DRUG POLICY MODELLING PROGRAM

MONOGRAPH 24

GOVERNMENT DRUG POLICY EXPENDITURE IN AUSTRALIA – 2009/10

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THE DRUG MODELLING POLICY PROGRAM

This monograph forms part of the Drug Policy Modelling Program (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 Program (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.

DPMP conducts rigorous research that provides independent, balanced, non-partisan policy analysis. The areas of work include: developing the evidence-base for policy; developing, implementing and evaluating dynamic policy-relevant models of drug issues; and studying policy-making processes in Australia.

Monographs in the series are:

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

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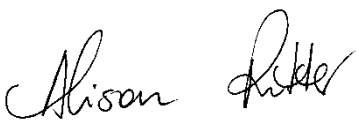
21. An assessment of illicit drug policy in Australia (1985 to 2010): Themes and trends

22. Legal thresholds for serious drug offences: Expert advice to the ACT on determining amounts for trafficable, commercial and large commercial drug offences

23. Prevalence of and interventions for mental health and alcohol and other drug problems amongst the gay, lesbian, bisexual and transgender community: A review of the literature

24. Government drug policy expenditure in Australia – 2009/10

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.



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EXECUTIVE SUMMARY

In responding to illicit drugs, Australian governments expend resources in providing proactive responses, such as drug treatment or policing of drug-crimes. Governments also expend considerable resources on the indirect consequences of drug use, such as emergency department admissions for overdose, or crimes that are committed to obtain income to purchase drugs. This second category of indirect or reactive spending is generally known as the social cost approach. International experts have emphasised that drug budgets should concentrate on the direct, proactive spending by governments, and this approach is taken here.

This study provides a new estimate of Australian governments' direct or proactive spending on illicit drug policy for 2009/10. Four drug policy domains were examined: prevention, treatment, harm reduction and law enforcement. Federal and state/territory expenditure estimates were derived for each of the four domains. A top-down approach was adopted wherever possible and consistency in method across the four domains was of central concern.

The results reveal that Australian governments spent approximately $1.7 billion in 2009/10 on illicit drugs. This included programs to prevent or delay the commencement of drug use in young people, drug treatment services including counselling and pharmacotherapy maintenance, harm reduction programs such as the needle syringe program, police detection and arrest in relation to drug crimes and policing the borders of Australia for illegal importation of drugs and their precursors.

The $1.7 billion amount equates to 0.13% of GDP, and 0.8% of all government spending. In 2009/10 it represented per person spending of $76.28.

The relative allocations to the four policy domains were as follows:

Policy domain	$ million	Percentage
Prevention	156.8	9.2%
Treatment	361.8	21.3%
Harm Reduction	36.1	2.1%
Law Enforcement	1123.3	66.0%
Other	23.1	1.4%
TOTAL	1701.1	100%

As can be seen, the majority of direct government spending was in law enforcement, representing 66% of government expenditures. This was followed by drug treatment at 21%; and then prevention at 9%. A small proportion of spending occurred for harm reduction (2%).

The state/territory governments expend a far greater proportion of the $1.7 billion than the federal government. The state/territory government spending represented 69% of the total.

Due to lack of available data and uncertainty around the main estimates, sensitivity analyses were conducted. These reveal the plausible ranges of the relative contributions, as shown below. Thus, the prevention spending may represent between 7% and 21% of the total direct or proactive spending; law enforcement may represent between 61% and 69% of the total expenditure. For the treatment and harm reduction estimates, the sensitivity analyses reveal smaller intervals. Treatment may represent between 20% and 23%; harm reduction between 2% and 3%.

	Expenditure ($ million)			Proportion of total (%)
	Main estimate	**Low estimate**	**High estimate**	**Range**
Prevention	156.8	111.1	404.5	6.7% to 20.8%
Treatment	361.8	330.0	407.6	19.9% to 23.3%
Harm Reduction	36.1	30.3	54.0	1.8% to 3.1%
Law Enforcement	1,123.3	915.7	1335.7	61.3% to 69.8%
Other	23.1	23.1	23.1	1.4%
TOTAL	1,701.1	1,413.2	2,224.9	

It is challenging to compare countries, largely because there are substantial methodological differences in approaches to drug budgets, and the year (and currency) vary. However, relative to other nations, the Australian drug budget results show that Australia's spend at 0.13% of GDP is very similar to most other countries. The proportion of GDP varies between a low of 0.1% (Luxemburg and France) to a high of 0.5% in the Netherlands.

Many European nations (with the exception of France) expend the largest proportion on law enforcement. The proportion spent on law enforcement ranged from 75% of drug budget in the Netherlands, to 47% in France. For the USA, only federal spending was available, but it is noted that in 2012, the budget for law enforcement represented 60%. Drug treatment is the next largest expenditure item for every European country, consistent with the Australian findings. Australia proportionally spends the greatest amount on prevention, compared to other nations. The inclusion of non-health government spending through the school-based drug education prevention estimate for Australia is likely to account for these cross-country differences.

The first Australian drug budget was undertaken for 2002/03 (Moore, 2005). Notably the original work included both direct (proactive) and indirect (reactive) estimates. For 2009/10, a more consistent methodology was used across domains, and only proactive expenditure was included. A comparison of the two proactive estimates, given CPI adjustments to the 2002/03 figures and accommodating an important methodological difference in the prevention calculation is shown below.

	2002/03 Direct spending (Moore, 2005)	**2002/03 Direct spending (Moore, 2005) with CPI adjustment to 2009/10 values[1]**	**2009/10 Direct spending**	**2002/03 % Direct spending**	**2009/10 % Direct spending**
	$ million	**$ million**	**$ million**	**%**	**%**
Prevention	101.6[2]	123.6	156.8	9.0%	9.2%
Treatment	229.2	278.9	361.8	20.2%	21.3%
Harm Reduction	44.8	54.5	36.1	3.9%	2.1%
Law Enforcement	740.4	900.8	1,123.3	65.3%	66.0%
Other	18.4	22.4	23.1	1.6%	1.4%
TOTAL	1,134.4	1,626.7	1,701.1	100%	100%

Notes

[1] The 2002/03 figures have been adjusted for CPI to be comparable with the 2009/10 figures.

[2] In Moore's (2005) original work, school-based drug education included social competencies training. This has been excluded from this table to ensure comparability with the 2009/10 method, which excluded social competency training from the school-based drug education estimate.

These data suggests that there has been little change in the relative balance of spending across the four policy domains in Australia between 2002/03 and 2009/10. The relative allocations are exceptionally similar (see last two columns).

Overall spending has increased by a small amount. There is a notable exception though – harm reduction is the only domain where spending has decreased. This is of concern, especially given the solid evidence-base for the effectiveness of harm reduction interventions.

As with any study such as this, there are important limitations and caveats associated with the findings. This study does not provide advice about what the ideal spending proportions should be – it is descriptive alone, providing an estimate of what governments spend in the four policy domains. These expenditure items are not matched to outputs or outcomes – this is an area for further research. The major limitation of top-down costing is that it assumes that everything in the denominator is equal. This is a significant assumption, but one which is unavoidable in this work. A number of assumptions needed to be made throughout this study, and have been documented herein. This should enable transparency in the results and the possibility for other research teams to develop contrasting estimates with alternate assumptions. Local government was not included. This study estimated government costs alone, and perforce did not include private costs.

Illicit drugs cause significant health, social and economic burdens on Australian society. Australian governments' investment in this area represents a tiny component of all government spending (0.8%). The extent to which the policy mix of spending across domains identified here represents efficient spending cannot be ascertained from this study; new research examining the relative cost-efficiencies for each of the four policy domains is now required.

INTRODUCTION

Illicit drug use is ubiquitous and a significant economic burden on Australian society. The ways in which governments respond usually represent a blend of options across different government portfolios – including policing and law enforcement, education, community and welfare services and health services. One of the aims of the National Drug Strategy is 'to achieve a balance between harm-reduction, demand-reduction and supply-reduction measures to reduce the harmful effects of drugs in Australia' (Ministerial Council on Drug Strategy, 2011). This approach has been echoed worldwide. For example, Switzerland's National Drugs Policy emphasises 'the four pillar model as a pragmatic middle way', and aims to increase the interchange between prevention, treatment, harm reduction and law enforcement (Swiss Confederation, 2006). The latest American drug control strategy also emphasises a balance between prevention, treatment, law enforcement and international cooperation (Office of National Drug Control Policy, 2010). (See also Ritter, 2010 for further examples of 'balanced' drug strategies).

One way of assessing the extent of 'balance' is to examine the distribution of government spending across the portfolios. While spending is only one measure of balance (Ritter, 2010), it provides potentially important and useful information from which discussions about the investments in responding to illicit drugs can be informed. The 'balance' of spending only reflects the government inputs to policy, and does not account for the outcomes achieved for that spending investment.

Resources are scarce. Governments aim to deliver services in a manner which maximises the value of public expenditure. In order to begin to assess whether maximum value is attained it is necessary to have an accurate assessment of public spending (EMCDDA, 2008). Thus, an analysis of drug-specific expenditure forms an essential platform in order to build the capacity for analysis and assessment of efficiency and investment. Without an accurate descriptive baseline, future analysis is impeded.

Government expenditure relates to services directly provided by government, and services funded by government but delivered in other ways, including through the purchase of services from non-government providers (Steering Committee for the Review of Government Service Provision, 2010). In an ideal world, all government expenditures on drug-related activities would be labelled in public sector budget documents. However, in Australia as in most nations, there has only been partial labelling of drug-related spending - creating limited transparency as to whether government drug-related spending is being undertaken efficiently with proper control and public accountability.

Government drug spending estimates were initially undertaken in the United States in the 1970s as activities of the Office for National Drug Control Policy (Walsh, 2004). A number of countries have undertaken such analyses, including Sweden (Ramstedt, 2006), Canada (DeBeck, Wood, Montaner, & Kerr, 2009), and the Netherlands (Rigter, 2006). The most recent federal estimates for the USA can be found on the website of the Office of National Drug Control Policy (http://www.whitehouse.gov/ondcp/2013-national-drug-control-strategy). A series of estimates were derived for multiple European Union countries, and are reported on the European Monitoring Centre for Drugs and Drug Abuse (EMCDDA) website (http://www.emcdda.europa.eu/countries/public-expenditure). In addition to country reports on expenditure, the EMCDDA has also produced a framework document which outlines the issues and methods for approaches to estimating public expenditure on drugs (EMCDDA, 2008). Despite these various developments, as will be seen below, the methods for estimating

government drug-specific expenditure remain crude and involve the application of numerous assumptions. However we believe that a descriptive analysis of Australian drug-specific expenditure is a worthwhile and useful exercise.

Moore (2005) pioneered drug-related expenditure analysis in Australia with a wide-ranging assessment of expenditure in 2002/03 as part of DPMP's first monograph series. This original work estimated two separate components: the direct costs associated with drug-spending on interventions (titled 'proactive' spending); and the indirect costs (or consequences) associated with drug use (titled 'reactive' spending). McDonald also developed an ACT drug budget (McDonald, 2006). Since Moore's original study, the EMCDDA (2008) and Reuter (2006) have emphasised that drug-related expenditure analyses should focus on proactive elements only, with an aim to standardise the approach for comparability across jurisdictions. Inclusion of only proactive or direct spending avoids overlap with cost-of-illness studies. Thus, this monograph only reports proactive spending.

Since 2003, there have been numerous developments in Australian drug policy with implications for government spending such as the continued roll-out of diversion, ongoing developments in drug treatment service provision, changes to needle and syringe programs and modes of delivery, along with changes in levels of research and policy funding. Thus, there is a need to update the 2002/03 expenditure estimates. This monograph follows the latest standard drug expenditure framework and details government expenditure estimates for the financial year 2009/10.

This study aimed to:

- update the expenditure framework developed by Moore (2005) for classifying and measuring government drug spending in Australia;
- develop a framework for identifying which drug-specific interventions are included in the cost analysis, along with the assumptions underpinning calculations being presented; and
- calculate annual drug expenditure for the year 2009/10 by the federal and state/territory governments in Australia.

This drug budget concerned illicit drugs only, including, heroin, cannabis, methamphetamine, cocaine, ecstasy, and hallucinogens. Drugs such as tobacco, alcohol, performance enhancing drugs and legal substances used for psychoactive effects are not included in the analysis.

