DRUG POLICY MODELLING PROJECT
MONOGRAPH 02

DRUG POLICY INTERVENTIONS: A COMPREHENSIVE LIST AND A REVIEW OF CLASSIFICATION SCHEMES

Alison Ritter
Turning Point Alcohol and Drug Centre

David McDonald
National Centre for Epidemiology and Population Health,
The Australian National University

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THE DRUG MODELLING POLICY PROJECT

This monograph forms part of the Drug Policy Modelling Project (DPMP) Monograph Series.

Drugs are a major social problem and are inextricably linked to the major socio-economic issues of our time. Our current drug policies are inadequate and governments are not getting the best returns on their investment. There are a number of reasons why: there is a lack of evidence upon which to base policies; the evidence that does exist is not necessarily analysed and used in policy decision-making; we do not have adequate approaches or models to help policy-makers make good decisions about dealing with drug problems; and drug policy is a highly complicated and politicised arena.

The aim of the Drug Policy Modelling Project (DPMP) is to create valuable new drug policy insights, ideas and interventions that will allow Australia to respond with alacrity and success to illicit drug use. DPMP addresses drug policy using a comprehensive approach, that includes consideration of law enforcement, prevention, treatment and harm reduction. The dynamic interaction between policy options is an essential component in understanding best investment in drug policy. Stage One has: a) produced new insights into heroin use, harms, and the economics of drug markets; b) identified what we know about what works (through systematic reviews); c) identified valuable dynamic modelling approaches to underpin decision support tools; and d) mapped out the national policy-making process in a new way, as a prelude to gaining new understanding of policy-making processes and building highly effective research-policy interaction.

This Monograph (No. 02) provides a comprehensive list of drug policy interventions. The authors identify a total of 107 different drug policy interventions, whilst also noting that some interventions may still be missing, and that others may describe and document drug policy interventions with different terms. With such an undifferentiated and long list of drug policy interventions, the issue of the ways in which these interventions are then coded and classified is also addressed. Ten different taxonomies (classification schemes) are reviewed and conclusions drawn in relation to which taxonomies prove useful in describing the array of drug policy interventions.

Monographs in the series are:

01. What is Australia's "drug budget"? The policy mix of illicit drug-related government spending in Australia

02. Drug policy interventions: A comprehensive list and a review of classification schemes

03. Estimating the prevalence of problematic heroin use in Melbourne

04. Australian illicit drugs policy: Mapping structures and processes

05. Drug law enforcement: the evidence

06. A systematic review of harm reduction

07. School based drug prevention: A systematic review of the effectiveness on illicit drug use

DPMP strives to generate new policies, new ways of making policy and new policy activity and evaluation. Ultimately our program of work aims to generate effective new illicit drug policy in Australia. I hope this Monograph contributes to Australian drug policy and that you find it informative and useful.

Alison Ritter
Director, DPMP

ACKNOWLEDGEMENTS

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INTRODUCTION

Drug policy provides a plethora of different types of interventions for government and community to implement. Indeed, the breadth of possible drug interventions is so wide that to date, no-one has endeavoured to document all the possible drug policy interventions, or conceptualise them within common frameworks.

The DPMP aims to improve drug policy through the development of new evidence, new policy-making processes and new tools to translate evidence into practice and facilitate policy decision-making. One foundation of this work is the need to document and conceptualise drug policy interventions.

The interventions occur at different levels (i.e. global, national, state, local); they target different sectors of our community (e.g. the drug user, the people in the drug user's immediate circle, the community); they impact on different aspects of drug use and drug use harms (e.g. health, social and economic functioning, safety and public order, criminal justice); and are measured by different outcomes (e.g. drug use, crime rate, arrest rate, number of initiations deferred, blood borne virus transmission rate).

Different countries approach the coding and classification of drug policy interventions in different ways. In Australia we tend to use supply reduction, demand reduction and harm reduction. In other countries these categories are not necessarily used nor understood.

This project has three primary aims:
1. to document drug policy interventions (responses/strategies)
2. to review the different possible classification schemes pertaining to the interventions; and
3. to document the outcomes associated with drug policy interventions.

The success of this project is that it deals with multiple coding systems, categories and classifications all within the one project. This is of course also its primary limitation. It could be interpreted as a confusing array of interventions, classification systems and outcomes.

The first section deals with describing drug policy interventions. We then sought to review classification schemes that enable the drug policy interventions to be clustered and expressed at higher order levels. Most of the classifications have between four and six categories. Some of the classification systems come from a health perspective, others from a law enforcement framework. It is hard to find frameworks that successfully span both of these, aside from the very generic ones. We have modified or simplified some of the classification schemes so that they make more sense in our context, but we do note where this has occurred. We see this section as particularly useful to policy-makers in appreciating the array and ways in which policy responses can be expressed to various audiences (including international audiences).

The final exercise was to code policy interventions by outcome. Policy interventions are chosen depending upon the desired outcome (for example reduction in new users; reduction in HIV). This system enables sorting of the drug policy interventions by the outcomes to which they are primarily targeted.

An important note on terminology is required. We have chosen the term "drug policy intervention" to describe any government, non-government, community or individual strategy,

response or intervention that we expect to impact on drug use and drug harm. It is an all-inclusive definition. The classification schemes could be referred to as taxonomies of drug policy interventions. We sought classifications or taxonomies that would provide a useful heuristic to cluster interventions into like-groups. Finally, we focussed on heroin. Thus the drug policy interventions do not cover alcohol, tobacco or other non-injected drugs.

METHODOLOGY

The work entailed a five-step process:
1. Identify drug policy interventions
2. Identify classification schemes that could be used to cluster the interventions
3. Code the interventions by classification scheme to review the utility of the schemes
4. Identify policy outcomes
5. Code the interventions by outcomes.

In reality, these steps were undertaken concurrently and iterative processes meant that the steps informed each other.

In order to establish a comprehensive list of interventions, we started with a brainstorm of all possible interventions known to the DPMP team. We then used the DPMP systematic reviews in harm reduction, law enforcement, prevention and treatment as ways of ensuring inclusion of all interventions. We also searched the Cochrane Collaboration database for relevant systematic reviews to identify interventions. Third, publications that summarised interventions across multiple domains were reviewed and any new interventions not previously identified were added. Once the classification schema work had been completed (see below), we then worked backwards from each scheme to review whether there were interventions we had missed. The final list was then reviewed for redundancies and overlap between interventions. As will be seen below in the results section, we identify 107 interventions.

An independent review and analysis of taxonomy systems was undertaken by the second author. Having worked on the development and evaluation of national- and state-level drug strategies in Australia and a number of developing nations, McDonald was conscious of the fact that the approach taken in classifying drug policy interventions can have a powerful impact on the resulting strategy, particularly with respect to the ins and outs of the strategy. For example, some taxonomies have no space for harm reduction and others include drug education but not other preventive interventions. He was also aware that some approaches are popular but not particularly useful in real-life drug policy activity.

A list of intervention taxonomies that have been used, or could be used, to organise thinking about intervening with heroin was developed. The next task was to identify the sources of each approach as revealed in the published literature. As this has not been done before, the results (published here) are useful for people wishing to investigate in more detail the origins of particular taxonomies. It also revealed how some of the taxonomies are now being used loosely, with their proponents being unaware of the definitions applied by the originators.

The taxonomies identified come from disciplines as diverse as medicine, public health, epidemiology, education, social work, criminology, criminal justice and public policy. As discussed below, their disciplinary origins have powerful impacts on their utility as instruments for organising the huge number and wide range of drug interventions that are available.

The resulting review produced 21 classification schemes (see below results section for more details). We then chose those schemes that could accommodate the greatest diversity of drug policy interventions, that is those that were overarching frameworks. The result was 10 different classification schemes. The remaining 11 classification schemes were concerned with specific types of drug interventions, such as law enforcement.

The authors coded the drug policy interventions against the chosen classification schemes. Both authors independently coded the interventions. These were then compared and used to generate reflections on the classification schemes [1].

RESULTS

The results are divided into 3 sections:
1. Drug policy interventions
2. Classification schemes
3. Drug policy intervention outcomes

The drug policy interventions

We identified a total of 107 drug policy interventions. They are listed in Table 1. There may be some definitional disagreements, but we have endeavoured to use simple labels and descriptions to make the list as accessible and straightforward as possible. Those from the treatment realm may feel that we have 'split hairs' in distinguishing some interventions from others. Those from law enforcement may have their own preferred ways of listing law enforcement interventions. In the prevention area, we have broken down school-based drug education into knowledge/information programs; affective education programs; resistance skills training; generic skills training/competency enhancement programs; social influence programs; and system-wide programs. The degree to which some intervention types are disaggregated or put together requires further conceptual work.

Some degree of 'external agency' is implied in the interventions. So, spontaneous recovery or cold turkey withdrawal have not been listed as drug policy interventions. The interventions span both specific interventions aimed at ameliorating drug use (such as raids, or drug treatment) and non-specific interventions that would indirectly impact on drug use (such as community-building, reducing poverty).

