

# **PREVENTION OF PSYCHOACTIVE SUBSTANCE USE**

## **A Selected Review of What Works in the Area of Prevention**



**World Health Organization  
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## FOREWORD

Globally, psychoactive substance use is a major public health and social concern. With changes in lifestyle, the erosion of powers of censure that have existed in traditional societies, and an increased acceptance of such substances it is clear that their use is growing. In recent decades, most countries, particularly those in the developing world, are facing unprecedented social and health problems among its populations. This places individuals, families and communities at a greater vulnerability to psychoactive substance use, in particular children, adolescents and the youth. In recognition of the problems psychoactive substance use poses on the user, tremendous efforts have been made by many institutions globally including the World Health Organization (WHO). In order to support these efforts WHO commissioned the present work so as to document the evidence for interventions in the area of psychoactive substance use prevention. The availability of the compiled information is a major step forward towards contributing to a growing body of evidence, which consequently should help in the development of programmes that are evidence based.

On behalf of the Department of Mental Health and Substance Dependence, I am pleased to present this publication based on a selected review of what works in the area of prevention of psychoactive substance use. The review was accomplished as a collaborative effort between the National Drug Research Institute (Perth, Australia) and the World Health Organization, Geneva. The review set out to determine what evidence exists for the efficacy of preventive interventions in five circumscribed areas; regulation of physical and economic availability of alcohol, regulation of physical and economic availability of illicit psychoactive substances, the use of the mass media, community-based initiatives and the use of school based education

The review is selective, rather than exhaustive, but still serves to highlight some broad findings around the selected areas. Overall what comes out clearly is that though evidence exist, for the effectiveness of many interventions, much more systematic research is necessary in a variety of settings. Through this review it has also been acknowledged that little information exists in developing countries in terms of evaluation and research. However, this work marks the foundation of evidence on what works on the part of WHO through the currently available and accessible sources and is a stepping stone for the development of culturally appropriate, practical and meaningful interventions.

It is my conviction that dissemination of research findings can motivate service providers in health and other social sectors to understand its meaningfulness and carry out local research that can ultimately prepare them for prevention programming and to select strategies that effectively address the needs and problems of young people.

I hope this review will serve its purpose and will be of use to policy makers, programme implementers, researchers, specifically in developing countries.

Lastly, I would like to thank the government of Japan for funding this project, the National Drug Research Institute, Australia, in particular, Dr David Hawks, Ms Katie Scott, Ms Nyanda McBride, Professor Tim Stockwell and Mr Paul Jones for carrying out this review on behalf of the World Health Organization. I also would like to thank my colleagues at the World Health Organization, Geneva, Mrs Mwansa Nkowane for providing technical inputs and editing of this summary report, Ms Mylene Schreiber and Ms Rosemary Westermeyer for their administrative assistance.

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## A Selected Review of What Works in the Area of Prevention

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World Health Organization



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**David Hawks and Katie Scott**

## EXECUTIVE SUMMARY

This review sets out to determine what evidence exists for the efficacy of preventive interventions in five circumscribed areas; (i) regulation of physical and economic availability of alcohol (ii) regulation of physical and economic availability of illicit psychoactive substances (iii) the use of the mass media (iv) community-based initiatives and (v) the use of school based education.

Searches of the empirical literature were undertaken covering the period 1985-June 2001 employing a number of strategies and inclusion criteria with an attempt to cover all geographic regions, developing and developed countries. Key informants at the National Drug Research Institute were asked to identify relevant studies and review articles pertinent to the areas under investigation. These studies were then obtained where possible and additional relevant studies listed as references identified.

Searches of the National Drug Research Institutes Inform Library Data Base and, the National Drug Research Institute's Indigenous Australian Alcohol and other Drug Intervention Project Data Base were also conducted. Information posted on "Update" an electronic email resource for drug and alcohol workers and researchers, was also inspected daily. This process identified a total of 192 studies for review.

A second phase of the research strategy involved searching scholarly electronic data bases for relevant published and unpublished literature. Key words were used to identify relevant literature, the initial search having produced in excess of 9,000 articles. The databases searched and the number of relevant studies identified through these sources: PSYCINFO, Medline, EMBASE, Current Contents, Dissertation Abstracts, SIGLE, Social Work Abstracts, National Clearinghouse on Alcohol and Drug Information (IDA), DRUG database, Alcohol & Alcohol Problems Science database – ETOH, Cochrane Collaboration Reviews and Internet search

A third phase of the search strategy, intended to access relevant unpublished material from developing countries involved communicating with 51 key informants in 24 countries identified by National Drug Research Institute and WHO staff and by reference to the author of published works. This process yielded a small number of unpublished studies from Poland, South Africa, Brazil and Thailand.

A total 1265 studies were identified in employing these three strategies. This list of 1265 studies was further reduced by applying Cochrane's guidelines for assessing study quality [Clarke and Oxman, 2000] to those studies emanating from industrial countries. In view of the very limited number of studies deriving from developing countries and the project's particular interest in such studies all of these studies were included regardless of their quality although all such material was then rigorously evaluated. As a result of these several processes the number of studies were reviewed in each of the 5 study areas; The Regulation of the Physical and Economic availability of Alcohol, The Regulation of the Physical and Economic availability of Illicit psychoactive substances, Mass Media, Community Based Programmes and School Based Programmes. Some broad conclusions are drawn from each of the 5 areas with a view to recommending what has been shown to work.

- **Regulation of the Physical and Economic Availability of Alcohol**

The regulated availability of alcohol in most countries has meant that it has been the most intensely studied of the psychoactive substances reviewed in this document. Changes in its availability whether effected by lowering the age of its legal availability decreasing its cost in real terms or increasing the number of outlets from which it can be legally sold have all been found to increase its consumption. Such increases in developing countries previously characterized by lower levels of consumption is of particular concern especially in view of the lack of infrastructure to treat the problems associated with such consumption. A variety of measures including the introduction of random breath testing, the strict enforcement of liquor licensing laws and the adoption of responsible serving practices had been found to reduce alcohol related problems in countries having the means to impose such sanctions. Increasing the real cost of alcohol or at least not allowing its erosion by means of taxation has been found to be

one of the most effective though least popular means of reducing problems associated with alcohol. The availability of localized data in some countries has allowed a particularly detailed study of the effects of certain policies and of the characteristics of premises associated with high levels of alcohol related problems.

- **Regulation of the Physical and Economic Availability of Illicit Psychoactive Substances**

The covert nature of both illicit psychoactive substance use and supply poses particular problems for the evaluation in measures intended to address these variables. Measures adopted across entire countries rarely lend themselves to evaluation or comparison. Of greater interest from a scientific point of view are initiatives taken by particular states or jurisdictions where the possibility exists of before and after comparisons or time series analysis. The legislative regulation of cannabis and its attendant police operations have been the most intensely studied at least in North America and Australia, the findings of which have led to various policy proposals. Other attempts to regulate the availability of illicit psychoactive substances employing a variety of policing policies have been found to effect the shape of the market, the purity of the substances available and their price though without in any permanent way eradicating it.

- **Mass Media**

The use of the mass media on its own, particularly in the presence of other countervailing influences, has not been found to be an effective way of reducing different types of psychoactive substance use. It has however been found to raise information levels and to lend support to policy initiatives. Combined with reciprocal and complimentary community action, particularly environmental changes, media campaigns have proved more successful in influencing attitudes towards psychoactive substance use and use itself. Health warnings associated with licit psychoactive substance use have been an effective way of communicating the hazards of such use particularly to heavy users if combined with other economic and environmental initiatives.

- **Community-based interventions**

The complexity of evaluating the many initiatives which make up any community based intervention has meant that very few such interventions have been rigorously evaluated. Those that have been tend to focus on a small number of discrete outcome variables such as drink driving convictions and to have employed matched communities or time series analysis. Changes have been more often observed in such areas as acceptance of health orientated policies and increased knowledge. For such changes to be sustained requires that they be institutionalized which itself provides that the initiatives be supported by the relevant community agencies.

- **School-based interventions**

School based educational programmes have been among the most popular preventive measures much of which occurs, however without any formal assessment of its impact on behaviour. To be effective they need to be provided at a developmentally appropriate time and particularly when interventions are most likely to have an impact on behaviour. Programmes need to be relevant to young people's life experience by providing material during the period most students are experiencing initial exposure to psychoactive substances, using local prevalence data. Complementary general health/life skills programmes appear to produce greater change than skill-based education programmes alone, suggesting that psychoactive substance use education is best integrated within a well-founded health curriculum. Pre-testing of a programme with students and teachers to ensure its relevance is important in establishing its behavioural effectiveness. While the majority of studies reviewed, deriving mainly from the United States, have abstinence as their goal, there is evidence that programmes having this goal consistently fail to produce behavioural effects suggesting that there is a need to develop programmes with outcomes other than abstinence as their goal.

- **Database of selected studies**

Additionally a database comprising the primary and review articles abstracted in accordance with a data extraction form was constructed and its operation detailed in a separate document (Scott, Hawks & Jones, 2001). The data extraction form was developed to ensure all important review criteria were covered, to enable an evaluation of interactive reliability and provide the basis for coding studies into the electronic database.

While not exhaustive, even in the areas selected for examination, the review is considered to be exemplary of the studies in these areas. The database, which is intended to become interactive, is capable of expansion in the future.





# PART I

## A SELECTED REVIEW OF WHAT WORKS IN THE AREA OF PREVENTION

### INTRODUCTION

In March 2001, the National Drug Research Institute (NDRI), in collaboration with the World Health Organization, Geneva began a six-month collaborative project to examine "what works" in the prevention of substance use-related harm, with an emphasis on developing countries. The review of the literature was international in scope, but given the short time frame for the project, was selective rather than exhaustive in its exploration of relevant issues. For the purposes of the project, primary prevention was defined as "strategies that aim to prevent the uptake of psychoactive substance use, or delay the age at which use begins" (WHO, 1997, p. 138), whereas secondary prevention "refers to interventions that aim to prevent substance use becoming problematic among people already using psychoactive substances, which limit the degree or duration of individual or social damage caused, and which assist users who may wish to stop using" (WHO, 1997, p. 139).

There were two mandates employed in selecting material for the project. The first was to identify those review articles and primary studies which demonstrated good levels of evidence as to the effectiveness of the intervention. The review articles were selected for their comprehensiveness and contribution to the field, while the primary studies were selected for the strength of their research designs and the evaluation techniques that were employed. The second was to identify and incorporate, wherever possible, material from developing countries. Less rigorous inclusion criteria were applied to these works, as it was acknowledged that the production of high quality research in countries with poor levels of resources and infrastructure may be a difficult task. As such, an endeavour was made to be inclusive rather than exclusive in selecting studies, in order to incorporate material covering a range of issues, across a broad geographical area, with varying levels of methodological rigour.

The final products for the project were identified as:

- 1) a hard copy monograph of 80-160 pages, which aimed to summarize the literature and make recommendations as to the applicability of the programmes in varying socio-cultural contexts.
- 2) a searchable electronic database (Microsoft Access 97) in which primary studies are coded with respect to citation information, methodological procedures, programme descriptors, and an evaluation of the strength of the evidence. Review articles and meta-analyses were coded with citation and summary information only. The database was intended to be something of a prototype, allowing that further modifications and the addition of new material would likely occur over time to enhance its utility.
- 3) A database Compendium which describes both conceptual and practical issues relating the database design.

Due to the collaborative nature of the project, a number of teleconferences between NDRI and WHO took place, involving the discussion of such issues as defining the parameters of the project, correspondence with key informants, refining the data extraction form, and the design of the electronic database.

## MAIN AREAS OF INVESTIGATION

According to the WHO Lexicon of Alcohol and Drug Terms, a psychoactive substance is “a substance that, when ingested, alters mental processes” (WHO Lexicon 1994, p. 53). The psychoactive substances addressed in this report include alcohol, amphetamines, cocaine, cannabis and heroin. Although alcohol was the licit substance of interest, a few illustrative studies on tobacco were included in some instances. In this document, the terms psychoactive substance use and substance use are used interchangeably, replacing a less specific term “drug”.

The main areas chosen for investigation were identified as the regulation of the physical and economic availability of alcohol, the regulation of the physical and economic availability of illicit substances, media campaigns, community-based programmes and school-based programmes. Within each of these domains, a range of salient issues considered worthy of investigation was generated with the assistance of researchers from the National Drug Research Institute and WHO Geneva. The five areas of investigation with their commensurate subcategories are listed below:

### Regulation of the physical and economic availability of alcohol

- 1) Underage drinking/minimum drinking age
- 2) DUI / DWI (drink driving)
- 3) Crime
- 4) Trading hours and days
- 5) Location and planning (density of outlets)
- 6) High risk venues and drinking environments
- 7) Server training
- 8) Alcohol types
- 9) Price of alcohol
- 10) Accords / community policy
- 11) Partial and/or total prohibition

### Regulation of the physical and economic availability of illicit psychoactive substances

- 1) Law enforcement
- 2) International agreements
- 3) Crop eradication and/or substitution
- 4) Different legislative / policy frameworks
- 5) Venue Management
- 6) Precursor chemicals legislation
- 7) Assets legislation (e.g.: seizures)

### Media

- 1) Mass media campaigns
- 2) Media advocacy
- 3) Advertising and advertising restrictions

### Community Based Programmes

- 1) “Top down” approaches
- 2) “Bottom up” approaches
- 3) Capacity building/sustainability/institutionalization of the intervention

## School Based Programmes

- 1) Peer education
- 2) Resiliency
- 3) Knowledge
- 4) Attitudes
- 5) Behaviours
- 6) Skills based
- 7) Interactive rather than didactic
- 8) Comprehensive vs class room approaches

## METHOD

### STUDY DESIGNS

A wide variety of study designs were considered for the project, which were broadly grouped into the following categories according to the guidelines identified by the Cochrane Drugs and Alcohol Review Group, and Kumar (1996), for the purpose of evaluation:

- Randomized control trial (RCT)
- Controlled clinical trial (CCT)
- Controlled prospective study (CPS)
- Controlled clinical trial (CCT)
- Controlled before after (CBA)
- Interrupted time series (ITS)
- Other study designs (such as ecological and quasi-experimental)

### SEARCH STRATEGIES

Although the criteria for selection of literature for the project were exemplary rather than exhaustive in their intent, searches were conducted in accordance with the systematic procedures identified in the Cochrane Reviewers' Handbook 4.1 (Clarke & Oxman, 2000), to avoid selection bias in identifying key literature for the initial review. Three specific search strategies were employed to access relevant resources during March through to June 2001. These are outlined below. An Access database was set up to store the citation information, source, and main area identifier for each resource. All studies were then entered into this database for ease of storage, sorting and recall.

### Primary Search

Studies were selected for review from the resources available at the National Drug Research Institute in Perth, Western Australia. Key informants at the Institute were asked to identify relevant studies and review articles relating to the prevention of substance use related harm, with respect to alcohol, cannabis, heroin, amphetamines, and cocaine.

The studies and review articles identified by key informants were then obtained where possible, as were further relevant studies cited in the reference lists of the latter (a technique known as "pearling"). Searches of the NDRI *Inform* library database, the NDRI *Indigenous Australian Alcohol and Other Drugs Bibliographic Database* and the NDRI *Indigenous Australian Alcohol and Other Drugs Intervention Projects Database* were also conducted. Information postings on "UPDATE", an electronic email resource for substances and workers and researchers in the substance use area, were also inspected daily. This process yielded a total of 192 studies for review.

## Secondary Search

The second phase of the strategy involved searching scholarly electronic databases for published and unpublished literature. The databases searched are listed below. Keywords were used to identify relevant literature, with the initial searches producing approximately 9000 studies in total. All titles and abstracts of articles produced in the initial searches were then examined, in order to select potentially relevant studies in the areas of interest designated for investigation. The number of studies selected from each database is provided in brackets.

PSYCHINFO	(148)
MEDLINE	(109)
EMBASE	( 37)
Current Contents	( 63)
Dissertation Abstracts	( 55)
SIGLE	( 46)
Social Work Abstracts	( 97)
National Clearinghouse on Alcohol & Drug Information (IDA)	( 90)
DRUG database	(434)
Alcohol & Alcohol Problems Science Database – ETOH	( 36)
Cochrane Collaboration Reviews	( 8)
Internet search	( 2)

As can be seen from these figures, the databases that proved most productive were DRUG, PsycInfo and Medline. Given that the DRUG database is devoted solely to alcohol and other psychoactive substance-related material, the disproportionate number of studies identified from this source was not unexpected.

The following keywords were used in a variety of combinations for the database searches:

**1. Alcohol**

drink\*  
alcohol\*  
liquor\*  
beer\*  
wine\*  
spirits  
drunk\*  
intoxicat\*  
bing\*

**3. Population group**

adolescen\*  
teenage\*  
youth\*  
young people  
early adult  
young adult

**5. Outcome**

prevent\*  
reduc\*  
improv\*  
increas\*  
decreas\*  
chang\*  
cessation  
drink driv\*  
dui  
harm\*  
health  
abstain\*  
stop\*  
problem  
intoxicat\*  
drunk\*  
violen\*

**2. Psychoactive substances**

illicit  
heroin  
amphetamines  
cannabis  
marijuana  
marihuana  
cocaine

**4. Intervention**

intervent\*  
educat\*  
promot\*  
programme\*  
adverti\*  
counsel\*  
treatment\*  
campaign\*  
mass media  
policy  
policies  
legislation

**6. Evaluation**

evaluat\*  
success\*  
effectiv\*  
measur\*  
examin\*  
assess\*  
compar\*  
trial\*  
rct

*NB: \* The use of the asterisk truncates the word.  
This allows for the identification of the keyword  
and all possible permutations of its ending*

To evaluate the effectiveness and sensitivity of the criteria for inclusion and key word search strategies in identifying relevant literature, key informants at the National Drug Research Institute were asked to nominate a number of studies they viewed as exemplary works in each of the five main areas. The keywords chosen identified 80% of the exemplary works nominated; those that were not identified were harm-minimization studies relating to the decriminalization of illicit substances. Given that the list of keywords was designed to identify primary prevention strategies, this level of sensitivity was considered acceptable.

## Tertiary Search

The third component of the search strategy was intended to access relevant unpublished literature from developing countries. From early March through to the end of July 2001, correspondence, which included a brief project description and a request for submissions, was sent to 51 key informants in 24 countries via email, fax and written mail. In addition, the 6 Regional Advisors of WHO were also contacted. The key informants were identified by NDRI staff, WHO (Geneva), and through authorship of published works relevant to the project. With the exception of the 6 regional advisors of WHO, Table 1 below provides a breakdown of the key informants contacted by region and country.

**Table 1: Key Informants Contacted by Country and Region**

<b>REGION</b>	<b>COUNTRIES (Number of persons contacted given in brackets)</b>
WHO Regional Office for Africa (AFRO)	Ethiopia (1) Nigeria (3) South Africa (14) United Republic of Tanzania (2)
WHO Regional Office for the Americas/Pan American Sanitary Bureau (AMRO/PAHO)	Argentina (1) Brazil (2) Colombia (1) Mexico (2) United States of America (2)
WHO Regional Office for the Eastern Mediterranean (EMRO)	Egypt (1) Islamic Republic of Iran (1) Morocco (1) Pakistan (1)
WHO Regional Office for Europe (EURO)	Austria (1) Israel (1) Poland (2)
WHO Regional Office for South-East Asia (SEARO)	India (5) Sri Lanka (2) Thailand (3)
WHO Regional Office for the Western Pacific (WPRO)	Australia (1) China (1) Japan (1) New Zealand (1) Republic of Korea (1)

This process yielded a small amount of unpublished material from Poland, South Africa, Brazil and Thailand.

## Search Summary

A total of 1265 works were included for initial review using these three strategies. The breakdown of studies according to main area is as follows:

**Table 2: Search Summary by Main Area**

Main Area	Number of Identified Works
Mass Media	92 studies
Community Based Programmes	183 studies
Regulation of Physical & Economic Availability of Alcohol and Illicit psychoactive substances	287 studies
School Based Programmes	285 studies
Other (studies overlapping more than one main area, or focussing primarily on harm minimization strategies)	418 studies

The studies that fell into the "other" category were predominantly community based programmes, with media or family intervention components, or harm minimization strategies such as treatment options and needle exchange programmes.

## SELECTING THE INITIAL GROUP OF STUDIES FOR REVIEW

In the first instance, a shortlist of approximately 400-500 studies was selected for preliminary review based on the range of issues identified for investigation. Given the focus on developing countries, these studies were also selected for their representation of a range of geographical and sample characteristics. For example, material from both industrialized and developing countries was incorporated, as was material from both rural and urban areas. Papers encompassing a variety of socio-economic levels, as indicated by the sample characteristics, were also considered.

## GENERAL INCLUSION CRITERIA

An outline was developed which provided general guidelines for the inclusion of material in the project, and these are reported in this section. It should be noted however, that the criteria for including material varied slightly for each area of investigation, and more specific inclusion criteria are reported in detail in other sections of this report.

Once the shortlist of studies was compiled, it was intended that an evaluation of the quality of material from industrialized countries would be made based on the Cochrane Collaboration Guidelines (Clarke & Oxman, 2000) and the evaluation sheets produced by the Cochrane Drug and Alcohol Review Group (see the Database Compendium), after which an attempt would be made to source suitable studies in their entirety. It became apparent while undertaking this process, however, that due to the brevity of many abstracts, there was insufficient information on which to make a fair and reasonable determination of study quality. Therefore, only those studies for which a full copy of the article was available for evaluation (and accessible within the three months timeframe allocated to accessing papers), were considered for the next stage of the review. Once this material had been sourced, studies from industrialized countries were selected based on quality as per the Cochrane Guidelines. It should also be noted that due to the identification of a limited number of studies from developing countries, this material was included regardless of quality, although all material was rigorously evaluated. Determination as to whether a country was considered 'developed' or 'developing' was based on the categorizations appearing in The Global Burden of Disease (WHO, 1996).

The earliest publication date for included material was set at 1985. Any study pre-dating 1985 was only included if the material covered was not available in a more recent article of equal quality. Where there were two or more articles of equal quality covering the same issue, and a decision had to be made as to which article to select, preference was given to the study with the larger sample size.

## **DATA EXTRACTION**

A data extraction form was developed to ensure that all of the important review criteria were covered, to evaluate inter-rater reliability, and to provide the basis for coding studies into the electronic database. The data extraction form was piloted by two reviewers on a number of studies chosen on the basis that they represented some of the main areas of investigation, as well as for their comprehensiveness, methodological rigour and extensive evaluation strategies. A fair degree of agreement was achieved in relation to that material which could be readily identified from the article. On the other hand, where the reviewer was required to make a subjective assessment, a greater degree of standardization needed to be achieved. To accomplish this, a set of guidelines was created for each of the subjective criterion. These are provided in the Database Compendium document produced as an accompaniment to this report. The extraction sheet was revised throughout the course of the project, with the final version also appearing in the Database Compendium. A comprehensive explanation of the design of the extraction form and how it may be used has been provided in the Database Compendium (Part II of this document).

## **DATABASE DESIGN**

Considerable time was given to the conceptual and practical issues surrounding the design of the electronic database. The finalization of the data extraction form was imperative to this process, as it provided the basis for the fields in the database. A design specification document has been included in the Database Compendium, which describes the database design and the list of field types, as well as further information about the database and its use.

## **EVALUATION PROCEDURE**

As research with varying levels of quality was incorporated into the project, a rigorous evaluation procedure was applied to each of the primary studies selected for inclusion, based on the Guidelines to Assess Study Quality from the Cochrane Drug and Alcohol Group. This allowed reviewers to discern the relative strengths and weaknesses of each piece of research, so that sound evidence-based recommendations could be made. The coding sheets for evaluating study quality appear on both the data extraction form and in the electronic database.



## REGULATION OF THE PHYSICAL AND ECONOMIC AVAILABILITY OF ALCOHOL

### CRITERIA FOR INCLUSION IN THE REVIEW

This section of the report addresses the regulation of the physical and economic availability of alcohol. Substantial attention has been directed towards these issues, as it has been suggested by numerous authors (Aitken, 1988; Jerningan, 1997; Saxena, 1997), that the increased marketing of alcohol in developing countries poses a significant risk to health and welfare. The inclusion criteria for reviews and primary studies in this area are listed below in point form. As mentioned in the General Inclusion Criteria section, greater latitude was given to those articles that directly addressed the issue of alcohol use in developing countries.

- Comprehensiveness (for which the number of references cited was a partial indicator)
- Recency of publication (on the premise that more recent material provided the most up-to-date reviews of the areas of interest)
- Provision of recommendations based on the evidence reviewed
- Potential application to developing countries
- The material had to be accessible within the 3 month time period allocated to identifying and sourcing studies
- The material was of a high quality as determined by the Cochrane Guidelines

### RESULTS OF THE SEARCHES

The search strategies produced 245 relevant studies, of which 172 articles were available in full copy for review. Fifteen review articles were selected for the project based on the inclusion criteria, and these are listed in Table 3. In comparison to other sections of this report (with the exception of the school based area), reviews in this section were of a generally high standard with respect to comprehensiveness, scope and in-text evaluation of the levels of evidence provided by the primary studies that were included. A summary of each of these review articles is provided in Appendix A.

**Table 3: Regulation of Alcohol Review Articles**

	<b>Citation</b>	<b>Relevant Area/s of Investigation</b>	<b>Country</b>
1	Chaloupka, F. J. (1993). Effects of price on alcohol-related problems. <i>Alcohol Health and Research World</i> , 17(1), 46-53.	Price of alcohol	USA
2	Osterberg, E. (2001). Effects of price and taxation. In N.Heathers, T.J. Peters & T.Stockwell (Eds.). <i>International Handbook of Alcohol Dependence and Problems</i> . (pp. 685-698). Chichester: John Wiley and Sons.	Price of alcohol	International
3	Grube, J. W., & Nygaard, P. (2001). Adolescent drinking and public policy. <i>Contemporary Drug Problems</i> , 28, 87-131.	Trading hours and days Prohibition Location and planning (outlet density) Underage drinking Price of alcohol DUI/DWI Server Training	International
4	Stockwell, T., & Gruenewald, P. (2001). Controls on the physical availability of alcohol. In N.Heathers, T.J. Peters & T.Stockwell (Eds.). <i>International Handbook of Alcohol Dependence and Problems</i> . (pp. 699-719). Chichester: John Wiley and Sons.	Underage drinking/minimum drinking age Location and planning (outlet density) Trading hours and days	International
5	McKnight, A. J., & Voas, R. B. (2001). Prevention of alcohol-related road crashes. In N.Heathers, T.J. Peters & T.Stockwell (Eds.). <i>International Handbook of Alcohol Dependence and Problems</i> . (pp. 741-769). Chichester: John Wiley and Sons.	Server Training DUI/DWI	International
6	Peek-Asa, C. (1999). The effect of random alcohol screening in reducing motor vehicle crash injuries. <i>American Journal of Preventive Medicine</i> , 16 (1S), 57-67.	DUI/DWI	Australia USA
7	Hingson, R. (1996). Prevention of drinking and driving. <i>Alcohol Health and Research World</i> , 20 (4), 219-229.	DUI/DWI	USA
8	Kenkel, D. (1998). A guide to cost-benefit analysis of drunk-driving policies. <i>Journal of Drug Issues</i> , 28 (3), 795-812.	DUI/DWI	USA
9	Homel, R., McIlwain, G., & Carvolth, R. (2001). Creating safer drinking environments. . In N.Heathers, T.J. Peters & T.Stockwell (Eds.). <i>International Handbook of Alcohol Dependence and Problems</i> . (pp. 721-740). Chichester: John Wiley and Sons.	Drinking environments	International
10	Single, E. (1997). Public drinking, problems and prevention measures in twelve countries: results of the WHO project on public drinking. <i>Contemporary Drug Problems</i> , 24, 425-448.	Underage drinking/minimum drinking age DUI/DWI High risk venues Server training	Australia Canada Chile Congo* Fiji* Finland France India* Israel* Japan Poland Trinidad* & Tobago*

11	Jernigan, D. H., Monteiro, M., Room, R., & Saxena, S. (2000). Towards a global alcohol policy: Alcohol, public health and the role of WHO. <i>Bulletin of the World Health Organization</i> , 78 (4), 491-499	Overview of the area	International
12	Bennett, L. A., Campillo, C., Chandrashekar, C. R., & Gureje, O. (1998). Alcoholic beverage consumption in India, Mexico, and Nigeria. <i>Alcohol Health and Research World</i> , 22 (4), 243-252.	Prohibition Underage drinking/minimum drinking age	India* Mexico* Nigeria*
13	Saxena, S. (1997). Alcohol, Europe and the developing countries. <i>Addiction</i> , 92 (supp 1), S43-S48.	Overview of alcohol-related issues for developing countries	International <b>(particular focus is on developing countries)</b>
14	Jernigan, D. H. (1997). <i>Thirsting for Markets. The Global Impact of Corporate Alcohol</i> . San Rafael, California: The Marin Institute.	Overview of alcohol-related issues for developing countries	Malaysia Zimbabwe Estonia
15	Miron, J. A. (1998). An economic analysis of alcohol prohibition. <i>Journal of Drug Issues</i> , 28 (3), 741-762.	Partial and/or total prohibition	USA

A number of areas were particularly well covered in these reviews, and there was general agreement between reviewers as to the efficacy of the interventions under investigation. These areas included: underage drinking and the minimum drinking age; price of alcohol; drink-driving (DUI/DWI); and responsible server training to reduce intoxication. Table 4 provides a list of the primary studies that have contributed to the reviews of these areas. With the exception of one study (Lang et al., 1996), all of the primary studies reviewed were from the United States of America.

**Table 4: Regulation of Alcohol Primary Studies that have Contributed to Reviews**

	Citation	Relevant Area/s of Investigation	Country
1	McKnight, A. J., & Streff, F. M. (1992). The effect of enforcement upon service of alcohol to intoxicated patrons of bars and restaurants. <i>Unpublished manuscript</i> . Michigan: National public Services Research Institute	Intoxication – responsible service	USA
2	Wagenaar, A. C., Toomey, T. L., Murray, D. M., Short, B. J., Wolfson, M., & Jones-Webb, R. (1996). Sources of alcohol for underage drinkers. <i>Journal of Studies on Alcohol</i> , 57, 325-333.	Underage drinking/minimum drinking age	USA
3	Harrison, P. A., Fulkerson, J. A., Park, E. (2000). The relative importance of social versus commercial sources in youth access to tobacco, alcohol, and other drugs. <i>Preventive Medicine</i> , 31, 39-48.	Underage drinking/minimum drinking age	USA
4	Lang, E., Stockwell, T., Rydon, P., & Beel, A. (1996). Use of pseudo-patrons to assess compliance with laws regarding under-age drinking. <i>Australian and New Zealand Journal of Public Health</i> , 20, (3), 296-300.	Underage drinking/minimum drinking age	Australia
5	Saffer, H., & Chaloupka, F. (1994). Alcohol tax equalization and social costs. <i>Eastern Economic Journal</i> , 20 (1), 33-43	Price of alcohol	USA
6	Saltz, R., & Stangetta, P. (1997). A community-wide responsible beverage service programme in three communities: early	Server training	USA

	findings. <i>Addiction</i> , 92 (Supp 2), S237-S249.		
7	Buka, S. L., Birdthistle, I. J. (1999). Long-term effects of a community-wide alcohol server training intervention. <i>Journal of Studies on Alcohol</i> , 60, 27-36.	Server training	USA
8	Saltz, R. F. (1987). The roles of bars and restaurants in preventing alcohol-impaired driving. An evaluation of server intervention. <i>Evaluation and Health Professions</i> , 10 (1), 5-27.	Intoxication – service of intoxicated patrons Server training	USA
9	Ruhm, C. J. (1996). Alcohol policies and highway vehicle fatalities. <i>Journal of Health Economics</i> , 15, 435-454.	Price of alcohol	USA
10	Coate, D., & Grossman, M. (1988). Effects of alcoholic beverage prices and legal drinking ages on youth alcohol use. <i>Journal of Law and Economics</i> , (April), 145-171.	Price of alcohol	USA
11	Chaloupka, F. J., & Wechsler, H. (1996). Binge drinking in college: The impact of price, availability, and alcohol control policies. <i>Contemporary Economic Policy</i> , 14, 112-124.	Price of alcohol DUI/DWI	USA
12	Jewell, R. T., & Brown, R. W. (1995). Alcohol availability and alcohol-related motor vehicle accidents. <i>Applied Economics</i> , 27, 759-765.	DUI/DWI	USA

To complement the review articles, and to address the remaining areas of investigation that were either not covered in reviews, or for which little consensus was achieved regarding the efficacy of the interventions, primary studies were then selected. The areas for which primary studies were chosen included: trading hours and days; location and planning (outlet density); alcohol types; crime; accords/community policy and high risk venues. There were two exceptions to this selection process. One study relating to the price of alcohol was selected because it was from a country other than the United States of America (National Drug Research Institute, 1999), while another was chosen because it investigated a strategy (the use of victim impact panels for drink driving offenders) that was not covered by previous reviews (Fors & Rojeck, 1999). Three primary studies from developing countries (Thailand, Brazil, and Israel) were also included. The selected primary studies, 15 in total, are presented in Table 5, and have been summarized in Appendix B.

**Table 5: Regulation of Alcohol Included Primary Studies**

	Citation	Relevant Area/s of Investigation	Country
1	Gray, D., Sagers, S., Atkinson, D., Sputore, B., & Bourbon, D. (2000). Beating the grog: An evaluation of the Tennant Creek licensing restrictions. <i>Australian and New Zealand Journal of Public Health</i> , 24 (1), 39-44.	Trading hours and days	Australia
2	Chikritzh, T., Stockwell, T., & Masters, L. (1997). Evaluation of the public health and safety impact of extended trading permits for Perth hotels and nightclubs. <i>National Centre for Research into the Prevention of Drug Abuse</i> . Bentley: Curtin University of Technology.	Trading hours and days	Australia

3	Scribner, R. A., MacKinnon, D. P., & Dwyer, J. H. (1994). Alcohol outlet density and motor vehicle crashes in Los Angeles county cities. <i>Journal of Studies on Alcohol</i> , 55, 447-453.	Location and planning (outlet density)	USA
4	Norstrom, T. (1998). Effects on criminal violence of different beverage types and private and public drinking. <i>Addiction</i> , 93 (5), 689-699.	Alcohol types	Sweden
5	Stockwell, T., Masters, L., Philips, M., Daly, A., Gahegan, M., Midford, R., & Philp, A. (1998). Consumption of different alcoholic beverages as predictors of local rates of night-time assault and acute alcohol-related morbidity. <i>Australian and New Zealand Journal of Public Health</i> , 22 (2), 237-242.	Alcohol types	Australia
6	National Drug Research Institute. (1999). <i>The public health, safety and economic benefits of the Northern Territory's Living With Alcohol Programme</i> . Bentley: National Drug Research Institute.	Price of alcohol	Australia
7	Fors, S. W., & Rojek, D. G. (1999). The effect of victim impact panels on DUI/DWI rearrest rates: A twelve-month follow-up. <i>Journal of Studies on Alcohol</i> , 60, 514-520.	DUI/DWI	USA
8	Lewis, R. K., Paine-Andrews, A., Fawcett, S. B., Francisco, V. T., Richter, K. P., Copple, B., & Copple, J. E. (1996). Evaluating the effects of a community coalition's efforts to reduce illegal sales of alcohol and tobacco products to minors. <i>Journal of Community Health</i> , 21, (6), 429-436.	Accords/ community policy	USA
9	Hawks, D., Rydon, P., Stockwell, T., White, M., Chikritzhs, T., & Heale, P. (1999). <i>The evaluation of the Fremantle police-licensee accord: Impact on serving practices, harm and the wider community</i> . Bentley: National Drug Research Institute.	Accords/ community policy	Australia
10	Stockwell, T., Rydon, P., Gianatti, S., Jenkins, E., Ovenden, C., & Syed, D. (1992). Levels of drunkenness of customers leaving licensed premises in Perth, Western Australia: A comparison of high and low 'risk' premises. <i>British Journal of Addiction</i> , 87, 873-881.	High risk venues	Australia
11	Speer, P. W., Gorman, D. M., Labouvie, E. W., & Ontkush, M. J. (1998). Violent crime and alcohol availability: Relationship in an urban community. <i>Journal of Public Health Policy</i> , 19, 175-190.	Crime	USA
12	Scribner, R. A., MacKinnon, D. P., & Dwyer, J. H. (1995). The risk of assaultive violence and alcohol availability in Los Angeles county. <i>American Journal of Public Health</i> , 85 (3), 335-340.	Crime	USA

13	Homel, R., & Clark, J. (1994). The prediction and prevention of violence in pubs and clubs. <i>Crime Prevention Studies</i> , 3, 1-46.	Crime	Australia
14	Laranjeira, R., & Hinkly, D. (2001). Evaluation of alcohol outlet density in a poor area of Sao Paulo – in search of an alcohol policy for the city. <i>Unpublished manuscript</i> .	Location and planning (outlet density)	Brazil*
15	Poehayachinda, V., Laxuthai, A., & Sirivongse, A. (1998). Problems identification related to alcohol consumption for a practical approach to protection and problem solving. Situation analysis in Lopburi province. <i>Research Paper in Thai</i> .	Crime DUI/DWI	Thailand*

## SUMMARY OF FINDINGS

The regulation of the physical and economical availability of alcohol has lent itself to extensive investigation in part because of alcohol's legality and long history of use in many countries. The results of such investigation have been given a particular pertinence by the increasing globalization of trade in alcohol and evidence of rising consumption in countries previously characterized by low levels of consumption and indigenous production (Jernigan, 1997; Saxena, 1997).

Being a legal substance in many countries, the manufacture and distribution of which is regulated and documented has meant that a degree of methodological sophistication can be observed which is mostly lacking in the study of illegal psychoactive substances. As a consequence a greater confidence can be reached in the conclusions than is true of research into illicit substances, although the extrapolation of those conclusions to other less regulated environments remains questionable.

Most research in this area has been carried out in what have been termed "saturated" market places, in economically developed countries characterized by high levels of consumption and wide availability (Stockwell & Gruenewald, 2001). Not surprisingly it has been harder to demonstrate a relationship between the availability of alcohol and its consumption in such countries where only small effects can be expected than may be true in countries which are by comparison "unsaturated" but in which the absence of data at present makes any such examination difficult (Saxena, 1997).

The regulation, and in some instances, the statutory enforcement of the regulations relating to alcohol has meant that more exact relationships have been observed, for example, between the density of outlets and the style of drinking observed in their neighbourhoods. The provision of localized data in some instances has added an additional refinement (Single, 1997; Saxena, 1997; Chikritzhs et al, 1997; Stockwell et al, 1998; Stockwell et al, 1992).

While the legality of alcohol in many countries has made the consequences of its use more accessible to investigation it needs to be noted that there is an increasing tendency to regard alcohol like any other commodity to be traded freely and increasingly in the world without trade barriers. This has meant the subjugation of national policies in relation to alcohol to the dictate of international treaties and coalitions and as already observed, the increasing globalization of alcohol with as yet inadequately documented consequences (Jernigan, 1997; Saxena, 1997; Jernigan et al, 2000).

The principal dependant variables investigated, which have included various measures of consumption, drink driving statistics, road crashes, violence and crime, and rates of alcohol-caused mortality and morbidity provide the basis on which this summary is organized.

Changes in the age at which alcohol is legally available, the density of outlets, the hours during which it can be sold and its price have all been shown to influence consumption levels with increases in availability, however affected, generally leading to higher consumption (Stockwell & Gruenewald, 2001; Osterberg, 2001; Grube & Nygaard, 2001; Gray et al, 2000; Chikritzhs et al, 1997). A particular refinement, increasingly observed in the literature, is to distinguish between consumption in general and risky or problematic consumption, however defined (Stockwell & Gruenewald, 2001). Of particular consequence is the finding that increasing the availability of alcohol, however achieved, leads to an increase in problem drinking and both chronic harms such as liver cirrhosis and strokes, and acute harms, such as road crashes and violence (Chikritzhs et al, 1997; Chaloupka, 1993; Miron, 1998; National Drug Research Institute, 1999).

Drink driving statistics provide an objective index against which the effect of changes in the availability of alcohol can be observed particularly in those countries in which random breath testing is legislated for and widely enforced. While clearly not every instance of intoxicated or disabled driving is enumerated, even in those countries strenuously enforcing the law against drink driving, drink driving statistics provide a useful barometer for assessing the effect of limiting the availability of alcohol or at least its influence in the drink driving environment (McKnight & Voas, 2001; Peek-Asa, 1999; Hingson, 1996; Kenkel, 1998; Chikritzhs et al, 1997; Scribner et al, 1994; National Drug Research Institute 1999; Fors & Rojek, 1999).

In those countries in which such measures have been introduced its effect has been to reduce the incidence with which drinkers drink and drive or at least drink over the legally prescribed limit. This effect is demonstrated by the falling incidence of such offences and the frequency with which alcohol is implicated in road crashes (McKnight & Voas 2001; Peek-Asa, 1999; Hingson, 1996). Moreover the more strenuously the law is prosecuted (as reflected in the number of random tests per licensed driver) the more effective the restriction (McKnight & Voas, 2001; Peek-Asa, 1999). The introduction of random breath testing in a number of countries has prompted a number of industry led initiatives, such as the skipper programme, whereby one person elects not to drink so as to provide safe transportation for the remainder of the party and the introduction of lower alcohol beers which permit drinkers "to stay a little longer" while remaining under the legally prescribed limit for driving (National Drug Research Institute, 1999).

The introduction of zero blood alcohol levels for young or probationary drivers, particularly if combined with extensive or targeted random stopping, has been shown to reduce the proportion of such drivers involved in road traffic crashes (Grube & Nygaard 2001; Peek-Asa, 1999).

While effective in reducing road traffic accidents these measures, together with the initiatives taken by the alcohol industry to circumvent them, such as the skipper programme, have not been shown to influence consumption in general or even risky consumption in other environments than the drinking environment.

Road traffic accidents, particularly those occurring at night, or in the near vicinity of alcohol outlets, have been used as an index of the effect of measures designed to influence the availability of alcohol (Stockwell et al, 1998). The availability of localized sales data in relation to particular outlets, combined with information as to where those apprehended for drink driving or involved in alcohol-related road traffic accidents last drank, has allowed a particularly close examination of the relationship between consumption patterns and subsequent traffic offences and accidents. Changes in opening hours for example are found to closely mirror those times when the majority of traffic offences occur, with later closing times moving the peak of such offences to commensurately later times (Chikritzhs et al, 1997). A similar relationship has been found in relation to the incidence of assaults in and around licensed premises (Chikritzhs et al, 1997). Furthermore, the extension of trading hours has been shown in this well-controlled study to result in significantly higher alcohol sales as well as a large increase in violence in and around the premises in question (Chikritzhs et al, 1997).

Data relating to drink driving, accidents and assaults which implicate particular premises, either because they were named as the last place at which drinking occurred or because such incidents occurred in the near vicinity of such premises, have allowed a close examination of the characteristics of those premises associated with a higher incidence of such events (Stockwell, 1992; Homel & Clark, 1994; Homel et al, 2001; Single, 1997). In general they have been shown to allow a greater degree of crowding, the discounting of drinks, service to under age and intoxicated patrons, the use of intimidatory crowd control and loud music. As a result various attempts have been made to draw up codes of good management sometimes referred to as Accords, usually self regulating agreements between local licencees and the police responsible for enforcing the Liquor Act, the beneficial effects of which are still to be demonstrated, or if demonstrated, sustained beyond the involvement of professional facilitators (Hawks et al, 1999). In those countries, notably Canada, in which the law against serving intoxicated patrons is more systematically enforced such practices have been shown to diminish (Single, 1997; Stockwell & Gruenewald, 2001).

Alcohol is known to be implicated in the aetiology of a large number of acute and chronic health conditions. In some cases the role of alcohol is sufficiently paramount to allow that condition to be used as a "marker" for a variety of regulatory measures (Miron, 1998). For example, while cirrhosis of the liver can occur without there having been an extensive history of heavy alcohol consumption, this condition has been found to be strongly correlated with measures of per capita consumption in the same way that head injuries for example have found to be correlated with instances of intoxication (Chaloupka, 1993). What appears to be clear is that both per capita consumption and more specific instances of risky or problematic consumption are positively related to a variety of physical conditions (Stockwell & Gruenewald, 2001). The rates at which these adverse outcomes occur in a population can be used to monitor the impact of policy changes that effect the availability of alcohol in specific ways (e.g. Chikritzhs et al, 1999).

## **REGULATION OF THE PHYSICAL AND ECONOMIC AVAILABILITY OF ILLICIT PSYCHOACTIVE SUBSTANCES**

### **CRITERIA FOR INCLUSION IN THE REVIEW**

The aim of this section of the review was to identify both the range and efficacy of options available to law enforcement and policy makers in the regulation of illicit substances. The first stage of the systematic review focused on identifying comprehensive articles which canvassed the international spectrum of regulatory options available, with a view to their application to particular substance types. The aim of the second stage was to select from the initial articles identified, that material which demonstrated the effectiveness, or the lack of effectiveness, of a variety of different regulatory strategies. Given the political nature of this particular area, and the likelihood that this could be reflected in the literature, the following criteria were applied with respect to the inclusion of material:

- The review article or study had to explore both the positive and negative aspects of the particular regulatory strategies under discussion
- The review article or study incorporated material that was evidence based and/or theoretically driven, rather than providing descriptive commentaries or containing recommendations for which the basis could not be clearly substantiated
- The review article or study was able to be accessed during the 3 month time period allocated to identifying and accessing publications
- The review article or study presented reliable and valid evidence based on objective measures such as:



- 1) changes in prevalence of use
- 2) changes in offence rates, detection rates or incarceration rates
- 3) cost effectiveness (in terms of dollar value and / or social costs)
- 4) impact on health outcomes
- 5) impact on entry into substance use treatment
- 6) impact on the physical availability of the substance
- 7) impact on the price of the substance
- 8) changes in rates of seizures

The databases searched, the keywords used to identify studies, and the attempts to source grey literature on the regulation of illicit substances were those reported in the section titled Search Strategies. A total of 60 works were identified through these strategies.

## RESULTS OF THE SEARCHES

The review articles included in the project are listed in Table 6 and have been summarized in Appendix C. Of the fourteen articles selected, all but one met all of the inclusion criteria, the exception being the Asuni (1990) article. In particular, nine articles covered material that met the inclusion criteria for being balanced in the presentation of the relative strengths and weaknesses of various regulatory strategies. These were also broad in scope and had international applications. Two of the articles (Hando, Hall, Rutter & Dolan, 1999; Spruit, 1999) dealt with the issue of safer venues with respect to amphetamine use, which was not covered in as much detail elsewhere, and a further two articles (Single, Christie, & Ali, 2000; National Drug Research Institute, 2000) provided data on cost-effectiveness not reviewed in other articles. The Asuni (1990) article was included as it reported material specific to developing countries, particularly the African region.

**Table 6: Regulation of Illicit Psychoactive Substances Review Articles**

	<b>Citation</b>	<b>Relevant Area of Investigation</b>	<b>Substance/s of interest</b>
1	World Health Organization (1997). <i>Amphetamine-type Stimulants</i> . Geneva: World Health Organization	Venue Management Supply Reduction Precursor Chemical Legislation International Agreements <b>(included material on developing countries)</b>	Amphetamines
2	Rolfe, J.L. (1989). <i>Drug Control. Legal Alternatives and Consequences. Background Issues Papers</i> . Melbourne: Victorian Drug Rehabilitation and Research Fund, Health Dept Victoria.	Different legislative/policy frameworks	All
3	Lenton, S., Heale, P., Erickson, P., Single, E., Lang, E., & Hawks, D. (2000). <i>The regulation of cannabis possession, use and supply. A discussion document prepared for the Drugs and Crime Prevention Committee of the Parliament of Victoria. Monograph 3</i> . Perth: National Drug Research Institute.	International Treaties Different legislative/policy frameworks	Cannabis
4	Dixon, D., & Coffin, P. (1999). Zero tolerance policing of illegal drug markets. <i>Drug and Alcohol Review</i> , 18, 477-486.	Different legislative/policy frameworks Harm reduction policing Supply reduction	All
5	Hando, J., Hall, W., Rutter, S., & Dolan, K. (1999). <i>Current State of Research on Illicit Drugs in Australia: An Information Document</i> . Sydney: NHMRC.	Safer Venues	Amphetamines
6	Asuni, T. (1990). Impact of research on designing strategies for preventing and treating dependence on drugs: The case for developing countries especially African countries. <i>Drug and Alcohol Dependence</i> , 25, 203-207.	Prevention of trafficking Different legislative/policy frameworks <b>(focus is on developing countries)</b>	Cannabis Amphetamines Heroin Cocaine
7	National Drug Research Institute. (2000). <i>Current inquiry: Substance abuse in Australian communities</i> . Perth: National Drug Research Institute.	Cost-effectiveness Supply reduction	All
8	Martin, P. (2001). The eight 'easy steps' to engaging police in harm reduction. <i>Winter School in the Sun</i> . <a href="http://www.adfg.org/martin2.html">http://www.adfg.org/martin2.html</a>	Harm reduction policing	All
9	Krajewski, K. (1999). How flexible are the United Nations drug conventions? <i>International Journal of Drug Policy</i> , 10, 329-338.	International Agreements	All
10	Single, E., Christie, P., & Ali, R. (2000). The impact of cannabis decriminalisation in Australia and the United States. <i>Journal of Public Health Policy</i> , 21 (2), 157-186.	Different legislative/policy frameworks Cost effectiveness	Cannabis
11	MacCoun, R. J. (1993). Drugs and the law: A psychological analysis of drug prohibition. <i>Psychological Bulletin</i> , 113 (3), 497-512.	Different legislative/policy frameworks	All

12	Bureau of International Narcotics and Law Enforcement Affairs. (2000). <i>1999 International Narcotics Control Strategy Report</i> . <a href="http://www.state.gov/www/global/narcotics_law/1999_narc_report/index.html">http://www.state.gov/www/global/narcotics_law/1999_narc_report/index.html</a>	Crop Control Supply reduction Prevention of trafficking Precursor chemicals legislation International agreements (includes data on developing countries)	All
13	Van de Wijngaart, G. V. (1990). The Dutch approach: Normalization of drug problems. <i>Journal of Drug Issues</i> , 20 (4), 667-678.	Different legislative/policy frameworks	All
14	Spruit, I. (1999). Ecstasy use and policy responses in the Netherlands. <i>Journal of Drug Issues</i> , 29(3), 653-678.	Venue management Assets legislation Precursor chemicals legislation	Amphetamines

The primary studies selected for inclusion are provided in Table 7 and have been summarized in Appendix D. A fair degree of difficulty was experienced in incorporating a range of international studies for this area. Most of the international literature identified in the searches relating to illicit substances either (a) concentrated on epidemiological issues or rapid assessment methods (b) were related to needle exchange programmes or (c) were descriptive rather than evaluative in nature, and generally reported regulatory changes without reference to potential or actual impacts. The general paucity of good quality literature for this area was not entirely unexpected. For instance, MacCoun (1993) has suggested that studies relating to the regulation of illicit psychoactive substances are rarely well controlled and therefore suffer from threats to internal validity. Furthermore, the common failure to collect pre-intervention data renders it difficult to measure change effects. As a result of these obstacles, the majority of studies available for quality assessment were from Australia. Of the nine studies selected for inclusion, six of these were of Australian origin, and were produced by three research groups. The other countries represented include the United States of America, Canada, and the United Kingdom. No primary studies from developing countries relating to the regulation of illicit substances were identified through the search strategies.

**Table 7: Regulation of Illicit Psychoactive Substances Primary Studies**

	Citation	Drug	Country
1	Donnelly, N., Hall, W., & Christie, P. (2000). The effects of the Cannabis Expiation Notice system on the prevalence of cannabis use in South Australia: Evidence from the National Drug Strategy Household Surveys 1985-1995. <i>Drug and Alcohol Review</i> , 19, 265-269.	Cannabis	Australia
2	Weatherburn, D., Lind, B., & Lubica, F. (1999). Drug law enforcement: its effects on treatment experience and injection practices. <i>General Report Series</i> . Sydney: NSW Bureau of Crime Statistics and Research.	Heroin	Australia
3	Lenton, S., Humeniuk, R., Heale, P., & Christie, P. (2000). Infringement versus conviction: The social impact of a minor cannabis offence in South Australia and Western Australia. <i>Drug and Alcohol Review</i> , 19, 257-264.	Cannabis	Australia
4	Petry, N.M. (2000). Effects of increasing income on polydrug use: A comparison of heroin, cocaine and alcohol abusers. <i>Addiction</i> , 95 (5), 705-717.	Alcohol Tobacco Heroin Cocaine Cannabis	United States of America
5	Heale, P., Hawks, D., & Lenton, S. (2000). Public awareness, knowledge and attitudes regarding the CEN system in South Australia. <i>Drug and Alcohol Review</i> , 19, 271-280.	Cannabis	Australia

6	Keane, C., Gillis, A.R., & Hagan, J. (1989). Deterrence and amplification of juvenile delinquency by police contact. The importance of gender and risk-orientation. <i>British Journal of Criminology</i> , 29 (4), 336-352.	Cannabis	Canada
7	Weatherburn, D., & Lind, B. (1997). The impact of law enforcement activity on a heroin market. <i>Addiction</i> , 92, 557-569.	Heroin	Australia
8	Christie, P., & Ali, R. (2000). Offences under the Cannabis Expiation Notice scheme in South Australia. <i>Drug and Alcohol Review</i> , 19, 251-256.	Cannabis	Australia
9	Sutton, M., & Maynard, A. (1994). Trends in the cost-effectiveness of enforcement activity in the illicit heroin market, 1979-1990. <i>Yartic Occasional Paper 4</i> . York: University of York.	Heroin	United Kingdom

## SUMMARY OF FINDINGS

The regulation of the physical and economic availability of illicit substances largely through policing is an inviting means of limiting the supply of such substances. While the relationship between the supply of illicit substances and demand for them in any specific instance is unpredictable there are a priori reasons to suppose that limiting their supply is one means of reducing their use. The studies reviewed in this section address the effectiveness of such measures.

It needs to be acknowledged at the outset however that with the exception of a few studies relating to specific psychoactive substances (principally cannabis) or specific regions, largely the United States of America and Australasia, the literature is deficient in this area. Aside from the fact that few studies are generalisable across regions or substance categories the lack of pre-intervention data and the absence of objective indicators of outcome make it difficult to offer summary recommendations. The fact that the behaviours in question, the use and supply of illicit substances, remain illegal activities makes their accessibility to measurement extremely difficult. In particular the inability to measure substance use, availability, price, purity and supply activity with any reliability, limit what conclusions can be made about the impact of different styles of law enforcement activity.

Notwithstanding these complexities the regulation, principally by limiting the physical availability of illicit substances, remains of interest to policy makers precisely because, at least theoretically, it is open to legislative or regulatory fiat; a consideration which renders evaluative research in this area even more imperative. For such research to be valid will require that reliable pre-intervention baseline measures be obtained and objective post-intervention measures be recorded over a sufficient period of time to allow both short term and long term effects to be observed.

A number of studies have investigated the effect of police operations on supply and use of illicit substances. These operations have varied from nationwide policies such as "zero tolerance" to individual initiatives undertaken by local police in specific jurisdictions. In general it has been found that policing initiatives have a role in regulating or shaping the market for substances, at least in the short term, rather than eradicating it (Weatherburn & Lind, 1997; Keane, Gillis & Hagan, 1989; Dixon & Coffin, 1999; Martin, 2001). While increased police enforcement may result in a temporary increase in the price of substances, it does not appear to permanently influence supply with the increased risk of prosecution being "factored" in by suppliers (Weatherburn & Lind, 1997). Nor does increasing the price of a particular substance *ipso facto* result in beneficial effects. It may merely divert use to other possibly more dangerous substances (Weatherburn and Lind 1997).

The application of "zero tolerance" approaches mainly pursued in the United States, whereby even quite minor substance use related offences are prosecuted, have not generally led to a reduction in supply, rather its diversion and dispersal, while at the same time increasing the number of people incarcerated for substance use related offences (Dixon & Coffin, 1999).

Perhaps the best evidence relating to the effect of varying the economic and physical availability derives from those studies of changes in the legislation effecting cannabis. The existence of a number of countries, particularly Canada, the United States and Australia, in which States or Provinces have jurisdiction over cannabis laws allows comparisons within countries and so achieves a degree of methodological sophistication impossible between countries.

The main such changes have been in the direction of decriminalising the personal use or cultivation of cannabis, while still rendering such activities illegal by substituting civil for criminal penalties. Such changes have generally been found not to result in the more widespread or intense use of cannabis; they have not however led to the reduced use of other more dangerous substances, as the proponents of such changes have sometimes argued (Donnelly, Hall & Christie 2000; Lenton et al., 2000; Single, Christie & Ali, 2000; Van de Wijngaart, 1990).

On the other hand there is a risk that the introduction of civil penalties for the personal possession or cultivation of cannabis can lead to a "net widening". In at least one jurisdiction it has been shown that because of the administrative facility with which such penalties can be applied (usually fines) and the frequency with which they are avoided (that is, not expiated) there has been a significant increase in the number of people prosecuted for such offences. As a consequence changes in the manner in which such offences can be discharged have been introduced to reduce net-widening (Christie & Ali, 2000; Single & Christie, 2000).

Policies which substitute civil for criminal penalties for cannabis use, while not appearing to increase cannabis use, have been shown to reduce the social and economic consequences of such penalties on those prosecuted, while at the same time effecting considerable savings in policing and court costs (Lenton, Humeniuk, Heale & Christie, 2000; Single and Christie, 2000; Van de Wijngaart, 1990).

The introduction of changes in legislation to regulate the use and cultivation of cannabis in a number of constituencies has allowed an examination of the attitudes of the public to such changes. While the changes have not always been understood, with decriminalization frequently being confused with legalization, such changes have usually been tolerated, although in one American state (Alaska) they have been subsequently reversed. The lack of understanding of such changes, and particularly about the legal status of the behaviours in question, would recommend that public education initiatives be introduced at the same time as the projected changes (Heale, Hawks & Lenton, 2000; Christie & Ali, 2000; Single & Christie, 2000).

A number of papers have set out the characteristics of various regulatory regimes, most notably in respect to cannabis, and have argued the pros and cons of such regimes. With the exception of some Australian studies where the federated nature of state and federal relations permits a degree of experimentation, few comparisons are available between regimes where both pre and post-intervention data is available (Rolfe, 1989; Lenton et al., 2000; National Drug Research Institute, 2000; Single, Christie, & Ali, 2000).

A number of studies have investigated the effect on subsequent substance use and criminal activities on admission to a treatment regime, usually methadone maintenance. A consistent finding has been that retention in treatment is a positive function of prior substance use and is associated with reduced recourse to illicit substances and diminished criminal activity, suggesting that the wider provision of treatment and its easier accessibility would be as effective a means of reducing substance use among existing users as police activity (Weatherburn, Lind, & Lubica, 1999; Weatherburn & Lind, 1997).

A number of countries, notably the Netherlands, but including those that have adopted a harm minimization approach to psychoactive substance use, have sought to "normalize" illicit use while not seeking to make it legal. While longitudinal data relevant to these countries does not permit confident attribution, there is some evidence that such policies do not increase substance use, while encouraging safer use by making it the subject of public education and greater access to treatment (Van de Wijngaart, 1990). What is clear however is that for such policies to work requires that there is a health

and welfare infrastructure which is accessible and affordable to drug users. The provision of safe venues for substance use, while holding out the prospect of safer practise is yet to be adequately evaluated though a number of experiments are underway (Weatherburn, Lind, & Lubica, 1999; Hando et al., 1999; Spruit, 1999).

A number of studies have looked at the effect of applying economic or other sanctions to illicit substance use. What general conclusions can be derived suggest that different substances can be expected to respond to limitation on the supply differently, depending for example on their addictive potential, the pattern of their use, their prevalence and the ease with which they can be cultivated or manufactured (Petry, 2000; World Health Organization, 1997; Rolfe, 1999; Asuni, 1990). Limitations on supply, even when they can be demonstrated, do not inevitably result in reduced use. There are very few credible studies of the economic behaviour of suppliers and users under different conditions and at least some of those which do exist demonstrate that limitations on the supply of one substance may precipitate increased use of another, sometimes more dangerous drug. There is clearly a need for studies which examine the price elasticity of different substances (Petry, 2000; Sutton and Maynard, 1994).

Limitations on the physical or economic availability of illicit substances, while seemingly and superficially an easy policy option, are exceedingly difficult in reality to enforce, in part because of the covert nature of illicit substance use and the international trade in such substances which makes establishing impermeable boundaries almost impossible (WHO, 1997; Rolfe, 1999). Whether or not limitations on the availability will be effective is at least in part determined by the cultural and contextual acceptance of such limitations (WHO, 1997; Rolfe, 1999; Van de Wijngaart, 1990). Laws which do not enjoy widespread support are unlikely to be implemented in reality, while the imposition of penalties, even severe penalties on suppliers is ineffectual unless there is an apprehension of prosecution leading to the suggestion that some enforcement initiatives in this area are best directed at the production of psychoactive substance use than their supplier, though even here the means of production in the case of some substances are so widespread that this strategy of restricting availability is limited (WHO, 1997; Spruit, 1999). The existence of a number of international agreements or treaties to which countries are signatories and in relation to which there are at times conflicting interpretations have acted as an inhibitor of experimentation in this area (Lenton et al., 2000; Krajewski 1999).

Several of the reviews included in this section provide epidemiological data relating to the prevalence of certain substance use in different countries (Bureau of International Narcotics and Law Enforcement Affairs, 2000). They have been included, not because they allow an assessment of the efficacy of different legislative regimes, but because they provide scant details of use in certain, largely developing, countries. Whether or not the regulations affecting their use in the different countries reviewed have been effective in diminishing their use is impossible to ascertain.

## **MASS MEDIA**

### **CRITERIA FOR INCLUSION IN THE REVIEW**

The purpose of this section is to provide evidence regarding the effectiveness of mass media campaigns and media advocacy to prevent substance use, as well as to canvass the effects of advertising and advertising restrictions on young people. Both Aitken (1989) and Jernigan (1997) have identified the latter as a salient issue, given the aggressive advertising and marketing strategies currently being employed by alcohol companies to sell their products in developing countries. A similar pattern regarding the marketing of tobacco has been reported by Barry (1991), who also suggests that on occasion, the advertising expenditure by tobacco companies in a given country can exceed that country's national health research budget.

Comprehensive mass media campaigns are often expensive, and there may be literacy and language barriers in developing countries that contra-indicate the use of certain mediums (WHO, 1997). Therefore

particular attention has been given to the use of media advocacy as a cost-effective strategy, and the use of a range of mediums, (including alcohol warnings), for communicating health promotion messages in the mass media.

The strategies employed to identify literature for this section are those outlined in the Search Strategies section of the report. The searches produced a list of 92 studies relating broadly to mass media. Of these, 33 studies were not relevant to the areas of investigation outlined, and 9 studies could not be accessed within the three month time frame allocated to identifying and sourcing material for review. The remaining 50 studies were sourced in their entirety. To be considered for inclusion, review articles had to meet the following criteria:

- The review had to identify components or issues related to effectiveness that have international application, rather than being context-specific.
- The review had to provide media-related information on theories, concepts or mechanisms that can create changes in knowledge, attitudes, or behaviour.
- The review had to be published from 1985 onwards, unless the concepts or issues identified were not covered in later articles, or unless the article was a key work frequently cited by other authors.

## RESULTS OF THE SEARCHES

The 13 review articles selected for inclusion are provided in Table 8, with three articles providing information relating to developing countries (Aitken, 1989; Barry, 1991; Jernigan, 1997). These reviews have also been summarized in Appendix E.

**Table 8: Mass Media Review Articles**

	Citation	Relevant Area/s of Investigation	Substance
1	Boots, K., & Midford, R. (2001). Mass media marketing and advocacy to reduce alcohol-related harm. In N.Heathers, T.J. Peters & T.Stockwell (Eds.). <i>International Handbook of Alcohol Dependence and Problems</i> . (pp. 805-822). Chichester: John Wiley and Sons.	Media Advocacy Media Campaigns	Alcohol
2	DeJong, W., & Winsten., J.A. (1990). The use of mass media in substance abuse prevention. <i>Health Affairs, Summer</i> , 30-46.	Media Campaigns	All
3	DeJong, W., & Atkin, C.K. (1995). A review of national television PSA campaigns for preventing alcohol-impaired driving, 1987-1992. <i>Journal of Public Health Policy</i> , 16 (1), 59-79.	Media Campaigns	Alcohol
4	Wallack, L.M. (1983). Mass media campaigns in a hostile environment: Advertising as anti-health education. <i>Journal of Alcohol and Drug Education</i> , 28, 51-63.	Media campaigns	All

5	Greenfield, T.K. (1997). Warning labels: Evidence on harm reduction from long-term American surveys. In M. Plant, E. Single and T. Stockwell (Eds.). <i>Alcohol. Minimising the Harm. What Works?</i> (pp. 105-125). London: Free Association Press.	Media Campaigns (warning labels)	Alcohol
6	World Health Organization. (1997). Prevention approaches for amphetamine-type stimulants. In <i>Amphetamine-type Stimulants</i> . (pp. 137-161). Geneva: World Health Organization.	Mass media campaigns	Amphetamines
7	Sowden, A. J. & Arblaster, L. (2001). Mass media interventions for preventing smoking in young people. <i>Cochrane Library, Issue 2</i> . Oxford: Update Software.	Mass media campaigns	Tobacco
8	Proctor, D., & Babor, T.F. (2001). Drug wars in the post-Gutenberg galaxy: Mass media as the next battleground. <i>Addiction</i> , 96, 377-381.	Media campaigns Advertising and advertising restrictions	All
9	Aitken, P.P. (1989). Alcohol advertising in developing countries. <i>British Journal of Addiction</i> , 84, 1443-1445.	Advertising and advertising restrictions <b>(this article examines the impact of advertising in developing countries)</b>	Alcohol
10	Jernigan, D. H. (1997). <i>Thirsting for Markets. The Global Impact of Corporate Alcohol</i> . San Rafael, California: The Marin Institute.	Advertising and advertising restrictions <b>(this article examines the impact of advertising in developing countries)</b>	Alcohol
11	Hill, L., & Caswell, S. (2001). Alcohol advertising and sponsorship: commercial freedom or control in the public interest? In N.Heathers, T. Peters & T.Stockwell (Eds.). <i>International Handbook of Alcohol Dependence and Problems</i> . (pp. 823-846). Chichester: John Wiley and Sons.	Advertising and advertising restrictions	Alcohol
12	Wallack, L. (1984). Television programming, advertising, and the prevention of alcohol-related problems. In D.R. Gerstein (Ed.). <i>Towards the Prevention of Alcohol Problems. Government, Business, and Community Action</i> . (pp. 79-169). Washington: National Academy Press	Advertising and advertising restrictions	Alcohol
13	Barry, M. (1991). The influence of the U.S. tobacco industry on the health, economy and environment of developing countries. <i>New England Journal of Medicine</i> , 324 (13), 917-920.	Advertising and advertising restrictions Mass media campaigns. <b>(this article examines media-related issues within the broader socio-political and cultural context of developing countries)</b>	Tobacco



For the primary studies, a set of inclusion criteria was developed for both media campaigns, and for advertising and advertising restrictions. Mass media campaigns were selected based on 1) pretesting of the campaign 2) a clearly defined target audience 3) a description of all of the mediums employed 4) evaluation of the campaign that corresponds to and is commensurate with the key aims 5) if an advocacy component was employed, a detailed description of how this was undertaken and the resulting effects. All seven of the included studies met these criteria. Studies relating to advertising and advertising restrictions were chosen based on the following: 1) the research incorporated a strong design for suggesting causality, such as time-series (and/or longitudinal), controlled before/after, or the use of structural equation modelling 2) the research incorporated variable/s that measure the relationship between advertising, and present and/or future drinking *behaviour* (either intended or actual), 3) the sample for the research consisted of children aged 18 years or younger.

As only three studies (Aitken, et al, 1988; Connolly, Casswell, Zhang, & Silva, 1994; Grube, & Wallack, 1992) met all of the inclusion criteria for the advertising and advertising restrictions section, there was some concern that the criteria may have been too exclusive. The parameters were broadened slightly to incorporate other material, which failed to meet one of these criteria, but still provided a useful contribution to the field. On this basis, two studies that failed to meet criterion one regarding study designs were included. These were both cross-sectional studies, one from Israel (Weiss, 1997), and one from the United Kingdom (Aitken et al, 1988) which included informative qualitative data. It should be noted that the Weiss (1997) study was included as it was from a developing country. A further study (Saffer, 1991) was also included despite failure to meet the sampling criterion, as it reported useful international pooled-time series data on advertising restrictions. The amended list of studies is included in Table 9, with summaries of each of the studies provided in Appendix F.

**Table 9: Mass Media Primary Studies**

	Citation	Relevant Area/s of Investigation	Substance	Country
1	Makkai, T., Moore, R., & McAllister, I. (1991). Health education campaigns and drug use: The 'drug offensive' in Australia. <i>Health Education Research</i> , 6 (1), 65-76	Mass media campaigns	All	Australia
2	Casswell, S., Ransom, R., & Gilmore, L. (1990). Evaluation of a mass-media campaign for the primary prevention of alcohol-related problems. <i>Health Promotion International</i> , 5 (1), 9-17.	Mass media campaigns Media Advocacy	Alcohol	New Zealand
3	Pierce, J.P., Macaskill, P., & Hill, D. (1990). Long-term effectiveness of mass media led antismoking campaigns in Australia. <i>American Journal of Public Health</i> , 80, 565-569.	Mass media campaigns	Tobacco	Australia
4	Carroll, T. (1993). 'Speed catches up with you'. The development and implementation of the National Drug Offensive amphetamine campaign. <i>Commonwealth Dept of Health, Housing and Community Services</i> .	Mass media campaigns	Amphetamines	Australia
5	Drug and Alcohol Services Council. (1991). Evaluation of DRINKWISE South Australia. <i>Drug and Alcohol Services Council Bulletin</i> 7.	Mass media campaigns	Alcohol	Australia
6	Weiss, S. (1997). Israeli Arab and Jewish youth knowledge and opinion	Mass media campaigns (warning labels)	Alcohol	Israel

	about alcohol warning labels: Pre-intervention data. <i>Alcohol and Alcoholism</i> , 32 (3), 251-257.			
7	Slater, M.D., & Domenech, M.M. (1995). Alcohol warnings in TV beer advertisements. <i>Journal of Studies on Alcohol</i> , 56, 361-367.	Mass media campaigns (warnings in advertising)	Alcohol	United States of America
8	Saffer, H. (1991). Alcohol advertising bans and alcohol abuse: An international perspective. <i>Journal of Health Economics</i> , 10 (1), 65-79.	Advertising and advertising restrictions	Alcohol	Australia Austria Belgium Canada Denmark Finland France Ireland Italy Luxembourg Netherlands Norway Portugal Spain Sweden UK USA
9	Grube, J.W. & Wallack, L. (1992) The effects of television beer advertising on children. Berkeley: <i>Prevention Research Center</i> .	Advertising and advertising restrictions	Alcohol	USA
10	Connolly, G.M., Casswell, S., Zhang, J., & Silva, P.A. (1994). Alcohol in the mass media and drinking by adolescents: A longitudinal study. <i>Addiction</i> , 89, 1255-1263.	Advertising and advertising restrictions	Alcohol	New Zealand
11	Aitken, P.P., Eadie, D.R., Leather, D.S., McNeill, R.E., & Scott, A.C. (1988). Television advertisements for alcoholic drinks do reinforce under-age drinking. <i>British Journal of Addiction</i> , 83, 1399-1419.	Advertising and advertising restrictions	Alcohol	UK
12	Wyllie, A., Zhang, J., & Casswell, S. (1998). Responses to televised alcohol advertisements associated with drinking behaviour of 10-17 year olds. <i>Addiction</i> , 93 (3), 361-371.	Advertising and advertising restrictions	Alcohol	New Zealand
13	Slater, M.D., Rouner, D., Murphy, K., Beauvais, F., Van Leuven, J., & Domenech Rodriguez, M. (1996). Male adolescents' reactions to TV beer advertisements: The effects of sports content and programming context. <i>Journal of Studies on Alcohol</i> , 57, 425-433.	Advertising and advertising restrictions	Alcohol	USA

## SUMMARY OF FINDINGS

The mass media has been a popular means with politicians and policy makers for influencing the use of substances, whether licit or illicit. While popular with policy makers, in part because of its widespread acceptance, it has been less easy to demonstrate its cost effectiveness. There have been relatively few studies in which adequate pre-campaign measures have been recorded and in which the effects of the campaign, if recorded, can be confidently attributed. In part this reflects the difficulty of providing adequate control populations when dealing with something as amorphous as the media and in part it reflects the fact that media campaigns, if pursued over the necessary time frame, are rarely the only influences bearing on the target population.

Despite their limitations it is likely that the mass media will continue to be used in attempts to modify substance use. It is appropriate therefore to summarize some of the conclusions which can be drawn from an examination of the research literature in this area.

It has been shown that media based campaigns which are pursued in conjunction with complimentary and reciprocal community actions are more effective than media campaigns alone in changing both attitudes towards substances and use itself (Casswell, Ransom, & Gilmore, 1990; Boots & Midford, 2001).

Media campaigns can have a variety of objectives for which different strategies and target audiences are appropriate. They have been shown to be effective in raising the general level for awareness with regard to substances and substance use and of lending support to policy initiatives in this area. Their effectiveness in precipitating changes to individual using behaviour is less clearly demonstrated (Makkai, Moore & McAllister, 1991; Casswell, Ransom & Gilmore, 1990; Carroll, Taylor & Lum, 1996; Proctor & Babor, 2001).

Changes in individual behaviour would seem to require both the provision of accurate information and the reduction of misinformation. In the case of illicit substances, particularly alcohol and tobacco, the concurrent and frequently prevalent advertising of these substances represents a countervailing, if not hostile influence, the consequence of which may be to modify if not nullify the effects of any health message (Slater, et al., 1996; Wallack, 1984; Wallack, 1983; Aitken, 1989).

Health advocacy, by which is meant the attempt to ensure a more supportive environment for healthy behaviour, whether by enhancing incentives for such behaviour and or removing disincentives is an important variant of a media based approach (Boots & Midford, 2001; Wallack, 1984; Wallack, 1983). The use of the mass media to effect changes in substance using behaviour is best seen as part of a systematic approach to the issue which will also require changes to the economic and social environment in which substance use occurs (Wallack, 1984).

In part because of the proliferation of media and the existence of countervailing influences expectations for the outcome of media campaigns need to be realistic and separately evaluated (Pierce, Macaskill, & Hill, 1990; Carroll, 1993; Taylor & Lum, 1996; Wallack, 1983).

A large number of studies have been carried out into the effectiveness of health warnings whether placed on packaging or on billboards. While they have been found to be an effective way of communicating the hazards associated with certain licit substances, with the heaviest users predictably having the greater exposure to such warnings, their effect on individual users is less certain in the absence of other economic and environmental initiatives (Pearce, Makerskill & Hill, 1990; Weiss, 1997; Slater & Domenech, 1995; Proctor & Babor, 2001; Greenfield, 1997).

The influence of advertising, and of bans on advertising on the perception and use of illicit substances has been the subject of extensive investigation. The advertising of alcohol products, particularly beer, and especially if associated with sporting prowess has been found to influence the perceptions and

future drinking intentions of under age viewers, particularly males (Grube & Wallack, 1992; Connolly, Casswell, Zhang, & Silva, 1994; Slater et al., 1996). Bans on the broadcast advertising of alcohol have been shown to be associated with lower per capita consumption and fewer motor vehicle motor accidents (Saffer, 1991).

Despite restrictions on the advertising of alcohol to under age audiences, in some countries studies have shown such audiences to be aware of alcohol advertisements. The positive perception of these advertisements is associated with intention to drink and heavy drinking at a later stage. This trend is more apparent for males than females (Connolly, Casswell, Zhang, & Silva, 1994; Aitken et al., 1988; Hill & Casswell, 2001).

The self or industry regulation of advertising of licit substances has generally found to be unsatisfactory from the health promotion point of view. Of particular note is the finding that the marketing activities of the alcohol and tobacco industries in some developing countries, previously characterized by low levels of consumption, is at variance with what is acceptable in developed economies, suggesting that in the absence of regulations on advertising which are enforced the alcohol and tobacco industries will seek through their marketing activities to increase consumption in these countries (Hill & Casswell, 2001; Barry, 1991; Jernigan, 1997).

A number of comprehensive reviews of the literature in this area have identified what are the effective ingredients of any mass media campaign. These include the need for well defined target group; the undertaking of formative research to understand the target audience and to pre-test campaign materials; the use of messages which build on audiences' current knowledge and which satisfy pre-existing needs and motives; addressing knowledge and beliefs which impede adoption of the desired behaviour; a media plan guaranteed to ensure exposure to the campaign; and a long term commitment to such a campaign (Boots & Midford, 2001; DeJong & Winston, 1990; World Health Organization, 1997; Sowden & Arblaster, 2001; DeJong & Atkin, 1995).

The use of scare tactics have only shown to be effective when applied with audiences having a low awareness. With high awareness audiences, modelling and demonstrating beliefs of non-use have been found to be more effective, as has challenging normative beliefs about the extent of use in a particular area or amongst a particular population (World Health Organization, 1997).

## **COMMUNITY BASED PROGRAMMES**

### **CRITERIA FOR INCLUSION IN THE REVIEW**

This section of the review addresses the literature on the effectiveness of community-based programmes designed to prevent or reduce substance use-related harm. One of the primary mandates for selecting literature for this section was to identify effective programmes that have been conducted in a wide variety of settings, in order to identify those effective components that were potentially transportable across a range of contexts. 'Community' was interpreted in a broad sense, including geographical, social and cultural communities. A notable exception to this was the school setting, to which a separate section of this report has been allocated.

As identified in the Main Areas of Investigation section, consideration of material for community based programmes included top down or bottom up approaches (or a combination of both strategies), and measures of effectiveness which incorporated capacity building, sustainability or institutionalization of the intervention with demonstrated effectiveness at both the scientific and community level. Of the 183 studies identified by the search strategies, the majority of these were better categorized as school or regulatory studies (with the community component being of secondary importance), or offered little more than a broad commentary on community based interventions. To be included review articles and primary studies were required to meet the following criteria:

- The community-based intervention was the primary mechanism for reducing substance use-related harm.
- The review article or study considered the importance of capacity and/or capacity building, contextual issues (such as an assessment of the needs of the community), and the maintenance/institutionalization of the programme over time.
- The review article or study was accessible within the three months allocated to identifying and sourcing material.
- The date of publication was 1985 or later.

Many of the publications identified in the searches, particularly those of a high quality, were from the United States. If based on the above criteria alone, the majority of exemplary publications selected would have been from this country. Given that the notion of community varies significantly across cultures, it was decided that including material from this country to the exclusion of others would represent a selection bias that would be counterproductive to the review. To ameliorate this, the material for initial review was divided into regions or countries, and selections were made from each of these. This allowed for the inclusion of the most comprehensive reviews or highest quality studies from each region or country. Preference was also given to review articles having an international scope.

