited (Berwick 2003). Additional resources, independent of funds allocated to routine service delivery, are therefore suggested to be required to support the implementation of a new service delivery initiative if sustainable adoption of an innovation is to occur.

To maximise the likelihood of a successful incorporation of the Alcohol Linking Program into the practice of New South Wales Police, the Program procedures were integrated into existing police systems and processes rather than introduced as a separate process. Various strategies were developed to achieve this outcome and were implemented as an adoption model. The model involved three elements: Design of the interventions; Organisational change strategies; and Provision of adoption resources. The specific strategies that were implemented for each of these elements are described below and summarised in Box 1.

5.2 Design of the interventions

To facilitate the incorporation of the Data Recording and Premises Interventions into ongoing police practice, both interventions were designed from the outset to contribute to the crime reduction objectives of police, rather than alcohol or health

improvement outcomes alone. In addition, the interventions were designed to address identified barriers to police enforcement of licensed premises, to value-add to existing police systems and procedures, and to minimise the extent of additional tasks required of police. For example, the amount of information required to be collected and recorded in the Data Recording Intervention was restricted to a maximum of four items. These items addressed information commonly collected by police, but not recorded in a mandated and readily retrievable fashion. The Premises Intervention was similarly designed to be relatively low cost (mailed letters and reports), to systematise existing police practices (premises audits, walk throughs), and able to be applied in a flexible manner in the context of variable need, police resource capacity, and other factors.

The two Program interventions were designed, developed and implemented in collaboration with police to enhance their operational relevance and feasibility. In addition, an advisory group, consisting of members of New South Wales Police, industry organisations and individual hotel licensees and club managers oversaw the initial development of the two Program interventions.

5.3 Organisational change strategies

Based upon behavioural and organizational change evidence and theories (Green & Kreuter 1991, Moulding et al 1999, Oxman et al 1995, Hulscher et al 2003), and their application to policing practice (Barton and Evans 1999, Doherty & Roche 2003, Fowler et al 2000, Leigh et al 1998, Scott 2000), a multi-strategic approach to achieving the behavioural, system and procedural changes was developed. The approach involved four separate types of organisational change strategies. The strategies and how they were operationalised during the implementation of the Program are described below.

5.3.1 Establishment of organisational leadership support

The adoption of the Program was formally endorsed by the New South Wales Police Commissioner. An Alcohol-Related Crime team, together with a monitoring committee was established within New South Wales Police to oversee the initiative. Within New South Wales Police, implementation of the Program was led by the Police Spokesperson for Alcohol-related Crime (Assistant Commissioner).

Formal police approvals were obtained regarding the data access, training and legal implications of the Program and adoption strategies.

Prior to the incorporation of the Program into New South Wales Police practice, the support of industry peak organisations (Australian Hotels Association, Clubs NSW) for the Program was obtained. Ongoing consultation between these organisations and New South Wales Police continued throughout the adoption initiative.

***Box 1*: Adoption Model**

1 Design of the Interventions

- Focus on police organisational goals of crime reduction and intelligence-led policing
- Focus on addressing identified barriers to police enforcement of licensed premises
- Value-adding to existing police tasks and procedures
- Limited additional time/task demands for police
- Ability to be implemented in a flexible manner

2 Organisational Change Strategies

- Establishment of organisational leadership support
  - Advocacy to key internal and external stakeholders
  - Endorsement/leadership by senior police
  - Formal agreements for Program procedures
- Enhancement of information systems/procedures
  - Modification of IT infrastructure
  - Implementation of standard operating procedures
- Enhancement of Program awareness, knowledge and skills among police
  - Provision of multiple modality training
  - Provision of adoption support to police
  - Dissemination of promotional materials
- Implementation of Program performance monitoring and feedback processes
  - Provision of regular performance feedback against agreed benchmarks

3 Provision of Adoption Resources

- Provision of staff in police facilities to support implementation
- Provision of a central implementation management team

5.3.2 Enhancement of information systems/procedures

Modification of IT infrastructure

As part of their normal duties, all operational police in New South Wales routinely enter incident information into an existing state-wide computer database (Computerised Operational Policing System ("COPS")). Given the information collection and retrieval focus of the Program, modification of this database represented the most feasible means of enabling all police in the state to efficiently record and extract the required Program intelligence information.

To achieve the first Program objective, a number of changes were made to the COPS database. First, prior to the adoption of the Program, the COPS database did not support the mandated recording of whether each person involved in an incident had consumed alcohol prior to the incident occurring. The COPS database did however allow police to record, at their discretion, whether an incident was 'alcohol-related'. The decision as to what constituted an incident being 'alcohol-related' was left to individual police judgement.

Second, prior to the adoption of the Program, the COPS database did not require for each person involved in an incident, the mandated recording of information regarding their level of intoxication, last place of alcohol consumption, or the name and address of a licensed premises if such a premises was their last place of alcohol consumption. Police had however, the option of recording such information in narrative form.

To address these limitations, the COPS database was modified to enable recording of the four Program alcohol intelligence information items for each person involved in an incident.

With respect to the second Program objective, to address limitations in the capacity of police to readily retrieve recorded information from the COPS database, a series of automated report templates were developed. The templates provided police with summary data for the local area, and the reports to be sent to licensed premises.

An Excel-based software application (Alcohol Intelligence Program) that interfaced with the COPS database was subsequently developed to allow police at the local level to more readily generate the summary data and reports. This application was subsequently replaced by equivalent changes to the state-wide police Electronic Data Warehouse system, the system through which New South Wales Police routinely undertake analysis of COPS data.

In addition, given their focus on those premises with the strongest association with people involved in incidents, and the greater level of intervention intensity, later in the adoption initiative further changes were made to the COPS database to enable the routine recording of police audits that were undertaken as a consequence of the Premises Intervention.

Implementation of standard operating procedures

Protocols were developed to provide guidance to police regarding the collection, entry and analysis of the required intelligence information. The collection and recording in COPS of the four alcohol intelligence information items was made mandatory.

Prior to the Program, the processes used by police to determine when a premises walkthrough or audit would be conducted varied between police units, as did the procedures used when conducting such activities. To implement an intelligence-based and standardised approach to the conduct of such activities, protocols and tools were developed to facilitate both the decision-making and the conduct of premises audits. Officers who undertook the audits used a standard auditing tool developed for the Program (Daly et al, 2002).

5.3.3 Enhancement of program awareness, knowledge and skills among police

At the introduction of the Data Recording Intervention in each area, operational police were provided with training that addressed the rationale of the Program, and the procedures for data collection and subsequent recording in the COPS database. A comprehensive learning package (in manual and electronic forms) was developed and distributed. Regular provision of feedback regarding the uptake of the data recording requirements was provided to police, as were details of the newly available intelligence information.

The training and support provided to all operational police regarding the data collection and recording requirements was delivered using the following modalities:

- Training by police Education and Development Officers during Program specific or routinely scheduled training days.
- Duty officer delivery of short 'refresher' training during shift changeovers.
- Training by Program staff.
- Inclusion in Alcohol-Related Crime training mandated by the New South Wales Police Commissioner for all police (one-day training incorporating half a day devoted to the Alcohol Linking Program).
- Training of recruits at Police College, Goulbourn.
- Dissemination of an Alcohol Linking Program Resource Kit that contained the following documents:
  - 'The Alcohol Linking Program: Recommended Procedures Manual'
  - 'Checking for unauthorised locations: recommended procedures'
  - 'Responsible hospitality checklist' and resources
  - 'Frequently asked questions'
  - Policing Issues and Practice Journal article: 'Alcohol-related crime'
  - 'Liquor Accords: Local solutions for local problems' (Department of Gaming and Racing)
- Alcohol Linking Program intranet/internet site
- Internal police Alcohol Linking Program email helpline

In addition, promotional materials were developed and distributed to support the adoption initiative, and to prompt adherence to the Program procedures. Materials developed for this purpose included brochures, mouse mats, posters, mugs, police notebook covers and prompt cards, pens, and magnets.

At the introduction of the Premises Intervention in each area, training in the retrieval of intelligence information, the dissemination of feedback reports to licensees/managers, and the conduct of premises audits and feedback was provided by Program staff to Crime Managers, Intelligence and Licensing Officers.

5.3.4 Implementation of program performance monitoring and feedback processes

Monthly "performance reports" were produced and forwarded as feedback to senior police and supervisors to enhance adherence to the Data Recording Intervention procedures. The reports included comparison of police data recording performance against agreed benchmarks, and between Local Area Commands.

5.4 Provision of adoption resources

Program staff were employed and located within regional police facilities to support the implementation of the Program and its adoption strategies. In addition, a central team of staff (manager, project officers, statisticians and data managers) were employed to oversee the implementation of the Program and its incorporation into policing practice.

6 Implementation of the program and adoption strategies

Where empirical evidence of an intervention is limited, pilot studies are suggested to be an appropriate initial step that allows an assessment of the critical elements of an intervention before proceeding to formal implementation and effectiveness testing (Marcus et al, 2007). In this context, implementation of the Program into routine police practice was initially undertaken as a pilot in a selected non-metropolitan area of New South Wales. Based on the findings of this pilot, the New South Wales Government directed that the Program be incorporated into the routine practice of all remaining police across New South Wales (NSW Government 2004). The Program was implemented in the remainder of the state in 2 stages.

As the Program and adoption strategies that were applied in the pilot and subsequent state wide implementation were the same, this report involves a description of the implementation and evaluation of the Program across the entire state, incorporating both the pilot and subsequent areas. The sequence of Program implementation was as follows (Figure 2):

- *Area 1 (Pilot): Western and Central NSW*
  Twenty one Local Area Commands in western and central New South Wales involving 1,413 licensed premises (2002-2003).

- *Area 2: North and South Coast*
  Three Local Area Commands on the north and south coasts of New South Wales involving 843 licensed premises (2003-2004)

- *Area 3: Metropolitan Sydney*
  Forty six Local Area Commands in Sydney involving 1,609 licensed premises (2004-2005).

6.1 Implementation of the program interventions

Within each of the three areas, the Data Recording Intervention was implemented first, followed by the Premises Intervention (Figure 3).

Two rounds of Premises Intervention were undertaken in Areas 2 and 3. Area 1 included an additional partial intervention round (1a) (Letter and Report only). The total length of time over which the Premises Intervention was delivered in each area varied between 6 and 8 months.