There is no benchmark for the ideal spending mix across the policy areas. This report does not set out to create such a benchmark – rather its aim is to describe the relative investment mix across government portfolios.

Given the uncertainty surrounding estimates of expenditure, the relative value of the estimates are more important than any absolute values provided in the analysis. So we concentrate on the distribution of expenditures between the policy domains. This provides insight into the proportions of spending on prevention, treatment, harm reduction and law enforcement activities at the federal and state/territory level.

METHODS

The first step was to outline the domains of drug policy to ensure consistent inclusions/exclusions of government spending categories. Then within each domain, consideration is given to the specific elements; such as those that make up 'prevention'. Whether the expenditure is incurred by the federal or state/territory government is also a consideration. Finally, a consistent costing approach across each domain and its associated elements is required. In this analysis we applied a top-down costing approach wherever possible, as detailed herein.

Drug policy domains

Following Reuter (2006) the conventional four-part division of programs into prevention, treatment, harm reduction and law enforcement was used for the expenditure framework (see Table 1 for the components):

- Prevention programs are designed to decrease the chance that people will first use drugs or reduce the probability of progression from infrequent or experiential use, to regular use. Interventions range from school-based education and community programs, to mass media campaigns.
- Treatment programs have the aim of decreasing drug use by established users through psychological and medical services. In Australia, treatment is provided across a range of locations including specialist and primary care settings, and provided by a range of practitioners including medical practitioners, psychologists, counsellors and nurses.
- Harm reduction programs have the objective of mitigating the harms associated with drug use. Activities include needle and syringe programs, Hepatitis C treatment and medically supervised injection centres to reduce the harms of drug use.
- Law enforcement programs seek to reduce the supply of drugs. Expenditures relate to state and federal costs of prosecuting traffickers, dealers and users. Expenditures are specified for police, judicial and specialised agencies such as the Australian Federal Police and the Australian Customs and Border Protection Service.

As noted earlier, these domains cover the proactive spending by governments - that is spending directed towards ameliorating the supply, use or harms of drugs. Reactive spending, such as the costs associated with criminal activity to acquire illicit drugs, or the costs associated with emergency department admissions for overdose, are not included. These are regarded as 'reactive' spending items, associated with the consequences of use, but not aimed at reducing use per se.

Elements within domains and level of government

Within each of the four domains there are multiple activities. Decisions needed to be made about the inclusions and exclusions; some activities are excluded due to the lack of available information. The table below details the expenditure items included within each of the four domains.

Table 1: Drug expenditure activities, by policy domains: inclusions and exclusions

Domain	Activities	Inclusions and exclusions
Prevention	School-based drug education programs	School-based drug education programs, which usually cover all substances (alcohol, tobacco and illicit drugs), are comprised largely of two types: those specifically aimed at drug education (for example, providing factual information about drugs and their effects) and those concerned with social skills (including assertiveness training and so on) to improve social skills which may assist in managing situations where drugs may be offered or used. This latter class, termed social competency training, has broader applicability beyond drugs. Only the drug-specific education was included in the analysis and social competency training was excluded.
	General prevention activities	The general prevention activities in this analysis included initiatives designed to delay the uptake of drugs. These included community education; community strengthening activities; and mass media campaigns. As will be seen, government expenditures generally do not identify the allocations to specific activities within general prevention. Closing the Gap[1] aims to improve the lives of Indigenous Australians. The federal government has allocated specific investment, of which a proportion is allocated to drug/alcohol issues. Local governments also support community safety initiatives, some of which may be direct responses to illicit drugs but these costs were not included. This was due to difficulty identifying expenditures by local governments across Australia. There are other more general welfare and support services, for example those provided to families and children, but as these are not specific to illicit drug prevention, they were not included. Arguably social welfare services (including government payments to individuals) to reduce poverty could be regarded as preventative. Again, due to lack of specificity regarding illicit drugs, these were not included. The federal government provides family support and crisis accommodation specifically related to illicit drug. Funding is channelled through the Department of Families, Housing, Community Services and Indigenous Affairs to state and territory governments. Again, due to lack of specificity these data are not included in the study.
Treatment	Drug treatment services	Drug treatment services include withdrawal (detoxification), counselling, pharmacotherapies, therapeutic communities and other programs. They are provided by either government or non-government services across a range of settings. Here all drug-specific treatment funding was included. Treatment provided as part of diversion away from the criminal justice system was included within the drug treatment estimates (as the diversion episodes of treatment used as the basis for the analyses are not separable in the specialist drug treatment services database).
	Opioid pharmacotherapy	Opioid pharmacotherapy treatment is provided both within specialist drug treatment settings and across primary care settings

[1] http://www.fahcsia.gov.au/our-responsibilities/indigenous-australians/programs-services/closing-the-gap

	treatment	in Australia. This category includes the primary care (GP setting) opioid pharmacotherapy treatment, and the costs of the medication for the full program. The staff costs associated with pharmacotherapy treatment provided as part of specialist drug treatment services is included in the drug treatment services category.
	Hospital-based drug treatment	General hospitals also provide drug treatment – withdrawal and management of dependence. Specific drug treatment provided in hospitals was included. Admissions to hospital for disorders/diseases for which illicit drugs are regarded as a contributing factor (such as heart disease) were not included. Admissions to emergency departments for overdose management were also not included. Both of these are classified as reactive spending.
	Prison-based drug treatment services	In Australian prisons a range of specific drug treatment programs are provided. These include withdrawal services, opioid pharmacotherapy treatment and counselling services.
Harm Reduction	Needle and syringe programs	Needle and syringe programs (NSPs) have been established in all Australian states and territories. NSP was included.
	Medically Supervised Injecting Centre (MSIC)	There is only one MSIC in Australia, located in Kings Cross, Sydney. As an explicit harm reduction service, it was included in the estimates. There are other harm reduction services, such as outreach workers and peer support programs but due to lack of available data which allowed specific expenditure to be identified, these were not included.
Law Enforcement	State and territory police	Policing activities concerned directly with illicit drugs – the detection, arrest and charge of drug offences – was included. Police activity associated with crimes not directly related to illicit drugs (such as property offences) were not included. Police activities related to traffic offences were also excluded. Arguably the role of drug law enforcement is more than crime detection, such as collaborating with the community and providing training to practitioners in recognising drug crimes (e.g. pharmacists). As we have no way of identifying these activities or their expenditures they are not identified separately. (These costs are part of the overall law enforcement total).
	Courts, public prosecutions and legal aid	Both magistrates and higher courts were included for drug-specific court cases. Likewise, costs associated with the Director of Public Prosecutions and Legal Aid for drug-specific cases were included.
	Corrective services – prisons and community corrections	Expenditures associated with prisons and community corrections for drug-specific sentences were included. Consistent with the proactive spending approach, sentences for other offences (such as property crime) were not included.
	Australian Federal Police	Activities of the AFP concerned with detection, arrest and charge of offenders in relation to illicit drug offending were included. Arguably a range of other AFP activities, such as trafficking in other goods are connected with the illicit drug trade, but due to lack of data specificity were not included.
	Australian Customs and Border Protection Service	The Australian Customs and Border Protection Service conduct border compliance and enforcement activities. Those concerned with illicit drug offending were included.
Other	Research funding	Research funds directed towards illicit drug research, which includes agencies such as National Health and Medical Research

		Council, were included.
	Policy administration	Expenditure associated with policy administration was difficult to ascertain. Where it has been specifically identified, such as the ANCD, it has been included. However, a number of known costs could not be included, such as the staffing costs associated with the Department of Health and Ageing Drug Strategy Branch and state/territory policy administration expenditure.

For each of the activities in Table 1, we distinguish between federal versus state/territory expenditure. The federal government undertakes activities in policy and management via the Department of Health and Ageing, opioid treatment programs through Medicare and the Pharmaceutical Benefits Schedule (PBS), coordination of a National School Drug Education Strategy (Department of Education), support for general illicit drug prevention activities, restricting drug importation via Australian Federal Police and Australian Customs and Border Protection Service, along with drug diversion funding.

State-level expenditure includes drug-education programs in schools; drug law enforcement including police time committed to drug crime and court activity; and health spending (drug treatment services).

For some expenditure items, the activity crosses both state and federal government spending. For example, in the provision of opioid pharmacotherapy treatment the pharmacotherapy medications (methadone, buprenorphine) are funded by the federal government through the PBS; there is some state government contributions to pharmacy dispensing of the medications; the prescriber costs are either borne by the federal government (general practitioners through the Medical Benefit Schedule) or the state governments (specialist drug treatment prescribers). We have been specific where both federal and state/territory costs are included within the same activity.

In some cases, it is difficult to distinguish federal from state/territory expenditure (for example NSP). The overriding consideration is where the decision-making occurs in relation to the actual spending. For example, the federal government provides funds to the state/territory governments, through general purpose payments (transfers), to fund health services. The state/territory determines the actual spending distribution, and hence we allocate expenditure to the state/territory government. An exception is where federal funds are allocated directly for a specific health program (these are included as federal expenditure).

Local government expenditures were excluded from the study as expenditure data are difficult to identify. Moore (2005) highlighted that local level activities would likely focus on community safety initiatives; local drug and alcohol action plans; along with harm reduction (waste disposal) and treatment management. In some cases, it is difficult to distinguish federal from state/territory expenditure (for example NSP). The overriding consideration is where the decision-making occurs in relation to the actual spending. For example, the federal government provides funds to the state/territory governments, through general purpose payments (transfers), to fund health services. The state/territory determines the actual spending distribution, and hence we allocate health costs to the state/territory government. An exception is where federal funds are allocated directly for a specific health program (these are included as federal expenditure).

Costing approach

In an ideal situation all drug-specific expenditure would be specified in government expenditure documentation. The EMCDDA names this 'labelled' expenditure (EMCDDA, 2008) and it is readily identifiable from formal budget documents, using the Classifications of the Functions of Government (COFOG). Most drug expenditures are, however, embedded in broader programs. There is no systematically identifiable 'labelled' expenditure in Australian budget papers for drug-specific expenditure. Indeed, the EMCDDA found that labelled expenditures accounted for only a small amount of expenditure on drugs policy across a range of European countries (EMCDDA, 2008). In lieu of labelled expenditure items, a top-down approach has been recommended (EMCDDA, 2008). This is the approach taken here.

'Top-down' spending refers to a costing approach where a proportion of the total agency/service cost is allocated as drug-specific based on some estimate of the proportion of the total agency activity that is drug-specific. In contrast, micro or bottom-up costing involves an estimation process in which the base or unit costs of an activity are calculated from detailed analysis of tasks and resources, and then multiplied by the amount of the activity. The top-down costing methodology is less time consuming (Tsilaajav, 2009) but arguably less precise. Bottom-up costing is generally employed when the fine detail of the project or program components are well defined. This is not the case for drug activities.

Top-down and bottom-up can produce very different cost estimates (Chapko et al., 2009). The difference between them often depends on the assumptions and availability of data. One of the limitations of the Moore (2005) study was the use of both top-down and bottom-up costing. In this updated work, we have improved the methodology by using a 'top-down approach' which improves comparability. There were three exceptions to the top-down method: the correctional treatment costs, the research spending, and the NSP costs. It should be noted that none of these three estimates represent a substantial contribution to the overall Australian drug budget.

For any data from years other than 2009/10, inflation/deflation adjustments were made using the Consumer Price Index for the appropriate year(s) (Australian Bureau of Statistics, 2012). All final expenditure estimates are expressed in 2009/10 terms, the reference year for this study.

Some data were obtained directly from each jurisdiction in Australia. A questionnaire was sent to each of the alcohol and drug state/territory health representatives on the InterGovernmental Committee on Drugs (IGCD) asking:

- What is the total expenditure on treatment for one year (2009/10) including expenditure on detoxification and withdrawal, rehabilitation and counselling services, case management, and operating the opioid treatment program?
- Does this amount include the cost of inpatient hospitalisations? If yes, is it possible to identify and exclude those costs?
- What if any, is the expenditure on peer support and peer outreach programs and is it currently included in the amounts above?
- Does this include funding for prevention programs? If so can this amount be identified?
- Does this include funding for educational programs? If so can this amount be identified?
- Are all transfers received by state department from the Australian Government for the use in diversion programs included in the totals?

Jurisdictional data were supplied on the proviso that individual jurisdictional data were not shown. This applies, for example, to spending estimates for drug treatment services. In this case, therefore, individual jurisdictional data are not provided. This is noted in footnotes where it occurs. In other cases, jurisdictional data are a matter for the public record. Where this was the case, jurisdictional calculations are provided. This applies, for example, to estimates of spending in school-based drug education.