## RESULTS OF THE SEARCHES

A total of 9 high quality, comprehensive review articles met all of the selection criteria and were therefore included in the review. The publication dates of these articles ranged from 1997 to 2001, and an examination of the reference lists of each indicated that the reviews had incorporated both recent material as well as studies published from 1984 onwards. Furthermore, 3 of the reviews were international, 2 were from North America (USA and Canada), 2 were from Australia, 1 was from Finland and 1 was from the United Kingdom. These reviews are listed in Table 10, and have been summarized in Appendix G.

**Table 10: Community Based Programmes Review Articles**

	Citation	Country
1	Graham, K., & Chandler-Coutts, M. (2000). Community Action Research: Who does what to whom and why? Lessons learned from local prevention efforts (international experiences). <i>Substance Use and Misuse</i> , 35 (1&2), 87-110.	International
2	Treno, A.J., & Holder, H.D. (2001). Prevention at the local level. In N.Heather, T.J. Peters and T. Stockwell (Eds.). <i>International Handbook of Alcohol Dependence and Problems</i> . (pp. 771-783). Chichester: John Wiley and Sons.	International
3	Holder, H.D., & Moore, R. S. (2000). Institutionalization of community action projects to reduce alcohol-use related problems: systematic facilitators. <i>Substance Use and Misuse</i> , 35 (1&2), 75-86.	International
4	Arthur, M.W., & Blitz, C. (2000). Bridging the gap between science and practice in drug abuse prevention through needs assessment and strategic community planning. <i>Journal of Community Psychology</i> , 28 (3), 241-255.	North America
5	Giesbrecht, N., & Rankin, J. (2000). Reducing alcohol problems through community action research projects: context, strategies, implications, and challenges. <i>Substance Use and Misuse</i> , 35 (1&2), 31-53.	North America
6	Midford, R., Laughlin, D., Boots, K., & Cutmore, T. (1994). Top down or bottom up: Is one approach better for developing a community response to alcohol harm? <i>Paper from APSAD National Conference on Alcohol, Drugs and the Family</i> . Melbourne: Conference Proceedings.	Australia
7	Gray, D., Saggars, S., Sputore, B., Bourbon, D. (2000). What works? A review	Australia

	of evaluated alcohol misuse interventions among Aboriginal Australians. <i>Addiction</i> , 85 (1), 11-22.	
8	Holmila, M. (2000). The Finnish Case: Community prevention in a time of rapid change in national and international trade. <i>Substance Use and Misuse</i> , 35 (1&2), 111-123.	Finland
9	Smith, L. (2000). <i>Take Your Partners! Stimulating Drugs Prevention in Local Communities</i> . Middlesex: Social Policy Research Centre.	United Kingdom

The same system was applied to primary studies from industrialized countries, with some latitude given to the number of studies incorporated from a particular country, so as to include research conducted with ethnic minority or indigenous populations. This selection process yielded 11 studies suitable for inclusion from industrialized countries. A further 5 studies were included from developing countries. The list of the 16 included primary studies is provided in Table 11, with the studies from developing countries indicated by an asterisk (\*) after the country name. Each of these studies has been summarized in Appendix H.

**Table 11: Community Based Programmes Primary Studies**

	Citation	Country
1	Moskalewicz, J., & Swiatkiewicz, G. (2000). Malczyce, Poland: A multifaceted community action project in Eastern Europe in a time of rapid economic change. <i>Substance Use and Misuse</i> , 35 (1&2), 189-202.	Poland
2	Saxe, L., Reber, E., Hallfors, D., Kadushin, C., Jones, D., Rindskopf, D., & Beveridge, A. (1997). Think globally, act locally: Assessing the impact of community-based substance abuse prevention. <i>Evaluation and Programme Planning</i> , 20 (3), 357-366.	United States of America
3	Holmila, M (1995). Community action on alcohol: Experiences of the Lahti Project in Finland. <i>Health Promotion International</i> , 10 (4), 283-291.	Finland
4	Cheadle, A., Pearson, D., Wagner, E., Psaty, B. M., Diehr, P., & Koepsell, T. (1995). A community-based approach to preventing alcohol use among adolescents on an American Indian reservation. <i>Public Health Reports</i> , 110 (4), 439-447.	United States of America (Native American community)
5	Midford, R., & Boots, K. (1999). COMPARI: Insights from a three year community based alcohol harm reduction project. <i>Australian Journal of Primary Health-Interchange</i> , 5 (4), 46-58	Australia
6	Stivers, C., (1994). Drug prevention in Zuni, New Mexico: Creation of a teen center as an alternative to alcohol and drug use. <i>Journal of Community Health</i> , 19 (5), 343-359.	United States of America (Native American community)
7	Hanson, B. S., Larsson, S., Rastam, L. (2000). Time trends in alcohol habits. Results from the Kirseberg Project in Malmo, Sweden. <i>Substance Use and Misuse</i> , 35 (1&2), 171-187.	Sweden
8	Goldstein, R. B., & Buka, S. L. (1997). Perceived effectiveness of community-based measures against alcohol misuse among "problem" and "nonproblem" drinkers. <i>Substance Use and Misuse</i> , 32 (5), 507-554.	United States of America
9	Wagenaar, A. C., Murray, D. M., Wolfson, M., Forster, J. L., & Finnegan, J. R. (1994). Communities mobilizing for change on alcohol: Design of a randomized community trial. <i>Journal of Community Psychology</i> , (Special Issue), 79-101.	United States of America
10	Holder, H., Gruenewald, P. J., Ponicki, W. R., Treno, A. J., Grube, J. W., Saltz, R. F., Voas, R. B., Reynolds, R., Davis, J., Sanchez, L., Gaumont, G., & Roeper, P. (2000). Effect of community-based interventions on high-risk drinking and alcohol-related injuries. <i>Journal of the American Medical Association</i> , 284 (18), 2341-2347.	United States of America
11	Rocha Silva, L. (2000). An Evaluation of the project "Prevention of Substance Abuse among Young People in South Africa". Pretoria: CADRE	South Africa*
12	Itzhaky, H., & Gropper, M. (1997). An exploratory profile of the anti-drug authority coordinator in Israel. <i>Social Work in Health Care</i> , 25 (4), 37-53.	Israel*
13	Wang, W. (1999). Illegal drug abuse and the community camp strategy in	China*

	China. <i>Journal of Drug Education</i> , 29(2), 97-114.	
14	Barrett, M. E., de Palo, M. (1999). Community-based intervention to reduce demand for drugs in Northern Thai tribal villages. <i>Substance Use and Misuse</i> , 34(13), 1837-1879.	Thailand*
15	Mohan, D., & Sharma, H. K. (1987). Health education intervention programme on non-medical use of drugs in the community – an Indian experience. <i>Health Education Research</i> , 2(4), 337-345.	India*
16	Fawcett, S. B., Lewis, R.K., Paine-Andrews, A., Francisco, V. T., Richter, K. P., Williams, E. L., & Copple, B. (1997). Evaluating community coalitions for prevention of substance abuse: The case of Project Freedom. <i>Health Education and Behavior</i> , 24(6), 812-828.	North America

## SUMMARY OF FINDINGS

While other of the interventions reviewed in this document frequently appear as part of a community response to substance use related problems, what distinguishes the studies reviewed in this section is their inclusion as part of an integrated whole. Holder describes this as a “systematic” approach. Within this perspective, problems are seen not only to be the result of individual behaviour, but also a consequence of the community environment. Community based interventions typically involve partnerships between police, community leaders and health services, justice systems and a diverse range of community organizations. The interventions constituting a community response may be undertaken simultaneously making their individual efficacy difficult to determine, as does the frequent absence of any control community or even baseline data.

As a result such approaches, with some notable exceptions, are best described as promising rather than exemplary with many of the articles reviewed in this section being stronger on recommending how community interventions can be carried out than demonstrating their efficacy (Graham, & Chandler-Coutts, 2001; Holder & Moore, 2000; Treno & Holder, 2001; Midford, Laughlin, Boots, & Cutmore, 1994; Smith, 2000; Giesbrecht & Rankin, 2000). Others have been included because they describe initiatives taken in parts of the world rarely included in any summary of the literature (Holmila, 2000; Cheadle et al., 1995; Itzhaky & Gropper, 1997; Wang, 1999; Barrett & de Palo, 1999; Mohan & Sharma, 1987; Rocha-Silva, 2000).

While there are few studies which allow a confident assertion of success, there is broad agreement as to what are the characteristics of successful programmes, though it must be asked on what basis success has been ascertained. These characteristics will be discussed before summarising those few studies meeting a degree of methodological rigour.

Ownership of the initiative by the target community would appear to be the single most important ingredient of success. Such ownership will include the involvement of key stakeholders, an acknowledgement of locally derived priorities, respect, and local participation in the delivery of the programme. Rather than favour either top down or bottom up approaches the literature suggests that the best approach is often a combination of such approaches adapted to local circumstances (Hanson, Larsson, & Rastam, 2000; Smith, 2000; Giesbrecht & Rankin, 2000).

The choice of the community itself is an important ingredient of success, with some communities characterized by low attachment, disorganization, high degrees of transition and low capacity presenting particularly difficult targets for change (Graham & Chandler-Coutts, 2000; Giesbrecht & Rankin, 2000).

A second ingredient in successful community approaches is a determination to build capacity while making use of the existing networks and existing links between community organizations, both governmental and non governmental. Of particular importance is the need to ensure the sustainability of the initiative through the institutionalization of the approaches taken (Graham & Chandler-Coutts, 2000; Holder & Moore, 2000; Treno & Holder, 2001).

A number of process issues have also been identified as important. They include the need to be flexible in both goal setting and the methods used, a willingness to be opportunistic, allowing sufficient time for community consultation and negotiation, and a mechanism for dealing with conflict and tension (Smith, 2000; Midford, Laughlin, Boots, & Cutmore, 1994; Saxena et al., 1997; Midford & Boots, 1999). The literature suggests it is not unusual for researchers and community stakeholders to have different perceptions of what works (supply reduction policies rarely being popular with communities), suggesting the need to establish a shared vision of the projects goals and outcome measures (Graham & Chandlers-Coutts, 2001; Midford, Laughlin, Boots, & Cutmore, 1994; Smith, 2000).

A too rigid adherence to the methodological dictate of delaying any feedback until the project is completed has been found to undermine community participation, suggesting that a more flexible sharing and dissemination of information as the project proceeds is necessary (Holmila, 2000).

As already mentioned the evaluation of community based interventions poses particular problems. The multiple nature of the interventions undertaken, the modification of such interventions in the course of the project, the difficulty of ensuring adequate controls (whether control communities or baseline data), the need to pursue evaluation over a protracted period of time, and the need to combine both quantitative and qualitative data, make the task of evaluation particularly complex (Holder et al., 2000; Goldstein & Buka, 1997). Generally speaking community initiatives have been more successful in influencing the public perception of problems, their knowledge base and acceptance of policy alternatives than effecting change in individual consumption levels, suggesting the need for both impact and outcome measures (Holder & Moore, 2000; Boots & Cutmore, 1994; Rindskopf & Beridge, 1997; Midford & Boots, 1999; Hanson, Larsson, & Rastam, 2000; Holder et al., 2000).

While the community approach construes individual problems within a community context it needs to be recognized that communities themselves are located in larger socio-political environments (Holmila, 2000; Giesbrecht & Rankin, 2000; Rocha Silva, 2000). As a result some of the initiatives which a community may favour and believe to be effective may not be within their remit (for example, changes in the liquor licensing laws), suggesting the need for a realistic approach to goal setting. On the other hand communities may favour approaches which the evidence suggests will be ineffectual precisely because they are uncontroversial, suggesting that consideration needs to be given to initiatives which are evidence based rather than those which merely enjoy popular support (Goldstein & Buka, 1997; Holmila, 2000; Rocha Silva, 2000).

Of the very few studies reviewed in this section which achieve a degree of methodological rigour permitting confident conclusions, those of Wagenaar et al (1994) and Holder et al (2000) are exemplary. Wagenaar et al (1994) evaluated a number of communities seeking to change the availability of alcohol, specifically to underage youth, and found that influencing policy and practices rather than individual behaviour achieved positive results. Holder et al (2000) compared matched communities in terms of the effect of various measures both educational and control, on the incidence of high risk driving and alcohol related injuries.

The economic evaluation of sobering up shelters established in a number of Indigenous communities in Australia is notable in an area in which there has been much investment but very few confident conclusions (Gray, Saggars, Sputore, & Bourbon, 2000). While more costly than incarceration in gaol the provision of sobering up shelters in these communities has been found to confer more dignity on their occupants and the potential for referral to a variety of treatment agencies.



## SCHOOL BASED PROGRAMMES

### CRITERIA FOR INCLUSION INTO THE SYSTEMATIC REVIEW

The primary aim of this systematic review is to identify potential components of substance use education that can lead to behaviour change through classroom based approach. This has been undertaken through a number of mechanisms. In the first instance, this systematic review has accessed all reasonably available published and grey literature that in themselves provide a review of the field. Undertaking this initial review of reviews serves several purposes. Published reviews have, to varying degrees, identified previous well-conducted studies for inclusion into their review and have provided key concepts and/or recommendations to the field. In this way much of the extensive literature of the past has already been assessed on quality for inclusion and summarized to a manageable format.

Rehm (1999) in his discussion about the quality of reviews for publication in the substance use areas suggests that the usefulness of a review is determined by the rigour in its search method, the selection methods adopted and the recommendations made. Furthermore, he suggests that a common problem with reviews of the past is their failure to define the scope of the review related to search method and inclusion criteria of studies. Because of this, it has not been possible to identify whether the review is based on a subjective selection of articles by the authors or whether the selection clearly reflect all research in the area. Given these concerns, the criteria for accepting past reviews of education on substance use prevention within this systematic review are based on the following considerations:

- a claimed review was a comprehensive, systematic literature review or meta-analysis of the area rather than a content review or opinion based commentary (states the search strategies, clearly defines selection and inclusion criteria, provides recommendations for the future) (Rehm, 1999)
- the review encompassed the school setting and student group as a focus
- the review encompassed classroom based substance use education
- the review encompassed programmes from more than one locality or country
- the published date of the review was 1990 or later (details about the field prior to 1990 were captured in these reviews and research methodology of primary studies prior to mid 1980 are poor) (Foxcroft, Lister-Sharp & Lowe, 1997; Sharp, 1994; Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999; White & Pitts, 1997; White & Pitts, 1998; Dusenbury, Falco & Lake, 1997; Dusenbury & Falco, 1995; Gorman, 1996; Tobler, 1997).
- the reviews set adequate guidelines determining inclusion of studies based on research design, allocation, analysis and measures
- the review was able to be accessed during the five month time period allocating to accessing publications

Details from accepted reviews were systematically recorded on a summary form to assess quality and content. The criteria used to summarize reviews included:

- authors, title, date and place of publication
- parameters of the review
- findings
- key points on effectiveness issues

- secondary points of effectiveness issues
- a comment about the comprehensiveness and usefulness to the review to the field of school substance use education
- a count of review articles, primary studies and commentaries pertaining specifically to school substance use education from the reviews reference list/bibliography. This information was a partial indicator of comprehensiveness.

The reference lists of review articles were also systematically searched for any further publications/reports that were not identified through the electronic databases. These documents were then accessed and the above criteria applied. Primary studies identified in the reviews that made a strong contribution to our understandings about school substance use education or that were of particular note, are tabled (Table 14).

In the second instance, a search was undertaken to identify primary studies that were conducted or published subsequent to the most current literature review. A cut off date of 1997 was selected for these types of publication as the most recent comprehensive review of school education on substance use effectiveness included studies to 1997 and/or subsequent reviews failed to identify the cut off point for primary studies considered in their review. These newer primary studies were then assessed for inclusion into this systematic review based on the following criteria:

- inclusive of school aged students in school setting
- encompassed a classroom intervention
- included substance use related behavioural measures and had a positive impact on student substance use related behaviours
- study design and methodology (experimental/quasi-experimental involving control group and baseline and follow-up assessment; discussed method of allocation to study group, level of study control; comparability of study groups at baseline, validity and reliability issues, attrition, method and unit of analysis, role of confounding, change, and bias).

Multiple papers from results of the same study published between 1997 and June 2001 have had results collated and are identified as one study in the following results section. As with the reviews, reference lists of the primary studies were systematically searched for any further publications or reports that were not previously accessed and could be included in the systematic review. A table of accepted primary studies documented from 1997 onwards are presented in the results section.

A combination of key words was used to identify appropriate publications for both the reviews and the newer primary studies. These included: school, substance use education, review, research, evaluation, project, study. Searches were undertaken within the following databases: ERIC (research in education and current index to journals in education); Science Direct (multidisciplinary); Current Contents (multidisciplinary); Expanded Academic (ASAP); EMB Reviews (Cochran database of systematic reviews); Eventline (International conferences); PsycInfo; Medline; EMBASE; ETOH (NIAAA Alcohol and alcohol problems database); Dissertation Abstracts; SIGLE; Social Work Abstracts; National Clearinghouse on Alcohol & Drug Information; DRUG database; Alcohol & Alcohol Problems; Cochrane Collaboration Reviews; Internet search; and the University of Sydney Health Education Unit 'Healthed' database. The most productive database for school substance use education articles proved to be PsycInfo, however, the database searches were not exhaustive as at least one third of all articles were identified from the reference/bibliography lists of earlier articles.

## RESULTS OF THE SEARCHES

### Reviews - 1990 onwards

An initial electronic data based search produced 113 reviews for potential inclusion. The next stage in the review process involved a review of the reference lists of the selected publications which revealed a further 52 publications that indicated potential worth as inclusions within a comprehensive review of alcohol and education on substance use in schools.

The total number of potential publications (n=165) was critically analysed and reviews were excluded based on the previously mentioned criteria. In particular, viewing of abstracts indicated that many potential reviews were actually commentaries or opinion based articles and/or published prior to 1990. Publications of varying quality were contained within this list and those acceptable to this systematic review numbered only eleven. The following table (Table 12) outlines those reviews included in this systematic review. These reviews have been summarized in Appendix I.

**Table 12: School Based Programmes High Quality Reviews**

	Review authors	Date	Publication details
1	Tobler, N., Lessard, T., Marshall, D., Ochshorn, P., and Roona, M.	1999	Effectiveness of school-based drug prevention programmes from marijuana use. <i>School Psychology International</i> ; 20, 1: 105-137.
2	White, D., and Pitts, M.	1998	Educating young people about drugs: A systematic review. <i>Addiction</i> ; 93, 10: 1475-1487.
3	Tobler, N., and Stratton, H.	1997	Effectiveness of school based drug prevention programmes: A meta-analysis of the research. <i>Journal of Primary Prevention</i> ; 18, 1: 71-128.
4	Foxcroft, D., Lister-Sharp, D., and Lowe, G.	1997	Alcohol misuse prevention for young people: A systematic review reveals methodological concerns and lack of reliable evidence of effectiveness. <i>Addiction</i> ;
5	Tobler, N.	1997	Meta analysis of adolescent drug prevention programmes: Results of the 1993 meta analysis. In: Bukoski, W. (Ed). <i>Meta analysis of drug abuse prevention programmes</i> . NIDA.
6	White, D., and Pitts, P.	1997	Health promotion with young people for the prevention of substance misuse. NHS Centre for Reviews and Dissemination, University of York: York.
7	Stead, M., Hastings, G., and Tudor-Smith, C.	1996	Preventing adolescent smoking: A review of options. <i>Health Education Journal</i> ; 55: 31-54.
8	Sharp, C.	1994	Alcohol education for young people: A review of the literature from 1983-1992. National Foundation for Education Research. (No place documented)
9	Bruvold, W.	1993	A meta-analysis of adolescent smoking prevention programmes. <i>American Journal of Public Health</i> ; 83, 6: 872-880.
10	Tobler, N.	1992	Drug prevention programmes can work: Research findings. <i>Journal of Addictive Diseases</i> ; 11, 3: 1-28.
11	Hansen, B.	1992	School based substance abuse prevention: A review of the state of the art in curriculum, 1980-1990. <i>Health Education Research: Theory &amp; Practice</i> ; 7, 3: 403-430.

All the eleven review articles met the critical search and selection criteria defined by Rehm (1999), and all were published in the 1990's with seven of the reviews published in the later half of the decade. However, an analysis of the inclusion dates of articles within these reviews, reveals that six of the high quality reviews included articles to 1990, one to 1992, two to 1995 and one to April 1997 (one other did not provide this information). So although the publication dates of these articles suggest an up to date review of the area, the most recent of these reviews included primary studies of up to four years old, and two others included primary studies six to nine years old, and the rest of the reviews included study over 11 years old. It should also be noted that the eleven high quality reviews included in the above table represent the work of seven authors or teams of authors, with one author responsible for four of the reviews and another team of authors responsible for two of the reviews. In addition, there has been some criticism from various authors as to the selection and inclusion of primary studies in the earlier Tobler reviews (Gerstein, & Green, 1993).

There is a potential concern that the stringent selection criteria for accepting reviews into this systematic review has been too exclusive and more flexibility is required to encompass other articles of good quality that fail to meet some of the criteria but can offer important information about the field. Therefore other review articles that have been published on or after 1995 (in an attempt to capture less dated primary studies) have been included. These reviews have been required to meet the other selection criteria with the exclusion of reviews encompassing programmes from more than one locality or country. Table 13 provides a summary of the second level review articles that fail to provide adequate information about their search and selection methods but make some important contribution to the field (see Appendix J for summaries of each of the review articles).

**Table 13. School Based Programmes Second Level Reviews**

	Review authors	Date	Publication details
1	Flay, B.	2000	Approaches to substance use prevention utilising school curriculum plus social environment change. <i>Addictive Behaviours</i> ; 25, 6: 861-886.
2	Lloyd, C., Joyce, R., Hurry, J., and Ashton, M.	2000	The effectiveness of primary school drug education. <i>Drugs, Education, prevention and policy</i> ; 7, 2: 109-126.
3	Stothard, B., and Ashton, M.	2000	Education's uncertain savior. <i>Drug and Alcohol Findings</i> ; 3: 4-7, 16-20.
4	Paglia, A., and Room, R.	1998	Preventing substance use problems among youth: Literature review and recommendations. <i>Addiction Research Foundation and Addiction and Mental Health Services Corporation: Ontario</i> .
5	Dusenbury, L., Falco, A., and Lake, A.	1997	A review of the evaluation of 47 drug abuse prevention curricula available nationally. <i>Journal of School Health</i> ; 67, 4: 127-131.
6	Gorman, D.	1996	Do school-based social skills training programmes prevent alcohol use among young people? <i>Addiction Research</i> ; 4, 2: 191-210.
7	Dusenbury, L., and Falco, M.	1995	Eleven components of effective drug abuse prevention curricula. <i>Journal of School Health</i> ; 65, 10: 420-431.
8	Gorman, D.	1995	Are school based resistant skills training programmes effective in preventing alcohol misuse. <i>Journal of Alcohol and Drug Education</i> ; 41, 1: 74-98.

Five of these second level reviews were targeted in their content. They aimed to answer specific questions about school education on substance use related to either content or delivery and rigorously reviewed studies that answered these questions. One of the reviews provided detailed assessment of the most widely acknowledged successful prevention programme (Life Skills Training) which has a 20 year implementation and evaluation history and provides the basis of many insights of authors reviewing

the field. The three other reviews were literature reviews of the area. These literature reviews were of high quality compared to others that were excluded and have been widely cited in the substance use education literature. One of these literature reviews also provided important insights into the practical application of recommendations.

### Key Primary Studies on which Reviews are Based

Table 14 lists the primary studies that were identified as good quality effective programmes by the above reviews of substance use education. Studies included in this Table have been identified by at least three reviewers as key education programmes on substance use. It should be noted that various reviewers classified some of these primary studies differently in terms of their effectiveness in impacting on young peoples substance use behaviours. The allocation of primary studies to the classifications adopted in Table 14 attempt to capture the most common assessment of the programmes and takes into account the primary study selection criteria outlined above for this review.

**Table 14: School Based Programmes Key Primary Studies that have Contributed to Reviews**

Review authors	Date	Publication details
<b>Main effect</b> Schinke, S., Orlandi, M., Botvin, G., Gilchrist, L., Trimble, E., and Locklear, W.	1988	Preventing substance abuse among American-Indian adolescents: A bicultural competence skills approach. <i>Journal of Counselling Psychology</i> ; 35: 87-90.
Gilchrist, L., Schinke, S., Trimble, J., and Cvetkovich, G.  <i>Short term effects</i>	1987	Skills enhancement to prevent substance abuse among American Indian adolescents. <i>International Journal of the Addictions</i> ; 22: 869-879.
DeJong, W.  <i>Most of the many DARE evaluations have no effect or negative effects.</i>	1987	A short tem evaluation of Project DARE (Drug Abuse Resistance Education): preliminary indications of effectiveness. <i>Journal of Drug Education</i> ; 17, 4: 279-294.
Botvin, G., Baker, E., Botvin, E., Filazzola, A., & Millman, R.  <i>Some of the Lifeskills evaluations have shown no effect (1984b; 1990a)</i>	1984	Alcohol abuse prevention through the development of personal and social competence: A pilot study. <i>Journal of Studies on Alcohol</i> ; 45: 550-552. less heavy drinking 6 month after intervention.
<b>Sub-group effect</b> Botvin, G., Baker, E., Dusenbury, L., Botvin, E., and Diaz, T.	1995	Long term follow-up of a randomised drug abuse prevention trail in a white middle class population. <i>Journal of the American Medical Association</i> ; 273, 1106-1112.
Shope, J., Kloska, D., Dielman, T., and Maharg, R.	1994	Longitudinal evaluation of an enhanced Alcohol Misuse Prevention Study (AMPS). Curriculum for grades six-eight. <i>Journal of School Health</i> ; 64: 160-166.
Caplan, M., Weissberg, R., Grober, J., Sivo, P., Grady, K., and Jacoby, C.  <i>Short term effects</i>	1992	Social competence promotion with inner city and suburban young adolescents: Effects on social adjustment and alcohol use. <i>Journal of Consulting and Clinical Psychology</i> ; 60: 56-63.

Hansen, W., and Graham, J. <i>Minor effect for normative aspect, negative effect for resistance training component</i>	1991	Preventing alcohol, marijuana, and cigarette use among adolescents: Peer pressure resistance training versus establishing conservative norms. Preventive Medicine; 20; 414-430.
Botvin, G., Baker, E., Dusenbury, L., Tortu, S., and Botvin, E.	1990	Preventing adolescent drug abuse through a multimodal cognitive behavioural approach: Results of a 3-year study. Journal of consulting and Clinical Psychology; 58, 437-446.
Bagnall, G. <i>Short term effects</i>	1990	Alcohol education for 13 year olds – does it work? Results from a controlled evaluation. British Journal of Addiction; 85: 89-96.
Ellickson, P.L., Bell, R.M.	1990	Drug prevention in Junior High ; a multi-site longitudinal test. Science; 247:1299-1305.
Dielman, T., Shope, J., Leech, S., and Butchart, A.	1989	Differential effectiveness of an elementary school-based alcohol misuse prevention programme. Journal of School Health; 59; 6: 255-263.
Perry, C., Grant, M., Ernberg, G., Florenzano, R., Langdon, M., Myeni, A., Waahlberg, R., Berg, S., Andersson, K., Fisher, K., Blaze-Temple, D., Cross, D., Saunders, B., Jacobs, D., and Schmid, T. <i>Effect not seen in all countries</i>	1989	WHO collaborative study on alcohol education and young people: Outcomes of a four country pilot study. The International Journal of the Addictions; 24, 12: 1145-1171.
Hansen W.B., Graham J.W., Wolkenstein B.H., Lundy B.Z., Pearson J., Flay B.R., Johnson C.A.	1988	Differential impact of three alcohol prevention curricula on hypothesised mediating variables. J Drug Education; 18, 2: 143-153.

Four of the fourteen primary study publications identified in reviews of substance use education were classified as having a positive main effect on students who received the programmes. Of these four publications, two were of the same programme provided to different population groups; one was an anomaly of a programme that has received rigorous and regular evaluation that has consistently shown no effect or negative effects (Ennett, Tobler, Ringwalt, and Flewelling, 1994) and one programme demonstrated only short term positive effects. The publication dates for all of these studies was during the 1980's. All of these programmes were North American in origin, focused on social skill training and were based on abstinence goals.

Ten other publications of primary studies demonstrated minor effects on student substance use behaviours. Generally minor effects were classified as some significant differences found in a sub-group of the study sample rather than significant differences demonstrated between the whole intervention group and the control group. These publications represent seven education programmes, one of which also received main effects classification. The publication dates for primary studies demonstrating minor effects ranged from 1988 to 1995 with six of these publications occurring in the early 1990's. As with programmes demonstrating main effects, the majority of programmes demonstrating sub-group effects were North American in origin, focused on social skill development and were based on abstinence goals.

All up, ten substance use education programmes identified from the reviews are representative of past successes in school education. Programmes demonstrating minor effects tended to be of longer term follow-up and indicate what the literature refers to as decayed effects over time. This poor showing of school education successes is the case even given the twenty year history of social influences approaches to school-based substance use education. Furthermore, the results of the reviews indicate that main effects, as compared to sub-group effects, have not occurred in the substance use education

field since the 1980's, one and a half to two decades ago. These programmes tend to provide us with our current understandings about what is an effective approach to school-based classroom education. The characteristics and experiences of young people today may be quite different from those of twenty years ago.

### Primary studies - 1997 onwards

The total number of recent primary study publications revealed during electronic data base searches, and the scanning of reference lists of previously accessed papers, totalled sixty-nine papers representing sixty five programmes. The total number of primary studies accepted into this review based on the above mentioned criteria is five (7.7%) two of which were of the same programme. Of the sixty (92.3%) studies rejected, only three had acceptable evaluation methodology and included behavioural measures. All three (4.6%) reported no behaviour change as a result of their programmes. Other key reasons for the rejection of studies include: they failed to measure drug related behaviours (27.7%), they had methodological problems (26.1%); they did not provide classroom drug education (13.8%); they focused on formative or process evaluation (10.8%); or they provided commentary/information only (10.8%). Of the three rejected primary studies that produced no behavioural effect, two were Drug Awareness Resistance Education (D.A.R.E.) involving abstinence goals and police officer instructors. The other rejected primary study was a reanalysis of a programme (published prior to 1997). This programme had a normative education focus which reported behavioural results in the first publication that were not replicated when appropriate analysis was applied in the second publication.

The following table outlines the reference details of the accepted primary studies. A summary of each of these is provided in Appendix K.

**Table 15: Primary Studies Post 1997**

	Review authors	Date	Publication details
1	<b>Main Effect</b>  McBride, N., Midford, R., Farrington, F., Phillips, M	2000	Early results from a school alcohol harm minimisation study: The School Health and Alcohol Harm Reduction Project. <i>Addiction</i> ; 95, 7: 1021-1042.
	McBride, N.	2002	School Health and Alcohol Harm Reduction Project: Reducing alcohol related harm in young people. Curtin University of Technology: Perth, Western Australia. Phd thesis.
2	Williams, C., Perry, C., Farbaksh, K., and Veblen-Mortenson, S.	1999	Project Northlands: Comprehensive alcohol use prevention for young adolescents, their parents, schools, peers and communities. <i>Journal of Studies on Alcohol</i> : 13: 112-124.
3	Maggs, J., and Schulenberg, J	1998	Reasons to drink and not to drink: Altering trajectories of drinking through an alcohol misuse prevention programme. <i>Applied Developmental Science</i> ; 2,1: 48-60.
1	<b>Sub-Group Effect</b>  Shope, J., Elliott, M., Raghunathan, T., and Waller, P.	2001	Long term follow-up of a high school Alcohol Misuse Prevention Programme's effect on students subsequent driving. <i>Alcoholism: Clinical and Experimental Research</i> ; 25, 3: 403-410.
	Dijkstra, M., Mesters, I., De Vries, H., Van Breukelen, G., and Parcel, G.	1999	Effectiveness of a social influence approach and boosters to smoking prevention. <i>Health Education Research</i> ; 14, 6: 791-802.

Three primary studies reported main group effects. Two of these programmes were classroom based and one was a comprehensive school/community programme. All three programmes required intervention over a number of years. One classroom programme demonstrated main effects for three domains (scale/indices with several items) including level of alcohol consumption, harm associated with own use of alcohol and harm associated with other peoples use of alcohol (McBride, 2002). This Australian study had an explicit goal of harm minimization. The other classroom programme adopted an abstinence goal but also measured alcohol related use in addition to use and delayed use. This North American programme demonstrated a main effect in the alcohol use scale (Maggs & Schulenberg, 1998). The comprehensive programme demonstrated a main effect for the measurement items of past month and past week alcohol use (Williams, Perry, Farbachsh et al, 1999). This North American programme had a general substance use focus and also adopted an abstinence goal. All three studies also demonstrated sub-group effects.

Two studies demonstrated sub-group effects only. Both programmes were classroom based, one of which also received main group effect classification but focused on the impact of an alcohol intervention on driving behaviours (Shope, Elliott, Raghunathan et al, 2001). Both programmes were substance use specific, one focusing on smoking (Dijkstra, Mesters, De Vries et al, 1999) and one on alcohol (Shope, Elliott, Raghunathan et al, 2001). One programme was conducted in the US and one in the Netherlands. Both programmes aimed to prevent substance use.

The primary studies from 1997 onwards that were accepted into this review comprise four separate programmes, three of which were classroom based. The fourth programme was a large scale school/community programme. Two of the programmes were North American in origin, one Australian and one was conducted in the Netherlands. The programme that attained main and sub-group classification (Maggs & Schulenberg, 1998; Shope, Elliott, Raghunathan et al, 2001) provided the initial phase of the programme in the late 1980's, all other programmes were conducted in the mid to late 1990's.

## SUMMARY OF FINDINGS

### TIMING AND PROGRAMMING CONSIDERATIONS

#### Ideal Timing of Interventions

Programmes should be provided at a developmentally appropriate time and particularly when interventions are most likely to impact on behaviour (Dusenbury & Falco, 1995; Lloyd, Joyce, Hurry, & Ashton, 2000; McBride, Farrington, Midford & Phillips 2001). There are potentially three critical periods in students' behavioural development when intervention effects are most likely to be optimized. An *inoculation* phase has the potential to play an important part in modifying behavioural patterns and young people's responses in alcohol and other substance use situations (Dusenbury, & Falco, 1995; Lloyd, Joyce, Hurry, & Ashton, 2000; McBride et al, 2001; Williams, Perry, Farbachsh & Veblen-Mortenson, 1999; Maggs, & Schulenberg, 1998; Dijkstra, Mesters, De Vries, Van Breukelen & Parcel, 1999; Shope, Elliott, Raghunathan; & Waller, 2001). Curriculum programmes should also be relevant to young people's life experiences by providing programmes during the period when most students are experiencing initial exposure (Dusenbury, & Falco, 1995; McBride et al, 2001; Williams, Perry, Farbachsh & Veblen-Mortenson, 1999; Maggs, & Schulenberg, 1998; Dijkstra, Mesters, De Vries, Van Breukelen & Parcel, 1999; Shope, Elliott, Raghunathan; & Waller, 2001). This early *relevancy* phase ensures that students gain exposure to programmes when information and skills are most likely to have meaning and practical application. Finally, some recent primary studies suggest that a *later relevancy* stage when prevalence of use increases and context of use changes, for example, when young people are drinking alcohol and driving or when they are exposed to a larger and older group of patrons at pubs and clubs (Shope, Elliott, Raghunathan & Waller, 2001; Maggs & Schulenberg, 1998; Williams, Perry, Farbachsh et al, 1999).



Programmes can be best tailored to a population group by using local prevalence data (White & Pitts, 1997; Maggs, & Schulenberg, 1998; McBride, Farrington, Midford et al, 2001; Shope, Elliott, Raghunathan et al, 2001). Prevalence data provides information about the usual age of initiation, the age at which most young people start experimenting, and ongoing usage rates for various substances and regions over different time periods. This information can then be used to meet the above mentioned critical times in young peoples drug use history and can be adapted to fluctuations in prevalence over time for new populations of young people.

**Recommendation:** Provide a combination of an inoculation phase and early and later relevancy phases guided by local prevalence data.

## **Review on Substance Use Education Provided in the Context of Health Education**

Reviews of research and primary studies provide little information about the placement or programming within the health education curriculum area in which it usually resides. These practical school based considerations, although not fully tested within research studies can be of conceptual and practical importance to grassroots programmers and teachers (Dusenbury and Falco, 1995). Additionally, there is evidence to suggest that complimentary general health/life skills programmes can produce greater change than skills based substance use education programmes alone (Dusenbury & Falco, 1995; Botvin, Baker, Dusenbury, Botvin, and Diaz, 1995; Botvin & Kantor, 2000). The importance of integrating education within a well founded health curriculum is an ongoing practical consideration for school staff, particularly given the already crowded curriculum and the generally low status of non-core subjects, and is an area that could benefit from further study.

**Recommendation:** Consideration should be given to incorporating substance use education into the general health curriculum. Alternatively, given the already crowded curriculum, substance use education could be incorporated into core subject areas. Research of the potential impact (behavioural and practical) of various placement is required.

## **Based on the needs of the target group**

There is strong consensus that for programmes to be effective, they should be based on the needs and be relevant to the young people who are likely to participate in the programme (Bruvold, 1993; Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999; White, & Pitts, 1997; White, & Pitts, 1998; Dusenbury, & Falco, 1995; Paglia, & Room, 1998; Gorman, 1995; Gorman, 1996; Lloyd, Joyce, Hurry, & Ashton, 2000; McBride, Farrington, Midford & Phillips, 2001; Williams, Perry, Farbachsh & Veblen-Mortenson, 1999). White and Pitts (1997) clarify this issue further, by suggesting that to obtain students interest and enthusiastic participation in a programme, the students need to feel that the programme is meaningful and interesting to them. Furthermore, given the changing experiences of young people during the period when substance use experimentation usually takes place, there is also a requirement to reflect these changes in curricula that is provided over a number of years, so that programme content and design has ongoing relevancy (White & Pitts, 1997). Some reviewers feel that a common reason for the failure of many substance use education programmes can be directly linked to the failure of those programmes to engage student interest, because they are not developmentally appropriate or because activities are too abstract to be meaningful to the student group (for example, values clarification) (Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999; Pagalia & Room, 1998).

The cultural background of students should also be a focus for programme developers (Dusenbury & Falco, 1995; White & Pitts, 1997). Dusenbury & Falco (1995) suggest that minority student groups could be catered for by training teachers with skills to modify programme material to suit their minority students needs, and for schools and programme developers to work more closely together to develop programmes specific to a local school or district.

Although reviewers voice consensus on the value of developing programmes that are relevant to students, little mention is made of how this task is best undertaken. Recent primary studies have

indicated that a formative phase prior to programme implementation is important (McBride, Farringdon, Midford et al, 2001; Williams, Perry, Farbakhsh et al, 1999; Maggs, & Schulenberg, 1998; Shope, Elliott, Raghunathan & Waller, 2001). This phase should involve focus interviews with the target groups so that content, scenarios and style of an intervention are based on the experiences and interest of the young people that it is trying to influence (McBride, Farringdon, Midford et al, 2001; Williams, Perry, Farbakhsh et al, 1999); and pre-testing of a programme with students and teachers is important in behavioural effectiveness of the programme (McBride et al, 2001). This preliminary phase, although time consuming, may play a critical role in ensuring that programmes are successful. In addition, this process provides programme developers with information about practical school-based factors that may impact on implementation and potential strategies, from grassroots programmers and teachers, to overcome barriers to implementation.

**Recommendations:** Formative research should be undertaken with the target group prior to programme development to ensure that programmes are based on the needs and are relevant to the young people who are likely to participate in them.

Teachers should be skilled to modify effective programmes to suit the cultural background of minority groups.

Participation of high risk students in school based programmes is limited due to the high truancy and drop-out rates of this group from school participation generally. Strategies should be in place to retain these students for as long as possible.

Prior to dissemination, programmes should be piloted with students and teachers and suggestions for change incorporated into the programme. This process is particularly important if school-based barriers to implementation are to be identified and overcome.

### The Goal of School-based Substance Use Education

It is of interest that reviewers who explicitly suggested the adoption of harm minimization goals, particularly in relation to alcohol programmes, as an appropriate addition or alternative to non-use and delayed use goals, are from countries other than the United States of America (Sharp, 1994; Pagalia & Room, 1998; White & Pitts, 1997). Stothard & Ashton (2000) label the difference in goals as prevention versus education and provide information about the focus and content differences between prevention and education programmes. The majority of studies accepted within reviews and meta-analyses of school based substance use education are drawn from the North American prevention experience and as such are dominated by goals of non-use and delayed use of alcohol (and other substances) (Sharp, 1994; Pagalia & Room, 1998; White & Pitts, 1997). This focus has limited the range of findings in the field to a small number of behavioural effects. Sharp (1994) in her review of studies between 1983-1992 concludes that programmes with an abstinence goal have consistently failed to produce behavioural effects and there is a need to develop and evaluate new approaches to substance use education that go beyond the limitations of abstinence programmes.

There is strong logic behind the adoption of harm minimization goals, particularly for tobacco, alcohol, and increasingly so for cannabis education, as a large percentage of youth initiate use at a young age and gain social rewards from doing so (World Health Organization, 1999; Single Beaubrun, Mauffret et al, 1997; Reid, Lynskey, & Copeland, 2000; Higgins, Cooper-Stanbury & Williams, 2000). Two recent primary studies included harm minimization as part of the programme. McBride, Farringdon, Midford et al (2001) included a goal of harm minimization in relation to their alcohol programme and adopted harm reduction measures in their assessment of change. The main effects resulting from the programme suggest potential benefit from this change in paradigm (students who participated in the programme had a 10% greater alcohol related knowledge, consumed 20% less alcohol, experienced 33% less harm associated with their own use of alcohol and 10% less harm associated with other peoples use of alcohol than did the comparison group). The Alcohol use Prevention Study (Shope, Elliott, Raghunathan et al, 2001; Maggs & Schulenberg, 1998) included measures of harm in their

assessment of change within a programme goal of abstinence/delayed use and identified significant effects for alcohol use. Given the limited number of longitudinal studies that have focused on this goal there is need to replicate the results in other localities to truly understand its potential value for school based alcohol. In addition, formative research is required to assess the potential value of this approach for illicit substance use education.

**Recommendation:** Consideration should be given to extending the goal of school substance use education to harm minimization, particularly for tobacco, alcohol and cannabis programmes.

Research is required to assess/replicate the impact of harm reduction programmes for school tobacco and alcohol education.

Formative research is required to assess the value of adopting harm minimization goals for cannabis and other substances.

### **Classroom versus comprehensive approach**

Although this systematic review has a primary focus on classroom approaches to school substance use education, there are conceptually sound arguments for providing comprehensive school substance use education programmes, as messages are then more likely to be reinforced by many sources in which young people are exposed. Typically, these broader approaches to substance use education in schools involve several components of intervention including: classroom lessons; school environment and policy changes; parental intervention and wider local community interaction (Blackman, 1996; Henderson, 1995; Perry, Williams, Forster, et al, 1993; Pentz, Dwyer, MacKinnon, et al, 1989; Williams, Perry, Farbakhsh & Veblen-Mortenson, 1999).

The reviewers of substance use education vary in their advice about the adoption of comprehensive approaches. However, several reviews recommend incorporating a parental component (Lloyd, Joyce, Hurry, & Ashton, 2000; Sharp, 1994; Dusenbury & Falco, 1995; Pagalia & Room, 1998; White & Pitts, 1997; Pagalia & Room, 1998) and this recommendation is supported by at least one recent primary study (Williams, Perry, Farbakhsh & Veblen-Mortenson, 1999). Several reviewers also suggest that at a minimum school based programmes need to occur in conjunction with broader community interventions, in particular, mass media programmes (White & Pitts, 1997; Dusenbury & Falco, 1995; Pagalia & Room, 1998).

Evaluation and research supporting a comprehensive school approach to substance use education is relatively limited in number and scope (Paglia & Room, 1998; Flay, 2000). Newer primary studies that incorporate at least some of the components of a comprehensive approach also include broader community programme elements but do not measure separate effects (Williams, Perry, Farbakhsh & Veblen-Mortenson, 1999). Flay (2000) and Pagalia & Room (1998) have reviewed in detail the evidence of comprehensive approaches to school substance use education and are critical of the additional benefits that components other than curriculum may provide to student behavioural outcomes. They conclude that this finding is largely due to the limited research available to inform us about the contribution that each component can offer in itself and in combination, to achieve behavioural change (Flay, 2000; Paglia & Room, 1998; White & Pitts, 1998).

There are other practical considerations that also need to be taken into account by schools when considering the type of education programme they provide. In particular, the costs (teacher time, expertise and financial) of providing comprehensive programmes are high compared to a classroom approach (McBride et al, 2001). There is strong consensus, either explicitly or implicitly, that the provision of a classroom component is important in creating change (Bruvold, 1993; Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999; White, & Pitts, 1997; White, & Pitts, 1998; Dusenbury, & Falco, 1995; Paglia, & Room, 1998; Gorman, 1995; Gorman, 1996; Lloyd, Joyce, Hurry, & Ashton, 2000; McBride, Farringdon, Midford & Phillips, 2001; Williams, Perry, Farbakhsh & Veblen-Mortenson, 1999;

Shope, Elliott, Raghunathan et al, 2001; Maggs & Schulenberg, 1998; Dijkstra, Mesters, De Vries et al, 1999).

**Recommendations:** Classroom substance use education should be considered the core of school substance use education efforts.

Each component of a comprehensive approach should, singularly and in various combination with other components, be well researched to identify the level of contribution they can make in changing student substance use related behaviours. This research should start with parental and policy components as they currently seem to be the most promising components. A cost analysis should also be included in the research.

Research and cost analysis as suggested above should then be compared to classroom approaches to substance use education to assess any additional benefit that may be gained from the addition of more extensive programme components.

The practical implementation of programmes that go beyond classroom intervention should be fully considered and investigated. Particularly the skills, time and resources required by school staff in implementing broad programmes.

### **Booster sessions**

Reviews and recent primary studies consistently suggest the value of incorporating booster sessions over a number of years throughout the schooling years (Stead, Hastings, & Tudor-Smith, 1996; White, & Pitts, 1997; White, & Pitts, 1998; Dusenbury, L., Falco, M., and Lake, A, 1997; Dusenbury, & Falco, 1995; Paglia, & Room, 1998; Flay, 2000; Lloyd, Joyce, Hurry, & Ashton, 2000; McBride et al, 2001; Williams et al, 1999; Maggs & Schulenberg, 1998; Dijkstra et al, 1999; Shope et al, 2001; Maggs & Schulenberg, 1998; Dijkstra, Mesters, De Vries et al, 1999). Booster sessions provide the opportunity to reinforce and build on messages over a number of years suited to the age and development of the students. The number of sessions identified in the literature varies but commonly involves a greater number of sessions in the initial year and fewer sessions in subsequent years (White, & Pitts, 1997; White, & Pitts, 1998; Dusenbury, Falco, and Lake, 1997; Dusenbury, & Falco, 1995; McBride et al, 2001). White and Pitts (1997) suggest that programme intensity should be of 15 or more hours duration while Dusenbury and Falco (1997) define the area more fully by stating that programmes should incorporate 10 sessions in the first year followed by at least 5 in the second year. Recent primary studies tend to recommend fewer sessions overall involving four (Maggs, & Schulenberg, 1998; Williams, Perry, Farbachsh et al, 1999; Shope, Elliott, Raghunathan et al, 2001), five (Dijkstra, Mesters, De Vries et al, 1999) to eight (McBride, Farrington, Midford et al, 2001) initial sessions followed by three (Maggs, & Schulenberg, 1998; Shope, Elliott, Raghunathan et al, 2001); five (McBride, Farrington, Midford et al, 2001) or eight booster sessions (Williams, Perry, Farbachsh et al, 1999) and possibly a third booster phase when prevalence data indicates a rise in use and/or when context of use changes of five (Shope, Elliott, Raghunathan & Waller, 2001; Maggs & Schulenberg, 1998) to eight lessons (Williams, Perry, Farbachsh et al, 1999).

**Recommendation:** Substance use education programmes should be conducted over a number of years and build on the skills, knowledge and experiences of students as they progress through school. Generally, a greater number of sessions should be provided in the initial year (4-10 sessions) with follow-up programmes of 3-8 sessions and 5-8 sessions in subsequent years.

It is important that programmes be sustained over time for effectiveness of behaviour change.

## CONTENT AND DELIVERY

### Life skills

The Life Skills Training intervention is a researcher-developed programme that is the most widely assessed programme in the substance use education field, having a 20 year history of implementation and evaluation. It is one of the key studies that is referenced when identifying effectiveness in substance use education. It is also one of the few studies that has received long term follow-up, has assessed effectiveness among a variety of population groups and has widely published results. This specific section on the Life Skills Training is included because of this background and because it has made a major contribution to past reviews and meta-analyses of school substance use education (Bruvold, 1993; Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999; White, & Pitts, 1997; White, & Pitts, 1998; Dusenbury, & Falco, 1995; Paglia, & Room, 1998; Gorman, 1995; Gorman, 1996; Lloyd, Joyce, Hurry, & Ashton, 2000).

The Life Skills Training programme (Life Skills Training Programme, 2001) initially aimed to prevent smoking and to develop a range of broad social competency skills. It involved fifteen 45 minute classroom lessons provided to students when aged 11-12 years followed by 10 lessons and 5 lessons over the following two years. The programme provided direct teacher training or training via video presentation, and provided a detailed teacher manual, student guide, and audio cassettes with relaxation exercises. The stated aims of the programme were to: provide the skills to resist social (peer) pressure to smoke, drink and use substances; help develop self esteem, self mastery and self confidence; cope with social anxiety; and to increase knowledge of the immediate consequences of substance use. These aims are met through content components of: personal self management skills (problem solving, managing emotions, achieving goals); social skills (communication, interacting with others, boy/girl relationships, assertiveness); and substance use related information and skills (knowledge, attitudes, normative expectations, skills for resisting offers of substances, media influences, advertising pressures to use substances). Delivery of the programme is through: skills instruction, demonstration, role play, practice and homework assignments, feedback and social reinforcement.

Stothard, and Ashton (2000) provide a thorough review of the Life Skills Training research and although they acknowledge that the programme can have a beneficial effect, particularly in the area of smoking (reduced growth of regular smoking by 3%) and multiple substance use measures (3% less use of weekly tobacco, alcohol and cannabis use – one measurement variable), they also expressed some concerns. Some of these concerns are related to methodological issues that apply to the substance use education field generally. Particular concerns with the Life Skills programme including: the programme developer gaining financial benefits from the sales and training associated with the programme; differential attrition as one quarter of intervention students were not included in the analysis because they did not receive at least 60% of the programme; a concern that indicators of programme success were modified to positive findings; that results were significant for multiple substance use questions and less so for individual use questions; that the most distinctive feature of the programme, its focus on social competency skills did little to contribute to student change and had no impact on psychological variables; and that although claims are made that Life Skills Training is effective the number of positive findings are probably similar to the number of negative or null findings and are limited to only some life skills studies (Botvin, Baker, Botvin, Filazzola, & Millman, R, 1984; Botvin, Baker, Dusenbury, Tortu, and Botvin, 1990; Botvin, Baker, Dusenbury, Botvin, and Diaz, 1995). There may also be some relevancy issues for contemporary youth as the fundamental programme elements of Life Skills Training were developed up to 20 years ago.

Stothard and Ashton (2000) consider it is justifiable to give more credence to the positive results that the programme has been able to achieve, particularly given the consistency of findings for smoking and the general difficulty in gaining positive results in prevention studies. Stothard and Ashton (2000) also highlight causality findings which suggest that it is the substance use related mediating variables (assertiveness in using substance use refusal skills (defined in the next section), anti substance use attitudes, substance use related knowledge and correcting young peoples misconceptions about the

normality and social acceptability of substance use) that were effective in creating change rather than the psychological variables as initially hypothesized. This information helps to provide clarification in the way forward for substance use education programme development.

**Recommendations:** Life Skills Training programme supports the use of booster sessions, interaction between peers, and teacher training.

Substance use specific mediating variables are important for creating substance use behaviour change and should be incorporated into programmes.

Substance use education may benefit from placement within a broader health education curriculum, however, research is needed to clarify the benefits of this placement.

### **Social influence (resistance skills training and normative education)**

There is a strong recommendation from reviewers and recent primary studies of school education on substance use to include social influence components into curriculum materials as it is suggested that they have a demonstrated effect on students behaviour compared to most other types of programmes (Bruvold, 1993; Hansen, 1992; Stead, Hastings, & Tudor-Smith, 1996; Tobler, & Stratton, 1997; White, & Pitts, 1997; Dusenbury, L., Falco, M., and Lake, A, 1997; Dusenbury, & Falco, 1995; Dijkstra, Mesters, De Vries, Van Breukelen & Parcel, 1999; Shope, Elliott, Raghunathan & Waller, 2001; Maggs & Schulenberg, 1998; Williams, Perry, Farbaksh et al, 1999). A social influence approach is generally considered to include three key elements: basic information, resistance skills training and normative information. Resistance skills training is the provision of skills to counter the effects of influences on young people to use substances and in most instances an emphasis is given to the influences of the media and peers. Resistance skills training also provides students with the opportunity to practice and provides feedback on these skills in the controlled classroom environment among peers. Normative education focuses on the provision of information about the age related prevalence of use. Past research has indicated that normative education can contribute to effectiveness in programmes as young people often overestimate the usage rate among their peers and there is an association between perceived peer usage and individual substance usage (Bruvold, 1993; Stead, Hastings, & Tudor-Smith, 1996; Dusenbury, L., Falco, M., and Lake, A, 1997; Dusenbury, & Falco, 1995; Paglia, & Room, 1998; Flay, 2000).

Several reviewers, however, have questioned the effectiveness of social influence approaches, particularly the resistance skills training component (Sharp, 1994; Paglia, & Room, 1998; Flay, 2000; Gorman, 1995; Gorman, 1996). Gorman (1995; 1996) in his critical analysis of social influence approaches to education on substance use, comments that resistance training skills, although regularly reported as finding positive effects, have effects limited to a sub-group of the targeted population and often have methodological problems association with the research. Pagalia and Room (1998) suggest that the failure of the resistance skills training aspect of a social influence approach to impact on student behaviour may be due to its perceived role in changing the effects of peer pressure, without taking into account the effect of peer influence and peer preference on behaviour. Others agree with this summation (Flay, 2000; Gorman, 1995; Gorman, 1996).

Support for the normative component of social influences approaches to substance use education is stronger than for the resistance skills training component (Bruvold, 1993; Stead, Hastings, & Tudor-Smith, 1996; Dusenbury, L., Falco, M., and Lake, A, 1997; Dusenbury, & Falco, 1995; Paglia, & Room, 1998; Flay, 2000). It is suggested that the incorporation of normative education should involve a detailed assessment of the target groups beliefs for different substance types and strategies should be developed to counter these normative beliefs (Bruvold, 1993; White, & Pitts, 1997). Pagalia and Room (1998) and Sharp (1994) acknowledge that research suggests that normative education seems more important in a social influence approach than does resistance skills training, however, they comment that problems arise when prevalence data works in the opposite direction to the aims of abstention programmes, particularly for alcohol and as students get older.

A recent harm minimization study that achieved main effects suggests an alternative to resistance skills training, particularly in relation to alcohol (McBride, Farringdon, Midford et al, 2001). The SHARHP programme focused on providing skills training related to the stated goal of harm minimization in alcohol education. Students were provided with skills to reduce the potential for harm to occur, and if it did occur, with the skills to reduce the likely impact of the harm rather than skills to resist pressure to use. This change in context of social influence from resistance skills training to harm reduction skills training maintains the need for teaching methods that allow students to practice behaviours in a low risk situation, using real life scenarios, provide young people with important practice that they can take with them to real life situations. More research is required to replicate the results of this study.

**Recommendation:** The normative education aspect of a social influence approach ensures greater programme effectiveness than the resistance skills training aspect and should be incorporated into programmes guided by local prevalence data. As prevalence of use increases, normative education becomes less effective.

Research is required to clarify the contribution that resistance skills training (and the strategies that make up RST) can make in modifying young peoples behaviour if incorporated within school substance use education programmes. Until research has provided definitive evidence, inclusion of resistance skills training in school substance use education programmes should be limited.

Research is required to replicate the potential of harm reduction skills training, as opposed to resistance skills training, related to the stated goal of harm minimization in alcohol education.

Research is required to assess the potential of harm reduction skills training in tobacco, cannabis and other substances.

### **Interactive, activity oriented**

Interactive programmes are at a minimum twice as effective as non-interactive programmes (Tobler, & Stratton, 1997) and up to four times as effective as non-interactive programmes (Tobler, 1997). Tobler, Lessard, Marshall, Ochshorn, and Roona (1999) identify that it is the exchange of ideas and experiences between students, the opportunity to practice new skills and obtain feedback on skills practice that acts as a catalyst for change rather than any critical content feature of the programme. Tobler and Stratton (1997) suggest that if current programmes were replaced with interactive programmes the effectiveness of school substance use education would increase by 8.5%. The benefits of interactive programmes have been reinforced by recent primary studies (McBride, Farringdon, Midford et al, 2001; Williams, Perry, Farbakhsh et al, 1999; Maggs & Schulenberg, 1998; Dijkstra, Mesters, De Vries et al, 1999; Shope, Elliott, Raghunathan et al, 2001).

Dusenbury, and Falco (1995) and Lloyd, Joyce, Hurry, and Ashton (2000) provide some important practical considerations related to the implementation of interactive programmes at the school and classroom level. They suggest that interactive programmes are more difficult to teach or facilitate than non-interactive programmes and require teachers with specialized teaching and classroom management skills. If teachers are uncomfortable or untrained in interactive techniques then they are unlikely to implement such programmes effectively (Dusenbury & Falco, 1995). This in turn has connotations for teacher training where Lloyd et al (2000) correctly state that more focus will be required on teaching methodology rather than content information. In addition, other considerations such as allocation of substance use education lessons to interactive-friendly classrooms; the impact of noise on nearby classrooms and the general poor status of health education in schools will impact on its logistics and therefore the delivery of interactive programmes.

**Recommendations:** Substance use education programmes should be interactive involving interchange of ideas and experiences between students. Skill development, skill practice and feedback are also important elements of substance use education programmes.

Skilled teachers should teach interactive substance use education programmes.

Interactive education programmes require user-friendly classrooms and other practical support from the school hierarchy.

Focus on teaching methodology rather than content information.

### Utility knowledge

Reviews of past studies provide strong evidence that knowledge and attitude based programmes have little effect on behaviour change (Bruvold, 1993; Hansen, 1992; Sharp, 1994; Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999; Dusenbury, & Falco, 1995; Paglia, & Room, 1998). Nevertheless, some reviewers and recent primary studies have identified that the delivery of knowledge as part of a skills training approach is an important aspect of a programme (Bruvold, 1993; Hansen, 1992; McBride et al, 2001; Maggs & Schulenberg, 1998; Dijkstra et al, 1999; Shope et al, 2001). The type of knowledge provided, however, needs to be relevant to the students, needs to be applicable to their life experiences and needs to be of immediate practical use to them (McBride et al, 2001). A term used for this type of knowledge is 'utility knowledge' (Cross, 1997). The role of utility knowledge in a programme reinforces the need to make certain that programme planning incorporates student input to help identify knowledge issues relevant to young people (Dusenbury & Falco, 1995; Dielman, 1994; Hansen, 1992). A recent alcohol study has suggested that information about reasons not to drink may be important utility knowledge in reducing alcohol consumption in young people (Maggs & Schulenberg, 1998). Another suggests that utility information needs to be directly linked to skill development (McBride et al, 2001).

**Recommendation:** Provide utility knowledge that is relevant to the needs of young people and that is linked to skill development and programme goals.

### Focus on behaviour change – rather than knowledge and/or attitudes

The key determinant of successful school substance education programmes as identified by reviewers, is whether a programme is capable of significantly impacting on students substance use behaviour (Foxcroft, Lister-Sharp, & Lowe, 1997; Sharp, 1994; Tobler, & Stratton, 1997; Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999; Tobler, 1992; White, & Pitts, 1998; Dusenbury, L., Falco, M., and Lake, A, 1997; Dusenbury, & Falco, 1995; Paglia, & Room, 1998; Gorman, 1995). Most reviewers have made some assessment of the number of studies within their acceptance criteria that meet the grade when it comes to behaviour change and most concur that it is possible to change students substance use behaviours to a certain degree through school based programmes. There is a general concern, however, that behavioural effects are often limited to a subgroup of the population of interest and often decayed over time. Stead, Hastings, & Tudor-Smith (1996) argue that the reduced impact of a programme in the years following its implementation is not necessarily a bad thing as the period when it is having an impact provides an added window of prevention opportunity that would not have otherwise been available. In addition, young people may have greater ability to quit their use and may have lowered mortality and morbidity as a result of this period of delayed or reduced use (Stead, Hastings, & Tudor-Smith, 1996). Dusenbury and Falco (1995) also note that it is not surprising that the effects of substance use education programmes decay given the low intensity and duration of many programmes. It is perhaps naive to expect classroom education to impact on the behaviour of students for more than the time when it is being implemented, particularly considering the numerous variables external to the school that influence substance use behaviour, and yet, in some cases programme effects do extend beyond implementation. Some studies show behavioural effects for at least one year after booster implementation has been completed (Botvin, Baker, Dusenbury, Botvin, and Diaz, 1995; McBride et al, 2001; Maggs & Schulenberg, 1998; Shope, et al, 2001). These results reinforce the use of regular booster sessions provided to school age students that are developmentally appropriate and that are based in the target groups' reality.



Tobler & Stratton (1997) in their more inclusive review of school substance use education identified that between the years 1978 and 1990 only 36% of programmes included behavioural measures and therefore only a small proportion of studies provide the basis of our understanding about behavioural effects. Reviewers also recognize that poor research methodology has contributed to the small number of studies that are accepted into reviews of programme effectiveness and suggest that optimising methodology should be a critical area for future research (Foxcroft, Lister-Sharp, & Lowe, 1997; Sharp, 1994; Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999; White, & Pitts, 1997; Dusenbury, Falco, and Lake, 1997; Gorman, 1996; Dusenbury & Falco, 1995).

**Recommendation:** The effectiveness of a programme should be based on its ability to change students substance use related behaviours.

Researchers and evaluators should ensure that appropriate research methodology is maintained when evaluating programmes.

### Multi or single substance use focus

Tobler (1992; 1997) provides the only detailed information about the potential of single or dual content focus of school based substance use education. In her 1997 meta-analysis, Tobler offers support for adopting programmes with a single substance focus as her results indicated that tobacco programmes were three times more effective than programmes that focused on multiple substances within the same programme. Alcohol programmes, although not as successful as tobacco programmes were also more successful than multi-substance programmes (Tobler, 1992). These results are particularly pertinent to students older than twelve years of age, younger students may benefit from general substance use education (Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999), however, this should be guided by local prevalence data (White & Pitts, 1997; Maggs, & Schulenberg, 1998; McBride, Farrington, Midford et al, 2001; Shope, Elliott, Raghunathan et al, 2001). White & Pitts (1997) comment that different aetiology of youth substance use suggest that programmes be developed for individual substance types, however, this suggestion may create difficulties for schools in relation to curriculum time. Another issue that may guide the development of programmes, is the substance that causes the most harm and costs in a community.

Recent primary studies point towards a recommendation of single substance focused programmes. Of the three primary studies that gained main effects two were alcohol specific and one was multi-substance focused (with main effect in past week and past month alcohol use) (McBride, Farrington, Midford et al, 2001; Williams, Perry, Farbachsh et al, 1999; Maggs & Schulenberg, 1998). Of the primary studies that gained sub-group effects one was alcohol focused and one was smoking focused (Dijkstra, Mesters, De Vries et al, 1999; Shope, Elliott, Raghunathan et al, 2001).

**Recommendations:** Provide general substance use education programmes up until 13 years of age (this recommendation should be modified based on local prevalence data).

Provide single content programmes until research provides evidence otherwise. To meet curriculum restrictions, focus on substances that are associated with the most harm and prevalent locally.

### Peer interaction / Peer leaders

Several reviewers identified the potential role of peers in school based substance use education (Sharp, 1994; Tobler, & Stratton, 1997; Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999; Tobler, 1992; Tobler, 1997; White, & Pitts, 1997; White, & Pitts, 1998; Paglia, & Room, 1998; Lloyd, Joyce, Hurry, & Ashton, 2000). Tobler in her 1992 meta analysis provides the most detailed account of the potential role that same age and older peers can have and found that peer programmes were more effective than non-peer programmes. It should be noted, however, that Tobler's (1992) criteria used to determine peer programmes was more loosely used than that which may generally be considered a peer programme of trained peer leader facilitating a classroom of same age or younger peers. Tobler included opportunity

for peer interaction among class members as part of her analysis of peer programmes. Tobler (1992) claims that peer programmes (interaction between class members) compared to no programme resulted in a 16% decrease in substance use and a 12% advantage when compared to other programmes.

There are difficulties associated with peers as leaders facilitating classroom activity including selection of leaders catering for social groups that already exist among classmates (Paglia & Room, 1998); the training and time required to adequately prepare peer leaders; the already demanding curricula which provides little opportunity to introduce older peers from other sites (Lloyd, Joyce, Hurry & Ashton, 2000). The only recent primary study that adopted the use of peer leaders was not able to isolate the additional positive or negative effect of this component (Williams, Perry, Farbakhsh et al, 1999). Thorough research in the processes and outcomes that can be expected from peer leaders, in comparison to other alternatives, is required before they can be accepted as part of regular substance use education in schools (Sharp, 1994; Paglia & Room, 1998; Lloyd, Joyce, Hurry & Ashton, 2000).

Tobler (1992) notes that the presence of peer leaders in a classroom does not make a peer programme but rather peer interaction is the key component for success. It is important that students are provided with the opportunity to interact in small group activities, to test out and exchange ideas on how to handle substance use situations and gain peer feedback about the acceptability of their ideas in a safe environment where the leader acts as a facilitator maintaining task oriented behaviour, maximizing opportunity for peer interchange, providing utility information, correcting misconceptions and providing skills practice (Tobler, 1992; Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999).

**Recommendations:** Programmes should provide students with a large amount of time to interact and exchange ideas during task oriented activities.

Further research is required before the use of peer leaders as facilitators can be recommended as part of substance use education programmes.

Peer Leaders as facilitators for now can function under the overall facilitation of programme practitioners.

## TEACHER TRAINING /SKILLS OF TEACHER/FACILITATOR

### Teacher training

Teacher training is a feature of most successful substance use education programmes (Sharp, 1994; Tobler, & Stratton, 1997; Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999; Dusenbury, & Falco, 1995; McBride et al, 2001; Maggs & Schulenberg, 1998; Dijkstra, Mesters, De Vries et al, 1999; Shope, Elliott, Raghunathan et al, 2001). To ensure that grassroots implementers have adequate knowledge and skills and are comfortable delivering substance use education programmes a certain type and level of training is required (Dusenbury & Falco, 1995). Training should directly train those teachers who will be involved with the classroom delivery (Sharp, 1994; McBride et al, 2001; Williams et al, 1999; Maggs & Schulenberg, 1998; Shope et al, 2001) as train-the-trainer models lack success due to key teachers lack of confidence, skills and experience in training colleagues (Sharp, 1994). Training is of most value when provided by programme developers (Dusenbury, & Falco, 1995); is offered to motivated teachers (Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999) and should be followed up with booster training (Sharp, 1994; Dusenbury & Falco, 1995; McBride et al, 2001; Williams et al, 1999; Maggs & Schulenberg, 1998; Shope et al, 2001). Only two reviewers discuss the area of pre-service training offered in teachers colleges and this is limited to statements about the lack of training offered (Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999; Lloyd, Joyce, Hurry, & Ashton, 2000); this is an area that could benefit from well structured intervention research to assess the subsequent impact on drug education programmes in schools.

Teachers of classroom substance use education require sufficient skill to be competent in interactive teaching techniques to enable a programme to be effective (Tobler, 1992; Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999; Tobler & Stratton, 1997; Tobler, 1997; Pagalia & Room, 1998; Dusenbury & Falco, 1995). Most importantly, teachers are required to be able to engender adequate student interaction that is task oriented and positive while managing group interaction, providing appropriate feedback and ensuring a safe learning environment. This type of teaching requires a certain amount of skills and practice while also been cognisant of classroom management issues. Dusenbury and Falco (1995) have suggested that providing teacher training for teachers of substance use education is not enough but that this training needs to involve interactive modelling of activities so that teachers gain experience and understand the classroom management and practical issues of conducting programme activities. Teachers expected to teach interactive programmes need to be provided with the opportunity to practice their interactive teaching skills in a pseudo teaching environment (eg among other teachers acting as students) and gain feedback on this practice (Dusenbury & Falco, 1995; McBride, Farrington, Midford & Phillips, 2001).

**Recommendations:** Training should directly involve those teachers who will be required to teach the programme.

Booster training should be provided in subsequent years.

More research is required on the benefits and type of pre-service teacher training for substance use education.

Teachers are required to engender adequate student interaction that is task oriented and positive while managing group interaction and ensuring a safe learning environment. To do this training should involve interactive modelling of activities.

Transmission of process, as well as content, also helps to standardize the delivery of the intervention at the classroom level for research purposes.

## DISSEMINATION

### Marketing – researcher to practitioner

Several reviewers offer concerns about the dissemination of effective school substance use education programmes (Foxcroft, Lister-Sharp, & Lowe, 1997; Tobler, 1997; Paglia, & Room, 1998; Dusenbury, & Falco, 1995). Tobler (1997) notes that there are problems in the availability of well tested interactive programmes with proven behavioural effectiveness. Many of these programmes are researcher driven and are most often not provided in a form that teachers can access and use immediately in their classroom (Tobler, 1997). In addition, these programmes receive little marketing in schools and therefore little is known about them by teachers (Pagalia & Room, 1998). Pagalia and Room (1998) suggest that funders of effective programmes should take a lead role in encouraging appropriate researcher to practitioner interchange.

Conversely, Dusenbury & Falco (1995) comment that ineffective programmes in the US are provided with a high level of funding for dissemination to schools and have become very successful in dissemination processes. Foxcroft, Lister-Sharp and Lowe (1997) and Paglia and Room (1998) suggest that programme developers have some responsibility to identify to potential purchasers if programmes have not been evaluated, and if it has been evaluated and achieved no behavioural effect then this information should also be provided if marketing is to occur. There is also some need for school staff to be provided with guidance in the selection of programmes (Dusenbury & Falco, 1995) and in their turn, teachers should request proof of evaluation and effectiveness prior to purchase (Paglia & Falco, 1998). It should be noted that discussions with teachers indicate that programmes such as DARE continue to be accessed by schools because of their availability and because the cost of programme materials are within school budgets (Silvia & Thorne, 1997).

**Recommendations:** Programmes with proven effectiveness should be used in schools.

Programme funding agencies should provide effective programmes with dissemination funding. Researchers of effective programmes need to be skilled in dissemination and marketing techniques, or alternatively, pathways that ensure effective programmes are transferred from researchers to practitioners need to be created.

Well tested effective programmes should be readily available in a user-friendly format.

Teachers and other programme users should be provided with the skills to assess the quality of programmes available and question effectiveness when this information is not provided.

## Cost

The cost of school substance use education is an important practical consideration for schools and community health funding generally. The cost of implementing these education programmes at the school site involves financial but also personnel costs related to training, timetabling and the costs on teacher time related to programme planning, classroom and material organization. Pagalia and Room (1998) suggest that costs for schools needs to be minimized so that access to effective programmes is widely possible.

Werthamer (1998) conducted a cost effectiveness and cost benefit literature review on prevention interventions, part of which looked at school based programmes. In this review she noted that very few programmes were assessed for cost benefit and suggested that at a minimum, programmes developers should provide a breakdown of known costs so that potential users of programmes have behavioural impact information as well as cost information on which to base their decision. Although costs and benefits will vary between programmes there are likely to be some commonalities. Ideally, programme developers should include the following cost details (Werthamer, 1998): supplies; materials; capital costs such as computers and buildings; administrative costs; donated goods; volunteer labour; staff salaries and fringe benefits; staff training and cost incurred by participants and their families. Benefits should include (Werthamer, 1998): behavioural improvements, reduced service use; greater school and labour market productivity; family benefits (eg less conflict). In addition, researchers of substance use education programmes should plan for cost benefit analysis.

Of the five recent primary studies that gained either main or sup-group effects, four are primarily classroom based (McBride, Farrington, Midford et al, 2001; Maggs & Schulenberg, 1998; Dijkstra, Mesters, De Vries et al, 1999 ; Shope, Elliott, Raghunathan et al, 2001). One of the studies provided details of the cost of providing the programmes to schools (excluding research and development) at Aust\$ 23.55 per students over a two year period if teacher training was required or Aust\$5.20 if trained teachers continued in the programme in subsequent years (McBride, Farrington, Midford et al, 2001). The fifth offered an extensive amount of comprehensive school and community activity over a number of years and although no cost analysis or summary is available it is likely to be an expensive undertaking (Williams, Perry, Farbachsh et al, 1999). These results support the use of less costly classroom based approaches to school substance use education.

**Recommendations:** Researchers of school substance use education programmes should provide clear information about the cost and outcomes associated with the programme.

Programmes which offer behavioural change, smaller demand on school based implementers and the least cost, should be well promoted to schools.

## RESEARCH AND EVALUATION ISSUES

Many of the reviewers comment that the limitation of past findings in the school substance use education area have been partially created by the poor research methodology adopted in research studies, particularly in studies prior to the late 1980's (Foxcroft, Lister-Sharp & Lowe, 1997; Sharp, 1994; Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999; White & Pitts, 1997; White & Pitts, 1998; Dusenbury, Falco & Lake, 1997; Dusenbury & Falco, 1995; Gorman, 1996; Tobler, 1997). They suggest that there should be a minimal requirement to ensure good quality research which includes: adequate sample size; appropriate control /comparison group; random allocation to study group; analysis catering for allocation by cluster analysis by individual; information on validity and reliability of measures; baseline measures and longitudinal follow-up; details of attrition and exclusion; behavioural measures; comprehensive reporting of results (including negative results); analysis in conjunction with information about level of implementation.

The following section identifies five areas of school substance use education research and evaluation that can have an important impact on our understandings about behaviour change in school substance use education and researchers/evaluators should be cognisant of these issues in addition to sound research/evaluation design and methodology generally.

### Report control group substance use education participation

Tobler and Stratton (1997), in their meta-analysis, note that if a control group received education on substance use during the period of the study then the effect size of the tested intervention was considerably lower. Tobler & Stratton (1997) also commented that it is more and more common for control schools to receive some level of substance use education during the period of a research study.

**Recommendations:** Research studies should clearly acknowledge when the control group is exposed to substance use education as a formal part of the school curricula and any additional components that they may receive as part of a more comprehensive approach to substance use education. This information should be documented in detail as part of the research methodology and reported when analysing and discussing the effects of a tested programme.

### Fidelity of implementation / Implemented as intended

There is common agreement among the reviewers who have focused on this issue, that if a programme is well implemented then better behavioural results occur (Hansen, 1992; Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999; White & Pitts, 1997). White and Pitts (1997) further comment, that although it is a costly exercise to measure the level of implementation by individual classrooms, it is nevertheless important to monitor implementation as if less than 60% of a programme is provided, critical components may be missed and this is likely to have an impact on subsequent student behavioural results. Recent primary studies support this conclusion (Shope, Elliott, Raghunathan & Waller, 2001; Dijkstra et al, 1999; McBride et al, 2001; Maggs & Schulenberg, 1998) with one study suggesting that teachers should aim to implement 80% of the programme (McBride et al, 2001). Tobler, Lessard, Marshall, Ochshorn, and Roona (1999) express concern that if the small group peer interactions and skill development components are not implemented as intended then the subsequent impact of the programme will be reduced. This aspect ties into teacher training, and the need to ensure that teachers are aware of the need to implemented programmes as intended and supplying teachers with the skill and practice to implement interactive activities in the classroom along with effective classroom management techniques. A recent primary study suggests that non-classroom based activities also need to ensure and measure compliance (Dijkstra et al, 1999). In this study, the researchers provided a component requiring students to read a series of take home magazines, however, they were only able to assume student participation (Dijkstra et al, 1999).

If fidelity of implementation is not measured along with change, then measures of change are of questionable value. Negotiating implementation and evaluation requirements with teachers, and

monitoring implementation through process evaluation are important aspects of intervention research. If fidelity measures are incorporated it is possible to identify in detail, successful and less successful aspects of an intervention, and to build upon this information in subsequent interventions.

**Recommendations:** Evaluators and researchers of substance use education need to include the assessment of implementation within the research design and analysis.

Programme implementers should aim for 60-80% implementation of effective programmes.

Teacher training is required to increase awareness of implementation issues.

### Measures of programme success

All of the reviewers have implicitly or explicitly stated that the success of a programme should be determined by its impact on young peoples substance use behaviour (Foxcroft, Lister-Sharp, & Lowe, 1997; Sharp, 1994; Tobler, & Stratton, 1997; Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999; Tobler, 1992; White, & Pitts, 1998; Dusenbury, L., Falco, M., and Lake, A, 1997; Dusenbury, & Falco, 1995; Pagalia, & Room, 1998; Gorman, 1995). However, there is a common feeling among non-US based reviewers that the aims of curriculum-based interventions have historically utilized unrealistic measures of programme success (Sharp, 1994; Pagalia & Room, 1998; White & Pitts, 1997). End goals of non-use and delayed onset have often guaranteed the failure of interventions, as any deviation from non-use, for example, sips or tastes of alcohol under parental supervision, are measured as failures. Such limited measures have hidden other positive programme effects such as changes in patterns of use and the reduction of related harms (Maggs & Schulenberg, 1998; McBride et al, 2001). A broadening of the scope and range of substance use related behaviours and situations should be included as measures of change, and as with programme content, these measures should be based on the realities of young people by being informed by formative research.

**Recommendations:** Measures of programme success should be inclusive (use and harm reduction) and based on the realities of young people by being informed by formative research.

### Duration of measurement

Reviewers of substance use education comment that research of substance use education programme effects should be longitudinal (Foxcroft, Lister-Sharp & Lowe, 1997; Tobler, 1997; Bruvold, 1993; Sharp, 1994; Tobler, Lessard, Marshall, Ochshorn, & Roona, 1999; White & Pitts, 1997; Dusenbury, L., Falco, M., and Lake, A, 1997). Follow-up evaluation of programmes is important as delayed effects are a common feature of curriculum based intervention (Goodstadt, 1986; Dielman, 1994; Maggs & Schulenberg, 1998) and the failure of many past programmes may be related to the short term nature of their evaluations (Goodstadt, 1986). Dielman (1994:275) further clarifies the issue by stating that *'Prevention programmes (which by their very nature should occur prior to onset) need to wait a sufficient length of time to allow treatment and control group prevalence rates to diverge enough for a statistically significant different to be detected'*.

There are some problems associated with long term follow-up. Lloyd, Joyce, Hurry and Ashton (2000) warn that the costs of follow-up can be prohibitive if studies attempt to follow students from too young an age. Tobler (1997) identifies problems with attrition in longitudinal studies. Of the 120 programmes analysed in her 1997 meta analyses 63% had a high attrition rate. This common feature of substance use education research requires creative action to address the methodological issues associated with attrition as well as practical problems associated with long term follow-up. Even so, the benefits of longitudinal assessment of substance use education programmes are critical, particularly information about delayed effects and decay of effects that can provide important guide to future programmes. Maggs and Schulenberg (1998) also acknowledge that long term follow-up requires additional time, resources and effort, but because interventions often occur prior to use it can be up to two years for intervention effects to become significant.