Licensed premises were allocated to receive one of the three types of educational police response. In each area the allocation was undertaken separately for each round of the Premises Intervention.

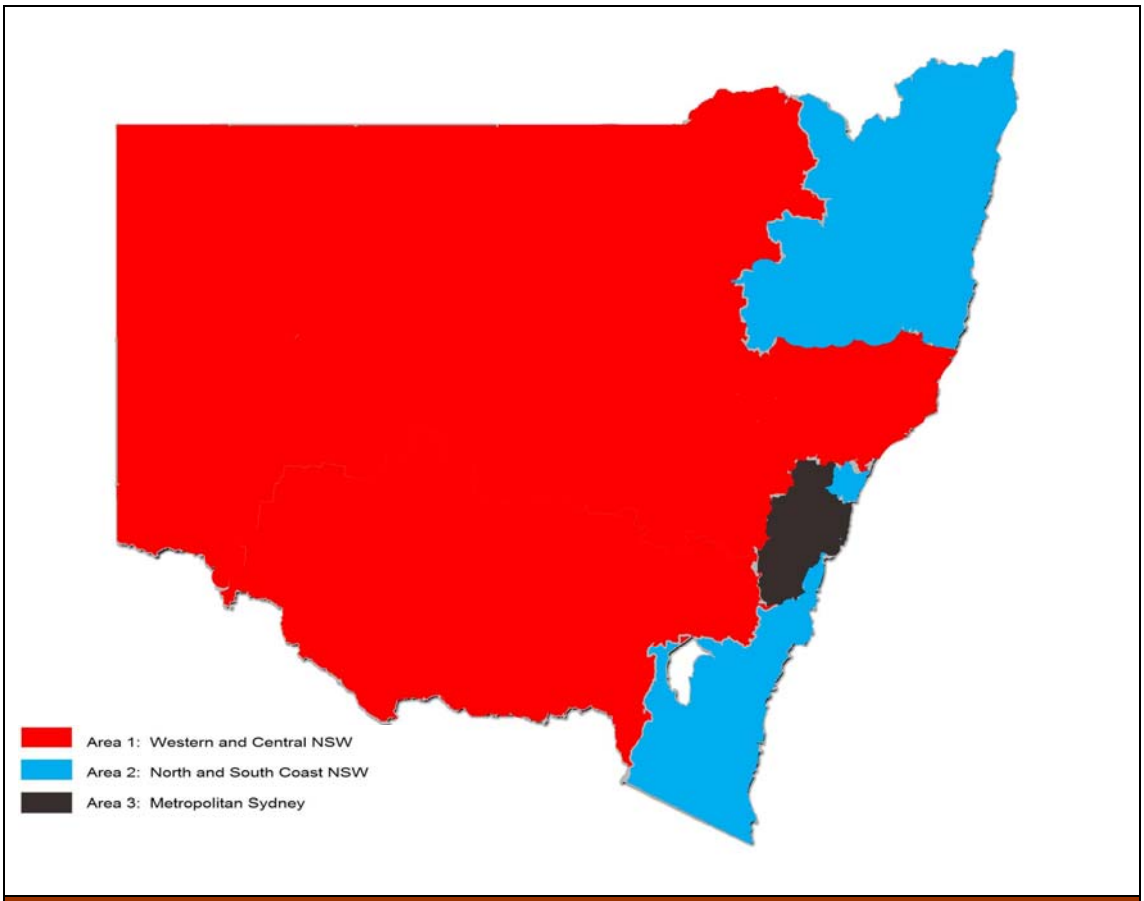


Figure 2: Implementation of Program and adoption model

The allocation of a premises to a type of police response was based on the extent to which intoxicated people involved in attended incidents were recorded by police to have consumed alcohol on the premises, and the resource capacity of police to undertake audits of premises. Incidents that occurred in the 6 months preceding each intervention round were used as the basis for the allocation of premises to a type of

police response in Areas 1 and 2, whilst incidents that occurred in the preceding 4 months were used to allocate premises to a type of police response in Area 3.

Based on the above, each premises was allocated to receive a type of educational police response according to the following criteria:

- **Level 1 (letter)**: Those premises that were not reported as the last place of alcohol consumption by any intoxicated person involved in an incident in the months preceding the intervention.

- **Level 2 (letter and report)**: Those premises that were reported to be the last place of alcohol consumption by intoxicated people involved in at least one incident in the months preceding the intervention.

- **Level 3 (letter, report and audit/feedback)**: Those premises that were reported to be the last place of alcohol consumption by intoxicated people involved in incidents in the majority of months preceding the intervention.

6.2 Implementation of the adoption strategies

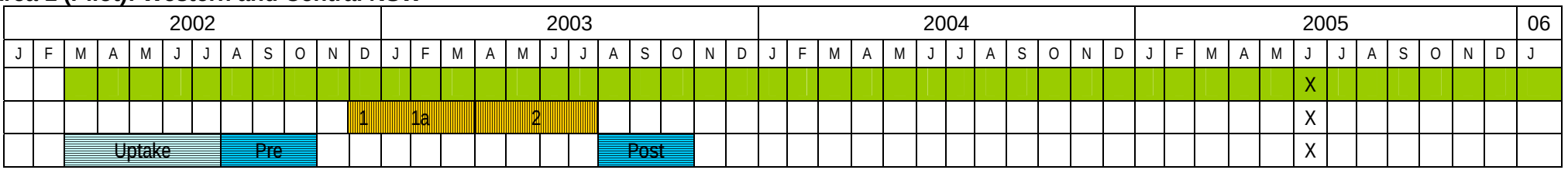
The adoption model was applied by the Program implementation team in full in Areas 1 and 2. In Area 3, the model was implemented by the team with fewer resources. The adoption model was varied in Area 3 to maximize the likelihood of a successful transfer of Program management to New South Wales Police at the completion of the adoption initiative. The altered approach to implementing the model, and the reduced allocation of resources involved a number of actions being undertaken.

First, in 2003 a full-time police officer was seconded to the New South Wales Police Drug and Alcohol Coordination Unit to oversee the ongoing implementation of the Program. A New South Wales Police monitoring committee was established to provide an oversight role.

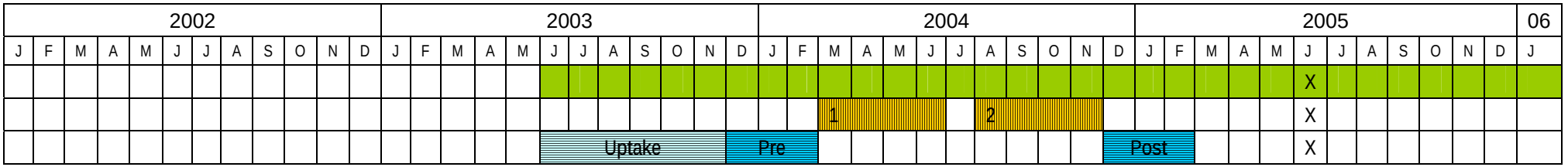
Second, in December 2004, the Program team developed a plan for the transfer of the Program to police. Following approval of the plan in early 2005, the activity of Program staff shifted from a Program adoption role to one of progressively transferring responsibility for these tasks to New South Wales Police staff.

Third, compared to Areas 1 and 2, relatively fewer Program staff located in police facilities were recruited to support the adoption of the Program in Area 3. Finally, a progressive reduction in the number of such Program staff occurred throughout the adoption period in Area 3. This process culminated in full responsibility for management of the Program implementation and adoption being handed over to New South Wales Police on June 30 2005 (Figure 3). As a consequence, delivery of the second round of the Premises Intervention in Area 3 was managed by police staff alone. An additional police officer was seconded to the Drug and Alcohol Coordination Unit to support the completion of the Program's adoption in Area 3.

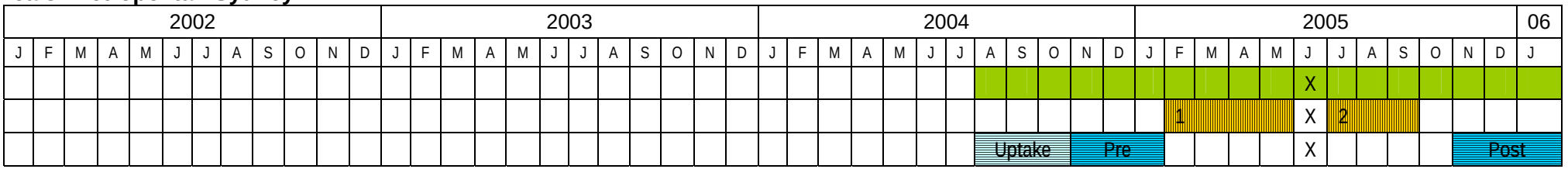
Area 1 (Pilot): Western and Central NSW



Area 2: North and South Coast NSW



Area 3: Metropolitan Sydney



Data Recording Intervention
Evaluation of Premises Intervention: Pre and Post data periods

Premises Intervention
Evaluation of Premises Intervention: Data recording 'uptake' period

X – Handover of Program to New South Wales Police

Figure 3: Program implementation and evaluation timeline

7 Effectiveness of the data recording intervention

7.1 Methods

Design

A stepped wedge, multiple baseline study (Biglan 2000) involving the three geographic areas was used to determine the impact of the Data Recording intervention. Police recording in the COPS database of the four items of intelligence information during the adoption initiative were the outcome measures of interest. Repeated measurement of police recording of such information occurred continuously for up to 46 months following the implementation of the intervention.

Sample and Measures

The effectiveness of the intervention was assessed by determining the proportion of people that were involved in incidents for whom the intelligence information was recorded. The four outcome measures were:

1 *Prior alcohol consumption:* the proportion of people involved in incidents whose prior alcohol consumption status was recorded as Yes or No.

2 *Intoxication status:* the proportion of people who were recorded to have consumed alcohol prior to the incident whose level of intoxication was recorded by police as either 'Not', 'Slightly', 'Moderately', 'Well' or 'Seriously' affected. Those who were 'Moderately', 'Well' or 'Seriously' affected were considered to be 'intoxicated'.

3 *Last place of alcohol consumption:* the proportion of people who were recorded to have consumed alcohol prior to the incident whose last place of alcohol consumption was recorded as either 'Licensed premises', 'Home/private residence', 'Non-licensed restaurant/café', 'Public place' or 'Other'.