RESULTS: PREVENTION

Box 1: Prevention expenditure in 2009/10

Prevention comprised school-based education and general prevention.

Total prevention expenditure was estimated to be $156.8 million per year. Expenditure on prevention was most significant for states and territories, which spent $113.9 million of the $156.8 million total (73%).

School-based education accounted for half of the prevention expenditure. In 2009/10 it was estimated that $79.2 million was spent on school-based drug education, comprising $18.8 million in federal expenditure and the balance of $60.2 million by states and territories.

Prevention encompasses interventions with the objectives of reducing the probability of uptake of drugs (primary prevention), or preventing problematic drug use (secondary prevention) (Soole, Mazerolle, & Rombouts, 2005). State and territory departments of education are the major providers of school-based drug prevention programs. General prevention targeting out-of-school youth and the wider population are implemented by federal and state departments of health. Activities include media-based programs focusing on drug education messaging, or support for community-based drug prevention involving such interventions as community mobilization and mentoring (Soole et al., 2005).

School based drug education

Drug education in schools involves the delivery of drug specific information and the development of social skills to improve drug-related decision making. It is postulated that "programs that emphasize resistance skills and general life skills appear to show the most promise of all school-based prevention approaches" (Botvin & Griffin, 2003, p. 62). School children in Australia are provided with social competency skills in the areas of communication, problem solving, assertiveness, negotiation, help-seeking behaviours and cooperation (Victoria Auditor-General, 2003).

There are limited data outlining the hours devoted to drug-specific education across Australian government and non-government schools. In 2002, the Victorian Auditor General surveyed 100 government schools as part of a performance audit. On average, 49.6 hours of drug education were found to be provided per year, mainly comprising training in social competencies. The average number of hours of drug-specific education was 11.4 hours. Formal drug education curriculum was mostly delivered in year 11 in elective health subjects, rather than in core subjects. The drug education curriculum at the senior secondary level covered risks associated with illicit drugs such as heroin, amphetamines, hallucinogens, cocaine and ecstasy. Not all drug specific and social competency hours related to illicit drugs. The Victorian Auditor General study (Auditor General Victoria, 2003) found illicit drugs comprised a lower proportion of the junior years curriculum compared to senior years.

Following Moore (2005), the costs of drug specific education were estimated using the proportion of classroom time spent on this drug education multiplied by school education recurrent expenditure for all states and territories. This is a top-down approach, consistent with our overall methodology for deriving a drug budget. Specifically, we took the following steps to

estimate school-based prevention expenditure. The total school hours (per state and by year) were estimated by multiplying the full time school equivalent student enrolments (as at August 2008) by the average hours of school attendance, generating a national annual total of 4.2 billion school hours based on 3.4 million full time equivalent (FTE) student enrolments in primary and secondary schools in Australia (Australian Bureau of Statistics, 2010).

Drug education hours were estimated from the Victorian schools survey (Auditor General Victoria, 2003). The hours of drug education peaked at 13 hours per year in Years 9 and 10. Not all drug education relates to illicit drugs. Based on the Victorian survey, it was assumed that 25% of drug-specific education below Year 9 was devoted to illicit drugs, while 50% was attributed to senior school years.

Applying these percentages across the different year levels, the number of hours of illicit drug education in schools was multiplied by the number of full time students in each year. This generated a total of 8.2 million hours per year in illicit drug education.

The proportion of all hours dedicated to illicit drug education (excluding social competence) was then estimated by dividing the total illicit drug hours by the total school hours, which results in 0.2% (i.e. 8.2 million hours divided by total school hours of 4.2 billion). This proportion (0.2%) was then multiplied by recurrent education expenditure. Recurrent education expenditure in 2008/09, was approximately $38.9 billion ($30.9 billion on government schools and $8 billion on non-government schools (Steering Committee for the Review of Government Service Provision, 2011). This level of expenditure was indexed to 2009/10. Calculations were made for each state/territory by applying the 0.2% to the recurrent expenditure for each state/territory (Steering Committee for the Review of Government Service Provision, 2011). The details are provided in Table 2. The calculation assumes all subjects taught have similar unit costs per hour of delivery.

Table 2: Government expenditure on school-based drug education, 2009/10

	Illicit Drug-specific Expenditure[1] ($ million)		
	Government Schools	**Non-Government Schools**	**All schools**
NSW	19.3	5.2	24.5
Vic	13.5	3.9	17.4
Qld	13.5	3.5	16.9
WA	8.1	1.8	9.9
SA	4.3	1.2	5.6
Tas	1.6	0.3	2.0
ACT	1.3	0.3	1.6
NT	1.1	0.2	1.3
TOTAL	62.8	16.4	79.2

Notes:
Columns may not sum to total due to rounding.
[1] Includes Australian, state and territory government expenditure on government schools, Australian Government specific purpose payments for non-government schools, and state and territory payments to non-government schools (Steering Committee for the Review of Government Service Provision, 2010).

It is estimated that combined federal and state/territory governments spent $79.2 million in 2009/10 (see Table 2). Most expenditure occurred in government schools. To divide expenditure between state/territory and federal government, the Steering Committee for the Review of Government Service Provision report (2012) calculated that for 2009/10 76% of total school expenditure is expended at the state/territory level. Thus $18.8 million of school-based drug education is federal expenditure and the balance of $60.2 million is state/territory expenditure.

General prevention

General prevention includes a range of programs such as out-of-school education programs, public education, mass media campaigns and community strengthening programs. The estimates for 2009/10 are discussed for the state/territory level of government, followed by the federal estimate.

State/territory: general prevention

General prevention expenditure data were publicly available for Victoria, Western Australia and confidentially for one other jurisdiction for 2009/10. In Victoria, prevention activities were implemented by the Victorian Department of Human Services. The Victorian Department of Human Services reported that they spent $27.3 million on "Drug prevention and control" in 2009/10 (Victorian Department of Human Services, 2010a). Given this state had a population of 5.6 million in 2010, average general prevention expenditure amounted to $4.88 per person in this year.[2]

The Western Australian Drug and Alcohol Office (2010) reported that $7.0 million was spent on "initiatives that delay the uptake, and reduce the harm, associated with alcohol and other drugs" in WA in 2009/10. The costs associated with this indicator include direct costs associated with prevention programs and activities, staff salaries and corporate overheads. Given there were 1.7 million people residing in Western Australia in 2010, average expenditure was estimated to be $4.12 per person. A similar method was used for the third jurisdiction, and then a weighted average was generated.

Not all activities relate to illicit drug use prevention. Currently there are no reliable estimates of the proportion spent on illicit drugs. If we assume that half of the general prevention expenditure is attributed to illicit drugs, the population weighted average (derived from confidential state/territory data) is $2.39. This is then projected onto the remaining jurisdictions. The calculations, conducted by state/territory, reveal an estimated expenditure of $53.67 million spent on illicit drug prevention activities by state and territory governments in 2009/10.[3]

Federal government: general prevention

The federal government also commit funds to prevention through the National Illicit Drug Strategy (NIDS). The strategy was launched in 1997 and has several components including treatment of users of illicit drugs, prevention of illicit drug use, training and skills development for front line workers, monitoring and evaluation and research. In 2009/10 it was estimated that

[2] The total state/territory population was taken as the multiplier for general prevention. While general prevention is frequently targeted at young people, the entire population is exposed to the prevention measures, for example through mass media campaigns.

[3] The national average of $2.49 multiplied by 22.4 million people gives $55.78 million. The reason for the discrepancy is because we used state/territory confidential estimates to derive the more precise figure of $53.67 million given differences in average spend per person by states/territories.

the federal expenditure (health appropriation) was $18.9 million for prevention activities. The $18.9 million figure was supplied by the Commonwealth. Some proportion of this includes the National Drugs Campaign, which amounted to $21.2 million in 2010/14 (http://www.drugs.health.gov.au/internet/drugs/publishing.nsf/content/campaign/$file/Campaign%20background.pdf). From this latter source, we can derive an annual figure of $5.3 million that is spent specifically on campaigns. It is assumed that this amount is included within the $18.9 million estimate provided by the Commonwealth and is therefore not separately included.

In terms of support for indigenous illicit drug users, the Closing the Gap strategy aims to improve the lives of Indigenous Australians in areas such as education, housing and health. The federal government committed a $4.6 billion investment in Indigenous-specific National Partnerships.[4] Some of these funds are directed to illicit drug prevention and treatment amongst indigenous Australians, and are not included within the above $18.9 million. Separately, the federal government track expenditure for some indigenous programs under the National Illicit Drug Strategy. In 2009/10 these programs were estimated to expend $5 million.[5]

Therefore, in total, federal government expenditure on general prevention in 2009/10 was estimated to be $23.9 million = $18.9 million + $5 million.

[4] http://www.fahcsia.gov.au/our-responsibilities/indigenous-australians

[5] The figure $5 million supplied by DoHA.

RESULTS: TREATMENT

Box 2: Treatment expenditure in 2009/10

Government spending on treatment activities was estimated to be $361.8 million in 2009/10. Federal government spending represented 30% of the total ($108.6 million).

The largest amount of drug treatment funding is provided by state/territory governments ($188.5 million) which excludes opioid pharmacotherapy maintenance in primary care settings.

The approach to estimating expenditure on drug treatment services was consistent with our overall top-down approach to this drug budget. Thus it entailed establishing the total expenditure for treatment, where possible by each jurisdiction, and then dividing that by the numbers of episodes of care to derive an average cost per episode of care. We then attributed the proportion of episodes of care to illicit drugs versus alcohol, and applied that proportion to alcohol and drug treatment expenditures. The approach for hospital-based treatment services, primary care pharmacotherapy, correctional treatment and drug diversion used similar top-down approaches. Each section (drug treatment, hospital-based drug treatment, pharmacotherapy maintenance and correctional drug treatment) are dealt with in turn.

Drug treatment services

Information on treatment for illicit drug use was obtained from publicly available sources such as annual reports, or in response to requests for information from individual jurisdictions (as noted in Methods).

State/territory government drug treatment funding estimates

We combined the publicly available data on drug treatment spending (for example from NSW, Victoria and WA, see below) with data we obtained in confidence from other jurisdictions to derive a cost per episode of care for each jurisdiction. The numbers of treatment episodes are outlined by the Australian Institute of Health and Welfare's (AIHW) Alcohol and Other Drug Treatment Services National Minimum Data Set (AODTS NMDS). Episodes are collated from all publicly funded government and non-government agencies that provide one or more specialist alcohol and/or drug treatment services, although the primary care delivery of opioid pharmacotherapy treatment is excluded (Australian Institute of Health and Welfare, 2011a). In 2009-10, it was estimated that there were 140,769 closed treatment episodes. More than half were provided in NSW and Victoria.

Publicly available data were used for NSW (Mental Health and Drug and Alcohol Office, 2013), Victoria (Victorian Department of Human Services, 2010a) and WA (Office of the Director of Public Prosecutions for the State of Western Australia, 2010; Western Australian Drug and Alcohol Office, 2010) and our workings are described here. The NSW Drug and Alcohol Budget in 2009/10 was $140 million. Of the total budget allocated to Area Health Services, $109 million was to provide pharmacotherapy services, detoxification and withdrawal management services, rehabilitation and counselling services, case management and consultation liaison services. The remaining $31 million was allocated to education, prevention, residential rehabilitation services and to encourage pharmacists with the pharmacotherapy program. Excluding hospital treatment of withdrawal (this item is dealt with separately, below), NSW treatment expenditure was

estimated to be $96.9 million in 2009/10. A total of 34,469 AODT episodes of care were provided in NSW (Australian Institute of Health and Welfare, 2011a) and an additional 6,096 opioid prescribed episodes in state-funded specialist treatment centres (Australian Institute of Health and Welfare, 2011b). Thus, the average cost per occurrence of service was $2,388.[6]

The Victoria Department of Human Services (2010a) reported that $104 million was spent in 2009/10 on drug treatment and rehabilitation. Given a total of 49,156 treatment episodes were provided in Victoria for that same period (Australian Institute of Health and Welfare, 2011a), an average cost of $2,116 per episode of treatment was expended in 2009/10.