Table 1 does not include research, monitoring and evaluation. These activities could be called 'infrastructure interventions', i.e. those that provide the foundations (or could or should provide the foundations) for many of the other interventions listed. They also differ from those listed in that, unlike most of the other approaches that are proximate to impacting on drug use, drug-related harm or to their risk and protective factors, these three interventions are more distal, providing evidence about, for or against particular policies and intervention strategies, and their implementation. However, we do acknowledge that research, monitoring and evaluation are listed as core interventions in most global, national and state drug strategies and have that status in UNODC's publication *Format and guidelines for the preparation of National Drug Control Master Plans* (UNDCP, 1994).

Importantly, the table does not identify to degree to which the interventions are effective or of proven efficacy. All interventions are included that are known to us to have been implemented at some point in the history of drug control. Some are known to be less than efficacious (such as drug-free zones), some have no evidence to date to support them (such as peer-administered

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[1] One coder made more use of multiple codes in some circumstances, whereas the other tried to use only single codes. When the two coders did not have any codes that agreed, it was identified as discordant. This will have skewed the coding towards greater agreement than disagreement.

naloxone) and some are well-known and highly efficacious interventions (such as methadone maintenance).

New interventions are being developed. Thus, the list of drug policy interventions remains open, and we would expect to add to it over time.

Table 1: Drug Policy Interventions

DRUG POLICY INTERVENTION	DESCRIPTION / EXAMPLE
Mass media campaigns	Target whole of population; education and information
Targeted media campaigns to at-risk groups	Social marketing campaigns to at-risk groups, eg: overdose prevention campaign, HIV testing campaign
Media advocacy	Strategic use of the media to raise awareness & educate
Employment (economic growth)	Maintaining high employment levels in the community
Reducing poverty	Providing social welfare, reducing poverty
Improving overall public health	Improving overall public health – good general health care services, accessible and available.
School-based drug education (SBDE) programs – education and information	Programs within schools aimed at preventing uptake of drug use, that use education/information approach
Affective education programs in schools	SBDE based on affective education programs
Resistance skills training programs in schools	SBDE that uses resistance skills training
Generic skills training/competency enhancement programs in schools	SBDE programs focussed on generic skills training or use the competency enhancement approach
Social influence programs in schools	SBDE focussed on social influence models. Most quoted example is the DARE program
Community/system-wide school programs	Multifaceted SBDE that includes community, family and school components (for example Gatehouse Project)
Community-building / neighbourhood enhancement programs	Suburb/community renewal programs including physical improvements and provision of social programs, sports and recreation programs, jobs, education for whole of community
Community programs for young people	EG: sporting activities, cultural programs, vocational programs, network of drug free youth
Crime prevention through environmental design (CPTED)	Strategies aimed at reducing crime through making appropriate changes in the physical environment of problem locations, eg: street lighting, garden maintenance
Infancy and early childhood programs for at-risk groups	Antenatal programs, family interventions, parent education programs
At-risk family interventions	Programs for at-risk families
At-risk youth programs	Programs for at-risk youth eg: truancy at schools, transition programs from primary to secondary school
Proactive classroom management and school policy	School programs and classroom management to reduce risk of drug use.
Mentoring and peer support programs	Various: in schools, mentoring programs for at-risk youths such as Big Brother and Sister. Largely targeting at risk groups
Peer education for users	Various peer education programs for existing drug users to reduce harm, improve treatment access etc.
Peer-led advocacy and support programs	Drug user groups, coalitions, representation of drug user concerns and issues at policy forums.
Needle Syringe Programs	Provision of clean injecting equipment, including needles, syringes, swabs, water
Outreach programs	Largely targeting risk behaviours for blood borne infections, but can also include outreach programs to improve access to treatment.
Regulations (and/or legislation) in relation to drug paraphernalia	Laws and regulations that enable access/prevent access to injecting equipment and other drug use paraphernalia
Overdose prevention programs	Improving witness responses, education on overdose prevention, training users in CPR, ambulance responses to overdose
Peer-administered naloxone	Making naloxone available to injecting drug users to administer in overdose situations.

DRUG POLICY INTERVENTIONS

DRUG POLICY INTERVENTION	DESCRIPTION / EXAMPLE
HIV and hepatitis prevention and education programs	Harm reduction programs aimed at reducing the risk of HIV and other blood borne viruses (hepatitis)
HIV/Hepatitis voluntary counselling and testing programs	Testing and counselling for blood borne viruses (as harm reduction intervention)
Supervised Injecting facilities	Supervised room or service where injecting can occur without prosecution and in a safe environment
Tolerance zones	Areas where police/community exercise discretion/tolerance in relation to drug use
Drug free zones	Identifying high drug use areas and then banishing drug offenders from these zones
Non-injecting routes of administration	Reducing likelihood of commencement of injecting; and encouraging existing injectors to change their route of administration
International treaties and conventions	Various international treaties and conventions in relation to scheduling drugs, availability and law enforcement responses
Bilateral and multilateral international agreements and operations	Less formal than the treaties and conventions, joint agreements and operations
Prohibition	Legislation proscribing cultivate, manufacture, permit on premises, self-administer, administer others, possess, supply etc.
Decriminalisation (various)	Removing criminal penalties for possession and use. Various models of decriminalisation including depenalisation, partial prohibition, cautioning and diversion schemes
Prescribed availability of drugs	Through registered user programs, prescription of drugs of dependence
Licensed availability of drugs	Legalisation of drugs in association with regulations regarding availability
Legalisation of drugs	Full legalisation of drugs in absence of regulations regarding availability
Crop eradication programs	In source countries – eradicating crops of opium
Crop substitution (replacement) programs	In source countries – replacing opium crops with other crops
Customs and border control	Seizures at the border (also known as interdiction)
Multi jurisdictions taskforces against trafficking	Multiple strategies against trafficking (eg: use of intelligence, "following the money trail", often targeted at organised crime)
Crackdowns	Crackdowns are abrupt escalations in proactive enforcement activities (such as seizures) that are intended to increase the perceived or actual threat of apprehension for certain offences occurring in certain situations or locations
Raids	Raids are specifically localised search and secure type (seizure) operations
Undercover operations	Undercover operations include law enforcement activities such as undercover investigations, undercover drug buys, buy-busts, use of informants, and reverse stings
Intensive policing	Intensive policing includes law enforcement activities such as saturation patrol and drug sweeps (policing drug hot spots)
Zero tolerance policing	Policing that concentrates on minor offences and offenders, rather than major offences/offenders. Strict enforcement of minor criminal conduct
Police management reform	Anti-corruption programs and new policing strategies
Health and welfare systems management reform	New health and welfare systems management (eg: funding systems, program accountability, key performance indicators)
Asset forfeiture against arrestees involved in drug related activities	Seizing assets of drug offenders
Financial controls and monitoring re money laundering detection and prevention	Use of financial controls and surveillance to monitor financial activities and potential money laundering
Crime mapping technology	Used to target police intervention in hot spots
Controls on precursor chemicals	In the case of heroin, particularly acetic anhydride
Multi agency taskforces/partnerships	Multi-jurisdictional taskforces involve coordinated and cooperative relationships between law enforcement agencies of differing jurisdictions (including local, regional, state, and federal) with the intention of improving communication and addressing the cross-jurisdictional nature of much drug offending
Community policing	Community policing includes community-based crime prevention;

DRUG POLICY INTERVENTION	DESCRIPTION / EXAMPLE
	proactive servicing as opposed to emergency response; public participation in the planning and supervision of police operations, and shifting of command responsibility to lower rank levels
Civil remedies and third party policing and drug nuisance abatement	Civil remedies are procedures and sanctions, specified by civil statutes and regulations, used to prevent or reduce criminal problems and incivilities …Civil remedies typically aim to persuade or coerce nonoffending third parties to take responsibility and action to prevent or end criminal or nuisance behaviour
Police discretion	Unofficial policy, capacity to exercise discretion in relation to drug-related matters
Cautioning only	Police cautioning or warning program (and/or on-the-spot fine)
Cautioning with compulsory drug education/treatment	Police cautioning that includes compulsory drug intervention component (and/or on-the-spot fine)
Pre-trial court diversion	Treatment a condition of bail
Pre-sentence court diversion	Delay of sentence whilst treatment undertaken e.g. CREDIT, MERIT
Post-sentence court diversion	Inclusion of treatment program within the sentencing options, deferred sentencing, non-custodial sentence with conditions
Drug Courts	Program of court-based interactions with treatment and support services for drug offenders
Restorative justice programs	Range of informal justice practices designed to require offenders to take responsibility for their wrongdoing and meet the needs of the victim(s), community
Detention of intoxicated drug user	Police powers to detain an intoxicated person who is at risk of harming him/herself
Neighbourhood Watch groups	Where citizens are encouraged to report drug activity
Renewal programs	Local community renewal programs e.g. Blitz to Bloom: saturation policing followed by clean up of area by citizen
Drug Action Teams	Local service providers (police, health, welfare, community groups) combine to form drug action teams to reduce drug use and offending
Screening in health settings	Identification of drug users, which can lead to brief interventions
Drug testing in schools	Identification of drug use, deterrent effect
Drug monitoring programs	Testing for presence of drugs in urine, blood, hair in identified users – voluntary and involuntary programs (usually part of court or treatment programs)
Drug detection devices (home testing kits)	Home testing kits to test for presence of drugs usually in non-identified users (urine, hair, blood)
Telephone information and counselling services	Provision of 24/7 information, advice and counselling services through the telephone – users, family members, community members
Brief interventions	Aimed at both use and harm reduction, includes motivational interviewing, brief solution focussed therapy, single session therapy, and brief cognitive-behavioural therapy. Can be opportunistic (non-targeted) or targeted.
Withdrawal treatment: Opioid agonist mediation	Methadone, morphine
Withdrawal treatment: Alpha adrenergic medication	Clonidine, lofexidine
Withdrawal treatment: Opioid antagonist medication	Naloxone, naltrexone
Withdrawal treatment: Symptomatic medication	Brufen, maxolone etc.
Withdrawal treatment: Other (eg: acupuncture)	Other types of withdrawal interventions
In-custody withdrawal services	Prison-based withdrawal services
Methadone maintenance	Pharmacotherapy maintenance program
Buprenorphine maintenance	Pharmacotherapy maintenance program
Heroin maintenance	Pharmacotherapy maintenance program
Naltrexone maintenance	Relapse prevention using opioid antagonist medication
LAAM maintenance	Pharmacotherapy maintenance program
Morphine maintenance	Pharmacotherapy maintenance program
Therapeutic community	Residential therapeutic program
Supported accommodation programs	Provision of drug-free accommodation, relapse prevention, community reintegration
Relapse prevention programs	Residential r non-residential, skills-based relapse prevention therapy programs
CBT (individual and group)	Cognitive-behavioural therapy
Family therapy	Family therapy