Hansen, Tobler and Graham (1990) in their meta-analysis of 85 longitudinal studies suggest that excellent retention should be considered as 85% over 36 months; that acceptable and interpretable rates of retention 77% over 12 months to 75% over 36 months; excessive attrition defined as 75% to 60%; and that we should have limited confidence in studies with retention rates below 60% over 12 months to 55% over 36 months. This suggestion has provided the bases for accepting or rejecting post 1997 primary studies for this systematic review.

**Recommendations:** Evaluation of substance use education programmes should involve longitudinal follow-up. Programme funders should provide adequate funds to ensure adequate follow-up is possible.

Research is required into methods to reduce cost and attrition of longitudinal studies.

Interpretation and recommendations from the results of longitudinal studies should take into consideration retention rates. Studies with retention below 75% (after 12 months) to 60% (after 36 months) should be considered as having excessive attrition.

### Grouping students on previous use

In addition to analysing the impact on the whole intervention sample, some reviewers suggest that analysis of programme effects should also look at programme effects by baseline substance use experiences (Sharp, 1994; Paglia & Room, 1998; Gorman, 1996). These reviews believe that a programme is likely to have differential effects on the intervention sample based on the previous experiences with substance use and substance use issues. Measuring this difference will provide important information to future programme planners (Sharp, 1994; Paglia & Room, 1998; Gorman, 1996), and may lead to the incorporation of different programme components targeted at sub-groups within the class (Paglia & Room, 1998). If this is the case, then it is critical that researchers and evaluators gather details of substance use history at baseline and analyse data by usage groups as well as aggregating all data when assessing programme main effects. Two recent alcohol primary studies report the greatest intervention impact on students who participated in unsupervised drinking prior to the intervention (McBride et al, 2001; Maggs & Schulenberg, 1998).

**Recommendation:** In addition to analysing the main effects of the programme, sub-group effects related to baseline use should be analysed.

### Allocation by School, Analysis by Student

Research methodologists commonly criticize school based studies because the unit for assignment (school) is not the same as the unit for analysis (student) and this increases the change of Type 1 error or the probability of rejecting the null hypothesis when it is true (Moskowitz, 1989; Biglan, 1985; Cook & Wallberg, 1985; Colley, Bond, & Mao, 1981; Burstein, 1980). Palmer and colleagues (1998) recognize that there are many practical reasons for analysing at the student level. These include: 1) when school is the unit of analysis then power is greatly decreased. When power is decreased the likelihood of identifying a positive effect is reduced. The number of schools required to achieve adequate power is impractical; 2) when using schools as the unit of analysis there is greater likelihood of a Type II error or failing to reject the null hypothesis when it is false. This will result in an over conservative presentation of results; 3) using schools as the unit of analysis is only appropriate when, in the unlikely case, the ICC (interclass correlation - tendency for scores to be more similar within groups) shows complete dependence of individuals within groups (ICC= 1.0). Using this method of analysis when the ICC is not equal to 1.0 will result in conservative results; 4) it is likely that the ICC at the school level is relatively high because schools exist within communities whereas classrooms, unless streamed, would have a relatively lower ICC because of random-like procedures used to allocate students to classroom; 5) using school as the unit of analysis ignores many individual processes that impact on effect and may remove meaning from the analysis. School based prevention programmes aim to impact on individuals not schools and there is a need to describe individual level changes.

The use of cluster analysis was originally proposed for pure epidemiology and its application to school based substance use education needs to be incorporated with caution. Given these practical reasons and to meet methodological concerns, it is suggested that, where possible, individual, class and school level results be presented along with discussion about the strengths and limitations of each area of analysis (Plamer, Graham, White & Hansen, 1998). However, the key focus of results should remain on individual level change by clarifying the effects of the programme on students and providing descriptive details about that change.

**Recommendation:** If allocation to intervention and control groups occurs by school, researchers should provided results by school, class and individual and note the limitations with each level of analysis in discussion about the results.

## CONCLUSION

This systematic literature review of school education on substance use has attempted to synthesize understandings about the development, implementation and evaluation of programmes that can contribute to better education on substance use in schools and particularly those programmes that can impact on young peoples behaviour. Additionally, the review has attempted to identify potential areas in which more work can be done to increase understandings and abilities in the area. There are, however, limitations to this type of undertaking. A systematic literature review can only be based on published literature that is reasonably available and there is some bias associated with this access. Most published studies of school substance use education evaluation are based on the North American experience with their associated philosophies and cultural context (Sharp, 1994; White, & Pitts, 1997; White, & Pitts, 1998; Foxcroft, Lister-Sharp, Lowe, 1997). Programmes are generally targeted at white middle class populations and do little to increase knowledge about programmes for other population groups (Tobler & Stratton, 1997). Published programmes also tend to be largely from research organizations (Stead, Hastings, & Tudor-Smith, 1996) however, there is also a enormous amount of substance use education activity that is occurring every day that has not received any formal evaluation to assess its impact on behaviour. This activity may or may not be beneficial to young people, however, its impact will only be known if evaluation occurs. Funding and evaluation expertise may not be available to undertake evaluation in these circumstances and creative solutions need to be developed between funders, researchers and practitioners to undertake such evaluation or to make well tested programmes with behavioural impact more widely available to practitioners. This review has also, purposely, not included the enormous literature about school substance use education available from commentaries and opinion based publications by experts and others in the field. This task has not been undertaken due to the difficulties of separating opinion from research findings and because of the extensiveness of the task in adequately and systematically assessing all input.

There is much refinement that can occur in the school substance use education field and the way forward is to continue to create and test interventions in an attempt to bring together all components of the development, implementation and evaluation of school substance use education that have the potential for behaviour change. In particular, encouraging programme planners to adopt a formative phase of development that involves talking to young people and testing the intervention out with young people; providing interventions at relevant periods in young people's development; interventions that are interactive and based on skill development; interventions that have a goal that is relevant and inclusive of all young people –harm minimization; booster sessions in later years; utility knowledge that is of immediate practical use to young people; appropriate teacher training for interactive delivery of the intervention; making effective programmes widely available and adopting marketing strategies that increase their exposure.

Conceptually much of the work done in school education on the area of substance use has a limited theoretical basis and there is some suggestion that the consideration of additional risk and protective factors as well as a broadening of the theoretical assumptions that inform substance use education



development will result in continued increases in the effectiveness of interventions (Dusenbury & Falco, 1995; Paglia & Room, 1998). In particular, there is some indication that the resiliency literature may prove to be of value to the substance use education field (Paglia, & Room, 1998; Toumborou & Gregg, 2001; Howard & Johnson, 2000).

Research of school substance use education prevention programmes often base discussion and recommendations on the statistical significance of change demonstrated during analysis and this is an appropriate starting point. It is also important, however, to progress from this to assess the practical significance of programmes and the ability of programmes to transfer from research studies to the real world of schools and classrooms. Demonstration of practical significance is the ultimate test of an intervention and one of the most valuable contributions that an evaluator can make to the field is to discuss the practical implications of their evaluation. Tobler provides an interesting example of practical significance in substance use education using a medical model comparison (Tobler & Stratton, 1997; Tobler, 1992). Her work identifies that interactive programmes offer a mean effect size of 0.2 equivalent to a 9.5% success rate with a mean programme time of 10 hours (Tobler & Stratton, 1997). In the medical field, it was deemed unethical to withhold the release of aspirin beyond the intervention group because of its effect size of 0.035 or 3.5% success (Tobler & Stratton, 1997; Tobler, 1992). Clearly, if similar considerations are given to the prevention field then it would be unethical if interactive programmes were not made widely available to schools.

## APPENDIX A: REGULATION OF ALCOHOL SUMMARY OF REVIEW ARTICLES

Citation	Extensiveness	Findings
<p><b>Single, Eric. (1997).</b></p> <p>Public drinking, problems and prevention measures in twelve countries: Results of the WHO project on public drinking. <i>Contemporary Drug Problems</i>, 24p. 425-448</p>	<p><b>Countries:</b> Canada, Trinidad and Tobago, France, Chile, Poland, Congo, Fiji, India, Australia, Finland, Japan and Israel</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> This review involved collaboration from experts in Canada, Trinidad and Tobago, France, Chile, Poland, Congo, Fiji, India, Australia, Finland, Japan and Israel. 24 references are included in the citation list.</p> <p><b>Focus:</b> is on control measures and prevention programmes that seem to be effective in reducing harm in public venues. Survey is not exhaustive with respect to range of countries, but aims to identify the range of preventive strategies available. Gaps in national estimate data have been filled by expanding on information from studies in regional and local settings. Great variability is seen in per capita consumption between countries.</p>	<p><b>Why Public Venues?</b> - Important in alcohol epidemiology due to amount of alcohol consumed there, and link to particular acute alcohol-related problems eg violence &amp; drink driving. They are also the usual site for introducing new drinking patterns and beverages, as well as a good place to implement preventive strategies. Important to note the great diversity in public drinking contexts cross-culturally (eg not usually a problem in Muslim countries due to religious constraints on alcohol consumption).</p> <p><b>Types of venues and patrons:</b> vary from country to country, but are inclusive of hotels, taverns, nightclubs, social clubs, restaurants and cafes, sports venues, street drinking, illegal outlets, casinos, at religious and cultural festivals and events, and open public drinking venues such as parks. Patrons also vary from setting to setting - eg young people in pubs and clubs, adults in restaurants. Some settings are also linked more closely to specific socio-economic groups and to gender (eg more affluent people are more likely to drink in restaurants and cafes, women are more likely to consume most of their alcohol in restaurants). Author says that generally, drinking in public venues is associated with young male adults. Caveat - these are general trends, and may vary from country to country.</p> <p><b>Norms re public drinking:</b> social attitudes towards public drinking can affect levels of alcohol problems, perhaps even more so than laws and their enforcement. Generally speaking, public drinking is okay (India is exception here), public intoxication is not (Chile is exception here). Seems to be more acceptable for men to drink in public than women. Specific groups in population may be viewed differently for others - eg more negative attitudes directed towards Indigenous Australians.</p> <p><b>Major problems with public drinking:</b> Appear to be dependence (the big one), traffic injuries and cirrhosis.</p> <p><b>Regulation of public drinking:</b> varies greatly across countries. Licensing of outlets is generally a local issue. Minimum drinking age varies from 16 to 21, with 18 being the most common age. Drinking in public is not allowed without a license in some countries, and is permissible in others. Most countries have some sort of regulation re sale of alcohol to intoxicated person, some regulate re density of outlets and trading hours and days. Many respondents indicated that the restrictions re underage drinking and overservice of alcohol are underinforced due to corruption or low priority political issue.</p> <p><b>Preventive initiatives:</b> Most countries indicated no preventive initiatives were conducted at problems associated with public drinking. Prevention of impaired driving was the most common of those that were reported. Possible strategies</p>

		<p>included:</p> <ol style="list-style-type: none"> <li>1) <b>general preventive education</b> - eg don't drink to intoxication, safe transportation</li> <li>2) <b>alcohol control policies</b> - eg lift drinking age, then evidence suggests that regular drinking starts later in life. Hours and days regulations may influence impaired driving and other problems. Tax - may affect level and pattern of drinking - higher taxes = greater discouragement.</li> <li>3) <b>Improved enforcement of licensing laws</b> - this was considered to be very important in most countries. More enforcement staff, inspections on nights and weekends, targeting these to high risk groups/establishments, and co-ordinating police RBT and licensing authorities so that problem areas can be identified and targeted.</li> <li>4) <b>Driving</b> - BAC levels, RBT, targeting high risk establishments, big campaigns about enforcement of drink driving penalties, and provision of safe transportation (eg designated drivers, free public transport).</li> <li>5) <b>Server training</b> - Australia and Canada. Cheaper pricing of low alcohol drinks, avoiding drink specials etc. Recognition of intoxicated patrons, offering low or no-alcohol alternatives, management of intoxicated persons, safe transport home. Advantage is that it only targets those people who are drinking in a hazardous way - not everyone in the premises. Establishments who do this have been shown to have more customers and become more profitable as a result.</li> <li>6) <b>Civil liability</b> - Canada. Means that establishments can be sued for actions of intoxicated patrons. Provides victim compensation and greater onus on server / establishment to act responsibly.</li> <li>7) <b>Promoting low alcohol drinks</b> - maintains industry profitability while profiting public health.</li> </ol> <p><b>Effectiveness</b>  Author says there aren't many systematic reviews of strategy effectiveness, but what is clear is that there are a lot of things that can be done. Most respondents indicated that these efforts should be comprehensive, involving treatment and prevention, and include both problem drinkers and the general population. Collaborations with policy makers, enforcement agencies, hospitality industry, public health agencies, and wider community.</p>
<p>Bennett, Linda A., Campillo, Carlos, Chandrashekar, C.R., Gureje, Oye. (1998).</p>	<p><b>Countries:</b> Nigeria, Mexico and India  <b>Substance:</b> Alcohol  <b>Scope:</b> The reference lists includes 24 citations.  <b>Focus:</b> The review covers drinking practices in Nigeria, Mexico and</p>	<p><b>Drinking contexts</b>  <i>India:</i> There are both permissive and abstinent features, and patterns of consumption depend upon the population group under consideration. Some cultural groups in India do not drink at all, while others have regular, moderate drinking</p>

<p>Alcoholic beverage consumption in India, Mexico, and Nigeria. A cross-cultural comparison. <i>Alcohol Health and Research World</i>, 22(4), 243-252.</p>	<p>India, with a view to making culturally appropriate policy recommendations regarding prevention, treatment and overall strategies to reduce alcohol related harm. Survey data discussed includes beverage preferences, age and gender, drinking contexts and patterns, problems, prevention and treatment strategies, and national drinking indicators. Some of these indicators are epidemiological and therefore outside of the scope of this review. The important sections for the WHO review are those relating to drinking contexts and patterns, and preventive efforts. These are summarized here.</p>	<p>patterns. The country has gone through periods of total prohibition and more permissive regulatory strategies. 1966 marked the end of prohibition at both federal and state levels. Beer production has been steadily increasing since.</p> <p><u>Mexico:</u> Alcohol consumption is a part of social and family life. There are gender differences in the social acceptability of drinking, with men often considering drinking "macho".</p> <p><u>Nigeria:</u> Drinking is a central part of adult life. It is consumed in social, religious, political and economic contexts. Elders and men are expected to drink more than young people and women.</p> <p><b>Approaches to prevention and treatment</b></p> <p><u>India:</u> Not all groups are affected by problems equally. Historically, alcohol control policies began in 1947 (some states adopted total prohibition). Between mid 60's and 1976, the national govt shifted from a total prohibition stance, and during the 80's and 90's regulations re production and distribution became far more lax, so it is easy to obtain a seller's license. It's been suggested that the policy stance has swung from one of total prohibition (which it is also stated here - p 252 (citing Isaacs 1998)"failed miserably") to unrestricted sale with no controls.</p> <p><u>Mexico:</u> Problems related to alcohol are common among men. 1982 Mexican Ministry of Health took responsibility for national health policy. 1988 - measures were introduced to restrict sales of alcohol to children under 18 and to intoxicated patrons. They also increased the price of pure cane alcohol.</p> <p><u>Nigeria:</u> Alcohol is the most widely misused psychoactive substance in the country. Govt moved to control both production and consumption. However, due to the social and cultural entrenchment of alcohol use, prevention and treatment haven't been very effective in reducing harm. Claim is that Nigeria is not very strict in implementing regulatory policies re production - eg, laws exist re where alcohol can be sold, but these are rarely enforced. No age restrictions exist on purchases of alcohol.</p> <p><b>Intoxication</b></p> <p>The definition of "normal" drinking and "intoxication" varies widely from country to country.</p> <p><b>Implications for policy</b></p> <p>There is a need to recognize that there are many differences between countries with respect to normal patterns of alcohol consumption and the social acceptability of alcohol consumption and its effects. Policymakers need to address the attitudes and expectation of populations re alcohol use.</p>
<p>Jernigan, David H. (1997).</p>	<p><b>Countries:</b> International <b>Substance:</b> Alcohol</p>	<p>Looks at the alcohol industry from a global perspective. Production in spirits is rising in developing countries and falling in developed countries, while production in beer is</p>

<p><i>Thirsting for Markets. The Global Impact of Corporate Alcohol.</i> San Rafael, California: Marin Institute for the Prevention of Alcohol and Other Drug Problems.</p>	<p><b>Scope:</b> The information reported in the document was collected in many countries. 276 citations are included in the reference list. <b>Focus:</b> covers the impact of globalization and the marketing of alcohol in developing countries, with a particular emphasis on supply.</p>	<p>increasing in most countries. Most alcohol is consumed in the country that makes it. Vigorous pursuit of alcohol marketing in developing countries – developed markets are flat or falling, so new markets are being pursued. Marketing and advertising is directed at vulnerable consumers, and often uses techniques forbidden in developed countries, such as marketing the health benefits of alcohol.</p>
<p><b>Hemel, Ross, McIlwain, Gillian, Carvolth, Russell. (2001).</b></p> <p>Creating safer drinking environments. In N. Heather, T.J. Peters and T. Stockwell (Eds.). <i>International Handbook of Alcohol Dependence and Problems</i>. Pp. 721-740. City? John Wiley &amp; Sons.</p>	<p><b>Countries:</b> International <b>Substance:</b> Alcohol <b>Scope:</b> The review draws on international literature, and 78 citations are included in the reference list. <b>Focus:</b> is on mechanisms to create safer (public) drinking environments to reduce alcohol-related harm, particularly violence and intoxication.</p>	<p>Environmental and situational variables in the drinking environment can act as risk factors for harm, particularly violence. Laws are often not enforced very well.</p> <p><b>Physical environment</b> Attractive environments that are well maintained may create an ambience that suggests violence is not expected nor permissible [how transportable is this?] Poor ventilation, smoky air, inadequate bar access and seating, noise and crowding have all been linked to violent behaviour in public drinking venues. Venues that are more crowded are often more violent, and crowding occurs more rapidly in high risk venues. Crowding ("unintended low level physical contacts" p. 724) seems to be a function of poor location of entry and exits, bars, toilets and entertainment areas. Entertainment that fosters competition, particularly without formal or informal rules, may lead to aggressive behaviour. Glassware / drinking containers may be used as weapons - plastic containers and tempered glass may be preferable to glass containers. Availability of food (that is not salty, because this encourages drinking) may promote a more sociable atmosphere and also helps to slow alcohol absorption, keeping BAC levels lower.</p> <p><b>Social Environment</b> An atmosphere of "permissiveness" (no responsible service practice, staff exerting little control over patrons), drink specials and promotions, as well as large numbers of intoxicated patrons, have been linked to violence. Severity of aggression is related to levels of intoxication. Interventions by staff with intoxicated patrons may be exacerbated if staff are aggressive - 'peace loving' staff should undertake this role. Patrons who are frequently aggressive should be identified and possibly banned if necessary.</p> <p><b>Interventions</b> Should reduce as many of these risk factors as possible - it doesn't really matter which ones, but the more the better. The most important one is to reduce the level of intoxication. Interventions can include interagency cooperation, community mobilization, the formation of a licensed venues association to promote compliance with codes of practice, policy development, cooperation with industry, the development of codes of practice (both formal and informal), education, publicity campaigns, incentives for responsible venues and community collaboration. There is</p>

<p><b>Stockwell, Tim &amp; Gruenewald, Paul. (2001).</b></p> <p>Controls on the physical availability of alcohol. In N. Heather, T.J. Peters and T. Stockwell (Eds.). <i>International Handbook of Alcohol Dependence and Problems</i>. Pp. 699-719. City? John Wiley &amp; Sons.</p>	<p><b>Countries:</b> International  <b>Substance:</b> Alcohol  <b>Scope:</b> The review draws on the international alcohol literature. 75 citations are included in the reference list.  <b>Focus:</b> includes restricting access to alcohol via minimum drinking age regulations, outlet densities and trading hours.</p>	<p>some suggestion that where law enforcement is corrupt, local people can act as "watchdogs".</p> <p>The impact of local context is often overlooked in this area.  The new tenets of availability theory are:</p> <ol style="list-style-type: none"> <li>1) increasing availability will increase average consumption when "full price" of alcohol is reduced (ie - the \$ cost of purchase plus the ease with which alcohol can be obtained).</li> <li>2) Increased availability will affect harm if the changes affect "routine drinking behaviour" (eg drinking in a public venue as opposed to drinking at home)</li> <li>3) Increased average consumption in the population will relate to increases in drinking among some groups along the following dimensions - rates of non-drinking, frequencies of use, amount consumed and variances in drinking levels.</li> <li>4) Increased health and social problems may be observed across the population, but most particularly in those groups most at risk. Risks will be distributed differently in sub-groups depending upon variability in drinking behaviours and patterns.</li> </ol> <p><b>Definition - Physical availability</b>  p. 703 "<i>Physical availability</i> is essentially the availability of alcohol in one's physical environment mediated by the likelihood that one will come into contact with these sources of drink"  Factors include: licensing laws, enforcement of those laws, hours of sale, outlet densities and types, strength of alcoholic drinks sold, characteristics of premises etc.</p> <p><b>Definition - Economic availability</b>  p. 703 "<i>Economic availability</i> is essentially the price of alcoholic drinks as a proportion of disposable income among potential consumers".  Factors include: taxation, production costs, consumer demand etc.  Both physical and economic availability act at the local rather than global level. Eg - consumers can buy a cheaper type of alcohol to off-set \$ cost, but may find it more difficult to get around the issue of reduced availability. However, in terms of policy issues, influencing price at the local level doesn't happen very much, but local communities often have some say in hours and days of sale, for example.</p> <p><b>Population levels of drinking</b>  An extensive review by Edwards et al (1994) found that the average level of consumption was associated with social and health consequences. [note - see Saxena on this issue re developing countries - might not be a transportable conclusion].</p> <p><b>Legal drinking age</b>  Vary from 16 to 21 internationally. It appears that if drinking age goes up, serious</p>
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		<p>alcohol-related harm goes down in young people, and vice versa. Longitudinal studies show some evidence for the idea that age of first use can predict consumption above recommended levels in later life. But! If that first use happens in the home, it's a bit hard to regulate it. Enforcement of underage drinking laws may be popular with the public, but US and Aussie studies have shown that underage drinkers can usually purchase alcohol (50% on first attempt), particularly if they're persistent (chance of making at least one buy goes up to 90% with four attempts). CTP (Holder's big US study) found that law enforcement is better than server training at reducing this. Police 'stings' have also produced good effects in reducing underage access to alcohol.</p> <p>Enforcement and regulation may be good at reducing access, but these require a level of effort that doesn't always manifest!</p> <p><b>Outlet density</b></p> <p>Limits to outlet density may be effective for reducing alcohol-related harm, but the harms and context within each locality or community need to be considered (eg - road crashes and their relationship to drinkers, source of alcohol and driving patterns may not necessarily translate well to attempts to reduce violence. Violence may be more closely associated with the environment in which drinking occurs, the residence of both perpetrators and victims).</p> <p><b>Hours and days of sale</b></p> <p>The evidence of effect for days is stronger than that for hours. Modification in days of sale seems to affect patterning of problems and intoxication across time and place. This has implications for public transport planning and access to emergency services. Overall weekly consumption may not change if trading days are changed, but there are parallel changes in problems with shifts in trading days. The evidence for later trading hours is not as good, but seems to indicate that later trading may increase levels of harm/problems and levels of consumption.</p> <p><b>Privatization vs Government Monopoly</b></p> <p>This is a bit difficult, as some government monopolies are quite commercially focused, while some private systems are very regulated. However, it appears on balance of evidence that privatization leads to increases in per capita consumption.</p> <p><b>Local context</b></p> <p>This influences the "net outcome" (p. 713) of a specific change to availability. It may be that this limits the transportability of strategies. However, indicators such as violence, drink-driving, injury, death and illness should be considered at the local level to monitor harm. How to regulate alcohol, given commercial interests in the industry, is a big policy challenge. The pros and cons of different strategies should be weighed up by communities to find the most effective intervention for their context and priorities.</p>
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<p><b>Saxena, Shekhar (1997).</b></p> <p>Alcohol, Europe and the developing countries. <i>Addiction</i> 92 (Supplement 1), S43-S48.</p>	<p><b>Countries:</b> International, particularly developing countries</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> 24 citations are included in the reference list.</p> <p><b>Focus:</b> alcohol consumption and related harm as it pertains to developing countries, providing an overview of the issues.</p>	<p><b>Consumption</b></p> <p>Alcohol consumption is dropping in developed countries and increasing in developing countries. Consumption levels are increasing far more than the increase in population levels. The rise in production and importation is highest in some developing countries.</p> <p><b>Harms</b></p> <p>Damage to health (although little data is available) may be more serious in developing countries due to poor nutrition, other illnesses and infections, impurities in liquor and the likelihood of poly-substance use. It is also more likely that most alcohol is consumed by a small number of heavy drinkers.</p> <p><b>Costs</b></p> <p>Economic costs are a serious consideration. In impoverished countries, money spent on alcohol is likely to be taken from that needed for food and education. Domestic violence is also an issue - vicious cycle of poverty, violence and disease may be linked to excessive drinking.</p> <p><b>Economic gains &amp; implications for policy</b></p> <p>Revenue (as much as 10% of total govt revenue in some places) is often derived from alcohol manufacture/retail. Also the argument that alcohol is necessary for tourism. Hard for govts to implement policies in the face of these issues.</p> <p><b>Traditional beverages</b></p> <p>In developing countries, these were often fermented, low in ethanol and had lots of nutrients. They also had to be consumed fresh so could not be stored and sold. Now with European influence, alcohol sale is commercially viable.</p> <p><b>Marketing of alcohol</b></p> <p>Aggressive marketing has occurred in many developing countries, often without restrictions that are seen in the developed world. Further, pressure is being put on govts of developing countries to relax alcohol-related laws.</p> <p><b>What can be done?</b></p> <p>Cooperation can occur between companies and nations if public health is the foremost consideration. Includes information exchange (reciprocal) and developing compatible but culturally suitable policies. More public health information is needed in developing countries. "A recent review of international research related to alcohol policy ... revealed an almost complete lack of studies from the developing countries" (p. S46).</p> <p>Policies should take into account levels and patterns of drinking, and social and cultural diversity. Public health should be the major consideration. International codes of self-regulatory practice should be in place for industries marketing and advertising alcohol. Alcohol should not be treated like other commodities.</p>
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		Interventions. Not all interventions translate well cross-culturally. A needs assessment of harms is a first step. Strategies should then be devised regarding appropriateness and feasibility. Directly transporting interventions from one setting to another can often be costly and ineffective, and may even have iatrogenic effects. Messages about alcohol - important that 'safe' levels of drinking, and those reports that say 'alcohol has health benefits' are not construed as encouragement to drink. If harm reduction measures are undertaken, it may be best to direct them at heavy drinkers, rather than at the entire population.
<p><b>Jernigan, D.H., Monteiro, M., Room, R., &amp; Saxena, S. (2000).</b></p> <p>Towards a global alcohol policy: Alcohol, public health and the role of WHO. <i>Bulletin of the World Health Organization</i>, 78 (4), 491-499.</p>	<p><b>Countries:</b> International</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> . 70 citations are included in the reference list.</p> <p><b>Focus:</b> inclusive of the impact policies on alcohol and alcohol related harm, with particular reference to developing countries. The review provides a general overview of these issues</p>	<p>1983 - World Health Assembly said that alcohol-related problems were a major health &amp; welfare concern.</p> <p><b>Globalization</b> has had a major effect on alcohol markets. This includes pressure on developing countries to privatize alcohol production and sale. Alcohol consumption and harm also appears to rise in developing countries as economic wealth increases.</p> <p><b>Protective effects of alcohol</b> - likely to be very small if not irrelevant in countries with low rates of coronary heart disease.</p> <p><b>Consumption</b> is clearly rising in developing countries and falling in developed countries. Difficulties with exact consumption data for developing countries includes informal production and trading, and varying consumption patterns (ie- majority of population doesn't drink, so alcohol is being consumed by a small group). Consumption patterns may be quite different in developing countries due to the composition of the population (lots of young people, few women drinkers etc). Therefore, a high level of problems can be seen even if the overall per capita consumption level is low.</p> <p><b>Economic and social costs</b></p> <p>Quite often industrialization in production can actually make developing countries worse off. Ex-pats take the skilled jobs, and crops used in production may have to be imported.</p> <p><b>Appropriate strategies</b></p> <p>Depend on the following:</p> <ol style="list-style-type: none"> <li>1) capacity to respond, including the level of control over enforcement and the alcohol market</li> <li>2) feasibility of particular interventions in different cultural contexts.</li> <li>3) Public acceptance</li> <li>4) Likelihood of effectiveness</li> </ol> <p><b>What's needed</b></p> <p>Good data on alcohol and social and health harm - can influence political will, as well as providing epidemiological info needed for effective interventions.</p> <p>Need to look at the effects on women and children, because although they don't do</p>

		<p>the bulk of the drinking, they often pay the price for the drinking of others. Dissemination of information - practical advice and manuals. Consistent efforts by WHO for a global alcohol policy.</p>
<p><b>McKnight, A. James, &amp; Voas, Robert B. (2001).</b></p> <p>Prevention of alcohol-related road crashes. In N. Heather, T.J. Peters and T.Stockwell (Eds.). <i>International Handbook of Alcohol Dependence and Problems</i>. Pp. 741-769. City? John Wiley &amp; Sons.</p>	<p><b>Countries:</b> International <b>Substance:</b> Alcohol <b>Scope:</b> The review includes international literature. 147 citations are included in the reference list. <b>Focus:</b> includes drink-driving with respect to four major areas of investigation - reducing availability, separating drinking from driving, removing drink drivers from the road and preventing re-offending.</p>	<p><b>DWI/DUI</b> 4 main strategies: 1) reducing consumption by reducing availability 2) separating drinking from driving 3) taking drink-drivers off the road 4) preventing recurrences.</p> <p><b>Designated driver programmes</b> Where heavy drinking is likely to occur, the importance of having a designated driver increases. Has been found that if a designated driver does actually drink, they are more likely to renege on their promise to drive, even if it means riding with a drunk driver. Doesn't appear to be as successful a strategy as first thought, but may work best when the designated driver takes their own vehicle (people seem to show a reluctance to leave their vehicles at the site of their drinking). Safe ride programmes (providing a free lift to drinkers) has not been well evaluated in terms of their ability to reduce drunk driving.</p> <p><b>Separating drinking from driving</b> Access to a vehicle is a key issue. In developing countries, per capita motor vehicle ownership is low, therefore alcohol-related driving fatalities are proportionally lower. Interventions for this strategy include information and education, and individual interventions (by hosts and peers). The latter hasn't been well evaluated, but the available evidence suggests there may be some effect with peers intervening in preventing friends from drink-driving (80-89% success rate reported here). One random experiment with groups receiving a peer intervention programme or a non-intervention control session showed that enduring behaviour change only occurred for the intervention group, not the controls.</p> <p><b>Minimum drinking age</b> There is a steeper rise in likelihood of fatality for teenage drink-drivers than adults, and this is most likely to be a result of lowered tolerance to alcohol, and inexperience and immaturity with driving. Enforcement of limiting alcohol to underage youth is not great - but when well publicized 'stings' are targeted at establishments themselves, rather than young people, illegal sales decrease. Both prohibition of sales and penalties for possession in combination have resulted in a significant reduction in alcohol-related road fatalities in the US (estimate is that 17 000 lives were saved from 1982 to 1997). Most young people appear to get their alcohol by having an older person buy it, through obtaining it illegally, or via home supplies.</p> <p><b>Venues</b> Risky practices - high alcohol content beverages, reduced price, hours when alcohol is sold, and amount served. During sporting events, (formal evaluation lacking) serving food and non-alcoholic beverages <i>may</i> reduce beer consumption.</p>

		<p>Intoxicated drivers are most commonly departing from licensed drinking venues. Stockwell's study reviewed here suggests that the biggest risk factors were the amount of alcohol drunk and whether an intoxicated person continued to be served. Efforts to reduce harm associated with licensed venues have taken the form of 1) sanctions against the venues or 2) server training. Police 'sting' operations of high-risk venues resulted in 3 times greater refusal of service to pseudopatrons feigning intoxication and a fourth drop in the % of arrested drivers leaving bars and restaurants (McKnight and Streff, 1994 - US study?) The savings were estimated at \$90 for each enforcement dollar spent. Drinking in private settings is more likely in unemployed, young male drivers (doesn't state which country, but probably US).</p> <p><b>Outlet density</b> Limiting density has had more of an effect on total consumption than individual drinking episodes.</p> <p><b>Responsible server training</b> Programmes tend to show improvements in knowledge and attitudes, discouraging over-consumption and encouraging alternate beverages. However, service to intoxicated patrons doesn't seem to have been affected. Obstacles include - busy attending to other aspects of job, loss of gratuities, persistent patrons, 'customer is always right' mentality and lack of managerial support. Mandated training doesn't appear to be any more successful than optional training.</p> <p><b>Enforcement methods</b> Two goals - to remove dangerous drivers from the road and to deter people from driving. Deterrence is contingent upon enforcement and adequate media coverage of the initiative. Strategies include fines, incarceration, removal of license and impounding of vehicles or removal of license plates. Removing dangerous drivers from the road has been conducted using the following strategies - identifying vehicles being driven by impaired drivers, sobriety checkpoints, and detecting impairment via visible signs, sobriety tests, chemical testing, breath testing, and BAC. Ignition interlocks have been used successfully to reduce repeat drink driving incidents, however once the locks are removed, re-offences often occur. Interlocks are more effective than license suspensions, however. Many drink drivers will only accept the application of an interlock to their vehicles if they alternative is prison.</p>
<p><b>Kenkel, Donald (1998).</b>  A guide to cost-benefit analysis of drunk-driving policies. <i>Journal of Drug Issues</i>, 28 (3), 795-812.</p>	<p><b>Countries:</b> USA <b>Substance:</b> Alcohol <b>Scope:</b> . 45 citations are included in the reference list. <b>Focus:</b> This review examines drink-driving and the costs (both fiscal and social) associated with policies to address it</p>	<p>Paper provides general guidelines for understanding how cost-benefit analyses (CBA) work and how they can be applied.</p> <p><b>Measuring costs and benefits</b> Benefits related to the change in "happiness" that results from a policy, while costs are they "unhappiness" it creates. For drunk-driving, the obvious one is life lost. Probability that someone will die as a</p>

		<p>result of the drunk-driving of another has been calculated between 0.000065 and 0.000016 in the US. A driver with a .10 BAC is 20 times more likely to be involved in a fatal crash than a sober one. How do you figure out the maximum \$ value people will pay to reduce a risk? <i>Value of a statistical life</i> - "the total amount a group of people are willing to pay for a risk reduction that can be expected to prevent one death in that group" p. 797. CBA relies on estimates of the willingness of people to pay.</p> <p>Drunk-driving policy may also create social costs. Resources directed at drink-driving may be taken from elsewhere.</p> <p>Fundamental principle of CBA is to select the policy that produces the greatest net benefit. ( see p. 799). <i>Pareto efficiency in welfare economics</i> - basically means that one person in society benefits, and no-one else is worse off. Simple benefit/cost ratios can be misleading, in that they may not capture the best net benefit policy. Incremental and marginal benefits should also be considered. Further, costs expended at one time might actually be made up later on (eg- treatment costs spend on alcohol rehabilitation might be made up further down the track). There is also uncertainty of this treatment outcome (success of rehabilitation) that needs to be factored in. You can calculate the expected benefits and costs, but must also consider and factor in individual attitudes towards risk.</p> <p>External costs (costs on others) need to be addressed. Some people might not want to avoid drunk driving if the costs to self are perceived as too high - level of information available to these people in making this decision is a crucial factor. The most common victim in an alcohol-related road crash (at least from these US stats) is the drunk-driver. This can have a big effect on CBA calculations. Also, passengers riding with a drunk-driver (usually) also make a decision to travel with the drunk-driver, so this too needs to be considered.</p> <p>A good summary of these issues is provided in the <i>summary</i> section on p. 803.</p> <p><b>Other issues</b></p> <ol style="list-style-type: none"> <li>1) Budget constraints - "opportunity cost is the value of that resource in this alternative public sector use." P. 803 That is, taking money from one sector and putting it into another might have some negative consequences.</li> <li>2) Costs to drunk-drivers - eg losing license - contentious whether these costs should be factored in. Some costs and benefits may actually cancel each other out (see next point).</li> <li>3) Costs to responsible drinkers - these costs in standard CBA should be factored in. Even though tax revenue may create benefits, these need to be weighed against the losses incurred by people drinking responsibly.</li> <li>4) Unintended consequences - these can occur if all of the consequences are not addressed, or if incentives and responses are not well understood.</li> </ol>
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<p><b>Hingson, Ralph (1996).</b></p> <p>Prevention of drinking and driving. <i>Alcohol Health and Research World</i>, 20 (4), 219-226.</p>	<p><b>Countries:</b> USA</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> 30 citations are included in the reference list, although this list was shortened by the journal editors to save space.</p> <p><b>Focus:</b> This review covers the effectiveness of a number of strategies to prevent drink driving. It appears that the focus is largely on U.S. data.</p>	<p>Methodological limitations in these types of studies often include multiple laws being passed at once, so that it's difficult to identify unique variance attributable to particular interventions, use of surrogate or proxy measures such as single-vehicle-nighttime (SVN) crashes etc. The latter may underestimate the actual level of alcohol involved crashes, as SVN's account for less than half of all fatal accidents. Also, drunk drivers may also take additional risks such as dangerous driving, speeding, polydrug use and failing to use seatbelts.</p> <p><b>Minimum drinking age</b></p> <p>In the US, states who raised drinking age showed a greater decline in fatal alcohol-related crashes with drivers under 21, than those states who retained their lower minimum drinking age. States adopting zero tolerance laws (no alcohol is allowed to be consumed by drivers under 21) showed a 20% greater decline in proportion of fatal SVN crashes among 15-20 year old drivers than those states without zero tolerance laws.</p> <p><b>BAC</b></p> <p>US states that adopted a .08 BAC level showed a 16% decline in fatal crashes (where the driver was fatally injured and over .08) post introduction of the law. One study where an independent effect of the law could be measured was Maine, USA. This study showed that the 0.08 law, in combination with license revocation, could reduce the number of fatal crashes with drivers over 0.08 - when these findings were generalized nationally, the projection was that if all states adopted the law, at least 500-600 fewer road deaths would result per year in the USA.</p> <p><b>Enforcement of laws</b></p> <p>Enforcement has to be present for laws to have any effect. In the US it was estimated that only 1 arrest was made for every 300-1000 drunk-driving trips. In Australia (NSW and Vic) a big police road blitz stopped and RBT'd 1 in 3 drivers. An immediate reduction of 37% in alcohol-related road fatalities was observed compared with the previous 3 years, and a sustained 24% decrease was observed over the next 5 years.</p>

<p><b>Peek-Asa, Corinne. (1999).</b></p> <p>The effect of random alcohol screening in reducing motor vehicle crash injuries. <i>American Journal of Preventive Medicine</i>, 16 (1S), 57-67.</p>	<p><b>Countries:</b> International</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> This is a systematic review that meets the Cochrane collaboration guidelines. The review has been independently assessed for quality and can be found on the DARE database (Cochrane review abstracts). Data sources included the USA and Australia. 32 citations are included in the reference list.</p> <p><b>Focus:</b> The interventions reviewed include RBT and checkpoints.</p>	<p>This is a well conducted systematic review, with conclusions drawn that are commensurate with the evidence.</p> <p>In all studies, the introduction of random screening were followed by reductions in fatalities or injury. However, the proportion of these reductions that can be attributed solely to these interventions is unclear, as other factors (e.g. other interventions) may have also had an impact.</p> <p>In the studies that controlled for time trends, reductions were found despite differences in communities and analytic techniques. This is reasonably good evidence that random screening can have an impact on reducing fatalities and injuries related to alcohol. The declines in outcome measures in Australia were greater than the US - this may indicate that as Australia has a stronger enforcement programme, greater intensity in implementation, and tests all drivers stopped (increasing programme visibility), community perceptions of getting caught may be greater in Australia than the US and therefore this may act as a stronger deterrent. The author suggests that this approach may be adopted in both developed and developing countries where traffic fatalities and injuries are high. Promotion of the programmes may be necessary to increase their effectiveness. The little evidence there is regarding cost effectiveness suggests that the programme is not prohibitively expensive, and costs are offset by reductions in injuries and fatalities.</p> <p><b>Recommendations</b> - multivariate analyses (controlling for confounding variables) need to be conducted to find out proportionally how much of these reductions can be attributed to this type of intervention. Further, cost-effectiveness analyses may also be useful.</p>
<p><b>Chaloupka, Frank J. (1993).</b></p> <p>Effects of price on alcohol-related problems. <i>Alcohol Health and Research World</i>, 17 (1), 46-53.</p>	<p><b>Countries:</b> USA</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> 17 references are included in the citation list.</p> <p><b>Focus:</b> This review covers the relationship between price of alcohol and population level of drinking. Statistical economic theory is used to analyse the data. Although not explicitly stated, it appears that the article relies heavily on US data.</p>	<p>The article examines the sensitivity of alcohol use/misuse to price. Analysis is based on statistical economic theory, which simulates policy effects on populations. Simulation predicts the effects of an action on an outcome, while keeping other factors constant. Outcome variables may be measure indirectly (eg levels of liver cirrhosis in the alcohol area), but are reliable if they are closely related to the outcome of interest. An assumption in the analyses presented here is that if tax goes up, the price goes up in a level that accords with the tax increase. However, studies have shown that if tax goes up, then the price usually goes up <i>more</i>, so the figures here might actually be underestimates.</p> <p>The comparison here is the predicted effects of tax increases as opposed to raising the legal minimum drinking age.</p> <p><b>Taxation and inflation</b></p> <p>In the US, inflation has exceeded taxation on alcohol, so alcohol has been, in effect, "undertaxed" for a while.</p> <p><b>Alcohol consumption and price</b></p>

		<p><i>Downward sloping demand curve</i> - suggests that as price goes up, demand goes down. Some people have argued that alcohol doesn't respond in the same way, because it's addictive - but it may be more accurate to say that the effects of price actually differ for groups of drinkers.</p> <p><i>Price elasticity of demand</i> - the sensitivity of consumption to price changes. It's the % change in consumption that occurs when price is increased by 1%. It's hard to generalize what this is for alcohol, but one study which comprehensively reviewed the literature suggested it was about -0.3 for beer, -1.0 for wine, and -1.5 for spirits. The studies they review suggest that increases in federal tax on beer, wine and spirits, might help to reduce both overall consumption and heavy consumption by young people.</p> <p>A number of variables were examined in the research reviewed as outcome measures:</p> <p>1) <b>Drinking and driving</b> - a study by Saffer and Grossman (1987) showed significant reductions in fatal youth road crashes for 15-24 year olds. A raise in the minimum drinking age would only reduce fatalities among those who could not legally purchase alcohol.</p> <p>Retrospective analyses (to 1951) show that if the federal tax on beer had remained at it's 1951 level (see the section on effects of inflation discussed earlier), fatal road crashes may have been reduced by 15%. Taxing the alcohol content in beer at the same rate as spirits may have lowered deaths by 21%. In combination, these two policies might have reduced death rates among youth by 54%. Holding the minimum drinking age at 21 might have lowered youth death rate by 8% from 1975-1981.</p> <p>An increase in tax on beer occurred in 1991 in US (federal). Simulations show that if tax had been 32cents per 6-pack of beer, it's estimated that 1744 fewer alcohol-related road deaths may have occurred. When this is compared to simulations for raising the minimum drinking age uniformly to 21, an average of 664 young lives might have been saved per year. However, the actual effects may have been smaller, as many states already had a minimum drinking age of 21 - when this was accounted for, the life saving was closer to 166 lives per year from 1982-1988</p> <p>2) <b>Chronic heavy consumption and liver cirrhosis</b></p> <p>Simulations on this variable showed that a US\$1 increase in state tax on spirits would lower cirrhosis death rate by approx the same percentage as the per capita consumption decrease in spirits. This suggests that heavy drinkers / addicted drinkers may still be sensitive to changes in price - which flies in the face of previous theory.</p> <p>Overall alcohol demand was price sensitive. If tax on distilled spirits had remained at the 1951 level, cirrhosis deaths may have been reduced by 13% per annum (3905 deaths per year).</p>
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		<p>3) <b>Workplace Accidents</b> A 12% beer tax increase in 1989 might have resulted in a reduction of 130 000 industrial injuries among full time employees, and lowered work-loss days due to these injuries by 1.5 million in 1989.</p> <p><b>Policy implications</b></p> <p>1) <b>increased taxation:</b> there are lots of extra costs associated with alcohol consumption (life, injuries, property damage, crime, violent, accidents, health care, insurance &amp; lost productivity). You could increase the tax level so that it factored in all of these other "social" costs. In the US, this would amount to \$175/gallon of pure alcohol at 1991 prices. The advantage is that heavy drinkers pay the financial brunt, while abstainers and light drinkers, who may suffer harms caused by others' drinking, bear very little of the cost.</p> <p>2) <b>tax equalization:</b> many countries have taxes that favour beer and wine over spirits (argument is that they have different physiological and public health effects, and that spirits are cheaper to produce). However, based on the findings reviewed here, the authors suggest that beer taxes should be about 28% higher than those on wine and spirits.</p> <p>3) <b>Issue of boarder smuggling:</b> taxes and prices need to be fairly uniform across states and territories, otherwise you might see things such as increases in drunk driving, as people drive further to purchase alcohol more cheaply.</p> <p>4) <b>Fixed tax:</b> To get around the tax/inflation issue, a tax rate could be set for alcoholic beverages which is a fixed percentage of the price. Therefore as price goes up, so does the amount of tax collected. Or you could index tax to inflation. Revenue can then be directed to harm reduction strategies, such as education, research, treatment etc.</p>
<p><b>Grube, Joel W., &amp; Nygaard, Peter. (2001).</b></p> <p>Adolescent drinking and alcohol policy. <i>Contemporary Drug Problems</i>, 28 (spring), 87-131.</p>	<p><b>Countries:</b> International</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> The studies reviewed in the article are international in scope. 143 citations are included in the reference list.</p> <p><b>Focus:</b> this review covers the policies that appear to be most effective in reducing underage drinking and problems linked to it. These include price/taxation of alcohol, raising the minimum drinking age, and graduated licensing &amp; zero tolerance. Also covered are RBT, conditions of sale and licensing restrictions (hours and days of sale).</p>	<p>Although this review looks at effectiveness of many interventions, the particular focus is on how effective they are for young people. Most interventions directed at reducing alcohol consumption among young people have been school-based programmes. Environmental (policy/regulatory ) strategies also can be used, and operate at national, regional, local and institutional levels.</p> <p>Target of drinking is important - reduction of overall drinking (public health model) vs reduction of risky drinking (harm reduction model). These authors suggest that given the way kids drink, it's probably better to adopt a harm reduction approach to reduce risky drinking.</p> <p>Pages 96-98 summarizes key findings in tabular form.</p> <p><b>Prohibition / legalization:</b> strong evidence that legalizing alcohol types leads to greater consumption by young people, but weak evidence that it increases overall consumption by young people</p>



		<p><b>Hours of sale:</b> some evidence that big shifts can have an effect on drinking and driving in general population, but less evidence of this for young drinkers.</p> <p><b>Outlet density:</b> Mixed evidence. May be that increased density is related to overall population consumption and problems, but geographic location studied may have bearing on the findings.</p> <p><b>Minimum drinking age:</b> good evidence that increasing the minimum drinking age can reduce adolescent drinking and road crashes. Enforcement is a key issue.</p> <p><b>Taxation / price:</b> good evidence that increases in price reduce adolescent drinking and problems associated with it.</p> <p><b>Responsible beverage service:</b> moderate evidence that mandated server training (see critique of this elsewhere - which concluded mandated was no different from voluntary training) can reduce intoxication and related problems in general population.</p>
<p><b>Osterberg, Esa (2001).</b></p> <p>Effects of price and taxation. In N. Heather, T.J. Peters and T. Stockwell (Eds.). <i>International Handbook of Alcohol Dependence and Problems</i>. Pp.685-698. City? John Wiley &amp; Sons.</p>	<p><b>Countries:</b> International</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> The material reviewed is international in scope. 48 citations are included in the reference list.</p> <p><b>Focus:</b> this review examines the effects of alcohol price on levels of consumption. Taxation is the main mechanism for increasing price.</p>	<p>Taxing alcohol has been a good way of raising govt revenue, and has been justified on the grounds of public health, it offers a wide tax base, and due to it's luxury status.</p> <p>Policy problem is that when you up the tax, it results in a small drop in consumption, but ups the household expenditure on the item. The key issue is who is paying the tax and how the tax is being used by governments.</p> <p>Alcohol industry provides jobs and often involves production and agriculture on the one hand, but incurs costs to health and welfare on the other. Preventive paradox occurs when lighter drinkers are harmed by alcohol, not just heavy drinkers (see Saxena on this for developing countries). Mortality is affected by prevalence of different diseases and injuries, age structure of population and per capital alcohol consumption - culturally and temporally specific! Not surprisingly therefore, the amount of harm can be attributed to alcohol varies greatly from region to region. Burden of social problems is probably equivalent in developed and developing countries.</p> <p>The effects of price change have been very well investigated in the alcohol literature, but not much of this knowledge is derived from developing countries - it's mostly from studies done in Western, industrialized nations. What it does tell us that a rise in price usually results in a drop in consumption - alcohol behaves like other commodities. But variations in elasticity depend on cultural, social and economic circumstances - these elasticities are not inherent to alcohol, as such, but related to how it's consumed and by whom.</p> <p>A study in Sweden showed that the more restricted availability of alcohol is, the smaller the influence of price increases. A Finnish study showed that the value of price elasticity decreases as incomes and standards of living rise. There is also weak evidence from a US study to suggest that heavy drinkers are more sensitive to price</p>

		<p>changes that lighter drinkers. Another US study found that higher beer taxes are one of the most effective ways to reduce drinking and driving in all sectors of the population. Other studies suggest that increasing beer taxes can reduce many forms of crime - however violence /assault rate seems to be the least affected. However, an inverse relationship between beer price and child abuse has been observed. There appears to be an interplay between price controls and other strategies to affect alcohol availability.</p> <p>Decreases in price - weak evidence gleaned from observational studies on "happy hours" and discounted drinks shows that people drink more (and possibly over a shorter period of time) when alcohol is cheaper.</p> <p>Cross elasticities - ie - substitution of one type of alcohol or brand for another. This has been observed with price increases in Nordic countries. Further, a rise in alcohol price may encourage illegal industry or shifts to illicit substances - the control measures that regulate these are probably a salient factor in determining whether or not this type of substitution is likely to occur. In developing countries, it has been argued that price increases on commercial production may well lead to illicit or home production of alcohol.</p> <p>Policy implications - taxing on the basis of alcohol strength within and across beverage types is usually considered effective. Some have argued that tax on alcohol is not socially equitable and imposes greater hardship on poorer people - the counterargument is that taxing alcohol imposes a lower burden than taxing other types of commodities. The issue of availability is important - where it's easy to get alcohol due to lax border restrictions etc, price may be less of a factor.</p>
<p><b>Miron, Jeffrey A. (1998).</b></p> <p>An economic analysis of alcohol prohibition. <i>Journal of Drug Issues</i>, 28 (3), 741-762.</p>	<p><b>Countries:</b> USA</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> 25 citations are included in the reference list.</p> <p><b>Focus:</b> this article discusses both the positive and negative aspects of alcohol (and other drug) prohibition. An analysis is conducted of the effects of prohibition on cirrhosis mortality (a proxy measure of consumption) and crime (homicide) in the USA during alcohol prohibition. This example is chosen due to reliable data sets, and the possibility of before/after comparisons (because prohibition was repealed).</p>	<p><b>General findings of the analysis</b> - The analysis conducted in this article is quite rigorous, in that it controls for confounding variables and trends, and it is explicit about weaknesses in available data and makes conservative estimates where necessary. The findings indicate that prohibition of alcohol had (at most) a small negative effect on consumption, and from the data available, alcohol price did not increase by much, and may have even declined in some cases. Violent crime (homicide) increased by more than 25% relative to its average value over the whole time period analysed, even when confounding variables were accounted for. A suggested alternative is that sin taxes, perhaps combined with some sort of regulation and subsidized treatment and prevention, might be better than a prohibition strategy, even for illicit substances.</p> <p><b>Positives and Negatives of Prohibition</b></p> <p><u>Price and quantities</u></p> <p>Prohibition most directly affects supply and demand. Costs of production may go up if legal sanctions are enforced, but costs may also decrease because taxes and</p>

		<p>market regulations can be avoided in the black market. Advertising of the product is not conducted for illegal substances, so producers don't incur this cost. If some part of demand is supplied by legal outlets (such as doctors), the effects of prohibition on costs and price are likely to be small. Degree of enforcement is key - for instance, if you enforce it rigorously it is expensive in law enforcement costs, and no tax revenues are gained from the sale of the prohibited substances. Deterrent effects of prohibition are questionable - prohibition may create a "forbidden fruit" effect. Substitutions for the prohibited substance may also be made, particularly when there's a good substitute available. The effect of prohibition on price depends to some degree on price elasticity - where demand is inelastic, prohibition will have little effect on price.</p> <p><u>Prohibition and crime</u></p> <p>Prohibition can actually generate crime because there are no legal avenues for dispute resolution - violence is an obvious alternative. If prohibition incurs law enforcement resources, then these are usually directed away from other policing needs. There is also the possibility of police corruption. Most experience with prohibition shows that a fairly strong illegal market still exists for many substances. If people are perceived to be "getting away with it", this may erode social norms to comply with other laws.</p> <p><u>Other effects</u></p> <p>To reduce the likelihood of detection, prohibited substances are often shipped in a concentrated form that is small and easy to conceal. Although this means that potent forms of the substance may become available to the market, at some point, this is usually imperfectly diluted, which may have an impact on overdose and quality. Some like prohibition for its symbolic value (ie - drug use is perceived as 'evil'), while others might argue for a civil liberties perspective (ie- people should be allowed to use if they want to). The middle ground looks at the effects of substance use on 'externalities' (ie - other people being harmed through someone else's use). It is suggested here that 'sin taxes' can have the same positive benefits of prohibition without many of the negative consequences (lots of govt revenue without market diversion to other more harmful substances, reduced enforcement costs, judicial system can resolve disputes, quality / purity can be monitored etc). E.G. it's estimated that the US could have made several billion dollars annually in revenue through taxing cannabis.</p>
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## APPENDIX B: REGULATION OF ALCOHOL SUMMARY OF PRIMARY STUDIES

Citation	Intervention Details	FINDINGS
<p>Gray, D., Saggars, S., Atkinson, D., Sputore, B., &amp; Bourbon, D. (2000).</p> <p>Beating the grog: An evaluation of the Tennant Creek licensing restrictions. <i>Australian and New Zealand Journal of Public Health</i>, 24 (1), 39-44.</p>	<p><b>Substance:</b> Alcohol  <b>Topic:</b> Trading hours and days  <b>Country:</b> Australia  <b>Programme name:</b> Beating the Grog  <b>Aims:</b> to review the effectiveness of (and community attitudes towards) increased restrictions on alcohol availability in Tennant Creek  <b>Key components:</b> restrictions on licensing for take-away outlets, sales of cask wine, sales of alcohol in glass containers, sales to third parties, and trading hours in hotel and lounge bars. Provision of food with alcohol was also mandated in some venues.  <b>Study design:</b> interrupted time series, pre-test/posttest  <b>Target group:</b> residents of Tennant Creek over 18 years of age  <b>Sample:</b> The sample was representative of the Tennant Creek population with respect to gender, age and Aboriginality. Total N=271.</p>	<p>Fewer alcohol-related DRG (diagnostic related groups) admissions were observed, however there was difficulty drawing conclusions on the access of women's refuges and sobering up shelters due to confounding variables. Increased policing and custody statistics may have been due to an increase in police activity and recording procedures. A decline in arrests was seen on Thursdays (the day primarily targeted for licensing restrictions). A decline was observed in the number of Aboriginal people taken into custody. The community was generally in support of the restrictions. 19.4% decrease in annual/capital consumption was observed, but this is still twice the national average.  <b>Comments:</b> qualified statements are made about the evidence – these incorporate the analysis and the importance of mitigating factors.</p>
<p>Chikritzhs, T., Stockwell, T., &amp; Masters, L. (1997).</p> <p>Evaluation of the public health and safety impact of extended trading permits for Perth hotels and nightclubs. <i>National Centre for Research into the Prevention of Drug Abuse</i>. Bentley: Curtin University of Technology.</p>	<p><b>Substance:</b> Alcohol  <b>Topic:</b> Trading hours and days  <b>Country:</b> Australia  <b>Programme name:</b> Impact of Extended Trading Permits  <b>Aims:</b> to assess the public health and safety issues relating to the introduction of extended trading permits (ETP'S), re assaults, drink driving and road crashes  <b>Key components:</b> introduction of extended trading permits  <b>Study design:</b> interrupted time series, controlled before/after  <b>Target group:</b> Premises with extended trading permits  <b>Sample:</b> Licensed premises (hotels, taverns and nightclubs) with ETP's, and in some instances, matched controls without ETP's in the Perth metropolitan area. 44 premises were sampled for road crash data, 20 premises were sampled for assault data and 49 premises were sampled for drink driving.</p>	<p>Regarding assaults – there was a significant increase after ETP's were granted (twice as large for ETP premises, non-ETP's remained stable), and alcohol purchases were 85% greater in ETP compared to non-ETP premises. Road crashes – increased, but it was not significant. With matched control, a 4% increase was observed for ETP premises, while a 31% decrease was observed for non-ETP premises (which was a significant difference). Drink driving – reduced after ETP, but a shift was observed in the time of testing drivers; that is, the later departure time from ETP premises meant that policing levels were lower and that intoxicated drivers may have been less likely to be apprehended.  <b>Comments:</b> the study was well controlled, providing a strong level of evidence based on objective data.</p>
<p>Scribner, R. A., MacKinnon, D. P., &amp; Dwyer, J. H. (1994).</p> <p>Alcohol outlet density and motor vehicle crashes in Los Angeles country cities. <i>Journal of Studies</i></p>	<p><b>Substance:</b> Alcohol  <b>Topic:</b> Location and planning (outlet density), DUI/DWI  <b>Country:</b> USA  <b>Programme name:</b> Outlet Density and Motor Vehicle Crashes  <b>Aims:</b> To examine the relationship between alcohol outlet density and motor vehicle crashes</p>	<p>There is an association between alcohol outlet density and alcohol-related road crashes, with alcohol outlet (both on premises and off premises sales) density accounting for a significant proportion of both road crash injury and associated property damage. Income may act as a modifying variable in analyses of the relationship between availability and alcohol-related outcomes, rather than as a confounder. The appropriate unit of geographic analysis for this type of research</p>

<p>on <i>Alcohol</i>, 55, 447-453.</p>	<p><b>Key components:</b> ? Epidemiological data was collected from a variety of government and police data sources.  <b>Study design:</b> cross-sectional, ecological  <b>Target group:</b> alcohol consumers  <b>Sample</b> The data was collected from 72 cities in Los Angeles County. Cities with populations over 300 000 or less than 10 000 were excluded from the analysis.</p>	<p>has been queried in other studies, however these authors suggest that as consumers may purchase alcohol in one locality, and be involved in an alcohol-related harm in another, census tract and zip code (USA) units may be too small a unit to draw realistic inferences from.</p>
<p><b>Norstrom, T. (1998).</b></p> <p>Effects on criminal violence of different beverage types and private and public drinking. <i>Addiction</i>, 93 (5), 689-699.</p>	<p><b>Substance:</b> Alcohol  <b>Topic:</b> alcohol types and violence  <b>Country:</b> Sweden  <b>Programme name:</b> Criminal violence and different beverage types  <b>Aims:</b> to analyse the relationship between homicide and assault rates, and alcohol consumption  <b>Key components:</b> This is an exploratory study of the relationship of alcohol consumption to violence  <b>Study design:</b> interrupted time series  <b>Target group:</b> alcohol consumers  <b>Sample:</b> Data was collected in Sweden for the period 1956-1994</p>	<p>A statistically significant relationship was observed between assault rate and on-premise sales of beer and spirits (attributable fraction 40%). The statistical analysis for homicide may have been underpowered. However, the results indicate that the relationship between total alcohol consumption and homicide has an attributable fraction of 0.69 (this should be interpreted cautiously due to the margins of error likely). Overall the variability in assault rates appeared to be related to per capita alcohol consumption in public venues (with beer and spirits being the beverage types of particular salience), whereas the variability in homicide rates seemed to be related to private alcohol (most importantly spirits) consumption. The findings of this study are consistent with those conducted previously in other countries, and with studies using different methodologies. On this basis the author concludes that the findings are fairly robust. Social contexts and patterns of drinking need to be examined in order to further interpret the results.</p> <p><b>Comments:</b> the researcher has controlled for confounding variables, and inspected data for correlations between measures that may have rendered the results uninterpretable. The study is well-designed and controlled, and conclusions are drawn that are commensurate with only the most reliable data</p>
<p><b>Stockwell, T., Masters, L., Philips, M., Daly, A., Gahegan, M., Midford, R., &amp; Philp, A. (1998).</b></p> <p>Consumption of different alcoholic beverages as predictors of local rates of night-time assault and acute alcohol-related morbidity. <i>Australian and New Zealand Journal of Public Health</i>, 22(2), 237-242.</p>	<p><b>Substance:</b> Alcohol  <b>Topic:</b> alcohol types  <b>Country:</b> Australia  <b>Programme name:</b> Alcohol consumption as a predictor of assault and alcohol-related morbidity rates  <b>Aims:</b> to assess whether population level consumption of particular beverage types are more closely associated with harm than others  <b>Key components:</b> The study was exploratory, however the level of taxation relative to different beverage types was one of the key areas of investigation  <b>Study design:</b> ecological  <b>Target group:</b> alcohol consumers  <b>Sample:</b> Data was collected from a variety of government sources available in Western Australia in the 1991-1992 financial year. Socio-</p>	<p>Per capita consumption of particular beverage types was associated with areas that had significant rates of alcohol related harm in Western Australia. Rates of cask wine consumption were better predictors of night-time assaults and hospital admissions. Rates of high-strength beer consumption were more strongly associated with harm than low-strength beer consumption. The proportion of low strength beer consumed was negatively related to local levels of assault and morbidity. The beverages associated with the most harm were those taxed at the lowest rate, providing little fiscal incentive for drinkers to choose lower strength alcoholic beverages.</p>

	economic status varied, with a mean of 10.6% unemployed, and there was a mean of 6.8% Indigenous Australians. Data represented both males and females, and the Australian Bureau of Statistics showed the population under investigation ranged in age from 25-39.7 years.	
<p><b>National Drug Research Institute. (1999).</b></p> <p><i>The public health, safety and economic benefits of the Northern Territory's Living With Alcohol Program.</i> Bentley: National Drug Research Institute.</p>	<p><b>Substance:</b> Alcohol  <b>Topic:</b> price of alcohol  <b>Country:</b> Australia  <b>Programme name:</b> Living with Alcohol  <b>Aims:</b> to address alcohol related harm in the Northern Territory and to reduce it over a 9 year period to levels comparative to that of the rest of Australia  <b>Key components:</b> multifaceted programme, including changes to trading hours, increasing the real price of alcohol, increased law enforcement, regulations on advertising, media campaigns, community education programmes. Real price is the variable of interest in the evaluation.  <b>Study design:</b> interrupted time series  <b>Target group:</b> residents and members of the Northern Territory community – responsible drinkers rather than abstainers  <b>Sample:</b> The community exhibited very high levels of alcohol-related problems. Harmful consumption was twice as prevalent as the national average, with the average per capita consumption 70% higher than that of Australia as a whole.</p>	<p>Reductions were observed in estimated alcohol caused deaths, hospital admissions for non-road injuries, road crash injuries, per capita consumption and self-reported hazardous consumption. These reductions occurred as soon as the programme was introduced. The median estimate in dollar saving in reducing hazardous consumption was AUD \$124.30 million.</p> <p><b>Comments:</b> The study was very well controlled, with good indicators and rationale for their use. Thorough explanations of potential confounds and how they were adjusted for were also provided</p>
<p><b>Fors, S. W., &amp; Rojek, D. G. (1999).</b></p> <p>The effect of victim impact panels on DUI/DWI rearrest rates: A twelve-month follow-up. <i>Journal of Studies on Alcohol</i>, 60, 514-520.</p>	<p><b>Substance:</b> Alcohol  <b>Topic:</b> DUI/DWI  <b>Country:</b> USA  <b>Programme name:</b> Victim Impact Panel (VIP)  <b>Aims:</b> to assess the effectiveness of victim impact panels in reducing drink-driving recidivism  <b>Key components:</b> Offender exposure to a victim impact panel.  <b>Study design:</b> cohort study  <b>Target group:</b> repeat drink-drivers  <b>Sample:</b> DUI offenders in the state of Georgia who were arrested and sentenced in the courts were purposively sampled for the study. Intervention group participants (n=404) were compared to matched controls (n=431). No significant differences between groups were found on sample matching characteristics. Total N=835. Ethnicities included White, African-American, Hispanic and other, with all participants aged</p>	<p>Using chi-square tests, the intervention group had significantly lower (65%) arrest rates for all time periods analysed in comparison to the control group. There was a statistically significant difference for age group (26-35 years) between the intervention and control groups in rearrest rates, and for whites (70% lower for intervention group). Logistic regression analyses showed that when controlling for other variables, participation in the VIP programme significantly increased the odds of not being rearrested. The effect of the VIP programme appears to have lasting results in the short and long-term; the authors suggest the programme may be a simple and cost-effective way to reduce repeat drink-driving</p> <p><b>Comments:</b> The authors control for confounding variables and have accounted for other explanations that might have influenced the results.</p>

	over 16, both male and female.	
<p><b>Lewis, R. K., Paine-Andrews, A., Fawcett, S. B., Francisco, V. T., Richter, K. P., Copple, B., &amp; Copple, J. E. (1996).</b></p> <p>Evaluating the effects of a community coalition's efforts to reduce illegal sales of alcohol and tobacco products to minors. <i>Journal of Community Health</i>, 21, (6), 429-436.</p>	<p><b>Substance:</b> Alcohol  <b>Topic:</b> Accords/ community policy  <b>Country:</b> USA  <b>Programme name:</b> Project Freedom  <b>Aims:</b> to reduce the availability of alcohol and tobacco to minors  <b>Key components:</b> Underage youth visited and attempted to purchase alcohol and tobacco products from a variety of types of retailers. Those retailers who sold the products to minors were issued with citations, and those who did not, with commendations. A media campaign alerted the community to the ease with which young people were able to purchase these substances, and informed retailers of the possibility of community surveillance. The intervention was then conducted again after this publicity.  <b>Study design:</b> single group pretest post-test  <b>Target group:</b> retailers of alcohol and tobacco products  <b>Sample:</b> Retailers (supermarkets, convenience stores, liquor stores) in Wichita, Kansas, were targeted for the intervention (N=100). Approximately 60% of supermarkets and 47% of liquor stores in the area received the intervention  The age of retailers was unspecified. Minors attempting to purchase were aged 14-20 years.</p>	<p>The overall percentage of stores willing to sell alcohol to minors dropped from 55% at pre-test to 41% post-test (<math>z=1.08</math>, <math>p&lt;.02</math>), while the figures for tobacco increased from 70% pre-test to 76% post-test. In intervention sites, alcohol sales dropped from 83% (5 of 6) to 33% (2 of 6), which was not statistically significant. Alcohol sales dropped in comparison sites from 45% to 36%. No pre-test / post-test differences in tobacco sales to minors in either intervention or comparison sites was observed. The authors suggest that some degree of success was obtained in reducing alcohol sales to minors in retailers who received the citation intervention. Further, legal penalties for sale of alcohol to minors are tougher than those for tobacco, which may have explained the differences in success observed between the two substances. An additional benefit was that law enforcement resources were able to be directed from licit substances to illicit substances  <b>Comments:</b> There may have been a lack of statistical power for the analysis, and lack of randomization for the intervention sites limits generalisability of the findings</p>
<p><b>Hawks, D., Rydon, P., Stockwell, T., White, M., Chikritzhs, T., &amp; Heale, P. (1999).</b></p> <p><i>The evaluation of the Fremantle police-licensee accord: Impact on serving practices, harm and the wider community.</i> Bentley: National Drug Research Institute.</p>	<p><b>Substance:</b> Alcohol  <b>Topic:</b> accords/community policy  <b>Country:</b> Australia  <b>Programme name:</b> Fremantle Accord  <b>Aims:</b> The Fremantle Accord was an agreement made by licensees with other community stakeholders to engage in responsible beverage service practice in alcohol outlets in the Fremantle area. The features of the accord included the imposition of an entrance fee to clubs after a certain hour, and the prohibition of drink discounting, as well as other requirements already mandated by law, such as refusal of service to underage patrons  <b>Key components:</b> The key component of the accord was responsible service practice relating to alcohol, with additional support from law enforcement regarding training and surveillance  <b>Study design:</b> controlled before/after  <b>Target group:</b> patrons frequenting licensed premises  <b>Sample:</b> The intervention community was the city of Fremantle, a</p>	<p>Only very marginal improvements were seen in the refusal of service of intoxicated patrons in the intervention community; slightly better results were obtained with the door staff checking of patron ID's if they were suspected of being underage. No significant differences were found in before/after comparisons in drink-driving and crash data in either the intervention community or the comparison site. It appears that the accord had limited success in reducing alcohol-related harm. Variability in the level and type of training of alcohol service staff may be one explanation for this.  <b>Comments:</b> The data presented is comprehensive and complementary, and conclusions are drawn which are commensurate with the evidence</p>

	coastal Western Australian city, while the comparison community was Northbridge, which is in close proximity to the Perth CBD.	
<p><b>Stockwell, T., Rydon, P., Gianatti, S., Jenkins, E., Ovenden, C., &amp; Syed, D. (1992).</b></p> <p>Levels of drunkenness of customers leaving licensed premises in Perth, Western Australia: A comparison of high and low 'risk' premises. <i>British Journal of Addiction</i>, 87, 873-881.</p>	<p><b>Substance:</b> Alcohol  <b>Topic:</b> high risk venues  <b>Country:</b> Australia  <b>Programme name:</b> Licensed Premises Risk Levels  <b>Aims:</b> To measure the risk of licensed premises having intoxicated customers  <b>Key components:</b> ? The intervention involved breathalysing and questioning patrons leaving licensed establishments.  <b>Study design:</b> cross sectional  <b>Target group:</b> drinkers leaving licensed premises  <b>Sample:</b> Customers (n=150 from high risk and n=157 low risk venues) participated in this study in Perth, Western Australia. The majority were male (76%) under 26 years of age (55.3%). Premises were matched on alcohol sales, presence of a car park, mean distance from the Perth city centre and size of premises. All participants were aged 18 or over, and males and females were sampled.</p>	<p>More patrons subjectively assessed as moderately or extremely intoxicated leaving high risk premises refused to participate than those from low risk premises. More blue collar workers were leaving high risk rather than low risk premises. The high risk patrons had a higher, though not significant, BAL on average than low risk patrons, but a significantly higher self-reported consumption of high strength beer than low risk patrons. Three times as many customers from high risk venues than low risk venues had a BAL level over 0.15, which was statistically significant. More patrons from low risk premises than high risk premises had BALs of under 0.08 and 0.149. A significant positive correlation between venues with higher risk ratios and patrons with BAL's exceeding 0.15 was observed (that is, the higher the risk ratio of the venue, the greater proportion of patrons with BAL's over 0.15).  <b>Comments:</b> It is not clear whether outlets were randomly sampled, as management permission had to be obtained before the study could be conducted. Further, subjective measures of intoxication are likely to be less reliable than BAL testing. Given the high attrition rate in high risk premises, the low number of outlets, and the moderate number of patrons agreeing to participate, it may be wise to interpret the generalisability of these results with some caution.</p>
<p><b>Speer, P. W., Gorman, D. M., Labouvie, E. W., &amp; Ontkush, M. J. (1998).</b></p> <p>Violent crime and alcohol availability: Relationship in an urban community. <i>Journal of Public Health Policy</i>, 19, 175-190.</p>	<p><b>Substance:</b> Alcohol  <b>Topic:</b> crime  <b>Country:</b> USA  <b>Programme name:</b> Violent Crime and Alcohol  <b>Aims:</b> To determine the relationship between violent crime, neighbourhood socio-demographic characteristics, and alcohol outlet densities  <b>Key components:</b> An analysis of outlet density, with respect to crime and neighbourhood characteristics was the focus of this study.  <b>Study design:</b> cross sectional  <b>Target group:</b> alcohol consumers  <b>Sample:</b> The study was conducted in Newark, New Jersey, with a population of approximately 275 000 in 1990. The city is characterized by a shrinking population, urban decline, and out-sourcing of manufacturing. Twenty six percent of the population live below the poverty line, and there is a high level of HIV prevalence and drug misuse. Two samples were used; census tracts (n=91) and census block (n=217) groups. Ethnicities represented include White (17%), Hispanic</p>	<p>Sociodemographic variables accounted for 48% of the variance in violent crime, with a further 19% explained by outlet density at the census tract level. For census block groups, sociodemographic variables accounted for 27% of violent crime, with alcohol outlet densities accounting for a further 27% of the variance. At the census tract level, an 8% increase in employment would result in a 1% decrease in violent crime. A 5% increase in median household income would produce the same result, according to their model. In comparison, the equivalent reduction in violence could be achieved by reducing outlet density by 1%. It appears that outlet density predicts violent crime at smaller rather than larger units of analysis. Limitations of the study include an analysis of crime for summer months only (weather and time of year have been identified as influencing crime rates elsewhere), the uniqueness of the features of the community (limiting generalizability), the possibility that ecological fallacy (in this case, that factors affecting crime may operate at different units of analysis) and finally, that a cross-sectional rather than longitudinal design may have produced relationships that were not identified, such as high crime locations attracting liquor outlets.  <b>Comments:</b> This study is not particularly well controlled or designed, so other</p>



	(25%) and African-American (56%), other (2%), with both males and females sampled. One third of the population is below the age of 18.	factors may have accounted for the results. It does provide weak evidence that outlet density may have an impact on violent crime rates, however some of the conclusions reported by the authors are perhaps a little stronger than the evidence truly suggests.
<p><b>Scribner, R. A., MacKinnon, D. P., &amp; Dwyer, J. H. (1995).</b></p> <p>The risk of assaultive violence and alcohol availability in Los Angeles county. <i>American Journal of Public Health</i>, 85 (3), 335-340.</p>	<p><b>Substance:</b> Alcohol  <b>Topic:</b> crime  <b>Country:</b> USA  <b>Programme name:</b> Violence and Alcohol  <b>Aims:</b> To assess the geographic association between outlet density and assaultive violence  <b>Key components:</b> The purpose of this study was to examine the relationship between outlet density and violence. Available data from government and law enforcement was collected to measure this relationship  <b>Study design:</b> cross sectional, ecological  <b>Target group:</b> alcohol consumers  <b>Sample:</b> The data collected in this research was from 74 cities in Los Angeles county. Cities varied in terms of ethnicity, socio-economics and age, although these variables were measured. All cities had a population of 10 000 or over. All smaller cities were excluded from the analysis  Ethnic groups represented included White, Hispanic and African-American and other.</p>	<p>Sociodemographic variables accounted for 70% of the variance in assaultive violence in the multiple regression model. A further 7% of variance was explained by the alcohol outlet density variable.  <b>Comments:</b> A cross-sectional design was used here, and the authors suggest that a longitudinal design in future research would assist in identifying confounding variables and other causal factors that may explain some of the variance observed here. Further, the analysis may be sensitive to geographic unit. The proportion of assaultive violence attributable to alcohol was assumed to be consistent across cities - some police data supports this assumption - however the authors advise caution in interpreting the results</p>
<p><b>Homel, R., &amp; Clark, J. (1994).</b></p> <p>The prediction and prevention of violence in pubs and clubs. <i>Crime Prevention Studies</i>, 3, 1-46.</p>	<p><b>Substance:</b> Alcohol  <b>Topic:</b> crime  <b>Country:</b> Australia  <b>Programme name:</b> Violence in Pubs and Clubs  <b>Aims:</b> To examine the situational and managerial factors that are most predictive of violence, particularly with respect to rates of intoxication  <b>Key components:</b> ? Observations of patrons in licensed premises, particularly monitoring acts of physical or other forms of aggression, where the key feature of this study.  <b>Study design:</b> quasi-experimental  <b>Target group:</b> alcohol drinkers on licensed premises  <b>Sample:</b> A mixture of cluster sampling and purposive techniques were used to select high risk and less high risk alcohol outlet venues in Sydney. Patrons in a total of 36 premises were observed.</p>	<p>A total of 102 acts of violence were observed, 29 (28.4%) of which involved physical assault. Of these, 24 occurred in premises considered 'high risk'. Regression analysis showed that the best predictors of violent behaviour were interventions by Pacific Islander bouncers, refusal of service, and overall server responsibility.  <b>Comments:</b> There are methodological shortcomings in this study, such as questionable inter-rater reliability, and the reliability and validity of outcome measures. The results should be interpreted very cautiously.</p>
<p><b>Laranjeira, R., &amp; Hinkly, D. (2001).</b></p>	<p><b>Substance:</b> Alcohol  <b>Topic:</b> location and planning (outlet density)  <b>Country:</b> Brazil</p>	<p>107 alcohol outlets were recorded within a 3.7km radius. It was calculated that 29 outlets existed per km of roadway. A total of one in 12 properties sold alcohol. It is unknown how many outlets were closed at the time of survey. The most</p>