According to the Western Australia Drug and Alcohol Office (2010), an average of $1,427 was spent per treatment episode on drug treatment services. A total of 16,048 episodes of AODT were provided (Australian Institute of Health and Welfare, 2011a) and an additional 1,176 state-funded pharmacotherapy clients were recorded (Australian Institute of Health and Welfare, 2011b).

For the Northern Territory, South Australia, Tasmania and the ACT we were provided with confidential data that enabled us to follow the same methods as for NSW, Victoria and WA (i.e. top-down, relying on total spending estimates divided by AODTS NMDS episodes of care). No data were provided for Queensland and hence an average cost per episode of care (derived from all other jurisdictions) was used.

An adjustment needed to be made for the proportion of licit drug treatments compared to illicit drugs. Alcohol accounted for around half of all treatments (Australian Institute of Health and Welfare, 2011a). This varied across states, with NT having the highest proportion of alcohol related treatment episodes (71%). Treatment expenditure estimates were reduced by the proportion of those seeking alcohol-related treatment to estimate the illicit drug component. This was done by individual jurisdiction, rather than using national averages.

The final estimate of the expenditure by state and territory governments on drug treatment (including state-funded pharmacotherapy maintenance) in 2009/10 was $188.5 million.[7]

Federal government drug treatment funding estimates

The federal government provides funding to non-government drug and alcohol treatment services to support outpatient counselling, outreach support, peer support, home detoxification, therapeutic communities and rehabilitation. The Commonwealth provided us with an estimate of $120.4 million spent in 2009/10.[8]

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[6] This average cost per episode of care includes state-funded pharmacotherapy maintenance services (the private and primary care pharmacotherapy maintenance service is costed separately in the next section).

[7] The national averages, for future reference, revealed a weighted average cost per episode of care of state/territory funds of $2,124; the total national number of episodes of care for 2009/10 for clients seeking alcohol or other drug treatment was 140,769 (Australian Institute of Health and Welfare, 2011a). And multiplying the average cost per episode of care by the total number of episodes results in total expenditure (inclusive of licit drugs) of $298.99 million. If approximately half are illicit drugs, a national estimate would total $149.5 million. Our main estimate, of $188.5 million, however, was not derived from national averages but calculated from jurisdictional data provided in confidence, as detailed in the text.

[8] This value can be corroborated from public domain sources, such as the flexible funding tender announcements in 2012. Focussing on the two explicit drug treatment funds (NGOTGP and SMSDG), the respective amounts of funding were: NGOTGP $125 million 2012/13 to 2014/15 = $41.6 million in 2012/13; and SMSDG $559.4 million over four years (with note that "$60 m will be made available in this round…. existing activities already take up $392.4m"). That would mean that the annual federal spend from these sources alone was $101.7 million per annum across both alcohol and other drugs. Thus we can

As with the state/territory expenditure estimates, to arrive at an estimate for illicit drugs only, this expenditure was reduced in proportion to the episodes of care in the NMDS relating to illicit drugs (Australian Institute of Health and Welfare, 2011a). In total around 54% of episodes of treatment were related to illicit drugs as the principal drug of concern. Correspondingly, $120.4 million was deflated by this proportion to generate a federal treatment expenditure of $65.0 million.

Hospital-based drug treatment services

Expenditures for illicit drug withdrawal and dependency syndrome where hospitalisation occurred were estimated for Australia in 2009/10. The numbers of cases of withdrawal and dependency syndrome for 2009/10 are outlined in Table 3, along with the weighted cost of treatment. Diagnostic reference group costs for 2008/09 were inflated to 2009/10 values. Cases were then multiplied by the average cost per weighted case in order to estimate total expenditure (http://www.health.gov.au/internet/main/publishing.nsf/Content/Round_13-cost-reports).

Overall national expenditure was estimated to be $25.6 million – the details are provided in Table 3. These expenditures are incurred at the state level.

Table 3: Hospital treatment costs, 2009/10

ICD-10 AM, for DRGs	National Cases	Cost per weighted case (DRG)	National Expenditure ($ million)
Withdrawal state - opioids	814	6,527	5.3
Withdrawal state - cannabis	146	6,527	1.0
Withdrawal state - cocaine	2	6,527	0.0
Withdrawal state - amphetamine	92	6,527	0.6
Withdrawal state with delirium - opioids	27	6,527	0.2
Withdrawal state with delirium - cannabis	4	6,527	0.0
Withdrawal state with delirium - cocaine	-	6,527	-
Withdrawal state with delirium - amphetamine	3	6,527	0.0
Dependence syndrome - cannabis	1,521	3,092	4.7
Dependence syndrome - cocaine	111	3,092	0.3
Dependence syndrome - amphetamine	704	3,478	2.4
Dependence syndrome - opioids	3,162	3,478	11.0
TOTAL	6,586		25.6

Columns may not sum to total due to rounding.
Sources: Frequency data provided by A. Roxburgh, NDARC;
Case weighted costs: http://www.health.gov.au/internet/main/publishing.nsf/Content/Round_13-cost-reports

Opioid pharmacotherapy treatment

The National Opioid Pharmacotherapy Statistics Annual Data (NOPSAD) collection provides Australia-wide data on the number of clients undergoing pharmacotherapy for opioid dependence (Australian Institute of Health and Welfare, 2011b). Nationally, an estimated 46,078

be somewhat confident that the $120.4 million value provided is a reasonable estimate for total alcohol and other drug treatment spending by the Commonwealth.

clients were receiving pharmacotherapy treatment in June 2009, which is an increase of more than five thousand since 2002/03, when the Moore (2005) expenditure estimates were calculated. The numbers of clients by state/territory and by drug type are given in Table 4. In 2009, most clients resided in New South Wales (41%), followed by Victoria (29%) and Queensland (12%).

Table 4: Opioid pharmacotherapy clients, June, 2010

State	Methadone	Buprenorphine	Buprenorphine–naloxone	Total
NSW	15,048	4,066	-	19,114
Vic	8,476	817	3,892	13,185
Qld	3,052	796	1,840	5,688
WA	2,269	126	947	3,342
SA	1,946	430	834	3,210
Tas	432	51	137	620
ACT	632	60	119	811
NT	34	15	59	108
TOTAL	31,889	6,361	7,828	46,078

Source: Australian Institute of Health and Welfare (2011b).

The federal government covers the costs of all opioid maintenance medications and payments to general practitioners and specialists through the medical benefit schedule for those patients seen in primary care settings.

For the medication costs, in 2009/10, the cost to the federal government of supplying methadone and buprenorphine amounted to $30.5 million (http://www.pbs.gov.au/info/browse/statistics).

Consistent with the top-down costing approach followed here, the cost of prescribing was estimated as a proportion of all GP visits; there were 91.3 million Level 'A, B and C' GP consultations at consulting rooms in 2009/10. A person on pharmacotherapy maintenance is required to visit a medical prescriber for prescriptions and monitoring. It was assumed that on average clients on pharmacotherapy visit a GP an average of 12 times in a year. Using patient numbers as at June 2010, and the proportion being supported by GPs (which varied by jurisdiction, with a low of 19% in the NT, and a high of 94% in Vic - (Australian Institute of Health and Welfare, 2011b), there was a total number of 351,000 GP visits associated with pharmacotherapy in 2009/10. The details are provided in Table 5.

Table 5: Opioid pharmacotherapy by general practitioners, number of cases and total visits, 2009/10

	General Practitioner			
State	**Patients**	**GP proportion**	**Average Visits**	**Total Visits**
NSW	19,114	55.0%	12	126,152
Vic	13,185	94.2%	12	149,043
Qld	5,688	36.8%	12	25,118
WA	3,342	54.6%	12	21,897
SA	3,210	56.9%	12	21,918
Tas	620	56.3%	12	4,189
ACT	811	33.9%	12	3,299
NT	108	19.4%	12	251
TOTAL	46,078			351,868

Source: Patient numbers and GP proportion (Australian Institute of Health and Welfare, 2011b).
Average visits: assumption.
Columns may not sum to total due to rounding.

As a proportion of all GP 'Level A, B and C' visits, the 351,868 visits represents 0.4%. This percentage was then multiplied by total GP expenditure of $3.42 billion to estimate GP-related pharmacotherapy expenditure. Thus, it is estimated that the federal government spent $13.1 million on pharmacotherapy-related GP visits (equates to $37.00 per visit).

Adding the $13.1 million for pharmacotherapy GP related costs with the $30.5 million in medication costs results in total expenditure by the federal government of $43.6 million.

Treatment in correctional facilities

There are three types of drug treatment provided in Australian prisons: opioid treatment program (methadone, buprenorphine and buprenorphine-naloxone); detoxification services; and counselling and rehabilitation services. Each of these is estimated separately. Unfortunately we were not able to follow a top-down methodology for the estimate of prison-based drug treatment costs. Instead we relied on published data about the individual costs of service provision, as reported in research papers.

The major cost components in the NSW prison methadone program were outlined by Warren et al (2006). Costs were described for administration, methadone delivery and corrections officers. In 2002, a total of 3.98 million millilitres of methadone was dispensed in NSW prisons, at an annual cost of $147,080. Costs of pharmacy, courier and dispensing were $44,732, generating a total cost $2.9 million annually, or $3,234 per treated prisoner per year (Warren et al., 2006).

Black et al (2004) estimated methadone program costs in correctional setting in Queensland, Victoria and South Australia. In Queensland, the cost of maintaining a prisoner on methadone, buprenorphine or buprenorphine-naloxone was estimated to be $2,000 per year across 45 prisoners. In Victoria, 310 inmates received either methadone or buprenorphine at a total cost of $1,007,935 per year, or $3,251 per year per inmate. The average cost per prisoner was $3,018 in South Australia. In Western Australia, 72 prisoners received methadone and eight received buprenorphine, at a cost of $2,000 and $4,000 respectively per prisoner per year. It is assumed

that these costs exclude the cost of the medication itself. This is explicitly stated for the South Australian figure and is implied in all the figures provided (given that they are state correctional costs). The medication costs themselves have already been included in the above pharmacotherapy expenditure estimate.

Using an average per prisoner cost of $3,500[9] and a prison pharmacotherapy maintenance population of 3,647 (Australian Institute of Health and Welfare, 2011b), it is estimated that an expenditure of $12.8 million occurred in 2009/10 for prison methadone programs.

Black et al (2004) reported detoxification expenditures in the ACT, New South Wales and Western Australia which were $90,145, $5,554,000 and $2,680,200 respectively. The total cost across these three jurisdictions was $8,324,345 in 2002/03. Indexing the expenditure by inflation (CPI) resulted in a 2009/10 estimate of $9,989,214. These three prison populations accounted for 53% of all prisoners in Australia in 2010 (Australian Bureau of Statistics, 2011c). To generate a national detoxification expenditure estimate, the cost was increased proportional to the total prison population to $18.9 million on prison detoxification services.

Counselling services are also provided to drug dependant inmates. There were no available data on costs for counselling services in prisons. Moore (2005) estimated $5.3 million was spent on these services in 2002/03, based on "extrapolating the available figures with weighted averages" (page 15). If the 2002/03 estimate of $5.3 million for these services is indexed by the prison population in 2002/03 and 2009/10, along with CPI adjustment, then a total of $7.4 million was expended on counselling in 2009/10.

In sum, the total costs of drug treatment services provided in prisons across Australia were estimated to be $39.1 million for 2009/10 (18.9 + 12.8 + 7.4).[10]

Drug diversion

Diversion is the term used to describe the redirection of offenders away from conventional criminal justice and into education and treatment support (Hughes & Ritter, 2008). The use of diversion in Australia has increased since the launch of the Council of Australian Government-Illicit Drug Diversion Initiative (COAG-IDDI) in 1999. The initiative was coupled with the provision of $310 million in federal funding – largely to expand treatment capacity.

At the time of the 2002/03 Australian drug expenditure study, much of the financial support for diversion was channelled through federal agencies. Moore estimated that diversion spending was $26.5 million, as spent by the federal government (Moore, 2005). Since then diversion has expanded, and support by state and territory agencies has increased. In reviewing the state of diversion programs in 2007, Hughes and Ritter (2008) found that 30 programs were funded by the IDDI (59%) and 21 programs were not funded by the IDDI (41%).