DRUG POLICY INTERVENTION	DESCRIPTION / EXAMPLE
Psychodynamic psychotherapy	Psychodynamic psychotherapy
Work/industry programs	Specially designed work/industry programs, usually as part of relapse prevention programs
Dual diagnosis programs	Various – for those with a mental health disorder and drug dependency
Services for pregnant drug dependent women - pre-natal	Pre-natal care and support
Parenting skills for drug dependent women	Parenting programs (eg Parents under Pressure)
Post-natal support for drug dependent mothers	Post-natal care and support
Narcotics Anonymous	Self-help program for drug users
NARAnon	Self-help program for families and friends of drug users
Drug driving programs	Drug driving offenders compulsory treatment/education
Monitoring of drug use by inmates	Prison monitoring programs (random and targeted drug screening)
Drug education in prison	Education programs to prevent or reduce likelihood of uptake of drugs
Treatment programs in prison	Various prison programs: withdrawal, relapse prevention and pharmacotherapy maintenance
Parole programs	Drug treatment programs as part of parole order
Post-release programs	Drug treatment and support programs post-release

Clearly such a long list requires some form of classification. We could have simply taken the existing DPMP schema (law enforcement, prevention, treatment, and harm reduction) and coded interventions by these four groups. However, there are limitations associated with imposing a single classification scheme onto the interventions: the DPMP schema may be less than inclusive; different sectors have their own preferred ways of classifying interventions; and different countries use different systems of classification. The next section describes our review of different classification schemes.

The classification schemes

As noted in the Methods section, a review of possible classification schemes was undertaken by the second author. This resulted in a total of 21 different types of schemes to classify drug interventions (excluding the infrastructure interventions: research, evaluation and monitoring).

Classifications included:
- Overarching schemes (such as the four pillars approach)
- Schemes that focused on the aims of the interventions (such as the US National Drug Control Strategy);
- Schemes that focused on different sectors;
- Stages on a continuum schemes;
- Schemes that focused on the target of the intervention.

From the 21 schema, ten were chosen because they were comprehensive and overarching in their approach. The ten classification schemes chosen are listed in the table below, with their coding levels in the second column (The remaining schemes can be found in Appendix 1). Each is then dealt with in turn, reporting details of the classification scheme, the results of the coding exercise and our conclusions.

Table 2: Summary of classification schemes

CLASSIFICATION SCHEME	CODING LEVELS
1. Four pillars approach	
	Law enforcement
	Prevention
	Treatment
	Harm reduction
2. Response level	
	Global
	National
	State
	Local
3. IOM Spectrum for mental health disorders	
	Universal prevention
	Selective prevention
	Indicated prevention
	Case identification
	Standard treatment for defined disorders
	Compliance with long-term treatment
	After-care
4. UNODC	
	Control and reduction of supply
	Suppression of illicit trafficking
	Reduction of illicit demand
	Cross-sectoral strategies
5. Demand reduction, supply reduction, harm reduction	
	Demand reduction
	Supply reduction
	Harm reduction
6. USA National Drug Control Strategy 2004	
	Stopping use before it starts: education and community action
	Healing America's drug users: getting treatment resources where they are needed
	Disrupting the market: attacking the economic basis of the drug trade
7. Allocating government responsibilities	
	Education sector
	Health and welfare sector
	Criminal justice / law enforcement sector
8. Primary, secondary and tertiary prevention	
	Primary prevention
	Secondary prevention
	Tertiary prevention
9. The public health model	
	Host
	Agent
	Environment
10. Policy instruments	
	Advocacy (using information to educate, persuade)
	Money (using spending and taxing power to shape activity)
	Direct government action (delivering services)
	Law (using legislative and regulatory powers)

Four pillars approach

This taxonomy has four different levels:

1. Law enforcement
2. Prevention
3. Treatment
4. Harm reduction

Classification source: Ministerial Council on Drug Strategy 2004, *The National Drug Strategy; Australia's integrated framework 2004-2009*, Dept of Health and Ageing, Canberra:

> The National Drug Strategy has strengthened Australia's presence among drug treatment, law enforcement and prevention service providers internationally, where Australia's model for dealing with drug issues is recognised as particularly effective (p. 3)

Harm reduction has been subsequently added by some Australian commentators as a fourth category, rather than presuming it is covered in prevention (or treatment). The City of Vancouver similarly has a four 'pillars' approach: prevention, treatment, enforcement and harm reduction (City of Vancouver 2005). The Swiss government also favours such a classification system (Collin 2002).

In some versions, *education* is used instead of *prevention*. Using 'prevention' instead of 'education' is sound. It broadens the scope, recognising that (drug) education is one type of prevention. It allows for intersectoral and multi-level preventive interventions, including those beyond the traditional 'drugs field', such as income maintenance and pre-natal well-being.

On the other hand, confusion arises when professionals engaged in treating people for drug dependence label their intervention as 'prevention', and when police argue that imprisoning drug offenders (users, user dealers and traffickers) is prevention through incapacitation, and that making illicit drug seizures prevents drug-related harm (Australasian Centre for Policing Research 2003; Australasian Police Ministers' Council 2003; Loxley et al. 2004; Williams, Keene & Williams 1995). However, these issues are particular quirks of the Australian policy environment where labelling interventions as prevention has become very popular.

This is the classification scheme used by DPMP. In our preliminary independent coding conducted by the two investigators, there was little difference between the coders. Of the 96 interventions that were coded, only 9 differed [2]. This reflects remarkable concordance using the four pillars taxonomy. As can be seen below, the interventions where there were differences in coding were diverse, and probably reflected different understandings of the interventions:

> Media advocacy – coded in all 4 categories by one, uncoded by another
> Peer-led advocacy and support programs – coded by one as prevention, the other as harm reduction
> Regulations in relation to drug paraphernalia – coded by one as law enforcement, the other as harm reduction
> HIV testing and prevention and education programs – coded by one as prevention, coded by the other as harm reduction
> Prescribed availability of drugs – coded by one as law enforcement, the other as harm reduction

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2 The coding was conducted on 96 interventions. This was because after the coding we identified a further number of interventions which were then subsequently included in the full list. As the coding was a preliminary exercise to identify the utility of the different taxonomies, the absence of some interventions was not problematic.

Licensed availability of drugs – coded by one as law enforcement, the other as treatment

Drug action teams – coded by one as all 4 categories, the other as treatment and harm reduction

Post-natal support for drug dependent mothers – coded by one as treatment, the other as prevention and harm reduction

Drug education in prisons – coded by one as treatment, the other as prevention

It seems that discussion between the coders would resolve these differences readily. The four pillars approach (and the one chosen for DPMP) performed very well as a classification approach. We have produced the list of 107 interventions (from Table 1) classified into the four pillars approach in Appendix 2.

Response level

This taxonomy has 4 levels:

1. Global
2. National
3. State
4. Local

There is no source identified for this taxonomy. It is just a sensible concept to code the intervention according to the level at which they occur. It is particularly useful for law enforcement interventions that vary between international/global activities and local policing. It is less useful for treatment interventions that all operate at a local (or sometimes state) level. The distinctions between state and local are difficult, and depend upon whether one classifies by funder, or by where the activity occurs. In this instance, we chose to classify broadly by where the intervention occurs, so for example infancy and early childhood programs may be state-funded and rolled out across a number of local areas, but we classified it as local because it occurs at the local level.

What becomes obvious in using this classification is that the vast majority of drug policy responses occur at a local level (albeit driven by state-based policies in some instances). There is few state, national and global policies in comparison. There was little difference between the two coders, with the exception of the court-based and prison interventions – coded by one as local, the other as state.

After our coding experience, and given that almost all interventions were 'local', we would argue that using this taxonomy for site of intervention is not useful. It would be more useful to use this taxonomy to differentiate the funding source.