<p>Evaluation of alcohol outlet density in a poor area of Sao Paulo – in search of an alcohol policy for the city. <i>Unpublished manuscript.</i></p>	<p><b>Programme name:</b> Alcohol outlet density in Sao Paulo  <b>Aims:</b> : to investigate alcohol availability, outlet density, and sales and selling points in Sao Paulo  <b>Key components:</b> The study aimed to generate a profile of outlet density in the city, so that policies could be formulated to reduce alcohol availability  <b>Study design:</b> descriptive  <b>Target group:</b> alcohol outlet owners/workers in Sao Paulo  <b>Sample:</b> The survey was conducted in the south of Sao Paulo, in the district of Jardim Angela, Brazil. Nineteen streets were surveyed, however the population within this area is unknown, due to lack of reliable data. High levels of social deprivation and violence are a feature of this area. Total N= 107. socio-economic status is rated low, ethnicity mixed, and both male and female. Respondents ranged in aged from 16 to 80 (mean=44.9 years)</p>	<p>common reason for opening an alcohol establishment was unemployment (44.3%), followed by free choice (15.7%), an alternative to retirement (14.3%), and potential profits (10%). Only 34.9% of outlets had some form of license, 50% were unlicensed, and the remaining cases had data missing. Staff tended to be friends or family of the owner. Outlets traded on average 6.82 days per week (a mean of 85.76 hours per week), with the busiest time being Friday to Sunday. The majority of the clientele lived in the neighbourhood (93.84%), and the median time spent in the outlet was 30 minutes. Availability of alcohol on credit occurred in 82.6% of outlets (40.77% of all sales). The most popular beverages sold were pinga (72%, US\$0.25 per 50ml) followed by beer (22%, US\$0.82 per 750ml). In comparison, milk is sold in Sao Paulo for US\$0.65 per litre. Pinga is a locally produced drink made from sugar cane, and its availability (13.2litres per head of population per year is produced), and low price, is reported as a secondary effect of the massive sugar cane plantation programme in Brazil. The authors conclude that outlet density is high in comparison to Cleveland and New Orleans, that enforcement of licensing is low, and that outlets stay open for as long as there is demand for alcohol. They suggest that increasing the price of pinga may reduce consumption, and that shifts to other beverage types would be unlikely due to their price. The use of credit to purchase alcohol is problematic. The authors report that the alcohol industry in the area has risen out of necessity, due to poverty and unemployment. Changes to regulatory systems are likely to have a large effect on the community, as most owners, employees and patrons live locally. Regulatory mechanisms should therefore only be enacted with prior community consultation.  <b>Comments:</b> Missing data was problematic, so only those variables considered most reliable were used in the analysis.</p>
<p><b>Poehayachinda, V., Laxuthai, A., &amp; Sirivongse, A. (1998).</b></p> <p>Problems identification related to alcohol consumption for a practical approach to protection and problem solving. Situation analysis in Lopburi province. <i>Research Paper in Thai.</i></p>	<p><b>Substance:</b> Alcohol  <b>Topic:</b> Crime, DUI/DWI  <b>Country:</b> Thailand  <b>Programme name:</b> Situation Analysis in Lopburi province  <b>Aims:</b> to provide evidence that alcohol availability is related to violence in Thailand.  <b>Key components:</b> Evaluation of statistical data indicating the link between alcohol use and violence  <b>Study design:</b> descriptive  <b>Target group:</b> people experiencing alcohol-related violence  <b>Sample:</b> Survey data was gathered from a variety of sources in Lopburi province, Thailand. Total N=14 577.</p>	<p>The results showed that most alcohol-related violence occurred in the family home. The most important impacts were assault in the family residence (67.7%) and traffic accidents (45.4%).  <b>Comments:</b> Scant data is available from the translation; interested reviewers should direct further inquiries to the authors.</p>

## APPENDIX C: REGULATION OF ILLICIT PSYCHOACTIVE SUBSTANCES REVIEW ARTICLES

Citation	Extensiveness	Key findings
<p><b>World Health Organization (1997).</b></p> <p><i>Amphetamine-type Stimulants.</i></p> <p>Geneva: World Health Organization</p>	<p><b>Countries:</b> International.</p> <p><b>Substance:</b> Amphetamines</p> <p><b>Scope:</b> This publication was the result of an international discussion by experts, meeting in Switzerland in 1996. Participants from 15 countries were represented. Inclusion criteria and assessment of the validity of literature not specified.</p> <p><b>Focus:</b> Content covers venue management, supply reduction, policy frameworks, precursor chemical legislation, international agreements.</p>	<p><b><u>VENUE MANAGEMENT</u></b></p> <ul style="list-style-type: none"> <li>This is of particular importance with respect to certain substances (eg MDMA). Implementation of codes of practice regarding safety issues has occurred in Australia and UK. Co-operation with local government bodies, emergency services, liquor licensing authorities, police, venue operators &amp; health industry is necessary to develop &amp; implement risk management strategies.</li> <li>Regulation emphasis is on operator (self-regulation) &amp; incorporates local legislation and legal guidelines (venue size, ventilation, hydration, # patrons allowed, access to first aid personnel). Non-compliance=prosecution.</li> </ul> <p><b><u>SUPPLY REDUCTION</u></b></p> <ul style="list-style-type: none"> <li>It is recommended that a greater degree of international co-operation is required to reduce the supply and use of amphetamines, particularly with respect to enforcing existing control measures. Given the clandestine nature of the illicit trade in amphetamines, it is difficult to assess the effects of supply control measures. However, it appears that the number of laboratories detected globally dropped between 1989-1994, while other indicators implied an increase in amphetamine use during that time.</li> </ul> <p><b><u>PRECURSOR CHEMICAL LEGISLATION</u></b></p> <ul style="list-style-type: none"> <li>The regulation and monitoring of precursor chemicals could be enhanced to reduce diversion. Amphetamines can be produced with a number of readily available and inexpensive chemicals, using a variety of methods, and in almost any location. As a result of these factors, controlling amphetamine supply is fairly difficult in comparison to other illicit substances.</li> </ul> <p><b><u>INTERNATIONAL AGREEMENTS</u></b></p> <ul style="list-style-type: none"> <li>Control of supply is based on three UN Conventions (1961 Single Convention on Narcotics and Other Drugs; 1971 Convention on Psychotropic Substances; 1988 Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances). Under these conventions, signatory countries are obliged to adhere to the following: licensing requirements, controls on manufacture, trade</li> </ul>

		<p>and distribution (including patient access for medicinal purposes), and measures for preventing abuse. It appears that these controls have impacted on the licit amphetamine market to reduce use, however, an increase in use has been observed in the illicit amphetamine market.</p> <p><b><u>POLICY FRAMEWORKS</u></b></p> <ul style="list-style-type: none"> <li>• Policies need to be comprehensive in order to address multifaceted nature of substance use. Requires interdisciplinary collaboration, as well as co-operative efforts between schools, communities, workplaces, govt and NGO's.</li> <li>• Single strategies are unlikely to work – need for inter-related strategies and a mix of initiatives.</li> <li>• Govt and international strategies re controlling supply relate largely to reducing production and supply through law enforcement and legislation.</li> <li>• International Control: 3 UN conventions that mandate licensing requirements, controls on manufacturing, international trade &amp; distribution (incl prescriptions), &amp; prevention of abuse measures:-             <ol style="list-style-type: none"> <li>1) <i>1961 Single Convention on Narcotic Drugs</i></li> <li>2) <i>1971 Convention on Psychotropic Substances</i></li> <li>3) <i>1988 Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances.</i></li> </ol> </li> <li>• Lists stimulants currently under international control, and their schedules according to UNDCP. (p. 165-166).</li> </ul> <p><b><u>DEVELOPING COUNTRIES</u></b></p> <ul style="list-style-type: none"> <li>• Large scale prescription of anorectics (partic in Brazil, Chile &amp; Argentina). Concern over use of dexfenfluramine which may have little therapeutic benefit. Substantial market for licit Amphetamine-type substances (ATS) eg ADD, obesity, narcolepsy, &amp; nasal decongestants. Over-supply may lead to greater controls of licit ATS, which may in turn increase illicit manufacture and supply (historical pattern – Japan, US &amp; UK).</li> <li>• Need to strengthen existing enforcement measures – esp precursor control (required under 1988 convention). Improve monitoring of precursors to reduce diversion to illicit market.</li> </ul>
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		<p><b><u>INCREASE IN ILLICIT AMPHETAMINES</u></b></p> <ul style="list-style-type: none"> <li>• Licit supply and use has decreased over past 20yrs, while illicit supply and use is increasing, particularly for amphetamine, methamphetamine and amphetamine-analogues of MDMA (eg ecstasy) – clandestine nature of market makes it hard to identify quantity of supply and success of measures attempting to control it. Law enforcement seizures (eg labs, precursors, # seizures) may not be best indication of size of problem due to differential efforts and enforcement strategies.</li> <li>• ATS can be made almost anywhere, from many different substances, and with many different manufacturing methods (partic concern is methamphetamine and mecatinone). MDMA 'ecstasy' is harder to make. Therefore, controlling supply is quite difficult – harder than for some other drugs like heroin / cocaine. Demand reduction measures for ATS have been attended to in some countries.</li> </ul> <p><b><u>COUNTRY SPECIFIC RESPONSES</u></b></p> <p><b>1) Nigeria:</b> 1968 'The Amphetamine and other Drugs (control) Decree No 5 of 1968' – stipulates that sale &amp; supply of amphetamines is under control of registered pharmaceutical chemists (prescription only). 1974 'Food and Drugs Act' repealed 1968 act – designed to control importation, export, manufacture, sale &amp; distrib of schedule 2 drugs. 1989 Decree 48 prohibits cultivation, production, processing, distribution, sale, possession &amp; abuse of ATS &amp; other substances. Also set up the National Drug Enforcement Agency as the co-ordinating body. Illicit importation still a problem for Nigeria – poor control at ports, sophisticated smuggling methods. Need more emphasis on demand reduction.</p> <p><b>2) Canada:</b> Food &amp; Drugs Act regulates both medical and non-medical ATS. No possession charge for controlled drugs, only for restricted drugs.</p> <p><b>3) Republic of Korea:</b> primarily supply control rather than demand reduction &amp; treatment (legal rather than health issue). Physicians are forced to report illicit use. Lack of infrastructure and epidemiological information.</p> <p><b>4) Central and Eastern Europe:</b> Very little attention to prevention and treatment. Responses to MDMA (due to emerging 'dance' culture) include info dissemination at clubs &amp; outreach programmes. Some countries have attempted to regulate or restrict dance events. Insufficient data available due to covert nature of use. Need for multi-indicator strategies that are innovative.</p>
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		<p><b>5) Australia:</b> National Action Plan on Psychostimulants 1993. Framework for national action 1) prevention of uptake amongst teenagers 2) harm reduction for recreational users 3) interventions with regular heavy users 4) prevention of uptake and harm reduction for industry transport workers. (see National Illicit Drug Strategy Initiatives Report for more up-to-date endeavours).</p> <p><b>6) USA:</b> comprehensive national strategy re methamphetamines. Strategies include: law enforcement, legislation, training, chemical regulation, international cooperation, environmental protection, public awareness, education &amp; treatment. Operate at Federal, State and Local levels &amp; include private sector and communities.</p> <p><b>RECOMMENDATIONS</b></p> <ul style="list-style-type: none"> <li>• National and international responses need also to consider the geographical, cultural &amp; social variations that effect use.</li> <li>• Balanced approach to supply and demand reduction.</li> <li>• Collaboration between govt, NGO's and community – with monitoring of effectiveness of implemented strategies.</li> </ul>
<p><b>Rolfe, J.L. (1989).</b></p> <p><i>Drug Control. Legal Alternatives and Consequences. Background Issues Papers.</i> Melbourne: Victorian Drug Rehabilitation and Research Fund, Health Dept Victoria.</p>	<p><b>Countries:</b> International, with an Australian focus</p> <p><b>Substance:</b> All, with heroin used as the exemplary substance</p> <p><b>Scope:</b> 150 references in total included in the citation lists, (figure includes some repetition). The majority of references are from the mid-late 1980's. Inclusion criteria not specified, assessment of validity of material discussed in text.</p> <p><b>Focus:</b> Content covers different legislative/policy frameworks and their possible effects</p>	<p><b><u>HARSHER PENALTIES</u></b></p> <p><b>Aim:</b> to increase penalties for trafficking to deter entry and continuation in illegal drug trade. Evidence (from Singapore, Malaysia &amp; US) suggests that these strategies have been ineffective in reducing use or availability of heroin. Use actually rose in these countries despite harsher penalties.</p> <p><b>Pros:</b> none given</p> <p><b>Cons:</b></p> <ol style="list-style-type: none"> <li>1) traffickers raise price of product [acts as an incentive to others – lucrative trade]</li> <li>2) calculation of risk when entering trade is unlikely – and usually in terms of likelihood of detection and conviction (unless risk of detection increases, penalties unlikely to act as deterrent).</li> </ol> <p><b><u>PRESCRIPTION</u></b></p> <p><b>Aim:</b> to provide legal heroin through outlets such as physicians' practices. Allows for management and monitoring of use (based on British system pre 1960's). IDU's may also have a lower risk of HIV, Hep C &amp; other viruses.</p> <p><b>Pros:</b></p> <ol style="list-style-type: none"> <li>1) supply to current users would decrease illegal use and assoc health problems.</li> <li>2) illicit market would be undercut</li> </ol>

		<p>3) decrease in crime rate</p> <p>Cons:</p> <ol style="list-style-type: none"> <li>1) need to identify criteria for assessment, entry and continuation into the programme</li> <li>2) how much heroin is to be prescribed?</li> <li>3) how long will supply be provided?</li> <li>4) where do recreational users buy their heroin? Won't eliminate black market &amp; may encourage increased usage amongst this group to gain access to legal supply.</li> <li>5) dependent users may divert heroin to illegal market</li> <li>6) need for 24hour clinics to service regular injections – expensive to fund, and disruptive to other life activities</li> <li>7) provides physicians with a great deal of power.</li> </ol> <p><b><u>LICENSING OF USERS</u></b></p> <p><b>Aim:</b> licensing of users (similar to licensing firearm users). Requirements: over 18, participation in drug education course, cooling off period, able to purchase over the counter (tax would be included on their substances), details of purchases recorded.</p> <p><b>Pros:</b></p> <ol style="list-style-type: none"> <li>1) problematic users could be identified and counselled.</li> <li>2) people who were suspected of on-selling could be penalized.</li> <li>3) costs are borne by users not community</li> <li>4) decrease in black market &amp; criminal activity</li> </ol> <p><b>Cons:</b></p> <ol style="list-style-type: none"> <li>1) an illicit market would still exist</li> <li>2) increased number of users may result given wider availability</li> <li>3) some users might still prefer to use the black market to avoid bureaucratic requirements</li> <li>4) recording of purchases raises the issue of civil liberties</li> </ol> <p><b><u>REGULATION OVER PROHIBITION VIA COMMERCIAL SALE OR GOVT MONOPOLY</u></b></p> <p><b>Aim of commercial sale:</b> market regulation similar to alcohol/tobacco. Include age restrictions, licensed premises, restrictions on advertising, imposition of excise, and control over product quality/purity.</p>
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		<p><b><u>Decriminalization</u></b> – possession and use become a civil rather than criminal matter, while trafficking would remain a criminal offence.</p> <p><b>Pros:</b> 1) removes discretionary power seen under the discretionary system 2) savings in law enforcement costs 3) savings in court time.</p> <p><b>Cons:</b> 1) could lead to increase in use of decriminalized drugs. (Although the experience of cannabis decriminalization in the US does not support this trend. Decriminalization also led to a 74% decrease in law enforcement costs) 2) no controls over product re quality, amount consumed or use by people under 18 years 3) no benefits to govt re tax 4) illicit market would still remain for those who did not produce their own cannabis.</p> <p><b><u>FREE AVAILABILITY</u></b></p> <p><b>Aim:</b> free availability of heroin to adults (ie – over 18). Price would cover cost of manufacture, supply and distribution, and possibly revenue for govt.</p> <p><b>Pros:</b> 1) reduction in crime rate 2) reduced burden on criminal justice system 3) reduction in health care costs due to complications caused by street heroin 4) elimination of black market, decrease in organized crime and corruption 5) reduced risk of needle sharing 6) redirection of law enforcement to other areas 7) purity and potency could be regulated (reduced risk of overdose) 8) doesn't restrict civil liberties</p> <p><b>Cons:</b> 1) increase in substance use 2) tolerance would necessitate increased use, leading to a "stoned" populace 3) increased risk of car accidents, home accidents and family disruption 4) inadequate treatment facilities to deal with increased # of users.</p> <p><b><u>IMPEDIMENTS TO CHANGING DRUG LAWS</u></b></p> <ul style="list-style-type: none"> <li>• <b><u>Community Attitudes:</u></b> notion that drug use is a moral issue, and drug-taking behaviour should not be condoned; concern re where changes will lead (eg increasing # of users)</li> <li>• <b><u>Political Pressures:</u></b> misconceptions of the drug problem (political sensitivity re illicit substances – problems/harms of illicit deemed worse, in Aust, than that of licits). Difficulty shifting institutionalized policies – renegeing on previous policies admits prior "error". Govt needs to be seen to be "doing" something about drug problem.</li> </ul> <p><b><u>International Pressures:</u></b> international drug policy has dictated supply control policies.</p>
Lenton, S., Heale, P., Erickson, P., Single, E.,	Countries: Australia	<p><b><u>BACKGROUND</u></b></p> <p><i>Central themes</i> – illicit substance use as a health issue, principle of harm</p>

<p><b>Lang, E., &amp; Hawks, D. (2000).</b></p> <p><i>The regulation of cannabis possession, use and supply. A discussion document prepared for the Drugs and Crime Prevention Committee of the Parliament of Victoria. Monograph 3.</i> Perth: National Drug Research Institute.</p>	<p><b>Substance:</b> Cannabis</p> <p><b>Scope:</b> 176 references in total, ranging in date from 1971-1999. Inclusion criteria for articles not specified, although terms of reference and aims are explicit. Validity of material discussed in text.</p> <p><b>Focus:</b> International Treaties, different legislative/policy frameworks</p>	<p>minimization/reduction (reduction of personal, social, &amp; economic harms, rather than just use-reduction).</p> <p><i>Key aims:</i> to consider options for legal regulation of cannabis possession, use &amp; supply within harm reduction framework, to provide comparative evidence on alternative forms of regulation re practicality, effectiveness and potential benefits, to offer a recommendation model for Victoria.</p> <p><i>Situational specifics:</i> large numbers of people (esp male youth) have tried or continue to use cannabis. Attempts to target organized crime have not reduced availability &amp; have been costly. Argument that social costs of criminal penalties are out of proportion to seriousness of the offence. Sourcing cannabis from illicit market exposes buyer to more harmful illicit substances.</p> <p><i>Harm reduction:</i> new strategies aim to reshape market so that laws minimize harm to health &amp; welfare, as well as reduce other harms (eg crime).</p> <p><b><u>LEGISLATIVE MODELS FOR CANNABIS</u></b></p> <p><i>Total Prohibition:</i> all activity (possession, use and sale) considered criminal.</p> <p><i>Legislative prohibition with and expediency principle:</i> all activities illegal, but possession &amp; use of small quantities not investigated or prosecuted by police. (Denmark &amp; the Netherlands).</p> <p><i>Prohibition with Civil Penalties:</i> cannabis related activities are illegal, but civil rather than criminal penalties apply. (3 Aust states: ACT, S.A., N.T. 10 states in the US). In ACT/SA/NT fines are given for minor offences with no criminal conviction recorded providing payment is made by due date.</p> <p><i>Partial Prohibition:</i> Personal use is not illegal, commercial production, cultivation, supply etc is. (Colombia, Spain, Switzerland).</p> <p><i>Regulation:</i> all cultivation, supply and sale under govt regulation – outside of regulated market, activity is illegal. (no country in the world has this system, but the Netherlands has sanctioned sale via <i>coffeeshops</i>)</p> <p><i>Free Availability:</i> no legislative or regulatory restrictions apply.</p> <p>Diversion schemes may operate (eg under total prohibition) which direct offenders from</p>
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		<p>justice system and/or to treatment. "Drug court" is an example of this.</p> <p><b><u>EFFECTS OF INTERNATIONAL TREATIES</u></b></p> <p>Signatories obliged to establish control systems re availability of illicit drugs. Non-incarcerative &amp; non-criminal sanctions do not violate these obligations. 1971 Convention – treatment/rehab are acceptable alternatives to punishment.</p> <p><b><u>RESEARCH EVIDENCE</u></b></p> <p><i>Deterrence effects:</i> decriminalising cannabis has shown that there is no disproportionate increase in use.</p> <p><b><u>VIABLE OPTIONS</u></b></p> <p>Given the parameters of the International Treaties: sufficient political will needed to have a de-facto system (eg Netherlands); partial prohibition doesn't comply with treaties while prohibition with civil penalties does. Compared total prohibition, prohibition with expediency principle, and prohibition with civil penalties along the domains of evidence base and conceptual/theoretical grounds</p> <p><b><u>UNDERLYING PRINCIPLES OF RECOMMENDED MODEL</u></b></p> <ol style="list-style-type: none"> <li>1) Psychoactive substances differ in their capacity to harm</li> <li>2) Preferred option should not impose life-long penalty for a simple offence of personal use</li> <li>3) Legislative system should not encourage cannabis use or patterns of use that increase harm</li> <li>4) Option should facilitate rather than hinder preventive education and treatment</li> <li>5) Any legislative option which does not criminalize personal use should make realistic provision for the non-criminal supply of the substance for that (personal) use</li> <li>6) The preferred option should not operate in practice in a way which can be shown to be discriminatory</li> <li>7) The preferred option should be compatible with a generally accepted interpretation of Australia's obligations under the various international treaties.</li> <li>8) The preferred option should not act to attract large numbers of non-resident users to that jurisdiction</li> <li>9) The preferred option will need to be viewed as justifiable. Workable and coherent</li> <li>10) Whatever behaviours the preferred option seeks to deter, their should be high</li> </ol>
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		<p>probability of their detection</p> <p>11) The preferred option should be capable of being evaluated and subject to regular review and adjustment to increase the likelihood that it meets the goals which it was designed to achieve.</p> <p><b><u>RECOMMENDED MODEL (details provided on pp lii to lxii)</u></b></p> <ol style="list-style-type: none"> <li>1) Cautioning for first offenders for small quantities (caution includes info about harms, legal provisions applying to the drug, info about treatment services, plus notification that the caution will be recorded and subsequent offences will result in a fine). Police have discretionary power to warn rather than issue a caution for first offenders.</li> <li>2) There will be an opportunity to expiate subsequent offences of possession of a small quantity of cannabis (infringement notice issued for subsequent offences including info about harms, legal provisions applying to cannabis and info about treatment services available). No increasing penalties for repeat offenders. Employment of a two-tiered system. More than a small quantity but less than a trafficable quantity to be dealt with as anon-expiable cannabis possession offence.</li> <li>3) Means of expiation would be able to be varied. Notice could be dispensed by either 1) payment of fine or 2) attendance at a cannabis education session. (avoids discriminating against low income earners).</li> <li>4) The provision of a small quantity of cannabis by an adult to a person of 17 years of age or more will not be regarded as a supply (trafficking) offence.</li> <li>5) A trafficable quantity of cannabis will be defined as possession of more than 10 plants or greater than 250 grms of cannabis flowering heads when dried.</li> <li>6) Failure to dispense with the infringement notice will not result in automatic conviction on the cannabis charge. (alternatives could include assets forfeiture, payment by instalment <i>or</i> prosecution).</li> <li>7) Persons under the age of 17 years would be dealt with under existing juvenile provisions.</li> <li>8) Records of non-supply offences will be automatically expunged after 2 years. (ie formal cautions, infringement notices and criminal convictions for personal possession but not supply would be automatically expunged after a two year period during which no other drug-related offence is recorded).</li> <li>9) Possession of equipment for the preparation and consumption of cannabis products should continue NOT to be an offence under Victorian law.</li> <li>10) Penalties for driving while impaired by cannabis should be commensurate with</li> </ol>
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those for driving under the influence of alcohol.

### **GOALS & EVALUATION CRITERIA**

- 1) Reducing harms from cannabis use itself by: not increasing prevalence relative to other jurisdictions, removing legal barriers for those seeking help & (potentially) providing funds which could be diverted to treatment
- 2) Reduce adverse social costs to individuals of being apprehended for a minor cannabis offence by: providing cautioning for first offenders, providing infringement notices with a scale of penalties according to amount, providing range of options for dispensing with notices, ensuring that failure to expiate doesn't result in automatic conviction, requiring mandatory expungement of offences after 2 yrs of non-offending & providing education re the harmful aspects of use.
- 3) Reduce adverse costs to society as a whole from the enforcement of the criminal law against minor cannabis offenders by: reducing the amount of police, court and corrective services resources devoted to enforcing minor cannabis offences.
- 4) Reduce the proportion of the total amount of cannabis consumed which is supplied by larger more commercial sources compared to that which is grown by the user of other low-level suppliers by: classifying cultivation, possession and/or provision of a small quantity of cannabis as expiable civil offences rather than criminal offences.
- 5) Increase the public's understanding of the laws which apply to cannabis by: undertaking a public education campaign on the laws applying to cannabis.

### **POSSIBLE EFFECTS**

- 1) unlikely to increase rates of cannabis or other drug use in Victoria
  - 2) unsure as to whether heavy use will increase, and therefore whether health-related harms will increase. Number of users unlikely to increase
  - 3) Impacts of social harm likely to be reduced
  - 4) Proportion of treatment seekers may increase due to increased education re harms of the substance
  - 5) Law enforcement success depends on police – will hopefully reshape cannabis market to small scale personal use rather than large commercial suppliers with criminal associations.
- Model needs to be accompanied by a community education campaign.

<p><b>Dixon, D., &amp; Coffin, P. (1999).</b></p> <p>Zero tolerance policing of illegal drug markets. <i>Drug and Alcohol Review</i>, 18, 477-486.</p>	<p><b>Countries:</b> International, with a focus on Australia and USA</p> <p><b>Substance:</b> All</p> <p><b>Scope:</b> 48 citations in total, ranging in date from 1962-1999 (one legal reference was dated 1769). Inclusion criteria and validity of articles unspecified.</p> <p><b>Focus:</b> Different legislative/policy frameworks, harm reduction policing, supply reduction</p>	<p><b><u>ZERO TOLERANCE POLICING</u></b></p> <p>Provides overview of “zero tolerance policing” (ZTP) strategy. ZTP has 3 related strategies:</p> <ol style="list-style-type: none"> <li>1) police focus on disorder and street offences with expectation of crime reduction (the ‘broken window’ metaphor)</li> <li>2) police priority is on improving quality of life in local areas</li> <li>3) Police engage in proactive/intensive operations directed at people/places/property identified by risk assessment techniques.</li> </ol> <p><b>Tactics include:-</b> sweeps, blockading, mass uniformed presence, undercover buy-busts, closed-circuit surveillance. In drug markets, attention focussed on bottom end of scale (partic street sales) with a view to gaining info that will lead them to large-scale dealers. (In Aust, this strategy seems unsuccessful – convictions for use went up, but dealing convictions remained stable; similar pattern observed in New York City). Also run the risk of making the market ‘move’ to other areas – diffusion may lead to growth. Counterproductive effects.</p> <p><b><u>EFFECTIVENESS</u></b></p> <p><u>Effects on serious crime:</u></p> <p>Drop in crime in New York City is following the general trend of other major US cities, many of which have different policing strategies, such as tolerance and diversion of low level offenders in San Francisco. Also, situational specifics in New York (eg lots of firearm possession and violence) mean that the strategy may not translate well elsewhere. Empirical evidence to support the ‘broken window’ hypothesis is lacking. In Aust, the opposite is more likely ie – focussing at the higher levels reduces crime at lower levels. Crackdowns may produce temporary reductions in activity. Attention to high risk people and places may reduce serious crime, with the <i>exception</i> of substance use related arrests.</p> <p><b>Effects on Quality of Life</b></p> <p><b>In New York City:</b></p> <p>Decline in street sales seems to improve quality of life of residents, but how it has come about is the issue debated. Ethnographic research in New York City has shown that changes to communities have been instigated from those within, rather than outside, the community. For example Latino dealers in substances who adopted a ‘community’ approach (eg contributed \$ to community projects, stopped dealing during pre and post school hours, co-operated with police re property and violent crime etc). In addition, there were improved economic opportunities &amp; a decline in crack use.</p> <p>Shift from street dealing/freelance/corporate networks to indoor/ delivery/socially</p>
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		<p>bonded networks may have helped to reduce crime.</p> <p><b>In Cabramatta (STP Operation Puccini):</b>          Had negative public health effects such as unsafe storage/transfer/injection of drugs, diffusion of markets, harming police/community relations, &amp; encouraging sophistication and organization re supply. Eg – dealers were storing heroin in their mouth or nose (issues of disease transmission and possible overdose), &amp; greater likelihood of high risk injecting practices (eg injection taking place quickly, needle sharing and improper disposal of syringes).</p> <p><b>Effects on civil liberties</b>          Number of issues:          1) use of closed circuit TV without notifying the public          2) patrols of parks – police sometimes outnumber citizens          3) closure of community gardens – decreases sense of community          4) use of certain ZTP tactics “unconstitutional” –eg loitering laws – and petty charges can have deleterious effects on future employment prospects, etc. Also, enforcing petty charges may undermine the perceived legitimacy of the police force – argued that police legitimacy has a preventive effect on crime.</p> <p><b>Effects on community/police relations</b>          Additionally, strained relations between police and community can result through ZTP policing – rioting, increased social disorder etc (as a result of constant, oppressive surveillance?)          Expectations of greater arrest rate (“quotas”) has reportedly generated falsification of statistics within the police dept in NYC. Accusations have also been made re racial targeting. Issue of police corruption is raised (illegal search/seizures, stealing money &amp; drugs from dealers, selling stolen substances, protection rackets, false testimony, &amp; submitting false crime reports). Increase in FBI investigation of police corruption by 15% from 1993-1997.</p> <p><b>Effects on incarceration and law enforcement costs</b>          From 1980 to 1998 number of inmates in NY state prisons rose x 3 - 40% of this was drug-related. Low level offenders exposed to prison dangers (due in part to mandatory sentencing). Civil sanctions also differentially impact on people (eg denial of state housing to families in which one person has a drug offence)</p> <p><b>Effects on reducing use &amp; availability</b>          In NYC drug use is climbing, prices are still low &amp; markets have shifted to more</p>
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		<p>convenient and less risky forms. Pattern is similar in Sydney – price has dropped 1/3, quality is stable and street-level cocaine marketing is developing. Quality of life is increasing – but at what cost? What are the criteria for success??</p> <p><b>ALTERNATIVES</b>  <i>Harm reduction</i> – faces 3 obstacles – demonising of substance users, law enforcement as oppositional to harm reduction strategies, and unrealistic expectations of society towards law enforcement.  Police need to adopt a problem-solving approach, and not undertake inappropriate interventions (eg needle confiscation). Co-operation between police and service provision is possible if use is framed as a health issue.</p> <p><b>Examples:</b>  In Holland, this involves keeping drug use above-ground so users can access services, while police focus on large-scale dealers in the interests of reducing nuisance and improving public health. Dealers who have a stable address, provide health info to users and are generally not disruptive are left alone. Police call health services when users are arrested to minimize impact of arrest.</p> <p><b>Drug courts</b>  Diversion into treatment only works if the treatment is likely to work (eg methadone) &amp; is well implemented.</p> <p><b>CONCLUSION</b>  US ZTP model doesn't seem to work – US has highest rate of addiction, drug-related health probes and drug-related crime recorded in the world.</p> <p>Role of police may best be seen as regulating, controlling and shaping market rather than eradicating it.</p>
<p><b>Hando, J., Hall, W., Rutter, S., &amp; Dolan, K. (1999).</b></p> <p><i>Current State of Research on Illicit Drugs in Australia: An Information Document.</i>  Sydney: NHMRC.</p>	<p><b>Countries:</b> Australia</p> <p><b>Substance:</b> Amphetamines</p> <p><b>Scope:</b> 384 references in total, with the majority of references dated 1995 onwards. Inclusion criteria broadly specified, validity of research discussed in text.</p> <p><b>Focus:</b> safer venues</p>	<p><b>SAFER VENUES</b>  Codes of practice have been developed in Australia (National Protocols for Conducting Safer Dance Parties, 1996; NSW Ministry for Police, 1997; Health Dept of WA, 1995).</p> <p>General recommendations:</p> <ul style="list-style-type: none"> <li>provision of water, adequate ventilation &amp; chill-out areas</li> <li>medical assistance</li> <li>security checks</li> <li>provision of info to users</li> </ul>



		National ecstasy campaign (Project 'E') produced info kit for venue operators in QLD, NSW & South Aust in 1997. Use of info by venue managers, and impact of kit as yet unevaluated. Need exists for the evaluation of such initiatives.
<p><b>Asuni, T. (1990).</b></p> <p>Impact of research on designing strategies for preventing and treating dependence on drugs: The case for developing countries especially African countries. <i>Drug and Alcohol Dependence</i>, 25, 203-207.</p>	<p><b>Countries:</b> International, with a focus on Africa and other developing countries</p> <p><b>Substances:</b> Cannabis, Amphetamines, Heroin, Cocaine</p> <p><b>Scope:</b> 9 citations in total, ranging in date from 1942-1989. Inclusion criteria unspecified, validity of studies discussed in text.</p> <p><b>Focus:</b> prevention of trafficking, different legislative/policy frameworks</p>	<p><b><u>IMPLICATIONS FOR DEVELOPING COUNTRIES</u></b></p> <p>This article makes the following general points:</p> <ol style="list-style-type: none"> <li>1) need for epidemiological research – informs practical and appropriate planning which is based on the prevalence of the condition. Can use indicators such as hospital admissions etc for cost effectiveness</li> <li>2) need for evaluation of interventions to determine reasons for success or failure. Developing countries need evidence based interventions, as they can't afford to spend on interventions that don't work.</li> <li>3) Need to be realistic about the infrastructure available to implement programmes successfully.</li> </ol> <p>Provides the following examples:</p> <ol style="list-style-type: none"> <li>1) Cannabis was the major drug of abuse in Africa pre 1990's. Was grown for domestic use and illegal exportation. Potency varied across the continent. Researchers in Nigeria attempted to investigate the potency question, and police agreed to supply the plants, but the regions from which they came were unlabelled, so they had to abandon the study. Problem of communication between different agencies.</li> <li>2) Research was conducted on the psychogenic effects of cannabis, and the results received criticism from the international community re methodological rigour. The researchers argued that although modest, their findings were based on important observations – and later studies in Africa did confirm their findings. Therefore, the contribution of even modest studies should not be negated.</li> <li>3) use of amphetamines (which are imported to, and not produced in Africa) is still evident despite banning the licit importation of amphetamines.</li> <li>4) Benzodiazepines have been available on prescription – but this is poorly regulated, and under the counter availability is a considerable issue (this may indicate that regulation via prescription is not a viable alternative for illicit)</li> <li>5) trafficking of heroin and cocaine in Nigeria. Was a transit point, but author suggests that eventually the misuse of the substance eventually occurs even in transit stations, which has been the experience in Nigeria.</li> </ol>

		<p>6) re heroin and cocaine, from clinical observations, no room for methadone maintenance or other drug substitutes in Africa – abstinence is the objective. Very few resources are available to follow up cases &amp; evaluate effectiveness –this includes an unreliable postal service, lack of staff, and lack of transport (issue of infrastructure again).</p> <p>7) Negative attitudes in the community towards misuse must be maintained, but provision of appropriate drug education should be still be accessible.</p>
<p><b>National Drug Research Institute. (2000).</b></p> <p><i>Current inquiry: Substance abuse in Australian communities.</i> Perth: National Drug Research Institute.</p>	<p><b>Countries:</b> Australia</p> <p><b>Substances:</b> Cannabis</p> <p><b>Scope:</b> 119 references in total, the majority dating 1995 onwards. Inclusion criteria not specified, validity of material discussed in general terms</p> <p><b>Focus:</b> cost-effectiveness, supply reduction</p>	<p><b>COSTS OF CRIMINAL JUSTICE RESOURCES</b></p> <p>Queensland (QLD) – introduction of expiation notice system for cannabis in Qld has created net savings to Qld community of AUS \$735 000 per year.</p> <p>South Australia – costs of prohibition and expiation compared. Prohibition system estimated cost of \$2.01 million, with revenue from fines and levies at \$1.0 million. Expiation with 44% expiation rate estimated to cost \$1.24 million, with revenues at \$1.68 million.</p> <p><b>EXPOSURE TO ILLICIT MARKET</b></p> <p>39% of respondents in Lenton et al study (1999) said they had been offered other substances when they went to buy cannabis in the illicit market.</p> <p><b>LAW ENFORCEMENT AND ORGANIZED CRIME</b></p> <p>Efforts targeted at the upper levels of organized crime have impacted on ease with which illegal activities can be conducted, but has had little impact on reduced availability of cannabis.</p>
<p><b>Martin, P. (2001).</b></p> <p>The eight 'easy steps' to engaging police in harm reduction. <i>Winter School in the Sun.</i>  <a href="http://www.adfq.org/martin2.html">http://www.adfq.org/martin2.html</a></p>	<p><b>Countries:</b> Australia</p> <p><b>Substances:</b> All</p> <p><b>Scope:</b> 4 references in total, ranging in date from 1995 to 1997. Inclusion criteria and validity not specified; information is of a practical and applied nature, and summarizes information based on a larger initiative (NCBADDLE).</p> <p><b>Focus:</b> Harm reduction policing</p>	<p>Addresses the difficulties of policing in a harm reduction climate, and how these issues can be reconciled.</p> <p><b><i>POLICING AND HARM REDUCTION</i></b></p> <p>NCBADDLE (National Community Based Approaches to Drug Law Enforcement). Piloting in WA, NSW and VIC. Aim: "to develop intersect oral community based structures, to reorient local level illicit drug law enforcement activat[e] towards minimising drug related harms" (p.3). Devt of DAT's (Drug Action Teams) and DRG's (Drug Reference Groups). DAT's – representatives from local govt, and ngo's that provide police with feedback about impact of law enforcement on levels of drug harm in community. DRG's – high level reps from DAT's that provide advice, advocacy and support at highest level.</p>

		<p><b><u>EIGHT EASY STEPS</u></b></p> <ol style="list-style-type: none"> <li>1. Consultation with the view to developing strategic alliances (individual and govt dev informal links with police).</li> <li>2. Involving police at the earliest opportunity</li> <li>3. Utilising existing police skills from diverse functional areas (recognition that police have different skills &amp; different levels of authority)</li> <li>4. Recognize the dichotomy that the law enforcement mandate may run counter to harm reduction strategies (police cannot ignore responsibility to uphold the law).</li> <li>5. Respect and compliance with police organizational protocols (need for others to understand police culture)</li> <li>6. Limitations on public comment (police cannot always make public comment, even though they might like to)</li> <li>7. Identification of the constraining political and legal parameters (gaining police support can only occur when efforts are consistent with the legal framework/political will of the milieu)</li> <li>8. Police input in development of strategic and operational plans (creation of shared vision in which police are allowed some input, and early consultation).</li> </ol>
<p><b>Krajewski, K. (1999).</b></p> <p>How flexible are the United Nations drug conventions?  <i>International Journal of Drug Policy</i>, 10, 329-338.</p>	<p><b>Countries:</b> International</p> <p><b>Substances:</b> All</p> <p><b>Scope:</b> 16 references in total, ranging in date from 1997 to 1998. Inclusion criteria not specified, validity of material discussed in general terms</p> <p><b>Focus:</b> International Agreements</p>	<p><b>UN CONVENTIONS</b></p> <p>Argues that 3 UN conventions are prohibitionist in their orientation, and that little room is provided for signatory countries to develop unique national drug policies. Very little chance of these being repealed or amended.</p> <p>Language of the conventions does allow for scope regarding interpretation with respect to particular substance use policy orientations, esp 1988 convention.</p> <p>All treaties are 'executory', which means that implementation requires incorporation into domestic law. Also, the conventions have to operate within the constitution and legal standards of the signatory countries.</p> <p><b>1988 CONVENTION</b></p> <p>Relates to offences and sanctions, jurisdiction, extradition, confiscating the proceeds of crime, mutual legal assistance, special investigative techniques and control of precursor chemicals etc. ie- criminal law matters. What is unclear is whether this relates to trafficking, or to consumption and consumers.</p> <p>Argument is that as it is also a political document, the balance favoured the demand countries (eg North America and Europe) over the supply countries (South America</p>

		<p>and Asia), and therefore placed the onus on developing countries to limit supply. Article 3 para 2, was introduced by the Mexican delegation, and Krajewski argues it was an attempt to “strike a political balance between the obligations of producing and consumer countries” p. 334.</p> <p><b>1961 AND 1971 CONVENTIONS</b> Require the introduction and implementation of regulatory and administrative measures both nationally and internationally, and that certain acts are criminalized (possession, purchase and cultivation). Argument is that this may not apply to small amounts of drugs for personal consumption. Single convention amendment (1972) allows for treatment as an alternative to punishment. This means that decrim and depenalization are okay, (although legalization is not). Many countries have adopted these types of policies (eg Greece, Italy, Poland, Spain, Holland and Denmark)</p> <p><b>DEPENALIZATION AND DECRIMINALIZATION</b> Similar approaches. Both retain basic prohibition principle, &amp; the illegal status of drugs, (only supply / trafficking subject to penal sanctions). Depenalization: acts related to consumption, (eg possession, acquisition, or cultivation) remain theoretically illegal, but in practice, are not penalized as a criminal offence. Alternatively, decriminalization says that such acts are not criminal acts.</p> <p><b>POSSIBLE SOLUTIONS</b> Constitutional arguments and basic concepts of the legal system of the signatory countries are still taken into consideration. Arguments against upholding strict prohibitionist policies might include: 1) legal principle that self destructive behaviour shall not be subject to punishment. Argument that a citizen has no obligation to be healthy, and can engage in an activity that endangers own health, but not the health of others (not always constitutional, although defensible from a legal theory standpoint). 2) Expediency principle – not prosecuting certain cases (Holland uses this system).</p> <p>* to uphold the ‘spirit’ of the convention it is better to depenalize than decriminalize, as decriminalising is a more likely target for suggesting a violation of the 1988 convention.</p>
<p><b>Single, E., Christie, P., &amp; Ali, R. (2000).</b></p> <p>The impact of cannabis decriminalisation in Australia and the United States. <i>Journal</i></p>	<p><b>Countries:</b> Australia and USA</p> <p><b>Substances:</b> Cannabis</p> <p><b>Scope:</b> 53 references in total, the majority published from 1990 onwards. Inclusion criteria not specified, validity of material</p>	<p>This article discusses and evaluates the impact of cannabis law and reform in Australia and USA.</p> <p><b><u>COST OF LAW ENFORCEMENT</u></b> Estimate for 1992: AUD \$404.2 million, US \$17.4 billion. Also has social costs – encroachment on civil liberties, deleterious effects of criminal</p>

<p>of Public Health Policy, 21 (2), 157-186.</p>	<p>discussed in text.</p> <p><b>Focus:</b> Different legislative/policy frameworks, cost effectiveness</p>	<p>record &amp; impact of fines/imprisonment on individuals, especially re employment &amp; family.</p> <p>Argument for criminalization is deterrence of use, but has to be commensurate risk of detection and punishment as well. Doesn't appear to be working in either country. More often people suggest lack of interest or health concerns as reasons for abstaining. 11 US States &amp; 5 AUS states have enacted changes to cannabis laws which involve civil penalties and / or cautioning.</p> <p><b><u>FOCUS OF THE ARTICLE</u></b></p> <p>To evaluate impacts of changes re rates and patterns of use, impact on criminal justice system and impact on individual users.</p> <p><b><u>CONTEXTUAL ISSUES</u></b></p> <p><u>Aus and US similarities:</u> proximity to illicit drug producing countries, developed market economies, state govts that have primary jurisdiction over drug trafficking laws within federal system, reliance on criminal law to deter use.</p> <p><u>Aus and US differences:</u> Aus has smaller pop &amp; is more isolated, shares no land borders with other countries. US has greater disparity between rich and poor, racial/ethnic divisions are more obvious. Racial differences in drug issues receive more focus in US than Aus. Aus has more developed social welfare &amp; health care systems. Aus has a harm minimization policy which focuses on licit and illicit, while US has a prohibitionist policy which focuses on illicit only.</p> <p>In US there is little support for decriminalization from federal authorities, NGO's and law enforcement. Aus has user groups which lobby on policy, US doesn't. Also, public opinion is different re cannabis decriminalization – Aus are more likely to be in favour of decriminalization, while US more likely to be opposed. Also, Aus more likely to use cannabis, US more likely to use other illicit.</p> <p><b><u>RATES OF USE</u></b></p> <p>In both countries, highest amongst young, unattached (ie single) males in late teens/early twenties. Unemployment related to higher use rates in both countries.</p> <p><b><u>IMPACT OF DECRIMINALIZATION IN AUSTRALIA</u></b></p> <p><u>Rates of use</u></p> <p>(Focuses largely on Sth Aust as evaluation material is available)</p> <p>Prohibition with civil penalties CEN model introduced in 1987.</p> <p>Rates of use went up between 1985 and 1995, but this trend was seen in total prohibition jurisdictions as well. Both CEN and Prohibition had little effect as deterrents</p>
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		<p>to intention to use in the future.</p> <p><u>Law enforcement and justice system</u></p> <p>Increase in detection from 6000 in 1987/88 to 17000 in 1993/94. Reflects greater ease with which police can process minor offences, and shift from informal cautions to formal processing of minor offences. Non-payment of fines around 50% - did not inflate court costs as most offenders plead guilty in writing and therefore did not appear in court. Law enforcement / criminal justice supportive of new legislation. Cost effective - \$30 per case if notice paid. Total cost of scheme \$1.2 million (not including police time detecting offence), revenue from fines \$1.7 million. Under old scheme, estimated that costs would have been \$2 million, revenue \$1 million.</p> <p><u>Knowledge, attitudes &amp; other social impacts</u></p> <p>1993 SA and ACT had expiation approach in place. In SA 34% and ACT 43% of respondents incorrectly believed it was legal to possess cannabis for personal use. Notice recipients believed fines cause financial hardships/were unreasonable. Prohibition-state offenders became more fearful and less trusting of police. In WA, more difficulties finding employment, probs with relationships and accommodation. In CEN and prohibition states, no differences in overseas travel difficulties, perception of self as criminal or self-reported substance use post-offence.</p> <p><u>Implementation issues and problems</u></p> <p>Lots of notices served are unpaid, which means more people are being criminalized than before measure was implemented. Financial hardship cited as major reason for non-payment. Notices often served in conjunction for charges for other offences – court appearance required anyway. Also, small level incidence of false addresses etc given, so notice can't be followed up later. ¾ of offenders receiving notice did not realize they would receive a criminal conviction if fine was left unpaid – lack of understanding of new regulations. Modifications in SA have included payment by instalment &amp; community service as substitute – impact has yet to be evaluated. Need to improve tracking of information re expiation, tracking of repeat offenders, and adequately implementing existing measures to correctly identify offenders. 10 plant limit should also be reduced to 3 plants.</p> <p><u>IMPACT OF DECRIMINALIZATION IN USA</u></p> <p>From 1993 to 1998 11 states enacted civil penalty legislation. In Oregon, maximum fine \$100 for possession of &lt;1oz.</p> <p><u>Rates of use</u></p> <p>Reduced enforcement costs, little or no impact on rates of use. Lack of pre-intervention data in most states means little reliable evidence available to make pre/post comparisons. Suggestion of modest increases in rates of use &amp; success of schemes – but evidence largely inconclusive due to lack of baseline and comparative trend data.</p>
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		<p>Little shift in perceived availability, no apparent connection between trends in use and trends in availability. Change in use more strongly linked to health risk perceptions. Trends in acceptance decreased in California eg students' acceptance of legalization declined between 1977 (53%) and 1985 (22%). Perception of harm increased from 35% in 1978 to 58% in 1997. Link (although hard to prove causality) between perceived harm and rates of use – as harm went up, use went down and vice versa.</p> <p><u>Impacts on drug enforcement costs and priorities</u></p> <p>In all states, number of cannabis cases processed through law enforcement system dropped. Eg California 36% possession charge drop, but trafficking etc did not decline. Decreases in incarceration, and increases in revenue from fines. Substantial decrease in cannabis related law enforcement costs (eg in California in 1975 it was \$17 million, by 1976 it was \$4.4 million). Some evidence that there was a redirection of law enforcement efforts to more serious crimes and other illicit.</p> <p><b><u>CONCLUSIONS</u></b></p> <p>Changes to penalties in both countries did not appear to effect rates of use. In Australia, the expiation scheme has had some problems (as mentioned previously) but does seem to be more cost-effective. Has been viewed as a success in Aus. In US, considerable cost savings were seen in law enforcement, and no deleterious effects were observed re health and safety, although there may still have been adverse social costs. Has not been widely viewed as successful in US, despite evidence. No national studies have been commissioned re effects of decriminalization.</p> <ol style="list-style-type: none"> <li>1) Changes to penalties have had no discernible impact on rates of use in either country.</li> <li>2) Decriminalization has led to financial and social cost savings, moderated by the way the schemes were implemented.</li> <li>3) The way cannabis problems and policy responses are conceived impacts on perceived effectiveness, regardless of the empirical evidence available.</li> <li>4) Empirical evidence is usually inadequate to make strong statements re success. (eg no collection of pre-intervention data).</li> <li>5) The way measures are implemented via law enforcement and justice official may impact on health and social impacts of the measures. (eg lack of education of the public re the new regulations in South Aust).</li> </ol> <p><b><u>RECOMMENDATIONS</u></b></p> <ol style="list-style-type: none"> <li>1) Law reform should incorporate an evaluation component.</li> <li>2) Problems to implementation should be anticipated and dealt with should they arise.</li> <li>3) Impacts and success indicators should be developed in consultation with health</li> </ol>
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		<p>agencies, law enforcement, welfare agencies, users and NGO's.</p> <p>4) Data collection needs to occur before and after policy change.</p> <p>5) Long term impacts need also to be considered.</p> <p>Cannabis - not as "addictive" as other illicit, availability may not affect use as much for cannabis as for other illicit substances. Very popular substance in both countries – market is "near saturation". Health effects rather than legal consequences have more salience in decision to abstain from use.</p>
<p><b>MacCoun, R. J. (1993).</b></p> <p>Drugs and the law: A psychological analysis of drug prohibition. <i>Psychological Bulletin</i>, 113(3), 497-512.</p>	<p><b>Countries:</b> Focus is on USA</p> <p><b>Substances:</b> All</p> <p><b>Scope:</b> 193 references in total, the majority of which were published from the 1970's to 1990's. Inclusion criteria not specified, validity of material discussed in text.</p> <p><b>Focus:</b> Different legislative/policy frameworks with a view to impacts on behaviour.</p>	<p><b><u>METHODOLOGICAL ISSUES RE EVALUATION</u></b></p> <ul style="list-style-type: none"> <li>Studies on impacts of regulation have rarely been well-controlled, and suffer from threats to internal validity. Very difficult to say with any certainty what the impacts of regulatory changes will be, or have been, particularly if pre-intervention data is/was not collected.</li> <li>This article critiques the rational-choice theory, which underpins the prohibition paradigm and looks at the corresponding mechanisms of risk of punishment, substance availability and price. Essentially MacCoun argues that because experimental research in this area isn't strong, using theory to inform the research findings in the regulation of substance area is useful.</li> </ul> <p><b><u>DIFFERENT CAUSAL MECHANISMS BY WHICH LAWS CAN INFLUENCE SUBSTANCE USE</u></b></p> <p><b><u>CERTAINTY AND SEVERITY OF PUNISHMENT:</u></b></p> <p>Classical Deterrence Theory assumes that people are hedonistic, that crime is motivated by gain, and that it can therefore be deterred by swift, certain and severe punishment. Certainty and severity of punishment must outweigh the relative benefits of the crime. In this paradigm, decriminalization would increase consumption. Available research tentatively suggests that there may be small effects for the certainty but not the severity of punishment, but that these effects may be short lived. Legal systems and juries often moderate severity of punishment. Overall, certainty may be better than severity as a deterrent, although there is likely to be an interactive effect (ie – the more certain the punishment, the more important the severity of punishment becomes). Combined, however, they only account for around 5% of the variance in marijuana use studies. Carroll study (1978) on risk and rewards show that gains were more influential than penalties, and probability of success more influential than probability of capture. Perceived health risks and lack of interest may be more influential than legal risks, and legal risks might be most influential at early stages rather than later stages of use.</p> <p><b><u>AVAILABILITY AND PRICE:</u></b></p>



		<p>Law enforcement is intended to reduce availability, which reduces opportunities for consumption and inflates drug price. Inflating substance price should discourage use, but elasticity is hard to gauge. May be inelastic for some users, or cause shift to use of alternative substances. Some studies have shown that increased availability of alcohol does not lead to increased consumption. Argues that there must be a lower threshold on availability and an upper threshold on price beyond which drug use becomes impossible – but law enforcement unlikely to achieve this, based on available evidence.</p> <p><b><u>SOCIAL NORMS:</u></b> Some children might use drugs simply because their friends do, or because they're illegal – the "forbidden fruit" effect. Also, labelling someone as 'criminal' and putting them into contact with other 'criminals' might make reintegration into 'normal' society very difficult.</p> <p><b><u>IMPLICATIONS FOR DECRIMINALIZATION</u></b> Substance retains its illegal status, so many people may be motivated either to avoid it or to seek it out (forbidden fruit). May reduce deterrence and stigmatization effects. Sanctions against manufacture and distrib remain, so shouldn't impact on these things. Unless reduction in deterrence substantially increased demand, would have little effect on availability or price. Substitution effect – research shows possibility that users shift from other illicit to marijuana post – decriminalization of marijuana. Also, marijuana use increased when drinking age was raised (see p. 507 for these study references). Policy implication – may be better to see an increase in use of a less harmful substance if it decreases use of more harmful ones.</p> <p><b><u>IMPACT OF LEGALIZATION</u></b> May see aggressive marketing by companies – such as we see with alcohol and tobacco now. Reduction in criminal drug markets and corruption/violence, also elimination of stigmatization, deterrence and forbidden fruit effects. Legalising carries social implication of condoning substance use.</p>
<p><b>Bureau of International Narcotics and Law Enforcement Affairs. (2000).</b></p> <p><i>1999 International Narcotics Control Strategy Report.</i> <a href="http://www.state.gov/www/global/narcotics_law/1999">http://www.state.gov/www/global/narcotics_law/1999</a></p>	<p><b>Countries:</b> International, including developing countries</p> <p><b>Substances:</b> All</p> <p><b>Scope:</b> Based on international data. Validity of material discussed in general terms, interpretation at times does not accord with data presented.</p>	<p><b><u>MAJOR ILLICIT DRUG PRODUCING &amp; TRANSIT COUNTRIES</u></b> Afghanistan, The Bahamas, Bolivia, Brazil, Burma, Cambodia, China, Colombia, Dominican Republic, Ecuador, Guatemala, Haiti, Hong Kong, India, Jamaica, Laos, Mexico, Nigeria, Pakistan, Panama, Paraguay, Peru, Taiwan, Thailand, Venezuela and Vietnam.</p> <p><b><u>AMPHETAMINES/PRECURSOR CHEMICALS</u></b> The report identifies Argentina, Brazil, China, Germany, India, Mexico and the</p>

_narc_report/index.html	<p><b>Focus:</b> Crop Control Supply reduction Prevention of trafficking Precursor chemicals legislation International agreements</p>	<p>Netherlands as the countries manufacturing precursor chemicals which are then being used in the production of illicit substances.</p> <p>Methamphetamine use is becoming more popular – rivalling cocaine as stimulant of choice. In Thailand, it has replaced heroin as the most “heavily abused” drug. MDMA/Ecstasy also growing in popularity in Europe – much of the market is being supplied by the Netherlands and Poland. American market largely supplied by Mexico. Demand for MDMA and other amphetamines is on the rise in both the developed and developing world. Very difficult to control production, as it is a synthetic and can be made just about anywhere. Regulating precursors is considered the best option.</p> <p><b><u>CROP CONTROL</u></b></p> <p>Recognition that crop control has enormous political and economic implications, as quite often cash crops of illicit substances provide an important source of revenue for countries. Need to develop alternatives to sustain affected communities.</p> <p><b><u>COCAINE</u></b></p> <p>Demand has fallen in past 15 years, but there is still a major demand for “crack” cocaine in US. Increasing targeting of Europe as a growth market – especially Russia, where price per gram is three times that paid in the US. Production only occurs in Colombia, Peru and Bolivia. Eliminating it on the ground is most cost-effective way of controlling supply. US govt has been using techniques involving aerial spraying with herbicides to eradicate crops. Although there are claims that they have managed to substantially reduce crops in Peru and Bolivia, the amount of cocaine being produced in Colombia has risen by 20%, and is being grown in a politically unstable part of the country where there is much guerrilla activity. This is making it very difficult for the Colombian govt to monitor and eradicate crops. In addition, the Colombians are becoming more efficient at extraction techniques, which means that more cocaine HCl is being produced per hectare under cultivation.</p> <p><b><u>OPIUM</u></b></p> <p>Grown in Afghanistan, India, Iran, Pakistan, Burma, China, Laos, Thailand, Colombia, Lebanon, Guatemala, Mexico, Vietnam, and other countries (unspecified). Estimate that production is at it lowest point in the past 15 years, but the amount being produced is still sufficient to supply global demand many times over. Afghanistan &amp; Burma are the major cultivators, but Afghanistan is yielding greater amounts of opium gum, despite less hectares under cultivation. Europe: transit along the “Balkan Route” – from Afghanistan and Pakistan travels through such countries as Turkey, Romania, Hungary, Czech &amp; Slovak Republics, Croatia, Slovenia, Macedonia, Greece, Albania</p>
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		<p>and other Western European countries. Creates domestic substance problems for all of these countries.</p> <p><b><u>CANNABIS</u></b> Production countries listed as Mexico, Colombia, Jamaica, Belize &amp; "others". Production increased in Colombia, despite previous crop eradication.</p> <p><b><u>EFFORTS TO CONTROL SUPPLY</u></b> International counter-narcotics programmes target cultivation, processing and transit. Focus is on crop control, to try and eradicate the problem before it has a chance to cause more problems further down the line. Efforts have also been made re targeting of major drug cartels, use of extradition (although this is often politically sensitive and can be quite difficult in practice), training people in producer countries in enforcement techniques, international co-operatives re law enforcement strategies, &amp; demand reduction training programmes. However, given the political nature of the global psychoactive substance trade, it is very difficult to reduce supply, as there are often significant vested interests in maintaining it.</p> <p><b><u>SUCCESS OF STRATEGIES – A US PERSPECTIVE</u></b> The US govt spent US\$233,600,000 on funding narcotics control programmes. It appears that despite successes in some areas (eg reducing cultivation of coca in Peru and Bolivia), markets have shifted sites of production, and extraction techniques have become more efficient. Furthermore, the supply of opium is still sufficient to more than meet global demand. In some instances, there is evidence that in those countries where cultivation has been reduced, illicit substances are being mixed with dangerous "filler" substances.</p>
<p><b>Van de Wijngaart, G. V. (1990).</b></p> <p>The Dutch approach: Normalization of drug problems. <i>Journal of Drug Issues</i>, 20 (4), 667-678.</p>	<p><b>Countries:</b> Netherlands</p> <p><b>Substances:</b> All</p> <p><b>Scope:</b> 23 references in total, ranging in date from 1975 to 1989. Inclusion criteria not specified, validity of material discussed in text.</p> <p><b>Focus:</b> Different legislative/policy frameworks</p>	<p><b><u>General Overview</u></b> In 1976 the Dutch govt adopted a differentiated enforcement policy (via amendment of the Opium Act). This policy distinguishes between substance types (hemp products vs other illicit), users and dealers/suppliers, as well as differentiating substance <i>problems</i> from substance <i>use</i>. The model is not completely a <i>normalization</i> model, because users still may face criminal prosecution for use of most substances (excepting cannabis).</p> <p><b><u>Expediency Principle</u></b> Dutch law has an expediency principle, which means that public prosecutors can refrain from instigating criminal proceedings in the interests of the public good. Priorities range from detecting the import and export of substances presenting unacceptable risk at the high end, to hemp products for personal use at the low end.</p>

		<p><b><u>De Facto Decriminalization and Prevalence Rates</u></b>  The amended Opium Act and the prosecution policy have created a de facto decriminalization system for cannabis, but use has not increased. For example, in 1973, 3% of people aged 15-16, and 10% of 17-18 year olds, had been occasional hashish users. In 1985 these figures were 2% and 6%. Cross cultural comparisons with the US indicate that Dutch school students (5%) use less cannabis than American school students (29%).</p> <p><b><u>Reduction of other harms</u></b>  Claim that Dutch policy is successful in terms of good living conditions for users, lack of marginalization, access to treatment, good quality of life and freedom (eg – not overly surveyed or coerced by police). The policy has not driven users “underground” as it has elsewhere, addiction is treated as a health issue, and the death rate for addicts is very low (0.5% in 1987). This has led to an influx of “foreigner addicts” who have chosen to live in the Netherlands.</p> <p><b><u>Prevention Policy</u></b>  Acknowledgement that controlling demand is preferable to controlling supply. Experimentation with substances is not necessarily a passport to addiction, therefore they try to prevent substance use problems rather than use. They also acknowledge that in some instances substance use serves a functional purpose. Prevention takes the form of information dissemination (which does not include “fear tactics” or sensationalization of the substance use problem). School-based programmes include the same style of information, with longer rather than short term interventions for effectiveness, but these are viewed as just one facet of prevention, in which family, peers and the broader social and cultural context also play a part. Treatment is also incorporated into the model, and includes methadone maintenance care, non-drug based treatments that include meeting friends outside the substance use scene, completing school, vocational training and developing a new lifestyle. The provision of social security benefits is also included. It’s a broad harm-reduction strategy.</p> <p><b><u>Evaluation of prevention policy</u></b>  Lack of employment opportunities and insufficient funding has made the rehabilitation components of the approach difficult.</p> <p><b><u>Generalisability of the strategy</u></b>  Must be an understanding of drug use in the context of social and historical factors.</p>
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		<p>Contextual factors considered helpful or necessary for applying the strategy in other settings are:</p> <ol style="list-style-type: none"> <li>1) strong belief in equal rights</li> <li>2) belief in the possibility and legitimacy of social intervention</li> <li>3) good welfare systems and health care provisions</li> <li>4) an understanding of substance use behaviour in terms of its functionality</li> <li>5) a view of drug use as a health issue</li> <li>6) differentiation between controlled and problematic use</li> <li>7) possibility that substance users can act as peer support for other users</li> <li>8) potential to differentiate between substances and the levels of harm they cause</li> <li>9) adopting a 'go slow' approach, and not changing too many regulations at a time</li> <li>10) political will, consultation and cooperation</li> <li>11) few impediments from neighbouring countries</li> </ol>
<p><b>Spruit, I. (1999).</b></p> <p>Ecstasy use and policy responses in the Netherlands. <i>Journal of Drug Issues</i>, 29(3), 653-678.</p>	<p><b>Countries:</b> Netherlands</p> <p><b>Substances:</b> Amphetamines (MDMA)</p> <p><b>Scope:</b> 44 references in total, ranging in date from 1986 to 1998. Inclusion criteria not specified, validity of material discussed in text.</p> <p><b>Focus:</b> Venue management Assets legislation Precursor chemicals legislation Amphetamines</p>	<p><b><u>Prevalence &amp; circumstances of use</u></b></p> <p>Used more by disadvantaged school children (truants and those with learning problems) than those in regular schools, and white males adolescents comprise the majority of users. Approximately 8% of 15 to 16 year olds have used the drug. Most often used in dance party / rave settings, although very few health problems in these settings are associated with ecstasy itself – problems usually result from polydrug use or exhaustion from non-stop dancing.</p> <p><b><u>Monitoring of market</u></b></p> <p>In 1992, the Substance Use Information Monitoring System (DIMS) was introduced. Education project for users about the possible chemical contents of ecstasy. DIMS analyses the chemical composition of ecstasy, and its findings include substances such as hallucinogens, "ice", medications, poisons and caffeine. In 1997, only 34% of "ecstasy" sampled contained MDMA. Attempts to control ecstasy (via law enforcement) of pills containing 2C-B (hallucinogen) were unsuccessful in reducing supply, while pills containing atropine (poison) dropped rapidly after a DIMS campaign to warn users about their use, and after police arrested a producer. Research has shown that more health complaints, particularly overdoses arise at times when the variability and uncertainty re ecstasy composition is highest. Considered a substance with high abuse potential due to mood altering effects.</p>

		<p><b><u>POLICY RESPONSES</u></b></p> <ul style="list-style-type: none"> <li>• <u>Public health harm minimization orientation</u>: for users, their environment and society. Judicial measures should not cause more harm than good.</li> <li>• <u>Venue management</u>: prevention is a combination of voluntary restraint by population and regulation by authorities, especially at a municipal level (drug, set and setting) rather than broad appeals or prohibition, which weren't effective. These are "tailor made" or "on the spot" interventions. These include <b>venue management</b> to reduce risk factors eg: enforcing room capacity, provision of water (preferably free), adequate ventilation, provision of first aid staff, and security checks at entry. An example: Safe House Campaign. Personnel provided general safety recommendations, as well as immediate testing of pills. Presence of immediate testing did not enhance use, and use was lower in some cases where testing was present. <b>Risk factors to individuals</b>: combination of ecstasy and amphetamine use, absence of social safety net, ecstasy use by peers, frequent partying and insufficient sleep, not having a regular dealer (uncertainty of quality of supply). Local authorities can also have an impact in safe venue provision re regulations.</li> <li>• <u>Justice policy</u>: targets supply through trafficking and production, as well as <b>assets confiscation</b> of gains made through criminal efforts. Target is organized crime, and suppliers rather than users. <b>Precursor chemicals</b> legislation was passed in 1995 (Prevention of Misuse of Chemicals law) making unlicensed transit, possession, import and export illegal. Traders with permits must also report suspicious transactions. Difficulty in accessing well coded data has made it difficult to evaluate the success of these strategies. Attempts to create guidelines re amount for 'personal use' seem to be out of step with actual amounts used, and therefore create problems with the <b>expediency principle</b>. Further, schedule one substances are treated the same re treatment options, but ecstasy users are not usually similar to heroin and cocaine users in the need for treatment. In 1997 a Unit Synthetic Drugs branch was created (national initiative) which targets large scale suppliers rather than small scale users, and this is considered a good application of limited resources.</li> </ul> <p><b><u>PREVENTION INITIATIVES</u></b></p> <p>Fundamental goal is to provide a unified stance on message delivery, with intersectorial collaboration in initiatives. The particular focus is on young people at risk, with a general focus on health. Locations for messages include leisure places, school and home. Media messages are dispatched, as are school substance use education programmes. This is a new initiative and has yet to be evaluated.</p>
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		<p><b><u>EARLY WARNING SYSTEM (EWS)</u></b></p> <p>Notification of other countries of emergent problems with synthetic substances. Includes a health and social risk assessment, as well as policy recommendations. Reports go to the European Monitoring Center on Drugs and Drug Addiction, which is the co-ordinating body. There is a Dutch national body (CAM) which does the same thing – information collection, risk assessment, and prevention recommendations including legal avenues. Risk assessment includes toxicology and pharmacology, patterns and extent of use and misuse, seriousness of harms, and related criminal involvement.</p> <p><b><u>CONCLUSIONS</u></b></p> <p>Having the two-faceted system is not always easy to maintain. It is important to ground both health and justice policies in social realities, not just nationally but internationally as well.</p>
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## APPENDIX D: REGULATION OF ILLICIT PSYCHOACTIVE SUBSTANCE PRIMARY STUDIES

Citation	Intervention Details	Findings
<p><b>Donnelly, N., Hall, W., &amp; Christie, P. (2000).</b></p> <p>The effects of the Cannabis Expiation Notice system on the prevalence of cannabis use in South Australia: Evidence from the National Drug Strategy Household Surveys 1985-1995. <i>Drug and Alcohol Review</i>, 19, 265-269.</p>	<p><b>Topic:</b> Regulation of cannabis</p> <p><b>Substance:</b> Cannabis</p> <p><b>Country:</b> Australia</p> <p><b>Programme Name:</b> Effects of the CEN system in South Australia</p> <p><b>Aims:</b> to examine the impact of the CEN scheme on the prevalence of lifetime and weekly cannabis use in South Australia</p> <p><b>Key components:</b> change in state legislation regarding minor cannabis offences. Issuing of a Cannabis Expiation Notice (CEN) began in 1987 for offences of possession of small quantities of cannabis for personal use</p> <p><b>Study design:</b> trend analysis</p> <p><b>Target group:</b> Australian residents</p> <p><b>Sample:</b> National survey of Australian households conducted yearly over a ten-year period. All participants are 14 years or older, and are male and female.</p>	<p>All jurisdictions showed an increase in the rate of lifetime cannabis use between 1985 and 1995, with the exception of the ACT and NT (both of these states showed stable rates, which were consistently higher than the other Australian states). The lifetime rate for SA was in the middle of the range of all other Australian states (36%). In SA an increase in weekly use occurred between 1988 and 1991, with no rate change since. Lifetime cannabis use showed a significant rate of increase (<math>p &lt; .05</math>) in SA in comparison to other states when year was represented as a linear term. The authors suggest that the CEN scheme cannot be shown to have impacted on prevalence of cannabis use, as trends demonstrating an increase in use have been observed in other locations that have not implemented a similar decriminalization system. Further, these types of differences were also observed in the comparisons between states that have criminal penalties. These findings are consistent with US research that examined partial decriminalization</p> <p><b>Comments:</b> The authors suggest that the SA weekly rate increase between 1988 and 1991 may have been due to the survey of a small sample size in 1988, which may therefore have been unrepresentative of the population. Further, they suggest that because the legal consequences of cannabis use may be perceived as less serious in SA, residents of that state may be more likely to report use</p>
<p><b>Weatherburn, D., Lind, B., &amp; Lubica, F. (1999).</b></p> <p>Drug law enforcement: its effects on treatment experience and injection practices. <i>General Report Series</i>. Sydney: NSW Bureau of Crime Statistics and Research.</p>	<p><b>Topic:</b> Law enforcement and effects on entry into treatment</p> <p><b>Substance:</b> Heroin</p> <p><b>Country:</b> Australia</p> <p><b>Programme Name:</b> Drug law enforcement: its effect on treatment experience and injection practices</p> <p><b>Aims:</b> to detail characteristics of heroin users and the extent and nature of contact with police, the justice system and methadone treatment (MMT); to establish if contact with police encourages entry into MMT; to measure the extent that law enforcement encourages unsafe injecting practices</p> <p><b>Key components:</b> street level law enforcement (ongoing), processing of offenders within the criminal justice system and methadone treatment programmes</p> <p><b>Study design:</b> cross-sectional</p> <p><b>Target group:</b> heroin users</p> <p><b>Sample:</b> The purposively selected sample (n=511) consisted of</p>	<p>The results of the study indicate the following -</p> <p>Regarding MMT programmes:</p> <ol style="list-style-type: none"> <li>1) Effects of MMT: Entry into MMT reduced spending on illicit drugs for most (but not all) of the participants, and this effect compounded over time (that is, the longer they were in treatment, the less they spent on illicit substances).</li> <li>2) Attitudes towards MMT: of those not in treatment, 39.3% said they wanted to be, but many of these were waiting for a place. The number one benefit of MMT according to users was that it stabilizes the user's life, while the costs were identified as a) harder withdrawal b) rules/restrictions relating to the programme and c) addictive properties of methadone.</li> <li>3) Reasons for entering MMT: a) keeping family/relationships together (76.9%) b) reduced spending on heroin (69.2%) c) reduced involvement with crime (45.5%) and d) to avoid more trouble with the police and courts (41.4%)</li> </ol>



	<p>heroin users in central and western Sydney, recruited through needle exchange and MMT programmes. Regular users not in treatment averaged \$140/day on heroin expenditure, with 2/3 of users with &gt;10 year habit experiencing an overdose. Over 50% funded their habit through illegal activity. Average age of initial use of heroin was approximately 19 years. Users were grouped as either a) in treatment b) wanting to be in treatment but were not at the time of survey and c) did not want, and were not in treatment. Ethnic groups represented included Asian, Aboriginal/Indigenous Australian or Torres Strait Islander, White Australian and Middle Eastern. Participants ranged in age from 15 to 40+ years</p>	<p>Regarding law enforcement:</p> <ol style="list-style-type: none"> <li>1) those who spent the most on heroin and/or had used for the longest were most likely to be arrested.</li> <li>2) those who funded their habit illegally were most likely to have contact with the justice system.</li> <li>3) the only law enforcement variable that impacted significantly on wanting MMT was the risk of imprisonment (more so for people who had previously been incarcerated). There was a moderating effect for ethnicity (Asian) and previous experience with MMT programmes.</li> <li>4) if supply reduction can influence the price of heroin, it may influence users' entry into MMT.</li> </ol> <p>Regarding injecting practices:</p> <p>85% of users injected in locations where they felt safe from police. In unsafe places, the likelihood of needle sharing and discarding needles unsafely was higher.</p> <p>The authors suggest that the ready availability of MMT would help law enforcement to reduce property crime, that police and health authorities should collaborate to reduce public health risks, that retention rates in heroin treatment programmes need to be increased (possibly through better programme design) and that future research should examine the cost-effectiveness of treatment vs incarceration</p>
<p><b>Lenton, S., Humeniuk, R., Heale, P., &amp; Christie, P. (2000).</b></p> <p>Infringement versus conviction: The social impact of a minor cannabis offence in South Australia and Western Australia. <i>Drug and Alcohol Review</i>, 19, 257-264.</p>	<p><b>Topic:</b> Regulation of cannabis  <b>Substance:</b> Cannabis  <b>Country:</b> Australia  <b>Programme Name:</b> Social Impact of a Minor Cannabis Offence  <b>Aims:</b> to compare the impact of receiving a criminal conviction for a minor cannabis offence under strict prohibition, with receiving an expiation notice under a civil penalty model  <b>Key components:</b> criminal conviction under a prohibition enforcement system for minor cannabis offences compared to infringement notice under a civil enforcement system for minor cannabis offences  <b>Study design:</b> quasi-experimental  <b>Target group:</b> first time cannabis offenders  <b>Sample:</b> The sample for this study was selected (snowball and opportunistic/ accidental sampling) from first time cannabis offenders with no prior convictions for a more serious offence in Western Australia (N=68) and South Australia (N=68). Participants were matched on age at arrest or age at receipt of expiation notice,</p>	<p>There were no between groups differences on attitudes to the law in general, cannabis laws in particular, and the role of police. The majority of participants in both groups believed cannabis was a safe substance with the benefits of use outweighing harms. The negative social consequences of a criminal conviction were reportedly greater than those of expiation regarding employment, accommodation and relationship problems. No between groups differences were found on subsequent drug use, although in the short term, there was a non-significant reduction by the convicted group which was not maintained over time. Those charged with a criminal offence in WA were subject to greater police scrutiny after the offence, and were more mistrustful of the police than those charged with an expiable offence in SA. This may be due to the ease of access of criminal records by police in WA than expiation records by police in SA</p> <p><b>Comments:</b> Some of the consequences of apprehension were measured retrospectively. There may an issue regarding accuracy of recall as a consequence.</p>

	gender, and duration between apprehension and interview. Participants were aged 18 years or over at the time of arrest	
<p><b>Petry, N.M. (2000).</b></p> <p>Effects of increasing income on polydrug use: A comparison of heroin, cocaine and alcohol abusers. <i>Addiction</i>, 95 (5), 705-717.</p>	<p><b>Topic:</b> Price and substance use  <b>Substance:</b> Heroin, cocaine, alcohol, tobacco, cannabis  <b>Country:</b> United States of America  <b>Programme Name:</b> Income and drug use  <b>Aims:</b> to examine the effect of income on hypothetical drug and non-drug purchasing decisions  <b>Key components:</b> exposure to 6 experimental conditions in which income rose from \$30 to \$560 per day  <b>Study design:</b> between groups repeated measures  <b>Target group:</b> heroin, alcohol and cocaine misusers  <b>Sample:</b> The sample (n=94) was comprised of 26 heroin users, 28 cocaine users, 15 alcohol users and 25 controls. All participants were aged over 18 years and those in the experimental conditions were currently using alcohol, cocaine or heroin. Controls were matched to users on age, ethnicity (Caucasian, African American, Hispanic and Other), gender and education level.. The socio-economic status of participants was considered low.</p>	<p>The results indicated that heroin users showed income elastic demand for heroin with significant differences from other groups. Heroin and cocaine users bought significantly more cocaine than the alcohol and control groups when income increased. The alcohol group showed income elastic demand for alcohol and cigarettes. In general, demand for rent and food were income inelastic for all four groups, and demand for entertainment was income elastic</p> <p><b>Comment:</b> The groups did differ on real income, but this difference was reported as non-significant.</p>
<p><b>Heale, P., Hawks, D., &amp; Lenton, S. (2000).</b></p> <p>Public awareness, knowledge and attitudes regarding the CEN system in South Australia. <i>Drug and Alcohol Review</i>, 19, 271-280.</p>	<p><b>Topic:</b> Regulation of cannabis  <b>Substance:</b> Cannabis  <b>Country:</b> Australia  <b>Programme Name:</b> Public awareness, knowledge and attitudes to CEN  <b>Aims:</b> to add to the existing knowledge of prevalence of cannabis use in South Australia; to investigate knowledge and attitudes regarding cannabis laws among South Australian residents  <b>Key components:</b> the introduction in 1987 of an expiation notice system for minor cannabis offences in the state  <b>Study design:</b> cross-sectional  <b>Target group:</b> South Australian residents  <b>Sample:</b> A simple random, sample (total N= 605), of metropolitan (N=404) and non-metropolitan (N=201) residents of South Australia, with varying education levels. The gender breakdown for the sample was male (N=303) and female (N=302) Participants were classified as 14-17 years, 18-34 years, 35-54 years or 55-70 years. The majority self-identified as non-Aboriginal Australian (93%)</p>	<p>The results indicated that:</p> <ol style="list-style-type: none"> <li>1) drug use involved alcohol (94.5%), cannabis (39.2%), amphetamines (9.1%), cocaine (3.1%) and heroin (2.4%)</li> <li>2) most people sampled knew of the 'on the spot' fine penalty, but there was some confusion over the legality of cannabis possession</li> <li>3) the majority felt that cannabis use for medical purposes should be allowed, and approximately 50% thought that small scale possession and cultivation should be permissible</li> <li>4) the best predictors of agreement with the notion of 'legalising cannabis for personal use' were cannabis use by the participant in the previous year, and weak or no religious affiliation</li> </ol>
<p><b>Keane, C., Gillis, A.R., &amp; Hagan, J. (1989).</b></p>	<p><b>Topic:</b> Deterrence and substance use  <b>Substance:</b> Cannabis</p>	<p>The significant predictors of police contact were gender (male), SES(lower) and neighbourhood susceptibility (delinquency present), but these were not significant</p>