While we can separately specify the IDDI funds within this updated drug budget, it is likely to represent double-counting, as diverted clients are registered within the NMDS system and treatment costs are already covered. Furthermore, tracking diversion funding is difficult, as

[9] Adjusting for CPI

[10] Some treatment costs in prison settings may potentially be double-counted within the law enforcement section on Corrective Services (where the proportion of prisoners with drug offences was divided by the total expenditure on prisons, hence inclusive of any health or social support services provided by the prison system). The extent of potential double-counting depends on whether health departments separately fund the drug treatment services provided in prisons, as occurs in some jurisdictions. Given the double-counting is small, it is unlikely to affect the overall result.

although treatment support is most likely to be channelled through state health departments, police and other elements of the criminal justice system also incur diversion expenditure. This feature of the Australian system was highlighted by Hughes and Ritter (2008) who noted that diversion options "were offered throughout all stages of the criminal justice system". The costs of illicit drug-specific criminal justice costs are handled in a subsequent section. For these reasons, diversion expenditure was not separately estimated: it is subsumed within the drug treatment services and criminal justice costs.

RESULTS: HARM REDUCTION

Box 3: Harm reduction expenditure in 2009/10

Total harm reduction expenditure was estimated to be $36.1 million in 2009/10. The main expenditure item of $28.8 million is associated with needle and syringe programs.

The attribution of the NSP costs to state/territory or federal government is unclear, and here it has been recorded as a state/territory expenditure item.

Smaller expenditure items included the Medically Supervised Injecting Centre and federal Hepatitis C Education and Prevention Initiative.

Harm reduction refers to programs that are aimed at reducing the harm caused by drug use. Typically, needle and syringe programs are included in this category. In addition, the medically supervised injecting room in Sydney is included, along with federally supported HIV/Hepatitis education.

Needle syringe program

Needle and syringe programs (NSPs) have been established in all Australian states and territories and receive support at the federal and state level. There were 3000 NSP sites across Australia in 2008 (NCHECR, 2009) and more than 30 million syringes were distributed that year. The National Centre for HIV Epidemiology and Clinical Research (2009) collected expenditure estimates for NSPs using a survey based approach. The survey identified two main categories, being consumables including sterile injecting equipment, disposal costs and safe sex-equipment, and operations support. Other costs included peer-support programs, and telephone information services on safe disposal of needles and training. In this report, it was noted that in total $26.4 million was spent on NSPs around Australia in the financial year 2007/08. Approximately $8.6 million was spent on the provision of consumables including $6.9 million on sterile injecting equipment, $1.5 million on disposal and $290,000 on safe sex packs (NCHECR, 2009). This estimate is not a top-down calculation and as with the prison-based drug treatment, reflects a deviation from the methodology consistently employed elsewhere in this report.

Taking the reported $26.4 million and inflating to 2009/10 values these costs were estimated to be $28.75 million. We desired to split this $28.75 million between the Commonwealth and state/territory spending. However we were not able to determine what amount should be apportioned to the Commonwealth and what amount to the states/territories. In the 2009 Return on Investment Report, it was noted that "Across jurisdictions Commonwealth funding provided under this initiative has represented a substantial proportion of government funding for NSPs." (NCHECR, 2009, p. 8). This suggests that the majority should be placed in the Commonwealth spending estimate. However, the Commonwealth website notes that: "From 1 July 2009 funding previously provided for health programs is included in the new broad banded Healthcare Specific Purpose Payment. Consistent with the Intergovernmental Agreement on Federal Financial Relations (IGA) the expenditure of these funds on healthcare programs is a matter for each State and Territory. Under the IGA all payments are provided directly from the Commonwealth Department of the Treasury to the State/Territory Treasury." (Victorian Department of Human Services, 2010b, p. 9). In the absence of further information we have attributed all NSP funding to the states/territories.

Medically Supervised Injecting Centre (MSIC)

The MSIC is a state-funded initiative, and occurs only in NSW. It commenced in May 2001 in Kings Cross, Sydney. The centre's objectives are to decrease drug overdose deaths; provide a pathway for drug treatment and counselling; decrease problems associated with public injecting and reduce the spread of infectious diseases (KPMG, 2010; Saha International, 2008). Since the commencement of operation in early 2001 to the end of April, 2010 some 12,050 injecting drug users had registered with the MSIC with a monthly average of 111 new clients registered (KPMG, 2010). For 2007/08, NSW Health advised that expenditures were $2,770,000 for MSIC operation (Saha International, 2008). Inflated to 2009/10 values, this represents $3.02 million.

Other harm reduction

The federal Hepatitis C Education and Prevention Initiative started in 1999. It has the objectives of providing education and prevention to people who are vulnerable to infection, along with information on testing, diagnosis and treatment for those living with Hepatitis C. In 2007, the Commonwealth (Department of Health and Ageing, 2007) announced continued funding of $17 million over four years. In 2009/10 an estimated $4.25 million was therefore included in expenditure calculations.

RESULTS: LAW ENFORCEMENT AND INTERDICTION

Box 4: Law enforcement expenditure in 2009/10

Government spending on law enforcement activities was estimated to be $1,123.3 million. Most expenditure was at the state level, with $770.8 million in activities at this level of government.

State spending is high due to the costs of police services allocated to illicit drug law enforcement and the costs of correctional services. Each of these items accounted for 48% and 27% of state/territory enforcement costs respectively.

Federal illicit drug law enforcement amounted to $352.5 million in 2009/10. Most of this cost was associated with the Australian Federal Police and Australian Customs and Border Protection Service.

Reuter (2006) classifies enforcement programs into those aimed at disrupting supply by targeting traffickers and producers and those directed at users to increase transaction costs (e.g. inconvenience) of buying drugs. This broad approach was also followed by Moore (2005) with measures being split into policing and judicial measures, correctional services and interdiction. Interdiction aims to restrict cross border supply and is handled in Australia by specialised agencies such as the Australian Federal Police and Australian Customs and Border Protection Service. Expenditures associated with these activities are outlined in the next section.

Police services

Policing activities are largely the responsibility of state and territory governments. An exception is the ACT, where this function is performed by the Australian Federal Police. Nationally, there was a total of 64,315 operational and non-operational police staff in 2008/09 (Steering Committee for the Review of Government Service Provision, 2010). Determining the police expenditure relating to illicit drug control using a top-down approach involves establishing the total police budget and then allocating an appropriate proportion to illicit drugs policing.

Such estimation is confounded by the lack of documentation by police services of activity-based time allocation. Given the data gaps, Moore (2005) apportioned time on the basis of the composition of arrests. As there is no other source of information, this method was adopted in the 2009/10 study. The shortcomings of this approach were noted in the 2005 report as numbers of arrests may not directly correlate with resource allocation because arrests for differing types of crimes take various lengths of time to conduct and non-operational staff time may not reflect arrest data.

The NSW Bureau of Crime Statistics and Research (BOCSAR) develop and maintain statistical databases on crime and criminal justice in NSW and conduct research on crime and criminal justice issues. In 2010/11 it reported that drug incidents accounted for 5.9%[11] of all incidents, excluding traffic related offences (Goh & Moffat, 2011). Although these are NSW data only, it is unlikely to vary substantially nationally.

[11] Australian Bureau of Statistics (2011b) noted that, nationally, the most prevalent principal offences for offenders were: acts intended to cause injury (19% of all offenders), public order offences (19%), theft (17%) and illicit drugs (15%). These estimates do not include traffic and vehicle regulatory offences; subdivision 041-dangerous or negligent operation of a vehicle.

As with the original Australian drug budget (Moore, 2005), police recurrent expenditure was adjusted by 10% to reflect expenditures related to traffic safety and management not otherwise reflected in police custody statistics (Moore, 2005)[12]. Police recurrent expenditures minus 10% was multiplied by 5.9% (the proportion of drug incidents, see above) to obtain an estimate of illicit-drug related expenditure. Expenditure on police services across Australia was $6.34 billion in 2007/08 after the 10% exclusion (Steering Committee for the Review of Government Service Provision, 2009). This expenditure was inflated to 2009/10. Multiplying police expenditures by the 5.9% of police activity attributed to drug-specific incidents generates state and territory government spending in 2009/10 of $388.9 million, as detailed in Table 6.

Table 6: State police drug-specific expenditure, 2009/10

States	State Police Recurrent Budget 2007/08 minus 10% ($ million)	Illicit Drugs Proportion (%)	2009/10 Police Illicit Drugs Expenditure ($ million)
NSW	2,021.7	5.9%	123.9
Vic	1,432.8	5.9%	87.8
Qld	1,193.0	5.9%	73.1
WA	771.4	5.9%	47.3
SA	486.8	5.9%	29.8
Tas	149.0	5.9%	9.1
ACT	112.5	5.9%	6.9
NT	177.1	5.9%	10.9
TOTAL	6,344.2		388.9

Columns may not sum to total due to rounding.

Judicial resources

The contribution of illicit drugs to overall court activity can be determined from Australian Bureau of Statistics data relating to the total numbers of cases by principal offence. The Australian Bureau of Statistics (2011b) reports cases for Higher (Intermediate and Supreme) Courts, Children and Magistrates (Local) Courts. Table 7 displays the available data: total number of cases by court by outcome (acquitted, guilty finding, guilty plea) and the number of illicit-drug specific cases. In addition, the average duration of cases is provided. All these data are necessary to derive a top-down estimate of drug-specific court expenditure. The proportion of illicit-drug offences at each court is multiplied by recurrent cost expenditure to estimate illicit drug-specific costs, given a weighting for length of proceedings, as detailed below.

Higher Courts. Some 2,827 defendants had illicit drugs as the principal offence of a total of 14,409 High Court adjudicated defendants in 2009/10 (see Table 7). This amounts to a proportion of 19.6% of defendants having an illicit drug related offence. To determine

[12] Mayhew (2003), in her study into the costs of crime in Australia, and Rollings (2008) in the update handled this by reducing overall expenditure by 30%. The 30% figure did not have a strong empirical basis, but was taken with advice from the Australasian Centre for Policing Research. Given that some of the activities that would fall into this figure – such as specialist drug units and drug-related community education programs – would be drug-related, 30% seems too severe. Instead, only the 10% of resources attributed to traffic safety and management by Mayhew (2003) is deducted (Moore, 2005).

expenditures in the Higher Courts relating to illicit drugs; we assumed that expenditure is related to the proportion of court time devoted to illicit drug defendants, adjusted by the relative duration of drug cases. The median duration of illicit drug court cases was 31.7 weeks, which was slightly shorter than the median duration for all categories of 33.4 weeks (Australian Bureau of Statistics, 2011b). The defendant proportion of 19.6% was reduced by a factor of 95% to reflect the lower time duration of illicit drug cases. Correspondingly, it was estimated that 18.6% of Australia's 2009/10 Higher Court activity was associated with illicit drug activities.

Table 7: Court cases: illicit drug cases, by court type, total number of cases and duration from initiation to finalisation, 2009/10

	# of Cases	<13 Weeks	13-25 Weeks	26-38 Weeks	39-51 Weeks	52 & over Weeks	Average Weeks
Higher Courts							
Acquitted							
Illicit Drugs	43	3	7	6	5	22	43
All Offences	1,218	52	248	234	226	458	42
Guilty Finding							
Illicit Drugs	175	6	26	42	19	82	43
All Offences	1,386	29	176	306	232	643	45
Guilty Plea							
Illicit Drugs	2,540	570	800	479	280	411	31
All Offences	11,697	2,605	3,536	2,274	1,282	2,000	31
Magistrates Courts							
Acquitted							
Illicit Drugs	341	70	93	62	41	75	33
All Offences	20,383	10,555	4,929	2,213	994	1,692	22
Guilty							
Illicit Drugs	32,127	24,802	3,934	1,628	707	1,056	17
All Offences	525,275	405,925	68,865	24,901	10,325	15,259	17

Source: Australian Bureau of Statistics (2011b). Criminal Courts 2009-10, Cat No. 5413.0, Australian Bureau of Statistics, Canberra.

Total High Court net expenditure in 2008/09 was $289.5 million. Recurrent expenditure on court administration covers salary and non-salary items relating to court accommodation, support for the judiciary, court and probate registries, sheriff and bailiff's offices (Steering Committee for the Review of Government Service Provision, 2010). Expenditure included in the drug budget is net of income (including court fees, library, probate, sheriff or bailiff revenues or rentals but excluding fines) (Steering Committee for the Review of Government Service Provision, 2010). By multiplying net recurrent expenditure by the proportion of court activity devoted to illicit drugs - adjusted for inflation to 2009/10 and weighted by proceedings time, a total High Court expenditure relating to illicit drugs of $55.9 million was estimated.