The US Institute of Medicine (IOM) Mental Health Intervention Spectrum for Mental Health Disorders

This taxonomy is a continuum with seven stages:

Universal prevention → selective prevention → indicated prevention → case identification → standard treatment for defined disorders → compliance with long-term treatment → after-care.
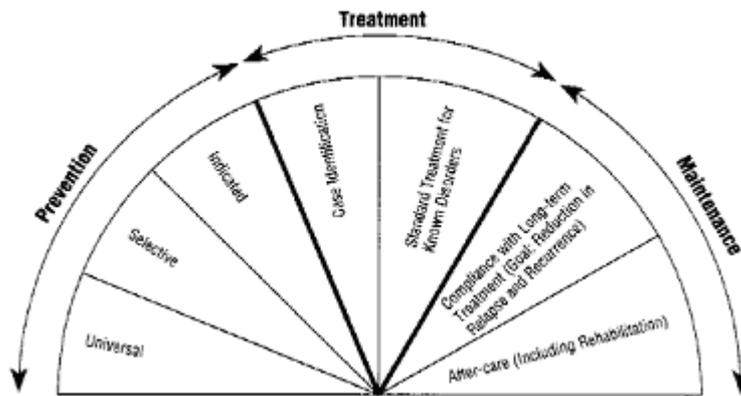
Figure 1: The mental health intervention spectrum for mental disorders

Classification source: Mrazek, PJ & Haggerty, RJ (eds) 1994, *Reducing risks for mental disorders: frontiers for prevention intervention research*, National Academy Press, Washington DC. The 'prevention' components come from Gordon (1987; 1983).

The 'prevention' stages of this continuum - or spectrum - are far better known than the treatment and maintenance stages. The authors acknowledge that their source for 'prevention' is Gordon (1983). This part of the taxonomy is prominent in many contemporary discussions of prevention including the NDS prevention monograph (Loxley et al., 2004).

Gordon (1983; 1987) focussed on universal, selective and indicated prevention, targeted at three different population groups. This taxonomy was published two decades ago and was an important departure from the single factor theory of disease causation (reflecting germ theory) apparently still prominent then. It was incorporated into the US Institute of Medicine's (IOM's) Mental Health Intervention Spectrum for Mental Health Disorders, aka Mrazek & Haggerty, discussed above. Here is what Gordon actually said:

> *In summary, we propose to define prevention as measures adopted by or practiced on persons not currently feeling the effects of a disease, intended to decrease the risk that the disease will afflict them in the future. Prevention is classified into three levels on the basis of the population for whom the measure is advisable on cost benefit analysis. Universal measures are recommended for essentially everyone. Selective measures are advisable for population subgroups distinguished by age, sex, occupation, or other evident characteristics, but who, on individual examination, are perfectly well. Indicated measures are those that should be applied only in the presence of a demonstrable condition that identifies the individual as being at higher than average risk for the future development of a disease (Gordon, 1983, p. 109).*

This taxonomy of prevention is probably the most widely used in public health at present, and is applied in domains far wider than 'disease prevention'. It is important not to equate universal, selective and indicated prevention with primary, secondary and tertiary prevention. They are quite different dimensions, as discussed below.

Universal, selective and indicated prevention are useful codes; the remaining classifications (case identification, treatment, compliance and aftercare) only apply to the treatment end of spectrum.

For the various drug treatment interventions, it did prove difficult to distinguish between treatment, compliance and aftercare.

In addition, the entire classification system does not easily accommodate criminal justice and law enforcement interventions. This was demonstrated in the independent coding exercise, where there was almost no agreement between the two coders in relation to the law enforcement-type interventions, whereas moderate agreement on the prevention and treatment interventions occurred (and no agreement on the harm reduction type interventions). We did not *a priori* attain a common understanding of the definitions within the IOM taxonomy so perhaps it is not surprising that we chose different approaches when tackling the coding exercise. If a taxonomy such as the IOM were to be used, our work highlights the importance of clear definitions for non-health interventions. We conclude that this taxonomy is of limited use in describing the full array of illicit drug policy options.

The UNODC approach to national drug control strategies

The UN drug control programme provides guidelines for countries in their preparation of national drug control plans. The UN uses four major headings in their recommendations for comprehensive drug control plans. These are:

- control and reduction of supply
- suppression of illicit trafficking
- reduction of illicit demand (prevention, treatment and rehabilitation)
- cross-sectoral strategies.

Classification source: United Nations International Drug Control Programme 1994, *Format and guidelines for the preparation of National Drug Control Master Plans*, UNDCP, Vienna.

The four categories of interventions listed here are expressed as aims. Under each of the four are more detailed categories, i.e. lists of the interventions that might be conducted so as to meet the specified aims.

The UNODC is active in assisting the nations of the world to develop comprehensive national drug strategies. In earlier decades these had a heavy focus on supply side interventions but, since the adoption of the CMO (United Nations International Drug Control Programme 1988) and later UNGASS' renewed commitment to demand reduction (United Nations 1998), the strategies have become better balanced.

There was little disagreement between the coders using this taxonomy. Differences occurred on mass media campaigns and media advocacy – coded by one as reduction of illicit demand, the other as cross-sectoral. Crime prevention through environmental design was coded by one as supply reduction, the other as demand reduction. This raises the interesting point that the way in which interventions are classified in the UNODC taxonomy depends on the assumptions underlying their primary mechanisms of action. It is unclear whether CPTED reduces the demand for drugs or reduces the supply of drugs – most likely both through different means. Drug free zones and neighbourhood watch are two other examples where the coders differed in their coding – driven by different assumptions about the primary mechanism of action of the intervention. Other than these differences, the coders agreed on all the other interventions.

The taxonomy provides a framework for a broad, inter-sectoral approach. Its comprehensiveness is a good feature. This is also the only taxonomy that includes a 'cross-sectoral' group, covering research, information systems, improving the legal framework, institutional co-ordination and inter-country co-operation. However, it does not distinguish between demand reduction and harm reduction – a major limitation of the taxonomy. Thus, all the harm reduction interventions (such as NSPs) are coded as demand reduction (which some will find unacceptable). This limitation notwithstanding, the taxonomy worked well.

Demand reduction, supply reduction, harm reduction
Another classification system that is expressed in terms of aims or goals is the triad of demand, supply and harm reduction:

- demand reduction - reducing the demand for illicit drugs

- supply reduction - reducing the supply (or availability) of illicit drugs

- harm reduction - reducing the incidence and/or prevalence and/or severity of harm related to drugs, drug use and societal responses to drugs and drug use, without necessarily requiring abstinence.

Classification source: Perhaps best known in the Australian context through successive National Drug Strategies, the latest of which is Ministerial Council on Drug Strategy 2004, *The National Drug Strategy; Australia's integrated framework 2004-2009*, Dept of Health and Ageing, Canberra.

It needs to be pointed out to an Australian audience that this taxonomy, with which we are so familiar, is little known in many parts of the world and, in many places, is rejected owing to the inclusion of harm reduction defined in this manner. The trichotomy was introduced into the NDS in the *National Drug Strategic Plan 1993-97* where it states that 'Harm minimisation is consistent with a comprehensive approach to drug-related problems using a balance of supply control, demand reduction and problem prevention' (p. 4).

'Problem prevention', as the term is used in the 1993-97 Strategy, is what we now call 'harm reduction'. It comes from the work of Pittman (1980) and Room (1981). The exact terms supply-reduction, demand-reduction and harm-reduction (as three components of 'harm minimisation') were introduced in the 1998-2003 *National Drug Strategic Framework* (Ministerial Council on Drug Strategy 1998).

The definitions of the three aims given in United Nations International Drug Control Programme (2000), *Demand reduction: a glossary of terms* are useful, owing to the role and status of the publisher.

This taxonomy is being used with some success in the Asia/Pacific region, expressed as follows:
- Supply reduction: cultivation, processing, transport, distribution, finance

- Demand reduction: education about drugs, treatment for drug problems, community development

- Harm reduction

'…Independent of each other, the three different approaches of supply, demand and harm reduction cannot be regarded as singularly effective. However, together they can complement each other - resulting in a favourable environment in which it is possible to contain the problem

of illicit drug misuse and address the public health catastrophe of HIV/AIDS among IDUs' (Costigan, Crofts & Reid 2003, p. 55).

This was a simple classification to use – there were only 7 out of 96 differences between the two coders (peer-led advocacy programs; regulations in relation to drug paraphernalia; HIV prevention and testing programs; prescribed availability of drugs; police discretion; and drug detection devices). It is likely that these differences arose through different understandings of the interventions. The vast majority of interventions were coded as demand reduction – this may reflect lack of sensitivity of the three-level taxonomy to finer distinctions within the demand reduction category but also may reflect bias in the actual list of interventions, towards greater specificity of the demand reduction interventions.

The coding experience highlights the importance of familiarity with the taxonomy. Both authors are Australian and highly familiar with the coding of drug policy interventions into supply, demand and harm reduction. The results using this three-way taxonomy were also almost identical to the results using the 'four pillars' taxonomy.

United States National Drug Control Strategy

The taxonomy of interventions covered by the 2004 US National Drug Control Strategy is also expressed in terms of a number of aims:

- stopping use before it starts: education and community action
- healing America's drug users: getting treatment resources where they are needed
- disrupting the market: attacking the economic basis of the drug trade.

Classification source: Office of National Drug Control Policy 2004, *2004 National drug control strategy*, Office of National Drug Control Policy, Washington, DC.