4 *Name and Address of Licensed Premises:* the proportion of people who were recorded to have consumed alcohol on a licensed premises for which the name and address of the premises was recorded.

The recording of the above intelligence information was assessed for two categories of people. First, those people involved in one of 32 incident categories (of a total possible of 77 categories) for which the definitions remained unchanged throughout the adoption initiative (Table 1), and second, for those people involved in an assault incident. Assault incidents were selected as an outcome measure given evidence of the strong association between their occurrence and alcohol consumption. In addition, evidence suggests that the number of such incidents is less likely to be influenced by changes in policing practice (English et al 1995, Giesbrecht & Nesbitt 2001, Stockwell 1994, Matka 1997).

Analysis

Each measure was calculated on a monthly basis following the implementation of the intervention in each area. As the COPS database and procedures did not support the mandatory recording of the four Program intelligence information items before the intervention was implemented, no comparable data were available for the pre-intervention period. As a consequence, baseline levels of police recording of the four measures of intelligence information were considered to be zero.

Table 1: Incident Categories included in analysis

Assault	Domestic Violence – No Offence
Breach AVO	Fire Breach
Break and Enter	Goods in custody Receiving
Emergency and Disaster	Liquor Registered Club Act
Emergency & Disaster/Marine	Located Person
Fire – Non Breach	Lost property
Firearm Offences	Malicious Damage
Gaming	Miscellaneous
Homicide	Missing Person
Intention Offence	Offence Against Person Other
Prohibited Article/Weapon	Person Violence
Public Mischief	Resist/Hinder Assault Officer
Sexual Offence/Other	Robbery
Suicide/Self Harm	Sexual Offence/Assault
Threats against Police	Stealing
Vice	Stolen Vehicle/Vessel

Following the implementation of the intervention, recording in the COPS database of the intelligence information for each measure is reported for two time periods:

- the first full month following the implementation of the Data Recording Intervention in each area.
- the mean monthly proportion of people from the first full month after the implementation of the intervention to January 2006 inclusive. That is, for Area 1, from April 2002 to January 2006 inclusive (46 months); for Area 2, from July 2003 to January 2006 inclusive (31 months); and for Area 3, from September 2004 to January 2006 (17 months).

To demonstrate the ability of the Data Recording Intervention to provide intelligence information of relevance to policing practice, the proportions of people with each of the alcohol intelligence characteristics are described.

7.2 Results

7.2.1 Prior alcohol consumption

32 Incident categories

In the 46 months following the implementation of the Data Recording Intervention in Area 1 (Pilot), 538,020 people were recorded as being involved in the 32 incident categories. For Area 2 and Area 3, the number of such people was 334,651 and 428,473 respectively.

In the first full month following the commencement of the intervention, the proportion of such people for whom prior alcohol consumption information (Yes or No) was recorded was 80% (Area 1), 78% (Area 2), and 84% (Area 3) (Figure 4).

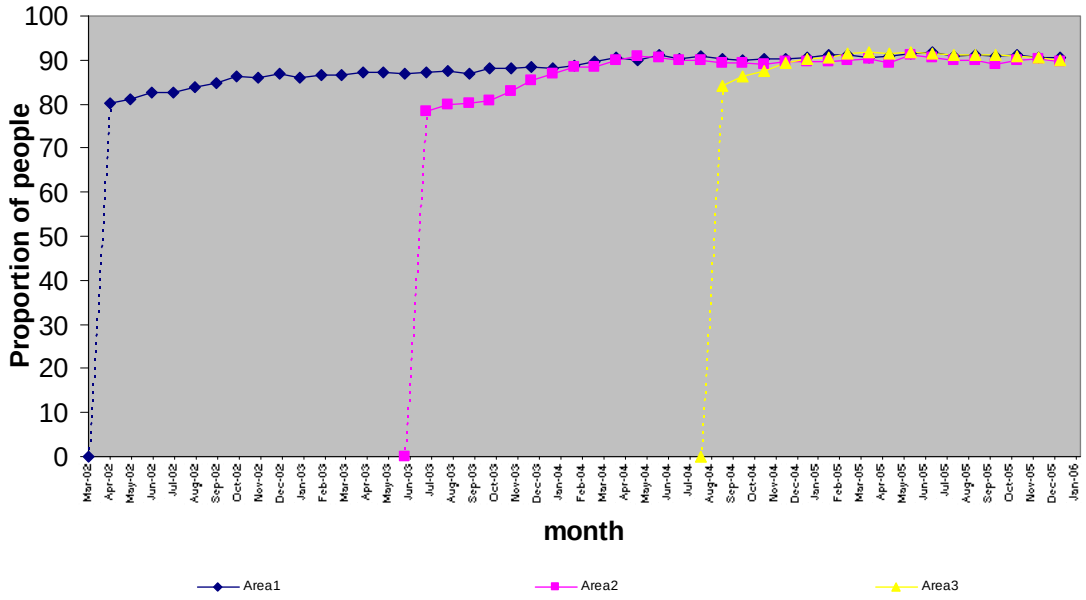


Figure 4 Recording of prior alcohol consumption for people involved in one of the 32 types of incidents

From the first full month after commencement of the intervention, until January 2006, the mean monthly proportion of people involved in the 32 incident categories for whom prior alcohol consumption information was recorded was 88% (S.D. 2.9%)(Area 1), 88% (S.D. 3.6%)(Area 2), and 90% (S.D. 2.2%)(Area 3).

Based on these data, from the first full month following the commencement of the intervention until January 2006, the mean monthly proportion of people involved in the 32 incident categories who were recorded as having consumed alcohol prior to the incident was 20% (S.D. 1.6%)(Area 1), 19% (S.D. 1.5%)(Area 2) and 14% (S.D. 1.0%)(Area 3).

Incidents from these 32 categories that involved at least one person who was recorded to have consumed alcohol prior to the incident are referred to throughout the remainder of this report as ‘alcohol-related incidents’.

Assaults

In the 46 months following implementation of the Data Recording Intervention in the Area 1 (Pilot), 126,048 people were recorded as being involved in assaults. For Areas 2 and Area 3, the number of such people was 73,752 and 91,832 respectively.

In the first full month following the commencement of the intervention, the proportion of such people for whom prior alcohol consumption information (Yes and No) was recorded was 83% (Area 1), 79% (Area 2) and 86% (Area 3) (Figure 5).

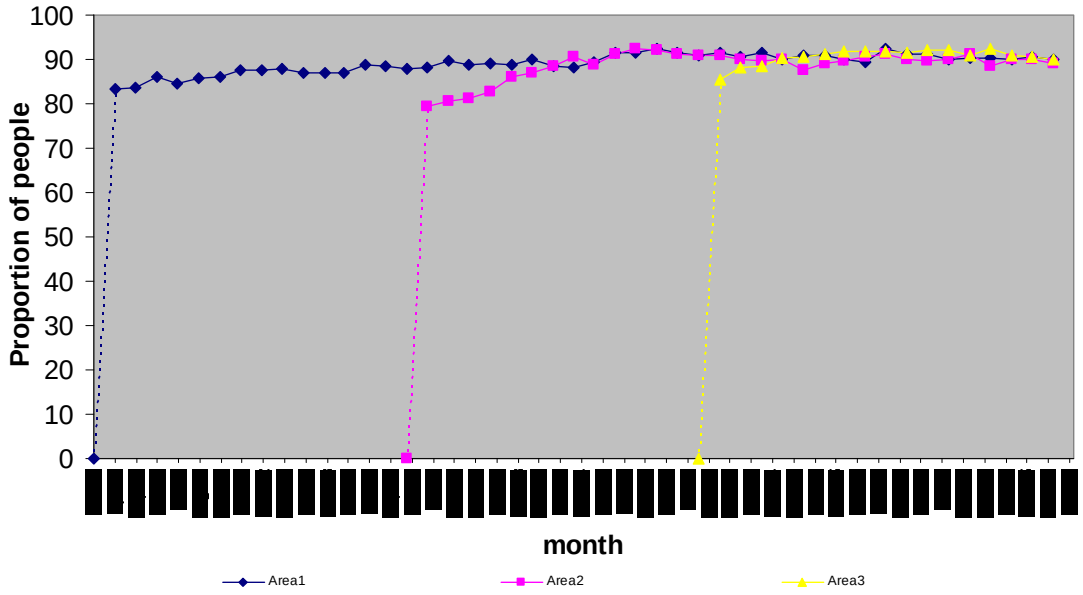


Figure 5 Recording of prior alcohol consumption for people involved in an assault

From the first full month after commencement of the intervention, until January 2006, the mean monthly proportion of people involved in assaults for whom prior alcohol consumption information was recorded, was 89.1% (S.D. 2.2%)(Area 1), 89% (S.D. 3.4%)(Area 2) and 91% (S.D. 1.8%)(Area 3).

Based on these data, from the first full month after the commencement of the intervention until January 2006, the mean monthly proportion of people involved in assaults who were recorded as having consumed alcohol prior to the incident was 34% (S.D. 2.3%)(Area 1), 32% (S.D. 2.5%)(Area 2) and 26% (S.D. 1.7%)(Area 3).

Incidents of assault that involved at least one person who was recorded to have consumed alcohol prior to the incident are referred to throughout the remainder of this report as ‘alcohol-related assaults’.

7.2.2 Intoxication status

Alcohol-related incidents

For the first full month following the implementation of the Data Recording Intervention, the proportion of people involved in alcohol-related incidents for whom the level of intoxication was recorded, was 100% in each of the three areas.

From the first full month after the commencement of the intervention, until January 2006, the mean monthly proportion of such people in each Area for whom the level of intoxication was recorded was 100%.

Based on these data, from one month after the commencement of the intervention until January 2006, the mean monthly proportion of people involved in alcohol-related incidents who were recorded as being intoxicated was 71% (S.D. 1.5%)(Area 1), 70% (S.D. 1.7%)(Area 2) and 66% (S.D. 1.1%)(Area 3).

Alcohol related Assaults

For the first full month following the commencement of the Data Recording Intervention, the proportion of people involved in alcohol-related assaults for whom the level of intoxication was recorded was 100% in each of the three areas.