Magistrates and Children's Courts. In 2009/10, there were 32,468 defendants in Magistrates' Courts (of 545,658 defendants) whose principal offence related to illicit drugs (See Table 7). Based on this proportion, some 6.0% of Magistrates' Court activity was deemed to be illicit drug-specific. In the same period there were 821 adjudicated cases in the Children's court, out of 33,469 cases, or 2.5%. Based on cases, the average proportion of illicit-drug related activity in

these courts was 5.74%. The Steering Committee for the Review of Government Service Provision (2010) reported that the total recurrent expenditure for Magistrates' Courts, which is borne by state governments, (including Children's Courts) was $358.6 million. After adjusting to 2009/10 values the Magistrates Court expenditure that could be regarded as illicit drug-specific was calculated to be $21.7 million.

Legal expenses

Public Prosecutions expenditure and Legal Aid expenditure comprise the category of legal expenses. The Director of Public Prosecutions prosecutes offences against Commonwealth law. Total state and territory government expenditure on public prosecutions was $247.5 million in 2009/10 (Director of Public Prosecutions, 2010; Director of Public Prosecutions Tasmania, 2010; Director of Public Prosecutions Victoria, 2010; Director of Public Prosecutions: Northern Territory of Australia, 2010; Office of the Director of Public Prosecutions, 2010a, 2010b; Office of the Director of Public Prosecutions for the State of Western Australia, 2010; The Office of the Director of Public Prosecutions New South Wales, 2010). The Federal Government spent $99.09 million on public prosecutions in 2009/10 (Commonwealth Director of Public Prosecutions, 2010).

We needed to apply a multiplier to those total expenditures to derive drug-specific legal expenditure. We chose the average of the Higher and Magistrates' illicit drug-specific court activity figures (see preceding section), weighted by expenditure. This was 12%. State and federal public prosecutions were multiplied by this factor to estimate expenditure relating to illicit drugs. A total of $29.5 million is estimated at the state level and $11.8 million federally for Public Prosecutions, as detailed in Table 8.

State and territory governments also have legal aid commissions to resource legal support in criminal, civil and family law matters. The total funds to Legal Aid commissions across Australia in 2009/10 were $589.9 million. We, however, only wish to take a proportion of that Legal Aid expenditure attributable to criminal cases alone. Criminal legal aid funding was identified in annual reports where possible. Total criminal legal aid funding in 2009/10 was $285.1 million – see Table 8 (Legal Aid Commission (ACT), 2010; Legal Aid Commission of Tasmania, 2010; Legal Aid New South Wales, 2010; Legal Aid Queensland, 2010; Legal Aid Western Australia, 2010; Legal Services Commission of South Australia, 2010; Victoria Legal Aid, 2010).

The 12% portion for court activity related to illicit drugs was again used to estimate drug-specific legal aid. It was estimated to be $34 million for 2009/10 (state/territory).

Table 8: Legal expenditure on illicit drug cases: Public Prosecutions and Legal Aid, 2009/10

		Public Prosecutions		Legal Aid		
States	Drugs Proportion (%)	Director of Public Prosecutions[1] ($ million)	Drugs Expenditure ($ million)	Legal Aid Commission ($ million)	Criminal Expenditure ($ million)[2]	Drugs Expenditure ($ million)
NSW	12	95.8	11.4	217.2	103.2	12.3
Vic	12	50.4	6.0	131.7	62.8	7.5
Queensland	12	39.5	4.7	120.2	60.1	7.2
WA	12	34.9	4.2	50.8	25.4	3.0

SA	12	18.2	2.2	37.3	17.3	2.1
Tasmania	12		-	13.0	6.5	0.8
ACT	12	8.8	1.0	10.4	5.2	0.6
NT	12		-	9.3	4.7	0.6
TOTAL		247.5	29.5	589.9	285.1	34.0
Federal	12	99.1	11.8			

Columns may not sum to total due to rounding.
[1] Director of Public Prosecutions expenditure estimates from available reports, see references in text.
[2] Criminal expenditure estimates could be derived from annual reports for NSW, Victoria, SA and NT. Criminal expenditure was around 50% of total legal aid expenditure. This proportion is applied to other jurisdictions.

Corrective services

Corrective services are managed and financed at the state level. The recurrent costs for all Australian prisons in 2009/10 was $2.2 billion Steering Committee for the Review of Government Service Provision (2011). At 30 June 2010 there were 29,700 prisoners in Australian prisons (ABS, 2010). This represented a national imprisonment rate of 170 prisoners per 100,000 adult populations, with 3,233 (10%) having an illicit drug offence as their principal offence (Australian Bureau of Statistics, 2010).

NSW Bureau of Crime Statistics and Research (2011) records the average length of imprisonment in the local and higher courts. In 2010, the average length of imprisonment was 5.9 months for all crimes, and 5.1 months for 79 people imprisoned for illicit drugs crime within local courts. The average length of imprisonment for higher court illicit drug charges was longer with an average sentence of 33.8 months, as opposed to 30.9 months for imprisonment across all offences. In 2009/10 a total of 452 people were imprisoned in NSW for drug offences heard in the high courts.

When both high and local courts are considered, people being imprisoned for drug charges are not receiving significantly longer or shorter sentences on average when compared to all offences. Thus no adjustment was made for sentence length, and the 10% (proportion of prison population with drug-specific sentences) was multiplied by recurrent costs to generate drug-specific prison costs of $220 million in 2009/10.

Community corrections are responsible for supervised prisoners released into the community. A total of 371 defendants received non-custodial orders from the High Court whose principal offence was drug specific in 2007/08. This number accounted for 16.5% of all defendants receiving non-custodial orders in this court. Some 26,737 defendants in the Magistrate's Courts, or 5.4% of all defendants in these courts in 2007/08, had illicit drugs as a principal offence (Australian Bureau of Statistics, 2010). Averaging across courts, it was estimated that 5.6% of all community corrections defendants had illicit drug(s) as the principal offence. This proportion is applied to the overall recurrent cost for all Australian community corrections programs in 2009/10 to estimate drug-specific community corrections expenditure. Given total recurrent cost was $371.7 million in 2009/10 (Steering Committee for the Review of Government Service Provision, 2011) the proportion attributed to illicit drug use was $20.8 million.

Australian Federal Police (AFP)

The Australian Federal Police commenced operation in 1979. The agency provides investigation and operational support, risk management, and security vetting, international police

development, aviation services, and protection services (Australian Federal Police, 2011). The Serious and Organised Crime portfolio at AFP undertakes activities relating to the deterrence and control of illicit drugs. The 2009/10 total AFP budget was $1.235 billion (Australian Federal Police, 2010). The two categories of direct relevance to illicit drugs were Criminal Investigations and Close Operational Support. These two categories amounted to $435.8 million (35% of the total AFP budget) (Australian Federal Police, 2010).

It is challenging to then apportion the $435.8 million to illicit drugs; mainly because there are not public records which can be used to derive an appropriate allocation.

Others have estimated that 42% of the total investigatory resources of the AFP were used on drug-related investigations (McFadden & Mwesigye, 2001; Moore, 2005). This would suggest that an appropriate figure would be 42% of $435.8 million (i.e. the total estimated investigation budget from Criminal Investigations and Close Operational Support). This results in an estimate of $183 million illicit drug-related expenditure by the AFP.

Australian Customs and Border Protection Service

Australian Customs and Border Protection Service manage the security and integrity of Australia's borders. Customs usually carries out its border compliance and enforcement for passengers, vessels, illicit drugs and other prohibited goods concurrently. Moore (2005) estimated 15.4% of the total Customs budget was drug specific activity. The estimate was based on USA Customs Service and Coast Guard operating expenditure. We have no further detailed information that would allow us to improve on this estimate. Total Australian Customs and Border Protection Service expenditure was $1,023.76 million in 2009/10 (Australian Customs and Border Protection Service, 2010). Using Moore's (2005) estimate of 15.4% annual illicit drug expenditure was $157.66 million in 2009/10.

RESEARCH AND POLICY ADMINISTRATION

Research

Funding sources for Australian illicit drug research, which included government (commissioned) research and generic competitive research funded by agencies such as National Health and Medical Research Council, was estimated for an EU project (Ritter, 2009) for the year 2006. The total research expenditure for illicit drugs for 2006 was estimated to be $16.8 million. That amount included some non-government funding, which for our purposes we delete. Table 9 shows the workings for the current research estimate.

Table 9: Funding for research related to illicit drugs

Funding Body	Institution	Amount (2006 estimate; CPI adjusted to reflect 2009/10 spending)
National Health and Medical Research Council (NHMRC)		$10,767,567
Australian Research Council (ARC)		$324,220
National Drug Law Enforcement Research Foundation (NDLERF)		$1,080,732
Australian Government	NDARC[1]	$821,407
	NDRI[1]	$992,889
	NCETA[1]	$248,568
	NCHECR[2]	$518,896
	NCHSR[2]	$332,213
Australian Institute of Criminology		$1,383,337
Australian National Council on Drugs (ANCD)		$270,183
TOTAL		$16,740,012

Adapted from: Ritter (2009).
Adjusting for inflation (Australian Bureau of Statistics, 2011a).
Notes:
[1] Ritter (2009) assumed that 50% of the research centres' core funding was used to approximate illicit drug research.
[2] For the two HIV research centres, NCHECR and NCHSR, Ritter (2009) estimated the proportion of their core funding that was illicit drug related, based on percentage of peer review publications in the illicit drug area.

The resulting total expenditure estimate for 2009/10 is $16.7 million.[13]

It was noted in the original EU report (Ritter, 2009) that no central records of state-based research funds could be located, however, the report provided an estimate of $3.0 million for state/territory research funding for the year 2006. Adjusting for inflation gives an estimate of state/territory research funding of $3.24 for 2009/10.

Policy administration

It is difficult to locate a central source of expenditure for policy coordination, advocacy and other policy administration activities. The items readily able to be included are funding provided (by the federal government) to peak bodies such as ADCA, the ANCD, and secretariat support

[13] In the main, the estimates in the table are bottom-up estimates (e.g. a count and sum of all NHMRC grants in 2006 referring to illicit drugs), although in some instances, (e.g. the AIC estimate), it is top-down (proportion of all AIC funds dedicated to illicit drugs research). There was no consistent method to ensure all top-down methods were used.

for the IGCD. It is recognised that these items are not all-inclusive, rather those that can be readily obtained from public documents.

The details of estimates for 2009/10 are provided in Table 10 below:

Table 10: Policy administration estimates, 2009/10

Policy administration	2009/10 funding	Source	Illicit drugs
Australian National Council on Drugs	$1,265,347	ANCD Annual Report 2009	50%
Alcohol and other Drugs Council of Australia	$1,523,766	ADCA Annual Report 2010-2011	50%
Intergovernmental Committee on Drugs and Ministerial Council on Drug Strategy	$85,000	PWC (2011) Efficiency review of the Ministerial Council on Drug Strategy and its supporting structures	50%
Australian Injecting & Illicit Drug Users League Inc. (AIVL)	$1,737,000	AIVL 2012 annual report, 2011 revenue; deflated to 2009/10	100%
TOTAL	$4,611,113		$3,174,056

As will be obvious, a number of state/territory peak bodies are not included in the above due to lack of data. This includes, for example the Victorian Association for Alcohol and Drug Agencies; the NSW Drug and Alcohol Association and so on. It should therefore be recognised that the policy administration data represent an underestimate. Given that it comprises such a small proportion of the overall drug expenditure, it will not unduly influence the overall proportions across domains.

The figures in the above table need to be apportioned by alcohol versus other drugs. The full amount for AIVL was included as their activities concern illicit drugs. However for the remaining items in the above table, 50% of the budget was removed, assuming that approximately half of the activities concerned legal drugs such as alcohol.

The resulting estimate for policy administration was $3.2 million.

PUTTING IT ALL TOGETHER: AUSTRALIA'S DRUG BUDGET

It is estimated that Australian governments spent $1.7 billion on illicit drugs in 2009/10. The summary of expenditure across all domains, and by state/territory versus federal governments is provided in Table 11.