<p>Deterrence and amplification of juvenile delinquency by police contact. The importance of gender and risk-orientation. <i>British Journal of Criminology</i>, 29 (4), 336-352.</p>	<p><b>Country:</b> Canada  <b>Programme Name:</b> The effect of police contact on delinquency  <b>Aims:</b> to examine the relationship between deviance and control  <b>Key components:</b> The key components included questionnaire administration regarding contact with police, as well as the measurement of other variables (<i>exogenous variables</i>: orientation to risk taking; age; neighbourhood susceptibility; differential association (delinquent peer group). <i>endogenous variables</i>: police contact; marijuana use; <i>control variables</i>: gender; socioeconomic status)  <b>Study design:</b> cross-sectional  <b>Target group:</b> secondary school students  <b>Sample:</b> Students were sampled (stratified random) from four Toronto secondary public schools, with SES levels varying from upper middle class to working class. The sample comprised 360 males and 305 females (an 83.5% response rate) upper middle-class, middle class, and working class, with Asian (7%), British (17%), Southern European (76%) ethnic groups represented. Total N=665.</p>	<p>predictors of marijuana use, of which age and positive attitudes towards risk-taking are. There is a reciprocal relationship between marijuana use and police contact, which is attenuated by differential association. Differential association is the best predictor of marijuana use and police contact, and also attenuates neighbourhood susceptibility as a predictor. With gender as a moderator in the model, differential association was a good predictor of marijuana use but not of police contact for females, and being picked up by the police had a negative relationship to marijuana use. Police contact had a positive relationship to marijuana use for males. Regarding risk, for risk averse juveniles, contact with police had a negative relationship to marijuana use (a deterrent effect), and for risk takers there was a greater likelihood of contact with police. Orientation to risk is a mediator between gender, police contact and the use of marijuana. In effect, the findings suggest that risk averse juveniles, largely female, are less likely to use marijuana after contact with police (a deterrent effect), while risk takers (largely male) are more likely to use marijuana after police contact (an amplification effect).</p> <p><b>Comments:</b> There were some difficulties producing models due to an insufficient sample size</p>
<p><b>Weatherburn, D., &amp; Lind, B. (1997).</b></p> <p>The impact of law enforcement activity on a heroin market. <i>Addiction</i>, 92, 557-569.</p>	<p><b>Topic:</b> Law enforcement and heroin markets  <b>Substance:</b> Heroin  <b>Country:</b> Australia  <b>Programme Name:</b> Impact of law enforcement on a heroin market  <b>Aims:</b> to monitor the price, purity and perceived availability of street level heroin; to measure the effects of law enforcement seizures of heroin on these factors; to measure the effects of price, perceived availability and number of local arrests on admissions to MMT  <b>Key components:</b> large scale (&gt;1kg) heroin seizures, arrests by police for heroin use/possession, and methadone maintenance treatment programmes  <b>Study design:</b> Interrupted time series  <b>Target group:</b> heroin users and heroin samples  <b>Sample:</b> The study was conducted in Cabramatta, Sydney, which is a city with many heroin users and a high population of migrants from Vietnam and other South East Asian countries. It is a major distribution centre for high grade "rock heroin". 322 samples of heroin were assessed in the study, for which 299 had price information available</p>	<p>The samples assessed ranged in price from \$118 to \$11 667 / gm, and purity ranged from 13.2% to 79.8% with most samples having more than 50% purity. No significant relationships were found between heroin seizures and street level purity, street level price and MMT admissions, heroin availability and MMT admissions, local law enforcement and MMT admissions, or local law enforcement and price of street level heroin. Significant negative relationships were found between seizures and price per gram, and seizures and availability (due to large seizures influencing data, which when removed attenuated the relationship and rendered it non-significant). Admissions to MMT were not effected by price of heroin at street level, heroin availability or law enforcement. The authors concluded that law enforcement attempts to increase heroin price by creating a shortage do not appear to be working, and that further research is needed into the cost-effectiveness of such strategies to raise heroin prices. They recommend that using MMT to supplement existing strategies seems sensible</p> <p><b>Comments:</b> Data was not available for all variables across the entire time period, but was still sufficient to make meaningful comparisons, and exceeded that required by the Cochrane reviewers guidelines for interrupted time series studies</p>
<p><b>Christie, P., &amp; Ali, R. (2000).</b></p>	<p><b>Topic:</b> Regulation of cannabis</p>	<p>There was a dramatic increase in the number of CENs issued between 1987 (6231)</p>

<p>Offences under the Cannabis Expiation Notice scheme in South Australia. <i>Drug and Alcohol Review</i>, 19, 251-256.</p>	<p><b>Substance:</b> Cannabis  <b>Country:</b> Australia  <b>Programme Name:</b> Offences under the CEN scheme  <b>Aims:</b> to examine the trends in the issuing and clearance of CENs since the inception of the scheme in 1987  <b>Key components:</b> the issuing of CENs with payment (of between AUS\$50 to \$150 required) within 30 to 60 days of issue. CENs are issued for possession of &lt;100g of cannabis or &lt;20g of cannabis resin, the use of cannabis in a private place, possession of equipment for using cannabis and cultivation of up to 3 cannabis plants  <b>Study design:</b> trend analysis  <b>Target group:</b> minor cannabis offenders  <b>Sample:</b> Data was collected from South Australian Police records from 1991 onwards. From 1987 to 1991 data was taken from the Commissioner of Police's Annual Reports and Statistical Reviews. CEN offenders were largely male (87.1%) and from the 18-24 year age group (51%). CENs can only be issued to offenders older than 18 years of age</p>	<p>and 1997 (18000) which was due to a 'net-widening' effect and the expediency with which police could deal with the offence. Possession of &lt;100g accounted for 40.8% of the CENs issued between 1991 and 1996, while possession of equipment accounted for 38.4% and cultivation for 19.9%. Cultivation had the highest rate of expiation (52.6%) and cultivation offences were most common for people aged 45 or over. Older people were also more likely to expiate the offence. Between 1991 and 1996, 46.2% of CENs resulted in a conviction. A modest increase in expiation rates was observed after the introduction of community service and instalment payment alternatives in 1997. Poor understanding of the scheme and financial difficulties were reported as the main reasons for low expiation rates. Many offenders are still ending up with convictions even though the system was designed to ameliorate this. The authors suggest that a public education campaign about the system, which could include a harm minimization component may improve the outcome</p> <p><b>Comments:</b> The data from 1987-1991 may be less reliable than the 1991-1997 data, due to differences in data availability. However, the findings focus largely on the latter date range</p>
<p><b>Sutton, M., &amp; Maynard, A. (1994).</b></p> <p>Trends in the cost-effectiveness of enforcement activity in the illicit heroin market, 1979-1990. <i>Yartic Occasional Paper 4</i>. York: University of York.</p>	<p><b>Topic:</b> cost effectiveness of law enforcement  <b>Substance:</b> Heroin  <b>Country:</b> United Kingdom  <b>Programme Name:</b> Trends in the cost-effectiveness of enforcement activity in the illicit heroin market, 1979-1990  <b>Aims:</b> to evaluate the cost-effectiveness of law enforcement strategies with respect to the: number and weight of seizures, interception rates, number of people dealt with by police and other agencies, risks imposed by law enforcement on smugglers, dealers and users  <b>Key components:</b> customs law enforcement, both drug and non-drug related, aimed at reducing supply at importation level, and police law enforcement at distribution level  <b>Study design:</b> trend analysis  <b>Target group:</b> heroin suppliers / dealers  <b>Sample:</b> Enforcement data was collected from the U.K. HM Customs service, the 8 non-metropolitan regional crime squads (in some instances excluding London and Scotland data), the police force drug squads in England and Wales and CID and uniformed police data from Cheshire and Sussex</p>	<p>The results indicate that cost-effectiveness decreased for both police and customs post 1985, but of the two, customs were more cost-effective. Both supply and demand of heroin increased in the U.K. from 1979-1990. Changes / increases in expenditure were not related to cost-effectiveness</p> <p><b>Comments:</b> The paucity of data necessitated the use of estimation in many cases. The data may therefore be unreliable</p>

## APPENDIX E: MASS MEDIA SUMMARY OF REVIEW ARTICLES

Citation	Extensiveness	Key findings
<p><b>Boots, K., &amp; Midford, R. (2001)</b></p> <p>Mass media marketing and advocacy to reduce alcohol-related harm. Chpt 41, pp. 805-822. International Handbook of Alcohol Dependence and Problems. Eds N Heathers, TJ Peters &amp; T Stockwell. West Sussex: John Wiley and Sons</p>	<p><b>Countries:</b> International</p> <p><b>Substance:</b> alcohol</p> <p><b>Scope:</b> 35 references in total, inclusive of primary studies (8), reviews (13) and theoretical papers (14) on behaviour change and media utilization. References range in date from 1986-1999. Inclusion criteria and assessment of the validity of literature not specified.</p> <p><b>Focus:</b> Content covers marketing (advertising, publicity and edutainment used to create individual behaviour change) and advocacy (used to generate changes in structural/external environment)</p>	<p><b>MARKETING</b></p> <ul style="list-style-type: none"> <li>Marketing in conjunction with community action is considered more effective than marketing alone.</li> <li>Importance of targeting, correct choice of media &amp; message, formative evaluation, realistic objectives.</li> <li>Obstacles to marketing approach (achieves short rather than long term goals, competition from advertisers, self-censorship).</li> <li>Recommendation: use for mainstream issues to produce incremental changes</li> </ul> <p><b>ADVOCACY</b></p> <ul style="list-style-type: none"> <li>Importance of coalition-building &amp; political lobbying as complementary practices to advocacy</li> <li>Forms: advertising, use of 'anniversaries', creative epidemiology, letters to the editor, opinion polls</li> <li>Obstacles to advocacy include resistance to the political nature of the activity, which requires time &amp; commitment to overcome</li> <li>Recommendation: use to set public agenda, good strategy when there are powerful/well-funded opponents, but use only in appropriate circumstances (goals are achievable and advocates can withstand opposition, and where other public health strategies can support it)</li> </ul> <p><b>COMBINATIONS</b></p> <ul style="list-style-type: none"> <li>Can be used together for mutual reinforcement: eg publicity</li> </ul>
<p><b>Hill, L., &amp; Casswell, S. (2001)</b></p> <p>Alcohol advertising and sponsorship: commercial freedom or control in the public interest? Chapter 42 pp 823-846. International Handbook of Alcohol Dependence and Problems. Eds N Heathers, TJ Peters &amp; T Stockwell. West</p>	<p><b>Countries:</b> International, although advertising restrictions are described for Australia, Austria, Belgium, Britain, Ireland, Luxembourg, Netherlands, New Zealand, Canada, Denmark, Finland, Norway, Portugal, Spain, Sweden, Switzerland, USA, France, Greece, Germany, Italy, and South Africa</p> <p><b>Substance:</b> alcohol</p> <p><b>Scope:</b> 139 references in total, inclusive of primary studies (37), reviews (83), policy papers (15) and theoretical papers (2) on</p>	<p><b>PATTERNS AND IMPACTS OF ADVERTISING</b></p> <ul style="list-style-type: none"> <li>Increasing alcohol advertising is due in part to media privatization (In New Zealand it's ten times that of health promotion messages).</li> <li>Proliferation of new media (eg world wide web) allows advertisers to reach new markets, especially children.</li> <li>Increased exposure to advertising may lead to positive beliefs and expectancies related to alcohol consumption. Weaker study designs, such as naturalistic and cross-sectional studies have produced equivocal findings; stronger designs for inferring a causal link, such as studies using longitudinal methods and structural equation modelling have found a good fit between</li> </ul>

<p>Sussex: John Wiley and Sons</p>	<p>behaviour change and media utilization. References range in date from 1972-1999.</p> <p>Inclusion criteria unspecified, validity of literature (strength of evidence) is discussed.</p> <p><b>Focus:</b> Content covers alcohol advertising and marketing practices with a view to the policies (restriction or self-regulation) that can limit exposure.</p>	<p>advertising, and expectations of future drinking, positive beliefs about alcohol and alcohol consumption.</p> <p><b>ADVERTISING RESTRICTIONS</b></p> <ul style="list-style-type: none"> <li>Codes of practice are sometimes unclear, particularly with different forms of media. In advertising-ban countries, sport sponsorship (to target young males – the group most likely to become heavy drinkers) is often more prevalent. Regulatory clarity and consistency is necessary.</li> <li>Voluntary (self-regulatory) codes are likely to be under-enforced and under-regulated because they conflict with the interests of alcohol producers.</li> <li>The alcohol industry often uses sophisticated techniques to market their products, of which mass-media broadcast advertising is only one component. Regulations need to be responsive to this trend.</li> <li>A co-ordinated international response to counter alcohol promotion via mass media is needed, particularly due to new forms of media (eg internet) that have a reach across national borders.</li> <li>Cross-national analyses comparing different levels of advertising restrictions showed lower levels of alcohol consumption and alcohol-related harm in countries with stricter regulatory mechanisms - although there may be other (confounding) factors which account for some of this variability.</li> </ul> <p><b>WARNING LABELS</b></p> <ul style="list-style-type: none"> <li>Warning labels can have some success in awareness raising, reaching target audience, and to a lesser extent, influencing individual behaviour</li> </ul>
<p><b>DeJong W., &amp; Winsten, J.A. (1990)</b></p> <p>The use of mass media in substance abuse prevention. <i>Health Affairs, Summer, 30-46.</i></p>	<p><b>Countries:</b> International, with a US focus</p> <p><b>Substance:</b> all, although alcohol is the exemplar used</p> <p><b>Scope:</b> 28 references in total, inclusive of primary studies (4), reviews (21) and theoretical papers (3) on behaviour change and media utilization. References range in date from 1977-1989. Inclusion criteria and assessment of the validity of literature not specified.</p> <p><b>Focus:</b> Content covers designing effective campaigns with respect to the following issues: planning, focus, messages, implementation, and evaluation.</p>	<p><b>MASS MEDIA CAMPAIGNS – COMPONENTS FOR EFFECTIVENESS</b></p> <ul style="list-style-type: none"> <li>Cost-effectiveness should be used as a criterion for evaluating the success of campaigns.</li> <li>Key elements for a successful campaign: 1) well defined target audience 2) formative research to understand the target audience and pretest campaign materials 3) messages that build from the audience's current knowledge and satisfy its pre-existing needs and motives 4) a media plan to guarantee exposure to the campaign 5) procedures for evaluating progress and 6) long-term commitment (p.32).</li> <li>Objectives need to be long-term, with phases that incorporate measurable objectives.</li> <li>Need to have good network of contacts, esp if resources are limited, and should attempt to link media with community &amp; school-based programmes, guided by a common strategy. Comprehensive &amp; mutually reinforcing.</li> <li><b>PLANNING:</b> need qualitative data about the subgroups targeted (via focus groups or individual interviews). Where possible, this info should be validated.</li> </ul>

		<ul style="list-style-type: none"> <li>• FOCUS: pre-teens to delay onset of experimentation, adolescents to reinforce the pre-teen intervention message, and to provide accurate factual information. High risk groups best addressed through other types of interventions.</li> <li>• MESSAGES: 1) address the knowledge and beliefs that impede adoption of desired behaviour 2) communicate benefits of adopting behaviour that match with the motives/needs/values of target group 3) highlight immediate negative consequences of use 4) only use scare tactics if audience has low awareness, with higher awareness, modelling and demonstrating benefits of non-use is more effective 5) for young people, need to be aware of developmental issues such as peer group acceptance etc. 6) Use credible peer models. 7) Use celebrities cautiously 8) focus on image and lifestyle</li> <li>• IMPLEMENTATION: pretesting (comprehension &amp; recall, aesthetic appeal, credibility, relevance, acceptance), appropriate selection of media (radio has some advantages), obtaining airtime (through psa's, paid spots &amp; collaborative efforts), use of news media (to further publicize the campaign), &amp; product or service promotion ("cause-related" marketing, sponsorship etc).</li> <li>• EVALUATION: need to measure outcomes that correspond to the campaign objectives. Quasi-experimental designs with matched control groups, and time series data collection (or CBA if ITS not possible) are best. CBA can be made stronger if campaign can be defined in time, has a concrete &amp; narrow objective, &amp; change after baseline is likely to be rapid &amp; large.</li> <li>• Exemplar: Harvard Alcohol Project: a comprehensive campaign following these principles, and assisted by tv industry, to promote designated driver concept. Statistically significant increase in use of, support for, or awareness of the designated driver concept was found, especially among males.</li> </ul>
<p><b>Wallack, L. (1984)</b></p> <p>Television programming, advertising, and the prevention of alcohol-related problems. In D.R. Gerstein (Ed.). pp. 79-169. <i>Towards the Prevention of Alcohol Problems. Government, Business, and Community Action.</i> Washington: National Academy Press.</p>	<p><b>Countries:</b> US focus</p> <p><b>Substance:</b> alcohol</p> <p><b>Scope:</b> 113 references in total, inclusive of primary studies (29), reviews (82) and theoretical papers (2) on behaviour change and media utilization. References range in date from 1960-1983. Inclusion criteria and assessment of the validity of literature not specified.</p> <p><b>Focus:</b> Content covers the role of mass media in preventing alcohol-related problems, with particular respect to advertising and programming.</p>	<p><b>IMPACT OF ALCOHOL IN THE MEDIA</b></p> <ul style="list-style-type: none"> <li>• Media is a source of informal socialization &amp; education – important that the information communicated is accurate (Bandura's social learning theory).</li> <li>• U.S. studies show that the use of alcohol in entertainment on television did not reflect realistic drinking patterns nor demonstrate negative consequences of harmful drinking.</li> <li>• Alcohol advertising is misleading in selling a lifestyle that bears no relation to the product. It also fails to address potential public health consequences – the issue is one of informed choice.</li> </ul> <p><b>RECOMMENDATIONS</b></p> <ul style="list-style-type: none"> <li>• Change requires both health promotion AND a reduction in misinformation via advertising and entertainment.</li> </ul>

		<ul style="list-style-type: none"> <li>• Concept of “co-operative consultation” with media to effect change. 4 part process: research, education of industry, specific education, and industry feedback. Mutually beneficial process.</li> <li>• Policies – disallow tax deductions for alcohol advertising, and levy a 10% tax on advertising to fund health promotion activities.</li> </ul>
<p><b>Proctor, D., &amp; Babor, T.F. (2001)</b></p> <p>Drug wars in the post-Gutenberg galaxy: Mass media as the next battleground. <i>Addiction</i>, 96 377-381.</p>	<p><b>Countries:</b> International</p> <p><b>Substance:</b> licit and illicit drugs</p> <p><b>Scope:</b> 20 references in total, inclusive of primary studies (7), reviews (9) and theoretical papers (4) on behaviour change and media utilization. References range in date from 1966-2000. Inclusion criteria and assessment of the validity of literature not specified.</p> <p><b>Focus:</b> Content covers mass media campaigns and their effectiveness.</p>	<p><b>WARNING LABELS</b></p> <ul style="list-style-type: none"> <li>• Warning labels may be effective in reducing consumption among light to moderate users, and less successful amongst heavy users. Warning messages attached to television advertising may be best placed before the advert, rather than during or afterwards, to minimize negative perceptions of the warnings.</li> </ul> <p><b>MASS MEDIA CAMPAIGNS</b></p> <ul style="list-style-type: none"> <li>• Campaigns may be most effective in raising knowledge and awareness, but are likely to have lesser effects on changing attitudes and behaviours.</li> <li>• One meta-analytic study demonstrated that mass media may have a modest effect in enhancing risk reduction, when it is <i>simultaneously</i> being promoted via other mechanisms</li> </ul> <p><b>RESEARCH RECOMMENDATIONS</b></p> <ul style="list-style-type: none"> <li>• A mix of qualitative and quantitative research methods, including both naturalistic and experimental designs need to be conducted in order to identify emerging patterns regarding the influence of advertising and product placement, as well as the effects of mass media campaigns to reduce drug-related harm. Further, this should be funded through commercial revenues.</li> </ul>
<p><b>Greenfield, T.K. (1997)</b></p> <p>Warning labels: Evidence on harm reduction from long-term American surveys. In M.Plant, E. Single, &amp; T. Stockwell (Eds.). pp. 105-125. <i>Alcohol. Minimising the Harm. What Works?</i> London: Free Association Press.</p>	<p><b>Countries:</b> North America</p> <p><b>Substance:</b> alcohol</p> <p><b>Scope:</b> 43 references in total, inclusive of primary studies (22), reviews (12), policy (1) and theoretical papers (8). References range in date from 1979-1995. Inclusion criteria and assessment of the validity of literature not specified. <i>Note – 11 of the 43 references have ‘Greenfield’ listed as an author, and 5 others are from the ‘Survey Design and Analysis Inc’ research group, indicating a possible bias in study selection.</i></p> <p><b>Focus:</b> Content covers evidence on the effects of warning labels on alcoholic beverage containers (eg: reducing driving after drinking,</p>	<p><b>WARNING LABELS</b></p> <ul style="list-style-type: none"> <li>• Advantages: target group will be exposed to message, can contain practical recommendations for reducing harm, cost-effective practice, and rather than being a manipulative strategy, it can be viewed as providing basic consumer information.</li> <li>• Evidence suggests that there should be mandated labelling of all containers to achieve a ‘saturation’ effect, &amp; rotation of labels to keep the messages ‘fresh’. Reinforce the messages with other types of campaigns (media, community) to produce ‘synergy’.</li> <li>• Implications for other countries: evaluate the public acceptance of and cultural attitudes towards appropriate warnings, and legislate for rotating messages at the outset (on the grounds that it’s hard to change govt policy once enacted).</li> </ul>



	and lowering consumption during pregnancy).	
<p><b>World Health Organization (1997)</b></p> <p>Prevention approaches for amphetamine-type stimulants. Pp. 137-161. In <i>Amphetamine-type Stimulants</i>. Geneva: World Health Organization.</p>	<p><b>Countries:</b> International. This publication was the result of an international discussion by experts, meeting in Switzerland in 1996. Participants from 15 countries were represented.</p> <p><b>Substance:</b> amphetamines</p> <p><b>Scope:</b> 37 references in total, inclusive of primary studies (9), reviews (26) and policy papers (2). References range in date from 1985-1996. Inclusion criteria and assessment of the validity of literature not specified.</p> <p><b>Focus:</b> Content covers a number of interventions to address amphetamine use, of which the use of mass media was one component.</p>	<p><b>MEDIA CAMPAIGNS - WHAT DOESN'T WORK WITH ILLICIT SUBSTANCES</b></p> <ul style="list-style-type: none"> <li>• Warnings about physical dangers (particularly for 'macho' males who view danger with pride)</li> <li>• Labelling of illicit as 'bad' (when so are legal substances eg tobacco, that are widely endorsed and provide substantial profits to manufacturers)</li> <li>• Implying experimentation leads to problem use (large numbers of people use without problems)</li> <li>• Focusing on dangers of self-medicating (lots of legal over the counter substances are also misused eg herbal remedies)</li> <li>• "just say no" messages (patronising, simplistic, implies an easy solution, and undermines the agency of the individual)</li> <li>• Messages that are moralistic and judgemental</li> <li>• Use of fear tactics</li> </ul> <p><b>MORE PRODUCTIVE APPROACHES</b></p> <ul style="list-style-type: none"> <li>• Targeted, accurate, unbiased information appropriate to target group</li> <li>• Addressing personal variables that may be associated with increased vulnerability to negative peer influences from some groups</li> <li>• Challenging/changing normative beliefs about extent of use in a particular area or amongst a particular population</li> <li>• Involvement of the target group within the decision making process – re addressing substance use/misuse</li> <li>• Exposure to satisfying and acceptable alternatives to substance use/misuse.</li> </ul> <p><b><u>MEDIA FOR DEVELOPING COUNTRIES</u></b></p> <ul style="list-style-type: none"> <li>• Where literacy &amp; language barriers are a problem, it is possible to use comic-style and pictorial messages rather than written ones. Info needs to be culturally appropriate, and suitable for the target group.</li> </ul>
<p><b>Sowden, A.J., &amp; Arblaster, L. (2001)</b></p> <p>Mass media interventions for preventing smoking in young people (Cochrane Review). In <i>The Cochrane Library</i>, Issue 2, 2001. Oxford: Update Software</p>	<p><b>Countries:</b> International</p> <p><b>Substance:</b> tobacco</p> <p><b>Scope:</b> Systematic search, inclusion / exclusion criteria and validity of studies explicitly stated. 63 studies reviewed in total, number of primary studies meeting all criteria (6). This article is a systematic review from the Cochrane Library.</p> <p><b>Focus:</b> Content covers the effectiveness of mass media campaigns</p>	<p><b><u>RECOMMENDATIONS</u></b></p> <ul style="list-style-type: none"> <li>• The results indicate that effective campaigns need a solid theoretical base, with formative research designs for the campaign messages. Further, messages need to be broadcast over an extensive period of time at a reasonable intensity. Planners of mass media campaigns need to consider:</li> <li>• consulting the target group to ensure that messages are appropriate</li> <li>• ensuring that the theoretical underpinning of the campaign is founded on concepts of behaviour change and maintenance</li> <li>• to use media that is appropriate and accessible to the target audience</li> </ul>

	in preventing the uptake of smoking in young people.	<ul style="list-style-type: none"> <li>to ensure that the intensity, frequency and duration of campaigns is sufficient to effect change, as is the "reach" of the campaign</li> <li>to consider the type of media that is most appropriate depending on the age of the target group</li> </ul>
<b>Barry, M. (1991)</b>  The influence of the U.S. tobacco industry on the health, economy, and environment of developing countries. <i>The New England Journal of Medicine</i> , 324, 13, 917-920.	<b>Countries:</b> International, focus is on developing countries  <b>Substance:</b> tobacco  <b>Scope:</b> 29 references in total, including primary studies (4) and review articles (25). References range in date from 1931-1990. Inclusion criteria and assessment of the validity of literature not specified.  <b>Focus:</b> Content covers the marketing of tobacco in developing countries and strategies to counteract harmful effects.	<b><u>ADVERTISING</u></b> <ul style="list-style-type: none"> <li>In 1986, only 55 countries restricted advertising, and 6 required rotating warnings on cigarette packets. In developing countries, these restrictions are often not in place, and US companies can sell cigarettes without any warnings at all if there is no legislation in the host country.</li> </ul> <b><u>RECOMMENDATIONS</u></b> <ul style="list-style-type: none"> <li>Mandate that warnings &amp; labelling of contents for products sold in developing countries be equal to those sold in the US.</li> <li>Formulate education campaigns for developing countries, and place a tax on cigarettes.</li> </ul>
<b>Wallack, L.M. (1983)</b>  Mass media campaigns in a hostile environment: Advertising as anti-health education. <i>Journal of Alcohol and Drug Education</i> , 28, 51-63	<b>Countries:</b> North America  <b>Substance:</b> all, with a specific focus on alcohol and tobacco  <b>Scope:</b> 44 references in total, inclusive of primary studies (6), reviews (35) and theoretical papers (3) on behaviour change and media utilization. References range in date from 1960-1981. Inclusion criteria and assessment of the validity of literature not specified.  <b>Focus:</b> Content covers mass media campaigns and their effectiveness, when occurring in the same climate as alcohol and tobacco advertising and promotion in the media.	<ul style="list-style-type: none"> <li>Problems with some mass media campaigns: poor model of behaviour change, poor definitions and conceptualizations of the problem, sole focus on individual as target for change, unrealistic expectations regarding the programmes.</li> <li>Consideration of the "hostile" environment is important – need to understand the impact of competing messages in the marketplace</li> <li>3 basic principles: 1) monopolization – little or no competition re competing values/issues/policies. 2) canalization – seeks to redirect existing but weakly held attitudes and behaviours 3) supplementation – media can act as a way of reinforcing existing efforts or to facilitate interpersonal contacts.</li> <li>Mass media campaigns for health promotion may be more effective in conjunction with personal contact if attitude and behaviour change are the targets.</li> </ul>
<b>DeJong, W., &amp; Atkin, C.K. (1995)</b>  A review of national television PSA campaigns for preventing alcohol-impaired driving, 1987-1992. <i>Journal of Public Health Policy</i> , 16 (1), 59-79.	<b>Countries:</b> USA  <b>Substance:</b> alcohol  <b>Scope:</b> 137 campaigns reviewed in total, date range 1987-1992. 42 additional references cited. Additional references range in date from 1963-1992. Inclusion criteria stated (national televised public service campaigns to reduced drink-driving, aired between 1987-1992).	<b><u>RECOMMENDATIONS</u></b> <ul style="list-style-type: none"> <li>PSA messages for youth should involve peers, be target-oriented, and emphasize social rather than life-threatening consequences.</li> <li>Three types of objectives: 1) general awareness 2) individual behaviour change 3) public action (policy).</li> <li>Communication / behaviour change model: 1) increasing knowledge and changing beliefs that impede behaviour change 2) modelling new behavioural skills 3) demonstrating how to overcome barriers to change 4) teaching self-</li> </ul>

	<p>Systematic search criteria. Assessment of the validity of literature not specified.</p> <p><b>Focus:</b>.. Content covers televised public service announcements to prevent alcohol-impaired driving.</p>	<p>management skills to sustain behaviour change 5) demonstrating social support for change.</p> <ul style="list-style-type: none"> <li>• Suggest that use of celebrities may hamper the integrity and credibility of the message, and that “fear” messages are difficult to implement effectively.</li> <li>• Recommendations: use of PSA’s to reinforce social norms (eg stigma re driving drunk). Specifically: 1) use of “alcohol related crash” rather than “drunk driving accident”, emphasis on impaired driving as an offence, regardless of whether it results in a crash 3) most people (especially young people) underestimate their level of impairment 4) BAC level is not necessarily a good indicator of impairment level.</li> <li>• Policy: likelihood of detection &amp; punishment requires increased enforcement. Increase local control of alcohol availability, especially sales to minors. Lower BAC limit. Increase taxes on alcohol.</li> <li>• Use radio more, and increase media advocacy.</li> </ul>
<p><b>Aitken, P.P. (1989)</b></p> <p>Alcohol advertising in developing countries. <i>British Journal of Addiction</i>, 84, 1443-1445</p>	<p><b>Countries:</b> International, focus is on developing countries</p> <p><b>Substance:</b> alcohol</p> <p><b>Scope:</b> 11 references in total, inclusive of primary studies (5), and reviews (6). References range in date from 1981-1989. Inclusion criteria not specified; assessment of the validity of literature (strength of evidence) is discussed.</p> <p><b>Focus:</b>.. Content covers the impact of alcohol advertising on drinking behaviour in young people. Particular focus is on implications for developing countries</p>	<p><b><u>RECOMMENDATIONS</u></b></p> <ul style="list-style-type: none"> <li>• Effects of advertising are difficult to measure – the use of multiple regression analysis might be helpful to identify predictors. Age is a good predictor, but the author seems to think that the increase is more than simply due to developmental issues.</li> <li>• Advertising may be having an impact – especially of “designer” drinks targeted at young women.</li> <li>• Potential avenues for research: awareness and appreciation of advertising, qualitative research, need to include other predictors of drinking other than advertising to account for / discriminate the unique variance attributable to advertising – may help to frame policy.</li> <li>• Increased promotion / aggressive marketing of alcohol in developing countries needs to be monitored.</li> </ul>
<p><b>Jernigan, D.H (1997)</b></p> <p>Thirsting for Markets. The Global Impact of Corporate Alcohol. San Rafael, California: The Marin Institute for the Prevention of Alcohol and Other Drug Problems.</p>	<p><b>Countries:</b> International, focus is on developing countries, particularly Malaysia, Zimbabwe and Estonia</p> <p><b>Substance:</b> alcohol</p> <p><b>Scope:</b> Chapters 1,2 and 6 were reviewed. 76 references in total, (some references duplicated between sections), including primary studies, alcohol industry reports and review articles. References range in date from 1975-1996. Inclusion criteria not specified; assessment of the validity of literature discussed in general terms.</p> <p><b>Focus:</b>.. Content covers the impact of the global marketing of alcohol. Particular focus is on implications for developing countries</p>	<p><b><u>RECOMMENDATIONS</u></b></p> <ul style="list-style-type: none"> <li>• Vigorous pursuit of alcohol marketing in developing countries – developed markets are flat or falling, so new markets are being pursued. Marketing and advertising is directed at vulnerable consumers, and often uses techniques forbidden in developed countries, such as marketing the health benefits of alcohol.</li> <li>• Recommendations: 1) marketing should only be allowed for price and quality 2) media with substantial child audiences should not be allowed to show alcohol advertising, 3) restrict ‘coupon’ and ‘sweepstake’ marketing strategies that target low-income earners, sponsorship (esp sport) should be limited, no free samples, advertisers should not be able to make health claims, products (&amp; advertising) should have labels disclosing ingredients and health warnings.</li> </ul>

## APPENDIX F: MASS MEDIA SUMMARY OF PRIMARY STUDIES

Citation	Intervention Details	Findings
<p><b>Makkai, T., Moore, R., &amp; McAllister, I. (1991).</b></p> <p>Health education campaigns and drug use: The 'drug offensive' in Australia. <i>Health Education Research</i>, 6 (1), 65-76</p>	<p><b>Topic:</b> Mass media campaigns  <b>Substance:</b> All  <b>Country:</b> Australia  <b>Programme Name:</b> Drug Offensive  <b>Aims:</b> to increase general knowledge about drugs and to promote responsible drug use  <b>Key components:</b> television advertising, the dissemination of printed material (an information kit to every household), and the provision of a drug information hotline (telephone)  <b>Study design:</b> cross-sectional  <b>Target group:</b> Australian community  <b>Sample:</b> A national survey (total N=2103) of urban centres was undertaken with over-sampling of 14-19 year olds where possible. The population in each centre was over 5000 people. There were 1673 adults aged 20 years or older, and 430 adolescents aged 14-19 years in the sample</p>	<p>The results indicate that 2/3 of participants had seen the logo, and 3/4 had heard of the campaign. The "Russian roulette" commercial had the greatest market penetration (50%) particularly among young males (70%). More people read the booklet than the information kit. Young males were more likely to have seen tv ads while young females were more likely to have read the literature. The perceived personal effectiveness of the campaign was generally low, with highest effectiveness reported for those with lower educational attainment levels. The campaign did not appear to have an effect on those most at risk</p>
<p><b>Casswell, S., Ransom, R., &amp; Gilmore, L. (1990).</b></p> <p>Evaluation of a mass-media campaign for the primary prevention of alcohol-related problems. <i>Health Promotion International</i>, 5 (1), 9-17.</p>	<p><b>Topic:</b> Mass media campaigns, Media Advocacy  <b>Substance:</b> Alcohol  <b>Country:</b> New Zealand  <b>Programme Name:</b> Community Action Project [CAP]  <b>Aims:</b> to increase the awareness and support for policy and attitudes towards moderation in alcohol use at the individual level; to increase non-industry alcohol-related material in print and radio media at the community level  <b>Key components:</b> The key components of this intervention were:            (1) four tv commercials aimed at the individual level with a lifestyle focus            (2) cinema advertising            (3) newspaper advertising            (4) sponsorship of a rock band  <b>Study design:</b> Controlled Before/After  <b>Target group:</b> 18-30 year old males  <b>Sample:</b> The sample (N=3600) was comprised of 6 New Zealand cities, with 2 per experimental condition. There were 24-27% of</p>	<p>The results indicated that a 69% recall was achieved for the first advertisement. On completion of the campaign, there was 7% spontaneous recall and 68% prompted recall (93% amongst the target group) of the campaign. Media plus community organizer groups had greater slogan recall (70%) than the media only cities (51%) which was significant at the .05 level. The campaign also had a positive effect on attitudes towards alcohol and support for alcohol policies</p>

	<p>participants under the age of 15, and 10-15% over the age of 65. Media only cities were 28% larger than the other four. All were service cities for horticulture / agriculture, with populations of 40 000 to 60 000 per city. Random, cluster and purposive sampling was used to recruit participants.</p>	
<p><b>Pierce, J.P., Macaskill, P., &amp; Hill, D. (1990).</b></p> <p>Long-term effectiveness of mass media led antismoking campaigns in Australia. <i>American Journal of Public Health, 80, 565-569.</i></p>	<p><b>Topic:</b> Mass media campaigns  <b>Substance:</b> Tobacco  <b>Country:</b> Australia  <b>Programme Name:</b> Mass media led antismoking campaigns in Australia  <b>Aims:</b> to assess the short and long term impacts of conducting anti-smoking mass media campaigns  <b>Key components:</b> The key components included advertising on tv, billboards, newspapers, radio, and press releases (advocacy component)  <b>Study design:</b> controlled before/after  <b>Target group:</b> smokers  <b>Sample:</b> Smokers were sampled from Melbourne and Sydney, two of Australia's largest cities. There were 68 136 males and 70 634 females (total N=138770). The participants were all aged 17 years or over. A combination of random and cluster sampling was used to recruit participants.</p>	<p>Six months after the campaign began, there was a 2.6% drop in smoking prevalence amongst males and females in Sydney. In Melbourne, there was a 2.9% drop for males. In both cities, males showed a continual drop of 1.5% per year throughout the campaign, although females did not</p>
<p><b>Carroll, T. (1993).</b></p> <p>'Speed catches up with you'. The development and implementation of the National Drug Offensive amphetamine campaign. Sydney: <i>Commonwealth Dept of Health, Housing and Community Services.</i></p> <p><b>Carroll, T., Taylor, J., &amp; Lum, M. (1996).</b></p> <p>Evaluation of the Drug Offensive "Speed Catches Up With You" Amphetamines</p>	<p><b>Topic:</b> Mass media campaigns  <b>Substance:</b> Amphetamines  <b>Country:</b> Australia  <b>Programme Name:</b> 'Speed catches up with you'  <b>Aims:</b> to reduce the prevalence of amphetamine use, particularly injecting; to increase and reinforce the negative aspects of amphetamine use by raising awareness; to reinforce the intention not to use, or to cease use  <b>Key components:</b> The key components for this intervention included:  (1) advertising on tv, cinema, radio, billboards, and youth magazines  (2) production of a kit for schools  (3) dissemination of posters and postcards  (4) production of a research monograph  (5) sponsorship of a dance, and production of a dance-offensive magazine  <b>Study design:</b> before/after (baseline study, 2 intervention-phase</p>	<p>A quantitative instrument was re-used in 1993 as a benchmark against which to measure the success of the campaign. Substantial qualitative and quantitative data were collected regarding epidemiology, and the campaign was designed around these findings. Four creative developmental research stages took place across 9 months to refine the message.</p> <p>Results indicate that the campaign was effective in reaching the target audience, with 8 out of 10 respondents in the target group reporting that the campaign had made them more aware of the negative effects of amphetamines. After the first two phases of the campaign, respondents indicated at least one negative effect of amphetamine use, although this was eroded at the 20 month follow-up, (returning to baseline). Those exposed to more recent information regarding the deleterious effects of amphetamine use were more likely to report negative effects than those who were not. Although the statistical significance of these contrasts is not reported, the differences range from 4% to 17% depending upon the indicator used. The campaign did not appear to have a long-term impact on those considered 'high risk' for trying amphetamines. Overall, the campaign was effective in communicating</p>

<p>Campaign – 1993-1995. Sydney: Commonwealth Department of Health and Family Services.</p>	<p>studies, 1 tracking study)  <b>Target group:</b> 15-25 year olds, particularly males (noting the unemployed as a high risk group), as well as non-users and moderate users  <b>Sample:</b> For the qualitative component, a regional sample (Sydney, Melbourne &amp; Dubbo) of non-users, moderate users and regular users of illicit drugs aged 12 to 29 were interviewed. The Quantitative component involved a national sample of 14-35 year olds, of whom 1004 completed the initial data and 1206 completed follow up data.</p>	<p>messages to the target group during the intervention phases, but these impacts were eroded over time, as indicated in the final tracking study.</p>
<p><b>Drug and Alcohol Services Council. (1991).</b></p> <p>Evaluation of DRINKWISE South Australia. <i>Drug and Alcohol Services Council Bulletin 7.</i></p>	<p><b>Topic:</b> Mass media campaigns  <b>Substance:</b> Alcohol  <b>Country:</b> Australia  <b>Programme name:</b> Drinkwise  <b>Aims:</b> to encourage responsible alcohol use amongst people who drink; to raise public awareness of the link between excessive alcohol consumption and ill health  <b>Key components:</b> The key components included advertising on tv, radio, newspapers, billboards, taxis and buses, and posters, and the issue of grants of AUS\$1000 or less for community groups to develop DRINKWISE activities  <b>Study design:</b> quasi-experimental before/after  <b>Target group:</b> drinkers  <b>Sample:</b> Residents were randomly selected from metropolitan and country regions in South Australia. Phase one included Metro (N=300) and Country (N=60) participants. Phase two included Metro (N=400) and Country (N=400) participants (total N= 1160). Participants were aged 18 to 45 years, and were recruited using random sampling.</p>	<p>After phase two, campaign recognition was 83% in metro and 68% in country areas. The effective mediums for Metro areas were tv, billboards and newspapers, whereas tv, newspapers and radio were the most effective mediums for Country areas. Awareness of health risks increased between phases I and II and awareness of hazardous drinking levels followed the same pattern (phase two greater than phase one). The most effective messages were "Four men two women" and "Heart, Brain, Liver"</p>
<p><b>Weiss, S. (1997).</b></p> <p>Israeli Arab and Jewish youth knowledge and opinion about alcohol warning labels: Pre-intervention data. <i>Alcohol and Alcoholism</i>, 32 (3), 251-257.</p>	<p><b>Topic:</b> Mass media campaigns (warning labels)  <b>Substance:</b> Alcohol  <b>Country:</b> Israel  <b>Programme name:</b> Israeli Youth Knowledge of Alcohol Harm  <b>Aims:</b> to gather baseline data on support for and knowledge of alcohol warning labels amongst Israeli youth, which could then be used to further legislative efforts to introduce drink labelling  <b>Key components:</b> baseline assessment of existing knowledge of drinking hazards via a questionnaire, to help inform future policy decisions  <b>Study design:</b> Cross-sectional</p>	<p>The results indicate that the majority of students were in support of labelling, with the Arab group the most supportive of warnings. Overall knowledge of the warnings presented was low, although levels of knowledge were higher for abstainers in all cultural groups than for drinkers</p> <p><b>Comments:</b> Although sampling was specifically targeted at the Arab students, the discrepant sample sizes between ethnic groups may have affected between groups comparisons. The generalisability of findings may also be limited due to non-random sampling</p>

	<p><b>Target group:</b> Israeli youth</p> <p><b>Sample:</b> Senior school children living in the northern region of Israel, from 4 different religious backgrounds were sampled. The breakdown of the sample size by ethnic group was Moslem (770 male, 922 female), Druze (137 male, 151 female), Christian (104 male, 136 female) and Jew (423 male, 422 female). Total N= 3065. Students were aged from 16 to 18 years, and were purposively sampled.</p>	
<p><b>Slater, M.D., &amp; Domenech, M.M. (1995).</b></p> <p>Alcohol warnings in TV beer advertisements. <i>Journal of Studies on Alcohol</i>, 56, 361-367.</p>	<p><b>Topic:</b> Mass media campaigns (warnings in advertising)</p> <p><b>Substance:</b> Alcohol</p> <p><b>Country:</b> USA</p> <p><b>Programme name:</b> Alcohol warnings in tv beer advertisements</p> <p><b>Aims:</b> to examine the impact of televised warnings on antecedents of belief change, confidence in beliefs about beer risks and benefits, and cognitive responses to advertisements</p> <p><b>Key components:</b> a comparison between an experimental group who saw four ad/warning pairs with a control group who saw the same advertisements without warnings</p> <p><b>Study design:</b> between groups repeated measures</p> <p><b>Target group:</b> beer drinkers</p> <p><b>Sample:</b> The sample was comprised of university students who were sampled by convenience then randomly allocated to groups. The experimental (N=37) and control group (N=38) consisted of 41 females and 34 males (total N=75). The mean age of the sample was between 20 and 21 years, with 'accidental' (opportunistic) sampling used to recruit participants.</p>	<p>Participants in the 'warning' condition showed more negative responses to the advertisements than the control group, and less confidence in benefit beliefs. That is, exposure to warnings reduced the level of confidence participants had in beliefs concerning the benefits of beer drinking, while the ads without warnings increased the confidence in beliefs regarding the benefits of beer drinking. For both conditions, the effects appeared to be cumulative</p> <p><b>Comments:</b> Small cell sizes in some analyses may have reduced statistical power. The wording of warnings may also be an important feature of this experiment</p>
<p><b>Saffer, H. (1991).</b></p> <p>Alcohol advertising bans and alcohol abuse: An international perspective. <i>Journal of Health Economics</i>, 10 (1), 65-79.</p>	<p><b>Topic:</b> Advertising and advertising restrictions</p> <p><b>Substance:</b> Alcohol</p> <p><b>Countries:</b> Australia, Austria, Belgium, Canada, Denmark, Finland, France, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, UK, USA</p> <p><b>Programme name:</b> Alcohol advertising bans and alcohol abuse</p> <p><b>Aims:</b> to examine the effect on alcohol misuse of banning broadcast advertising of alcoholic beverages</p> <p><b>Key components:</b> The implementation of bans was categorized into three levels: 1) no bans 2) ban on spirits only and 3) ban on beer, wine and spirits</p> <p><b>Study design:</b> pooled time series</p> <p><b>Target group:</b> countries with bans on all advertising, bans on spirits advertising but not beer or wine, or countries with no advertising</p>	<p>The results indicate that countries with bans on spirits advertising had lower consumption rates than those that didn't have bans at all. Countries with beer and wine had lower consumption than spirits advertising countries. Further, alcohol consumption was related to both advertising bans and price. Liver cirrhosis was related to price of alcohol, and motor vehicle fatalities were related to advertising bans. Countries with bans also had the least increase in consumption</p> <p><b>Comments:</b> There could be a moderating effect regarding alcohol control policies in these countries which accounts for some of the variability. The article also does not report levels of advertising exposure</p>

	<p>bans</p> <p><b>Sample:</b> Seventeen OECD countries were purposively selected. Those countries with a ban on all advertising included Norway, Finland, and Denmark. Those with a ban on spirits advertising included Canada, Ireland, Austria, UK, USA, France and Spain. Countries with no bans included Portugal, Australia, Belgium, Italy, Luxembourg and the Netherlands.</p>	
<p><b>Grube, J.W. &amp; Wallack, L. (1992)</b></p> <p>The effects of television beer advertising on children. Berkeley: <i>Prevention Research Center.</i></p>	<p><b>Topic:</b> Advertising and advertising restrictions</p> <p><b>Substance:</b> Alcohol</p> <p><b>Country:</b> USA</p> <p><b>Programme name:</b> Beer advertising and children</p> <p><b>Aims:</b> to assess the extent to which primary school kids are exposed to and aware of tv beer ads; to assess their knowledge towards these ads; to assess their knowledge of brands and slogans; to assess the effects of awareness of ads on beliefs, knowledge and intentions to drink</p> <p><b>Key components:</b> The key component was an experimental design which assessed the impact of television beer advertising</p> <p><b>Study design:</b> Cross sectional</p> <p><b>Target group:</b> primary school children ages 10-14 years</p> <p><b>Sample:</b> Fifth and sixth graders (48.9% male, 51.1% female) from a Northern Californian community participated in the study (total N= 468). Participants were aged 10-14 years, of working and middle class, with a median family income of US \$33 000, and 32% Caucasian, 29% Asian American, 26% African American, 7% Central/South American, 4% Pacific Islander, and 3% Other. Participants were randomly sampled.</p>	<p>The results showed that females paid less attention to beer ads than males (<math>p&lt;.001</math>). Males were significantly more aware of ads than females (<math>p&lt;.001</math>) and identified the ads correctly more often (<math>p&lt;.001</math>). Males (32.8%) were less suspicious of the truthfulness of ads than females (29.3%) (<math>p&lt;.05</math>). Approximately half of the sample thought that ads made beer drinking seem better than it really is. Both males (35.8%) and females (50.2%) thought that ads tried to get children to drink. The structural equation model showed that awareness of advertising was related to greater knowledge of brands and slogans and more positive beliefs about drinking. Awareness also had an indirect link to adulthood intention to drink via positive beliefs. The authors suggest that awareness of ads has a causal influence on positive beliefs about drinking, drinking knowledge and drinking intentions, and that children who are already interested in drinking seek out alcohol information.</p>



<p>Connolly, G.M., Casswell, S., Zhang, J., &amp; Silva, P.A. (1994).</p> <p>Alcohol in the mass media and drinking by adolescents: A longitudinal study. <i>Addiction</i>, 89, 1255-1263.</p>	<p><b>Topic:</b> Advertising and advertising restrictions  <b>Substance:</b> Alcohol  <b>Country:</b> New Zealand  <b>Programme name:</b> Alcohol-related mass media material and adolescents  <b>Aims:</b> to investigate associations between alcohol consumption at 18 and alcohol-related mass media communications recalled at ages 13 and 15 years  <b>Key components:</b> the core intervention features included the portrayal of alcohol advertising, moderation, and alcohol-in-entertainment messages, on television, radio, newspapers, magazines and cinema. Further, changes to the regulation of beer advertising in New Zealand took place over the course of the study  <b>Study design:</b> longitudinal  <b>Target group:</b> adolescents born in Dunedin, New Zealand, in 1972  <b>Sample:</b> The sample for this study (N= 667) was a subset of a larger sample born in 1972 in Dunedin, participating in a multi-disciplinary study of growth and development.</p>	<p>For males at 18 years of age, there was a significant relationship between the number of advertisements recalled at 15 years of age and the maximum amount of beer consumed at age 18, as well as beer consumed on average, but not frequency of consumption. Media recall was not a significant predictor for women. There was some indication that an increase in the women's TV watching had an impact on the amount of wine and spirits consumed. The effects of moderation messages may also have been attenuated by alcohol advertising</p> <p><b>Comments:</b> All of the models accounted for a small proportion of variance, indicating that alcohol messages in the media have small effects, and that there are other factors which also need to be examined</p>
<p>Aitken, P.P., Eadie, D.R., Leathar, D.S., McNeill, R.E., &amp; Scott, A.C. (1988).</p> <p>Television advertisements for alcoholic drinks do reinforce under-age drinking. <i>British Journal of Addiction</i>, 83, 1399-1419.</p>	<p><b>Topic:</b> Advertising and advertising restrictions  <b>Substance:</b> Alcohol  <b>Country:</b> United Kingdom  <b>Programme name:</b> Television advertisements reinforce under-age drinking  <b>Aims:</b> to demonstrate that under-age drinkers get some kind of reward or pleasure from alcohol advertising that has a reinforcing effect on underage drinking  <b>Key components:</b> measures of reward value and attention to alcohol advertising, measures of drinking experiences, and qualitative interviews regarding television advertisements  <b>Study design:</b> cross-sectional  <b>Target group:</b> children aged 10 to 17 years  <b>Sample:</b> A total of 433 children (approximately 110 at each age group, categorized as 10-11, 12-13, 14-15 and 16-17 years) matched on age, gender and SES[(55% C2DE (lower-middle) and 45% ABC1 (middle-upper)] from the Greater Glasgow area were surveyed in this study. They were assigned to one of 3 conditions: non-drinkers, triers and drinkers. Quota sampling was used to recruit participants.</p>	<p>The results of the multiple regression show that the number of alcohol advertisements identified and appreciation for advertising significantly distinguished drinkers from triers and non-drinkers. Multiple discriminant analysis showed significant contrasts in that drinkers were older, perceived their parents as being less disapproving of underage drinking and were more able to identify photographs of tv advertisements. They also differed on the belief "that drinkers are more attractive and tough" than triers and non-drinkers.</p> <p>The qualitative findings are important, showing that children around 10 years of age are most appreciative of tv advertisements. Many children are aware of advertising, and can identify it well. Further, image advertising (action, music, style, colour and humour) is engaging to young children.</p> <p><b>Comments:</b> There may have been differences in the level of exposure to advertising that were responsible for the variance observed. There is also no reporting of the composition of the groups (drinkers, triers and non-drinkers) on age, gender, or SES.</p>
<p>Wyllie, A., Zhang, J., &amp;</p>	<p><b>Topic:</b> Advertising and advertising restrictions</p>	<p>The majority of children in both groups had seen the advertisements and of those</p>

<p>Casswell, S. (1998).</p> <p>Responses to televised alcohol advertisements associated with drinking behaviour of 10-17 year olds. <i>Addiction</i>, 93 (3), 361-371.</p>	<p><b>Substance:</b> Alcohol  <b>Country:</b> New Zealand  <b>Programme name:</b> 10-17-year-olds' response to tv ads  <b>Aims:</b> to examine the nature of the relationships between 10-17 year old New Zealanders' responses to alcohol advertisements and their drinking behaviour and future drinking expectations, with consideration also being given to the role of positive and negative beliefs about drinking  <b>Key components:</b> The key component for this research involved surveying the effects of exposure to advertising  <b>Study design:</b> cross-sectional (using structural equation modelling)  <b>Target group:</b> 10-17 year old children  <b>Sample:</b> Ten to 17 year olds from the 3 largest urban centres in New Zealand were interviewed. For the purpose of analysis, the sample was split into two groups (10-13 yrs and 14-17yrs). The sample size by group was Auckland (N=500), Wellington (N=125) and Christchurch (N=125). For the structural equation model there was N=447 with complete data sets. Ages ranged from 10-17 yrs, with 16-17 year olds over-represented due to informed consent issues. Ethnic groups represented included White, Maori (8%) and Pacific Islander (7% - which was under-representative of the wider population). Participants were selected using stratified random cluster sampling. Total N=500.</p>	<p>who had seen them, the majority like them. Younger males (54%) agreed that they learnt more about drinking from advertising, while for females this figure was 39%. Younger respondents thought portrayals were more realistic than older respondents. When asked if they thought ads were encouraging people to drink, the 10-13 year old group responded positively (males 65%, females 52%) while the 14-17 year old group was slightly less agreeable (males 46%, females 49%). The structural equation model showed that positive responses to beer advertising contributed to the expectancy of future drinking and although non-significant, contributed to the increased frequency of current drinking.  <b>Comments:</b> It should be noted that the analysis was exploratory. Further, there may have been a 'novelty' effect as product advertising for alcohol was restricted in New Zealand shortly before the study was conducted</p>
<p>Slater, M.D., Rouner, D., Murphy, K., Beauvais, F., Van Leuven, J., &amp; Domenech Rodriguez, M. (1996).</p> <p>Male adolescents' reactions to TV beer advertisements: The effects of sports content and programming context. <i>Journal of Studies on Alcohol</i>, 57, 425-433.</p>	<p><b>Topic:</b> Advertising and advertising restrictions  <b>Substance:</b> Alcohol  <b>Country:</b> USA  <b>Programme name:</b> Male adolescents' reactions to TV beer advertisements: the effects of sports content and programming context  <b>Aims:</b> to examine white male adolescents' responses to TV beer advertisements with and without sports content  <b>Key components:</b> presentation of beer and non-beer ads embedded in either sports or entertainment programming  <b>Study design:</b> repeated measures factorial design  <b>Target group:</b> adolescent males  <b>Sample:</b> White male adolescents from the public school system in a mid-size Western US city were recruited for the study. Junior high students had a mean age of 13.5 yrs (N=83) and senior high students had a mean age of 16.4 years (N=74). Participants were recruited using accidental (opportunistic) sampling.</p>	<p>The results indicate that adolescents prefer beer ads with sports content. Older adolescents preferred beer ads without sports content during sports programming, and ads with sports content during entertainment. The reverse was true for younger adolescents. There were more counter-arguments offered to beer ads than non-beer ads, which may indicate that alcohol education has an effect.</p>

## APPENDIX G: COMMUNITY BASED PROGRAMMES SUMMARY OF REVIEW ARTICLES

Citation	Extensiveness	Key Findings
<p><b>Graham, K., &amp; Chandler-Coutts, M. (2000).</b></p> <p>Community action research: who does what to whom and why? Lessons learned from local prevention efforts (international experiences). <i>Substance Use and Misuse</i>, 35 (1&amp;2), 87-110.</p>	<p><b>Countries:</b> International</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> Papers from an international conference (4<sup>th</sup> International Symposium on Community Action Research and the Prevention of Alcohol and Other Drug Problems, New Zealand, February 1998) on community action research were summarized. Twenty papers in total were included in the review. Target groups, focus, goals and main activities are summarized for each project.</p> <p><b>Focus:</b> included community action and evaluation of programmes with issues covering 1) alcohol-related violence 2) policy-based prevention 3) education and training 4) secondary prevention and treatment. A range of target populations from youth to specific ethnic groups was incorporated.</p>	<p>The recommendations covered three broad domains: 1) community targeted for change 2) implementation of projects and 3) community action generally.</p> <p><b><u>Community targeted for change</u></b></p> <p><b>Selecting the target population</b> (or “problem” population) for the intervention should be an inclusive process. Researchers should preferably belong to the culture under investigation, culturally appropriate research approaches should be used.</p> <p><b>Research goals often conflict with community goals.</b> Researchers are accountable on multiple fronts. A balance between the needs of the community and meeting the research criteria should be struck. The community needs to have a voice in the decision-making process.</p> <p><b>Does the target group WANT to change?</b> Community support for the initiative is often required for the successful implementation of programmes. This can be of a general nature (eg sufficient political will or support from the broader community), rather than support for the initiative from specific target groups.</p> <p><b>Ability of the target group to change.</b> The constraints operating on the target group (eg lack of control and autonomy, cultural norms, financial considerations etc) that may impact on their ability to change should be recognized.</p> <p><b>Knowledge of the Community.</b> It is imperative that knowledge of the community and how it operates is well understood. An appropriate “needs assessment” is included in this caveat.</p> <p><b><u>Implementation of community projects</u></b></p> <p><b>The community’s perception of the researchers.</b> Researchers should respect community processes and share decision-making power with community partners. Researchers should not be seen to be holding all of the power.</p> <p><b>Community organizers should be informed by research.</b> This assists with policy options and “selling” prevention initiatives to the community. It also assists with conducting needs assessments (esp community attitudes) which provide a basis for action. This information can also be used to provide knowledge/training to the community.</p>

		<p><b>Importance of feedback.</b> The exchange of knowledge and information between researchers and community partners is mutually beneficial. It can also demonstrate/reinforce progress. It keeps everyone 'up-to-speed' as to where the initiative is at, and helps to create a sense of momentum.</p> <p><b>Incorporate Key Stakeholders into the process.</b> Key stakeholders should be allowed input into the process and their support should be sought. The "social capital" (eg: knowledge, skills, commitment, credibility, power) held by key stakeholders may have some impact on the initiation, success and sustainability of the project.</p> <p><b>Acknowledging multiple perspectives.</b> The varying perspectives of different target groups may necessitate the appropriate tailoring of messages. Various target groups within communities may have differences in opinion regarding what is important for them.</p> <p><b>Allow time for communication.</b> Community partners, particularly those with divergent views, may need to be consulted in the early stages of the project, for a significant timeframe, and in collaboration with one another, for projects to overcome initial barriers (such as lack of cohesiveness or consensus) to implementation.</p> <p><b>Allow for the evolution of projects.</b> Projects tend to diverge somewhat from their original goals. Projects that adopt top-down approaches only, may fail if insufficient flexibility is incorporated to meet challenges that arise during implementation. Not all events can be foreseen in the planning stages, so a capacity for change and compromise is necessary.</p> <p><b>Sustainability.</b> Community partners are usually volunteers. Lack of available resources, which may include the political/social climate in which the community operates, as well as funding for the project, may limit the ability of community members to participate in projects. This may be particularly true for communities undergoing rapid socio-political or economic change. Celebrating victories can help to sustain momentum.</p> <p><b>General Lessons</b></p> <p><b>Desirability.</b> Initiatives must have something desirable to offer the community. If the intervention provides something that the community needs, and is perceived to be effective, it is more likely to be sustained in the long-term.</p> <p><b>Obstacles.</b> Most initiatives will meet with countervailing forces. Projects that can</p>
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		<p>respond effectively to these obstacles are more likely to be successful, and many obstacles can be anticipated prior to implementation of the project through good preliminary research.</p> <p><b>Measuring outcomes.</b> It can be quite difficult to measure effectiveness even in successful projects, due to 1) a weak intervention working against strong opposition 2) inappropriate outcome measures or 3) measuring outcome variables at the incorrect time. Outcomes can also be impacted by other factors. Therefore, community-based interventions can act to set up the necessary preconditions for the success of other types of interventions, such as changes in policy. Different types of interventions can help to reinforce one another.</p> <p><b>Building on past experiences.</b> Previous work can be used to inform current initiatives, and lessons learned can be incorporated into the development of new projects.</p> <p><b>Having a solid plan.</b> Although change and compromise may be necessary to implement a project successfully, a solid conceptualization of project goals may be necessary to stay on course.</p> <p><b>Capitalize on opportunities.</b> Timing of projects can be important. (eg: making the most of legislative or political changes, partnerships with community groups or law enforcement agencies or personnel who have a similar focus).</p> <p><b>Capacity building.</b> Communities with interest/experience in prevention may be easier to work with. Build on existing community strengths, and develop programmes that build capacity for the initiative (or other similar undertakings) to be institutionalized beyond the life of the project. Activities include strengthening existing networks and training local people.</p> <p><b>Timeframe.</b> Need to allow for sufficient time for community mobilization and recruitment, implementation of the initiatives and sufficient follow up for an effect to register. This can be difficult with short-term and poorly funded projects, or in projects where funding is contingent upon demonstrable short-term success.</p> <p><b>Sustainability.</b> Projects in which the community is allowed to take ownership (and has an investment in the value of the initiative) are more likely to be sustained over time.</p> <p><b>Similarities across projects.</b> Despite varying contexts, community action projects are often quite similar. This includes the ability to explain, apply and transfer knowledge and skills to community problems. An understanding of the power dynamic (ie – researchers often have significant power which can either work for or against them depending upon how it is used) is essential for successful programme implementation. Ad-hoc changes and adaptation to local conditions/contexts are also necessary. Mutually respectful relationships must be sought in order to achieve research goals as well as community benefits.</p>
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<p><b>Arthur, M. W., &amp; Blitz, C. (2000).</b></p> <p>Bridging the gap between science and practice in drug abuse prevention through needs assessment and strategic community planning. <i>Journal of Community Psychology</i>, 28 (3), 241-255.</p>	<p><b>Countries:</b> International with a US focus.</p> <p><b>Substance:</b> All</p> <p><b>Scope:</b> The rationale for inclusion of material and the search strategy undertaken are unstated. The population base is children and adolescents. 64 citations are included in the reference list, ranging in date from 1976-2000.</p> <p><b>Focus:</b> includes needs assessment and utility, predictors of drug misuse, support for community prevention and establishing a scientific basis for interventions.</p>	<p><b>SCIENCE BASE.</b> The authors argue that a solid scientific basis is needed for designing effective interventions across settings. This includes a solid needs assessment process to match the appropriate research-based intervention to the needs of the community.</p> <p><b>KNOWLEDGE.</b> Knowledge of the target population is necessary for the effective delivery / implementation of the programme.</p> <p><b>IMPLEMENTATION AND EVALUATION.</b> Priority areas need to be identified, baseline assessments should be undertaken, specific outcomes should be specified, implementation of strategies should be monitored, and outcome indicators should be measured across time.</p> <p><b>NEEDS ASSESSMENT.</b> This includes not just an assessment of epidemiology, resource availability and utilization, but also recognising the need for early intervention and health promotion. Therefore, it is the <i>probability</i> of future drug use that needs to be assessed, not just <i>current</i> levels of use. The model proposed (p. 244) includes a) information on incidence (rate of initiation) and prevalence (pervasiveness) of current problems b) information on risk and protective factors (precursors) within the community in order to prioritize intervention targets c) co-ordinated, community-owned, multi-component strategies focussing on these risk and protective factors.</p> <p><b>RISK AND PROTECTIVE FACTORS.</b> Occur across community, family, school, peer group and individual domains. These stabilize at different developmental points, and if addressed just prior to stabilization, interventions are more likely to be effective. Multiple risk factors increase the likelihood of substance misuse, while protective factors can mitigate the likelihood of substance misuse. Interventions can be targeted at areas (identified through epidemiological research) with the highest number of risks and lowest number of protective factors. There are scales available which measure this across domains (see p. 245), although this paper does not state whether the measure is cross-culturally appropriate or how widely it has been validated.</p> <p><b>COMMUNITY LEVEL RISK AND PROTECTIVE FACTORS.</b> <i>Risk factors:</i> low neighbourhood attachment, community disorganization, transitions and mobility, laws and norms favourable to substance use and perceived availability of substances and firearms. <i>Protective factors:</i> opportunities for community</p>
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		<p>involvement and rewards for community involvement. (see page 245 for risk and protective factors for other domains).</p> <p><b>ASSESSING RESOURCES.</b> The availability and utilization of resources, quality of existing programmes and “untapped” resources should be assessed. These can be used to inform the allocation of prevention programme funding by avoiding duplication (while directing resources towards community needs), to co-ordinate existing resources more effectively, to improve accountability, track costs, predict the impact of changes to funding, and emphasize pre-existing assets (useful for mobilising the community). A global assessment of the community’s socializing environment can be conducted by evaluating the developmental assets of youth in the community – internal (commitment to learning, positive values, social competencies and positive identity) and external (support, empowerment, boundaries / expectations, and constructive use of time). Alternatively, the neighbourhood can be assessed by looking at the skills and abilities of residents, businesses, schools, hospitals, health service providers, emergency service staff and libraries. This can provide an understanding of community resources that can be directed towards risk and protective factors, but is a resource intensive process and is best done with small, well defined geographic communities.</p> <p><b>PREVENTION PLANNING.</b> Comprehensive community prevention planning (community wide programmes) appears to be successful as a long-term preventive strategy, but requires adequate implementation. This includes 1) increasing protective and reducing risk factors 2) adequate fidelity. Successful implementation also requires a) the community to recognize the problem/need and b) to put the intervention or idea into a form that maps onto the problem as they perceive it (local “ownership”). Use of community planning boards can actually increase social cohesion/bonding, which acts in itself as a protective factor. Greater participation from community members also helps to create and reinforce norms against drug and alcohol misuse (another protective factor). Other important factors for successful programmes include 1) clarity of goals 2) amount of training 3) content specificity 4) timing of training.</p> <p><b>SUMMARY.</b> “One size fits all approach” does not work. What does work?</p> <ol style="list-style-type: none"> <li>1) Local ownership</li> <li>2) community readiness (attitudes and organizational capacity)</li> <li>3) needs assessment</li> <li>4) planning</li> <li>5) monitoring and feedback</li> </ol>
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		6) community training 7) technical assistance
<p><b>Holder, H., &amp; Moore, R. S. (2000).</b></p> <p>Institutionalization of community action projects to reduce alcohol-use related problems: Systemic facilitators. <i>Substance Use and Misuse</i>, 35 (1&amp;2), 75-86.</p>	<p><b>Countries:</b> International</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> Nine papers from a conference (4<sup>th</sup> International Symposium on Community Action Research and the Prevention of Alcohol and Other Drug Problems, New Zealand, February 1998) on community action research were summarized. A further nine papers were included in the review.</p> <p><b>Focus:</b> included maintenance, sustainability or institutionalization of community based projects long term; the particular focus is on identifying the project characteristics that made sustainability after the initial intervention possible.</p>	<p><b>PAUCITY OF KNOWLEDGE RE SUSTAINABILITY.</b> This is due to very few projects continuing past the initial intervention, and lack of data collection if they do continue.</p> <p><b>INSTITUTIONS AND THEIR LINK TO COMMUNITY BASED PROGRAMMES.</b> <i>The definition used - "an institution is a social pattern or order that can reproduce or sustain itself over time, independent of the particular people in the institution at any point in time" (p. 76).</i> Institutions are located within the power dynamics of the broader community. Therefore, in order to survive they have to be powerful within the community context; if a community project is not institutionalized (ie – is incorporated into regular community processes) it is unlikely to survive past the life of the project. The use of alcohol generally has a particular network of community interests/stakeholders ('subsystems') either endorsing or attempting to minimize its use. Alcohol problems are therefore by definition a systemic issue, and effective community programmes often disrupt systems, meet with resistance from opposing interests, and if unsupported by the community, are unlikely to be institutionalized.</p> <p><b>FACTORS WHICH SUPPORT INSTITUTIONALIZATION.</b> These are clustered into local factors, programme factors, and goals for institutionalization.</p> <p><b>LOCAL FACTORS:</b> <i>community relevance</i> (the community deemed the intervention important and relevant to their needs, and had sufficient impetus to maintain the intervention over time); <i>community values and cultural relevance</i> (an account of local values and culture are part of the project design and implementation); <i>key leader support</i> (obtain support from key community leaders for acceptance of, funding for, and institutionalization of the initiatives); <i>indigenous staff</i> (who know the community, have sufficient training and can train others, have support of community leaders, can represent the project goals and interests to the wider community, and can keep the project active after the initial round of funding).</p> <p><b>PROGRAMME FACTORS:</b> <i>development of local resources</i> (training staff to access further funding resources); <i>flexibility</i> (programmes may need to adapt to changes/needs within the community and to take advantage of opportunities as they are presented); <i>leveraging prior success</i> (maximize / highlight project gains to demonstrate effectiveness via documentation and publicising project gains)</p>



		<p><b>GOALS FOR INSTITUTIONALIZATION:</b> <i>policy and structural changes</i> (build upon local organizational / community processes, create necessary changes in structures prior to completion of project which can then be maintained afterwards)</p> <p><b>SUMMARY:</b> What works in sustaining the intervention after initial implementation phase?</p> <ol style="list-style-type: none"> <li>1) Honouring community values and culture</li> <li>2) Cultivating key leader support</li> <li>3) Utilizing indigenous staff</li> <li>4) Developing local resources, including building upon past projects for a cumulative effect</li> <li>5) Maintaining flexibility</li> <li>6) Leveraging prior success</li> <li>7) Aiming for policy and structural changes (even if project does not survive, it can have an impact at these levels).</li> </ol>
<p>Treno, A. J., &amp; Holder, H. D. (2001).</p> <p>Prevention at the local level. In N. Heather, T. Peters and T. Stockwell (Eds.). <i>International Handbook of Alcohol Dependence and Problems</i>. (pp. 771-783). Chichester: John Wiley and Sons.</p>	<p><b>Countries:</b> International</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> The chapter reviews 6 major projects (international in scope) aiming to reduce alcohol-related harm at the local level. The projects included in the review met the following criteria: 1) baseline planning and pre-intervention period 2) well-defined community level alcohol – involved problems as targets 3) long-term implementation and monitoring period 4) a follow-up or final scientific evaluation of changes in target problems and 5) empirically documented successful result in the target that can be attributed to the intervention. Excludes the school setting. 15 references are included in the citation list.</p> <p><b>Focus:</b> Reducing alcohol related harm in the community setting, with particular respect to supply reduction of alcohol and a whole of population approach.</p>	<p><b>SYSTEMS APPROACH:</b> programmes adopt a supply-oriented (systems) approach which has the advantage of not having to identify/target/inculcate high risk groups – it is the system that is viewed as problematic, not individuals within it.</p> <p><b>PROGRAMMES:</b> Projects reviewed by the authors include:</p> <ol style="list-style-type: none"> <li>1) CAP – New Zealand</li> <li>2) Lahti – Scandinavia</li> <li>3) CMCA – USA</li> <li>4) Compari – Australia</li> <li>5) Community Trials Project – USA</li> <li>6) Saving Lives Project – USA</li> </ol> <p><b>CONCLUSIONS/RECOMMENDATIONS:</b> from analysis of these projects, the following general recommendations were provided:</p> <ol style="list-style-type: none"> <li>1) Interventions should be well defined and theory-driven.</li> <li>2) Total community action rather than action targeted towards particular groups help to reduce problems across the total community</li> <li>3) Local participation should be encouraged – mobilization is an essential element.</li> <li>4) A partnership between community groups and researchers should be established.</li> <li>5) Although projects may differ across groups, their implementation includes the five criteria listed above (ie- well defined problem, long-term implementation and monitoring, follow-up period, and a successful result demonstrable at the</li> </ol>

		<p>empirical level which is attributable to the intervention).</p> <p>6) It is easier to change attitudes and beliefs than behaviour.</p> <p>7) Interventions should have multiple components rather than consist of 'one-shot' single interventions.</p> <p>8) Programmes that have the capacity to be institutionalized should be favoured over those that are likely to last solely for the life of the project.</p>
<p>Midford, R., Laughlin, D., Boots, K., &amp; Cutmore, T. (1994).</p> <p>Top down or bottom up: Is one approach better for developing a community response to alcohol harm? Paper presented at APSAD National Conference. Alcohol, Drugs and the Family. Conference Proceedings. Melbourne: Radisson President Hotel, 11 to 13 October 1994. pp.285-292.</p>	<p><b>Countries:</b> Australia</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> The paper is restricted to the Western Australian setting, however other literature is incorporated to highlight the issues identified by these 2 West Australian projects. The two projects are COMPARI (Community Mobilization for the Prevention of Alcohol Related Injury – Geraldton – top down initiated) and Triple AC (Alcohol Action Advisory Committee – Halls Creek – bottom up). 17 references are included in the citation list.</p> <p><b>Focus:</b> The paper compares the effectiveness of top down and bottom up approaches in the prevention of alcohol related harm via community-based interventions.</p>	<p><b>Project implementation is more important to success than initiation.</b></p> <p><b><u>TOP DOWN APPROACHES</u></b></p> <p>The top down, 'problem-drinker specific' approach has been the traditional philosophy when trying to address alcohol problems, however these often ignore the community development principles outlined in the Ottawa Charter on Health Promotion (1986).</p> <p>Necessary preconditions for top-down interventions (from p.287, from Sabatier, 1986): clear and consistent objectives, adequate causal theory, implementation process legally structured to enhance compliance by implementing officials and target groups, committed and skilful implementing officials (requires planning and resources), changes in socio-economic conditions which do not substantially undermine political support or causal theory (may not necessarily be approach specific), support of interest groups and sovereigns (this may be dependent upon community willingness)</p> <p>Top down approaches may be more difficult to sustain once the initial project is complete (harder to institutionalize). May take a substantial time to really grab hold in the community.</p> <p><b><u>BOTTOM UP APPROACHES</u></b></p> <p>Bottom up approaches may be easier to sustain in the long term due to local support and community empowerment - but they do not necessarily achieve better outcomes. There may also be deficits in conceptualising the problems to be addressed and providing adequate solutions to them. Additionally, there could also be a lack of impetus to extend activities / interventions beyond those which are already easily available. Difficulties with this approach include changes in community interests, level of involvement, and feedback to keep the momentum going</p>

		<p><b><u>INTEGRATED APPROACHES</u></b></p> <p>Integrated approaches – this seems to be a way of operating that is garnering significant support in the literature. ‘Top down’ and ‘bottom up’ might once have been viewed as mutually exclusive philosophies, but more often they are now being viewed as complementary processes. Although the initiation of a project may be important, the implementation process may take even greater primacy.</p> <p><b><u>IMPLEMENTATION – KEY FACTORS:</u></b></p> <ol style="list-style-type: none"> <li>1) ambiguity in the policy message (provides scope for negotiation, learning and reformulation of intervention)</li> <li>2) co-ordination between multiple stakeholders (requires a considerable time period to achieve – which is more difficult in top-down initiated projects due to bureaucratic requirements – however the pace must suit the community)</li> <li>3) multiplicity of perspectives and ideologies (need to be able to “bridge the gap” p. 290 by providing information and allowing for the development of a more comprehensive appreciation of the issues involved).</li> <li>4) manner and amount of resource provision (includes fiscal, legal, political and technical – ie knowledge – top down approaches are usually better resourced in these areas)</li> <li>5) politics of planning (need to incorporate conflict resolution, negotiation, and compromise – effective handling of differences via use of power, influence skills and bargaining).</li> </ol>
<p>Gray, D., Saggars, S., Sputore, B., &amp; Bourbon, D. (2000).</p> <p>What works? A review of evaluated alcohol misuse interventions among Aboriginal Australians. <i>Addiction</i>, 95 (1), 11-22.</p>	<p><b>Countries:</b> Australia</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> Systematic review of Australian Aboriginal programmes designed to reduce alcohol-related harm. Scope included evaluated alcohol intervention projects (14 in total), with stated inclusion/exclusion criteria and search strategies. 41 references are included in the citation list.</p> <p><b>Focus:</b> Main areas of investigation were categorized under “treatment”, “health promotion education”, “acute interventions” and “supply reduction”.</p>	<p><b><u>Health promotion</u></b></p> <p>This is the most common intervention after treatment. Both knowledge and behaviour have been the targets. valuations have focused on short term outcomes or process issues. Long term consumption patterns and harm have largely been ignored.</p> <p><b>Koori Alcohol and Drug Prevention Project</b> – Victoria (1985) comprised both treatment and prevention initiatives – implemented by Aboriginal D &amp; A workers in 4 locations. <b>Components:</b> due to funding shortages, had to be limited to Health Promotion focus (education classes, sporting / recreational activities, support for the homeless). <b>Evaluation</b> – unstructured and semi-structured interviews with staff, clients &amp; community members. Focus: 1) description of services 2) impediments to delivery 3) acceptance by community. <b>Results:</b> services well received, but lack of support for D &amp; A workers compromised activities. Pressure was put on D&amp;A workers to provide greater service provision than that for which they were funded (due to Aboriginal people generally not wishing to access mainstream services).</p>

		<p><b>Northern Territory campaign targeting Aboriginal adolescent alcohol abuse (1993)</b> – funded by Commonwealth. <b>Components:</b> 1) bush tour by Yothu Yindi (Aboriginal band) 2) television commercial. <b>Evaluation:</b> qualitative analysis on perceptions of impact of and response to campaign message, quantitative data on exposure to campaign. <b>Results:</b> 1) tour effective in reaching target group in communities visited, 2) highlighted existing anti-alcohol misuse agendas, 3) perceptions of the impact of message were mixed. 4) Exposure to commercial varied 5) Health workers / teachers wanted accompanying information and project materials. <b>Criticisms:</b> ‘top-down’ approach was criticized – lack of consultation with some Aboriginal groups meant that the programme was culturally inappropriate in some areas.</p> <p><b>Karalundi Aboriginal Education Centre Western Australia (1998):</b> Small scale programme. <b>Components:</b> unstated. <b>Evaluation:</b> qualitative data pre and post interventions with treatment and control group. <b>Results:</b> limited positive change in knowledge and behaviour. <b>Criticisms:</b> evaluation faced methodological difficulties due to lack of expertise of programme staff and little support for them. Resourcing – project grant was worth \$17 300, but implementation actually cost and extra \$32 000 on top of this, which had to be covered by people donating time and resources to the project.</p> <p><b>Acute Interventions</b> Three types of interventions have been conducted in this category for Indigenous people: 1) night patrols 2) personal injury prevention initiatives 3) sobering-up shelters. Only the latter has been evaluated. The evaluations focus largely on the cost-effectiveness of such shelters in comparison to incarceration.</p> <p><b>Sobering up shelters:</b> impetus for sobering up shelters – decriminalization of public drunkenness in various jurisdictions. 24 shelters across the country. Aims: 1)to provide temporary haven and supervision of intoxicated people at risk of harm to themselves or others, 2)to provide a more appropriate alternative to placing intoxicated people in police custody, 3) to reduce the likelihood of deaths in custody.</p> <p><b>Study by Daly &amp; Gvozdenovic (1994) in Western Australia:</b> conducted in three WA towns with sobering up shelters, and 1 comparison community without a sobering up shelter. <b>Evaluation:</b> qualitative interviews with Aboriginal people, police and others (n = unspecified ) re 1)attitudes to decriminalization of public</p>
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		<p>drunkenness, 2) attitudes towards sobering up shelters. <b>Results:</b> attitudes towards shelters was largely favourable (well accepted by clients and police). Diversion reduced administrative workload of police.</p> <p><b>McDonald (1985) Darwin and Tennant Creek: Results:</b> 60% of intoxicated people detained by police were diverted to sobering up shelters. Not a cheap initiative, however.</p> <p><b>Midford, Daly and Holmes (1994) Halls Creek Western Australia:</b> in first 15 months of operation, 78% of people detained were diverted to sobering up shelter.</p> <p><b>Alexander (1998) Darwin, Tennant Creek and Alice Springs:</b> in 1985-86 the mean cost per admission in Darwin was \$94, at Tennant Creek \$146 (due to lower admission rate ie lower numbers with admin costs stable). In Alice Springs during first 6 months of operation, cost was \$74 per admission, compared with prison costs of \$82-\$93 per day in NT prisons and hospital day bed costs of \$290-\$350.</p> <p><b>General comments:</b> sobering up shelters appear to be more costly than prison detainment, which is estimated at \$50 per day (note – this figure doesn't include cell staffing costs). However, the benefits include the provision of more comfortable and dignified treatment &amp; possibility of entry into other services (Alexander, 1998), and the added spin-off that establishing such shelters can provide the impetus for further actions to address alcohol misuse and harm (Daly &amp; Maisy, 1993; Midford, Daily &amp; Holmes, 1994).</p>
<p><b>Smith, L. (2000).</b></p> <p><i>Take Your Partners! Stimulating Drugs Prevention in Local Communities.</i></p> <p>Middlesex: Social Policy Research Centre.</p>	<p><b>Countries:</b> United Kingdom</p> <p><b>Substance:</b> All</p> <p><b>Scope:</b> Report reviews 6 community prevention projects in the UK. 36 references are included in the citation list. Inclusion criteria clearly stated, search strategies unstated.</p> <p><b>Focus:</b> All interventions had multiple components, and worked with schools, parents, community groups and young people. Different approaches were adopted which fall into two main categories: 1) community development and 2) regeneration activities. The success of these two approaches is compared.</p>	<p><b>GENERAL OVERVIEW:</b> all projects aimed to involve a broad range of people, to integrate drugs prevention with other local initiatives and to establish an ongoing commitment to community level drugs prevention (which occurred through either a community focus or a focus on statutory agencies). Locations for projects included a multi-cultural inner city estate, white working class districts and areas with proximity to town centres and outer estates. Strategies included action research, multi-agency cooperation and community profiling.</p> <p><b>AIMS OF THE PROJECTS:</b></p> <ol style="list-style-type: none"> <li>1) skill development and knowledge development of local people</li> <li>2) capacity building</li> <li>3) enabling and empowering local communities</li> <li>4) encouraging project ownership</li> </ol>