From the first full month after the commencement of the intervention, until January 2006, the mean monthly proportion of such people in each Area for whom the level of intoxication was recorded was 100%.

Based on these data, from the first full month after the commencement of the intervention until January 2006, the mean monthly proportion of people involved in alcohol-related assaults who were recorded as being intoxicated was 71% (S.D. 2.0%) (Area 1), 70% (S.D. 1.7%) (Area 2) and 69% (S.D. 1.1%) (Area 3).

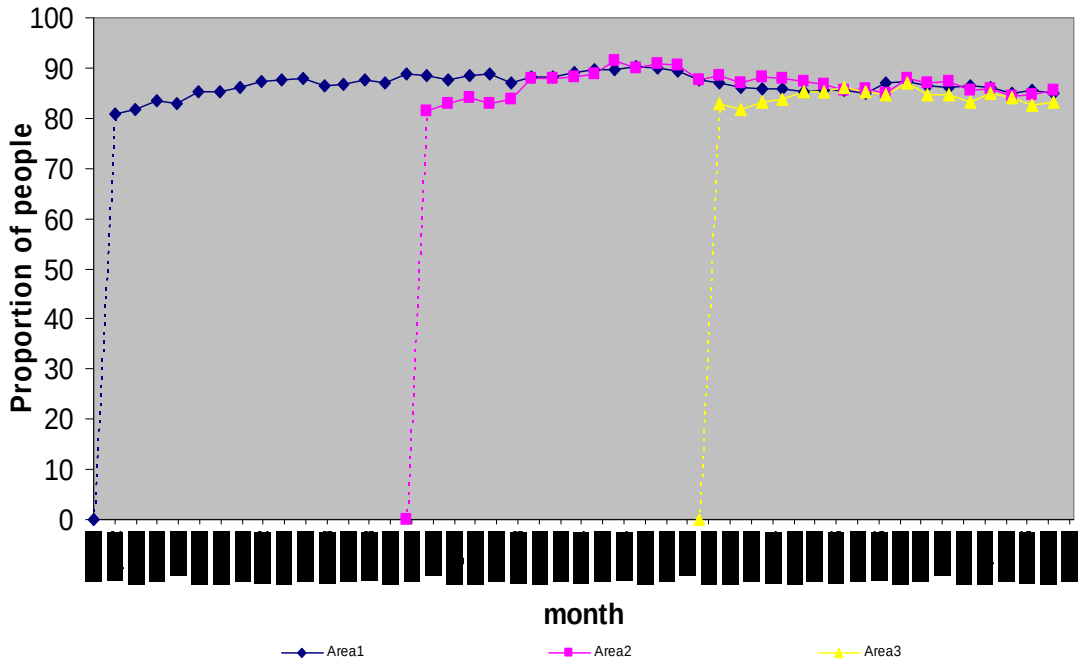


Figure 6 Recording of last place of alcohol consumption for people involved in an alcohol-related incident

7.2.3 Last place of alcohol consumption

Alcohol-related incidents

In the first full month following the implementation of the Data Recording Intervention, the proportion of people involved in alcohol-related incidents for whom information was recorded regarding their last place of alcohol consumption was 81% (Area 1), 81% (Area 2) and 83% (Area 3) (Figure 6).

From the first full month after intervention delivery until January 2006, the mean monthly proportion of such people for whom their last place of consumption was recorded was 87% (SD 2.0%) (Area 1), 87% (SD 2.4%) (Area 2) and 84% (SD 1.4%) (Area 3).

Based on these data, from the first full month after implementation of the intervention until January 2006, the mean monthly proportion of people involved in alcohol-related incidents and who were recorded as having last consumed alcohol on a licensed premises, in a private residence, or in a public place are shown in Table 2. The mean monthly proportion of people last consuming alcohol on licensed premises ranged from 32% (Area 1) to 45% (Area 3).

The mean monthly proportion of people involved in alcohol-related incidents who were intoxicated, by place of last consumption, are shown in Table 2. The mean monthly proportion of such people who last consumed alcohol on a licensed premises and who were intoxicated ranged from 66% (Area 3) to 71% (Area 2).

Alcohol-Related Assaults

In the first full month following the commencement of the Data Recording Intervention, the proportion of people involved in alcohol-related assaults for whom information was recorded regarding their last place of alcohol consumption was 85% (Area 1), 85% (Area 2) and 84% (Area 3) (Figure 7).

From the first full month after intervention delivery until January 2006, the mean monthly proportion of such people for whom their last place of consumption was recorded was 89% (S.D. 2.1%)(Area 1), 89% (S.D. 2.5%)(Area 2) and 85% (S.D. 1.7%)(Area 3).

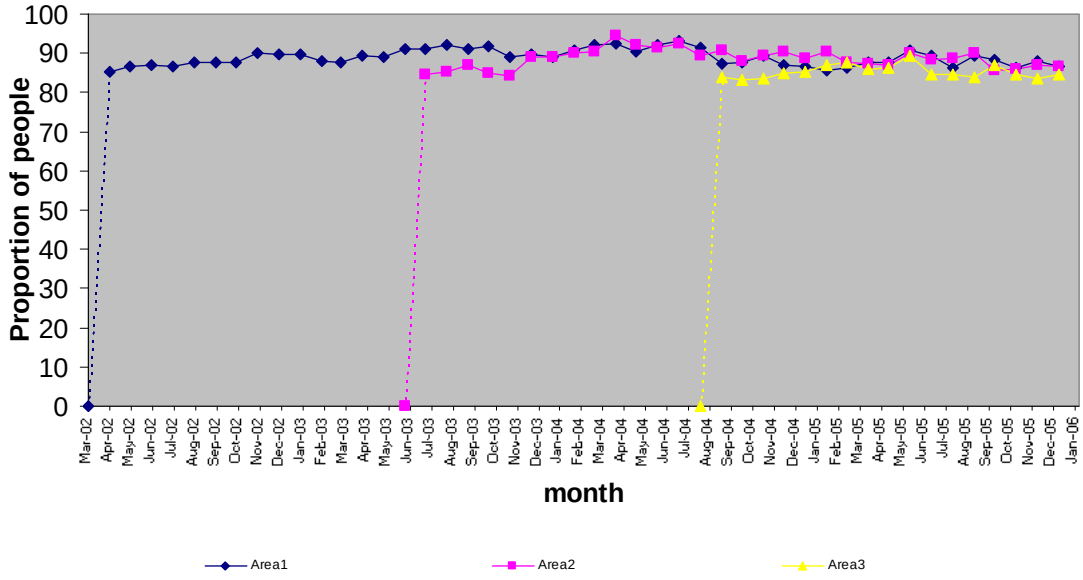


Figure 7 Recording of last place of alcohol consumption for people involved in an alcohol-related assault

Table 2: Reported last place of alcohol consumption of people involved in alcohol-related incidents, and the proportion recorded as intoxicated

Last Place of Consumption	AREA 1 (Pilot)		AREA 2		AREA 3	
	% as last place	% intoxicated	% as last place	% intoxicated	% as last place	% intoxicated
Home / Private Residence	60	71	56	68	47	64
Licensed Premises	32	70	33	71	45	66
Public Place	5	62	9	60	6	58
Other	3	67	2	66	2	61

Based on these data, from the first full month after intervention delivery until January 2006, the mean monthly proportion of people involved in alcohol-related assaults who were recorded as having consumed alcohol on a licensed premises, in a private residence, or in a public place are shown in Table 3. The mean monthly proportion of such people last consuming alcohol on licensed premises ranged from 39% (Area 1) to 53% (Area 3).

The mean monthly proportion of people involved in alcohol-related assaults who were intoxicated, by place of last consumption, are shown in Table 3. The mean monthly proportion of such people who last consumed alcohol on a licensed premises and who were intoxicated ranged from 71% (Area1) to 70% (Areas 2 and 3).

7.2.4 Name and address of licensed premises

Alcohol-related incidents

For the first full month following implementation of the Data Recording Intervention, the proportion of people involved in alcohol-related incidents who last consumed alcohol on a licensed premises and for whom the name and address of the premises was recorded was 93% (Area 1), 96% (Area 2) and 98% (Area 3) (Figure 8).

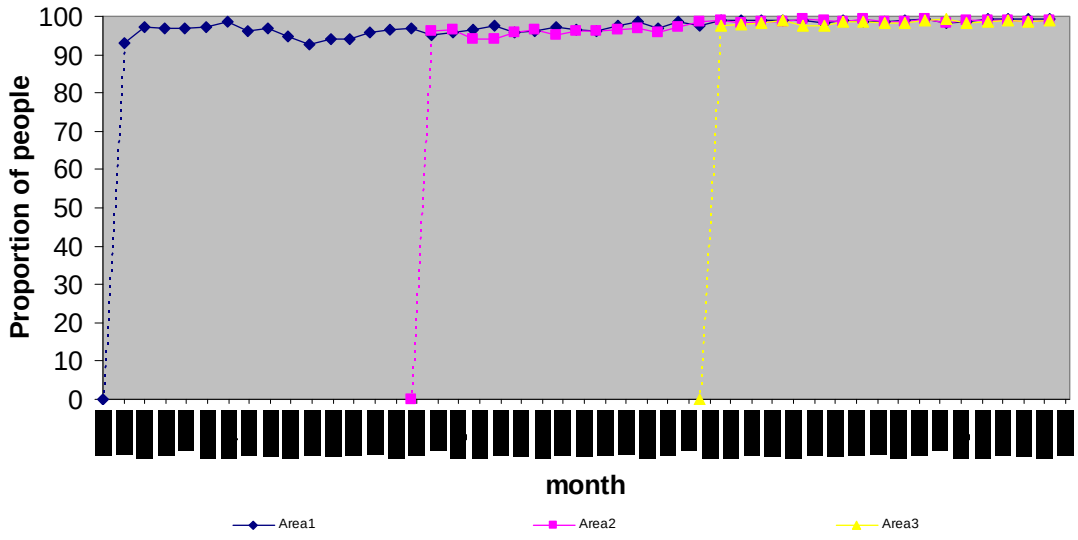


Figure 8 **Recording of the name and address of licensed premises for those people involved in an alcohol-related incident who last consumed alcohol in a licensed premises**.