Table 11: Australian drug budget, 2009/10 ($ million)

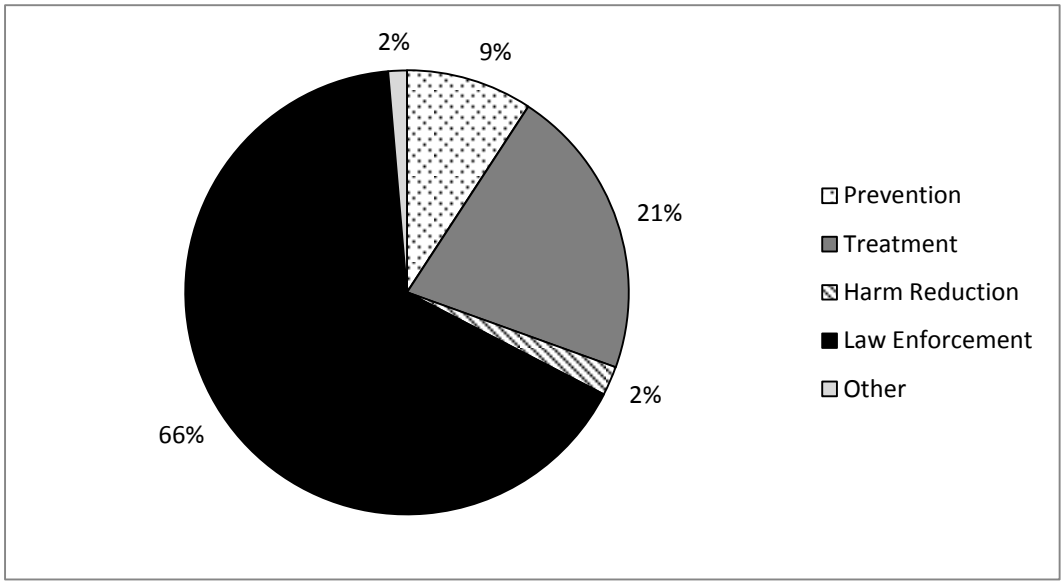
	Federal	State / Territory	Total
PREVENTION			
School-based drug education	19.0	60.2	79.2
General prevention activities	23.9	53.7	77.6
TOTAL	42.9	113.9	156.8
TREATMENT			-
Drug treatment services	65	188.5	253.5
Hospital-based drug treatment		25.6	25.6
Opioid pharmacotherapy treatment	43.6	-	43.6
Prison drug treatment	-	39.1	39.1
TOTAL	108.6	253.2	361.8
HARM REDUCTION			-
Needle and syringe programs	-	28.8	28.8
Hepatitis C education and family support	4.3	-	4.3
MSIC	-	3.0	3.0
TOTAL	4.3	31.8	36.1
LAW ENFORCEMENT			-
State and Territory Police	-	388.9	388.9
Higher courts	-	55.9	55.9
Magistrates courts	-	21.7	21.7
Public prosecutions	11.8	29.5	41.3
Legal aid	-	34.0	34.0
Corrective services - prisons	-	220	220.0
Community corrections	-	20.8	20.8
Australian Federal Police	183	-	183.0
Australian Customs and Border Protection Service	157.7	-	157.7
TOTAL	352.5	770.8	1123.3
OTHER			-
Research funding	16.7	3.2	19.9
Policy administration	3.2	-	3.2
TOTAL	19.9	3.2	23.1
GRAND TOTAL	**528.2**	**1172.8**	**1701.1**

As can be seen, state/territory governments expend the majority of the resources – 69% of all spending is by states/territories. Of the total drug budget of $1.7 billion, state and territory expenditure accounts for 69%, or $1.2 billion. This is largely due to their support and management of correctional and police services. This would suggest that state/territory governments' investments should receive a greater focus from drug policy researchers.

As noted at the outset, we are less concerned with the actual amounts per se (given the various uncertainties) and more concerned with the relative proportions. These are shown in Figure 1 below.

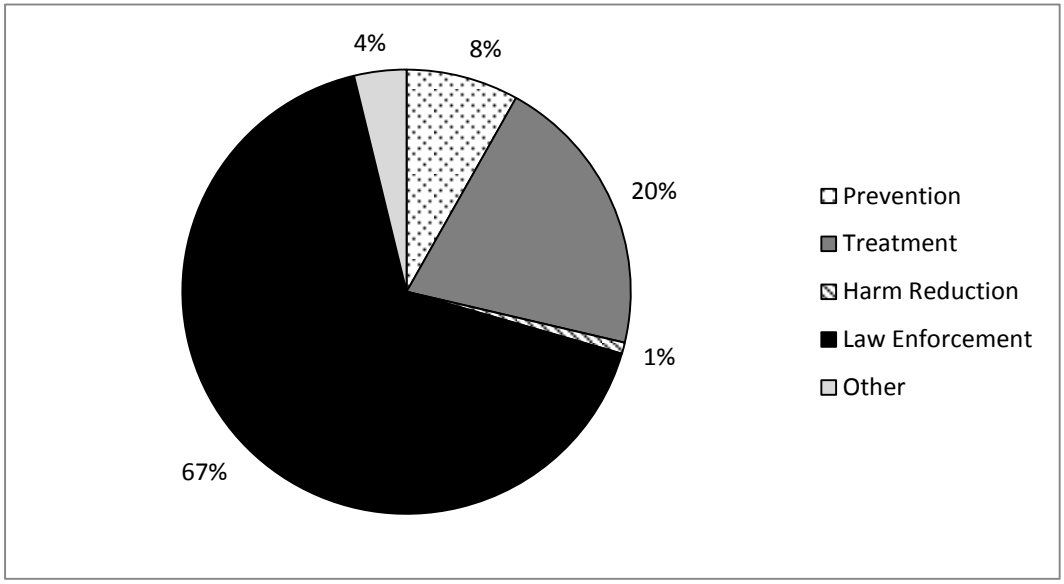
Law enforcement and interdiction accounted for 66% of total drug expenditure and is the most significant category. Prevention (9%) and treatment (21%) together account for approximately one-third of total expenditure, while harm reduction (2%) and other (1%) are small elements of the total.

Figure 1: Total government expenditure estimates (proportion) across four policy domains



Examination of the federal government only spending shows the following breakdown (Figure 2).

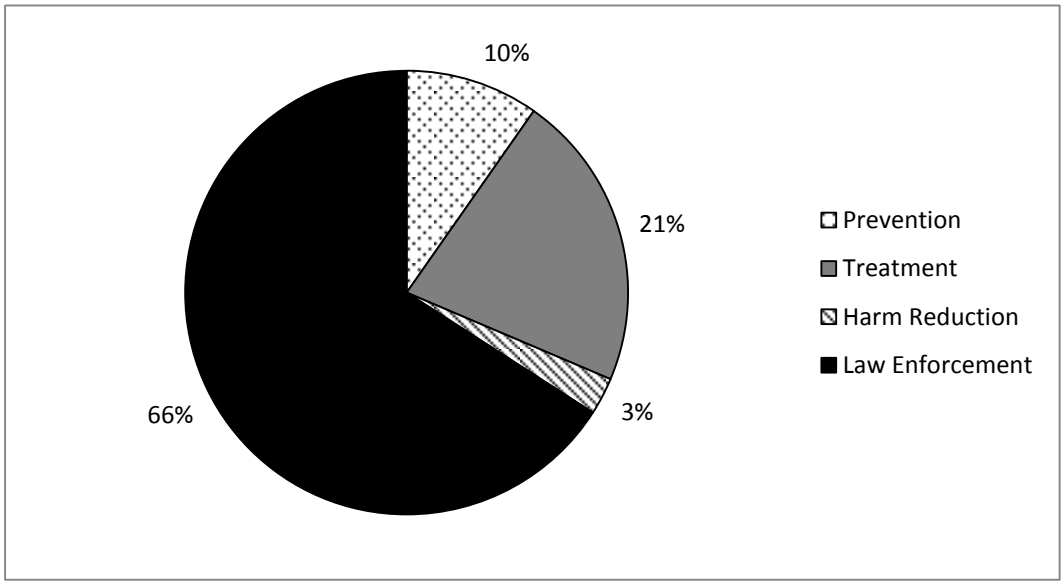
Figure 2: Federal government expenditure estimates (proportion) across four policy domains



Federal government spending on law enforcement activities is the largest single component (67%) of spending at this level of government.

For state/territory spending, Figure 3 shows the relative allocations between domains.

Figure 3: State/territory government expenditure estimates (proportion) across four policy domains



Percentage of GDP, government spending and per person spending

The total estimated 2009/10 expenditure on illicit drugs represents 0.13% of GDP, and 0.8% of government spending. The amount per person is $76.28 per annum. These statistics are provided in Table 12.

Table 12: Australian drug budget as % of GDP, % government spending and per person spending

	Australian Statistics
GDP 2009/10 ($ million)	1,283,571
Total government consumption expenditure ($ million)	224,690
Population	22,300,000
Drug spending as percentage of GDP	0.13%
Drug spending as a percentage of government spending	0.8%
Drug Budget per person ($)	76.28

Although a significant amount of expenditure, $1.7 billion only represents 0.8% of total public expenditure in Australia in 2009/10 and 0.13% of GDP.

Sensitivity analysis

The 2009/10 drug budget estimate is governed by some key assumptions. A number of these are subject to estimation uncertainty and definitional issues. Here we conduct sensitivity analyses on a number of the estimates; and compare the main estimate with a low and a high estimate.

The items examined in the sensitivity analysis were:

- School-based drug education
- General prevention – state/territory
- Drug treatment services – state/territory estimate
- Primary care opioid pharmacotherapy maintenance
- NSP
- State/territory police services
- Judicial resources
- Correctional services
- Australian Federal Police
- Australian Customs and Border Protection Service

Where alternate data were available, those numbers were tested in the sensitivity analyses. Where the total amount contributed significantly, but there were no known alternatives, a standard 10% variation was applied. Remaining items either could not be improved upon, or represented a small overall contribution to the Australian drug budget (such as the research estimate). Those items that were varied in the sensitivity analysis are shown in Table 13, where the rationale for the low and high estimates is provided along with their estimated values.

Table 13: Sensitivity analyses – selected drug budget items ($ million)

		Low	Main	High	Comments
Prevention					
School-based drug education	Federal	9.5	19.0	73.8	The main estimate did not include social competencies (only drug-specific hours were costed). To generate the high estimate both social competency and drug-specific hours were costed. The main estimate also assumed 25% of drug-specific hours below Year 9 related to illicit drugs, and 50% of drug curriculum hours above this year were related to illicit drugs. There is uncertainty surrounding the exact magnitude of this estimate. For the low scenario, it was assumed that drug teaching hours devoted to illicit drugs were half those included in the main estimate for all years.
	State	30.1	60.2	233.8	

General prevention	State	47.6	53.7	72.9	The low estimate was calculated assuming the relatively low per person expenditure undertaken by the WA of $2.10 is the norm for state-related illicit drug prevention. The upper bound used $3.25, the highest value sourced from another jurisdiction (private communication).
Treatment					
Treatment services	State	164.1	188.5	231.0	The state/territory main estimate was generated without specific Queensland data; applying an average unit cost for treatment for Queensland. In the sensitivity analysis the low and high estimates were derived by applying the lowest and highest average costs from other jurisdictions to Queensland. (These estimates are diluted by the assumption that illicit drugs account for 32% of treatment episodes in Queensland).
Primary care opioid maintenance	Federal	39.2	43.6	46.9	The medication costs were not adjusted in the sensitivity analysis, rather Medicare (GP) costs were adjusted. The sensitivity analysis allowed for uncertainty around frequency of GP visits. A low scenario assumed an average of 8 GP visits, while a high scenario assumed an average of 15 GP visits per client per year.
Harm Reduction					
Needle and syringe programs	State	23.0	28.8	46.7	As noted elsewhere, the NSP costs were taken from published research (and largely bottom-up). For the high estimate, the value used by Moore of $38.3 (2003) was CPI adjusted, and for the low the costs were decreased by 20%.
Law Enforcement					
State and territory police services	State	350.0	388.9	427.8	The main estimate relied on data indicating that 5.9% of police resources are consumed by drug-specific crime. In the absence of further data, this assumption was varied by 10%; that is the low estimate assumed that 5.3% of police resources were directed towards illicit drugs; the high scenario assumed that 6.5% were directed towards illicit drugs.