		<p><b><u>DISTINCTION BETWEEN COMMUNITY INVOLVEMENT AND COMMUNITY DEVELOPMENT – TOP DOWN AND BOTTOM UP.</u></b> Community development was considered long-term and “bottom up”. Community involvement was construed to be the more appropriate term for these projects (both by the community and by the project workers) because the work was short term with specified objectives. Community development was incorporated in the sense that the initiatives were ‘bottom up’ wherever possible and that substance use prevention were located within the local context of concerns.</p> <p><b>Key players:</b> community groups, professional networks, voluntary agencies, local authorities, health authorities, youth services, schools, church/fait h groups and drug prevention teams.</p> <p><b>Project activities:</b> Communities implemented differing combinations of the following activities: youth projects, community skills, schools work, training and awareness, sports projects, community arts, minority ethnic groups, parents, inter-generational work, supporting/developing tenants associations, training/supporting volunteers, peer group work, promotional events, newsletters, information/resources.</p> <p><b>Community consultation - reasons for drug use:</b> lack of things to do, boredom, unemployment, peer pressure and stress. Community beliefs about possible interventions – providing more activities, info and awareness, and involving parents in drug education. Purpose of consultation phase – to gauge existing knowledge amongst community members, to establish a base for interventions and to provide a way to introduce the projects and key people.</p> <p><b>Evaluation:</b> projects were qualitatively evaluated along process dimensions, and included a) the context in which they were initiated b) features of the implementation process and c) resource issues. The monitoring period was approximately two years (Sept 96 to Dec 98).</p> <p><b>Re community partnerships:</b> most were effective. Problems involved a) capacity of partners to deliver b) clarity re timescales c) clarity of objectives and d) (in summary) clear agreement on what was to be delivered, by whom and when.</p> <p><b>Strategic level:</b> a degree of influence was obtained via participation in drugs reference groups, drug action teams and multi-agency steering groups.</p>
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		<p><b>Role of project workers</b> included either dealing with tensions between communities and outside authorities, or deciding when to leave them alone if necessary. Requires skilful negotiation. Perseverance and listening skills were important with disadvantaged communities.</p> <p><b><u>KEY FINDINGS</u></b></p> <ol style="list-style-type: none"> <li>1) community consultation showed a lack of accurate information about drugs</li> <li>2) community development approach empowered communities about their strengths and gave them the sense that they could tackle drug-related problems</li> <li>3) communication improvements between adults and youth were tackled innovatively (eg: parenting skills targeted towards teenagers, creation of opportunities for the development of informal networks)</li> </ol> <p><b>Interventions that succeed are based on: (verbatim list from p. iii)</b></p> <ol style="list-style-type: none"> <li>1) community consultation with clear links to development work</li> <li>2) utilising existing networks</li> <li>3) identifying committed local people who can enthuse and mobilize others</li> <li>4) acknowledging local concerns (of which drugs may <b>not</b> be top of the list)</li> <li>5) establishing and maintaining a shared vision; and</li> <li>6) recognising and dealing with conflict and tension</li> </ol> <p><b>Context:</b> having a framework helps to concentrate effort, co-ordination &amp; communication between activities important, networks and partnerships help to raise drug prevention profile with other agencies, essential – locating community partners to develop activities, valuable – multi-agency steering groups</p> <p><b>PROCESS:</b> community consultation – establish priorities and engage people; discrete and self-contained target area; progress is usually slow, trust building requires time and effort; having a focal point (physical) is useful; locals should be involved in development stages; build on existing work; different groups have different needs – identify them; tension can occur between different groups and appropriate strategies are needed to manage these</p>
<p><b>Holmila, M. (2000).</b></p> <p>The Finnish case: Community prevention in a time of rapid change in national and</p>	<p><b>Countries:</b> Finland</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> Article reviews Finnish prevention programmes – only two</p>	<p><b>WIDER CONTEXT:</b> requires consideration of traditional approaches to handling problems, funding of initiatives, and the role of local organizations. The context needs to be understood before the process and effects of initiatives can be interpreted. Both projects discussed here are a combination of top down and bottom up approaches.</p>

<p>international trade. <i>Substance Use and Misuse</i>, 35 (1&amp;2), 111-123.</p>	<p>have had evaluation components so far – the Lahti Project, and a project planned for Helsinki. There are 6 citations in the reference list.</p> <p><b>Focus:</b> Community action research in Finland to reduce alcohol-related problems</p>	<p><b><u>LAHTI PROJECT</u></b></p> <p>First community based prevention project to be evaluated in Finland. Characterized as “reflexive problem prevention”, in that action and research were conducted simultaneously, with results continuously being fed back into the project to direct actions.</p> <p><b>Components:</b> study of local key informant's thoughts on alcohol policy, primary health care brief intervention, educational events (libraries, shopping malls and local media), youth work, counselling for ‘significant others’ of problem drinkers, server training and creating new networks.</p> <p><b>Evaluation:</b> methodology is interrelated, but can be described in terms of:</p> <ol style="list-style-type: none"> <li>1) what kinds of action produced desired results and to what extent? (outcome evaluation, quantitative and experimental methodology) – ie success is demonstrable at a scientific level</li> <li>2) how was the work carried out and made possible? (qualitative methodology – process related issues)</li> <li>3) why did it produce the results? (qualitative methodology – theory building, action in context and process issues)</li> <li>4) whose task was it or who did it? (project organization and co-operation, sustainability and community ownership) ie – success is demonstrable at the community level</li> </ol> <p><b>Results:</b> heaviest drinkers reduced alcohol use more than those in comparison group. Overall alcohol use level did not differ from comparison group. Significant increase in awareness of social problems related to alcohol use amongst intervention group. Knowledge of alcohol use facts increased. Prevention message reached target groups, and profile of project in community was high. Media articles relating to prevention increased during each educational intervention. New methods of prevention worked became permanent (<i>sustainability / institutionalization</i>) within the community (primary health care, responsible service, assisting families of heavy drinkers and some of the youth work initiatives). Project initiatives were disseminated and transported to other parts of the country.</p> <p><b><u>METROPOLITAN SUBURBS PROJECT</u></b></p> <p><b>General characteristics:</b> Began August 1997 in Helsinki metropolitan area. 3 cities – Helsinki, Vantaa and Espoo with population total of approx 1 million. The project</p>
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		<p>communities are Tikkurila (in Vantaa, local pop approx 38 000, average SES compared to Vantaa in general, described as youthful working-class centre) and Mullypuro (in Helsinki, pop approx 10 000, high density housing, lots of immigrants, high unemployment, strong local identity, not a slum, despite poor statistical indicators). Espoo is the comparison site, which is described as “the average of the characteristics” (p. 117) of the project sites.</p> <p><b>Community consultation:</b> began in Autumn 1997 using a snowballing technique. Data gathering indicated that the problems as perceived by the community were 1) age of first use of alcohol was too low, and consumption was too heavy 2) public drunkenness and related issues were a problem 3) alcohol and drug related violence 4) marginalization and unemployment 5) illegal drug use increasing – frightening to community 6) family problems increasing, and more children being taken into custody due to parental AOD use 7) health and social costs due to AOD use growing, and officials don't know how to plan for future 8) health care professionals don't know what to do with excessive drinkers.</p> <p><b>Prevention and context</b> – both project communities voice similar concerns re problems, but are likely to undertake different types of interventions. In both communities there is a reluctance to engage in policy level alcohol availability issues. Demand reduction is favoured. Prevention specialists have to work hard to keep supply reduction on the agenda.</p> <p><b>Evaluation:</b> flexibility is incorporated into the current model. Team consists of five researchers, two prevention specialists and key activists in the two communities. Outcome and process, pre/post intervention surveys in all three sites. Analysis of existing AOD harm records &amp; interviews with key informants. Process evaluation is to be conducted separately – mechanisms of action and context of action. Targets include: 1) brief intervention as a preventive tool 2) server training – particularly given the changing climate re liquor licensing and outlet growth (focus groups and educational courses are included in the intervention, and representatives on the prevention team include a rep from the restaurant business), 3) attitudinal and group processes that encourage or discourage child and teenage drinking behaviour 4) qualitative key informant interviews re violence in the home 5) success in encouraging local media to print and report on prevention related activities 6) facts on alcohol seminar in Tikkurila 7) ‘village events’ approach in Myllypuro to develop community processes and for carrying out education.</p>
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		<p><b>CONCLUDING COMMENTS:</b> the wider context for the Lahti and Metropolitan projects is quite different due to shifts in the political, cultural and administrative nature of Finland. Challenge is to incorporate the best harm reduction initiatives in a changing climate. Understanding WHY results are achieved is crucial to community based work – so knowledge of outcomes, mechanisms and context is important in order to transfer initiatives to other settings.</p>
<p><b>Giesbrecht, N., &amp; Rankin, J. (2000).</b></p> <p>Reducing alcohol problems through community action research projects: Context, strategies, implications, and challenges. <i>Substance Use and Misuse</i>, 35 (1&amp;2), 31-53.</p>	<p><b>Countries:</b> North America</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> The paper discusses 'several' community-based initiatives to reduce alcohol problems in North America. 54 references are included in the citation list, with the majority published in the 1990's.</p> <p><b>Focus:</b> includes social context, project capacity, goals, objectives and project roles, project design, problem identification strategies, social change models and conceptual framing, &amp; outcomes and implications.</p>	<p>The capacity of community based action research to deliver positive outcomes can be curtailed by the socio-political climate in which they operate. Considerations of likely effectiveness should also include issues of project ownership, power, sensitivity to local approaches and expertise.</p> <p><b>Context analysis:</b> projects need to provide constructive input and answers to the following questions:</p> <ol style="list-style-type: none"> <li>1) How do the project goals fit with ongoing / previous initiatives?</li> <li>2) Are the new initiatives likely to be more effective than current initiatives?</li> <li>3) What aspects of the project have been effective in other contexts?</li> <li>4) If the initiative is markedly different from current understandings of how to address alcohol problems, why should it be done?</li> <li>5) Is the prevention initiative based on previously evaluated interventions?</li> <li>6) Why is the initiative important now?</li> <li>7) Who will manage the project and how will it incorporate local experts and community leaders?</li> </ol> <p>Consideration must also be given to how the project will be positioned with respect to both government (state, provincial, regional) and local priorities re alcohol promotion and alcohol problem management, and the drinking culture in the community.</p> <p><b><u>Capacity</u></b></p> <p>The best estimate of the capacity of a community may be to look at previous prevention initiatives undertaken, and to gauge from them the resources (project participants and other resources) required to bring about a specific level of reduction in drinking related problems. Alternatively, you can examine projects in other locations to see how resource intensive they are. Capacity includes maintaining funding, intervention planning, training and implementation, evaluation and research activities and dissemination. These are particularly important when looking at <b>capacity building</b>, in order to sustain project goals and activities in the longer term. When planning projects, capacity needs to be examined for the following variables:</p> <ol style="list-style-type: none"> <li>1) length of time required to achieve goals</li> <li>2) resources required for implementation and co-ordination</li> </ol>

		<ol style="list-style-type: none"> <li>3) team commitments required</li> <li>4) time needed to build networks</li> <li>5) resources required for community mobilization</li> </ol> <p><b>Developing capacity:</b> this involves issues of staffing, resource allocation, training and activities that meet local needs. An important consideration here is the goal/s of the project. Purely objective indicators (eg positivistic Dependent Variables) do not take into consideration the process-oriented qualitative changes that can occur to enhance community wellness, and to empower communities to advocate for change via procedures, systems, and policies that can in themselves impede access to quality of life at a population level. Some recognition of the differences in skills and goals key players will have, in conjunction with a collaborative effort and utilising appropriately skilled people at appropriate stages of the project, assists in effective programme delivery.</p> <p><b>Early process issues:</b></p> <ol style="list-style-type: none"> <li>1) <i>team building</i> – discussion of primary and secondary project goals, timing, roles and responsibilities. Development of a structure that incorporates all goals and total project focus. Fewer goals may be easier to manage (less demand on project workers, greater clarity, easier evaluation and implementation), but requires lots of negotiation with local groups and participants.</li> <li>2) <i>Project design</i> – suggest using the programme logic model (generic model). Highlights underlying assumptions of project. Five components: 1) implementation/means objectives 2) outputs 3) short-term outcome/ends objectives 4) intermediate outcome/ends objectives and 5) long-term outcome/ends objectives. Model links interventions to evaluation, as well as causal relationships and solutions. Iterations of the model are required throughout the project evolution.</li> <li>3) <i>Problem identification</i> – data identifying the nature and extent of the problem should be gathered from 1) multiple community sources (key stakeholder interviews, archival sources, community surveys official stats) and 2) local, state and national epidemiology (eg from govt agencies, law enforcement, health services etc).</li> <li>4) <i>Information dissemination</i> – info about the project can be given to the community to inform them of the objectives (mobilization), to provide information about the problem, and to counteract pro-alcohol messages from other sources. Information dissemination needs to be timed carefully within the framework of the total project, should use appropriate media and not overstate the aims of the initiative.</li> </ol>
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		<p><b>Conceptual models:</b> when deciding which approach to adopt (eg top down, bottom up, combinations of both strategies etc) the following issues should be considered: 1) who (organizations, groups or individuals) will play the key roles? 2) what types of coalitions are most likely to achieve the goals? 3) where will interference come from and how can these effects be prevented, inhibited or neutralized? 4) what are the main components and what is their relationship to each other? 5) what is the best sequence for activities? 6) what evidence is there for expecting change? 6) what type, size and timing of effort is required to bring about such changes?</p>
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## APPENDIX H: COMMUNITY BASED PROGRAMMES SUMMARY OF PRIMARY STUDIES

Citation	Intervention Details	Findings
<p><b>Moskalewicz, J., &amp; Swiatkiewicz, G. (2000).</b></p> <p>Malczyce, Poland: A multifaceted community action project in Eastern Europe in a time of rapid economic change. <i>Substance Use and Misuse</i>, 35 (1&amp;2), 189-202.</p>	<p><b>Substance:</b> All  <b>Country:</b> Poland  <b>Programme name:</b> Malczyce, Poland  <b>Aims:</b> to demonstrate that community based prevention is possible and feasible in Poland despite current socio-political transitions; to assess community needs regarding drug prevention; to increase public concerns; to facilitate implementation of prevention initiatives; to provide local professionals with skills and techniques for implementation and dissemination of preventive approaches and strategies; to assist change in drug-user treatment; to establish or reinforce structures for perpetuation of increased awareness at the community level; to evaluate the process of implementation of the project as well as its outcomes; to produce materials and strategies for use throughout Poland and other countries of the region.  <b>Key components:</b> Intervention features were based on community feedback regarding perceived priorities for drug prevention. As such, provision of leisure opportunities for young people, public education focussing on promotion of the project and awareness of drug use problems, working with parents, and reintegration of substance misusers were the core intervention features.  <b>Study design:</b> pre/post-test, no control group  <b>Target group:</b> school children were the primary target, with adults targeted in secondary capacity to ensure sustainability of the intervention  <b>Sample:</b> The project was conducted in Malczyce, Poland, a community with approximately 6000 inhabitants, which was experiencing high unemployment and poverty due to an economic crisis leading to the downfall of local industrial plants. A randomly sampled survey of 500 residents aged 15 years or over was conducted both at the formative stages and at the completion of the project.</p>	<p>Participation in the project was uniform across socio-economic groups, with benefits evenly distributed in general. Evaluation of the project showed that 59% thought the project was either fairly good or good, with 4% indicating it was bad or very bad. Amongst youth, positive scores were indicated by 78% of those surveyed, and approximately 40% felt that alternate leisure activities were a good way to prevent drug-related problems, as opposed to deterrence examples (4%). Some impact was seen with awareness of drug issues (<math>p &lt; .05</math>) increasing at the post test level. Sustainability was demonstrated via the emergence of preventive lobbying efforts in the community, and the formation of a new voluntary association funded locally and by the EC. Information provided by focus group members suggested that a decline in drug use could be attributed to the project. The influence on attitudes manifested in the sentiments that prevention, particularly primary prevention, is both an achievable and successful approach., and that substance misusers can be offered community support instead of referrals to specialized treatment services.  <b>Comments:</b> The outcome measures are not clearly specified or reported, making it difficult to evaluate the project in statistical terms.</p>
<p><b>Saxe, L., Reber, E., Hallfors, D., Kadushin, C., Jones, D., Rindskopf, D., &amp; Beveridge,</b></p>	<p><b>Substance:</b> All  <b>Country:</b> USA  <b>Programme name:</b> Fighting Back</p>	<p>The data for the Fighting Back project was still being collected at the time of publication; the programme allowed for data collection over the 10 years of implementation. The quantitative results published in the article were predominantly</p>

<p><b>A. (1997).</b></p> <p>Think globally, act locally: Assessing the impact of community-based substance abuse prevention. <i>Evaluation and Program Planning</i>, 20 (3), 357-366.</p>	<p><b>Aims:</b> The Fighting Back programme aimed to demonstrate the feasibility of reducing substance abuse through comprehensive and coordinated community efforts, via prevention, treatment and aftercare, with consideration of the physical and social environments in which it occurs</p> <p><b>Key components:</b> As this was a broad based National programme, communities were given flexibility to design project goals in accordance with local needs and concerns, while implementing the global concepts of the programme. These concepts include the 'think globally, act locally' dictum, having a shared vision, co-ordinating efforts to effect change (including both hierarchical and vertical community participation), and addressing the multiple causes of substance abuse. All communities had to set up a Citizen's Task Force representing all key constituents of the community. The programmes, although top-down with respect to key conceptual issues, were very much bottom-up regarding local initiatives and implementation</p> <p><b>Study design:</b> multi-method controlled longitudinal</p> <p><b>Target group:</b> varied from community to community</p> <p><b>Sample:</b> The Fighting Back programme was implemented in 14 US locations, varying in demographics and baseline levels of AOD problems and related issues. Although a large sample (N=13929) was surveyed, a core sample of 16-44 year olds (N=500) were surveyed in 12 Fighting Back communities. In addition, a youth over-sample (N=1816) was conducted for 16-22 year olds. A further 12113 people were sampled in comparison sites. All sites were mid to large cities with considerable substance abuse problems. Although there was considerable ethnic and economic diversity in project sites, most had a large ethnic population, and problems with unemployment, poverty and crime</p>	<p>concerned with baseline characteristics, and indicated that there was no difference between the fighting back communities and comparison sites on levels of substance use. The hypothesis that substance use was the result of wider environmental systems was supported in that involvement in the 'substance use system' was the best predictor of substance use when controlling for other variables associated with AOD use such as age, sex, and SES. The data which is reported here is from the early stages of the Fighting Back project, and shows no significant differences between the experimental and control sites in AOD use. However, the authors mention that the variation between experimental sites on a number of variables supports the notion that communities should be allowed flexibility to design their own needs-based interventions. The qualitative data reported is more instructive, demonstrating that groups which can overcome process-related issues such as conflict resolution, show a greater ability to secure additional funding for project continuity and diversification. Further, the form system change can take depends on the state of the system in place. The authors suggest that conflict and conflict resolution may be necessary precursors for systemic change, and that sufficient time must be allowed for this process to occur</p> <p><b>Comments:</b> Final data collection for this project occurred in 2001. The final results would be a useful addition to the database when published</p>
<p><b>Holmila, M (1995).</b></p> <p>Community action on alcohol: Experiences of the Lahti Project in Finland. <i>Health Promotion International</i>, 10 (4), 283-291.</p>	<p><b>Substance:</b> Alcohol</p> <p><b>Country:</b> Finland</p> <p><b>Programme name:</b> Lahti Project</p> <p><b>Aims:</b> To obtain information about the feasibility and possibilities of local prevention of alcohol-related harm</p> <p><b>Key components:</b> The key components of the intervention included discussion regarding local alcohol policy, education and information, health care intervention for heavy drinkers, youth work and self-help for heavy drinkers and their families</p>	<p>The results of the project are not published in this paper, as the evaluation was not complete at the time of publication. The Holmila (2000) review article discusses the findings. The authors do note in this paper, however, that trying to influence alcohol supply is difficult due to vested financial interests from alcohol producers and retailers. For example, purchases of medium strength beer from grocery stores increased across the country, as well as in Lahti, despite a decline in the total amount of alcohol sold in 1992 due to economic recession. Furthermore, an increase in the availability of alcohol via restaurants, and the allowance of extended trading for a new liquor outlet may have an impact on the amount of alcohol being sold and</p>

	<p><b>Study design:</b> Controlled Before / After</p> <p><b>Target group:</b> whole of population</p> <p><b>Sample:</b> The intervention took place in Lahti, Finland, an industrial city with 93 000 residents, located 100km from the capital. Alcohol consumption per capita is higher than in other parts of the country, and unemployment increased from 4% in 1989 to 26% in 1993</p>	<p>consumed in Lahti. However, the researchers expected that some influence over regulating alcohol supply could be attained via gathering and presenting research data regarding responsible service (restricting sales to minors and drunken patrons), as well as reporting data to authorities on alcohol-related levels of violence and disorderly behaviour. They believe this data could support initiatives to influence municipal policy makers to further regulate the supply of alcohol</p>
<p><b>Cheadle, A., Pearson, D., Wagner, E., Psaty, B. M., Diehr, P., &amp; Koepsell, T. (1995).</b></p> <p>A community-based approach to preventing alcohol use among adolescents on an American Indian reservation. <i>Public Health Reports</i>, 110 (4), 439-447.</p>	<p><b>Substance:</b> Alcohol</p> <p><b>Country:</b> USA (Native American)</p> <p><b>Programme name:</b> A community-based approach to preventing alcohol use among adolescents on an American Indian reservation</p> <p><b>Aims:</b> To reduce the rate of substance use, particularly alcohol, by adolescents; to reduce the rate of binge drinking from 45% to 35%; to delay the onset of alcohol use by one year; to decrease drink-driving by 12th graders from 27% to 18%.</p> <p><b>Key components:</b> Educational classes both within and outside the school setting, involving awareness raising and skills development; alcohol and drug free events; public campaigns</p> <p><b>Study design:</b> Controlled Before / After</p> <p><b>Target group:</b> youth, parents and the community as a whole</p> <p><b>Sample:</b> The population (21 900 people, 10% of which are aged 12-17 years) on the reservation was largely Native American, and is comprised of two main tribes. The unemployment rate is high, at 70%, and 35% live below the poverty line. An extremely high suicide rate (20 times that of the national average) was reported in 1985. An approximation of the sample size surveyed is N= 9000, as two surveys were conducted. Almost 4000 people participated in each intervention, but how many of these attended more than one intervention is difficult to ascertain. The sampling method used is unclear.</p>	<p>The decline in overall rate of alcohol use was highest for the American Indian intervention group (15.9 percent decline) in comparison to the other groups overall (8.0). Relative decline rates were 34.9% for the intervention group and 25.2 % overall, however the decline in alcohol use was not statistically significant for the intervention group. For cannabis, the intervention group showed a decline of 17.7% in comparison to no change in the overall groups, while a decline in cocaine use was seen in all groups. The use of inhalants increased for all groups except rural Hispanics, while the use of tobacco also increased amongst all groups - however the relative increase in the intervention group was smaller (12.7%) in comparison to the other groups (29.9%). The authors suggest that the decline in alcohol, and the increase in inhalant use, amongst all groups are trends that have been reported elsewhere in previous years. The decrease in tobacco use amongst the groups in this study runs contrary to the trends observed elsewhere, however. The authors argue that the evidence for the effectiveness of the intervention can only be reported as inconclusive, particularly given the non-randomization of the study design, and low sample sizes in some comparisons that may have affected statistical power</p>
<p><b>Midford, R., &amp; Boots, K. (1999).</b></p> <p>COMPARI: Insights from a three year community based alcohol harm reduction project. <i>Australian Journal of Primary Health-Interchange</i>, 5 (4), 46-58</p>	<p><b>Substance:</b> Alcohol</p> <p><b>Country:</b> Australia</p> <p><b>Programme name:</b> COMPARI</p> <p><b>Aims:</b> to demonstrate the community mobilization could reduce alcohol related injury via changing individual drinking behaviour and the environmental factors that influence it</p> <p><b>Key components:</b> There were twenty two different interventions implemented over three years, which fell into the following 6 major categories: 1) networking and support 2) community development 3) alternate options 4) health education 5) health marketing and 6)</p>	<p>Top down initiation of the project created difficulties in initially obtaining community support for the initiative, as the illicit substance use problem was considered more of a priority for community members, as well as creating problems in institutionalization of the initiatives, as community members did not feel they could fulfil the roles of the project staff once the demonstration phase was complete. Changes to knowledge and attitudes showed an increased awareness of alcohol related issues, and safer 'partying' behaviour was observed as a result. Surveys of key informants and community members reflected these attitudinal changes. Further, 23% of Geraldton residents surveyed had heard of COMPARI. One of its initiatives, the Pick a Skipper campaign, was recognized by 83% of post-test respondents. A statistically significant</p>

	<p>policy institutionalization</p> <p><b>Study design:</b> quasi-experimental</p> <p><b>Target group:</b> whole of population</p> <p><b>Sample:</b> The interventions were conducted in the regional / coastal city of Geraldton, with a population of approximately 25 000 residents. The economic base is diverse, with industries including agriculture and fishing. The demographic base reflects the gendered nature of these industries in Western Australia, with many residents being male</p>	<p>increase was seen regarding community level support for local government councils to limit the number of alcohol-serving outlets in the community. The authors argue that 3 years was not a long enough time frame to see measurable results on a reduction in alcohol-related harm, as many of the targets for intervention were long-term rather than short term goals. However, the institutionalization of the project was considered successful, as the COMPARI initiatives were eventually taken over by the community with further funding accessed to maintain the initiatives; it is now the biggest provider of drug and alcohol services in the region</p>
<p><b>Hanson, B. S., Larsson, S., Rastam, L. (2000).</b></p> <p>Time trends in alcohol habits. Results from the Kirseberg Project in Malmo, Sweden. <i>Substance Use and Misuse</i>, 35 (1&amp;2), 171-187.</p>	<p><b>Substance:</b> Alcohol</p> <p><b>Country:</b> Sweden</p> <p><b>Programme name:</b> Kirseberg Project</p> <p><b>Aims:</b> to develop and evaluate new alcohol consumption prevention strategies and methods at the local level; to influence the alcohol consumption patterns at the population level in order to reduce alcohol related harm</p> <p><b>Key components:</b> Community mobilization; awareness raising of alcohol consumption via newsletters, an alcohol consumption questionnaire, and information on how to moderate drinking; exhibitions and public lectures; courses on alcohol to schools, health care centres and other local organizations; skill training for teachers; screening for heavy drinkers at health care centres; efforts to reduce the availability of illegally produced alcohol, and beer to young people under 18 years of age</p> <p><b>Study design:</b> mixed design with no control</p> <p><b>Target group:</b> whole of population</p> <p><b>Sample:</b> The intervention was conducted in the Kirseberg area located in Malmo, Sweden. Kirseberg has a population of approximately 11,000 residents, most of whom are employed. In 1990, 18% of residents were aged 65 years or over, and 9% were aged under 6 years. Total N= 1888, selected by simple random sampling. The age of participants varied. Data is reported for 24-45 year olds</p>	<p>A decline in alcohol consumption was seen for 24-45 year old males, but not for females, across the intervention period. Similarly, a decline in alcohol problems was also observed in males but not females. It should be noted that baseline levels for females in both cases were much lower than for males. At the completion of the project, prevention activities were continued by the Kirseberg Council.</p> <p>This study reports largely cross-sectional data, and there is no control group. The authors discuss the limitations of their design and interpret results accordingly</p>
<p><b>Wagenaar, A. C., Murray, D. M., Wolfson, M., Forster, J. L., &amp; Finnegan, J. R. (1994).</b></p> <p>Communities mobilizing for</p>	<p><b>Substance:</b> Alcohol</p> <p><b>Country:</b> USA</p> <p><b>Programme name:</b> Communities mobilizing for change on alcohol (CMCA)</p> <p><b>Aims:</b> To alter community policies and practices affecting the availability of alcohol to underage youth</p>	<p>The researchers report the study design here, rather than the results.</p> <p><b>Comments:</b> This is a very useful article to demonstrate how to conduct a large scale community based project, with a particular target or focus, that is well evaluated to demonstrate evidence of effect at the scientific level. The process evaluation also allows for an assessment of whether the project was also perceived as effective by the community. The complexity is rated as "high" due</p>



<p>change on alcohol: Design of a randomized community trial. <i>Journal of Community Psychology</i>, (Special Issue), 79-101.</p>	<p><b>Key components:</b> The project was designed to utilize the community as the mechanism for change, with an emphasis on influencing policies and practices, rather than individual behaviour. It also intended to build community capacity for problem solving.</p> <p><b>Study design:</b> randomized controlled before / after, with nested interrupted time series</p> <p><b>Target group:</b> underage drinkers</p> <p><b>Sample:</b> 15 communities (7 experimental, 8 control) matched on state, presence of a residential college or university, population size and baseline alcohol purchase surveys. All communities were located in Minnesota or Wisconsin, USA. Total N=18 000, including both male and female participants. Underage drinkers, &lt;21 years, were the focus of the study</p>	<p>to the sophisticated evaluation components.</p>
<p><b>Goldstein, R. B., &amp; Buka, S. L. (1997).</b></p> <p>Perceived effectiveness of community-based measures against alcohol misuse among "problem" and "nonproblem" drinkers. <i>Substance Use and Misuse</i>, 32 (5), 507-554.</p>	<p><b>Substance:</b> alcohol</p> <p><b>Country:</b> USA</p> <p><b>Programme name:</b> Rhode Island Community Alcohol Abuse and Injury Prevention Project (CAAIPP)</p> <p><b>Aims:</b> to measure the perceived effectiveness of alcohol control / prevention strategies in the community.</p> <p><b>Key components:</b> responsible server training; enhanced enforcement of alcohol-related laws to prevent alcohol misuse and injury, particularly road crashes and assaults.</p> <p><b>Study design:</b> cross-sectional</p> <p><b>Target group:</b> alcohol drinkers</p> <p><b>Sample:</b> Urban communities, with populations ranging from 19400 to 45300 residents. Simple random sampling was used to select the 720 participants. The median age of residents ranged from 29-32 years. Local industries included resorts and a military installation. Each community had a local police station, newspaper, radio station/s, public school district and one or more hospitals. White, Italian, French-Canadian and Irish were the main ethnic groups represented. Participants were both male and female, with a median age of 38 years.</p>	<p>The community perceived the most effective prevention/control strategies as school based programmes, server training, and stricter drink-driving laws. The least effective strategies were considered to be stronger warning labels on alcohol containers, lower BAC levels for drivers, and increased alcohol taxation. Males were significantly less likely than females to rate each of the strategies as effective, and binge drinkers were significantly (<math>p &lt; .05</math>) less likely than non-binge drinkers to rate 9 of the 11 control measures as effective, with the exceptions being server training and workplace programmes, after controlling for age, gender and marital status. There was an inverse relationship between perception of control measures being effective and educational attainment level. The authors conclude that as binge drinkers are less likely to perceive measures such as lowering BAC levels, and greater law enforcement of drunk driving as effective, they are at greater risk of alcohol-related harm. Further, large sections of the population (males and binge drinkers) may be resistant to direct interventions designed to reduce alcohol-related harm, and more receptive to broad-based, less invasive methods. The authors suggest that strategies shown empirically to be most effective in reducing alcohol-related harm, such as lowering BAC levels, increased taxes, random breath testing and license revocation, are those less often considered effective by those most at risk of harm. In conclusion, the authors suggest that measures of perceived effectiveness should be used rather than measures of support for interventions to gauge community beliefs accurately.</p>
<p><b>Holder, H., Gruenewald, P. J., Ponicki, W. R., Treno, A. J., Grube, J. W., Saltz, R. F., Voas, R. B., Reynolds, R.,</b></p>	<p><b>Substance:</b> Alcohol</p> <p><b>Country:</b> USA</p> <p><b>Programme name:</b> Community Trials Project (CTP)</p> <p><b>Aims:</b> to reduce alcohol-related injury and trauma</p>	<p>From the abstract: "Population surveys revealed that the self-reported amount of alcohol consumed per drinking occasion declined 6% from 1.37 to 1.29 drinks. Self-reported rate of "having had too much to drink" declined 49% from 0.43 to 0.22 times per 6-month period. Self-reported driving when "over the legal limit" was 51% lower</p>

<p><b>Davis, J., Sanchez, L., Gaumont, G., &amp; Roeper, P. (2000).</b></p> <p>Effect of community-based interventions on high-risk drinking and alcohol-related injuries. <i>Journal of the American Medical Association</i>, 284 (18), 2341-2347.</p>	<p><b>Key components:</b> Community mobilization through the formation of community coalitions and media advocacy; assistance with measures to reduce harmful drinking in licensed premises, including responsible service training; reduce underage drinking via access to alcohol through retailers, and increase enforcement of underage drinking laws; increase actual and perceived risk of detection for drink driving via increase law enforcement efforts; community assistance with zoning and other laws to control outlet density.</p> <p><b>Study design:</b> interrupted time series</p> <p><b>Target group:</b> excessive binge drinkers and/or underage drinkers</p> <p><b>Sample:</b> Participants, male and female, were (total N&lt;5400) were randomly sampled. The age of participants varied, although underage drinkers were one of the target groups. The intervention took place in the USA, with 3 matched intervention communities (northern California, southern California, and South Carolina).</p>	<p>(0.77 vs 0.38 times) per 6-month period in the intervention communities relative to the comparison communities, nighttime injury crashes declined by 10% and crashes in which the driver had been drinking declined by 6%. Assault injuries observed in emergency departments declined by 43% in the intervention communities vs the comparison communities, and all hospitalized assault injuries declined by 2%".</p> <p><b>Comments:</b> This is an extremely well designed intervention and study, with clear targets for reducing alcohol-related harm. Few studies show this level of sophistication in design and analysis</p>
<p><b>Itzhaky, H., &amp; Gropper, M. (1997).</b></p> <p>An exploratory profile of the anti-drug authority coordinator in Israel. <i>Social Work in Health Care</i>, 25 (4), 37-53.</p>	<p><b>Substance:</b> All</p> <p><b>Country:</b> Israel</p> <p><b>Programme name:</b> National Anti-Drug Coordinator</p> <p><b>Aims:</b> to provide leadership and develop and strengthen the community response system to prevent and treat substance misuse</p> <p><b>Key components:</b> see findings</p> <p><b>Study design:</b> descriptive exploratory</p> <p><b>Target group:</b> anti-drug coordinators in Israel</p> <p><b>Sample:</b> The purposive sample consisted of 70 of the 74 anti-drug coordinators in Israel, the majority of which are university-educated social workers. Ethnicities represented include Jewish, Moslem and Christian, including both male and female. The respondents were aged 23-58</p>	<p><b>Results:</b> The five categories of roles, identified through factor analysis with varimax rotation, included 1) community assessment and social broking 2) assisting in community interventions 3) community coordination 4) direct planning and implementing of anti-drug services and 5) supervision and consultation. The most priority was given to the community assessment and social broking role, followed by community coordination, supervision and consultation, direct planning and implementation of anti-drug services and assistance in community intervention respectively. The types of anti-substance use events facilitated by the coordinators included school based events, and community-based programmes. Many of the community programmes involved an education component. The authors suggest that anti-substance use coordinators are adopting a public health approach to substance misuse prevention, in that they take both a macro and micro approach to substance use related problems. Their goals include needs assessment and system development, system organization, maintenance and enhancement of existing services, provision of anti-drug services, and improving service delivery. The exception has been the workplace setting, in which very little is being done due to local sensitivity towards the issue. The authors suggest this is a serious gap in service provision and needs to be addressed. The papers specifically states that evaluation of effectiveness is not part of the present study</p> <p><b>Comments:</b> although this paper is descriptive rather than evaluative, it does provide some insight into what is being done in Israel, a developing country, at the community level to reduce the grow problem of increasing substance use and substance use -related harm.</p>
<p><b>Wang, W. (1999).</b></p>	<p><b>Substance:</b> All</p>	<p>Self-reports from participants after an average of 12 months in the programme</p>

<p>Illegal drug abuse and the community camp strategy in China. <i>Journal of Drug Education</i>, 29(2), 97-114.</p>	<p><b>Country:</b> China  <b>Programme name:</b> Community Drug Rehabilitation Camp Strategy  <b>Aims:</b> to detoxify and rehabilitate drug users, particularly illicit drug users  <b>Key components:</b> Mass media propaganda; mobilization of the health and social security systems to provide rapid detoxification, rehabilitation and employment  <b>Study design:</b> qualitative  <b>Target group:</b> drug users, particularly illicit drug users, in China  <b>Sample:</b> The participants were sampled (method unclear) from two camps in Xian and Shenzhen. The majority are male, with educational attainment at the junior high school level or lower. Total N=243, both male and female. Participants ranged in age from 15-42 years.</p>	<p>indicate a rehabilitation rate of 80%. The key components of the programme appear to be based on "Chinese Correct Thought" - doing that which is beneficial to self and others (desirable), doing that which is beneficial to the self but harms others (undesirable), and doing that which harms the self and others (least desirable). Approximately 56% believed that the camp strategy was helpful and necessary, and 62% believed the camps provided them with mental and physical help. Methadone and traditional herbs are used in the detoxification process. Major drug traffickers are sentenced to execution in China, but those who deal at a lesser level or are 'recidivists' are incarcerated for long-term sentences of three years or more - these people tend to believe the camps are less helpful and liken them to "jail" (p. 109). Negative comments from substance users about the camps include analogies to prison, discrimination from staff, lack of advocacy resulting in suicidal acts by participants, and lack of an individualized treatment approach. 18% of those interviewed believed that the camp strategy would not change their behaviour. The author suggests that other policy avenues, such as addressing issues like unemployment, poverty, and educational access may be of use. Further, the camp strategy has a narrow focus which could be complemented by a range of alternative options. Treatment may be more successful if conducted in a less stigmatizing and non-discriminatory environment, with better facilities for participants.</p>
<p><b>Barrett, M. E., de Palo, M. (1999).</b></p> <p>Community-based intervention to reduce demand for drugs in Northern Thai tribal villages. <i>Substance Use and Misuse</i>, 34(13), 1837-1879.</p>	<p><b>Substance:</b> Heroin and other drugs  <b>Country:</b> Thailand  <b>Programme name:</b> Integrated Drug Abuse Prevention Project (IDAP)  <b>Aims:</b> to reduce demand for and use of drugs; to decrease the spread of heroin use; to build capacity among tribal villages and local government agencies to control the drug problem in villages  <b>Key components:</b> The intervention consisted of four major components: 1) community preparation and strengthening, via mechanisms such as training and multimedia, 2) treatment and rehabilitation, largely within villages 3) capacity building involving training of government officials and creating links between government and non-government agencies and 4) empowerment of villagers through an emphasis on awareness raising, ownership, participation and sustainability  <b>Study design:</b> observational  <b>Target group:</b> heroin users  <b>Sample:</b> Participants were purposively sampled from 85 villages in Northern Thailand were targeted for the intervention. These communities were experiencing a rapid upsurge in heroin use, social</p>	<p>New cases of substance use dependence were low in all 85 sites during the project, although many drug users left villages during its implementation. A 65% decrease in addicts living in the villages was found between June 1995 and November 1997, but this may have been due to out-migration of addicts. A decrease of 5.5% was seen in the number of heroin addicts from December 1995 to October 1997, although this may also have been linked to availability. Awareness raising campaigns were successful in 8 of the 11 sites visited, indicated by good attendance, and increased knowledge of substance use related harms. Overall, villages were able to detoxify approximately 2/3 of people with dependence problems presenting for treatment, although the relapse rate was about 67% on average. Qualitative data regarding entry to treatment indicated that most people were motivated to detoxify for financial reasons, because of village regulations against substance use, and due to encouragement from family and friends. Relapse was linked to presence of a strong addict subculture in the village, failure to integrate back into village life, working in or visiting areas where substance use was high, and in a few cases, resumption of use to control chronic pain. Follow up data (both qualitative and quantitative) showed great variability in the sustainability of the intervention, and of the levels of heroin use in the community 6 months after project completion. In some villages, knowledge and awareness of substance issues was improved, and substance use was a less 'public' activity. Relapse was linked to the previously mentioned factors,</p>

	<p>disintegration due to a shift to a cash-based economy, and pressure from drug dealers to buy and use heroin. The sample size is unspecified. Ethnic groups surveyed were predominantly Karen, with Lisu, Lahu and Hmong in some villages. The participants were both male and female, and the age range of participants varied.</p>	<p>as well as lack of intervention activities. The high profile of the IDAP project and its links to outside government agencies kept drug dealers at bay during the project, but once it ceased, villages felt they had less control and weaker defence against the threats of the dealers, and had a need for greater law-enforcement efforts to assist them. The researchers suggest that more effort could have been directed at creating links between villages with strong leadership to those with weaker leadership to countermand these effects. In addition, it was felt that an intervention period of 5 years, with greater funding levels, would have enhanced the efficacy of the project and assisted in sustainability.</p> <p><b>Comments:</b> Like many community-based studies, evaluation is a major concern in this project. The evaluation was not planned prior to the intervention, and no baseline data was gathered. The authors argue that the inter-village consistency in results (found in retrospective data collection) lends to their reliability, however.</p>
<p><b>Mohan, D., &amp; Sharma, H. K. (1987).</b> Health education intervention programme on non-medical use of drugs in the community – an Indian experience. <i>Health Education Research</i>, 2 (4), 337-345.</p>	<p><b>Substance:</b> Alcohol and Tobacco <b>Country:</b> India <b>Programme name:</b> Health Education Intervention Programme in India <b>Aims:</b> To gather baseline data on size of substance misuse and the extent to which these are perceived by the community to be linked to alcohol and tobacco; to develop a health education package relating to alcohol and tobacco; to examine the best technique of delivering the health education materials; to evaluate the effectiveness of both the package and its delivery. <b>Key components:</b> New health education materials were produced for the intervention, due to lack of appropriate pre-existing materials. A slide-tape series was produced which was presented to small groups, allowing for interaction after the presentation, ease of presentation to a small number of people, and ease of clarification of issues. The presentation was thematic and narrative, with the presentation of adverse health consequences relating to alcohol and tobacco use. <b>Study design:</b> controlled before/after <b>Target group:</b> users of alcohol and tobacco, believed to be at high risk of drug-related harm <b>Sample:</b> A cluster sample of people previously living in urban slums in Delhi, who had been relocated to resettlement areas, participated in the intervention. They were selected on the presumption that high levels of tobacco and alcohol use would be prevalent, based on</p>	<p>At short term follow-up, the prevalence of current male alcohol users was lowered by 5.3%, which was maintained at long-term follow-up. The proportion of past users almost doubled at both short and long-term evaluations. Those who never used remained stable. In comparison, the control group experienced a 7.2% increase in alcohol intake in the short term, and approximately a 5% increase at long-term. Approximately 6-7% of those males indicated that they had never used alcohol at baseline began alcohol use between the short and long-term evaluation. The number of women in both groups was too small to make any statistical comparisons regarding alcohol use. For tobacco use in the experimental group, a statistically significant reduction was found at both evaluation points for cessation of tobacco use. The number of non-users did not change across the time period. Current tobacco users in the control group showed statistically significant increases in tobacco use in both short term (4.0%, <math>p &lt; .05</math>) and long-term (5.7%, <math>p &lt; .001</math>) evaluations. Women in the experimental group showed a decline in use amongst current users of 4.7% and 5.1% at respective evaluation points, while those who never used remained stable. The control group of women who currently used tobacco showed a marginal increase in use, and the number who reported cessation (1.5%) were approximately the same at both assessments. In summary, the authors suggest that the intervention was able to influence approximately 32% of alcohol users to moderate or cease alcohol use, although the figure drops to approximately 19.7% at long-term evaluation. Tobacco use was similarly reduced by 40% at short term and 27.3% at long term evaluations.</p>

	evidence of illicit alcohol consumption resulting in death in these areas. Access to electronic and press media existed in these communities. Groups were selected based on geographical proximity (20km separation between communities), and access to health care services and other community resources, and were matched on socio-demographic and socio-economic variables. Total N=2098. Participants were aged 15 years or older, and were both male and female.	
<p>Fawcett, S. B., Lewis, R.K., Paine-Andrews, A., Francisco, V. T., Richter, K. P., Williams, E. L., &amp; Copple, B. (1997). Evaluating community coalitions for prevention of substance abuse: The case of Project Freedom. <i>Health Education and Behavior</i>, 24 (6), 812-828.</p>	<p><b>Substance:</b> All  <b>Country:</b> North America  <b>Programme name:</b> Project Freedom  <b>Aims:</b> to bring about policy, programme and practice changes to reduce risk. Evaluation aim: to demonstrate the utility of an evaluation system to examine process, outcome, and impact of community coalitions to prevent substance misuse.  <b>Key components:</b> Both top down and bottom up strategies used by a 100-organization coalition.  <b>Study design:</b> Quasi-experimental. The process data was conducted as a time series, without pre-programme data. For outcome variables, archival data was compared with post-intervention data.  <b>Target group:</b> children and adolescents, as well as the entire community of Sedgewick County  <b>Sample:</b> The purposive sample comprised children and adolescents aged 12-17 years residing in Wichita, Kansas, (population 311 300) and Sedgewick County (pop 403, 662). The sample size is unspecified, but varied for different evaluation components.</p>	<p>1) <b>community mobilization:</b> initial rates were low, but increased significantly after the appointment of a community organizer and completion of the action plan. Losses to key staff created a lull in activity, and levels of activity after the new appointments were not equivalent or sustained in comparison to those seen with former personnel. No explanation or rationale is provided. 2) <b>changes as a result of coalition:</b> a new youth community programme was set up, a US\$25 000 scholarship programme for community college was established to support at-risk students needing support, council granted approval for a drive-by shooting ordinance which increased the maximum penalty to 1 year, DUI victim impact panels were established as part of substance misuse sentencing. 3) <b>changes in reported use by youth in Sedgewick County of alcohol &amp; other substances (note – intervention group stats are from high school surveys):</b> alcohol use was reduced from 25.1% to 21.9% compared to 25.2% to 23.3% statewide; cocaine use was reduced from 2.1% to 1.6% in comparison to 2.0% to 1.9% statewide; regular use of cigarettes increased from 24.3% to 25.3% compared to an increase from 22.2% to 22.9% statewide; smokeless tobacco increased from 7.1% to 9.1% with statewide comparisons showing a reduction from 10.2% to 9.9%. The conclusion was that effects of the interventions were modest for alcohol, marijuana and cocaine, while failures in reducing tobacco use indicated that tobacco control strategies needed to be targeted more. 4) <b>community level impact on substance misuse:</b> single nighttime vehicle crashes (the key indicator) during implementation of the action plan showed that rates went down more sharply and in a more sustained manner in comparison to state levels and those of another comparison county. The evaluators suggest this may be due to the intervention, although other factors (eg granting of DUI prevention grants) may have accounted for some of the change (see next point). 5) <b>community level impact and relationship to changes facilitated by coalition:</b> reductions in crashes only occurred after numerous community changes. The pattern of crash increases and decreases coincided with decreased and increased community actions respectively – the evaluators therefore suggest that decreases in crashes are likely to be linked to increases in changes brought about by community action.</p>

		<p>To produce / maintain good results in community level indicators, sustained community changes may be necessary.</p> <p><b>Comments:</b> The study design, although containing elements of time series and before-after components, does not strictly fit either of these categories, therefore the study has been categorized as "other" and evaluated as such.</p>
<p><b>Rocha Silva, L. (2000).</b> An Evaluation of the project "Prevention of Substance Abuse among Young People in South Africa". Pretoria: CADRE</p>	<p><b>Substance:</b> All  <b>Country:</b> South Africa  <b>Programme name:</b> Prevention of Substance Abuse among Young People in South Africa (PSAY-SA)  <b>Aims:</b> to strengthen efforts to prevent the harmful consequences of alcohol and other drug use.  <b>Key components:</b> Two phases – the first phase was designed to build capacity, revitalize the existing coordinating body and develop an action plan. The second phase involved the activation and linking of three prevention projects.  <b>Study design:</b> single group pretest-posttest  <b>Target group:</b> young people  <b>Sample:</b> Young people in South Africa participated in the projects; a number of people were trained to implement and manage the interventions in order to build capacity.</p>	<p>The project was considered to be successful on the following criteria: collaboration occurred between groups that had formerly been opponents; cost-effective prevention resulted via partnerships and the belief in the capacity to raise quality of life; prevention activities were initiated in very under-resourced rural areas. Cross-fertilization of knowledge, effective use of resources, participatory action and collaboration, and successful implementation were considered to be the facilitators of success. Other factors included a solid structural framework, consideration of contextual issues, the development of good infrastructure, involvement and training of target groups in the planning and implementation of the projects, and collaboration between projects. Inhibiting factors including exclusion of supply reduction, neglecting socio-economic contributors to initiation and maintenance of substance use, and a focus on the individual rather than on the collective. Sustainability of the project in the long term could be hampered by the need to expand the administrative aspects of the co-ordinating body.</p>

## APPENDIX I: SCHOOL BASED PROGRAMMES SUMMARY OF FIRST LEVEL REVIEWS

Citation	Extensiveness	KEY FINDINGS
<p><b>Bruvold, W. (1993)</b></p> <p>A meta-analysis of adolescent smoking prevention programmes. <i>American Journal of Public Health</i>, 83, 6: 872-880.</p>	<p>1970's – 1980's. systematic search; criteria specified; school based smoking; four classifications defined; 84 reports from 94 programmes.</p>	<p>Programme Classification</p> <ol style="list-style-type: none"> <li>1. Rational: information approach: substance use effects and consequences – lecture, question answer, displays substances.</li> <li>2. Developmental: affective education. Increase self esteem, reliance, decision making, interpersonal skills. Minimal focus on substances use. Lecture, discussion, group problem solving and minimal role play.</li> <li>3. Social norms: alternatives approach. Reduce alienation, increase self esteem, reduce boredom, minimal or no substance use focus. Participation in community projects, vocational training, tutoring, recreational activities.</li> <li>4. Social reinforcement. Social pressures approach. Develop abilities to see social pressure to use drugs, skills to resist, identify immediate social and physical consequences of substance use. Discussion, behaviour modelling, role playing, extended practice, public commitment not to use.</li> </ol> <p>Studies in all four approaches had an effect on knowledge –commonly including a didactic sub-component of knowledge (greatest effect size social reinforcement at first follow-up 1.26). Knowledge component in all types of programmes impacted on knowledge.</p> <p>Attitude: not as positive results as knowledge. Social reinforcement programmes greatest effect size 0.51. Followed by developmental programmes (0.12, 0.40). Social norms, too small number of programmes couldn't calculate effect size. Attitude small number of measures, new approaches were more successful in changing attitudes (developmental, social norm, social reinforcement).</p> <p>Behaviour: Social reinforcement programmes (0.27 – 0.62) and social norm programmes (0.19-0.55) greatest positive effect. Developmental programmes mostly positive effect (some negative); rational programmes mix positive and negative (not sig.). Behaviour: new programmes greater impact than traditional rational programmes. Rational programmes very little effect on behaviour. Social norm and developmental programmes both had an intermediate impact on behaviour and social reinforcement programmes had greatest impact on behaviour. Attitude was related to behaviour change where as knowledge change was not.</p> <p>Effect size was lower for the better methodology studies.</p>

		<p>Larger effect size always associated with higher grade levels. Sometimes with fewer sessions, fewer secondary programme elements and earlier publication (&lt;1985) and sometimes with the opposite.</p> <p>Should carefully assess primary behavioural norms and control beliefs held by the target group and then develop educational activities designed to modify these beliefs attitudes and norms.</p> <p>Programmes should include experiential learning (activity skills based learning).</p> <p>Need to continue to evaluate programmes to increase knowledge to see if diffusion to schools works (most evaluations based on research). Need more about the longer term effects of these programmes.</p>
<p><b>Foxcroft, D., Lister-Sharp, D., and Lowe, G. (1997)</b></p> <p>Alcohol misuse prevention for young people: A systematic review reveals methodological concerns and lack of reliable evidence of effectiveness. <i>Addiction</i>, 92, 5: 531-538.</p>	<p>1966-1995.</p> <p>Systematic extensive search; databases listed; criteria specified; behavioural outcome focus; 33 studies met criteria.</p>	<p>The majority of good quality evaluation from the late 1980's onwards. Most short term studies (up to 1 year) ineffective, several reported increases in alcohol use, three positive effect – no curricular differences between them (social skills training and knowledge based education).</p> <p>Mid term followup (1-3 years). Five found behaviour change - minimal, 5 no evidence of change, 2 increased drinking (social skills, knowledge, affective education).</p> <p>Long term (over 3 years). Two studies. One study effective after six years (Botvin). Found less self –reported drunkenness (multi modal). Students attended at least 60% of programme. One study medium but no long term effect (information and social skills).</p> <p>Many studies have methodological problems.</p> <p>There is a need to carry out well-designed scientific evaluations of programmes.</p> <p>Effectiveness of programme to change behaviours is crucial.</p> <p>If programme has not been evaluated then purchases should be made aware of this.</p>
<p><b>Hansen, W. (1992)</b></p> <p>School based substance abuse prevention: A review of the state of the art in curriculum, 1980-1990. <i>Health Education Research: Theory &amp; Practice</i>, 7, 3: 403-430.</p>	<p>1980-1990.</p> <p>systematic; electronic database search and table of contents from selected referenced journals; criteria specified; late primary and secondary school programmes; excluded tobacco only programmes; 12 types of programmes defined; 41 curriculum programmes.</p>	<p>When poor designs were excluded: Information/values classification neutral (30% positive, 30% neg, 40% neutral). Affective programmes more likely to be positive (42%, 33% neutral, 25% negative). Social influence mainly positive (63%, 26% neutral, 11% neg). Comprehensive results most positive 72% and 28% neutral. Of these two project most contribution to success Life Skills Training and STAR.</p> <p>Programmes gained better results if well or completely delivered (fidelity). Most promising results seem to be with multiple components. Comprehensive and</p>



		<p>social influence most effective but don't know if additive or combined effect or the exclusion of one or more key components. Other strategies may work but poor design flaws don't let them be found.</p> <p>Knowledge programmes have been characterized as low impact but in this review suggests that the role of information remains important. But information alone is not sufficient.</p>
<p><b>Sharp, C. (1994)</b></p> <p><i>Alcohol education for young people: A review of the literature from 1983-1992.</i> National Foundation for Education Research. (No place documented).</p>	<p>1983-1992. systematic; search strategy defined (11 databases, contacts with various organizations); criteria specified; broader than school but majority school-based; 21 studies met criteria.</p>	<p>Most studies originated in US and most school based.</p> <p>Knowledge: 18 assessed for knowledge 10 reported positive results. No negative results, some no difference.</p> <p>Attitudes: 8 out of 19 neutral results. 5 positive results – none showed negative results. 6 mixed results.</p> <p>13 studies no knowledge assessment and 12 didn't assess attitudes – methodology issue.</p> <p>Behaviour: Majority neutral effects for drinking. 6 positive effects, 6 mixed effects In most cases programmes seem to have a greater effect on non-drinkers than on drinkers.</p> <p>Easier to improve knowledge than attitude. Behaviours most difficult to change. Alcohol education programme largely ineffective in improving attitudes and affecting behaviour. Behaviour change in six programmes few common characteristics. Most used: active learning methods; small group work; training for teachers. However some of the unsuccessful programmes also had these features. Social influence approach not effective with alcohol. Maybe because of acceptability of alcohol use in society.</p> <p>Feature of more successful programmes include: teacher training; peer tutors, use of active learning methods. Classroom time, teacher training and materials all relate to programme success.</p> <p>Recommend that school programmes include parents and form part of community wide initiatives.</p> <p>Teacher training needed. Cascade model (train the teacher training) not very successful because of lack of confidence, skills and experience in training</p>

		<p>colleagues – can be effective in teaching knowledge and to a less extent in changing attitudes and improving skills. 20 hour training change knowledge and attitudes – after three years knowledge change still there but attitude not. Many support follow-up training.</p> <p>Overall broad conclusion: 1) difficult to summarize given inconclusive nature of results that point in contradictory directions; 2) social influences approach no negative results for knowledge attitudes or behaviour. Suggests that limited negative results in most recent publications (social influence) could be because publishers haven't been publishing negative papers – won't ever know this; 3) knowledge gains are more easy to get than attitudes and behaviours; 4) harder to gain positive outcomes for alcohol than other substances; 5) include active learning methods; 6) provide peer leader and teacher training. Extra cost of peer leaders cannot be justified in terms of enhancing programmes. Further research in peer leaders needed; 7) programme length did not yield any association with success in behavioural terms.</p> <p>There is a need for large scale longitudinal studies of new approaches which look at the impact of programmes for different groups of participants. Also more research on the effectiveness of peer leaders, using former alcoholics in classes, parental involvement and work of theatre education companies.</p> <p>Study design. Absence of control or comparison in earlier studies. Assignment of students to treatment or control conditions – school as unit of assignment, practical and delivering of programme to some students in class but not others, contamination if treatment and control student in same school. One answer of too few schools is matching schools on a number of variables prior to random assignment of schools (matched sets). Some have too small sample selection to produce meaningful results. White middle class populations. Longitudinal studies needed. Many programmes start before alcohol use to impact on students before use occurs need post test measured over time to see any effect. Long term evaluation also helps to indicate when programme effects start to decline.</p> <p>Measures. Reliance on knowledge and attitude rather than behaviour, validity of self report data, and the reliability, validity and comparability of measures used by different researchers. Measure the impact of implementation of success; measure mediating variables as well as substance use (eg if self esteem is in the programme to impact on substance use measure self esteem as well as drug use).</p>
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		<p>Analysis. Debate on the appropriate unit of analysis eg student vs school. Should be the same a unit of allocation (Battjes and Bell: 1985, Botvin and Wills: 1985). Because results could be influenced by class and school effects. Multilevel modelling takes into account of the hierarchical nature of data. Use student data to analyse but makes allowances for underestimation of standard errors due to calls and school effects (Goldstein and Griffin 1987; Raudenbush and Willms 1991). Analyse for different sub groups to see if the intervention has a differential effect.</p> <p>Criticism for reporting percentage change rather than tests of significance because magnitude can be misrepresented. Some selective and inaccurate reporting and weak interpretation of results. Should include programme goals, content, study design, sample size, characteristics, measures, analysis, results and discussion.</p> <p>Abstinence based alcohol programmes may be fighting a losing battle against social norms which support alcohol use. Abstinence based programmes unlikely to succeed unless social context becomes less supportive of alcohol. Look into involving former alcoholics of same age, peer leaders – continued research on costs and benefits.</p> <p>Community wide programmes mass media, community groups and school and family alternative answer to abstinence based programmes.</p> <p>Differential effect on groups: more research – noted to be difficult with heterogeneous school populations without stigmatising.</p> <p>Obvious gap in research literature. Need more well conducted studies outside US. Need qualitative research to find out meaning as well and quantitative – helps illuminate reactions of participants. Need to keep developing and evaluating new approaches to substance use education.</p> <p>Little info on validity and reliability, variety of alcohol use measures, little info on attrition rates and possible attrition effects, few assessed programme implementation.</p>
<p><b>Stead, M., Hastings, G., and Tudor-Smith, C. (1996)</b></p> <p>Preventing adolescent smoking: A review of options. <i>Health Education Journal</i>,</p>	<p>1989-1995. search method stated (5 databases); focus on smoking prevention, broader than school; primary studies; commentaries, discussion papers, pilot studies, qualitative studies and small scale studies included.</p>	<p>Most major studies have used different variations of the social influences model.</p> <p>School programmes can delay but not prevent smoking (reductions in prevalence disappear after 5-6 years). They argue that a delay in onset is a worthwhile outcome (may find quitting easier and have lower mortality and morbidity), and provides larger window of opportunity</p>

55:31-54.		<p>to continue prevention efforts. Social influence approach more impact than knowledge based.</p> <p>Programmes should focus on raising awareness of socio-cultural pressures to smoke and on developing skills to resist. Attention paid to social norms – address adolescent tendency to over-estimate prevalence. Focus on short term effects. Interactive learning methods such as role play and pupil led discussion. Some delivery by peers or slightly older students. Booster sessions to reinforce message.</p> <p>Suggests that further improvement in success rate of school programmes is unlikely. Subsequent refinements to programme, more booster sessions, more intensive or more intensive teacher training have not proven conclusively superior to more modest programmes in terms of long term results. Other improvements are so resource and time intensive that they are likely to prohibit widespread dissemination of programmes. Programmes need to work in real classroom conditions if they are to have a large population impact.</p> <p>Classroom interventions alone are unlikely to succeed and money should be diverted away from schools towards campaigning for full scale structural and environmental measures.</p>
<p><b>Tobler, N., and Stratton, H. (1997)</b></p> <p>Effectiveness of school based drug prevention programmes: A meta-analysis of the research. <i>Journal of Primary Prevention</i>, 18, 1: 71-128.</p>	<p>1978-1990. systematic; electronic database listed (10), 360 letter and 75 phone calls to relevant people; criteria specified; school-based with behavioural measures; contact made with programme developers; US and Canada; programme content coded into 7 areas; 90 studies from 120 programmes met criteria; sub-set of 56 high quality studies.</p>	<p>Interactive programmes were clinically and statistically significant compared to non-interactive for tobacco, alcohol, cannabis and other illicit substances for all adolescent groups including minority.</p> <p>Larger interactive programmes were less effective than smaller programmes but still better than non-interactive programmes.</p> <p>Majority of programmes in urban setting – rural unrepresented. Only 36% of programmes evaluated their results based on levels of use. Pre-existing differences in 60% of studies. Only 37% of studies reported attrition information.</p> <p>Most programmes offered training to teachers.</p> <p>Interactive programme equally successful for tobacco, alcohol and cannabis (0.16 –0.20 120; 0.14-0.21 56). Non-interactive programmes equally unsuccessful (-0.05-0.03 120; 0.04-0.13 56). Interactive and non-interactive alcohol programmes similar results.</p>

		<p>No difference in effectiveness between high and low intensity programmes. Mean 10 hours. Despite limited time interactive programmes can have behavioural effects. .</p> <p>Interactive programmes: No statistical difference between type of leader. Peers least effective (0.15:0.17), teachers (not health ed)(0.14: 0.19); other (0.17: 0.20) but health clinicians most effective (0.35: 0.33). Skills of leader probably more important than type. Trained teachers preferable to outside professionals as available on daily basis. Interactive programmes were not dependant on leader type for success.</p> <p>If the control group had health class then effect size of the tested intervention group smaller particularly for interactive programmes. (56: no treat: 0.23 and control education 0.18; total 120: no treat 0.22: control ed 0.13). Need to report details of the control education.</p> <p>Attrition: whether at acceptable or unacceptable levels still the interactive programmes had a greater effect (120: acc 0.19: not acc: 0.17; 56 acc 0.2 not acc 0.23).</p> <p>Sample size. Interactive programmes had exceptional positive results but small non-interactive programmes were completely ineffective (56: small -0.01: 0.5; large: 0.07: 0.16); (120: 0.08: 0.49, large -0.01: 0.13). Larger programmes statistical difference between interactive and non-interactive but much smaller difference.</p> <p>DARE type programmes had much lower effect size than other interactive programmes. Social influence second highest but Life skills highest effect of interactive programmes (values programmes -0.01: DARE type 0.07; social influence 0.19 and comprehensive life skills 0.24). Type of programmes by size of sample: Social influence small 0.47, large 0.15. Comprehensive life skills small 0.54, large 0.16. Large programmes one third as effective as smaller scale counterparts. Despite this larger interactive programmes still twice as effective as large non-interactive.</p> <p>Tobler's three meta-analysis similar findings. Interactive approximate effect size of 0.2 across all subsets compared to 0.02 for non interactive. Using Rosenthal and Rubins (1982) Binomial effect size display, this modest effect size is equal to a success rate of 9.5% and 1% respectively. 'This is clearly a significant thing particularly when the mean delivery intensity was just 10 hours. Contrast with aspirin effects of 0.035 (success fate of 3.5%) decision that it</p>
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		would be unethical not to offer the treatment to the control group (Rosenthal: 1994). (117). Replacing present programmes would increase effectiveness of school based programmes by 8.5%. Successful programmes not available in a marketable form that can be placed in to the hands of teachers.
<p><b>Tobler, N., Lessard, T., Marshall, D., Ochshorn, P., and Roona, M. (1999)</b></p> <p>Effectiveness of school-based drug prevention programmes for marijuana use. <i>School Psychology International</i>, 20, 1: 105-137.</p>	<p>1978-1990 systematic; electronic database listed (10), 360 letter and 75 phone calls to relevant people other page 112; criteria specified; school-based with behavioural measures; contact made with programme developers; US and Canada; programme content coded into 7 areas; 90 studies from 120 programmes met criteria; sub-set of 37 included measures of marijuana use.</p>	<p>Method of delivery if crucial to the effectiveness. Needs to be interactive. Interactive programmes nearly a seven times greater impact on attitudes than non interactive (stat sig diff). And these changes in attitudes (0.27) were accompanied by large reductions in cannabis use (0.29)</p> <p>Smaller programmes &lt;400 students were significantly more effective than the larger programmes 400-1000 students. Fidelity of implementation may have been a problem. Essential ingredient is participation by everyone preferably in small groups to practice skills.</p> <p>The delivery method not the content determined the success of the programme. Interactive provides opportunity for exchanging ideas through participatory contact among peers. Small group activities in younger student, correcting misconceptions and keeping focus on peer to peer interchanges. Each student should get to practice newly acquired skills and receive feedback in supportive environment.</p> <p>Delivery method cannot stand alone. If essential content is missing then ineffective. Interactive content (drug refusal skills, normative understandings of peers use). Non interactive content: ways to strengthen individuals interpersonal function to stop involvement in drugs. Self esteem building, decision making goal setting etc – not effective strategies.</p> <p>The interactive programmes that were effective for cannabis were also effective for tobacco and alcohol. All programmes that addressed cannabis were general substance abuse programmes. Suggests the possibility that each drug does not need a special programme. These findings cannot be generalized to 9-12 graders.</p> <p>Training. Few teachers colleges offer course on drug prevention. Teachers assigned to teach a drug prevention programmes are inadequately prepared. Should provide extensive training and or recruit motivated teachers.</p> <p>Student input into development. Failure of non-interactive programmes teachers did not feel that content was developmentally appropriate from a cognitive perspective. Numerous researchers reported that teachers were unable to engage students in curricula. – ie some activities too abstract such as values clarification.</p>

		<p>Aspirin example. 3.5% vs 12 percent for preventing marijuana use. Clearly clinically significant.</p> <p>Why are programmes not used: not available in marketable format and teacher training is necessary. Non-interactive programmes widely use because attractively packaged and easily available.</p> <p>Sporadic and inadequate evaluations of past programmes have led many to claim that drug education programmes are ineffective. However latest generation of programmes have substantial changes in content and delivery and have good research designs.</p> <p>The policy question is not whether substance use prevention programmes work, but rather, whether policy makers and school administrators are ready to undertake the changes necessary to replace the ensconced non-interactive programmes with newer interactive approaches</p> <p>Researchers also need to develop programmes that are teacher friendly.</p>
<p><b>Tobler, N. (1992)</b></p> <p>Drug prevention programs can work: Research findings. <i>Journal of Addictive Diseases</i>, 11: 1-28.</p>	<p>1972-1984. Search strategy stated; criteria stated; summarizes previous 1986 met-analysis – 143 studies; subset of 91 studies; focus on implementation factors and leaders.</p>	<p>Peer programmes were significantly different from knowledge, affective and knowledge-plus-affective programmes.</p> <p>Top 10 peer programmes assessed for predictors of success. No difference when comparing experimental with quasi-experimental design or method of selection into the programme. Middle group of peer programmes (19) no distinguishing features. Least effective group (11) were associated with implementation problems, larger proportion of college age or outside leaders and longer follow-up. Most successful leader. Top 10: 8 of 10 were delivered by mental health professionals/counsellors.</p> <p>Average effect size for different types of leaders: mental health professionals (0.70); combination of mental health professionals/counsellors and teachers (0.35); health education specialists (0.26); peer leaders (0.25); teachers (0.14); college students/others (0.10). Success of peer programmes is not dependent on the leader. Voluntary selection into the programme did not change the direction of the findings and minutely altered their magnitude.</p> <p>Peer programmes compared to no programme 16% decrease in drug use. Peer programmes compared to other strategies 12% advantage (knowledge only, affective only, knowledge plus affective, alternatives – NO RST in analysis).</p>

		<p>Programmes targeting a single drug. Tobacco programmes most successful (0.49). Alcohol programmes not successful (0.17). Combination of alcohol, tobacco and other substances poor (0.0015). Tobacco programmes showed no difference in effectiveness when different strategies were used but alcohol programmes success was dependent on programme type or strategy.</p> <p>Components of peer programmes: knowledge based on credible factors both immediate and long term consequences; group situation that promotes peer support for not using substances. Peer interaction is the key component.</p> <p>Leader: should be skilled, competent in group processes; who can enhance interactional process and simultaneously focus and direct the group. Act as guides, tolerate ambivalence, know when to remain silent; empower adolescents to make decision and encourage freedom of choice.</p> <p>Results show that mental health professionals can facilitate this process more effectively than non-health education teachers. Peer leaders were more effective than teachers (but not health education specialists). Usually older, trained, supported teacher who remained in background to maintain classroom discipline. Specially skilled adolescent. Peer leaders do not make a peer programme as they may or may not be able to facilitate necessary interaction. In many cases peer leaders benefit more than group members.</p> <p>Teachers OK if trained and have support of programme designers.</p> <p>Highly structured programmes for young students. 6-8<sup>th</sup> – acquisition of skill. Senior high school core processes were personal interactions in small groups to share ideas, feelings and experiences. Leader encouraged open discussion (generally mental health professional). 10-12 regular sessions.</p> <p>Directions for the future:  Mental health professionals should teach older youth and trained teachers younger students.  Comprehensive community programmes – needs to be funded for longitudinal evaluation.  Design, implement and evaluation developmentally appropriate creative programmes to intervention periodically throughout school career.  Abusive drug user should not be forgotten - community based strategies for this group given high absence from school.</p>
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<p><b>Tobler, N. (1997)</b></p> <p>Meta analysis of adolescent drug prevention programs: results of the 1993 meta analysis. In: Bukoski, W. (Ed). <i>Meta-analysis of drug abuse prevention programs</i>. NIDA.</p>	<p>1978-1990. systematic; search strategy stated; selection criteria specified; school-based; US and Canada; 39 programmes.</p>	<p>Interactive (effect size 0.25) better than non-interactive programmes (effect size 0.06) Across time. Delivery method rather than content is the issue. Large interactive programmes less effective than small interactive programmes.</p> <p>Programme content seems to have had no impact.</p> <p>Interactive consistently higher than non-interactive no matter what drug the programme targeted. However generic programmes (within interactive category) were nearly three times less effective than tobacco programmes. In 56 high quality programmes group: interactive programmes regardless of substance focus were equally successful. Peer programmes also equally successful across all types of substances.</p> <p>Comprehensive life skills programmes most effective (see her categorization in publication). Interactive programmes focus primarily on interpersonal competence and peer pressure is assumed to be the paramount reasons for adolescent drug use.</p> <p>Mental health specialists were the most effective leaders but not significantly so. It appears that the credentials of the leader may not be the issue but rather whether or not the leader can facilitate the necessary group interactions.</p> <p>Type of control. Trend towards standard education class control – need to report the content and delivery method used for controls that receive standard education classes.</p> <p>63% of programmes showed high degree of sample drop out over time. Higher attrition associated with slightly lower effect size in interactive programmes.</p> <p>Intensity had no impact on effectiveness. Mean intensity for interactive and non interactive was 10 hours. May be no finding because of generally low intensity.</p> <p>Other sources of bias are nearly twice as important as whether a programme was randomly assigned.</p> <p>Lack of longitudinal followup in research programmes.</p> <p>Educators still use non-interactive programmes because interactive programmes are not in a form available for teachers to use in the classroom</p>
<p><b>White, D., and Pitts, P. (1997)</b></p>	<p>Dates unstated. search strategy defined; criteria specified; 8-25 year olds; broader</p>	<p>Interventions directed at the minimization of harm have not been evaluated adequately.</p>

<p><i>Health promotion with young people for the prevention of substance misuse.</i> NHS Centre for Reviews and Dissemination, University of York: York.</p>	<p>than schools; 62 studies met criteria; of these 11 of high quality.</p>	<p><i>Interventions should incorporate a needs assessment of young people to tailor interventions to the group.</i> Need to maintain student interest. Need to develop more focused interventions to reflect the needs and experiences of recipients.. Too few interventions target the specific needs of the young people at differing stages of substance use careers and from different backgrounds. Need to have this information to design programmes.</p> <p>There is no clear trend on age at which programmes are maximally effective interventions at ages 11,12, and 13 provide a mixture of marginal success and failure. But then recommends: <i>Age 11-13 should be included as targets of interventions.</i></p> <p><i>Substances should be addressed and measured independently of each other.</i> The aetiology of drug use varies from substance to substance and should be tailored to individuals stage of onset and acquisition (ie use prevalence data).</p> <p><i>Programme intensity should be 15 hours or more.</i> Successful interventions were intense and could reinforce messages and programmes gains. Also usually included booster sessions, increasing both intensity and recency of programme. Brief interventions minimal impact on behaviour but could be used to target attitudes and knowledge.</p> <p><i>Regular programmes of booster sessions should be incorporated to reinforce programme gains. Should included normative education.</i> Often young people have an exaggerated perception of peers substance use – normative education is a feature of more successful school interventions.</p> <p><i>Should have a mix of elements including social influence and skills training.</i> The authors think that building self esteem and self efficacy would be efficacious – but also state that there is little evidence to support this (p 18). All successful programmes had a complex combination of approaches including skills training. The provision of more elements in an intervention were associated with greater success, however, there was no direct evidence that skills training was the necessary component of success and no support for the value of self esteem development.</p> <p><i>Interventions should be tailored for different target groups.</i> Some ethnic groups under served and under researched – usually a small minority of the sample and not analysed separately.</p>
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		<p><i>School based programmes should be supported by parental training, media, community groups. Messages should be credible to the targeted group.</i></p> <p><i>Should not be delivered by uniformed police officers.</i> Project DARE has been used as a model for the design of school-based prevention programmes in Britain – not much optimism for success given US DARE failures.</p> <p><i>Individual pacing of programme is preferable.</i></p> <p><i>Fidelity needs to be assessed.</i> Very few programmes assessed this. Programmes are frequently not implemented as intended. It is, however, expensive to ensure delivery as intended either external person has to be recruited or existing staff have to be given extensive training. Also need to ensure that the targets of the intervention receive the intervention in full. If receive 60% or less then critical features of programme may be missed – then recommend individually paced programmes.</p> <p>Evaluations need to be rigorous. Need to extend evaluations to a range of groups, settings and substances. Interventions need to focus on existing substance use experimenters and target the progression to regular use.</p> <p>Recommendations for school based research: long term follow-ups needed. Track from 11 to early adulthood to see if small delay in onset translates to further delays of regular use and non-progression to other substances. Greater mix of programme elements seems to be associated with greater programme impact. There is a need to assess which elements or mix of elements are most effective as well as the whole programme. Programmes with booster sessions had the greatest longer term success than those without. Need to understand if booster sessions impact because of recency of intervention, the intensity of the intervention or because of the phasing of elements. Need young people's contextual input to develop interventions that will be plausible to young people and relevant to their needs and situations.</p> <p>Measures of behaviour: some studies use lifetime use, others previous week or month, and others frequency of weekly or monthly use. Hampers direct comparison between studies.</p> <p>Too few non US programmes to determine whether programmes introduced in different countries have different levels of success (1 UK, 1 Israeli, 3 Australian).</p>
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		Aust and UK programmes less intense than US (less curricular time) – hinders comparisons. Generalisability between countries not established.
<p><b>White, D., and Pitts, M. (1998)</b></p> <p>Educating young people about drugs: A systematic review. <i>Addiction</i>, 93, 10: 1475-1487.</p>	<p>1980-April 1997. systematic; data bases listed (12 to August 1995, 3 to April 1997); hand searches of key journals; citations; grey literature from 4<sup>th</sup> and 5th International Conference on Drug Related Harm criteria listed; illicit drug focus (beyond school but 89% were school based); 71 studies of 62 programmes met criteria (63% school); subset of 20 studies methodologically sound</p>	<p>Majority of studies in schools simultaneously targeting alcohol, tobacco and marijuana.</p> <p>Effects on substance use small and declined with time (effect size p1479). Of 11 short term studies 10 showed positive effect, long term 8/10 positive effect. 2 marginal or insignificant counter effects.</p> <p>Over half of long term evaluations (2-3 years) showed some statistically significant impact on substance using behaviour extending beyond the end of the programme.</p> <p>Effective interventions were a mix of focused and generic training – both broad based and specific focus can have an effect.</p> <p>Need to target interventions to reflect the specific needs and experiences of recipients.</p> <p>Early initiation of use associated with later problems.</p> <p>Of the 10 effective programmes 8 included booster sessions had additional elements that served same purpose (community massmedia).</p> <p>Effective programmes intense with a large amount of curriculum time. 8 of effective sound programmes had 10 or more sessions.</p> <p>If delivered as planned effectiveness increased.</p> <p>Need more assessment of studies outside US.</p> <p>Need better evaluation of programmes.</p>