From the first full month after intervention delivery until January 2006, the mean monthly proportion of such people for whom the name and the address of the premises was recorded were 97% (SD 1.8%)(Area 1), 98% (SD 1.6%)(Area 2), and 98% (0.5%)(Area 3).

Table 3: Reported last place of alcohol consumption of people involved in alcohol-related assaults, and the proportion recorded as intoxicated

Last Place of Consumption	AREA 1 (Pilot)		AREA 2		AREA 3	
	% as last place	% intoxicated	% as last place	% intoxicated	% as last place	% intoxicated
Home / Private Residence	55	70	50	67	40	64
Licensed Premises	39	71	42	70	53	70
Public Place	4	68	6	70	5	68
Other	2	68	2	68	2	65

Alcohol-related Assaults

For the month following implementation of the Data Recording Intervention, the proportion of people involved in alcohol-related assaults who last consumed alcohol on a licensed premises and for whom the name and address of the premises was recorded was 93% (Area 1), 98% (Area 2) and 98% (Area 3) (Figure 9).

From one month after intervention delivery until January 2006, the mean monthly proportion of such people for whom the name and the address of the premises was recorded were 98% (SD 1.9%)(Area 1), 98% (SD 1.6%)(Area 2), and 99% (SD 0.7%)(Area 3).

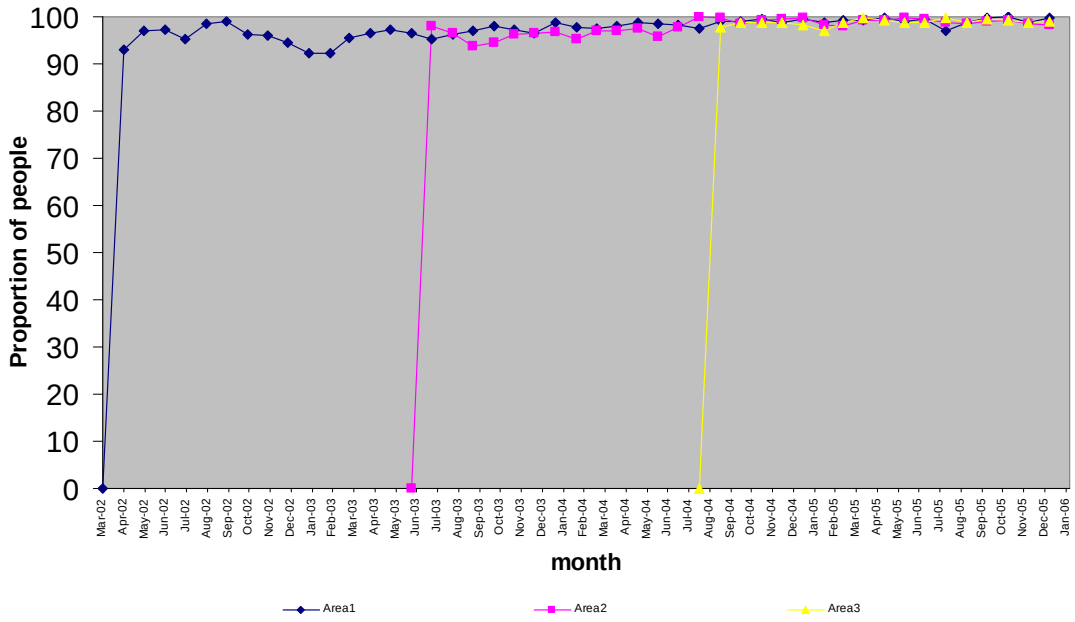


Figure 9 **Recording of the name and address of licensed premises for those people involved in an alcohol-related assault who last consumed alcohol in a licensed premises**

8 Effectiveness of the premises intervention

Evaluation of the Premises Intervention was conducted in terms of its delivery to licensees by police (process evaluation), and of its impact on the number of alcohol-related incidents and assaults (outcome evaluation).

8.1 Delivery of the premises intervention

The Premises Intervention was delivered to all 3,865 licensees on up to 3 occasions (Table 4). In total, the intervention was delivered to licensees on 9,138 occasions.

Based on modifications to the COPS database undertaken during implementation of the Program in Area 3, data describing the number of audits (Level 3 police response) undertaken in that area are shown in Figure 10. Sixty percent and 89.6% of audits undertaken in the two rounds of intervention were recorded in the COPS database. The two distinct spikes in the number of covert audits undertaken correspond with each of the two intervention rounds.

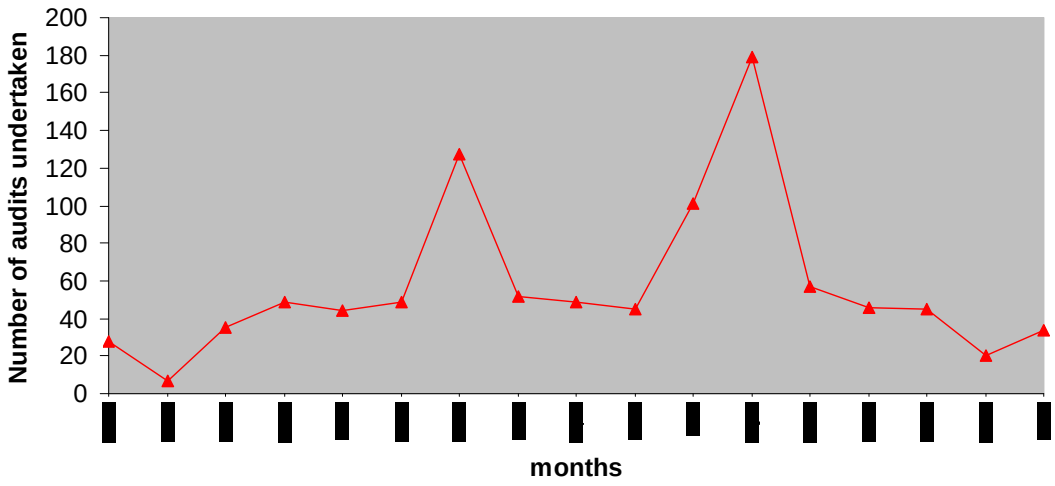


Figure 10 Covert audits of licensed premises undertaken in Area 3

8.2 Level of alcohol-related crime

8.2.1 Methods

Design

A quasi-experimental design was used to evaluate the impact of the Premises Intervention on the number of alcohol-related incidents attended by police. Incident data for a three month period before the implementation of the intervention in each area were compared with 3 months of post-intervention incident data, and with equivalent data for a comparison area in the state. Pre and post-intervention incident data for both areas were collected for the same months of the year, 12 months apart (Figure 3).

Table 4: Delivery of the Premises Intervention

	Level 1	Level 2	Level 3	Total
Area 1 (Pilot)				
Round 1	462	830	121	1413
Round 1a	786	627	NA	1413
Round 2	579	701	133	1413
Total Area 1	**1,827**	**2,158**	**254**	**4,239**
Area 2				
Round 1	229	498	116	843
Round 2	306	425	112	843
Total Area 2	**535**	**923**	**228**	**1,686**
Area 3				
Round 1	558	845	206	1609
Round 2	470	938	201	1609
Total Area 3	**1,028**	**1,783**	**407**	**3,218**
TOTAL ALL AREAS	**3,380**	**4,864**	**889**	**9,138**

Area 3 was used as the comparison area for Area 1, and Area 1 was used as the comparison area for Areas 2 and 3 on the basis that there was no overlap in time between the areas in terms of either the period of Premises Intervention implementation, or the pre and post evaluation periods.

Sample and Measures

For each area, the 3 months of pre-intervention data followed an initial 'uptake' period after the introduction of the Data Recording Intervention (Figure 3). The 'uptake' period varied in length from 5 and 6 months for Areas 1 and 2 respectively, and 3 months for Area 3.

The impact of the Premises Intervention was assessed in terms of change between pre and post-test periods in the number of alcohol-related incidents occurring in 32 incident categories (Table 1). The impact of the intervention was similarly assessed in terms of change between pre and post-test periods in the number of alcohol-related assault incidents.

Those incidents that were recorded by police to have involved a person who had consumed alcohol prior to the incident were considered to be alcohol-related. Prior to the implementation of the Program as a pilot in Area 1, the COPS database did not support the recording of a person's alcohol consumption. As a consequence, for the

purposes of determining the effectiveness of the Premises Intervention for the pilot, an alternative measure of what constituted an alcohol-related incident was adopted for its comparison area. As the COPS database prior to the implementation of the Program allowed police to record, at their discretion, whether an incident was 'alcohol-related', without a specified basis for such a decision, the number of incidents recorded as 'alcohol-related' in this manner was used as the outcome measure for this area.

Analysis

Poisson regression analyses were undertaken to determine if there was a differential change in the number of incidents between the area receiving the Premises Intervention and its comparison area. The significance of the interaction between areas (intervention/comparison) and time (pre/post) was used to determine if the Program had a statistically significant effect on the number of incidents.

8.2.2Results

There was a significantly greater reduction in the number of both alcohol-related and assault incidents in both Areas 1 and 2 relative to the number of such incidents in their respective comparison areas (Table 5).

There was no significant difference between Area 3 and its comparison area in the change in the number of either alcohol-related incidents or alcohol-related assaults.

Table 5: Number of, and changes in alcohol-related incidents and alcohol-related assaults: Areas 1, 2 and 3 and comparison Areas

	Area1 (Pilot)	Comparison area	Interaction *p* value	Area2	Comparison area	Interaction *p* value	Area3	Comparison area	Interaction *p* value
ALCOHOL-RELATED INCIDENTS									
Pre intervention	6575	4475		6700	7133		10563	7355	
Post intervention	5939	4773		6343	7291		11404	7905	
Difference (pre-post)	-636 (-9.7%)	298 (+6.7%)	*p*<0.0001	-357 (-5.3%)	158 (+2.2%)	*p*=0.0015	841 (+8.0%)	550 (+7.5%)	*p*=0.8314
ALCOHOL-RELATED ASSAULTS									
Pre intervention	2129	1525		2130	2332		3576	2343	
Post intervention	1933	1629		1847	2340		3733	2505	
Difference (pre-post)	-196 (-9.2%)	104 (+6.8%)	*p*=0.0006	-283 (-13.3%)	8 (+0.3%)	*p*=0.0007	157 (+4.4%)	162 (+6.9%)	*p*=0.5192

9 Discussion

This report has described the implementation of the Alcohol Linking Program into routine practice by New South Wales Police. The Program was designed to enhance the recording of alcohol intelligence information by police and, through the application of such information, to reduce the number of alcohol-related incidents responded to by police.