For many years the US strategies have been unusual in that the US Government has produced a new Strategy virtually each year, often with new goals and little in the way of evaluation. Greater continuity has been seen recently, though the Strategy is still subject to rapid change. This highlights how the types of interventions and the relative emphases given to them may remain more-or-less constant, while the top level of the taxonomy may change as part of political positioning. (The Strategy is described as 'The President's National Drug Control Strategy' rather than the nation's strategy, a very American approach to public policy.)

The three aims appear to be relatively easy to use as a classification system because they make explicit the goal of the intervention, and use plain language. However, one coder was unable to code many interventions because of the absence of a harm reduction type cluster, the narrow definition of prevention, and the difficulties associated with defining interventions that 'disrupt the market' (indeed, this coder did not code any interventions as level 3). The other coder classified all the harm reduction interventions as 'healing America's drug users' and the majority of the law enforcement interventions as 'disrupting the market'.

Government responsibility: education, treatment and law enforcement sectors

A simple taxonomy defined by government instrumentality: education; health and welfare; criminal justice/law enforcement sectors of government.

Classification source: This taxonomy is widely used in Australia and abroad. It was used in describing the Australian National Campaign Against Drug Abuse when it was launched in 1985:

Australia, Dept. of Health 1985 (That source, at p. 4, actually refers to education, treatment/rehabilitation, research and information, controls and enforcement.)

Another Australian National Drug Strategy source is: National Campaign Against Drug Abuse (Australia) 1992, *Comparative analysis of illicit drug strategy*, Monograph series, National Campaign Against Drug Abuse, no. 18. The classification system is also used in Graycar, A, Nelson, D & Palmer, N 1999, 'Law enforcement and illicit drug control', *Trends & issues in crime and criminal justice, no. 110*. This source is a detailed taxonomy of criminal justice system interventions.

This taxonomy is superficially attractive: it is simple and accords with a common-sense approach to thinking about interventions. It identifies from the outset the agencies or sectors with responsibility for the various types of interventions. Education departments do education, health departments do treatment, and criminal justice system agencies do law enforcement. This is how budgets are structured and bureaucracies organised. Things start to unwind, however, when cross-sectoral and multi-level interventions are contemplated. But for our purposes, a taxonomy that codes by government agency is useful.

There was little difference between the two coders (10 differences: infancy and early childhood programs; proactive classroom management; mentoring and peer support; tolerance zones; drug free zones; prescribed availability of drugs; drug action teams; drug monitoring programs; drug education in prisons; and treatment programs in prison). It is likely that these could be simply resolved by clarification of the government department that does (or would) take funding responsibility for these interventions.

Primary, secondary and tertiary prevention

This taxonomy is the well-known triad of primary prevention, secondary prevention and tertiary prevention. *Primary prevention* aims to prevent the occurrence of disease, targeting the total population, selected groups and/or healthy individuals. *Secondary prevention* addresses the early stage of disease (those using drugs and identified at risk of serious harm). *Tertiary prevention* addresses the late stage of disease (treatment, rehabilitation) and targets patients.

Classification source: The primary prevention – secondary prevention taxonomy was introduced in Commission on Chronic Illness (USA) 1957, *Chronic illness in the United States*. The origin for the three-part taxonomy is unclear. It probably evolved without serious thought as to how confusing it may be. It is discussed in Gordon (1983 & 1987) and (a similar discussion) in Mrazek & Haggerty (1994).

The US Commission on Chronic Illness (CCI) was quite clear in what it was doing: talking about the prevention of chronic illnesses for which we have sound knowledge about the patterns of biological causality. The Commission coined these definitions:

> 'Primary prevention means averting the occurrence of disease' (p. 16)

> 'Secondary prevention means halting the progression of a disease from its early unrecognized stage to a more severe one and preventing complications or sequelae of disease ... secondary prevention frequently merges into treatment...' (p. 28).

Gordon and his followers have pointed out that this approach is of little use when dealing with behaviour and conditions with complex and largely unknown causal webs. In any case, it is especially to be noted that primary and secondary prevention draw attention to the stages of

development of a condition, not to a population group (in contrast to Gordon's universal, selective and indicated prevention).

The new epidemiology taxonomy is an elaboration of primary, secondary, tertiary triad (see Appendix 1). It entails four taxa: primordial prevention, primary prevention, secondary prevention and tertiary prevention (Beaglehole, Bonita & Kjellström, 2000). The authors explain that 'The aim of primordial prevention is to avoid the emergence and establishment of the social, economic and cultural patterns of living that are known to contribute to an elevated risk of disease' (p. 86). *Primordial prevention* addresses underlying conditions leading to causation and targets the total population and selected groups.

The primary, secondary, tertiary classification is used extensively within the drugs area. Here we coded only for primary, secondary and tertiary prevention (leaving out primordial prevention) and using the definitions above. Perhaps reflecting the general confusion in the use of these terms in our sector, the two coders did not agree on the majority of the codes. One coder coded most of the law enforcement interventions as tertiary prevention (late stage of the disease and targeting users), whereas the other coded law enforcement as primary prevention – where stopping availability stops use. One coder used the tertiary prevention level for the harm reduction interventions, whereas the other used secondary prevention. The criminal justice interventions (such as court programs) were coded by one as secondary, the other as tertiary prevention. And even in the long list of treatment interventions there was not agreement on programs such as work/industry, dual diagnosis, parenting skills. It is possible that with carefully crafted definitions of primary, secondary and tertiary prevention as well as discussion of how to classify law enforcement and multi-dimensional interventions, this taxonomy may ultimately prove useful as a way of describing the array of drug policy interventions. As it stands, our preliminary exercise has merely demonstrated that it is a difficult and confusing taxonomy.

The public health model
This taxonomy is the traditional public health and epidemiologic model: host, agent and environment.

This taxonomy deals with target systems. This concept is not novel; it was introduced into social work in the 1970s and remains prominent in that profession (Pincus & Minahan 1973). For example, a person's problematic use of a particular type of drug could be modified by intervening with the individual (e.g. providing treatment), or with the person's environment (e.g. incapacitating the person by means of imprisonment) or by substantially reducing the availability of the drug in question (e.g. through police crackdowns on user-dealers). This is the target system, as different from a target person or population group.

Classification source: This model dates back to the 1920s. The earliest exposition appears to be by the famous American public health scholar Wade Hampton Frost who, in 1928, gave the following summary of the conditions for epidemic transmission of disease:

> *The factors concerned in keeping up this equilibrium [of transmission of micro-organisms from host to host] and in bringing about the changes from one level of prevalence to another are:*
> *1) A specific microorganism capable of producing the infection and the disease…*
> *2) A host population (man being usually the host to which we refer) containing susceptible individuals in sufficient number to keep up the infection.*
> *3) Such conditions of environment as are necessary for bringing the specific microorganism into potentially effective contact with infectible (sic) hosts (Frost 1976, pp. 143-4).*

Frost's concept of the environment was far narrower than our current approach.

The model was described by Cassel in 1976 as 'the well-known triad of host, agent and environment in epidemiologic thinking' (p. 107). Cassel's paper has been characterised as one of the defining articles in the field of social epidemiology (Krieger 2001, p. 669). What this means for the taxonomy is the importance in the illicit drugs field of Cassel's emphasis on what he called the 'psychosocial environment'. See also Krieger (2001) and Beaglehole and Bonita (1997) for further commentary on this classification.

The public health model of host, agent and environment has been reworked by Zinberg (1984) into drug, set and setting (see Appendix 1).

The definitions used here for coding were: host = drug user (so included interventions targeted at the drug user him/herself – but coders differed in the extent to which education, treatment & law enforcement interventions were coded as host); agent = drug (interventions targeted at the drug itself, largely law enforcement); environment = environment (both the social and physical environments, largely prevention). Thus the target of the interventions was used to identify whether the intervention was targeted at the host, agent or environment. One coder used multiple codes for a number of interventions, notably those that targeted both host and environment, such as parenting programs. The other coder used single coding.

The interventions that differed between the coders were: school-based drug education; international treaties; asset forfeiture; police management reform; civil remedies; police discretion; and drug detection devices. In total there were 7 (out of 96) differences, which is comparable to some of the other successful taxonomies, and likely could be resolved in discussion. We conclude that the host-agent-environment system provides a useful taxonomy of interventions concerning illicit drugs. It works well for all sectors and for intersectoral and multi-level interventions.

Policy instruments

The term 'policy instrument', routinely used in public administration/public policy circles, is synonymous with the term 'intervention' frequently used in the DPMP. Policy instruments are 'the means governments use to achieve their ends' (Bridgman & Davis 2004, p. 69) or 'the means by which a policy is put into effect' (*op. cit.*, p. 184.)

The four main classes of policy instruments used in Australia are, according to Bridgman & Davis (2004, pp. 69-77):

- Policy through *advocacy*: educating or persuading, using information available to government
- Policy through *money*: using spending and taxing powers to shape activity beyond government
- Policy through direct *government action*: delivering services through public sector agencies
- Policy through *law*: using legislative and regulatory powers

Classification source: Bridgman, P & Davis, G 2004, *The Australian policy handbook*, 3rd edn, Allen & Unwin, Crows Nest, N.S.W.