## APPENDIX J: SCHOOL BASED PROGRAMMES SUMMARY OF SECOND LEVEL REVIEWS

REVIEW	EXTENSIVENESS	Key Findings
<p><b>Dusenbury, L., Falco, A., and Lake, A. (1997)</b></p> <p>A review of the evaluation of 47 drug abuse prevention curricula available nationally. <i>Journal of School Health</i>, 67, 4: 127-131. Limited to US abstinence studies but is a good review.</p>	<p><b>Country:</b> USA</p> <p><b>Substance:</b></p> <p><b>Scope:</b> Undated. Search strategy undefined; limited to US national programmes; selection criteria specified; focus on primary prevention –classroom based; 47 studies (48 met criteria one declined to be involved).</p> <p><b>Focus:</b></p>	<p>Substance abuse curricular can reduce substance use. 8 out of the 10 . Life Skills Training to young adulthood. 6 had effects at least two years. 2 not evaluated beyond post test.</p> <p>Training social resistance skills or how to recognize influences and resist them effectively.</p> <p>Normative education – outlining to students that substance use is not the norm. Training in broader personal and social skills such as decision making, anxiety reduction, communication, and assertiveness appears to exchange programme effectiveness.</p> <p>At least 10 sessions in the first year and 5 sessions in the second year. Reinforcement and follow-up are critical to success.</p> <p>Should not be surprised when effects disappear after prevention programme ends.</p> <p>Guidelines set down for minimal acceptable standard for evaluation (pre post test, control group, behavioural measures, published in peer review journals). Minimum follow-up 1 or 2 years, adequate sample size, standardized measures, include alcohol, cannabis and other substances in addition to tobacco. Presentation of data should be standardized (percent reduction and effect sizes). Accept or not that unit of assignment does not match unit of analysis and that some assumptions will be violated.</p> <p>37 programmes no real information about effectiveness. May be effective but without evaluations no guarantee of success. Suggest that if marketed as prevention criteria developers and distributors have a responsibility to evaluate the effect of their programmes on substance use behaviour and make results available. Schools should insist on evaluations.</p> <p>Most effective programmes, not marketed aggressively. Funders should promote partnerships between researchers and marketers. Federal and state governments should promote or require evaluation of curricula being used in schools and funding set</p>

		aside to do this.
<p><b>Dusenbury, L., and Falco, M. (1995)</b></p> <p>Eleven components of effective drug abuse prevention curricula. <i>Journal of School Health</i>; 65, 10: 420-431.</p>	<p><b>Country:</b></p> <p><b>Substance:</b></p> <p><b>Scope:</b> 1989-1994. Search strategy undefined; criteria vaguely specified; telephone interview with 15 experts in field - listed; number of studies unstated.</p> <p><b>Focus:</b></p>	<p>Substance abuse programmes can be effective and there is a significant knowledge base about the critical ingredients.</p> <ol style="list-style-type: none"> <li>1. Research based/ Theory driven. As researchers broaden their focus to consider new risk and protective factors, prevention programmes are likely to become increasingly appropriate and effective.</li> <li>2. Developmentally appropriate information about substances. Concrete here and now information than distant effects. Information needs to be accurate and relevant. Needs to emphasize short term negative social consequences of use. Extensive information about the types of effects is not necessary and may be counterproductive.</li> <li>3. Social resistance skills training. Most successful programmes are social resistance skills training programmes. Prepare students to identify pressures to use and skills to resist peer pressure while maintaining friendships.</li> <li>4. Normative education. Teach's that most people do not use drugs. Hansen suggests important in itself. Botvin says can't impact without resistance skills training.</li> <li>5. Broader based skills training and comprehensive health education. Resistance skills training in the context of broader personal and social skills training: eg decision making, goal setting, stress management, communication skills, general social skills and assertiveness skills.</li> <li>6. Interactive teaching techniques. Social resistance skills approach rely on interactive teaching techniques (role play, discussion and small group activities). Promote active participation of student. Some teachers less comfortable with interactive style and less likely to effectively implement.</li> <li>7. Teacher training and support. Programmes more successful when teachers receive training and support from programme developers. More research needed on optimal length and strategies for teacher training and content. Major emphasis should be interactive teaching techniques. Need to model interactive methods. Give teacher opportunity to practice new skills and feedback on new skills. Initial training should be</li> </ol>

		<p>followed by boosters.</p> <p>8. Adequate coverage and sufficient follow-up. Mentions fewer than 10 sessions in the first year and fewer than five in the second. Given smallness of interventions not surprised effects decay.</p> <p>9. Cultural sensitivity. Need to be sensitive to ethnic and cultural backgrounds of the youth they target (ethnic and cultural). Difficult because most classrooms have multiple cultures present. Maybe develop programmes that train teachers to modify programmes to suit their group. Prevention professional closer working relationship with schools to develop curriculum for a specific school or community – extensive process and evaluation.</p> <p>10. Additional components. Much research remains to be done. Other components such as family, community, media and special population components to enhance the effectiveness of substance use prevention. Relative contribution of additional components needs to be done.</p> <p>11. Evaluation. Important question for any drug education programme is whether it can impact on drug use behaviour. Minimum designs should pre and post test, control group and behavioural measures. Some researchers gain royalties and income from grants or contracts which involve these curricula. Need to disclose this and consulting fees associated with the curriculum.</p> <p>Evaluation of programmes has increased in rigour over last 15 years (larger samples, more sophisticated research designs, more thorough data analysis, impact of implementation fidelity, accuracy of assessment and longer follow-ups).</p> <p>Replicate and consistency of current findings across studies and research groups important development.</p> <p>Dissemination. In America, most money spent on programmes is not on promising programmes. DARE, QUEST and Here's Looking at You 2000 three largest marketed programmes. DARE extremely successful as diffusion and dissemination but little effectiveness. Can use DARE to identify successful dissemination strategies. Schools given little guidance in selection of programmes.</p>
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		Most promising programmes tend to be researcher driven. Interactive (good quality) programmes more difficult to implement.
<p><b>Flay, B. (2000)</b></p> <p>Approaches to substance use prevention utilizing school curriculum plus social environment change. <i>Addictive Behaviours</i>, 25, 6: 861-886.</p>	<p><b>Countries:</b></p> <p><b>Substance:</b></p> <p><b>Scope:</b> Undated. Search strategy and selection criteria undefined; number of studies unspecified.</p> <p><b>Focus:</b></p>	<p>Little evidence that environmental change, parental training, mass media and community wide programmes can be effective, there is little evidence of the added effects of any of these approaches over and above the effects of the school curricula with which they are often combined.</p> <p>There is also little evidence of the effectiveness of school wide environment change strategies alone.</p> <p>Results partially due to study designs not allowing for separate estimates of school curricula and any added component. The few studies that would have allowed for such estimates were either too small or found no differential effect. Very few studies have been designed to separate out the effects of curricula and other components – but can be very large and expensive.</p> <p>Research issue: more difficult to include pure control groups in prevention studies. Makes it more important to compare multi component programmes with the very best school-based programmes – of known effectiveness. Comparing the multicomponent programmes with a school programme of unknown effectiveness does not allow one to estimate the contribution of the other components over and above the effects of the school programme.</p> <p>School environment: little evidence the school wide climate change are effective alone or with curricula. Some evidence that the way teachers manage classrooms and student behaviours and /or teaching methods and/ or altering school environment in other ways may have a positive effect on student behaviour and performance (short term school performance, smoking over long term). But this intervention not compared with curriculum. Other studies contradictory – may be methodological issues.</p> <p>School policy. Some studies have found that school policies are important predictors of prevalence. Southern Cal lower rates of smoking with clearly articulated policies regarding smoking restrictions and requirements for education. Comprehensive policies low amount of smoking but not prevalence. Page 863 discusses studies findings of policies.</p>



		<p>Very few studies if any has assessed the change to school policies in the absence of other programmes.</p> <p>Parent training has been found to change parenting practices in multiple studies. But based on interventions targeted at families of youth who engage in substance use (or other problem behaviours) or high risk youth/families. Doesn't provide strong evidence that parent training programmes can add to the effects of an effective universal school based curriculum.</p> <p>Parents can have an influence on how important peer influence becomes for their children. Parent who have clear expectations about behaviours can influence their child's friend selection and behaviour. Parents can also reinforce desired behaviours.</p> <p>Some family programmes have indicated reduction in substance use.</p> <p>Mass media. Some success but difficult to obtain in one study. Careful steps in development and design. Says that this study does not allow an estimate of how much the total effect could be attributed to the school programme versus the media programme. More research needed.</p> <p>Community interventions. More studies looking at this but only one designed to separate out the added effects of the community intervention and was a small study. None of the larger studies was designed to allow for the estimation of the community effect. Midwestern and Northlands produced significant effects but neither has yet been replicated and can assess the proportion of effect that is due to the community component over and above the school component. Appears that effects of community component may be larger and occur in more domains and be more maintained than school only programmes.</p> <p>Existing studies do not inform us of the differential effectiveness of school components to substance use education. We require such knowledge before we will be able to recommend any of the programmes that combine two or more of these approaches to schools or communities for substance use prevention. Without such knowledge, we cannot assess the cost effectiveness of adding components and schools can't make informed decisions.</p>
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		<p>The correction of normative beliefs may be more important than skill development.</p> <p>Interactive programmes including high degree of student activity and interaction and skills training more effective than non-interactive. Mean effect size 0.19 for social influences/skills programmes and 0.24 for comprehensive life skills programmes.</p> <p>Programmes that provide multiple years of education or booster sessions have improved long term effects. However, some of the decay may be due to unchanged school wide environment.</p> <p>Social environment – parent behaviour, school policies community norms are distal predictors of students' behaviours. Distal predictors need to be changed to support and reinforce newly changed attitudes, normative beliefs and social skills to increase possibility of lasting effects.</p>
<p><b>Gorman, D. (1995)</b></p> <p>Are school based resistance skills training programs effective in preventing alcohol misuse? <i>Journal of Alcohol and Drug Education</i>, 41, 1: 74-98.</p>	<p><b>Country:</b></p> <p><b>Substance:</b></p> <p><b>Scope:</b> Undated. Search strategy undefined; selection criteria stated; focus on resistance skills training on alcohol misuse; 16 studies.</p> <p><b>Focus:</b></p>	<p>The majority of interventions showed that resistance skills training programmes, while not detrimental, have little or no effect upon participants in terms of their drinking behaviour at follow-up. In the few studies reporting positive effects, this is limited to sub-groups of the target population.</p> <ol style="list-style-type: none"> <li>1) Studies reporting negative effects. Two with methodological shortcomings (very high attrition, posttest only).</li> <li>2) Studies reporting no effect. Half of the studies reviewed (8).</li> <li>3) Studies reporting minor effects. Project ALERT.</li> <li>4) Studies reporting positive effects. Four studies AMPS; McAlister (1980); Project SMART (Hansen 1988) and WHO collaborative study (Perry et al 1989).</li> </ol> <p>McAlister et al (1980). 8 sessions, smoking focus; data at 4, 9, 12, 16 and 21 month followup, 340 subjects in RST school and 186 in control. Alcohol crude measures and reported at final follow up only. 5.6% in RST had been drunk in previous day or week compared to 16.6% in control (<math>p&lt;0.01</math>). Post test only, not randomly assigned. Only two schools used.</p> <p>AMPS 6 districts, 5635 students from 213 5<sup>th</sup> and 6<sup>th</sup> grade classrooms. Random assignment by school to 4 sessions. Half 5<sup>th</sup> grade also had 3 booster sessions in second year.</p>

		<p>Three groups split in half again to assess effect of pretest. Authors supported continued use of RST in schools but Gorman states that there was no sig diff between 5<sup>th</sup> grade students who received 4 + 3 sessions and control at any 3 followups. Sig programme effects confined to 6<sup>th</sup> graders who were baseline supervised and unsupervised drinkers (one category). At 14 and 26 month alcohol use in control group was sig greater than RST group (1.9 vs 1.3 and 2.4 vs 1.7). Control group also had more problems at final followup (3.0 vs 1.9).</p> <p>Most results based on just over one quarter followup (26.9%). Results of AMPS questionable particularly in relation to generalizability.</p> <p>Project SMART 8 schools. 2863 students 7<sup>th</sup> grade at baseline. 12 sessions. 12, 24 month follow-up. Separate analysis for those present at 12 months and those at 24 months. Attrition 12 – 63% response; 24 – 48% response. Claim: reduce onset and prevalence of tobacco, alcohol and marijuana use at 1 yr follow-up. Separate analysis occurred for different groups.</p> <p>Gorman: successful in delaying use among baseline non-drinkers on some outcome measures. When all subject were included in analysis little evidence of programme effects. RST modest impact. Hansen suggests that non-programme effects (school climate) may explain some of the post difference in the two groups.</p> <p>WHO collaborative study Adult and peer led. Aimed to delay onset and minimize use. 5 sessions, 11018 12-14 year olds in three counties (Aust 828), Chile (195), and Norway (1306). Pre test, 3 month followup. 90-95% response. Perry: peer led programmes appears to be efficacious in reducing alcohol use across variety of setting and cultures. But (Gorman) of the 12 statistical comparisons just one was significant (baseline nondrinkers in Norway – alcohol use sig lower for peer led programme than teacher led or control). Gorman results of two types of RST far from uniform across countries or risk groups. Neither programme effective for those who were already drinking. Stat sig were small.</p> <p><i>Discussion</i> RST programmes are not universally effective. Majority of studies showed that RST programmes while not detrimental have little or no impact on participants. Positive</p>
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		<p>effects limited to subgroups.</p> <p>Not surprising given that RST programmes target just two of the known risk factors for alcohol misuse – peer pressure and media influences. Other factors (intrapersonal – self concept, interpersonal, parenting and sociostructural economic deprivation) are largely ignored.</p> <p>Early 1980's had by then shown that knowledge and affective are largely ineffective. Ten years of research shows that RST programmes are also largely ineffective and we should now look to develop and evaluate other types of interventions.</p> <p>Founded on simplistic assumptions ie peer pressure. If members of high risk peer groups differ from their low risk counterparts in terms of certain predisposing personal and social characteristics (risktaking, self concept and type of parenting) then programmes will need to include components other than resistance skills training to address these factors.</p> <p>RST approach became dominant in the early 1980's following publication of research studies showing the ineffectiveness of existing 'knowledge based' and 'affective' programmes and more importantly though the high profile political support it was able to attract. Two types: resistance skills training and one which incorporates broader personal and social skills training eg stress reduction and decision making etc (so called comprehensive programmes).</p> <p>RST originally developed to combat onset of smoking in adolescents (Evans 1976).</p>
<p><b>Gorman, D. (1996)</b></p> <p>Do school based social skills training programs prevention alcohol use among young people? <i>Addiction Research</i>, 4, 2: 191-210.</p>	<p><b>Country:</b></p> <p><b>Substance:</b></p> <p><b>Scope:</b> Undated Search strategy undefined; selection criteria stated; focus on the effectiveness of social skills training programmes on alcohol misuse (excluding DARE); 12 studies.</p> <p><b>Focus:</b></p>	<p>Reports on: 1) studies reporting no effects; 2) studies reporting minor effects; 3) studies reporting positive effects. Lots of details of each study provided.</p> <p>All studies reporting positive results displayed methodological weaknesses that reduce confidence in findings. Eg allocated by cluster but analysed by individual.</p> <p>Social influence models originally developed to prevent tobacco. Gorman claims that this review adds that school based social skills training for alcohol use prevention is sparse.</p> <p>Claims that many of the social skills training components are the same as those of the</p>

		<p>affective strategies of 1970's which are considered ineffective in reducing alcohol and other substance use.</p> <p>Refine programmes to identify potential effective components.</p> <p>Target interventions to the profile of the risk factors evident among subgroups.</p> <p>Develop and evaluate programmes that limit youth access to substances.</p>
<p><b>Lloyd, C., Joyce, R., Hurry, J., and Ashton, M. (2000)</b></p> <p>The effectiveness of primary school drug education. <i>Drugs, Education, Prevention and Policy</i>, 7, 2: 109-126.</p>	<p><b>Country:</b></p> <p><b>Substance:</b></p> <p><b>Scope:</b> Undated. Search strategy undefined; criteria largely unstated; selective review; age 11 or younger; focus on illicit; no. of studies unstated.</p> <p><b>Focus:</b></p>	<p>Review really only based on 3 studies.</p> <p>Do it too young and the delayed involvement of drug use makes follow-up and costs high.</p> <p>Lack of well conducted studies for primary school children – more long term studies needed.</p> <p>1 substance use education should start in primary school. This remains contentious but authors suggest needs to happen when most likely to influence patterns of attitudes and behaviours. Early childhood teachers need to know that knowledge is only one element of such programmes. <i>Addresses needs of students who receive it. Teacher training institutions</i> should include substance use education especially for primary sector.</p> <p>2. Life skills approach seems to be most effective. Conclusions from both primary and secondary programmes. Not a new concept but blocks in educational system and classroom practice which mitigate against their use. Need a fundamental change in the configuration of curriculum to enable skills based programmes to be introduced into curriculum. Inservice training need to address this too.</p> <p>3. Should seek to involve parents and communities. Programmes that involve parents seem to be effective, parents of younger children may also be more inclined to be involved. Need to develop innovative ways to involve parents. Involve parents in programme and policy development. Wider community involvement can be initiated though parental involvement.</p>

		<p>4. Peer approaches: promising but tricky. Illawarra secondary school students returned to introduce programme to primary school students. Overcrowded curriculum little opportunity to do this. Despite the promise of some early results, peer education is a relatively new innovation in teaching methodology, remains largely ill defined and unproven and there are potential pitfalls if peer educators are not sufficiently prepared. Rigorous research in this area is long overdue.</p> <p>5. Drug education needs to continue into secondary school. Need to link primary and secondary school input as programme impacts fade over time. Need to build links between the schooling phases.</p> <p>6. Interactive approaches are more effective than didactic ones. This has major implications for teacher training. Need to refocus on teacher methodology rather than subject expertise. Need school system support for this teaching style – class size, choice of teacher and flexibility in rooms. Sophisticated assessment and monitoring and recording tools. Heavy demands on classroom management. Guest speakers may not have the necessary skills need to be carefully planned monitored and evaluated.</p> <p>7. Universal versus targeted approaches. High risk kids limited evidence and runs the risk of labelling them and further amplifying substance use. However, many high risk kids later absent or excluded from secondary school will be present in primary school and can be reached with universal approaches. Strategies to support schools to retain students. If high risk approach was effective, practical, morally and ethically acceptable would need significant improvement in assessment, training and support implications.</p> <p>8 Long term, intensive programmes are more likely to be effective. Not surprising but raises the question of the importance of substance use education. Time on substance use education means time away from other subjects. Critical stages in education where there is less flexibility in curriculum. First years of secondary school. Need to relax curriculum pressure.</p>
<p><b>Paglia, A., and Room, R. (1998)</b></p> <p><i>Preventing substance use problems among youth:</i></p>	<p><b>Country:</b></p> <p><b>Substance:</b></p> <p><b>Scope:</b> Undated.</p>	<p>Most promising of substance use prevention models are psychosocial approaches based on social influence model. Premise that youth who use do so from pressure from peers, family, media and internal pressures. Also have knowledge component. Skills to counter pressures and to resist pressures. One way through normative education seeks to undermine popular beliefs on prevalence and acceptability. Counter</p>

<p><i>Literature review and recommendations.</i> Addiction Research Foundation and Addiction and Mental Health Services Corporation: Ontario.</p>	<p>Search strategy and selection criteria undefined; focus on tobacco, alcohol and illicit substances; broader than schools.</p> <p><b>Focus:</b></p>	<p>arguments to tactics of alcohol and tobacco advertising; resistance skills, personal and social skills – decision making problem solving goal setting, assertiveness. Interactive delivery: small groups, role play and demonstrations.</p> <p>Generally SRT programmes have found delayed prevention of use lasting only a few years after delivery with one study up to 6 years (Botvin, 1995 – has been criticized for failing to report on negative results on alcohol use and for issues surrounding sample selection). However, little is known about what components or combination of strategies within these programmes are effective – challenging perceived social norms and beliefs about positive consequences of use seem to be important mediators in prevention or reduction of use.</p> <p>Note of caution about resistance skills as part of programmes because it may not be peer pressure (or perceived peer pressure) but rather peer influence or peer preference that acts as an influence.</p> <p>In a programme comparing resistance skill training with normative education found that resistance skills development had little effect on prevention.</p> <p>Should tackle positive expectations and images surrounding substance use. Focus on students' personal experience and therefore should distinguish between use and abuse and should not overlook benefits of use. If don't focus on these issues then programme may be discredited.</p> <p>Programme leaders should be a combination of a teacher who has good classroom management skills and peer leaders to assist in implementation and discussion. High credibility and ability to facilitate a group are requisites for good programme leaders.</p> <p>Not clear if programmes should focus on substance use in general or be targeted to individual substances.</p> <p><b>Summary of key points.</b>  <b>Structure</b>  Programme should be on-going from kindergarten to final year of high school.  Should be intensive in junior high school just prior to median age of onset.  Short programmes do not work – if a short programme then booster sessions are</p>
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		<p>necessary.</p> <p>Different approaches should be used for various sub groups (substance sophistication, level of use, psychographic and demographic groups – must be based on normative research.</p> <p>Involve students in curriculum planning and implementation.</p> <p><b>Content</b></p> <p>Not knowledge or affective only.</p> <p>Discuss reasons for substance use, benefits, alternative ways to gaining benefits.</p> <p>Present honest factual material – dangers and benefits.</p> <p>Focus on short term effects.</p> <p>Discuss and correct perceptions about normative use.</p> <p>Lifeskills development may also be beneficial (assertiveness, decision making, communication techniques).</p> <p><b>Delivery</b></p> <p>Tolerant atmosphere free of moralising and fear tactic – open nonjudgemental dialogue.</p> <p>Active learning not passive lectures and films.</p> <p>Interactive delivery such as small groups and role playing.</p> <p>Leaders someone students should trust, unbiased, factual with assistance from peer leaders (be careful as rigid social groups already exist among students and could result in some students being alienated or turned off).</p> <p>Anything taught in the school must be reinforced in the community by parents, media and health policies.</p> <p>Harm reduction – educational approaches have very little impact on convincing current users to stop. Thus minimising the adverse consequences from alcohol (particularly – given its normative prevalence in later adolescence) use is a worthwhile strategy.</p> <p><b>Comments and analysis</b></p> <p>The effects of the same prevention intervention may differ depending on the substance. When tobacco is the target, it should not be assumed that the effects also apply to cannabis and alcohol.</p> <p>Much of the literature is based in academic social and developmental psychology and it</p>
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		<p>is an article of faith of these literatures that prevention programmes should be theory based. Resiliency mentioned as an alternative to the theoretical assumption.</p> <p>Generally the prevention literature fails to recognize how the phenomena of substance use appears to youth themselves. Lack of recognition of the fun side of use. Prevention literature assumes drug use to counteract troubles.</p> <p>Literature also ignores collective action of drug use (usually done in groups) and is associated with other social activity, partying, dancing etc. Peer influence more an attraction to a particular social group.</p> <p>Theoretical frames for youth prevention efforts need to be recast to recognize that youthful substance use is not part of a negative downward spiral, that from the point of view of the user use usually has a positive valuation and that substance use is usually a social and highly symbolic activity.</p> <p>Even the most successful programmes fall short of attaining their official goal. Where programme success is shown, it tends to be in terms of latent and more realistic goals.</p> <p>Questions the practical significance of statistically significant results.</p> <p><b>Recommendations</b></p> <p>Main goal should be to reduce harm of users and others.</p> <p>Curricula might better be based on general educational principles rather than framed by ideology on substance use.</p> <p>Programmes should be matched to the target audience.</p> <p>It is extraordinarily difficult to achieve change in the opposite direction to prevailing trends in the population – hitch their approach and framing of the issues to current trends among adults and in youth cultures.</p> <p>Family based programmes (functioning) have shown some promise.</p> <p>Regulatory approaches considerable success in limiting and shaping youth drug use when there is a legal market in the substance.</p> <p>Combine policy and environmental measures with education or persuasional approaches – however evidence still lacking.</p> <p>Many interventions not much impact on evaluation of specific programme but is possible that the broad application of diverse prevention programmes in a population</p>
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		<p>may have a cumulative positive effect.</p> <p>If interventions are to perform well in a cost effectiveness analysis they must set realistic goals and give attention to containing the costs of the intervention.</p> <p>Educational efforts at adults concerning the realities of youth substance use may be effective in prevention initiatives.</p>
<p><b>Stothard, B., and Ashton, M. (2000)</b></p> <p>Education's uncertain saviour. <i>Drug and Alcohol Findings</i>; 3: 4-7, 16-20.</p>	<p><b>Country:</b></p> <p><b>Substance:</b></p> <p><b>Scope:</b> Undated. Search strategy and selection criteria undefined; focus on reviewing Life Skills Training programme.</p> <p><b>Focus:</b></p>	<p>Reviews Life Skills Training most tested prevention programme over twenty years.</p> <p><b>Programme</b> Substance abuse prevention/competency enhancement programme designed to focus primarily on the major social and psychological factors promoting substance use/abuse. 15 x 45 min lessons at ages 11-12 followed by 10 and 5 booster sessions in next two years.</p> <p>Aims: provide the skills to resist social (peer) pressure to smoke, drink and use substances; help develop self esteem, self mastery and self confidence; enable children to effectively cope with social anxiety; increase knowledge of the immediate consequences of substance use.</p> <p>Personal self management skills (problem solving, managing emotions, achieving goals). Social skills (communication, interacting with others, boy/girl relationships, assertiveness). Substance use related information and skills (knowledge, attitudes, normative expectations, skills for resisting substance offers, media influences, advertising pressures to use substances).</p> <p>Information content: facts adolescents react most readily to such as immediate negative results of drug use, how many of their peers use substances. Teacher role skills trainer or coach. Imparting skills through instruction, demonstration, role play, practice and extended practice in form of homework assignments, feed back and social reinforcement. Materials: detailed teacher manual, student guide, audio cassettes with relaxation exercises.</p>

		<p><b>Successes</b>  Started in 1980 with two schools, peaking in 1995 with 56 schools – 3500 students. Grew from University of Houston programme.</p> <p>Teachers smoking resistance skills within a broader programme fostering general social and personal skills and addressing the psychological factors of poor self-esteem, social anxiety, lack of confidence. Curriculum's core remains the same. In-depth investigation of a single approach over 20 years.</p> <p>1995 study: white middle class American high point of lifeskills training. Published results 6 years after baseline.  Older students, teachers and health educators could all deliver the lessons. Booster sessions after intensive initial year helped to maintain impact.  56 schools in New York state. Started with nearly 6000 students aged 12-13. Random allocation/selection.  30 sessions over three years.  Teacher training (1 day with followup support from research team, or 2 hour training video with instructions)</p> <p>Results: end of three years how often students smoked, used cannabis and got drunk were slightly but significantly lower in intervention students. 'However, reporting of results badly flawed'. Footnote of analysis by school where results indicated that still came up with some significant results but now drunkenness was unaffected and only fully trained teachers reduced cannabis use.  Results from a quarter of the intervention students (6 whole schools) were excluded because they had received under 60% of programme – no similar adjustments could be made for control schools – serious bias towards Life Skills.  At 6 year outcomes rectified these faults and still found significant impacts on heavy forms of substance use. Curbed growth of regular smoking (9% (video trained teachers) vs 12% smoking 1 pkt per day). Reduction in personally trained were not sig. Fewer Life Skills students (3% vs 6%) smoked, drank and used cannabis weekly. Findings suggest that teachers can take manual and materials and curb regular smoking and multi substance use which if they outlast the teenage years could help preserve physical health throughout life.</p>
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		<p><b>Theory basis</b></p> <p>Most disappointing results are the curriculum's inconsistent impact on the skills and psychological variables through which it is supposed to influence substance taking. Evidence strongest for the knowledge and skills most closely related to substance use which also tend to be those susceptible to classroom teaching – students' awareness of how (ab) normal substance use is and of its social acceptability substance related knowledge, knowing about social skills as opposed to practicing them and assertiveness in refusing substance offers as opposed to general assertiveness, anti substance use attitudes. No significant impact on psychological variables such as self esteem and self confidence nor on general skills like assertiveness and decision making – what goes to the heart of what makes life skills distinctive – locating substance specific content within 'a larger context of social skills that kids need to navigate the minefield of adolescence'.</p> <p>Two life skills studies which tested causality more directly found evidence of a role for assertiveness in using substance refusal skills, anti substance use attitudes, substance related knowledge and correcting young people's misconceptions about the normality and social acceptability of drug use – all substance specific variables.</p> <p>Several explanations for theory anomalies. Which either leave theory intact or do not account for all the findings or cast doubt on positive as well as negative findings.</p> <p>Theory based intervention produced inconsistent outcomes and few findings support its hypothesized causal chain – possible that the theory is wrong. Underlying theory which starts with psychological deficits and underdeveloped personal and social skills and ends with substance use. Also held back by narrow objective that does not take into account substance use experimentation. Had Botvin been able to pursue and measure responsible substance use (which in one paper he suggests is the more feasible goal) he may have found more encouraging results. Also doesn't allow students to make decisions for themselves – teaches them to make refusal decisions – how to implement a decision. Problems as students become older.</p> <p><b>Methodological problems</b></p> <p>Shortcoming endemic in school based prevention. Analysis by student but allocation by school.</p> <p>Baseline differences in control group and intervention group – too little is known about children's development to account for uneven playing field.</p> <p>Compared to usual substance use education in control schools – unknown quantity. If</p>
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		<p>this is ineffective or worst then Life Skills had a head start.  Data collected by research team and analysed by research team – may be aware which students received programme thus bias.  Tested own programme and benefited from sales and associated training - independent evaluation is always preferable (19).</p> <p><b>Practical significance</b>  Yardstick of use prevention not problem reduction.  Heavy use information is obscured by reporting of a frequency index conflating the range of use levels. Heavy drinking and frequent cannabis smoking have not been reduced. But smoking reduction occurred and any reduction is a health bonus. Curbed increases in smoking in past month - But past week and past day smoking unaffected – on this basis few lives saved.  Not whether early use occurs but how early this use occurs – delaying onset of cannabis use associated with reduced risk of later problems with illegal substances.</p> <p><b>Costs</b>  Compared to other interventions. US RAND institute. Per \$ spent savings totalled between \$1 -\$9 with a best guess of nearly \$4. Comparable with enforcement it is half the return of \$10 per \$ spent for treatment .  Prevention would cost \$20000 per life saved by cutting smoking alone, this is within the accepted figure for justifying health interventions.</p> <p>Anticipated use reductions from prevention are modest but so too is the cost of achieving them. Rand omit important benefits of preventing unhappiness, wasted years and lost lives which precede substance use treatment and which treatment cannot recover.</p> <p>Programmes need to be interactive.  Peer leaders – may be some benefits but there are also risks (unsound messages, classroom disorder, lessons not being taken seriously). Works best if older students, well trained and supported and supervised by teachers.  Provide booster sessions in the two years following the basic course.</p>
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## APPENDIX K: SCHOOL BASED PROGRAMMES SUMMARY OF PRIMARY STUDIES

Citation	Intervention Details	Findings
<p><b>McBride, N. (2001)</b></p> <p><i>School Health and Alcohol Harm Reduction Project: Reducing alcohol related harm in young people.</i> Unpublished Phd thesis dissertation. Curtin University of Technology: Perth, Western Australia.</p> <p><b>McBride, N., Farringdon, F., Midford, R., and Phillips, M. (2001)</b></p> <p><i>SHAHRP final report to the Western Australian Health Promotion Foundation.</i> National Drug Research Institute: Perth, Western Australia.</p> <p><b>McBride, N., Midford, R., Farringdon, F., and Phillips, M. (2000)</b></p> <p>Early results from a school alcohol harm minimization study: The School Health and Alcohol Harm Reduction Project. <i>Addiction</i>; 95,7:1021-1042l.</p>	<p><b>Country:</b> Australia</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> Based on evidence of potential for behaviour change; harm minimization goal; alcohol focus, classroom based only, 8 lessons when students were 13 years old followed by 5 booster lessons when students were 14 years old. Formative year: focus group with students, development and pre-testing of intervention. Teacher training 2 days in first year and 1 day in second year – interactive modelling of activities – research discussion and fidelity information and tasks. Teacher manual and student workbooks for each phase, trigger video.</p> <p>Average level of fidelity 80.7%.</p> <p>Aust\$612.50 per class, Aust\$23.55 per student including project officer preparation (3 days), workshop facilitator, venue hire, catering, teacher release payments, printing of manuals and workbooks, video replication. If taught by trained teachers in subsequent years Aust\$134.30 per class and Aust\$5.20 per student.</p>	<p style="text-align: center;"><b>BEHAVIOURAL IMPACT</b></p> <p>Baseline n=2343, 75.9% retention to final-follow-up. 2.5 years.</p> <p>Main effect: 1<sup>st</sup> and 2<sup>nd</sup> follow-up: intervention group significantly lower consumption and less harm associated with own use. Final follow-up: intervention group significantly, lower consumption, less harm associated with own use and significantly less harm associated with other people use of alcohol.</p> <p>After phase one intervention students consumed significantly less alcohol (p=0.01, 31.4%) and experienced significantly less harm associated with their own use of alcohol (p=0.014, 32.7%) than the control group.</p> <p>After phase two intervention students continued to consume less alcohol (p=0.01, 31.7%) and experienced less harm associated with their own use of alcohol (p=0.006, 16.7%) than the control group.</p> <p>Seventeen months after the completion of phase 2 intervention students experienced significantly less harm from their own use of alcohol (p=0.008, 22.9%) and also experienced significantly less harm from other peoples use of alcohol (p=0.049, 12.8%) than the control group..</p> <p>Sub-group effect: The context of use group most influenced by the intervention were baseline unsupervised drinkers. Of this high risk group, students who received the intervention had 8.5% greater knowledge, consumed 13% less alcohol, experienced 17.4% less harm associated with their own alcohol use and 7.7% less harm associated with other peoples alcohol use than did the corresponding control group.</p> <p><b>EFFECTIVENESS FINDINGS</b></p> <p><i>Several evidenced based components are identified as key or priority components based on the results of the study. These components are:</i></p> <p>Involving students in the development of the intervention and preliminary testing of</p>

		<p>the intervention;</p> <p>Pilot testing the intervention with teachers and students;</p> <p><b>Providing interventions at relevant periods in young people's development;</b></p> <p>Interventions that are interactive and based on skill development (ie skills training in avoiding harm rather than resisting pressures to use);</p> <p>Interventions that have a goal that is relevant and inclusive of all young people - harm minimization;</p> <p>Booster sessions in later years;</p> <p>Utility knowledge that is of immediate practical use to young people;</p> <p>Appropriate teacher training for interactive delivery of the intervention.</p>
<p><b>Williams, C., Perry, C., Farbaksh, K., and Veblen-Mortenson, S. (1999)</b></p> <p>Project Northlands: Comprehensive alcohol use prevention for young adolescents, their parents, schools, peers and communities. <i>Journal of Studies on Alcohol</i>. Supplement number 13: 112-124.</p> <p><i>The 1999 study refers to the results of this earlier 1996. The results are more clearly stated in this earlier study so it has been included.</i></p> <p><b>Perry, C., Williams, C., Veblen-Mortenson, S., Toomey, T., Komro, K., Anstine, P., McGovern, P., Finnegan, J., Forster, J., Wagenaar, A., Wolfson, M. (1996). Project, Northlands:</b></p>	<p><b>Country:</b> US</p> <p><b>Substance:</b> General drug focus</p> <p><b>Scope:</b> Two phases phase 1 (1990-1994) interventions in early adolescence. Phase 2 (1995-1999) high school years. This paper focuses on phase 1 and in particular parent interventions. Phase 1 involved: 6-8<sup>th</sup> grade.</p> <p>Intensive parental involvement components:</p> <p>6<sup>th</sup>: 4 weeks of parent and child activities to increase communication, home rules; Newsletter for parents; 1 hour parent nights at schools; parents targeted for membership on community task forces.</p> <p>7<sup>th</sup>: Alternatives parties; home based programme with 4 booklets information and tips; 3 issues of newsletter; parents recruited to facilitate TEENS groups; parents included in task force members.</p> <p>8<sup>th</sup>: parents involved to 'Its My Party'; 3 issues of newsletter; parents continued involvement in TEENS and task force.</p> <p>Multiple peer leadership opportunities:</p> <p>6<sup>th</sup>: student peers elected for classroom sessions, 2 hour training sessions on how to be an effective peer leader.</p> <p>7<sup>th</sup>: Peer leaders elected. Two peer leader training sessions conducted. Volunteer peer leaders recruited to plan alcohol free activities - full day of regional training.</p> <p>8<sup>th</sup>: different peer leaders chosen for class activities – no training;</p>	<p><b>Behavioural Impact</b></p> <p>Baseline n=2351, 81% retention to final-follow-up. Three years.</p> <p>Main effect: Percentage of past month (29%) and past week alcohol use (19.2) significantly lower in intervention group at end of 8<sup>th</sup> (after 3 years).</p> <p>Sub-group effect: Students who reported both using alcohol in the past month and having smoked cigarettes on more than one or two occasions there was a significant difference (p&lt;0.03) and indicated a 27% reduction in gateway substance use.</p> <p>For baseline nonusers consistently lower rates of onset (sig diff at 8<sup>th</sup> grade).</p> <p>No significant difference in cigarette use, smokeless tobacco use or marijuana use.</p> <p><b>EFFECTIVENESS FINDINGS</b></p> <p>Formative: focus groups with parents and young people, pilot testing – lead to high participation rates.</p> <p>Most promising programmes tend to be comprehensive. To look at influences from family, peers and community. Two key strategies 1) demand reduction – teaching adolescents refusal skills and motivate students to use the skills by making use less normative and acceptable; 2) supply reduction strategy focusing on reducing availability of substances in major segments of adolescents social environment (home, community, school, peer hangouts).</p> <p>Comprehensive strategies target entire community. Behaviour change reinforced from multiple community sectors.</p>



<p><b>Outcomes of a community wide alcohol use prevention program during early adolescence. American Journal of Public Health; 86, 7: 956-965.</b></p>	<p>student volunteers to produce 'Its My Party'; Volunteer peer leaders organising alcohol free activities; 3 issues of newsletter.</p> <p>Community level: 6<sup>th</sup>: training of 8 field staff, recruitment of task force members from community, media campaigns intruding problem of underage drinking and Project Northlands, regional training for 25 reps of 12 taskforces. 7<sup>th</sup> meetings of task forces, task forces selects prevention activities, task force members support TEENS group and plan alcohol free activities. 8<sup>th</sup>: task forces meet; 6 press releases and 21 published in school newsletters and local newspapers, task force members continue to support TEENS in providing activities.</p> <p>Classroom lessons (replace usual alcohol and other drug programmes) : 6<sup>th</sup> grade: 4 hour training of teachers in implementation of curriculum and public health problems, 4 weeks peer and teacher led activities, small group projects designing posters. 7<sup>th</sup> grade: full day of training about curriculum implementation and alcohol as public health problem, 45 min class sessions though by teacher and peers 1 per week for 8 weeks – resistance training 8<sup>th</sup> grade: full day of training as above; 8 x 45 min lessons once or twice per week. Review of previous concepts and consideration of community level influences and ways to bring about change.</p>	<p>Classroom component important. Booster sessions</p> <p>Use of home based programmes with parents and children. Need to be engaging and relevant, colourful and interactive Provide incentives for parental participation. Tie in with homework assignments rather than mailing out.</p>
<p><b>Maggs, J. and Schulenberg, J. (1998)</b> Reasons to drink and not to drink: Altering trajectories of drinking though an alcohol misuse prevention program. <i>Applied Developmental Science</i>; 2, 1: 48-60.</p> <p><i>Intervention description:</i> <i>Shope, J., Dielman, T.,</i></p>	<p><b>Country:</b> US</p> <p><b>Substance:</b> Alcohol</p> <p><b>Scope:</b> Pilot tested. Content: Social pressures resistance training approach; short term effects of alcohol, risks of alcohol misuse; situations of pressure to use and skills to resist. Trained teachers.</p> <p>5<sup>st</sup> grade: 4 x 45 min sessions one week apart.</p>	<p><b>Behavioural Impact</b> Students who provided baseline plus at least 2 additional data points. Baseline n=933-967 and post test 4 n=633-652. Approximately 68% retention over 4 years. 92.8% over 1 year, 90.5% over 2 years and 82.3% over 3 years – meets with Hansen et al (1990) recommendations. Hansen has made no recommendations about rate of attrition for 4 years assume acceptable.</p> <p>Main effect for one measurement scale. APMS students did not increase their alcohol misuse as much as students in the control group. 11% difference.</p> <p>Subgroup: Unsupervised drinkers in intervention group had a less steep linear</p>

<p><i>Butchart, A., Campanelli, P., and Kloska, D. (1992). An elementary school-based alcohol misuse prevention program: A follow-up evaluation. Journal of Studies on Alcohol; 53, 2: 106-119.</i></p>	<p>6 th grade: 3 x 45 min sessions one week apart. 10 grade: 5 x 45 min sessions.</p> <p>Delivery: Active participation and positive reinforcement; audiovisual materials, student activity sheets and handouts; practice and development of resistance skills.</p>	<p>increase in their alcohol misuse (<math>p=0.0071</math>). Although there was a significant main effect on alcohol misuse in the total sample this effect was primarily accounted for by the prior unsupervised drinkers.</p> <p><b>EFFECTIVENESS FINDINGS</b></p> <p>Pilot testing. Trained teachers. Active participation. Social resistance skills. Implemented as intended (1<sup>st</sup> year: 77% all, 96% three of 4 sessions. 2<sup>nd</sup> year: 76% all sessions, 95% two or more sessions).</p> <p>Longitudinal: intervening in a long term developmental trajectory. It may take years for the impact of the prevention effort to become manifest. Requires additional time, resources and effort. Initial low variation in target group because prevention aimed at individuals before they begin to experience problems. Takes time for differences in variation to be detected. Previous AMPS analysis have showed that treatment effects do not become significant until 2 years after the prevention programme.</p> <p>Analyse by baseline prior use experience: AMPS worked best for students with prior unsupervised drinking experience – raises issues about appropriate timing of an intervention. Baseline nonusers and supervised users perhaps information is not relevant and earlier intervention is not better. Should aim to assess programme not whether it worked but rather for whom the programme worked and why.</p> <p>Reason not to drink may be an important mediating variable and intervention component. Classroom based. Booster sessions. Resistance skills. Short term effects. Measure fidelity. Teacher training. Active participation. Pilot testing.</p>
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<p>Sub-group effects</p> <p><b>Dijkstra, M., Mesters, I., De Vries, H., Van Breukelen, G., and Parcel, G. (1999)</b></p> <p>Effectiveness of a social influence approach and boosters to smoking prevention. <i>Health Education Research</i>, 14, 6: 791-802.</p>	<p><b>Country:</b> Netherlands</p> <p><b>Substance:</b> Smoking</p> <p><b>Scope:</b> Two social influence smoking prevention programmes for students in higher educational tracks. Social influence (5 weekly 45 min lessons) and SI DM social influence decision making programme: decision making component added (5 step process information about and practice in this process). Programme content: reasons for use, reasons for quitting, pressures (direct indirect), short term effects, passive smoking, addiction, quitting, resistance training, how to react when bothered by smoke, alternatives to smoking, decision making and commitment not to smoke. Methodology: peer led activities, video intro, video guided activities, homework, written summary of lesson, non-smoking contract, non-smoking poster for school sit – with students name on it, received a non-smoking poster to take home. Peer: chosen by students, non-smoking student from same class, acted a chair person for small Group activities. Teacher training 1 hour and teacher manual. Peer training video and manual.</p> <p>Boosters were three magazines on smoking prevention handed out to students by teachers. Grade 8 (13-14 year olds) follow though grade 9 (14-15 year olds). Singers, actors, and sports personalities as models for non smoking. Information, cartoons, competition letters from students.</p>	<p><b>Behavioural Impact</b></p> <p>Retention: 75.7% over 12 months (acceptable); 64.3% over 18 months (not acceptable). Eighteen month study. Considered successful in short term only.</p> <p>Main effects: nil. No effect for baseline smokers.</p> <p>Sub-group effects: baseline non-smokers significant treatment effect from SIDM group (reduction of smoking onset) after 6 months. Both programmes were effective for non-smokers. At 12 months: SI only effective when boosters were included but SIDM still effective without boosters. SIDM lower increase in smoking uptake at 12 months compared to SI and control (5.6, 12.2 and 12.5% respectively). SIDM without boosters significant impact compared to control (8.1 and 12.6% respectively). SIDM with boosters no difference compared to programme without boosters (10.6% increase in smoking). SI with boosters more effective in preventing smoking compared to SIDM with boosters but SI without boosters was less effective than SI with boosters. 18 months: only SI with booster remained effective compared to IS without booster and control (9.7, 13.9, and 14.9% respectively). General difference between treatment and non-treatment group ranged from 25-60% and persisted for more than 1 year.</p> <p><b>EFFECTIVENESS FINDINGS</b></p> <p>Different smoking programmes needed for different education tracks/levels. Social influence approach effective in reducing onset of smoking in the short term for non-smokers. Need boosters and/or programmes longer than 5 lessons. Need to ensure compliance with activities not involving direct teacher/student interaction eg take home magazines as boosters.</p>
<p>Shope, J., Elliott, M., Raghunathan, T., and Waller, P. (2001)</p> <p>Long term follow-up of a high school Alcohol Misuse Prevention Programme's</p>	<p>US</p> <p>Alcohol</p> <p>1988/89 and 1989/90 school years, 10<sup>th</sup> graders in 6 school districts participated in AMPS booster.</p> <p>Initial sessions in 5<sup>th</sup> and 6<sup>th</sup> grades.</p> <p>5<sup>st</sup> grade: 4 x 45 min sessions one week apart.</p> <p>6<sup>th</sup> grade: 3 x 45 min sessions one week apart.</p>	<p><b>Behavioural Impact</b></p> <p>Attrition: Those students who participated in the 10<sup>th</sup> grade pretest and who had obtained a drivers licence. Original n=6081 of these n=4635 obtained drivers licence (76%), control n=2815, intervention n=1820. Seven year follow-up (71.4% of original baseline; 93.6% of those with drivers licences).</p> <p>Cluster nature of sample, generalized estimating equation methodology was used to</p>

<p>effect on students subsequent driving. <i>Alcoholism: Clinical and Experimental Research</i>; 25, 3: 403-410.</p> <p><i>Descriptive information of earlier years of the study in: Dielman, T., Shope, J., Leech, S., and Butchart, A. (1989). Differential effectiveness of an elementary school-based alcohol misuse prevention program. Journal of School Health; 59: 255-263.</i></p> <p><i>Shope, J., Dielman, T., Butchart, A., and Campanelli, P. (1992). An elementary school based alcohol misuse prevention program: Follow-up evaluation. Journal of Studies in Alcohol; 53: 106-120.</i></p>	<p>10 grade: 5 x 45 min sessions. Refresher for those how had participated in previous and new material to those who hadn't received previous lessons.</p> <p><b>Content:</b> Short term effects of alcohol, risks of alcohol use, situations and social pressures to use alcohol. Resistance skills from peers and other pressures.</p> <p><b>Delivery:</b> audio visual material, activity sheets, handouts, class discussions, small group activity.</p>	<p>account for the potential correlation among subjects from the same classroom.</p> <p>Michigan's driver history files.</p> <p><b>Main effects:</b> nil.</p> <p><b>Sub-group effects:</b> Intervention effects strongest for those students who were drinking less than one drink per week on average before the curriculum. Treatment effects disappeared after first year of licensure. Significant intervention effect on serious offence in the first year of driving was substantially stronger among those who reported less than one drink per week (0.002, rr 0.63). Those who averaged one or more drinks per week had a first year treatment effect of (p=0.009, rr 1.19). Those subjects whose parents showed disapproval of alcohol use showed a stronger treatment effect (p=0.004, rr 0.36) than those whose parents disapproved (p=0.24, rr 0.87) between groups p value (p=0.032). No sig diff for either group after first year.</p> <p>Students who drank less than one drink per week but whose parents did not disapprove of alcohol use had a first year rr 0.13 for serious offences (p=0.004) compared to the control group. Students who drank less than one drink per week but with disapproving parents had a first year rr 0.71 (p=0.022). No significant effects for crash outcomes.</p> <p><b>EFFECTIVENESS FINDINGS</b></p> <p>Prevention programme rarely measure long term harm outcomes. Generally measure immediate outcomes such as knowledge, attitude intentions and behaviour. Classroom based. Booster sessions. Resistance skills. Short term effects. Measure fidelity. Teacher training. Active participation. Pilot testing.</p>
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## PART II

### DATABASE COMPENDIUM

#### INTRODUCTION

This Database Compendium describes both conceptual and practical issues relating to the database design, although it should be noted that users of the database will need to have a reasonable level of proficiency with the Microsoft Access 97 program to run the database. The data extraction form and database specifications appearing in this Compendium has been developed over the course of the NDRI/WHO collaborative prevention project. The basic protocol for developing a data extraction form was taken from Chapter 7 ("Collecting Data") of the Cochrane Reviewers' Handbook (2000).

#### DESIGN OF THE DATA EXTRACTION FORM & DATABASE

The purpose of this section is to provide detailed information on the design of the data extraction form, which provides the basis for the fields in the database. This section will also give reviewers who do not have access to the electronic database sufficient information to code material on the data extraction form in a format that is compatible with the database, should the need arise. As such, the rationale for including each piece of information, the type of information the heading is designed to code, the purpose/s served by each field, and a brief description of how they are stored and used in the electronic database will be provided here.

The data extraction form contains four main sections:

- 1) **Citation Information:** this covers the coding of reference information, allowing interested persons to access the original article, and to track down the authors if necessary in order to access more detailed project information.
- 2) **Programme Description:** these fields identify the country of origin, the main aims of the programme, the type of intervention and drug use addressed, and the staffing, costs and other requirements identified as necessary components for implementing the project.
- 3) **Method:** this section provides information on the research design employed for the project. Information in this section also includes sample size, demographic characteristics and recruitment methodology.
- 4) **Evaluation:** there are two components to this section. The first is largely descriptive, and codes variables such as the type of evaluation conducted, the variables used to assess the effectiveness of the programme, the results of the programme, and issues relating to programme implementation. The second component codes the level of evidence for the effectiveness of the programme. A number of coding sheets have been provided for this purpose, with the type of coding sheet employed dependent upon the study design.

#### POTENTIAL USES OF THE DATABASE

Whilst designing both the data extraction form and the database, we have been mindful of the final uses for which they may be employed. WHO has indicated that similar databases in their organization have been used to produce project descriptions. In essence, these descriptions are pro-forma word documents into which salient information from the database is extracted and inserted to produce unique project descriptors in a standardized format. Due to the very broad scope of this project, it was not possible to break down all of the information and code it in such a way that it would lend itself to this

process. Therefore, where the information in a field is largely descriptive and involves a substantial amount of text, it has been entered in a format that can be extracted as a "stand alone" piece of information. That is, we have attempted to standardize the text entries as much as possible, but these entries are produced in sentence or paragraph format, so that the entire field can be inserted into a project description document, without any additional text being required aside from the field heading. Where this approach has been used to code information for a field, it is indicated as "[standard text]". In other instances, it has been possible to provide a very brief amount of text for particular fields, and these fields may lend themselves to inclusion in a pro-forma word document. For these fields "[brief text]" is indicated. In all cases, punctuation has only been used within the field, but not at the end of each field. This will allow for the programming of reports in a particular format or style without the need to amend the punctuation of database entries.

## OVERLAP BETWEEN THE DATA EXTRACTION FORM AND THE DATABASE

Given that the data extraction form provides the basis for the fields in the electronic database, a high degree of overlap between the two means of coding research information is to be expected. However, reviewers using the data extraction form record the necessary information a little differently from those using the database. The description of the data extraction form is therefore focussed primarily on the use of the hard copy extraction form, with a small amount of detail provided on how that material is stored electronically, so that reviewers will have some idea as to how both systems work. This Compendium also includes both the hard copy data extraction form, and printouts of the electronic forms, so that reviewers can compare the two formats. A detailed list of the field types employed in the database is provided with the database specifications information in this Compendium.

### CITATION INFORMATION

**Authors:** this field provides the list of authors in the order that they appear on the *original* document. It is imperative that the authors names are recorded in the exact order that they appear on the article, with the surname for each author given first, followed by the first and second names or initials. In the database each author's name only appears once, however an author can be linked to numerous citations.

**Title:** this is the title of the article or work as it appears on the document.

**Author Affiliation:** this field provides information regarding the organization or company with which each author is affiliated. Only *one organization* can be linked to a *citation* in the database, and this is the organization with which the first author is associated, the rationale being that it is the first author who customarily takes responsibility for correspondence relating to the project.

Authors can be linked to more than one organization, however. For example, an author may have published material whilst employed at one organization, then later changed their place of employment. Therefore works published later by the same author may have a different organizational affiliation. Furthermore, it is possible that an author may have worked on a particular project on a contractual basis. In many cases, it is the organization that holds ownership of the material, not the author. The author affiliation information in the database has been designed in such a way that it can accommodate this spectrum of possibilities. Although only one field is provided on the extraction form for this information, the database includes specific fields for the name of the organization, and contact details fields such as address, telephone and fax numbers. Author affiliations should be completed for every author listed on the publication.



**Source:** on the paper copy of the data extraction form, the source field contains the bulk of the citation information. For instance, information such as the book or journal name, the electronic source, the editors and publishers, the place published, and the volume, series, edition, issue, pages, chapters and other similar citation information is all entered here into the source field. However in the database, each piece of citation information is broken down in very specific detail, so that a reference can be built in a particular referencing style. This information is intended to be sent to a Microsoft Word document to build a reference, as the Microsoft Access program can not produce the italics required by many of the well-known referencing systems.

**Publication year:** this provides the year of publication, or for unpublished documents, the year the work was written, if stated on the document.

**University:** This field is used for dissertations only. It provides details of the university at which the research was undertaken.

**Degree:** This field is also specific to dissertations, and notes the degree for which the research was conducted. For instance, PhD, MA, Honours etc.

**Publication Status:** these check boxes differentiate published from unpublished literature. On the extraction form, there is a box for each, whereas in the database, there is only one box. The database box is marked "published", and is checked for published documents or left unchecked for unpublished documents.

**Type of article:** a list of check boxes is provided here from which the coder can choose the article type. For instance, there are check boxes for book, report, papers from refereed journals etc. It should be noted that review articles and meta-analyses are coded in the database with citation and abstract information only.

**Where it was sourced from:** the fundamental purpose of this field is to give database users an idea of where a hard copy or electronic copy of the document is available. A list of check boxes is provided, as is a location field for recording salient information, such as the database name or NDRI library reference number. The information used in the NDRI/WHO collaborative project was identified through many sources, and indeed, the same citation may have appeared at numerous electronic or library cites. Wherever possible, if it was discovered that a hard copy of the document was held at the National Drug Research Institute library, we have indicated this and have listed the NDRI library reference number for the material. If the article was accessed via another source, we have provided the database name, key informant, internet address or other information necessary to track the article. Reviewers should record details of where a copy of the document is held in this field.

## PROGRAMME DESCRIPTION

**Country of origin [brief text]:** This is the name of the country in which the research was conducted. If the project has an international scope, more than one country can be recorded. A drop down list of countries is available in the database.

**Country code [brief text]:** This matches the country of origin, and is automatically selected in the database once the country has been selected. The ISO 3, ISO 2, UN, WB and WHO codes have all been listed in the database. It is not necessary for reviewers using the data extraction form to know the country code, as it is automatically identified by the database.

**Region [brief text]:** the WHO region the country or countries belong to are entered in this field. In the database, the regions are selected automatically when the country of origin is identified. Therefore as with the country code, reviewers using the data extraction form do not need to know the WHO region code.

**Language published in [brief text]:** The language the article was published or written in is entered into this field. The database does not have a comprehensive list of languages to select from, but languages can be added at the time of entry, so this information should be included on the extraction form.

**Programme name [brief text]:** This identifies the name of the programme if one is given with the abbreviation for the project name listed in square brackets (eg: Community Trials Project [CTP]). If the work under review does not cover a discrete programme per se, as is the case with much of the research, the running head for the article or chapter title is entered here. If no running head or chapter title for the article is identified, the full title of the research is entered instead. Abbreviations of the programme name are only recorded if they are used in the research piece under review. They are not necessary for either the running head or the full title of the article.

**Key aims of programme [brief text]:** these identify the primary aims of the programme, and are listed in point form.

**Abstract [standard text]:** wherever possible, the authors' abstract is provided here. If none is available, a brief synopsis of the research can be entered by the reviewer instead.

**Type of intervention [brief text]:** this provides a number of check boxes, for which multiple selections can be made. Multiple selections for this field are necessary as some programmes employ more than one type of intervention. The types of interventions identified are media, school, harm minimization, regulation of physical and economic availability and community.

**Type of drug [brief text]:** as with the types of interventions, drug type has a number of check boxes from which multiple selections can be made. This was necessary as many projects, particularly those with a 'universal prevention' focus, concentrate on prevention of harm for more than one drug. Alternatively, there are also projects with a drug-specific focus. We have included an "other" category, as some drugs are not specifically targeted by the WHO/NDRI collaborative project, but may have emerged in the literature within the context of some of the more comprehensive prevention programmes. The inclusion of a multiple selection allows for this range of eventualities.

**Theoretical base [brief text]:** this is designed to capture the theoretical or conceptual underpinning on which the programme is based. In some instances, this is clearly identified by the authors, and in others it is not. Where it has been identified, the information should be incorporated.

**Key components [standard text]:** this section provides a paragraph on the core intervention features that were undertaken. In a sense, it is a very brief synopsis of "what was done" to effect change. In some cases, this information may include the components in bullet point form.

**Intervention staff [brief text]:** the staff required to implement the intervention components (that is, to implement the key components identified in the previous field) are identified in this section. This information generally takes the form of occupation or job description, and is recorded as a list. For example, intervention staff may include police, community organizers, school teachers etc. The intention is to provide some indication of the staffing requirements necessary to implement the intervention.

**Cost of programme [brief text]:** where the information is available, details regarding the cost of the programme have been noted. The database has a list of currencies from which a selection can be made. This should give some indication as to the level of expenditure that may be necessary to implement a particular programme or intervention. Additionally, it may allow database users to evaluate the relative cost-effectiveness of particular programmes or interventions should the need arise.

**Programme complexity [brief text]:** three checkboxes are provided here, which identify the programme complexity as low, moderate or high. Only one of these selections can be made. As a subjective evaluation by the reviewer is made here, we have attempted to ensure inter-rater reliability in the following way. Firstly, the identification of complexity is relative to programmes of a similar type only. For example, media campaigns are only compared to other media campaigns. Complexity also includes the level of staffing required to implement the programme, the level of training that would be required for these people to implement the programme itself, the level of infrastructure necessary, the funding required, the number and complexity of the key components of the intervention, and intensity of implementation that the key components require in order to ensure programme fidelity. Even with these parameters in place, it is likely that there may be some disagreement as to the programme complexity rating. Wherever possible, it would be preferable to have more than one rater evaluate the complexity of the programme.

**Evaluation staff [brief text]:** the evaluation staff are those who were employed to evaluate the effectiveness of the intervention. In some instances, these will be the same as the intervention staff, or they may in fact be the authors of the publication. This information has been included to identify the staffing requirements should an evaluation component be included in a prevention project. The most common entry into this field is "researchers". If a particular form of training or knowledge is required, this should also be recorded (eg: "researchers trained in time series analysis").

**Situational Specifics [standard text]:** the purpose of this field is to identify those contextual, and oftentimes pragmatic issues, that may have influenced the implementation or effectiveness of the programme or initiative. It is also intended that this information should identify the necessary pre-conditions for enacting a programme or intervention in a particular setting at a particular time. The type of information entered into this field includes issues such as level of government support, regulatory or legal guidelines in place, public attitudes or level of awareness about the issues being targeted, and specific and/or unique information about the setting or community in which the intervention was conducted. In essence, this information hopes to capture those contextual factors that may limit the applicability or generalisability of the programme to different settings.

**Other considerations [standard text]:** although this field has rarely been used in the project we have undertaken, it has been included on the form and in the database to identify other issues that effect the implementation of programmes or interventions. The issues are canvassed in the Cochrane Reviewer's Handbook (Clarke & Oxman, 2000) and include level of compliance and baseline risk in the population under investigation. This field is differentiated from the situational specifics field in that it looks at epidemiological and methodological issues, rather than issues of social, political and cultural context.

## METHOD

**Study Design [brief text]:** this section provides a list of multiple select checkboxes for the study design employed for the research. In most cases, only one design is selected. In some cases, there may be studies that have employed multiple designs (eg. for different phases of the project), so for these, more than one box can be checked. In the database, checking the appropriate study design box/es produces a list of design-specific tabs for evaluating the quality of the project. For example, if the interrupted time series box is checked, the evaluation form for interrupted time series designs is produced, on which the study quality can be evaluated.

**Sample selection [brief text]:** a number of multiple select check boxes are provided for describing the sampling method used for the project. More than one choice can be made, as many studies include more than one type of sampling methodology.

**Target group [brief text]:** in this field the particular group of interest can be identified. For example, the target group for the intervention may be "males attending secondary school", "regular drinkers", "teenagers" etc.

**Sample description [standard text]:** this field is designed to describe the sample population. The type of information coded in this field includes the cities or communities from which the sample was taken, or a breakdown of the sample size according to gender and age. In effect, it provides a more detailed synopsis of the sample characteristics that are not fully covered by other fields relating to the sample.

**Sample size [brief text]:** this is the total sample size given as a discreet number. The reason for coding the total sample size in this way is that WHO have suggested sample size will be one of the main search categories employed by users of the database. If a description regarding the breakdown of the sample into smaller groups is given in the study, it should be entered in the sample description field.

**Socioeconomic status [brief text]:** if the socio-economic status is reported in the study, it should be entered in this field.

**Ethnicity [brief text]:** this field lists the ethnicity of the participants sampled.

**Gender [brief text]:** check boxes allow for one choice only, either male, female, or both male and female.

**Age [standard text]:** the age range of participants is entered into this field, and is coded as a brief sentence. The rationale for this is that many studies have provided multiple age spans for certain groups under investigation. A simple numerical figure was therefore unable to clearly reflect the level of information provided in many studies.

## EVALUATION

**Type of evaluation [brief text]:** one checkbox from a selection of five can be chosen for this field. The choices are process evaluation, outcome evaluation, process and outcome evaluation, not applicable and unclear.

**Process evaluation [standard text]:** a paragraph describing the process evaluation is entered here. This field is only completed for those projects that have evaluated the process in some shape or form, otherwise it is left blank.

**Outcome variables [brief text]:** this field provides a list of outcome measures in point form. Aside from the assistance this provides in describing the evaluation measures for a particular programme, it may also be beneficial information for project planners who want to incorporate an evaluation component in their work. This field in the database can be used to produce a comprehensive list of outcome measures used by researchers to evaluate programme effectiveness for particular types of interventions.

**Results [standard text]:** this is a paragraph that summarizes the results of the study, including statistical results, discussion of findings or recommendations made by the authors.

**Comments [standard text]:** this field can be used for reviewers to provide comments regarding the study design, implementation, recommendations or any additional notes.

**Implementation description [standard text]:** this field describes the steps taken to implement the programme or intervention. In effect, it describes the implementation methodology.

**Implementation adequacy [brief text]:** one choice can be made here from a selection of four (yes, no, partially or unclear). This field gives an indication of the fidelity of the programme implementation.

**Implementation intensity [brief text]:** some works provide information about the degree to which key components have been implemented over time. This is most common in the school based programmes, where, for example, information such as "a 3 hour session once per week for fourteen weeks" may be reported. If information of this type appears in the article, it should be recorded in this field.

**Implementation obstacles were there problems that hampered the implementation of the project? [brief text]:** two check boxes are provided here, for which a simple yes or no response is required. If yes, is selected, the next field should also be completed.

**If yes, what were they and how were they dealt with [standard text]:** Some researchers report the difficulties of implementing particular programmes due to obstacles such as opposition from vested interests. This heading allows reviewers to type a short paragraph (no more than 255 characters) describing these obstacles, how they impacted on the programme, and what solutions, if any, were arrived at. The purpose of providing this type of information is that it may assist programme planners to anticipate such difficulties should they choose to implement a similar style of programme. These can then be addressed pro-actively in the planning stages of the project. Obviously many of these problems may be context-specific. However it is hoped that providing exemplars of some implementation difficulties and the strategies employed to address them, will prove a useful additional resource.

**Length of intervention [brief text]:** this provides the total time span for the intervention phase. It is differentiated from implementation intensity as it does not attempt to code the level of implementation, but rather the entire timeframe of the implementation process. For instance, information in this field may take such forms as "3 months", "two years" or "12 months".

**Length of follow up [brief text]:** the time between the implementation phase and the evaluation phase is reported in this field.

**Was there a sufficient time frame for an effect to register? [brief text]:** one choice can be made here from the three check boxes available (yes, no, unclear). Most often, this field is coded as “yes”, as there is some evidence in the results that the intervention has had an impact. However, there are some projects for which it has been argued that a longer follow-up time was needed before a significant effect would register. In these cases, a “no” selection should be made. In other work, it is difficult to provide a simple yes or no response, and in these cases, “unclear” is the preferred option.

## EVALUATION CODING SHEETS

A number of evaluation coding sheets are provided both in the data extraction form and in the electronic database. The coding sheets for Randomized Controlled Trials (RCT), Controlled Prospective Studies (CPS), Controlled Clinical Trials (CCT), Controlled Before/After (CBA) and Interrupted Time Series (ITS), come from the Cochrane Drugs and Alcohol Review Group, and the categorization of such studies has been done in accordance with their guidelines. Another study quality form has also been developed. This form is called “Study Validity”. The first four items shown under the heading “Bias”, come from the Cochrane Reviewer’s Handbook (Clarke & Oxman, 2000), while the final four items listed under the heading “Analysis” were devised by NDRI in collaboration with WHO, and cover methodological issues such as statistical power, reliability and validity of outcome measures, the appropriate use of statistical analyses, and correspondence between the analyses and the original hypothesis. Study designs (other than RCT, ITS, CCT, CBA and CPS) have been categorized according to the guideline provided by Kumar (1996).

The completion of all forms, in both the hard copy and electronic formats, requires checking the appropriate box for each statement. In the electronic database, some of the evaluation forms remain hidden, with ‘Study Validity’ as the default form. However, when the study design is identified in the method section by checking the appropriate box or boxes, the database automatically produces tab/s for the correct evaluation form/s. The database automatically produces a total score for the study once all boxes are checked on the evaluation form.

## HARD COPY DATA EXTRACTION FORM

### CITATION INFORMATION

This should include the following information: Author/s, year, title, source (eg journal name), electronic source, type of report (published, unpublished), publisher, place published, edition, editors, series, volume, issue, pages, chapter.

**Authors:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Author Affiliation:** (eg NDRI, Turning Point etc) \_\_\_\_\_

**Source:** (eg journal name) \_\_\_\_\_

\_\_\_\_\_

**Publication Year:** \_\_\_\_\_

**University:** (for dissertation abstracts only) \_\_\_\_\_

\_\_\_\_\_

**Degree:** (for dissertation abstracts only) \_\_\_\_\_

#### Publication status

published

unpublished

#### Type of article

paper from refereed journal

report

chapter in monograph or book

monograph

book

unrefereed journal/magazine/newsletter

other \_\_\_\_\_

#### Where it was sourced from

NDRI library

internet

database

key informant

other

**Location (eg database name or web address):** \_\_\_\_\_

### PROGRAMME DESCRIPTION

**Country of origin:** \_\_\_\_\_

**Country code:** \_\_\_\_\_

**Region:** \_\_\_\_\_

**Language published in:** \_\_\_\_\_

**Programme Name:** \_\_\_\_\_

Key aims of programme: \_\_\_\_\_

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Description of study/Abstract:

Type of intervention (choose one or more):

Media Campaigns      School Based Programme      Harm Minimization  
Regulation of Physical and Economic Availability  
Community Based Programmes

Type of drug (choose one or more):

alcohol                      heroin  
tobacco                      cocaine  
cannabis/marijuana      other  
amphetamines

Theoretical base: \_\_\_\_\_

Key components: what were the core intervention features?

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Intervention Staff: \_\_\_\_\_

---

Cost of programme (note currency): \_\_\_\_\_

*Programme Complexity (choose one)*

low      moderate      high

Evaluation Staff: \_\_\_\_\_

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*Situational Specifics:* \_\_\_\_\_

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*Other considerations (eg compliance, baseline risk):* \_\_\_\_\_



## METHOD

### Study Design

randomized control trial  
 controlled prospective  
 interrupted time series  
 quasi-experimental  
 cohort study

controlled clinical trial  
 controlled before after  
 cross-sectional  
 other (state) \_\_\_\_\_

### Sample Selection

Random / probability  
 simple random sampling  
 stratified random sampling  
 cluster sampling  
*Mixed design*  
 systematic sampling

Non-random  
 quota  
 accidental  
 purposive  
 snowball  
 unclear

Target group: \_\_\_\_\_

\_\_\_\_\_

Sample description: \_\_\_\_\_

\_\_\_\_\_

Sample size: \_\_\_\_\_

\_\_\_\_\_

Socio-economic status: \_\_\_\_\_

\_\_\_\_\_

Ethnicity: \_\_\_\_\_

\_\_\_\_\_

Gender:      male                  female                  male and female

Age: \_\_\_\_\_

\_\_\_\_\_

## EVALUATION

Type of Evaluation (choose one):

Process Evaluation

Outcome Evaluation

Process & Outcome Evaluation

Not Applicable

Unclear

Process Evaluation (description): \_\_\_\_\_

\_\_\_\_\_

Outcome Variables (what was measured):

\_\_\_\_\_

Results: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Implementation:

*Implementation description*

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*Implementation adequacy: was the intervention adequately implemented?*

yes

no

partially

unclear

\_\_\_\_\_

*Implementation intensity:* \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*Implementation obstacles: were there problems that hampered the implementation of the project?*

yes      no

*If yes, what were they and how were they dealt with?*

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*Length of Intervention: how long was the intervention phase?*

\_\_\_\_\_

*Length of follow up:* \_\_\_\_\_

*Was there a sufficient timeframe for an effect to register?*

yes      no      unclear

## Evaluation Coding Sheets

### Complete this page for Experimental Studies Only:

(Randomized Control Trials [RCT] & Controlled Clinical Trials [CCT] )

#### 1. Randomization

- 2 (adequate random numbers generation (random lists tables, computers, coin tossing)
- 1 (no description of method but mentioned random method)
- 0 (other methods that appears to be biased)

#### 2. Allocation Concealment

- 6 (adequate measures to conceal allocation such as central randomization, computerized systems, or other strategies convincing of concealment)
- 3 (unclear concealment measures, either not reported by authors or reported and not included in the above strategies)
- 0 (inadequate concealment measures, as alternation, sequential assignment, dates of birth, day of week or any other such approach)

#### 3. Blinding

- 3 (adequate blinding measures for participants [placebo] and in assessment of outcomes [specially for 'soft' outcomes] )
- 1 (unclear blinding for participants or in outcome assessment)
- 0 (inadequate blinding especially in outcome assessment)

#### 4. Inclusion of all participants in the analysis

- 3 (the trial presents an intention-to-treat analysis and few losses to follow up)
- 2 (intention-to-treat analysis and less or equal to 20% losses to follow up)
- 0 (no reporting of drop-outs, or more than 20% losses to follow up, or wide differences in losses to follow-up between groups)

#### 5. Other criteria

Were the groups similar at the start of the trial?

- 1 (yes)
- 0 (no)

Aside from the experimental intervention, were the groups treated equally?

- 1 (yes)
- 0 (no)

**Total Evaluation Score (out of a possible 16): \_\_\_\_\_**

**Complete this page for Controlled Prospective Studies (CPS) only:**1. Base of the Study

- 2 (adequate description of the population base of the study, clear inclusion and exclusion criteria, suggesting no selection bias)
- 1 (adequate description of population base of the study, clear inclusion and exclusion criteria, but with suspect of selection bias)
- 0 (unclear description, either not reported by authors or reported and not included in the criteria for which a two point score would be assigned)

2. Confounding control

- 8 (adequate identification of all confounders, [severity of the disease, disease, disease classification, treatment prescription criteria...] valid indicators and adequate statistical analysis)
- 4 (unclear or incomplete identification of confounders, adequate statistical analysis)
- 0 (inadequate identification, and statistical analysis)

3. Inclusion of all participants in the analysis

- 4 (the study presents an intention-to-treat analysis and few losses to follow-up)
- 2 (intention to treat analysis and losses less or equal to 20% and not suspicion of selection bias)
- 0 (no reporting of drop outs, or exclusion greater than 20%, or suspicion of selection bias)

4. Other criteria

Adequate description of base characteristics of the compared groups

1 (yes)    0 (no)

Adequate description of all treatments

1 (yes)    0 (no)

**Total Evaluation Score (out of a possible 16): \_\_\_\_\_**

**Complete this page for Controlled Before After (CBA) studies only:**

1. Base of the study

- 4 (adequate description of population and control group performed prior to the intervention, at the same time and using some methods over the two groups, clear inclusion and exclusion criteria and groups are similar for confounding variables [variables predicting outcomes] )
- 2 (unclear description of groups under study or no specification of time and/or methods of the collection of information)
- 0 (information collected in different time or using different methods across groups, or groups are different for confounding variables)

2. Detection Bias

- 4 (primary outcome variable(s) assessed blindly or variables are objective [biological markers, length of treatment etc] and complete correspondence to primary hypothesis)
- 2 (unclear description and assessment of primary outcomes or not complete correspondence to primary hypothesis)
- 0 (primary outcome variable(s) collected without blind assessment and variables not objective)

3. Contamination

- 4 (adequate description of allocation methods in order to protect them against [from] contamination, it is considered that control group hasn't received the intervention)
- 2 (unclear description of the allocation, ie control group could have received intervention)
- 0 (control group is likely to have received the intervention)

4. Inclusion of all participants in the analysis

- 2 (the study presents an intention-to-treat analysis and few losses to follow up)
- 1 (intention-to-treat analysis and losses less or equal to 20%, and not suspicion of selection bias)
- 0 (no reporting of drop outs, or exclusion greater than 20%, or suspicion of selection bias)

5. Other criteria

Reliability of outcome measures – there were two or more raters with 90% of agreement, with  $k > 0.8$  and outcome were obtained from some automatic system)

(yes)      (no)      (not applicable)

**Total Evaluation Score (out of a possible 14): \_\_\_\_\_**

**Complete this page for Interrupted Time Series (ITS) studies only:**1. Intervention

- 4 (there is data enough to state that the intervention is independent of other changes)
- 2 (there is not enough data to state the independence of intervention)
- 0 (there is a solid suspicion of dependency of the intervention)

2. Statistical inference

- 4 (there are sufficient data points to enable reliable statistical inference, ie at least 3 points collected before the intervention and 3 after, and there are at least 30 observations per data point)
- 0 (there are less than 3 data points before or after the intervention or less than 30 observations per data point)

3. Data collection

- 4 (intervention is unlikely to affect data collection and sources of information are explicitly the same before and after intervention)
- 0 (there is suspicion that the intervention has affected data collection)

4. Detection Bias

- 4 (primary outcome variable(s) assessed blindly or variables are objective [biological markers, length of treatment etc] and complete correspondence to primary hypothesis)
- 2 (unclear description and assessment of primary outcomes or not complete correspondence to primary hypothesis)
- 0 (primary outcome variable(s) collected without blind assessment and variables not objective)

5. Other criteria

Reliability of outcome measures – there were two or more raters with 90% of agreement, with k >0.8 and outcome were obtained from some automatic system)  
(yes)      (no)      (not applicable)

**Total Evaluation Score (out of a possible 16):\_\_\_\_\_**

**Study Validity – Complete this section for studies which are not RCT, CCT, ITS, CBA or CPS studies.**

**1. Bias**

Selection bias (systematic differences in comparison groups): Sample matching: samples were equivalent and matched for confounding variables

3 met                      2 partly met                      1 unclear                      not met

Performance bias (systematic differences in care provided apart from the intervention being evaluated).

There were no extraneous factors affecting some groups, but not others, that may have effected the outcome

3 met                      2 partly met                      1 unclear                      not met

Attrition bias (systematic differences in withdrawal from the study): there were no problems with systematic attrition that may have effected the outcome

3 met                      2 partly met                      1 unclear                      not met

Detection bias (systematic differences in outcome assessment): There were no differences between groups in the way that the outcome variables were assessed

3 met                      2 partly met                      1 unclear                      not met

**2. Analysis**

The outcome measures are reliable and valid, with little chance of measurement error affecting the integrity of the analysis:

3 met                      2 partly met                      1 unclear                      not met

The statistical analysis conducted was appropriate for testing the hypothesis:

3 met                      2 partly met                      1 unclear                      not met

The sample size was sufficient to ensure an appropriate level of statistical power:

3 met                      2 partly met                      1 unclear                      not met

The conclusions drawn are commensurate with the statistical evidence, and correspond to the original hypothesis:

3 met                      2 partly met                      1 unclear                      0 not met

**Reviewers Rating:**

Score: 24	<b>Excellent</b> (all criteria met, study is of a high standard )
Score: 16-23	<b>Good</b>
Score: 9-15	<b>Fair</b>
Score: 0- 8:	<b>Poor</b> (all of the criteria are unmet or unclear, results should be interpreted with caution)



## OPENING THE DATABASE

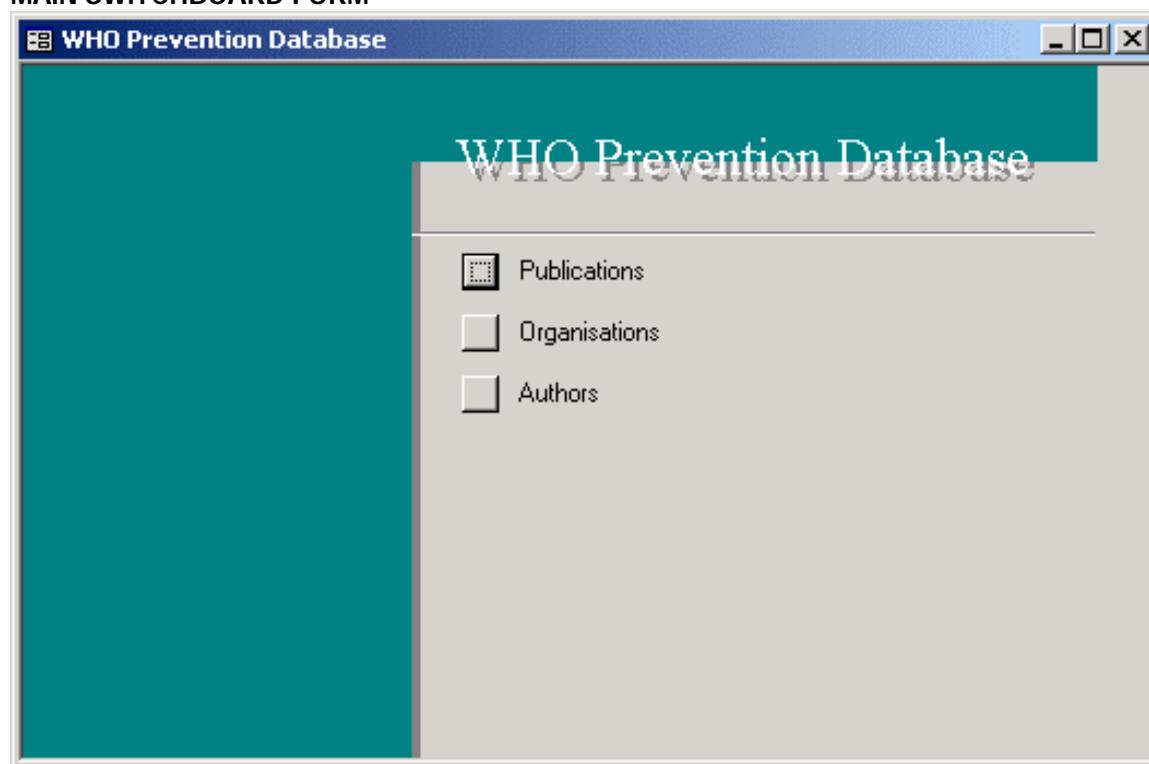
The database consists of two Access 97 database files. The front-end and back-end are called WHO Prevention Database and WHO Prevention Database\_be respectively. The back-end file contains all of the table structures, relationships and data, while the front-end contains forms, queries and modules.