The findings indicate that high levels of police recording of all four measures of alcohol intelligence information followed the implementation of the Data Recording Intervention. Such levels of recording were achieved on three successive occasions and sustained over extended periods of time on each occasion. Further, significant reductions in alcohol-related incidents and assaults were observed in two areas where the adoption model was applied in full. On the basis of these findings, the incorporation of the Program into policing practice appears to have provided police with the potential to reduce the number of alcohol related incidents.

9.1 Data recording intervention

No other studies have reported the effectiveness of an intervention in enhancing police recording of the types of alcohol intelligence information addressed by this Program, nor the recording of such information for the types of incidents addressed. As a consequence, the extent to which the very large effect sizes resulting from the implementation of the Data Recording Intervention (84% to 100%) are consistent with the effects of other interventions with similar objectives is unknown.

Although intelligence information similar to that recorded in this initiative is collected by police in some locations, where this occurs it is most commonly recorded at the local level and not on a whole of jurisdiction or sustainable basis (Doherty and Roche 2003). Similarly, where select elements of such information are collected on a jurisdiction wide and sustainable basis, (e.g. last place of alcohol consumption information), it is more likely to be collected for specific incident types that are defined by alcohol involvement (e.g. drink driving) (WHO 2000, Lang 1991, Wood et al 1995). As a consequence, the capacity to make direct comparisons between the levels of intelligence information recording achieved in this initiative with those achieved through other mechanisms is limited.

Despite this constraint, a number of short term research studies have reported the extent to which police record whether attended incidents are alcohol-related. For example, in a study of incidents over a 2 week period in five police regions in south east Queensland, Australia (Arro et al 1991), a lower proportion of incidents (81.1%) had their alcohol related status recorded, relative to the 88%-90% of people observed in this initiative to have their prior alcohol consumption status recorded. Similarly, in their study of assault incidents in Sydney, Australia over a 4 week period, Ireland and Thommeny (1993) reported that a slightly higher proportion (95%) of such incidents had their alcohol-related status recorded. These comparisons suggest that the proportion of people in this adoption initiative for whom the prior alcohol consumption status was recorded was comparable to the levels of recording obtained under more stringent and short term research conditions. The finding that this level of intelligence information recording was maintained over a period of up to 4 years suggests that the recording of such information can become a sustainable practice for operational police beyond the short periods of time described in previous studies.

In many jurisdictions, police record the last place of alcohol consumption for persons involved in drink-drive incidents. In a number of Western Australian studies reporting such data, 93% of drink-drive cases had the name and address of the last place of alcohol consumption recorded (Lang et al 1991, Gruenewald et al 1999), compared to the 97%-99% observed in this initiative. These findings serve to further emphasize the success of the Data Recording Intervention in establishing an equivalent sustainable system for recording information for offence categories that are not defined by alcohol involvement.

The ability to compare the observed prevalence of alcohol involvement in incidents in this initiative with the prevalence reported in previous studies is limited by methodological differences between the studies. In some instances, the overall proportion of people recorded by police in this initiative to have consumed alcohol prior to their involvement in an incident was similar to the proportion of incidents that have been reported to be alcohol-related [Arro et al 1991; Briscoe and Donnelly 2001). In contrast, the proportion of people recorded by police in this initiative to have consumed alcohol prior to an incident was lower than the proportion of incidents that were reported to be alcohol-related in a study conducted in New South Wales a decade earlier (Ireland and Thommeny, 1993). This latter disparity may be explained by differences between the studies in terms of: the unit of analysis in the current initiative being people not incidents; differences in the definitions of incidents included in each study; the previous study being limited to a 4 week period that coincided with a seasonal peak for excessive alcohol consumption and assaults; or to changes over time. Given consistent findings of variable levels of alcohol-related harm between geographic areas, a further important difference between the two studies relates to the adoption initiative being conducted across a range of remote, rural and metropolitan settings, whereas the previous study was conducted in a select sample of six police patrols in an inner-city metropolitan area with a high concentration of licensed premises.

It has been recognised that as a consequence of police and other public agencies not routinely recording the alcohol consumption characteristics of service users, a lack of information regarding the extent and characteristics of alcohol related harm in the community is evident (WHO 2000). An illustration of the capacity of the Data Recording Intervention to make a contribution to addressing this limitation is the finding of a consistent association between intoxicated people involved in incidents and their reported prior consumption of alcohol on licensed premises. Of further and particular importance is the finding that up to 71% of such people were recorded by police as being intoxicated. The strength and consistency of this association over time and across areas suggests an ongoing need for police, government and community intervention to reduce alcohol-related harms associated with alcohol consumption in this setting.

9.2 Premises Intervention

The finding that the Premises Intervention was able to be delivered to licensees as planned is unremarkable. However, the positive findings suggest that the previously reported limited enforcement of licensed premises is capable of being improved in a number of ways. First, the findings, particularly those relating to the increase in audit activity in Area 3, demonstrate the feasibility of previously low levels of police enforcement being increased through the establishment of supportive systems and procedures (Briscoe and Donnelly 2003). Second, the findings demonstrate that such an enhancement can involve an increased focus on licensee compliance with licensing laws. Such a finding is important in the context of previous research that

suggests that enforcement activity in the past has primarily focused on patron behaviour, rather than on licensee compliance with liquor licensing laws (Briscoe and Donnelly 2003). Third, the findings demonstrate the capacity for police liquor licensing activity to be intelligence-led, and hence targeted to the highest risk premises. Such an approach is in contrast to the more common compliance-focused approaches that involve both the routine inspection of all premises on a periodic basis, regardless of their association with harm, and reactive response to individual incidents of harm (Doherty and Roche 2003).

The finding of a reduction in the number of alcohol-related incidents in the two areas where the adoption model was implemented in full confirms the capacity of intelligence-led policing practices to contribute to a reduction in the number of criminal incidents.

Similarly, the finding of significant reductions in alcohol-related incidents in the two areas that received the full application of the adoption model reinforce the findings of previous research that suggests that police actions undertaken with licensed premises can be effective in contributing to a reduction in alcohol-related harm (Babor et al 2003; McKnight and Streff 1994; Jeffs and Saunders 1983). As these earlier studies applied more intensive policing activities than those delivered in the Premises Intervention, the results of this initiative suggest an additional lower cost option is available to police.

Notwithstanding the positive outcomes described above, the non-significant effect of the Premises Intervention on the number of alcohol-related incidents and assaults in Area 3 suggests that, as with all service delivery initiatives, the likelihood of a benefit arising from the implementation of a service innovation is not assured. A number of factors may have contributed to this differential outcome, including different social and demographic characteristics between the areas, and/or differences between the areas in the utilisation or characteristics of licensed premises.

A further potential explanation for the non-significant effect of the Premises Intervention in Area 3 relates to the implementation of a reduced version of the adoption model, and particularly, the allocation of a lower level of adoption resources. In this area, implementation of the adoption strategies coincided with the implementation of additional strategies to transfer management of the Program to New South Police. This integration of both adoption and succession strategies was intentionally undertaken to enhance the longer term sustainability of the Program following the completion of the adoption initiative. The possibility exists that the implementation of strategies to achieve this longer term objective may have compromised the shorter term objective of maximising the effectiveness of the Premises Intervention in reducing the number of alcohol-related incidents during the adoption initiative.

9.3 Methodological Issues

The findings of this initiative should be considered in the context of a number of its design and implementation characteristics. Firstly, it is possible that the observed prevalence of police recording of a person's prior alcohol consumption may be an underestimate. A proportion of people for whom prior alcohol consumption was recorded as 'not known' may well have consumed alcohol prior to the incident. Similarly, the possibility exists that some police may have chosen to record that alcohol was not consumed prior to the incident, where in fact the opposite was the case.

The use of self-reported last place of alcohol consumption information, and self-reported name and address of a licensed premises carries a risk of inaccurate information being recorded. This risk may have been increased by the effects of alcohol consumed by the people involved. As a consequence, these items of intelligence information recorded by police have an unknown level of validity and reliability.

The collection of intelligence information with such limitations is a normal and routine element of law enforcement practice. Intelligence information is routinely collected and analysed by police as a preliminary step towards establishing more definitive associations between incidents, people and locations through the subsequent gathering of more reliable and valid evidence. In this context, the utility of the recorded information is recognised as being restricted to having an 'intelligence' function, with the information not being considered to infer a proven association, or causality. The information has value however, as an indicator of potential risk and hence is of value for police tasking and deployment decisions. In addition, the information has similar value to licensees as a business management tool to facilitate review and improvement of alcohol service and management practices. The educational nature of the Premises Intervention was designed for such a purpose.

Direct attribution to the Data Recording Intervention of the observed levels of intelligence information recording is constrained by the absence of a control or comparison group in the evaluation design, and the assumption that baseline levels of information recording were zero. It is likely that some level of equivalent information was obtained by police prior to the implementation of the Program. However, as no systems supported the standardised recording or retrieval of such information, its utility as a basis for an intelligence-based approach to the policing of licensed premises will have been limited. Despite these limitations, the high, immediate and sustained levels of information recording that followed the implementation of the intervention are considered to reflect a positive outcome of the intervention.

Similarly, interpretation of the findings regarding the impact of the Premises Intervention on alcohol-related incidents and assaults is constrained by the use of a quasi-experimental evaluation design with non-equivalent, and non randomly selected or allocated experimental and control areas. Such a limitation is common in community-based studies, and particularly in evaluation of service delivery initiatives due to logistic and ethical constraints. In the absence of a more rigorous design, the observed differences in the number of alcohol-related incidents may be a consequence of unknown confounding factors, and not of the intervention. However, the repeated implementation and evaluation of the intervention and the finding of significant reductions in incidents in the two locations where the adoption model was implemented in full is suggested to warrant a conclusion that the intervention has the potential to contribute to a reduction in incidents of alcohol-related crime.

9.4 Future opportunities

Further opportunities exist for the enhancement of the Program interventions and their ability to contribute to a reduction in alcohol-related harm.