This four-level taxonomy is a relatively simple, condensed approach, but nonetheless is one that works well in an Australian context. It is familiar to public servants and aligns closely with their styles of operating. These factors, along with the fact that it applies equally well to all sectors including education/prevention, treatment and law enforcement, makes it useful to the DPMP's categorisation of interventions.

This was a more difficult taxonomy to use, largely because of unfamiliarity. The second level 'money' was infrequently coded. This may lie in the fact that we are only coding interventions for illegal drugs, and as such government instrumentalities around taxation and other spending powers are less prominent (in the case of alcohol, there would be a number of interventions coded as 'money').

There were some differences between the coders, most prominently on reducing poverty; school-based drug education; peer-led advocacy programs; non-injecting routes of administration; and NA and NARAnon (one coder viewed these interventions as not applicable under the taxonomy because they are independent from government). One of the coders also used multiple levels for a number of the interventions. Based on this preliminary exercise, this taxonomy did prove useful, with only moderate differences between the coders. Further clarification of the meanings of the different 'government instrumentalities' may enhance its utility as a coding system for illicit drug policy interventions.

Summary of classification approaches and coding

We reviewed 10 different classification systems across 96 drug policy interventions. Overall there was remarkable agreement between the coders, particularly in light of the fact that we did not provide any descriptors of the interventions over and above the list, we did not discuss the classification systems between the coders, and the two coders are from different states and institutions and reflect specialisation in different drug policy areas. This augurs well for the utility of the classification systems.

The primary purpose of the coding exercise was to establish the usefulness and clarity of different classification schemes. It was not intended to come up with a definitive classification approach. Nonetheless, the ones that worked well, with strong concordance between the coders and little confusion in the schemes were:

> The four pillars approach
> The UNODC classification
> Demand, supply and harm reduction
> Government responsibility
> The public health model
> The policy instruments model

The classification schemes that were more familiar to the coders were easier to work with. But the inclusion of classification systems from other areas (such as public health and policy) provides an opportunity to view drug interventions in a different light.

In this preliminary exercise, the classification schemes that did not work well were: response level, IOM spectrum, USA National Drug Control Strategy, and the primary, secondary and tertiary prevention taxonomy.

Some interventions were quite hard to classify irrespective of the classification scheme. For example mass media campaigns and media advocacy could potentially apply to all spectrums of

the drug interventions – targeting whole populations, specific at risk groups, or existing drug injectors as well as focussing on education, information, treatment services or legal responses.

Tolerance zones and drug-free zones are two separately listed interventions – with almost opposite aims. The former is a permissive, harm reduction approach to enabling public space to be used for injecting; the latter is a clean-up strategy with no permissiveness for drug use in public space. The coding of these two interventions was interesting (and revealed bias). In general the tolerance zones were coded as harm reduction or demand reduction or indicated prevention/case identification. The drug-free zones, on the other hand, were coded as supply reduction, law enforcement or universal prevention. Both were coded as environmental interventions (using the public health model) and as criminal justice department responsibilities (using the government departments model). This example demonstrates the potential importance of how interventions are listed and coded, and those interventions that are similar in some classification systems are identified as being very different from each other in other classification schemes.

For those interested, a copy of the interventions coded against the 10 classification schemes is available from the first author. In further work we plan to conduct roundtable consensus coding with a number of stakeholders, then make all the materials available online.

Drug Policy Intervention Outcomes

Drug policy interventions have different outcomes. Some are concerned with the health and well-being of drug users, others are aimed at reducing crime. We have nominated five major categories of outcome:

> Health-related outcomes
> Market-related outcomes
> Crime-related outcomes
> Prevalence related outcomes
> Public amenity

They are not mutually exclusive. That is, a methadone maintenance program may target both health and crime related outcomes. Likewise a supervised injecting facility measures its outcomes by improvement in public amenity as well as improvement in health (overdose). Within the 5 outcome types, we created sub-categories.

Health-related outcomes
For health-related outcomes, we identified seven different sub-categories:

> Entry into treatment
> Reduction/cessation of drug use (quantity and/or frequency of use)
> BBV prevention/reduction (hepatitis, HIV)
> Physical health improvements
> Overdose prevention (mortality)
> Psychological/mental health improvements
> Quality of life

These are commonly used to measure the impact and outcome from interventions. Quality of life is the least well-specified and is likely to be inextricably linked to the other health-related outcomes.

Market-related outcomes

The concept of drug markets is complicated (see Ritter, 2005, Monograph No. 8). Acknowledging this, we have chosen four main market indicators:

Drug availability
Price
Purity
Displacement of the drug market activity

There is an obvious link between price and purity (see Moore et al, 2005, Monograph No. 09). The application of these market-related outcomes is largely seen in law enforcement literature, evaluating the impact of interventions on the price, purity and availability of drugs.

Crime-related outcomes

We identified seven crime-related outcomes:

Crop replacement and crop eradication
Seizures of drugs
Criminal activity
Arrests
Convictions
Diversion to treatment
Calls for police service

Clearly, some of these outcomes are linked (and mutually independent), such as criminal activity, arrests and convictions. In one sense these represent progressively smaller, or more precise ways of measuring crime-related outcomes.

Prevalence/incidence related outcomes

This category of outcome is concerned with the numbers of drug users at the population level (not the amount of drug use, which is classified as a health-related outcome). Both incidence and prevalence of drug use in the community can be specified as an outcome. In addition, initiation deferred is an outcome notably measured for prevention interventions.

Incidence of drug use
Prevalence of drug use
Initiation deferred or reduced

Public amenity

Public amenity is an important outcome of drug interventions. We identified two sub-categories:

Fear of crime
Public safety

It is not clear whether these two sub-categories do cover the full range of public amenity outcomes. There is less research using these outcomes (and largely confined to needle syringe programs and supervised injecting facilities).

The purpose of coding drug policy responses by their outcomes is to make more explicit the intent of the policy option. At a simple level, it provides a policy maker who wishes to achieve a particular goal with a list of interventions to potentially choose from. But there is also a more sophisticated level of analysis to which these outcome codings could be used. One of the current debates of our time in drug policy is that of harm reduction. Does good drug policy reduce use, reduce the amount of harm caused by use, or reduce both use and harms? One way to characterise this is to distinguish between prevalence (numbers of users) and consumption (amount consumed). The outcomes coded here can differentiate those drug policy interventions

that target reduction in prevalence of use, versus those that target reduction in consumption and those that target reductions in harm (without affecting use levels).

Both investigators coded the drug policy interventions against the outcomes. This exercise highlighted that each policy intervention is targeted at multiple interventions. Indeed, at least half of the 96 interventions were coded across all five outcome areas (health, market, crime, prevalence, public amenity) and had multiple codes within each of these five categories. As a result it became apparent that this exercise required significant refinement if it was to be a useful resource. This work will be taken up in Stage Two. Drug policy interventions may need to be coded into a primary outcome and then secondary outcomes. This would result in a more useful resource. Whether agreement between experts could be reached on defining the primary outcome for each intervention is unclear at this time. Another aspect emerging from our preliminary work was the distinction between intended and unintended outcomes, which will need consideration in the next iteration of this task.

CONCLUSIONS

DPMP has taken a very broad policy perspective and aims to develop new insights and policy tools across the full spectrum of drug policy interventions. When DPMP commenced, we had not actively considered developing a comprehensive list of drug policy interventions. However, not long into the program of work, it became apparent that this would be a useful resource. As we started to develop the list, there was interest from outside parties in such a list. No-one had endeavoured such a task before. By the end of the project we had identified 107 different drug policy interventions.

Despite a systematic process aiming to identify all possible interventions, we do not believe that we now have a definitive list: we anticipate that we will continue to identify interventions that are not covered and we are also mindful that new interventions are developed over time. The list of 107 interventions should therefore be seen as a working list. The degree to which individual interventions are clustered together under one heading or disaggregated also varies in the current list. For example, the treatment interventions are all fairly precisely divided, whereas the law enforcement interventions have less specificity to them at this time. We have not used combined categories (for example school-based drug education that uses multiple approaches, or methadone maintenance combined with relapse prevention counselling). Some interventions may require further description in order for them to be clear to a non-drug specialist audience. Furthermore, as noted in the report, the list does not differentiate between those interventions with a strong evidence-base versus those which have a relatively weak evidence-base. Furthermore, the list only covers interventions for heroin.

Despite these various limitations, we have produced what is probably the most comprehensive list of drug policy interventions to date, and believe it will prove a useful resource for many different audiences – researchers, practitioners and policy makers.

The ways in which such an undifferentiated list can be clustered into policy relevant domains was our second endeavour. We identified ten classification schemes that could be used to categorise the interventions (and a further 11 that represented partial systems, Appendix 1). We documented these classification schemes and conducted a preliminary coding exercise to test their utility. The results were somewhat surprising – there was much more concordance between

the coders than had been anticipated. Six of the 10 classification schemes demonstrated good utility and promise as a way of coding drug policy interventions. The one that DPMP had chosen originally (the four pillars approach) had high concordance, and the resultant categorisation of drug policy interventions according to the four pillars approach is reproduced in Appendix 2.

The third component to this work was the development of a set of outcome variables. Our original intent was to be able to develop a resource whereby policymakers or others who had a particular outcome they were seeking could then identify all the possible interventions that may address that outcome. As it turned out, there was insufficient differentiation of the interventions by outcomes. Further work is now required with some different approaches to develop this resource.