The database has been developed in Access 97 and should run with little or no modification in this version or any subsequent versions. To use newer versions of Access, the database files may need to be converted – note that once the database has been converted to a newer version, it will not be useable in older versions.

To run the database, open the front-end file (WHO Prevention Database). As this opens, the links to the backend database are checked – if the path has changed, a dialogue is displayed prompting the user to locate the back-end (WHO Prevention Database\_be). Once this is done, the links will be refreshed and the database can be used. Note that if the names of the database files are changed, the constant `pcstrDBName` in the module `modInitialise` will also need to be changed. The linking code expects the backend database to have the same name as the front-end with “\_be” added to the end.

After the database starts up, the main switchboard will open.

### MAIN SWITCHBOARD FORM



## SEARCHING THE DATABASE

Clicking on the Publications button brings up the Publication search form.

This form allows the user to add, edit and search for publications. Clicking the Add button near the bottom of the form will open the Publications form (see below) in data entry mode. The edit button allows any of the publications listed in the publications list at the bottom of the form to be edited. To do this, select the publication to be edited in the publication list and click edit. The Publication form will then open with the selected record. As with most list boxes in this database, double-clicking performs the same action as selecting an item and clicking the edit button. The navigation buttons on the edit form move to the other records in the list.

Searches may be done on the title of the publication, intervention type, country, study quality, sample size, author, year of publication, the organization that produced the publication, and/or type of drugs covered by the publication. Sorting may be done by organization, sample size, study quality, title and/or year of publication.

Searches on title can locate the specified text at the beginning, end or anywhere in the title. Type of intervention and country searches may be done on multiple items at one time – i.e. more than one intervention type or country may be specified. Click on the appropriate Add button below the lists to add additional criteria. Sample size and year of publication may be searched over a range of values. If both the lower and upper values are entered, the records returned will be within the range of values. If the upper value of the range is omitted, all record greater than or equal to the lower value will be found. Likewise, if the lower value is omitted, all values less than or equal to the upper value will be found. Author is displayed as [last name, first initial]. The author combo box like all other combo boxes allows the user to do a key search (typing in the combo box will attempt to match an item in the combo box list). To find a particular author, either select the name from the combo box, or while the focus is on the combo box, start typing the author's name (starting with the last name) until their name appears.

The sort keys are selected from the sort by combo boxes – first, second and third refer to the order that the keys are applied. Each key may be sorted in either ascending or descending order. Note that additional sort keys may be added to the `tlkpPubSort` table if desired. The field name goes in the first field, while the description to appear in the combo box goes in the second field. The queries may need modification for some of the sort fields to work – `mcstrSQL` and `mcstrlstSQL` in the form `frmPubSrch` and `mcstrSQL` in the module `modReports` (both `mcstrSQL` strings should be the same). Sorting on fields that allow multiple items in the publication record (such as country and intervention type) is not recommended with the database in its current form, as this may produce unpredictable results.

Once the search criteria and sort options have been selected, clicking on the Search button will display the records matching the search criteria in the order specified by the sort options, in the publications list near the bottom of the form. The Show All button will list all publication records according to the current sort options. The Clear Search button clears the search criteria fields so new criteria may be entered – this does not change the contents of the list box (the Show All button both clears and updates the list box).

Clicking on an item in the list will enable the Edit and View Citation buttons. The Edit button has been discussed above. The View Citation button will open a dialogue displaying the citation for the selected publication. The Export to Word button will create a new document in Word containing all publications in the list. Note this may take quite a while depending on the size of the list.

## ADDING ENTRIES TO THE DATABASE


### CITATION TAB



As noted previously, the Add and Edit buttons beneath the publication list bring up the Publications form. The first tab (Citation) contains all of the citation information for the article, as well as further details for sourcing the document. This tab is filled out for all material entered into the database. On the top right hand corner of the form is a button with the Word icon. Clicking this button will produce the same report that the Export to Word button produces for the current publication only. A sample of the report is included in this Compendium.

**Publications**

Organisation

Title



Citation | Program Description | Method | Evaluation | Experimental | Controlled Prospective | Controlled Before After | In  

Authors and Editors

Name	Author	Editor

Type

Type other

Source

Year  Volume  Issue  Pages

Place






Series

ISBN  Edition  Chapter  ☐ Published

University  Degree

Location  Location desc

Abstract

Record:       of 1

## PROGRAMME DESCRIPTION TAB

The details of the programme are entered into this tab. For primary studies, it is preferable to complete all fields. For review articles, the country, programme name, type of intervention and type of drug should be completed.

Publications

Organisation

Title

Citation

Program Description

Method

Evaluation

Experimental

Controlled Prospective

Controlled Before After

In

Country

Add country

Remove country

Language

Program name

Aims

Type of intervention

☐ Media
 ☐ School
 ☐ Harm minimisation
 ☐ Regulation
 ☐ Community

Type of substance

☐ Alcohol
 ☐ Heroin
 ☐ Tobacco
 ☐ Cocaine
 ☐ Cannabis
 ☐ Amphetamines
 ☐ Other

Theoretical base

Key components

Intervention staff

Program cost

Currency

Complexity

Evaluation staff

Situational specifics

Other considerations

Record:

1

of 1

## METHOD TAB

The method information, including the study design, is entered here. When the study design/s check-boxes are checked, the appropriate evaluation tabs/s will appear. For illustrative purposes, all of the tabs (or scroll arrows) have been shown here, but when using the database, only the study validity tab will appear until the appropriate boxes are checked on this tab.

Publications

Organisation

Title

Citation

Program Description

Method

Evaluation

Experimental

Controlled Prospective

Controlled Before After

In

Study design

☐ Randomised control trial

☐ Quasi-experimental

☐ Cross-sectional

☐ Controlled prospective

☐ Controlled clinical trial

☐ Cohort study

☐ Interrupted time series

☐ Controlled before after

Other

Sample selection

☐ Simple random

☐ Systematic

☐ Purposive

☐ Stratified random

☐ Quota

☐ Snowball

☐ Cluster

☐ Accidental

☐ Unclear

Target group

Sample description

Sample size

Socio-economic status

Ethnicity

Gender

Age

Record:

1

of 1

## EVALUATION TAB

The evaluation tab should be filled out for all primary studies, as the material covered is relevant to all study design types. However, not all of the fields need to be completed, as not all of the information identified in this tab is relevant to all studies.

Publications

Organisation

Title

Citation

Program Description

Method

Evaluation

Experimental

Controlled Prospective

Controlled Before After

In

Evaluation type

Process evaluation

Outcome variables

Results

Comments

Implementation description

Implementation adequacy

☒ Yes
 ☒ No
 ☒ Partially
 ☒ Unclear

Implementation intensity

Implementation obstacles

☐ Yes
 ☐ No

Obstacle description

Length of intervention

Length of follow-up

Sufficient timeframe

☒ Yes
 ☒ No
 ☒ Unclear

Record:

1

of 1

## EXPERIMENTALTAB

This tab should be completed for Randomized Controlled Trials (RCT) and Controlled Clinical Trials (CCT) only. Note that the Total Evaluation score on this and the following tabs will not be displayed until a radio button from each group on the tab is selected.

Publications

Organisation

Title

Citation

Program Description

Method

Evaluation

Experimental

Controlled Prospective

Controlled Before After

In

1. Randomisation

2 (adequate random numbers generation (random lists tables, computers, coin tossing))

1 (no description of method but mentioned random method)

0 (other methods that appears to be biased)

2. Allocation Concealment

6 (adequate measures to conceal allocation such as central randomisation, computerised systems, or other strategies convincing of concealment)

3 (unclear concealment measures, either not reported by authors or reported and not included in the above strategies)

0 (inadequate concealment measures, as alternation, sequential assignment, dates of birth, day of week or any other such approach)

3. Blinding

3 (adequate blinding measures for participants [placebo] and in assessment of outcomes [specially for 'soft' outcomes])

1 (unclear blinding for participants or in outcome assessment)

0 (inadequate blinding especially in outcome assessment)

4. Inclusion of all participants in the analysis

3 (the trial presents an intention-to-treat analysis and few losses to follow up)

2 (intention-to-treat analysis and less or equal to 20% losses to follow up)

0 (no reporting of drop-outs, or more than 20% losses to follow up, or wide differences in losses to follow-up between groups)

5. Other criteria

1 (yes) 0 (no) Were the groups similar at the start of the trial?

1 (yes) 0 (no) Aside from the experimental intervention, were the groups treated equally?

Total Evaluation Score (out of a possible 16):

Record: 1 of 1



## CONTROLLED PROSPECTIVE TAB

This tab should be completed for Controlled Prospective Studies (CPS) only.

Publications

Organisation

Title

Citation

Program Description

Method

Evaluation

Experimental

Controlled Prospective

Controlled Before After

In

1. Base of the Study

2 (adequate description of the population base of the study, clear inclusion and exclusion criteria, suggesting no selection bias)

1 (adequate description of population base of the study, clear inclusion and exclusion criteria, but with suspect of selection bias)

0 (unclear description, either not reported by authors or reported and not included in the criteria for which a two point score would be assigned)

2. Confounding control

8 (adequate identification of all confounders, [severity of the disease, disease, disease classification, treatment prescription criteria...] valid indicators and adequate statistical analysis)

4 (unclear or incomplete identification of confounders, adequate statistical analysis)

0 (inadequate identification, and statistical analysis)

3. Inclusion of all participants in the analysis

4 (the study presents an intention-to-treat analysis and few losses to follow-up)

2 (intention to treat analysis and losses less or equal to 20% and not suspicion of selection bias)

0 (no reporting of drop outs, or exclusion greater than 20%, or suspicion of selection bias)

4. Other criteria

1 (yes)

0 (no)

Adequate description of base characteristics of the compared groups

1 (yes)

0 (no)

Adequate description of all treatments

Total Evaluation Score (out of a possible 16):

Record: 1 of 1

## CONTROLLED BEFORE / AFTER TAB

This tab should be completed for Controlled Before / After (CBA) study designs only.

Publications	
Organisation	<input type="text"/>
Title	<input type="text"/>
<div> Citation Program Description Method Evaluation Experimental Controlled Prospective Controlled Before After In </div>	
<div> 1. Base of the study <div> <input checked="" type="radio"/> 4 (adequate description of population and control group performed prior to the intervention, at the same time and using some methods over the two groups, clear inclusion and exclusion criteria and groups are similar for confounding variables [variables predicting outcomes]) <input checked="" type="radio"/> 2 (unclear description of groups under study or no specification of time and/or methods of the collection of information) <input checked="" type="radio"/> 0 (information collected in different time or using different methods across groups, or groups are different for confounding variables) </div> </div>	
<div> 2. Detection Bias <div> <input checked="" type="radio"/> 4 (primary outcome variable(s) assessed blindly or variables are objective [biological markers, length of treatment etc] and complete correspondence to primary hypothesis) <input checked="" type="radio"/> 2 (unclear description and assessment of primary outcomes or not complete correspondence to primary hypothesis) <input checked="" type="radio"/> 0 (primary outcome variable(s) collected without blind assessment and variables not objective) </div> </div>	
<div> 3. Contamination <div> <input checked="" type="radio"/> 4 (adequate description of allocation methods in order to protect them against [from] contamination, it is considered that control group hasn't received the intervention) <input checked="" type="radio"/> 2 (unclear description of the allocation, ie control group could have received intervention) <input checked="" type="radio"/> 0 (control group is likely to have received the intervention) </div> </div>	
<div> 4. Inclusion of all participants in the analysis <div> <input checked="" type="radio"/> 2 (the study presents an intention-to-treat analysis and few losses to follow up) <input checked="" type="radio"/> 1 (intention-to-treat analysis and losses less or equal to 20%, and not suspicion of selection bias) <input checked="" type="radio"/> 0 (no reporting of drop outs, or exclusion greater than 20%, or suspicion of selection bias) </div> </div>	
<div> 5. Other criteria <div> Reliability of outcome measures - there were two or more raters with 90% of agreement, with <math>k &gt; 0.8</math> and outcome were obtained from some automatic system <div> <input checked="" type="radio"/> (yes) <input checked="" type="radio"/> (no) <input checked="" type="radio"/> (not applicable) </div> </div> </div>	
<b>Total Evaluation Score (out of a possible 14):</b>	
Record: <input type="button" value="Previous"/> <input type="button" value="Next"/> <input type="text" value="1"/> <input type="button" value="First"/> <input type="button" value="Last"/> of 1	

## INTERRUPTED TIME SERIES TAB

This tab should be completed for Interrupted Time Series (ITS) studies only.

Publications

Organisation

Title

Evaluation

Experimental

Controlled Prospective

Controlled Before After

Interrupted Time Series

Study Validity

◀

▶

1. Intervention

☐ 4 (there is data enough to state that the intervention is independent of other changes)

☐ 2 (there is not enough data to state the independence of intervention)

☐ 0 (there is a solid suspicion of dependency of the intervention)

2. Statistical inference

☐ 4 (there are sufficient data points to enable reliable statistical inference, ie at least 3 points collected before the intervention and 3 after, and there are at least 30 observations per data point)

☐ 0 (there are less than 3 data points before or after the intervention or less than 30 observations per data point)

3. Data collection

☐ 4 (intervention is unlikely to affect data collection and sources of information are explicitly the same before and after intervention)

☐ 0 (there is suspicion that the intervention has affected data collection)

4. Detection bias

☐ 4 (primary outcome variable(s) assessed blindly or variables are objective [biological markers, length of treatment etc] and complete correspondence to primary hypothesis)

☐ 2 (unclear description and assessment of primary outcomes or not complete correspondence to primary hypothesis)

☐ 0 (primary outcome variable(s) collected without blind assessment and variables not objective)

5. Other criteria

Reliability of outcome measures - there were two or more raters with 90% of agreement, with  $k > 0.8$  and outcome were obtained from some automatic system

☐ (yes)

☐ (no)

☐ (not applicable)

Total Evaluation Score (out of a possible 16):

Record:

◀

▶

1

▶

▶▶

▶▶▶

of 1

## STUDY VALIDITY TAB

This tab should be completed for those study designs that are not RCT, ITS, CPS, CBA or CCT designs.

Publications

Organisation

Title

Evaluation

Experimental

Controlled Prospective

Controlled Before After

Interrupted Time Series

Study Validity

1. Bias

Selection bias (systematic differences in comparison groups): Sample matching: samples were equivalent and matched for confounding variables

☒ 3 (met)
 ☐ 2 (partly met)
 ☐ 1 (unclear)
 ☐ 0 (not met)

Performance bias (systematic differences in care provided apart from the intervention being evaluated). Were there no extraneous factors affecting some groups, but not others, that may have affected the outcome

☒ 3 (met)
 ☐ 2 (partly met)
 ☐ 1 (unclear)
 ☐ 0 (not met)

Attrition bias (systematic differences in withdrawal from the trial): there were no problems with systematic attrition that may have affected the outcome

☒ 3 (met)
 ☐ 2 (partly met)
 ☐ 1 (unclear)
 ☐ 0 (not met)

Detection bias (systematic differences in outcome assessment): There were no differences between groups in the way that the outcome variables were assessed

☒ 3 (met)
 ☐ 2 (partly met)
 ☐ 1 (unclear)
 ☐ 0 (not met)

2. Analysis

The outcome measures are reliable and valid, with little chance of measurement error effecting the integrity of the analysis:

☒ 3 (met)
 ☐ 2 (partly met)
 ☐ 1 (unclear)
 ☐ 0 (not met)

The statistical analysis conducted was appropriate for testing the hypothesis:

☒ 3 (met)
 ☐ 2 (partly met)
 ☐ 1 (unclear)
 ☐ 0 (not met)

The sample size was sufficient to ensure an appropriate level of statistical power:

☒ 3 (met)
 ☐ 2 (partly met)
 ☐ 1 (unclear)
 ☐ 0 (not met)

The conclusions drawn are commensurate with the statistical evidence, and correspond to the original hypothesis:

☒ 3 (met)
 ☐ 2 (partly met)
 ☐ 1 (unclear)
 ☐ 0 (not met)

Reviewer's Rating (out of a possible 24):

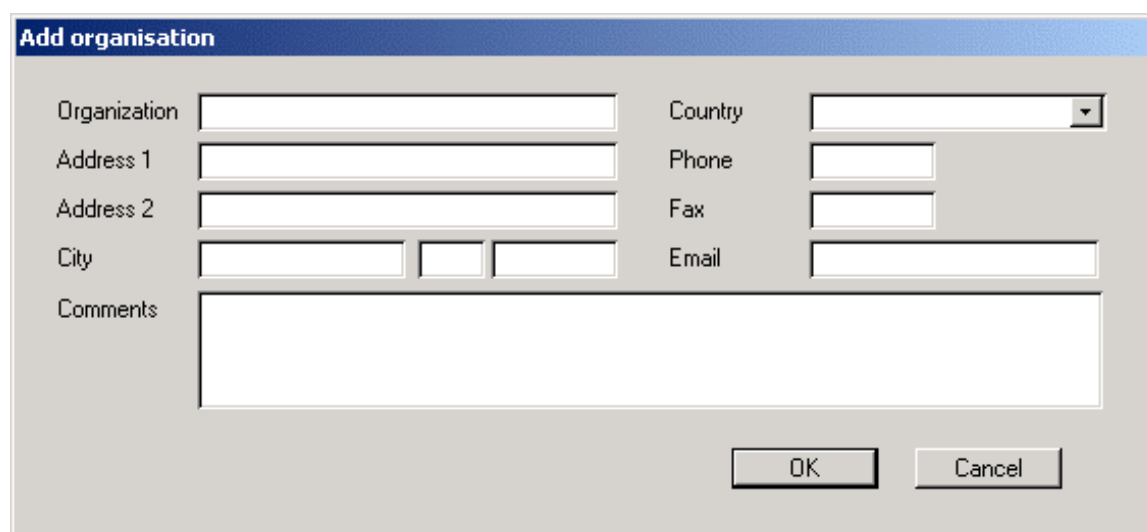
Record:

1

of 1

## ADD ORGANIZATION FORM

When a new publication is being entered (or an existing publication edited), and a *new* organization is entered in the Organization field at the top of the Publication form, the Add organization form will appear so that the address details of the organization may be entered into the database. If the organization has already been entered, the database will anticipate this as the name is entered, and this form will not appear. The name of the organization will automatically be inserted into the organization field on the publication form.

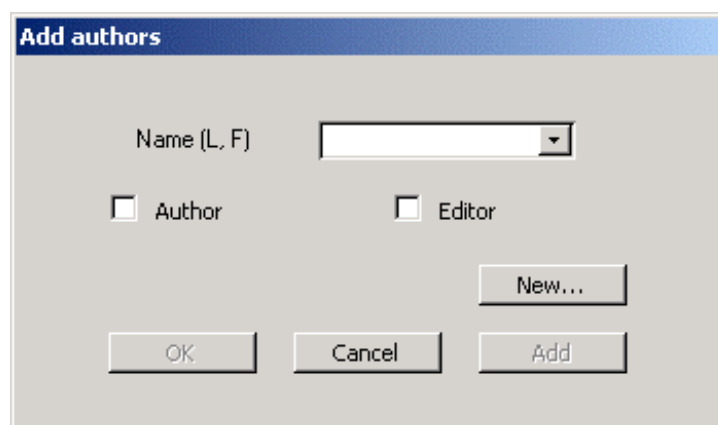


The 'Add organisation' dialog box contains the following fields and controls:

- Organization: Text input field
- Country: Dropdown menu
- Address 1: Text input field
- Address 2: Text input field
- City: Three separate text input fields for first, middle, and last parts of the city name
- Comments: Large text area
- Phone: Text input field
- Fax: Text input field
- Email: Text input field
- Buttons: OK and Cancel

## ADD AUTHORS FORM

Authors and editors are added to a publication by clicking on the Add button next to the Authors and Editors list on the Citation tab.



The 'Add authors' dialog box contains the following fields and controls:

- Name (L, F): Combo box for selecting a name from a list
- Author: Check box
- Editor: Check box
- New...: Button to create a new author record
- Buttons: OK, Cancel, and Add

Type the author's name (last name first followed by a comma, space and first initial), or select the name from the Name combo box. When the name has been found, tab out of the field. If the name isn't in the database or the New... button is pressed, a new author record can be created.

## ADD NEW AUTHORS FORM

**Add authors**

Name (FML)    Title

Comments

Organisation	Position	Phone
<input type="text"/>		

Add Edit Remove

OK Cancel

This form is used to add new authors to the database. Each author only appears once in the database, but can be linked to any number of citations. The details of the author's affiliation with an organization can be added at this time by clicking on the Add button next to the organization list. Once the author has been added, the OK button saves the record and adds the author's name to the name list in the previous Add authors form. The two check-boxes in this form, Author and Editor, are used to indicate whether the current author is the author or editor for the current publication. It is important to note that these check-boxes have a subtle secondary function – they also determine the order in which authors and editors appear in the citation. The first author to have one of the check-boxes checked will appear first in the list, second author checked will appear second and so on. The two check-boxes are independent – this means the first author doesn't need to be the first editor. The ordering is indicated by a number in the Authors and Editors list on the Citations tab of the Publications form. Corrections to the ordering can be achieved in two ways – either remove all authors and editors (use the Remove button – this just removes the link to the author) then re-enter them in the correct order, or edit the list, uncheck all check-boxes that need to be re-ordered, then re-check them in the correct order. The order number is incremented by one, from the maximum current order number when one of the check-boxes is checked. If no check boxes are checked, the maximum is 0, so the next order number will be 1. If there is an overlap between authors and editors, but different ordering, one way to enter the authors and editors would be to enter all the authors first in the correct order, and checking the author check-box as records are entered; the editors would then be entered without checking either check-box. Close the Add authors form by clicking OK if available or Cancel. Click on the first editor in the Authors and Editors list, then click the Edit button next to the list. Check the Editor check-box, find the next editor using either the navigation buttons on the Edit Authors form, or by closing the Edit Authors form and clicking on the editor in the Authors and Editors list and clicking the Edit button again. Click the Editor check-box – repeat for the remaining editors.

## ORGANIZATION FORM

From the main switchboard, organizations and authors can be accessed independently of the publications. To return to the main switchboard, close the Publication and Publication Search forms if open. Clicking on the Organizations button opens the Organization form.

**Organisation**

Organisation  Country

Address 1  Phone

Address 2  Fax

City    Email

Comments

Authors | Publications

Name	Position	Phone
<input type="text"/>		

Add Edit Remove

Record:   1   of 1

Organizations can be viewed and edited on this form. Records can be stepped through using the navigation buttons at the bottom of the form or specific records may be found using the Find button on the Access toolbar. The Authors tab is used to manage relationships between organizations and authors. The Add button opens the Add authors form.

## ADD AUTHORS FORM

**Add authors**

Name (L, F)

Position

Department

Phone number  Extension

Fax number

Email

New...

OK Cancel Add

Links can be created to existing authors by selecting the author from, or entering part of the name, into the Name combo box. If the author doesn't exist, the New... button can be used to open a form to create a new author record. The database will also ask the user if they wish to create a new record if the name entered in the Name field doesn't correspond to an existing author.

The Edit button on the Authors tab on the Organization form allows the editing of existing links. The Remove button deletes the link – the author record is not changed.

The Publications tab on the Organizations form displays a list of all the publications linked to the current organization. The publications in the list can also be edited from here.

## AUTHORS FORM

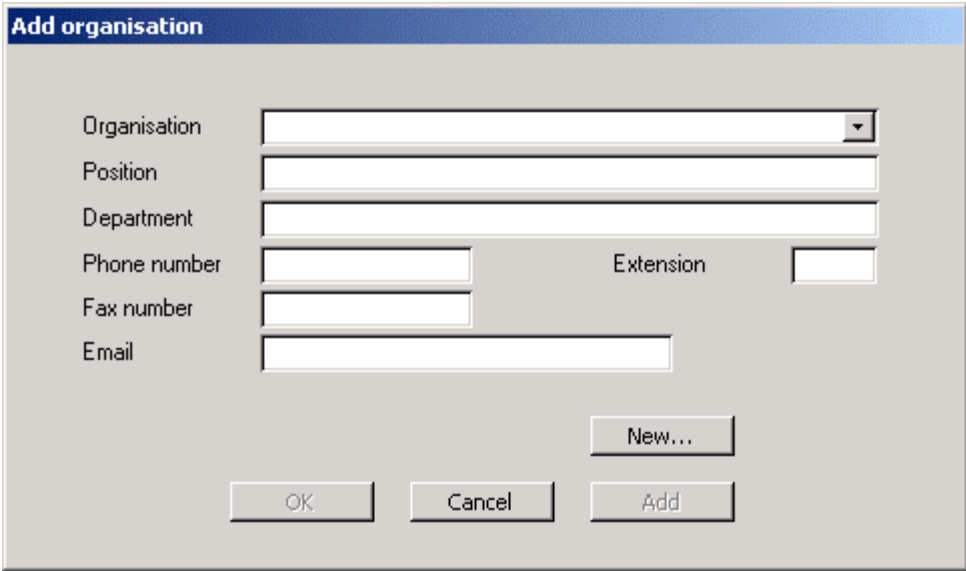
The last button on the main switchboard – Authors – opens the Authors form. This is similar to the Organizations form except it views the Authors-Organizations link from the Authors side. The Publications tab lists all publications for which the current author is either an author or editor. Publications can also be edited from this tab.

The screenshot shows a software window titled "Authors". At the top, there are input fields for "Name (FML)" (split into three boxes) and "Title" (a dropdown menu). Below these is a large "Comments" text area. A tabbed interface at the bottom has two tabs: "Organisations" (which is selected) and "Publications". The "Organisations" tab displays a table with three columns: "Name", "Position", and "Phone". The table is currently empty. To the right of the table are three buttons: "Add", "Edit", and "Remove". At the very bottom of the window is a record navigation bar that says "Record: 1 of 1" with navigation icons.

The Add button on the Organizations tab is used to create links to organizations.



## ADD ORGANIZATION FORM



The screenshot shows a software window titled "Add organisation". It contains several input fields for user information: "Organisation" (a dropdown menu), "Position", "Department", "Phone number", "Extension", "Fax number", and "Email". The "Phone number" and "Extension" fields are grouped together. At the bottom of the form, there are three buttons: "OK", "Cancel", and "Add". A "New..." button is also present, located above the "Add" button.

This form works in a similar fashion to the Add author form, which can be opened from the Organizations form. If the organization does not already exist as a record, it can be added by clicking the New... button or entering a new name in the Organization combo box, then tabbing and clicking OK when prompted if a new record is to be added. Links can be edited or removed by clicking on the appropriate button on the Authors form.

## SAMPLE REPORT

This is a sample report of one of the studies already entered into the database. It demonstrates the fields and the format that the database has been programmed to produce when the Word icon (in the top right hand corner of the publications form) is clicked. Note that it has also been programmed to produce a citation in the Harvard referencing style.

### Publication Details

#### **Citation:**

Caswell, S., Ransom, R. and Gilmore, L. (1990). Evaluation of a mass-media campaign for the primary prevention of alcohol-related problems. *Health Promotion International*, 5, (1), pp. 9-17.

#### **Abstract:**

A quasi-experimental design was used to evaluate an alcohol-related problem prevention programme. The study compared two cities which received the same mass-media campaign and also participated in community organization. Two comparable reference cities received no intervention programme. The objectives of the community organization campaign included an increase in support for alcohol policies and the mass-media campaign aimed to change attitudes about alcohol use.

A process evaluation illustrated the difficulties a problem-prevention programme such as this is likely to encounter. Vested interest groups involved in the production, sale and promotion of alcohol had a significant adverse effect on the running of the campaign. The process evaluation also documented that the way in which a public health agency chooses to manage controversies is an integral part of the health promotion campaign.

Attitudes towards alcohol use were affected by the mass-media campaign but the combined approach of mass-media and community action showed a slightly greater impact. The mass-media campaign also had an effect on public support for alcohol policies even though this was not the target of the campaign.

Over all, the results suggest that the mass-media campaign, despite having a focus on individual drinking behaviour, served the function of keeping alcohol problems on the public agenda and maintaining support for healthy public policies.

### Programme Information

#### **Country (name, WHO code, region):**

New Zealand, 5150, Western Pacific

#### **Programme name:** Community Action Project [CAP]

#### **Drug(s):** Alcohol

#### **Intervention type:** Media, Community

#### **Key aims of the programme:**

- to increase the awareness and support for policy and attitudes towards moderation in alcohol use at the individual level
- to increase non-industry alcohol-related material in print and radio media at the community level

#### **Key components:** The key components of this intervention were:

- (1) four tv commercials aimed at the individual level with a lifestyle focus
- (2) cinema advertising
- (3) newspaper advertising
- (4) sponsorship of a rock band

### Method

#### **Target group:** 18-30 year old males

**Sample description:** The sample was comprised of 6 New Zealand cities, with 2 per experimental condition. Media only cities were 28% larger than the other four. All were service cities for horticulture / agriculture, with populations of 40 000 to 60 000 per city.

**Sample size:** 3600

**Study description:** Controlled before after

**Outcome variables:**

- prompted and unprompted recall of tv commercials
- message comprehension
- slogan recall
- attitudes and support for alcohol policies

### **Results**

The results indicated that a 69% recall was achieved for the first advertisement. On completion of the campaign, there was 7% spontaneous recall and 68% prompted recall (93% amongst the target group) of the campaign. Media plus community organizer groups had greater slogan recall (70%) than the media only cities (51%) which was significant at the .05 level. The campaign also had a positive effect on attitudes towards alcohol and support for alcohol policies.

### **Comments:**

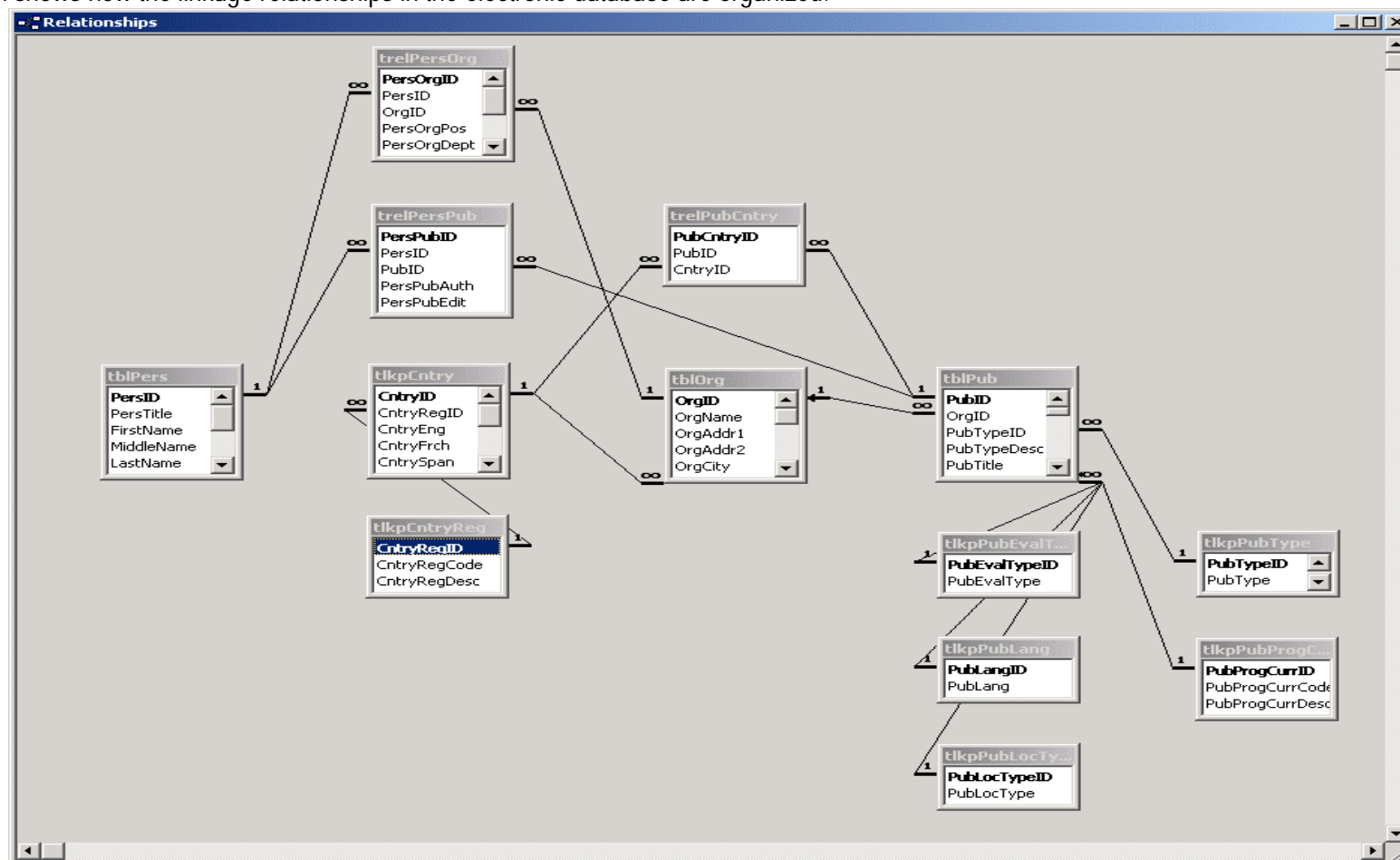
This study is one of the better-controlled studies relating to media campaigns.

### **Evaluation of study quality**

Controlled before after study total evaluation score (out of a possible 14): 11

## RELATIONSHIPS DIAGRAM

This diagram shows how the linkage relationships in the electronic database are organized.



## TECHNICAL DATABASE SPECIFICATIONS

The following pages contain tables that provide the specifications for the electronic database.

### SCHEMA TABLE

Table Name	Order	Field Name	Caption	Type	Description	Ctl	Index	Reqd	Linkage	Comments
tblOrg	0			Table	Organisation					
tblOrg	1	OrgID	Organisation ID	AutoNumber	Unique ID to identify this organisation	txt	PK	Yes		
tblOrg	2	OrgName	Organisation name	Text 60	Organisation name	txt		Yes		
tblOrg	3	OrgAddr1	Address 1	Text 40	Address 1	txt		No		
tblOrg	4	OrgAddr2	Address 2	Text 40	Address 2	txt		No		
tblOrg	5	OrgCity	City	Text 20	City	txt		No		
tblOrg	6	OrgState	State	Text 3	State	txt		No		
tblOrg	7	OrgPostalCode	Postal code	Text 10	Postal code	txt		No		
tblOrg	8	CntryID	Country	Long Integer	Country lookup	cbo		No	tlkpCntry.CntryID	
tblOrg	9	OrgPhoneNum	Phone number	Text 20	Phone number	txt		No		
tblOrg	10	OrgFaxNum	Fax number	Text 20	Fax number	txt		No		
tblOrg	11	OrgEmail	Email	Text 40	Email	txt		No		
tblOrg	12	OrgComm	Comments	Memo	Comments or notes	txt		No		
tblOrg	13	CreatedAt	Created At	Date/Time	Date/time record created	txt		No		Not used
tblOrg	14	CreatedBy	Created By	Text 15	Who created the record	txt		No		Not used
tblOrg	15	ChangedAt	Changed At	Date/Time	Date/time of last edit	txt		No		Not used
tblOrg	16	ChangedBy	Changed By	Text 15	Who made the last edit	txt		No		Not used
tblPers	0			Table	Personnel					
tblPers	1	PersID	Personnel ID	AutoNumber	Unique ID to identify this person	txt	PK	Yes		
tblPers	2	PersTitle	Title	Text 25	Title	txt		No	tlkpPersTitle.PersTitle	Authors
tblPers	3	FirstName	First name	Text 15	First name	txt		No		Authors
tblPers	4	MiddleName	Middle name	Text 15	Middle name	txt		No		Authors
tblPers	5	LastName	Last name	Text 20	Last name	txt		Yes		Authors

tblPers	6	PersComm	Comments	Memo	Comments or notes	txt		No		Authors
tblPers	7	CreatedAt	Created At	Date/Time	Date/time record created	txt		No		Not used
tblPers	8	CreatedBy	Created By	Text 15	Who created the record	txt		No		Not used
tblPers	9	ChangedAt	Changed At	Date/Time	Date/time of last edit	txt		No		Not used
tblPers	10	ChangedBy	Changed By	Text 15	Who made the last edit	txt		No		Not used
tblPub	0			Table	Publications					
tblPub	1	PubID	Publication ID	AutoNumber	Unique ID to identify this publication	txt	PK	Yes		
tblPub	2	OrgID	Organisation	Long Integer	Same entry as in Organisation table	txt	D	No		
tblPub	3	PubTypeID	Type	Long Integer	Publication type lookup	cbo		No	tlkpPubType.PubTypeID	Type of article
tblPub	4	PubTypeDesc	Type other	Text 20	Type other	txt		No		Type of article – other
tblPub	5	PubTitle	Title	Text 255	Title	txt		Yes		Title
tblPub	6	PubPublish	Published	Yes/No	Published	chk		No		Publication status
tblPub	7	PubSource	Source	Text 255	Source for publication	txt		No		Source
tblPub	8	PubVol	Volume	Text 5	Volume	txt		No		Source
tblPub	9	PubIssue	Issue	Integer	Issue	txt		No		Source
tblPub	10	PubPage	Pages	Text 15	Pages	txt		No		Source
tblPub	11	PubChap	Chapter	Integer	Chapter	txt		No		Source
tblPub	12	PubPub	Publisher	Text 100	Publisher and place of publication	txt		No		Source
tblPub	13	PubYear	Year	Integer	Year	txt		No		Publication year
tblPub	14	PubISBN	ISBN	Text 20	ISBN	txt		No		Source
tblPub	15	PubEdition	Edition	Text 5	Edition	txt		No		Source
tblPub	16	PubSeries	Series	Text 100	Series	txt		No		Source
tblPub	17	PubUniversity	University	Text 50	University	txt		No		University
tblPub	18	PubDegree	Degree	Text 10	Degree	txt		No		Degree
tblPub	19	PubLocTypeID	Location	Long Integer	Location lookup	cbo		No	tlkpPubLocType.PubLocTypeID	Where it was sourced from
tblPub	20	PubLocDesc	Location desc	Text 100	Location description	txt		No		Location (eg database name or web address)
tblPub	21	PubAbstract	Abstract	Memo	Abstract	txt		No		Description of study/Abstract
tblPub	22	PubLangID	Language	Long Integer	Language lookup	cbo		No	tlkpPubLang.PubLangID	Language published in

tblPub	23	PubProgName	Program name	Text 255	Program name	txt	No		Program name
tblPub	24	PubAims	Aims	Memo	Key aims of program	txt	No		Key aims of program
tblPub	25	PubIntMedia	Media campaigns	Yes/No	Media campaigns	chk	No		Media campaigns
tblPub	26	PubIntSchool	School based	Yes/No	School based	chk	No		School based program
tblPub	27	PubIntHarm	Harm minimisation	Yes/No	Harm minimisation	chk	No		Harm minimisation
tblPub	28	PubIntReg	Regulation of physical and economic availability	Yes/No	Regulation of physical and economic availability	chk	No		Regulation of physical and economic availability
tblPub	29	PubIntComm	Community based	Yes/No	Community based	chk	No		Community based programs
tblPub	30	PubDrugAlcohol	Alcohol	Yes/No	Alcohol	chk	No		Alcohol
tblPub	31	PubDrugTobacco	Tobacco	Yes/No	Tobacco	chk	No		Tobacco
tblPub	32	PubDrugCannabis	Cannabis	Yes/No	Cannabis/marijuana	chk	No		Cannabis/marijuana
tblPub	33	PubDrugAmphetamines	Amphetamines	Yes/No	Amphetamines	chk	No		Amphetamines
tblPub	34	PubDrugHeroin	Heroin	Yes/No	Heroin	chk	No		Heroin
tblPub	35	PubDrugCocaine	Cocaine	Yes/No	Cocaine	chk	No		Cocaine
tblPub	36	PubDrugOther	Other	Yes/No	Other	chk	No		Other
tblPub	37	PubTheoretical	Theoretical base	Text 100	Theoretical base	txt	No		Theoretical base
tblPub	38	PubKeyComp	Key components	Memo	Key components	txt	No		Key components: what were the core intervention features
tblPub	39	PubIntStaff	Intervention staff	Text 255	Intervention staff	txt	No		Intervention staff
tblPub	40	PubProgCost	Program cost	Currency	Cost of program	txt	No		Cost of program
tblPub	41	PubProgCurrID	Currency	Long Integer	Currency	cbo	No	tlkpPubProgCurrency. PubProgCurrID	Currency
tblPub	42	PubProgComplexity	Complexity	Text 10	Program complexity	grp	No		Program complexity (low, moderate, high)
tblPub	43	PubEvalStaff	Evaluation staff	Text 255	Evaluation staff	txt	No		Evaluation staff
tblPub	44	PubSitSpec	Situational specifics	Memo	Situational specifics	txt	No		Situational specifics
tblPub	45	PubConsiderations	Other considerations	Text 255	Other considerations	txt	No		Other considerations (eg compliance, baseline risk)
tblPub	46	PubStudRandCont	Randomised control trial	Yes/No	Randomised control trial	chk	No		Randomised control trial
tblPub	47	PubStudContClin	Controlled clinical trial	Yes/No	Controlled clinical trial	chk	No		Controlled clinical trial
tblPub	48	PubStudContProsp	Controlled prospective	Yes/No	Controlled prospective	chk	No		Controlled prospective
tblPub	49	PubStudContBA	Controlled before after	Yes/No	Controlled before after	chk	No		Controlled before after
tblPub	50	PubStudIntTimeSer	Interrupted time series	Yes/No	Interrupted time series	chk	No		Interrupter time series
tblPub	51	PubStudXSec	Cross-sectional	Yes/No	Cross-sectional	chk	No		Cross-sectional

tblPub	52	PubStudQExp	Quasi-experimental	Yes/No	Quasi-experimental	chk	No		Quasi-experimental
tblPub	53	PubStudCohort	Cohort study	Yes/No	Cohort study	chk	No		Cohort study
tblPub	54	PubStudOther	Other	Text 50	Other	txt	No		Other
tblPub	55	PubSampSelSimp	Simple random	Yes/No	Simple random sampling	chk	No		Simple random sampling
tblPub	56	PubSampSelStrat	Stratified random	Yes/No	Stratified random sampling	chk	No		Stratified random sampling
tblPub	57	PubSampSelClust	Cluster	Yes/No	Cluster sampling	chk	No		Cluster sampling
tblPub	58	PubSampSelSyst	Systematic	Yes/No	Systematic sampling	chk	No		Systematic sampling
tblPub	59	PubSampSelQuota	Quota	Yes/No	Quota	chk	No		Quota
tblPub	60	PubSampSelAcc	Accidental	Yes/No	Accidental	chk	No		Accidental
tblPub	61	PubSampSelPurp	Purposive	Yes/No	Purposive	chk	No		Purposive
tblPub	62	PubSampSelSBall	Snowball	Yes/No	Snowball	chk	No		Snowball
tblPub	63	PubSampSelUnclear	Unclear	Yes/No	Unclear	chk	No		Unclear
tblPub	64	PubTargGrp	Target group	Text 255	Target group	txt	No		Target group
tblPub	65	PubSampDesc	Sample description	Memo	Sample description	txt	No		Sample description
tblPub	66	PubSampSize	Sample size	Long Integer	Sample size	txt	No		Sample size
tblPub	67	PubSocEconStat	Socio-economic status	Text 100	Socio-economic status	txt	No		Socio-economic status
tblPub	68	PubEthnicity	Ethnicity	Text 140	Ethnicity	txt	No		Ethnicity
tblPub	69	PubGender	Gender	Text 20	Gender	grp	No		Gender
tblPub	70	PubAge	Age	Text 100	Age	txt	No		Age
tblPub	71	PubEvalTypeID	Evaluation type	Long Integer	Type of evaluation	cbo	No	tlkpPubEvalType.PubEvalTypeID	Type of evaluation (choose one)
tblPub	72	PubProcEval	Process evaluation	Memo	Process evaluation	txt	No		Process evaluation (description)
tblPub	73	PubOutcomeVar	Outcome variables	Memo	Outcome variables	txt	No		Outcome variables (what was measured)
tblPub	74	PubResults	Results	Memo	Results	txt	No		Results
tblPub	75	PubComm	Comments	Memo	Comments	txt	No		Comments
tblPub	76	PubImpDesc	Implementation description	Memo	Implementation description	txt	No		Implementation description
tblPub	77	PubImpAdequacy	Implementation adequacy	Byte	Implementation adequacy	grp	No		Implementation adequacy: was the intervention adequately implemented?
tblPub	78	PubImpIntensity	Implementation intensity	Text 255	Implementation intensity	txt	No		Implementation intensity
tblPub	79	PubImpObstacles	Implementation obstacles	Byte	Implementation obstacles	grp	No		Implementation obstacles: were there problems that hampered the implementation of the project?



tblPub	80	PubImpObDesc	Implementation obstacles description	Text 255	Implementation obstacles description	txt	No		If yes, what were they and how were they dealt with?
tblPub	81	PubInterventionLen	Length of intervention	Text 50	Length of intervention	txt	No		Length of intervention: how long was the intervention phase?
tblPub	82	PubFollowupLen	Length of follow-up	Text 50	Length of follow-up	txt	No		Length of follow-up
tblPub	83	PubSufficientLen	Sufficient timeframe	Byte	Sufficient timeframe	grp	No		Was there a sufficient timeframe for an effect to register?
tblPub	84	PubRCTRandomisa tion	Randomisation	Byte	Randomisation	grp	No		Randomisation
tblPub	85	PubRCTAllocConce al	Allocation concealment	Byte	Allocation concealment	grp	No		Allocation concealment
tblPub	86	PubRCTBlinding	Blinding	Byte	Blinding	grp	No		Blinding
tblPub	87	PubRCTInclusion	Inclusion	Byte	Inclusion	grp	No		Inclusion
tblPub	88	PubRCTSimGroups	Similar groups	Yes/No	Similar groups	chk	No		Similar groups
tblPub	89	PubRCTEquGroups	Groups treated equally	Yes/No	Groups treated equally	chk	No		Groups treated equally
tblPub	90	PubCPSBase	Base of study	Byte	Base of study	grp	No		Base of study
tblPub	91	PubCPSConfoundin g	Confounding control	Byte	Confounding control	grp	No		Confounding control
tblPub	92	PubCPSInclusion	Inclusion	Byte	Inclusion	grp	No		Inclusion
tblPub	93	PubCPSAdDescGr oups	Adequate description of groups	Yes/No	Adequate description of groups	chk	No		Adequate description of groups
tblPub	94	PubCPSAdDescTre atments	Adequate description of treatments	Yes/No	Adequate description of treatments	chk	No		Adequate description of treatments
tblPub	95	PubCBABase	Base of study	Byte	Base of study	grp	No		Base of study
tblPub	96	PubCBADetectBias	Detection bias	Byte	Detection bias	grp	No		Detection bias
tblPub	97	PubCBAContaminat ion	Contamination	Byte	Contamination	grp	No		Contamination
tblPub	98	PubCBAInclusion	Inclusion	Byte	Inclusion	grp	No		Inclusion
tblPub	99	PubCBAOther	Other criteria	Byte	Other criteria	grp	No		Other criteria
tblPub	100	PubITSIntervention	Intervention	Byte	Intervention	grp	No		Intervention
tblPub	101	PubITStatInferenc e	Statistical inference	Byte	Statistical inference	grp	No		Statistical inference
tblPub	102	PubITSDataCollecti on	Data collection	Byte	Data collection	grp	No		Data collection
tblPub	103	PubITSDetectBias	Detection bias	Byte	Detection bias	grp	No		Detection bias
tblPub	104	PubITSOther	Other criteria	Byte	Other criteria	grp	No		Other criteria

tblPub	105	PubStVlySelBias	Selection bias	Byte	Selection bias	grp		No		Selection bias
tblPub	106	PubStVlyPerfBias	Performance bias	Byte	Performance bias	grp		No		Performance bias
tblPub	107	PubStVlyAttBias	Attrition bias	Byte	Attrition bias	grp		No		Attrition bias
tblPub	108	PubStVlyDetBias	Detection bias	Byte	Detection bias	grp		No		Detection bias
tblPub	109	PubStVlyOutMeasures	Outcome measures	Byte	Outcome measures	grp		No		Outcome measures
tblPub	110	PubStVlyStatAnal	Statistical analysis	Byte	Statistical analysis	grp		No		Statistical analysis
tblPub	111	PubStVlySampSize	Sample size	Byte	Sample size	grp		No		Sample size
tblPub	112	PubStVlyConclusions	Conclusions	Byte	Conclusions	grp		No		Conclusions
tblPub	113	CreatedAt	Created At	Date/Time	Date/time record created	txt		No		Not used
tblPub	114	CreatedBy	Created By	Text 15	Who created the record	txt		No		Not used
tblPub	115	ChangedAt	Changed At	Date/Time	Date/time of last edit	txt		No		Not used
tblPub	116	ChangedBy	Changed By	Text 15	Who made the last edit	txt		No		Not used
tlkpCntry	0			Table	Country					
tlkpCntry	1	CntryID	Country ID	AutoNumber	Unique ID to identify country	txt	PK	Yes		
tlkpCntry	2	CntryRegID	Region	Long Integer	Same entry as in Region table	txt	D	No		
tlkpCntry	3	CntryEng	English	Text 60	English	txt		Yes		
tlkpCntry	4	CntryFrch	French	Text 60	French	txt		No		
tlkpCntry	5	CntrySpan	Spanish	Text 60	Spanish	txt		No		
tlkpCntry	6	CntryISO2	ISO 2 code	Text 2	ISO 2 code	txt		No		
tlkpCntry	7	CntryISO3	ISO 3 code	Text 3	ISO 3 code	txt		No		
tlkpCntry	8	CntryUN	UN code	Text 3	UN code	txt		No		
tlkpCntry	9	CntryWB	WB code	Text 4	WB code	txt		No		
tlkpCntry	10	CntryWHO	WHO code	Text 4	WHO code	txt		No		
tlkpCntry	11	CntrySearch	Publication search	Yes/No	Use in publication search	chk		No		
tlkpCntryReg	0			Table	Region					
tlkpCntryReg	1	CntryRegID	Region ID	AutoNumber	Unique ID to identify region	txt	PK	Yes		
tlkpCntryReg	2	CntryRegCode	Code	Text 5	Code	txt		Yes		

tlkpCntryReg	3	CntryRegDesc	Description	Text 25	Description	txt		Yes		
tlkpIntType	0			Table	Intervention type					Used in publication search form only
tlkpIntType	1	IntTypeID	Type ID	AutoNumber	Unique ID to identify intervention type	txt	PK	Yes		
tlkpIntType	2	IntTypeField	Field name	Text 25	Field name	txt		Yes		
tlkpIntType	3	IntTypeDesc	Description	Text 50	Description	txt		Yes		
tlkpIntType	4	IntTypeSearch	Publication search	Yes/No	Use in publication search	chk		No		
tlkpPersTitle	0			Table	Title					
tlkpPersTitle	1	PersTitle	Title	Text 25	Description	txt		Yes		
tlkpPubEvalType	0			Table	Evaluation type					
tlkpPubEvalType	1	PubEvalTypeID	Evaluation type ID	AutoNumber	Unique ID to identify evaluation type	txt	PK	Yes		
tlkpPubEvalType	2	PubEvalType	Description	Text 40	Description	txt		Yes		
tlkpPubLang	0			Table	Language					
tlkpPubLang	1	PubLangID	Language ID	AutoNumber	Unique ID to identify language	txt	PK	Yes		
tlkpPubLang	2	PubLang	Description	Text 20	Description	txt		Yes		
tlkpPubSort	0			Table	Sort key values					Used in publication search form only
tlkpPubSort	1	PubSortID	Sort ID	AutoNumber	Unique ID to identify evaluation type	txt	PK	Yes		
tlkpPubSort	2	PubSortField	Field name	Text 25	Field name	txt		Yes		
tlkpPubSort	3	PubSortDesc	Description	Text 20	Description	txt		Yes		
tlkpPubLocType	0			Table	Location type					
tlkpPubLocType	1	PubLocTypeID	Location type ID	AutoNumber	Unique ID to identify location type	txt	PK	Yes		
tlkpPubLocType	2	PubLocType	Description	Text 20	Description	txt		Yes		

tlkpPubProgCur										
currency	0			Table	Currency					
tlkpPubProgCur	1	PubProgCurID	Currency ID	AutoNumber	Unique ID to identify currency	txt	PK	Yes		
currency	2	PubProgCurrCode	Code	Text 3	Code	txt		Yes		
tlkpPubProgCur	3	PubProgCurrDesc	Description	Text 30	Description	txt		Yes		
currency										
tlkpPubType	0			Table	Publication type					
tlkpPubType	1	PubTypeID	Type ID	AutoNumber	Unique ID to identify publication type	txt	PK	Yes		
tlkpPubType	2	PubType	Description	Text 50	Description	txt		Yes		
tlkpPubType	3	PubTypeSearch	Publication search	Yes/No	Use in publication search	chk		No		Not used in current version of database
trelPersOrg	0			Table	Relates personnel to organisations					
trelPersOrg	1	PersOrgID	PersOrg ID	Autonumber	Unique ID to identify this record	txt	PK	Yes		
trelPersOrg	2	PersID	Personnel	Long Integer	Same entry as in Personnel table	cbo	D	Yes	tblPers.PersID	
trelPersOrg	3	OrgID	Organisation	Long Integer	Same entry as in Organisation table	cbo	D	Yes	tblOrg.OrgID	
trelPersOrg	4	PersOrgPos	Position	Text 30	Position	txt		No		Affiliation
trelPersOrg	5	PersOrgDept	Department	Text 40	Department	txt		No		Affiliation
trelPersOrg	6	PersOrgPhoneNum	Phone number	Text 20	Phone number	txt		No		Affiliation
trelPersOrg	7	PersOrgFaxNum	Fax number	Text 20	Fax number	txt		No		Affiliation
trelPersOrg	8	PersOrgLocal	Local	Text 5	Local	txt		No		Affiliation
trelPersOrg	9	PersOrgEmail	Email	Text 40	Email	txt		No		Affiliation
trelPersPub	0			Table	Relates personnel to publications					
trelPersPub	1	PersPubID	PersPub ID	Autonumber	Unique ID to identify this record	txt	PK	Yes		
trelPersPub	2	PersID	Personnel	Long Integer	Same entry as in Personnel table	cbo	D	Yes	tblPers.PersID	
trelPersPub	3	PubID	Publication	Long Integer	Same entry as in Publication table	cbo	D	Yes	tblPub.PubID	
trelPersPub	4	PersPubAuth	Author	Byte	Author rank	chk		No		
trelPersPub	5	PersPubEdit	Editor	Byte	Editor rank	chk		No		

trelPubCntry	0			Table	Relates publications to countries					
trelPubCntry	1	PubCntryID	PubCntry ID	Autonumber	Unique ID to identify this record	txt	PK	Yes		
trelPubCntry	2	PubID	Publication	Long Integer	Same entry as in Publication table	cbo	D	Yes	tblPub.PubID	
trelPubCntry	3	CntryID	Country	Long Integer	Same entry as in Country table	cbo	D	Yes	tlkpCntry.CntryID	

## COUNTRY LOOKUP TABLE

tlkpCntryReg					
	CntryRegID	CntryRegCode	CntryRegDesc	5	21
	1	AFRO	African	4	7
	2	AMRO	Americas/Pan American	4	21
	3	EMRO	Eastern Mediterranean	4	21
	4	EURO	Europe	4	6
	5	SEARO	South East Asia	5	15
	6	WPRO	Western Pacific	4	15

## INTERVENTION TYPE LOOKUP TABLE

tlkpIntType					
	IntTypeID	IntTypeField	IntTypeDesc	12	48
	1	PubIntMedia	Media campaigns	11	15
	2	PubIntSchool	School based	12	12
	3	PubIntHarm	Harm minimisation	10	17
	4	PubIntReg	Regulation of physical and economic availability	9	48
	5	PubIntComm	Community based	10	15

## PERSON TITLE LOOKUP TABLE

tlkpPersTitle			
	PersTitle		19
	Dr		2
	Miss		4
	Mr		2
	Mrs		3
	Ms		2
	Professor		9
	Associate Professor		19

## PUBLICATION EVALUATION TYPE LOOKUP TABLE

tlkpPubEvalType			
	PubEvalTypeID	PubEvalType	28
	1	Process Evaluation	18
	2	Process & Outcome Evaluation	28
	3	Outcome Evaluation	18
	4	Not Applicable	14
	5	Unclear	7

## PUBLICATION LOCATION TYPE LOOKUP TABLE

tlkpPubLocType			
	PubLocTypeID	PubLocType	13
	1	NDRI Library	12
	2	Internet	8
	3	Database	8
	4	Key Informant	13
	5	Other	5

## PUBLICATION SORTING LOOKUP TABLE

tlkpPubSort					
	PubSortID	PubSortField	PubSortDesc	11	13
	1	PubTitle	Title	8	5
	2	PubYear	Year	7	4
	3	PubMaxPct	Study quality	9	13
	4	PubSampSize	Sample size	11	11
	5	OrgName	Organisation	7	12



## PUBLICATION TYPE LOOKUP TABLE

PubType	PubTypeID	PubType	
	1	Paper from Refereed Journal	27
	2	Unrefereed Journal/Magazine/Newsletter	38
	3	Report	6
	4	Chapter in Monograph or Book	28
	5	Monograph	9
	6	Book	4
	7	Meta-analysis	13
	8	Review Article	14
	9	Other	5

## COUNTRY LOOKUP TABLE

[illegible]

PUBLICATION LANGUAGE LOOKUP TABLE

tlkpPubLang		
	PubLangID	PubLang
		Entered by user

PUBLICATION PROGRAM CURRENCY LOOKUP TABLE

tlkpPubProgCurrency			
	PubProgCurriD	PubProgCurrCode	PubProgCurrDesc
		See currency tab	

## COUNTRY TABLE

tlkpCntry										
	CntryID	CntryRegID	CntryEng	CntryFrch	CntrySpan	CntryISO2	CntryISO3	CntryUN	CntryWB	CntryWHO
	1	3	Afghanistan	Afghanistan	Afganistan	AF	AFG	4 AFG		3010
	2	4	Albania	Albanie	Albania	AL	ALB	8 ALB		4005
	3	1	Algeria	Algérie	Algeria	DZ	DZA	12 DZA		1010
	4	4	Andorra	Andorre	Andorra	AD	AND	20 ADO		4008
	5	1	Angola	Angola	Angola	AO	AGO	24 AGO		1020
	6	2	Antigua and Barbuda	Antigua-et-Barbuda	Antigua y Barbuda	AG	ATG	28 ATG		2010
	7	2	Argentina	Argentine	Argentina	AR	ARG	32 ARG		2020
	8	4	Armenia	Arménie	Armenia	AM	ARM	51 ARM		4007
	9	6	Australia	Australie	Australia	AU	AUS	36 AUS		5020
	10	4	Austria	Autriche	Austria	AT	AUT	40 AUT		4010
	11	4	Azerbaijan	Azerbaïdjan	Azerbaijan	AZ	AZE	31 AZE		4012
	12	2	Bahamas	Bahamas	Bahamas	BS	BHS	44 BHS		2030
	13	3	Bahrain	Bahreïn	Barain	BH	BHR	48 BHR		3020
	14	5	Bangladesh	Bangladesh	Bangladesh	BD	BGD	50 BGD		3025
	15	2	Barbados	Barbade	Barbados	BB	BRB	52 BRB		2040
	16	4	Belarus	Bélarus	Belarusia	BY	BLR	112 BLR		4018
	17	4	Belgium	Belgique	Bélgica	BE	BEL	56 BEL		4020
	18	2	Belize	Belize	Belice	BZ	BLZ	84 BLZ		2045
	19	1	Benin	Bénin	Benin	BJ	BEN	204 BEN		1025
	20	5	Bhutan	Bhoutan	Butan	BT	BTN	64 BTN		3027
	21	2	Bolivia	Bolivie	Bolivia	BO	BOL	68 BOL		2060
	22	4	Bosnia and Herzegovina	Bosnie-Herzégovine	Bosnia y Herzegovina	BA	BIH	70 BIH		4025
	23	1	Botswana	Botswana	Botswana	BW	BWA	72 BWA		1030
	24	2	Brazil	Brésil	Brasil	BR	BRA	76 BRA		2070
	25	6	Brunei Darussalam	Brunéï Darussalam	Brunei Darussalam	BN	BRN	96 BRN		3030
	26	4	Bulgaria	Bulgarie	Bulgaria	BG	BGR	100 BGR		4030
	27	1	Burkina Faso	Burkina Faso	Burkina Faso	BF	BFA	854 BFA		1035

	28	1 Burundi	Burundi	Burundi	BI	BDI	108 BDI	1040
	29	6 Cambodia	Cambodge	Camboya	KH	KHM	116 KHM	3050
	30	1 Cameroon	Cameroun	Cameroon	CM	CMR	120 CMR	1045
	31	2 Canada	Canada	Canada	CA	CAN	124 CAN	2090
	32	1 Cape Verde	Cap-Vert	Cabo Verde	CV	CPV	132 CPV	1060
	33	1 Central African Republic	République centrafricaine	República del Africa Central	CF	CAF	140 CAF	1070
	34	1 Chad	Tchad	Chad	TD	TCD	148 TCD	1080
	35	2 Chile	Chili	Chile	CL	CHL	152 CHL	2120
	36	6 China	Chine	China	CN	CHN	156 CHN	3068
	37	2 Colombia	Colombie	Colombia	CO	COL	170 COL	2130
	38	1 Comoros	Comores	Comoros	KM	COM	174 COM	1090
	39	1 Congo	Congo	Congo	CG	COG	178 COG	1100
	40	6 Cook Islands	Îles Cook	Islas Cook	CK	COK	184 AAA*	5060
	41	2 Costa Rica	Costa Rica	Costa Rica	CR	CRI	188 CRI	2140
	42	1 Côte d'Ivoire	Côte d'Ivoire	Costa de Marfil	CI	CIV	384 CIV	1115
	43	4 Croatia	Croatie	Croacia	HR	HRV	191 HRV	4038
	44	2 Cuba	Cuba	Cuba	CU	CUB	192 CUB	2150
	45	3 Cyprus	Chypre	Chipre	CY	CYP	196 CYP	3080
	46	4 Czech Republic	République tchèque	República de Checoslovaquia	CZ	CZE	203 CZE	4045
	47	5 Democratic People's Republic of Korea	République populaire démocratique de Corée	República Democrática de Korea	KP	PRK	408 PRK	3083
	48	1 Democratic Republic of the Congo	République démocratique du Congo	República Democrática de Congo	CD	COD	180 ZAR	1555
	49	4 Denmark	Danemark	Dinamarca	DK	DNK	208 DNK	4050
	50	3 Djibouti	Djibouti	Djibouti	DJ	DJI	262 DJI	1120
	51	2 Dominica	Dominique	Dominica	DM	DMA	212 DMA	2160
	52	2 Dominican Republic	République dominicaine	República Dominicana	DO	DOM	214 DOM	2170
	53	2 Ecuador	Équateur	Ecuador	EC	ECU	218 ECU	2180
	54	3 Egypt	Égypte	Egipto	EG	EGY	818 EGY	1125
	55	2 El Salvador	El Salvador	El Salvador	SV	SLV	222 SLV	2190
	56	1 Equatorial Guinea	Guinée équatoriale	Guinea Equatorial	GQ	GNQ	226 GNQ	1130
	57	1 Eritrea	Érythrée	Eritrea	ER	ERI	232 ERI	1135

	58	4 Estonia	Estonie	Estonia	EE	EST	233	EST	4055
	59	1 Ethiopia	Éthiopie	Etiopia	ET	ETH	231	ETH	1140
	60	6 Fiji	Fidji	Fiji	FJ	FJI	242	FJI	5070
	61	4 Finland	Finlande	Finlandia	FI	FIN	246	FIN	4070
	62	4 France	France	Francia	FR	FRA	250	FRA	4080
	63	1 Gabon	Gabon	Gabón	GA	GAB	266	GAB	1160
	64	1 Gambia	Gambie	Gambia	GM	GMB	270	GMB	1170
	65	4 Georgia	Géorgie	Georgia	GE	GEO	268	GEO	4084
	66	4 Germany	Allemagne	Alemania	DE	DEU	276	DEU	4085
	67	1 Ghana	Ghana	Gana	GH	GHA	288	GHA	1180
	68	4 Greece	Grèce	Grecia	GR	GRC	300	GRC	4140
	69	2 Grenada	Grenade	Granada	GD	GRD	308	GRD	2230
	70	2 Guatemala	Guatemala	Guatemala	GT	GTM	320	GTM	2250
	71	1 Guinea	Guinée	Guinea	GN	GIN	324	GIN	1190
	72	1 Guinea-Bissau	Guinée-Bissau	Guinea-Bissau	GW	GNB	624	GNB	1192
	73	2 Guyana	Guyana	Guyana	GY	GUY	328	GUY	2260
	74	2 Haiti	Haiti	Haiti	HT	HTI	332	HTI	2270
	75	2 Honduras	Honduras	Honduras	HN	HND	340	HND	2280
	76	4 Hungary	Hongrie	Hungría	HU	HUN	348	HUN	4150
	77	4 Iceland	Islande	Islandia	IS	ISL	352	ISL	4160
	78	5 India	Inde	India	IN	IND	356	IND	3100
	79	5 Indonesia	Indonésie	Indonesia	ID	IDN	360	IDN	3110
	80	3 Iran, Islamic Republic of	Iran (République islamique d')	República Islámica de Iran	IR	IRN	364	IRN	3130
	81	3 Iraq	Iraq	Iraq	IQ	IRQ	368	IRQ	3140
	82	4 Ireland	Irlande	Irlanda	IE	IRL	372	IRL	4170
	83	4 Israel	Israël	Israel	IL	ISR	376	ISR	3150
	84	4 Italy	Italie	Italia	IT	ITA	380	ITA	4180
	85	2 Jamaica	Jamaïque	Jamaica	JM	JAM	388	JAM	2290
	86	6 Japan	Japon	Japón	JP	JPN	392	JPN	3160
	87	3 Jordan	Jordanie	Jordania	JO	JOR	400	JOR	3170

	88	4 Kazakhstan	Kazakstan	Kazakistan	KZ	KAZ	398	KAZ	4182
	89	1 Kenya	Kenya	Kenya	KE	KEN	404	KEN	1220
	90	6 Kiribati	Kiribati	Kiribati	KI	KIR	296	KIR	5105
	91	3 Kuwait	Koweït	Kuwait	KW	KWT	414	KWT	3190
	92	4 Kyrgyzstan	Kirghizistan	Kyrgyzstan	KG	KGZ	417	KGZ	4184
	93	6 Lao People's Democratic Republic	République démocratique populaire lao	República Democrática de Lao	LA	LAO	418	LAO	3200
	94	4 Latvia	Lettonie	Latvia	LV	LVA	428	LVA	4186
	95	3 Lebanon	Liban	Libano	LB	LBN	422	LBN	3210
	96	1 Lesotho	Lesotho	Lesoto	LS	LSO	426	LSO	1230
	97	1 Liberia	Libéria	Liberia	LR	LBR	430	LBR	1240
	98	3 Libyan Arab Jamahiriya	Jamahiriya arabe libyenne	Jamahiriya arabe libyenne	LY	LBY	434	LBY	1250
	99	4 Lithuania	Lituanie	Lituania	LT	LTU	440	LTU	4188
	100	4 Luxembourg	Luxembourg	Luxemburgo	LU	LUX	442	LUX	4190
	101	1 Madagascar	Madagascar	Madagascar	MG	MDG	450	MDG	1260
	102	1 Malawi	Malawi	Malawi	MW	MWI	454	MWI	1270
	103	6 Malaysia	Malaisie	Malasia	MY	MYS	458	MYS	3236
	104	5 Maldives	Maldives	Maldives	MV	MDV	462	MDV	3255
	105	1 Mali	Mali	Mali	ML	MLI	466	MLI	1280
	106	4 Malta	Malte	Malta	MT	MLT	470	MLT	4200
	107	6 Marshall Islands	Îles Marshall	Islas Marshall	MH	MHL	584	MHL	5107
	108	1 Mauritania	Mauritanie	Mauritania	MR	MRT	478	MRT	1290
	109	1 Mauritius	Maurice	Mauritius	MU	MUS	480	MUS	1300
	110	2 Mexico	Mexique	Mexico	MX	MEX	484	MEX	2310
	111	6 Micronesia, Federated States of	Micronésie (États fédérés de)	Estados Federados de Micronesia	FM	FSM	583	FSM	5108
	112	4 Monaco	Monaco	Mónaco	MC	MCO	492	MCO	4205
	113	6 Mongolia	Mongolie	Mongolia	MN	MNG	496	MNG	3260
	114	3 Morocco	Maroc	Marruecos	MA	MAR	504	MAR	1310
	115	1 Mozambique	Mozambique	Mozambique	MZ	MOZ	508	MOZ	1320
	116	5 Myanmar	Myanmar	Myanmar	MM	MMR	104	MMR	3270
	117	1 Namibia	Namibie	Namibia	NA	NAM	516	NAM	1325

	118	6 Nauru	Nauru	Nauru	NR	NRU	520 NRU	5110
	119	5 Nepal	Népal	Nepal	NP	NPL	524 NPL	3280
	120	4 Netherlands	Pays-Bas *	Holanda	NL	NLD	528 NLD	4210
	121	6 New Zealand	Nouvelle-Zélande	Nueva Zelandia	NZ	NZL	554 NZL	5150
	122	2 Nicaragua	Nicaragua	Nicaragua	NI	NIC	558 NIC	2340
	123	1 Niger	Niger	Niger	NE	NER	562 NER	1330
	124	1 Nigeria	Nigéria	Nigeria	NG	NGA	566 NGA	1340
	125	6 Niue	Nioué	Niue	NU	NIU	570 CCC*	5170
	126	4 Norway	Norvège	Noruega	NO	NOR	578 NOR	4220
	127	3 Oman	Oman	Omán	OM	OMN	512 OMN	3285
	128	3 Pakistan	Pakistan	Pakistán	PK	PAK	586 PAK	3290
	129	6 Palau	Palaos	Palau	PW	PLW	585 PLW	5180
	130	2 Panama	Panama	Panamá	PA	PAN	591 PAN	2350
	131	6 Papua New Guinea	Papouasie-Nouvelle-Guinée	Papúa Nueva Guinea	PG	PNG	598 PNG	5195
	132	2 Paraguay	Paraguay	Paraguay	PY	PRY	600 PRY	2360
	133	2 Peru	Pérou	Perú	PE	PER	604 PER	2370
	134	6 Philippines	Philippines	Filipinas	PH	PHL	608 PHL	3300
	135	4 Poland	Pologne	Polonia	PL	POL	616 POL	4230
	136	4 Portugal	Portugal	Portugal	PT	PRT	620 PRT	4240
	137	3 Qatar	Qatar	Qatar	QA	QAT	634 QAT	3320
	138	6 Republic of Korea	République de Corée	República de Korea	KR	KOR	410 KOR	3325
	139	4 Republic of Moldova	République de Moldova	República de Moldova	MD	MDA	498 MDA	4260
	140	4 Romania	Roumanie	Rumania	RO	ROM	642 ROM	4270
	141	4 Russian Federation	Fédération de Russie	Federación Rusia	RU	RUS	643 RUS	4272
	142	1 Rwanda	Rwanda	Ruanda	RW	RWA	646 RWA	1370
	143	2 Saint Kitts and Nevis	Saint-Kitts-et-Nevis	Saint Kitts y Nevis	KN	KNA	659 KNA	2385
	144	2 Saint Lucia	Sainte-Lucie	Santa Lucía	LC	LCA	662 LCA	2400
	145	2 Saint Vincent and the Grenadines	Saint-Vincent-et-les Grenadines	San Vicente y la Granadinas	VC	VCT	670 VCT	2420
	146	6 Samoa	Samoa	Samoa Occidental.	WS	WSM	882 WSM	5197
	147	4 San Marino	Saint-Marin	San Marino	SM	SMR	674 BBB*	4275

	148	1 Sao Tome and Principe	Sao Tomé-et-Príncipe	San Tomé-Príncipe	ST	STP	678	STP	1385
	149	3 Saudi Arabia	Arabie saoudite	Saudi Arabia	SA	SAU	682	SAU	3340
	150	1 Senegal	Sénégal	Senegal	SN	SEN	686	SEN	1390
	151	1 Seychelles	Seychelles	Seychelles	SC	SYC	690	SYC	1400
	152	1 Sierra Leone	Sierra Leone	Sierra Leone	SL	SLE	694	SLE	1410
	153	6 Singapore	Singapour	Singapur	SG	SGP	702	SGP	3350
	154	4 Slovakia	Slovaquie	Eslovakia	SK	SVK	703	SVK	4274
	155	4 Slovenia	Slovénie	Eslovenia	SI	SVN	705	SVN	4276
	156	6 Solomon Islands	Îles Salomon	Islas Solomón	SB	SLB	90	SLB	5198
	157	3 Somalia	Somalie	Somalia	SO	SOM	706	SOM	1420
	158	1 South Africa	Afrique du Sud	Sur Africa	ZA	ZAF	710	ZAF	1430
	159	4 Spain	Espagne	España	ES	ESP	724	ESP	4280
	160	5 Sri Lanka	Sri Lanka	Sri Lanka	LK	LKA	144	LKA	3365
	161	3 Sudan	Soudan	Sudán	SD	SDN	736	SDN	1470
	162	2 Suriname	Suriname	Suriname	SR	SUR	740	SUR	2430
	163	1 Swaziland	Swaziland	Swazilandia	SZ	SWZ	748	SWZ	1480
	164	4 Sweden	Suède	Suecia	SE	SWE	752	SWE	4290
	165	4 Switzerland	Suisse	Suiza	CH	CHE	756	CHE	4300
	166	3 Syrian Arab Republic	République arabe syrienne	República Árabe de Siria	SY	SYR	760	SYR	3370
	167	4 Tajikistan	Tadjikistan	Tajikistan	TJ	TJK	762	TJK	4301
	168	5 Thailand	Thaïlande	Tailandia.	TH	THA	764	THA	3380
	169	The Former Yugoslav Republic of Macedonia	ex-République yougoslave de Macédoine	Antigua República Yugoslavia de Macedonia	MK	MKD	807	MKD	4195
	170	1 Togo	Togo	Togo	TG	TGO	768	TGO	1510
	171	6 Tonga	Tonga	Tonga	TO	TON	776	TON	5200
	172	2 Trinidad and Tobago	Trinité-et-Tobago	Trinidad y Tabago	TT	TTO	780	TTO	2440
	173	3 Tunisia	Tunisie	Tunez	TN	TUN	788	TUN	1520
	174	4 Turkey	Turquie	Turquía	TR	TUR	792	TUR	3400
	175	4 Turkmenistan	Turkménistan	Turkmenistan	TM	TKM	795	TKM	4302
	176	6 Tuvalu	Tuvalu	Tuvalu	TV	TUV	798	TLU	5205
	177	1 Uganda	Ouganda	Uganda	UG	UGA	800	UGA	1530



	178	4	Ukraine	Ukraine	Ucrania	UA	UKR	804	UKR	4303
	179	3	United Arab Emirates	Émirats arabes unis	Emiratos Arabes Unidos	AE	ARE	784	ARE	3405
	180	4	United Kingdom	Royaume-Uni de Grande-Bretagne et d'Irlande du Nord	Reino Unido de Gran Bretaña e Irlanda del Norte	GB	GBR	826	GBR	4308
	181	1	United Republic of Tanzania	République-Unie de Tanzanie	República Unida de Tanzania	TZ	TZA	834	TZA	1546
	182	2	United States of America	États-Unis d'Amérique	Estados Unidos de América	US	USA	840	USA	2450
	183	2	Uruguay	Uruguay	Uruguay	UY	URY	858	URY	2460
	184	4	Uzbekistan	Ouzbékistan	Uzbekistan	UZ	UZB	860	UZB	4335
	185	6	Vanuatu	Vanuatu	Vanuatu	VU	VUT	548	VUT	5207
	186	2	Venezuela	Venezuela	Venezuela	VE	VEN	862	VEN	2470
	187	6	Viet Nam	Viet Nam	Vietnam	VN	VNM	704	VNM	3408
	188	3	Yemen	Yémen	Yemen.	YE	YEM	887	YEM	3420
	189	4	Yugoslavia	Yougoslavie	Yugoslavia	YU	YUG	891	YUG	4340
	190	1	Zambia	Zambie	Zambia	ZM	ZMB	894	ZMB	1560
	191	1	Zimbabwe	Zimbabwe	Zimbabwe	ZW	ZWE	716	ZWE	1570

## PUBLICATION PROGRAM CURRENCY TABLE

tlkpPubProgCurrency			
	PubProgCurrID	PubProgCurrCode	PubProgCurrDesc
	1	DZD	Algeria Dinars
	2	ARP	Argentina Pesos
	3	AUD	Australia Dollars
	4	ATS	Austria Schillings
	5	BSD	Bahamas Dollars
	6	BBD	Barbados Dollars
	7	BEF	Belgium Francs
	8	BMD	Bermuda Dollars
	9	BRL	Brazil Real
	10	BGL	Bulgaria Lev
	11	CAD	Canada Dollars
	12	CLP	Chile Pesos
	13	CNY	China Yuan Renmimbi
	14	CYP	Cyprus Pounds
	15	CZK	Czech Republic Koruna
	16	DKK	Denmark Kroner
	17	XCD	Eastern Caribbean Dollars
	18	EGP	Egypt Pounds
	19	EUR	Euro
	20	FJD	Fiji Dollars
	21	FIM	Finland Markka
	22	FRF	France Francs
	23	DEM	Germany Deutsche Marks
	24	GRD	Greece Drachmas
	25	HKD	Hong Kong Dollars

	26	HUF	Hungary Forint
	27	ISK	Iceland Krona
	28	INR	India Rupees
	29	IDR	Indonesia Rupiah
	30	IEP	Ireland Punt
	31	ILS	Israel New Shekels
	32	ITL	Italy Lira
	33	JMD	Jamaica Dollars
	34	JPY	Japan Yen
	35	JOD	Jordan Dinar
	36	KRW	Korea (South) Won
	37	LBP	Lebanon Pounds
	38	LUF	Luxembourg Francs
	39	MYR	Malaysia Ringgit
	40	MXP	Mexico Pesos
	41	NLG	Netherlands (Dutch) Guilders
	42	NZD	New Zealand Dollars
	43	NOK	Norway Kroner
	44	PKR	Pakistan Rupees
	45	PHP	Philippines Pesos
	46	PLZ	Poland Zloty
	47	PTE	Portugal Escudo
	48	ROL	Romania Leu
	49	RUR	Russia Rubles
	50	SAR	Saudi Arabia Riyal
	51	SGD	Singapore Dollars
	52	SKK	Slovakia Koruna
	53	ZAR	South Africa Rand
	54	ESP	Spain Pesetas
	55	SDD	Sudan Dinar

	56	SEK	Sweden Krona
	57	CHF	Switzerland Francs
	58	TWD	Taiwan Dollars
	59	THB	Thailand Baht
	60	TTD	Trinidad and Tobago Dollars
	61	TRL	Turkey Lira
	62	GBP	United Kingdom Pounds
	63	USD	United States Dollars
	64	VEB	Venezuela Bolivar
	65	ZMK	Zambia Kwacha

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