First, the demonstrated ability of the Data Recording Intervention to provide the required alcohol intelligence information for the large majority of attended incidents suggests a potential for the same or similar systems to be implemented in other jurisdictions. To date, this potential has been realised through the adoption by New

Zealand Police and South Australia Police of equivalent intelligence recording systems, despite marked differences between jurisdictions in data collection, data recording, information technology and other systems. The wider adoption of such systems has been recommended for all police jurisdictions in Australasia (Ministerial Council on Drug Strategy 2006). The apparent success of the adoption strategies applied in this initiative demonstrates a feasible approach to meeting this recommendation.

Second, the Premises Intervention was designed to provide police with a single additional low cost option for responding to harms associated with the excessive consumption of alcohol on licensed premises. Given its educational non-punitive focus, the intervention is not intended to, nor is it capable of responding to all forms of licensee non-compliance with liquor licensing requirements. The findings in this initiative that a large proportion of people involved in incidents who consumed alcohol on a licensed premises were intoxicated suggests a potential need for the introduction of a similar intelligence-based approach to the implementation of other forms of police response, such as the issuing of infringement notices, the undertaking of formal proceedings and the imposition of restrictions on trading conditions.

The latter approach has been applied in New South Wales through the imposition of restrictions on licensed premises that were the site of a large number of assaults on the premises. The restrictions included mandatory lock outs, cessation of alcohol service 30 minutes before closing time, drink purchase limits after midnight and ten minute alcohol sale 'time outs' every hour after midnight. Evaluation of the restrictions found a decline in the number of assaults on premises in contrast to a previous increasing trend of such assaults (Moffatt et al, 2009).

Third, an opportunity exists to enhance police use of the intelligence information obtained through the Data Recording Intervention by combining it with other information relating to the performance of licensees, such as information relating to: the number of assaults on licensed premises, the issuing of police infringement notices to licensees, the taking of actions against licensees by other agencies, and the judicial actions taken against licensees (Briscoe and Donnelly 2003). Through the integration of such information, a more robust approach to determining the need and type of police response appropriate for a particular licensed premises can be achieved. The establishment of such a system whereby information from a number of sources can be readily appraised by police was a recommendation of the NSW Summit on Alcohol Abuse (NSW Government 2004). In response to this recommendation, a multi-agency Alcohol Related Crime Information Exchange designed to meet this objective has subsequently been established in New South Wales.

Fourth, an opportunity exists for the information obtained through the Data Recording Intervention and other sources to also support non-enforcement-based agencies in their planning and evaluation of alcohol harm reduction initiatives. For example, such information could be made available to road safety and local government officers to enable better focusing of their educative and other services and decision-making to enhance licensee compliance with liquor licensing legislation. Similarly, consideration could be given to public health officers utilising such information to enhance licensee compliance, as currently occurs in New Zealand, and as occurs in New South Wales with respect to monitoring of compliance with smoke-free legislation.

Fifth, in interpreting the results of the study, it is important to recognise that the Program, through its explicit focus on licensed premises, represents a potential

solution to only one context of alcohol-related harm in the community. Hence, the Program, and specifically the Premises Intervention, does not directly address harms associated with the consumption of alcohol in other locations, such as private residences and public places. Similarly, through its focus on the supply of alcohol, the Program does not directly address the demand for alcohol or the alcohol consumption behaviour of consumers, either in licensed premises or elsewhere. Other intervention strategies are required to address these contexts and determinants of alcohol-related harm. Importantly, the intelligence information now available as a consequence of the Data Recording Intervention has the ability to provide an insight into those contexts and determinants at the local, regional and state level. In providing such an insight, the newly available intelligence information represents a valuable resource for the development of policies and interventions that address a broader range of harms, locations and populations groups that may benefit from additional intervention.

Finally, the potential exists for the principles of the Data Recording Intervention to be applied to the recording of similar information by other organisations, particularly those that, like police, may have an interest in reducing alcohol related harm. For example, licensing authorities and local governments with roles relating to the approval and regulation of licensed premises may benefit from a similar enhancement of their recording and use of alcohol related complaint information. Similarly, the intervention could be applied to ambulance services, and hospital emergency departments, where information regarding alcohol involvement in presenting cases may facilitate better health service and broader community service planning.

9.5 Conclusion

Significant community support and policy recommendations support the implementation of additional approaches to reduce alcohol-related harms associated with licensed premises (Australian Institute of Health and Welfare 2008; National Preventative Health Taskforce 2009a,b). Given this, and given the substantial burden posed by alcohol misuse on the Australian population generally (Chikritzhs et al. 2003), a need exists for the implementation of interventions even in the absence of scientific certainty regarding their effectiveness (National Drug Research Institute 2007). In this context, the findings of this report that suggest that police can gain both an enhanced capacity to enforce existing liquor licensing laws, and an additional means of reducing alcohol-related incidents provide support for the implementation of the Alcohol Linking Program as a part of routine policing practice.

10 References

Andreasson S, Lindewald B & Rehnman C (2000) Over-serving patrons in licensed premises in Stockholm. *Addiction, 95*: 359 – 63.

Arro, P, Crook, G, Fenlon, T. The Nature and Extent of Alcohol Related Incidents Requiring Police Attention in South East Queensland: Results of an Alcohol Management Study (AIMS). Queensland, Australia: Department of Health and Queensland Police Service: 1992.

Australian Institute of Health and Welfare. 2007 National Drug Strategy Household Survey: First results. Canberra: Australian Institute of Health and Welfare: 2008.

Babor T, Caetano R, Casswell S et al (2003) *Alcohol: no ordinary commodity—research and public policy*. Oxford: Oxford University Press.

Barclay, P., J. Buckley, P.J. Brantingham, P.L. Brantingham, and T. Whinn-Yates (1996). "Preventing Auto Theft in Suburban Vancouver Commuter Lots: Effects of a Bike Patrol." In R. Clarke (ed.), Preventing Mass Transit Crime. Crime Prevention Studies, Vol. 6. Monsey, N.Y.: Criminal Justice Press.

Barrett, M., Grant D., Wailes N. ICT and organisational change: Introduction to the special issue. Journal of Applied Behavioral Science 2006; 42: 6-22.

Barton, A and Evans, R. 1999. *Proactive policing on Merseyside Police Research Series paper 105.* London: Crown Publishing.

Berwick D (2003) Disseminating innovations in health care. *JAMA, 289*: 1969 – 75.

Biglan A., Ary D., Wagenaar A.C. The value of interrupted time-series experiments for community intervention research. Prevention Science 2000; 1: 31-49.

Braga, A., Kennedy, D. M., Waring, E. J., & Piehl, A. M. (2001). Problem-oriented policing, deterrence, and youth violence: An evaluation of Boston's operation ceasefire. Journal of Research in Crime and Delinquency, 38, 195–226.

Braga A, Weisburg D, Waring E, Mazerolle L et al. Problem-oriented policing in violent crime places: A randomized controlled experiment. Criminology 1999; 37: 541-580

Briscoe S, Donnelly N (2001) Assaults on licensed premises in inner-urban areas. New South Wales Bureau of Crime Statistics and Research. *Alcohol Studies Bulletin 2001*.

Briscoe S, Donnelly N (2003) Liquor licensing enforcement activity in New South Wales. New South Wales Bureau of Crime Statistics and Research. *Alcohol Studies Bull 2003*.

Burns L, Flaherty B, Ireland S & Frances M (1995) Policing pubs: what happens to crime? *Drug Alcohol Rev, 14*: 369– 75.

Byleveld D (1979) Identifying, explaining and predicting deterrence. *Br J Criminol, 19*: 205 – 24.

Campbell D & Greed, D (1997) Assault injuries in the Gold Coast Region. *Emerg Med, 9*: 97 – 9.

Chesher G, Greeley J, Saunders J (1989) Tolerance to the effects of alcohol. In: Greeley J, Gladstone W, eds. *The effects of alcohol on cognitive, psychomotor and affective functioning*. *NDARC Monograph no. 8*. Sydney: National Drug and Alcohol Research Centre, 1989.

Chikritzhs T, Catalano P, Stockwell T, Donath S, Ngo H, Young D. et. al. *Australian Alcohol Indicators, 1991-2001: Patterns of alcohol use and related harms for Australian states and territories*. Perth, Australia: National Drug Research Institute, 2003.

Collerette P., Legris P., Manghi M. A Successful IT Change in a Police Service. Journal of Change Management. 2006; 6: 159-179.

Commissioner's Drugs Committee. The antecedents of alcohol-related violence in and around licensed premises. Adelaide, Australasian Centre for Policing Research, 2004.

Conway K, McTaggart S. Evaluation of Alcohol Healthwatch Last Drink survey programme. Auckland: Alcohol and Public Heath Research Unit, University of Auckland, 2002.

Crosswaite C, Curtice L. Disseminating research results—the challenge of bridging the gap between health research and health action. Health Prom Int 1994;9:289 – 96.

Daly J, Campbell E, Wiggers J, Considine R. Prevalence of responsible hospitality policies in licensed premises that are associated with alcohol-related harm. Drug Alcohol Rev 2002;21:113 – 20.

Dash P. Increasing the impact of health services research on service improvement and delivery: a report for The Health Foundation and the Nuffield Trust. London: Health Foundation, Nuffield Trust, 2003.

Doherty S, Roche A. Best practice in policing licensed drinking environments: a monograph for Police and policy makers. Adelaide, Australasian Centre for Policy Research, 2003.

English D, Holman D, Milne E, Hulse G, et al. 1995. *The quantification of drug caused morbidity and mortality in Australia.* Canberra: Australian Government Publishing Service.

Flay B, Phil D. Efficacy and effectiveness trials (and other phases of research) in the development of health promotion programs. Prev Med 1986;15:451 – 74.

Fowler G, Allsop S, Melville D, Wilkinson C. 1999. *Drug harm minimisation and education for Police in Australia*. *A collaborative report by the National Centre for Training in the Addictions,, Queensland Police Service and Edith Cowan University.* Canberra: Publications Production Unit, Commonwealth Department of Health and Aged Care.

Giesbrecht, Norman and Sheila Nesbitt. 2001. Alcohol and crime: from understanding to effective intervention. *Journal of Substance Use* 6: 215-217

Glasgow R, Lichtenstein E, Marcus A. Why don't we see more translation of health promotion research into practice? Rethinking the efficacy to effectiveness transition. Am J Public Health 2003;93:1261 – 7.