We will continue to maintain the list of interventions, and plan to make it available interactively in the new year. Further work is also planned on the classification schemes (with a broader group of stakeholders) and the outcomes approach as noted above. In this work to date, we have not integrated our thinking about the benefits and harms of different policy interventions. We are currently working on ways to represent both the benefits and harms of each policy intervention, and the target of those benefits and harms (the user, the community and so on). Ultimately, all of our work is geared towards developing decision-support tools for policy makers.

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APPENDIX 1: OTHER CLASSIFICATIONS SYSTEMS

Farrington's taxonomy of crime prevention

Four groups of approaches to crime prevention: criminal justice, situational, community/social and developmental.

Source: Farrington, DP 1996, *Understanding and preventing youth crime*, Joseph Rowntree Foundation, [England]. The taxa are described as 'Four strategic approaches: law enforcement, developmental, situational, community' in Tonry, M & Farrington, DP (eds) 1995, *Building a safer society: strategic approaches to crime prevention*, Univ. of Chicago Press, Chicago. (Tonry & Farrington 1995)

A powerful taxonomy that was further developed, with particular reference to drugs, in the landmark report National Crime Prevention 1999, *Pathways to prevention: developmental and early intervention approaches to crime in Australia*, National Crime Prevention, Attorney-General's Department, Canberra.

Although labelled a 'crime prevention' approach, it fits nicely with drug use since that behaviour is, in most jurisdictions (though not all) a crime. Treatment can fit in this schema among the 'developmental strategies', where one seeks to intervene to assist people at actual or potential developmental crisis points.

Mazerolle's taxonomy (used in the DPMP law enforcement systematic review)

Lorraine Mazerolle has coded the law enforcement responses for the systematic review. The categories she has used for police-led drug law enforcement are:
- international/national interventions;
- reactive/aggressive interventions (eg crackdowns, raids, buy-busts saturation patrolling); proactive/partnership interventions (eg: third-party policing, community policing, drug nuisance abatement);
- individualised interventions (eg arrest referral, diversion); and
- combination of reactive/aggressive and proactive/partnership

Drug crime law enforcement

Graycar, A, Nelson, D & Palmer, M 1999, 'Law enforcement and illicit drug control', *Trends & issues in crime and criminal justice, no. 110*. report a list of all law enforcement strategies:
- high level drug trafficking control
- drug seizure
- multi-agency supply reduction approaches
- street-level control
- police crackdowns: undercover policing, drug sweeps
- community policing
- problem-oriented policing

- policing drug hot spots
- place managers
- third party policing and the use of civil remedies
- civil forfeiture law
- diversionary law enforcement strategies: drug action teams, cautioning, mandatory treatment services, drug courts.

Graycar (et al., 1999) state that:

This paper is a basic catalogue of law enforcement responses to illicit drug use. As one of the most important issues facing Australia today, the use of illicit drugs has no simple solution, and will require policy and intervention responses from agencies across the spectrum of education, treatment and rehabilitation, and law enforcement. Partnership between government and the community is essential in dealing with the issues that confront us. Recognising the diversity and value of complementary approaches, this paper looks at only one aspect of our response to illicit drugs, a law enforcement perspective (Graycar, Nelson & Palmer 1999, p. 1).

Members of the DPMP team may find this taxonomy of value as it has been produced in Australia, reflecting the perceptions of Australian people involved in the criminal justice system both operationally and from a research and policy perspective.

Social determinants of health

This is a taxonomy of interventions that, research evidence indicates, can contribute to health and well-being generally. While it has a strong preventive emphasis, it also covers down-stream interventions and identifies 'addiction' (WHO term) as one of the issues demanding attention.

It is particularly useful in reminding people of the need for intersectoral approaches, and of the limited capacity of the 'drugs field', as we usually define it, to achieve societal goals relating to illicit drug related harms. If we really took a comprehensive approach, the drugs field would include interventions in all the areas listed, among others.

There are ten different but interrelated social determinants of health and well-being:
1. the social gradient - the need for policies to prevent people from falling into long-term disadvantage
2. stress - how the social and psychological environment affects health
3. early life - the importance of ensuring a good environment in early childhood
4. social exclusion - the dangers of social exclusion
5. work - the impact of work on health
6. unemployment - the problems of unemployment and job insecurity
7. social support - the role of friendship and social cohesion
8. addiction - the effects of alcohol and other drugs
9. food - the need to ensure access to supplies of healthy food for everyone
10. transport - the need for healthier transport systems.

Source: Wikinson, R & Marmot, M (eds) 2003, *Social determinants of health: the solid facts*, 2nd edn, WHO, Copenhagen.

The Ottawa Charter for Health Promotion

Health promotion is the process of enabling people to increase control over, and to improve, their health.

Five key actions in health promotion:
- building healthy public policy
- creating supportive environments
- strengthening community action
- developing personal skills
- re-orienting health services.

Source: International Conference on Health Promotion 1986, 'Ottawa Charter for Health Promotion, WHO/HPR/HEP/95.1', First International Conference on Health Promotion, Ottawa, 17-21 November.

The *Ottawa Charter* describes its scope as follows:

Health promotion is the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy life-styles to well-being.

As set out here, actions directed at improving health and well-being lie both within, and far beyond, the narrowly-conceived 'health sector'. By extension, the actions listed may be seen as an important taxonomy of preventive interventions in the illicit drugs field.

The NIDA Drug Abuse Program Continuum

This taxonomy is a continuum with six stages:

information → education → alternatives → intervention → treatment → rehabilitation/relapse prevention.
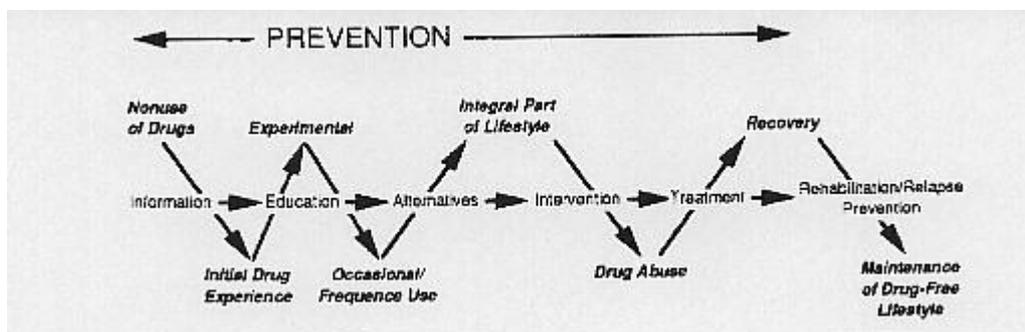

Figure 2: The NIDA drug abuse continuum

Classification source: It was first published in French, JF & Kaufman, NJ 1981, *Handbook for prevention evaluation: prevention evaluation guidelines*, NIDA, Rockville, MD, pp. 3-6, though in that version the continuum ends with 'rehabilitation', not relapse prevention.)

A decade later it reappeared in Bukoski, WJ 1991, 'A framework for drug abuse prevention research', in CG Leukefeld & WJ Bukoski (eds), *Drug abuse prevention intervention research: methodological issues; NIDA research monograph 107*, National Institute on Drug Abuse, Rockville, MD, pp. 7-28. In this version it is called 'A model of comprehensive prevention'. The final step is 'rehabilitation/relapse prevention', reflecting new approaches to treatment.

Bukoski states that 'This approach recognizes that drug abuse encompasses a spectrum of behaviours from nonuse to dependency and includes a comparable range of theoretically based prevention strategies along this continuum of drug use' (pp. 12-3).

This taxonomy immediately raises the confusing issue of labelling all treatment and rehabilitation as 'prevention'. It seeks to link the types of interventions to points in people's drug using careers. This approach is no longer used by NIDA. McDonald contacted them recently and they said they had never heard of it, despite the fact that Leukefeld & Bukoski's *NIDA research monograph* is available on their web site!

McDonald reports that he has found this taxonomy useful in assisting policy makers to see the big picture. It clearly comes from the health sector and does not lend itself easily to incorporating law enforcement/criminal justice system interventions.

Canada's Drug Strategy 1998

Canada's Drug Strategy applies a taxonomy of interventions expressed as five goals:

- reduce the demand for drugs
- reduce drug-related mortality and morbidity
- improve the effectiveness of and accessibility to substance abuse information and interventions
- restrict the supply of illicit drugs
- reduce the costs of substance abuse to Canadian society.

Source: Health Canada 2004, *Canada's drug strategy*, <http://www.hc-sc.gc.ca/hecs-sesc/cds/index.htm>.

This strategy also emphasises its aims. Internationally, it is seen as similar to the Australian demand, supply and harm reduction trichotomy, and does indeed include harm reduction components, though they are not readily identifiable in this top level taxonomy. It is based on a fairly comprehensive legislative framework.

The new epidemiology taxonomy

This is an elaboration of the familiar but confusing triad discussed above. It entails four taxa: primordial prevention, primary prevention, secondary prevention and tertiary prevention. The source is: Beaglehole, R, Bonita, R & Kjellström, T 2000, *Basic epidemiology*, Updated reprint, WHO, Geneva.