Goldstein H. Problem-oriented policing. New York: McGraw Hill, 1990.

Green L, Johnson J. Dissemination and utilization of health promotion and disease prevention knowledge: theory, research and experience. Can J Public Health 1996; 87(Suppl. 2):S11 – 17.

Green L, Kreuter M. Health promotion planning and evaluation: an educational and environmental approach. Mountain View, CA: Mayfield Publishing, 1991.

Greenwald P, Cullen J. The new emphasis in cancer control. J Natl Cancer Inst 1985;74:543 – 51.

Gruenewald P, Stockwell T, Beel A., Dyskin E. Beverage Sales and Drinking and Driving: The Role of On-Premise Drinking Places. Journal of Studies on Alcohol 1999; 47, 1.

Haines A, Jones R. Implementing findings of research. Br Med J 1994;308:1488–92.

Hawks D, Rydon P, Stockwell T et al. The Fremantle Police—licensee accord: impact on serving practices, harm and the wider community. in Drug trials and tribulations: lessons from Australian drug policy. Perth: National Centre for Research into the Prevention of Drug Abuse, Curtin University of Technology, 1998:53 – 63.

Holder H, Flay B, Howard J, Boyd G, Voas R, Grossman M. Phases of alcohol problem prevention research. Alcohol Clin Exp Res 1999;23:183 – 94.

Holder H (1998) *Alcohol and the community: a systems approach to prevention*. UK/NY: Cambridge University Press.

Holder H, Wagenaar A. Mandated server training and reduced alcohol-involved traffic crashes: a time series analysis of the Oregon experience. Accid Anal Prev 1994;26:89 – 97.

Homel R, Carvolth R, Hauritz M, McIlwain, G, Teague R. Making licensed venues safer for patrons: what environmental factors should be the focus of interventions? Drug Alcohol Rev 2004;23:19 – 29.

Homel R, Hauritz M, Wortley R, McIlwain G, Carvolth R. Preventing alcohol-related crime through community action: the Surfers Paradise Safety Action Project. Crime Prev Stud 1998;7:35 – 90.

Homel R. Policing and punishing the drinking driver: a study of general and specific deterrence. New York: Springer-Verlag, 1988.

Hope, T. (1994). "Problem-Oriented Policing and Drug-Market Locations: Three Case Studies." In R.V. Clarke (ed.), Crime Prevention Studies, Vol. 2. Monsey, N.Y.: Criminal Justice Press.

Hulscher M, Wensing M, van der Weijden T et al. Interventions to implement prevention in primary care (Cochrane Review). Cochrane Library, Issue 1. Oxford: Update Software, 2003.

Ireland C & Thommeny J (1993) The crime cocktail: licensed premises, alcohol and street offences. *Drug Alcohol Rev, 12:* 143 – 50.

Jeffs B, Saunders W. Minimizing alcohol-related offences by enforcement of the existing licensing legislation. Br J Addict 1983;78:67 – 77.

Johnson J, Green L, Frankish C, MacLean D, Stachenko S. A dissemination research agenda to strengthen health promotion and disease prevention. Can J Public Health 1996;87(Suppl. 2):S5 – 10.

King L, Hawe P, Wise M. From research into practice in health promotion: a review of the literature on dissemination. Sydney: National Centre for Health Promotion, 1996.

Kolbe L. Increasing the impact of school health promotion programs: emerging research perspectives. Health Educ 1986:17:49 – 52.

Lang E, Stockwell T & Sing K (1989) *Drinking locations of drink drivers in the Perth Metropolitan Area*. Perth: Australian National Centre for the Prevention of Drug Abuse.

Lang E. 1991. Drinking location of drink-drivers in the Perth Metropolitan area. *In The Licensed Drinking Environment current research in Australia and New Zealand,* eds. T Stockwell, E Lang and P Rydon. Bentley: National Centre for the Prevention of Drug Abuse.

Lang, E., Stockwell, T. Drinking Locations of drink-drivers: A comparative analysis of accident and nonaccident cases. Accident Analysis and Prevention 1991; 23; 573-584.

Leigh A, Read T, Tilley N. 1998. *Brit POP II: Problem-oriented policing in practice. Police Research Series paper 93.* London: Crown Publishing.

Makkai T, Braithwaite J. Re-integrative shaming and compliance with regulatory standards. Criminology 1994;32:361 – 85.

McKnight A, Streff F. The effect of enforcement upon service of alcohol to intoxicated patrons of bars and restaurants. Accid Anal Prev 1994;26:79 – 88.

Marcus, Marianne T. Liehr, Patricia R. Schmitz, Joy. Moeller, F Gerald. Swank, Paul. Fine, Micki. Cron, Stanley. Granmayeh, L Kian. Carroll, Deidra D. Behavioral therapies trials: a case example. Nursing Research. 56(3):210-6, 2007

Matka E. 1997. Uses and abuses of crime statistics. *Crime and Justice Bulletin*, Sydney: New South Wales Bureau of Crime Statistics and Research.

Ministerial Council on Drug Strategy. National Alcohol Strategy 2006-2009. Towards safer drinking cultures. 2006

Moffatt S, Mason A, Borzycki C and Weatherburn D (2009). Liquor licensing enforcement and assaults on licensed premises. NSW Bureau of Crime Statistics and research: Crime and Justice Statistics Bureau Brief: Issue paper 40: October 2009.

Moulding N, Silagy C, Weller D. A framework for effective management of change in clinical practice: dissemination and implementation of clinical practice guidelines. Qual Health Care 1999;8:177 – 83.

National Drug Research Institute (2007). *Restrictions on sale and supply of alcohol: Evidence and Outcomes*. Perth: National Drug Research Institute, Curtin University of Technology.

National Preventative Health Taskforce (2009a). Australia: the healthiest country by 2020. National Preventative Health Strategy - Overview. Commonwealth of Australia.

National Preventative Health Taskforce (2009b). Australia: the healthiest country by 2020. Technical Report 3: Preventing alcohol-related harm in Australia - a window of opportunity including addendum for October 2008 to June 2009. Commonwealth of Australia.

New South Wales Government. Outcomes of the NSW Summit on Alcohol Abuse 2003. Changing the Culture of Alcohol use in New South Wales. Sydney, New South Wales Government, 2004. http://www.alcoholinfo.nsw.gov.au (accessed May 2004)

Nutbeam D. Improving the fit between research and practice in health promotion: overcoming structural barriers. Can J Public Health 1996;87(Suppl. 2):S18 – 23.

Oldenburg B, Sallis J, French M, Owen N. Health promotion research and the diffusion and institutionalization of interventions. Health Educ Res Theory Pract 1999; 14:121 – 30.

Orlandi M. The diffusion and adoption of worksite health promotion innovations: an analysis of barriers. Prev Med 1986;15:522 – 36.

Oxman A, Thomson M, Davis D et al. No magic bullets: a systematic review of 102 trials of interventions to improve professional practice. Can Med Assoc J 1995;153:1423 – 31.

Potvin L. Methodological challenges in evaluation of dissemination programs. Can J Public Health 1996; 87(Suppl. 2):S79 – 83.

Ratcliffe J. Intelligence-led Policing. Trends Issues Crime Crim Justice. 2003; 248: 1-6.

Roche A, Watt K, McClure R, Purdie D & Green D (2001) Injury and alcohol: a hospital emergency department study. *Drug Alcohol Rev, 20*: 155 – 66.

Rosenberg W, Donald A. Evidence based medicine: an approach to clinical problem solving. Br Med J 1995; 310:1122 – 6.

Rydon P, Stockwell T, Lang E, Beel A. Pseudo-drunk patron evaluation of bar staff compliance with Western Australian liquor law. Aust NZ J Public Health 1996; 20:290 – 5.

Saltz R, Hennessy M. Reducing intoxication in commercial establishments: an evaluation of responsible beverage services practices. Berkeley, USA: Prevention Research Centre, 1990.

Saltz R. The roles of bars and restaurants in preventing alcohol—impaired driving: an evaluation of server interventions. Eval Health Prof 1997;10:5 – 27.

Scott, M. 2000. *Problem-Oriented Policing: Reflections on the first 20 years.* Washington D.C.: U.S. Department of Justice, Office of Community Oriented Policing Services.

Scott L, Donnelly N, Poynton S, Weatherburn D. Young adults' experience of responsible service practice in NSW: an update. New South Wales Bureau of Crime Statistics and Research. Alcohol Studies Bull 2007.

Shakeshaft P, Bowman J, Sanson-Fisher R. Behavioural alcohol research: new directions or more of the same? Addiction 1997;92:1411 – 22.

Smith K, Wiggers J, Considine R, Daly J, Collins T. Police knowledge and attitudes regarding crime, the responsible service of alcohol and a proactive alcohol policing strategy. Drug Alcohol Rev 2001;20:181 – 91.

Stockwell T, Lang E, Rydon P (1993) High risk drink settings: the association of serving and promotional practices with harmful drinking. *Addiction, 88*: 1519 – 26.

Stockwell T. 1994. Alcohol, violence and licensed premises: the nature of the relationship. In *Alcohol misuse and violence: An examination of the appropriateness and efficacy of liquor licensing laws across Australia,* ed. Tim Stockwell, 105-118. Canberra: Australian Government Publishing Service.

Teplin L, Lutz G. Measuring alcohol intoxication: the development, reliability and validity of an observational instrument. J Stud Alcohol 1985;46:459 – 66.

Wiggers J, Sanson-Fisher R. Evidence-based health promotion. In: Scott D, Weston R, ed. Evaluation in health promotion. Cheltenham, UK: Stanley Thorne, 1998;126 – 45.

Wiggers J, Jauncey M, Considine R, Daly J, Kingsland M, Purss K, Burrows S, Nicholas C & Waites RJ (2004) Strategies and outcomes in translating alcohol harm reduction research into practice: the Alcohol Linking Program. Drug and Alcohol Review, 23, 355 – 364.

Wood L, McLean S, Davidson J, Montgomery I. One for the road: on the utility of citation data for identifying problem hotels. Drug Alcohol Rev 1995;14:115 – 24.

World Health Organization. 2000. International guide for monitoring alcohol consumption and related harm. http://whqlibdoc.who.int/hq2000/WHO MSD 00.4.pdf