This approach uses the now-traditional though confusing taxonomy which addresses the stages of development of a disease or condition (1°, 2°, 3°), but adds 'primordial prevention' preceding primary prevention:

> *Four levels of prevention can be identified, corresponding to different phases in the development of a disease...:*
> *- primordial;*
> *- primary;*
> *- secondary;*
> *- tertiary.*
> *All are important and complementary, although primordial prevention and primary prevention have the most to contribute to the health and well-being of the whole population (p. 85).*

The authors explain that 'The aim of primordial prevention is to avoid the emergence and establishment of the social, economic and cultural patterns of living that are known to contribute to an elevated risk of disease' (p. 86).

Primordial prevention addresses underlying conditions leading to causation and targets the total population and selected groups.

Primary prevention addresses the early stage of disease and targets the total population, selected groups and healthy individuals.

Secondary prevention addresses the early stage of disease and targets patients.

Tertiary prevention addresses the late stage of disease (treatment, rehabilitation) and targets patients.

It can be seen, then, that the authors are attempting to combine a stages of disease taxonomy with a population group targeted taxonomy, with confusing results.

Drug, set and setting

The public health model of host, agent and environment has been reworked by Zinberg into drug, set and setting.

Source: Zinberg, NE 1984, *Drug, set, and setting: the basis for controlled intoxicant use*, Yale Univ. Press, New Haven & London.

Zinberg's formulation can be seen as an application of the traditional host-agent-environment system to the field of drug use and drug-related harm. While the subtitle of his book is important for his argument about the concept of 'drug abuse', for our purposes the interlocking system of drug (= agent), set (= host) and setting (= environment) is the taxonomy of interest.

As with its predecessor, this taxonomy works equally well with diverse and multiple sectors and levels of interventions. It has provided some of the conceptual framework for understanding the impacts of law enforcement strategies on treatment seeking behaviour (e.g. Weatherburn, Lind & Forsythe 1999) and is an important tool in conceptualising and operationalising a net harm approach.

Drug-related harms and risks: types, who bears them and their sources

This taxonomy focuses on drug-related harms and risks, identifying the types of harms and risks, who bears them, and the sources of the harms and risks.

Source: Part of this taxonomy was published by one of the early harm reduction theorists, Russell Newcombe (1992). It was taken to a deeper and even more useful level by Robert MacCoun, Peter Reuter and Thomas Schelling in a 1996 journal article and this formulation has been reproduced in an important contemporary book (MacCoun, R. J. & Reuter 2001).

Newcombe (1992) presented a taxonomy of drug-related harm. It has two axes: first, the type of harm (health, social and economic) and second, the level at which the harm occurs (individual, community or society).

MacCoun and Reuter usefully complexified this. They point out (as did Newcombe) that a number of sources of illicit drug-related harm may be identified. This may be displayed as a matrix showing, on one axis, the types of harms (health, social & economic functioning, safety & public order, and criminal justice) and identifying on the other axis who bears the harm or risk (drug users, dealers, intimates, employers, neighbourhoods and society) *and* the primary sources of harm (drug use, the illegal status of drugs and enforcement) (pp. 102-112). This taxonomy, then, has three taxa: the types of harms and risks, who bears them, and the sources of the harms and risks.

The authors identify one intervention taxon—enforcement—within their list of sources of harm, but this is too limited an approach. Other interventions can be included, for example drug education and treatment programs, as they also have potentials for creating drug-related harms as well as benefits.

As with the other taxonomies in this section—target systems—this one is of great practical value. It is a fine tool for a net harm analysis, as acknowledged in the Australian Capital Territory Government's, *ACT Alcohol, Tobacco and Other Drug Strategy 2004-2008*. McDonald has drafted a definition of the net harm approach, building on MacCoun & Reuter (who do not use the term), as follows:

> A net harm approach to policy and intervention development is one which takes into account both the anticipated positive and negative consequences of interventions, and weighs one against the other. It includes looking broadly to identify the consequences of one intervention for other interventions. Core elements of a net harm analysis include (a) identifying who bears the human and financial costs/harms (e.g. drug users; families; neighbours; communities) and (b) identifying what are the sources of the drug-related costs/harms (e.g. drug use itself; the legal status of a drug; or interventions aiming to reduce certain types of drug-related costs/harm through law enforcement, education, treatment, etc.). If the likely impact of an intervention is limited to shifting the burden of harm from one sector to another (especially from the general community to drug users) this should be made explicit in the planning process and judgments made, based upon a net harm analysis, as to the appropriateness of proceeding.

Gordon's operational classification of disease prevention

Universal, selective and indicated prevention measures, targeted at three different population groups.

Source: Gordon, RS, Jr. 1983, 'An operational classification of disease prevention', *Public Health Reports*, vol. 98, pp. 107-9.

Gordon, R 1987, 'An operational classification of disease prevention', in MM Silverman & JA Steinberg (eds), *Preventing mental disorders: a research perspective*, National Institute of Mental Health, Department of Health and Human Services, Rockville, MD, pp. 20-6.

This taxonomy was published two decades ago and was an important departure from the single factor theory of disease causation (reflecting germ theory) apparently still prominent then. It was incorporated into the US Institute of Medicine's (IOM's) Mental Health Intervention Spectrum for Mental Health Disorders, aka Mrazek & Haggerty, discussed above. Here is what Gordon actually said:

> *In summary, we propose to define prevention as measures adopted by or practiced on persons not currently feeling the effects of a disease, intended to decrease the risk that the disease will afflict them in the future. Prevention is classified into three levels on the basis of the population for whom the measure is advisable on cost benefit analysis. Universal measures are recommended for essentially everyone. Selective measures are advisable for population subgroups distinguished by age, sex, occupation, or other evident characteristics, but who, on individual examination, are perfectly well. Indicated measures are those that should be applied only in the presence of a demonstrable condition that identifies the individual as being at higher than average risk for the future development of a disease (Gordon, 1983, p. 109).*

This taxonomy of prevention is probably the most widely used in public health at present, and is applied in domains far wider than 'disease prevention'. It has been discussed from time to time (sometimes critically) in publications of the Australian Network for Promotion, Prevention and Early Intervention for Mental Health (Auseinet).

APPENDIX 2: DRUG POLICY INTERVENTIONS CODED BY THE FOUR PILLARS: PREVENTION, LAW ENFORCEMENT, TREATMENT AND HARM REDUCTION.

Prevention
Mass media campaigns
Targeted media campaigns to at-risk groups
Media advocacy*
Employment
Reducing poverty
Improving overall public health
School-based drug education (SBDE) programs – education and information
Affective education programs in schools
Resistance skills training programs in schools
Generic skills training/competency enhancement programs in schools
Social influence programs in schools
Community/system-wide school programs
Community-building / neighbourhood enhancement programs
Community programs for young people
Crime prevention through environmental design (CPTED)
Infancy and early childhood programs for at-risk groups
At-risk family interventions
At-risk youth programs
Post-natal support for drug dependent mothers*
Parenting skills for drug dependent women
Proactive classroom management & school policy
Mentoring and peer support programs
Renewal programs
Drug Action Teams
Screening in health settings
Drug testing in schools
Law enforcement
Drug-free zones
International treaties and conventions
Bilateral and multilateral international agreements and operations
Prohibition
Decriminalisation
Prescribed availability of drugs*
Licensed availability of drugs*
Legalisation of drugs
Crop eradication programs
Crop substitution programs
Customs and border control
Multi jurisdictions taskforces against trafficking
Crackdowns
Raids
Undercover operations
Intensive policing
Zero tolerance policing
Police management reform
Health and welfare systems management reform*
Asset forfeiture
Financial controls and monitoring re money laundering detection and prevention
Controls on precursor chemicals
Crime mapping technology
Multi agency taskforces/partnerships
Community policing
Civil remedies, third party policing, drug nuisance abatement

Police discretion
Cautioning only
Cautioning with compulsory drug education/treatment
Pre-trial court diversion
Pre-sentence court diversion
Post-sentence court diversion
Drug courts
Restorative justice programs
Detention of intoxicated drug user
Neighbourhood Watch groups
Drug driving programs
Monitoring of drug use by inmates
Treatment
Drug monitoring programs
Drug detection devices (home testing kits)
Brief interventions
Telephone information and counselling services
Withdrawal treatment: Opioid agonist mediation
Withdrawal treatment: Alpha adrenergic medication
Withdrawal treatment: Opioid antagonist medication
Withdrawal treatment: Symptomatic medication
Withdrawal treatment: Other (eg: acupuncture)
In-custody withdrawal services
Methadone maintenance
Buprenorphine maintenance
Heroin maintenance
Naltrexone maintenance
LAAM maintenance
Morphine maintenance
Therapeutic community
Supported accommodation programs
Relapse prevention programs
CBT (individual and group)
Family therapy
Psychodynamic psychotherapy
Work/industry programs
Dual diagnosis programs
Services for pregnant women - pre-natal
Narcotics Anonymous
NARAnon
Drug education in prison
Treatment programs in prison
Parole programs
Post-release programs
Harm reduction
Peer-led advocacy and support programs
Needle Syringe Programs
Outreach programs
Peer education for users
Regulations (and/or legislation) in relation to drug paraphernalia
Overdose prevention programs
Peer administered naloxone
HIV prevention and education programs
HIV/hepatitis voluntary counselling & testing programs
Supervised Injecting facilities
Tolerance zones
NIROA

* interventions more difficult to classify.