Judicial resources	Federal	5.7	11.8	19.4	The main estimate relied on data showing that 11.9% of court resources were consumed by drug-specific crime. This estimate was based on the amount of court time dedicated to illicit drug offences, compared to other matters. To test how robust this assumption was, it was varied by applying the rate in the Magistrates Court (5.7%) for all court activities (higher and magistrates courts, public prosecutions and legal aid) for the low estimate, and for the high estimate, the rate of the Higher Courts (19.6%) was applied. This was applied across both state and federal courts.
	State	68.64	141.1	234.38	
Correctional services	State	218.8	240.8	262.8	It was assumed that 10% of the total corrective services recurrent budget was dedicated to illicit drugs – based on the proportion illicit drug offenders in the total prison population. This estimate was varied by 10% for both the low and high estimates.
Australian Federal Police	Federal	130.7	183.0	217.9	The expenditure associated with Australian Federal Police generates one of the largest cost items. It is based on the estimate that 42% of the investigation budget of $435.8 million is attributable to illicit drugs. A low scenario assumption of 30% (i.e. 12% decrease) of this budget and high estimate of 50% (i.e. 8% increase) were tested in the sensitivity analysis.
Australian Customs and Border Protection Service	Federal	141.9	157.7	173.4	Using USA Customs Service and Coast Guard operating expenditure, Moore (2005) estimated 15.4% of the total budget was related to drugs. The expenditures were varied by 10% lower and higher in the absence of any additional information.

The main estimate for school-based prevention was $79.2 million. As can be seen in the above table, this estimate may vary substantially; up to $307.6 million if social competency training is included, or as low as $39.6 million if one excludes social competencies training and reduces the proportion of hours of alcohol and drug education assumed to be allocated to illicit drugs.

The general prevention estimate for state/territory governments relied on a per person budget expenditure estimate. The main estimate may vary by around $20 million (see Table 13) dependent on the per person allocation that is assumed.

Drug treatment services funded by states/territories carry an average unit cost per episode of care. When adjustments are made for missing data, the main estimate of $188.5 million may in reality be as a high as $231 million or as low as $164 million. The role that assumptions play also applies to the primary care opioid maintenance pharmacotherapy estimate, depending on the

assumptions around the average number of GP visits per annum (Table 13). The NSP estimate for 2009/10 was in real terms lower than the 2002/03 estimate; thus we used the 2002/03 estimate with CPI adjustment to provide a high estimate for NSP ($46.7 million).

The state/territory police main estimate used NSW data (BOCSAR) to estimate the proportion of all offending that was directly concerned with illicit drugs. This percentage (5.9%) was varied by 10% in the sensitivity analysis, resulting in a low estimate of $350 million and a high estimate of $427.8 million (the main estimate was $388.9 million) (See Table 13). Correctional services (prison and community corrections) were also varied by 10% in the absence of any additional data.

The main estimates for both the Australian Federal Police and the Australian Customs and Border Protection Service relied on dated assumptions. The sensitivity analysis varied the AFP estimate by between 8% and 12% (in the absence of any further data to draw reasonable sensitivity analysis assumptions). The resulting low estimate was $130.7 million; the high estimate was $217.9 million, with the main estimate being $183.0 million. The Customs estimate was similarly varied by 10% variation to the main estimate of 15.4% of Customs resources dedicated to illicit drugs.

The low and high estimates that were varied in the above sensitivity analysis were then summed with the remaining main estimates that were not varied. The resulting overall sensitivity analysis by drug policy domain is shown in Table 14. As can be seen, the plausible ranges for the estimates are large in some cases, notably prevention. When only the prevention assumptions are varied, prevention expenditures range between 6.7% of the Australian drug budget up to 20.8%. Varying the drug treatment assumptions results in a range between 19.9% and 23.3% of the Australian drug budget. Similarly, when only law enforcement expenditure is varied the range is between 61.3% and 69.8% of the Australian drug budget.

Table 14: Summary of sensitivity analysis: expenditure and proportion

	Expenditure ($ million)		Proportion of total (%)	
	Main	Range	Main	Range
Prevention	156.8	111.1 to 404.5	9.2%	6.7% to 20.8%
Treatment	361.8	330.0 to 407.6	21.3%	19.9% to 23.3%
Harm Reduction	36.1	30.3 to 54.0	2.1%	1. 8% to 3.1%
Law Enforcement	1,123.3	915.7 to 1335.7	66.0%	61.3% to 69.8%
Other	23.1	23.1	1.4%	1.4%
TOTAL	1,701.1	1,413.2 to 2,224.9	100%	

Columns may not sum to total due to rounding.

Comparison between Australia and other countries

It is challenging to compare countries, largely because there are substantial methodological differences in approaches to drug budgets, and the year (and currencies) for the states vary. Indeed, Reuter (2006) notes challenges associated with any cross-country comparison. Nonetheless, examination of data available on a number of European countries, as provided in Table 15, points to some general observations.

Table 15 lists the Australian drug budget results in the first column, followed by those from a number of European countries: Belgium, Luxemburg, the Netherlands, Finland, Sweden, the UK, France and Germany. These data were sourced from the EMCDDA website (http://www.emcdda.europa.eu/countries/public-expenditure).

Table 15: Selected drug budget studies: Australia compared to European countries

Country	Australia	Belgium	Luxemburg	Netherlands	Finland	Sweden	UK	France	Germany
Year	**2010**	**2008**	**2009**	**2003**	**2009**	**2002**	**2005**	**2005**	**2006**
	%	%	%	%	%	%	%	%	%
Prevention	9	2.9	0.03	1.9		1.4	1.4		
Treatment	21	34.1	41	13.0	11.2	25.0	12.7	50.7	32.1
Harm Reduction	2	0.6		10.1		0.15			
Law Enforcement	66	62.0	57	75.0	54.5	73.0	60.7	47.3	67.1
Other	1	0.4	2.1		34.3		25.1	2.0	0.8
TOTAL[1]	1,701	392.2	38.4	2,186	128	739	8,738	1,806	5,634
% GDP	0.13	0.11	0.10	0.50	0.07	0.28	0.48	0.1	0.25

Source: EMCDDA http://www.emcdda.europa.eu/countries/public-expenditure
[1] All in million Euros, except Australia ($ million AUD).

As can be seen in Table 15, every country expends the largest proportion on law enforcement, with the exception of France. The proportion spent on law enforcement ranged from 75% of drug budget in the Netherlands, to 47% in France. For the USA, only federal spending was available, but it is noted that in 2012, the budget for law enforcement represented 60% (domestic law enforcement; interdiction and international efforts: ONDCP 2012 http://www.whitehouse.gov/sites/default/files/ondcp/policy-and-research/fy12highlight_exec_sum.pdf).

Reuter (2006) noted that enforcement expenditure variations could represent conceptual discrepancies. For example, the Netherlands estimates included costs incurred for drug-related crime, not merely drug offenses (Reuter, 2006) which would account for the relatively high estimate for the Netherlands when one considers their national drug policy. It appears that the Australia estimate of 66% is not inconsistent with most European nations and with the US.

Drug treatment is the next largest expenditure item for every European country (except France, where it was the highest at 51%). This is also true for the USA (ONDCP 2012 budget; http://www.whitehouse.gov/sites/default/files/ondcp/policy-and-research/fy12highlight_exec_sum.pdf) where treatment represented 34% of the federal expenditure. The Australia proportion (21%) is higher than the Netherlands, Finland, and the UK, but lower than Belgium, Luxemburg, Sweden, France and Germany.

From these data it would appear that Australia proportionally spends the greatest amount on prevention, compared to other countries (see Table 15). The USA figure for prevention was 6% (Office of National Drug Control Policy, 2012). The inclusion of non-health government

spending through the school-based drug education prevention estimate for Australia is likely to account for these cross-country differences.

The challenges associated with comparing drug budgets are highlighted in the harm reduction estimate. As noted elsewhere, the major component of the Australian harm reduction estimate used a bottom-up costing method and hence may not be truly analogous for comparative purposes. Certainly in comparison to the Netherlands 10% it is low. However, as can be seen in Table 15, a majority of countries do not have any estimate for harm reduction spending, including countries like the UK and Germany with known harm reduction programs.

Finally, in relation to the drug budget as a proportion of GDP, as can be seen in Table 15, the proportion varies between a low of 0.1% (Luxemburg and France) to a high of 0.5% in the Netherlands. Australia's estimate at 0.13% of GDP is very similar to most other countries.

Comparison between 2002/03 estimate and 2009/10 estimate

The original Australian drug budget estimated direct government spending in 2002/03 as $1.33 billion. The present estimate is $1.7 billion for 2009/10. As would be expected, the overall total is greater (by $380 million). However, once CPI adjustment is applied to the 2002/03 values, there is only a 5% difference in expenditure between the two years.

In the first instance, methodological differences need to be accounted for. There was an overall change from mixed bottom-up top-down methods in 2002/03 to mainly top-down in 2009/10. This aside, the largest difference was the exclusion of social competencies training from the school drug education budget in the 2009/10 estimate compared to the 2002/03 estimate. We take this into account in the below table, and recalculate the 2002/03 estimate excluding the social competencies in prevention, and show the relative proportional allocations as they compare between 2002/03 and 2009/10 (Table 16).

Table 16: Comparison of 2002/03 Australian drug budget with 2009/10 Australian drug budget

	2002/03 Direct spending estimate[1]	2002/03 original % direct spending	2002/03 estimate excluding social competencies from prevention[2]	2002/03 Direct spending, excluding social competencies, CPI adjustment to 2009/10 value	2009/10 Direct spending estimate	2002/03 revised % direct spending [2]	2009/10 % direct spending
	$ million		$ million				
Prevention	304.0	23%	101.6	123.6	156.8	9.0%	9.2%
Treatment	229.2	17%	229.2	278.9	361.8	20.2%	21.3%
Harm Reduction	44.8	3%	44.8	54.5	36.1	3.9%	2.1%
Law Enforcement	740.4	55%	740.4	900.8	1,123.3	65.3%	66.0%
Other	18.4	1%	18.4	22.4	23.1	1.6%	1.4%
TOTAL	1,337	100%	1,134	1626.7	1,701.1	100%	100%

Notes:
[1] Moore (2005).
[2] Social competency training is excluded from the prevention estimate for 2002/03 for comparability purposes.

As this table demonstrates, the difference between the 2002/03 and 2009/10 proportions can be accounted for by this methodological difference. In the revised 2002/03 estimate the proportional allocations between the four policy domains are largely as has been found for 2009/10.

Examination of some of the changes in actual spending amounts (as compared to proportions of the four domains) provides some useful insights. For law enforcement, the value of the estimate increased by more than what would have been expected from CPI alone (which would take it to $900 million). Table 17 provides the values from the 2002/03 estimate, CPI adjusted, compared to the 2009/10 estimate.

Table 17: Comparison of 2002/03 and 2009/10 law enforcement spending estimates

LAW ENFORCEMENT	2002/03	2002/03 with CPI adjustment to 2010 value	2009/10 (see Table 11)
State and Territory Police	226.4	275.4	388.9
Higher courts	26.0	31.6	55.9
Magistrates courts	29.2	35.5	21.7
Public prosecutions	25.3	30.8	41.3
Legal aid	24.6	29.9	34.0
Corrective services - prisons	156.1	189.9	220.0
Community corrections	15.5	18.9	20.8
Australian Federal Police	97.1	118.1	183.0
Australian Customs and Border Protection Service	84.4	102.7	157.7
Australian Crime Commission	52.6	64.0	
Other: research, crops	3.2	3.9	
TOTAL	740.4	900.8	1123.3

Examining the line items in more detail, there appears to have been a real increase in state/territory police costs over the seven year period ($275.4 million compared to $388.9 million). The methods applied by Moore were identical to the methods applied here; the percentage of police time attributable to illicit drugs was estimated at 5% in 2002/03 and with 2009/10 data was also estimated at 5%. Given the absence of methodological differences, this expenditure increase represents a real increase in spending on police, but importantly this is not specific to illicit drugs. On the other hand, the increase in the higher courts expenditure can be accounted for by a change in offender percentages. In 2002/03, 12.5% of defendants had illicit drug offences, compared to 18.6% in 2009/10 (hence the increase in costs: methodology was otherwise identical). The reason for the decline in estimated expenditure for magistrates courts appears similar - a function of the lower proportion of offences being heard (11.5% of magistrate court hearings illicit drugs in 2002/03, whereas 6% in 2009/10). The methods for public prosecutions and legal aid were identical (with similar percentages of illicit drug activity derived from the courts) therefore the increase in higher courts was also brought across to the Director of Public Prosecutions/legal aid analysis, accounting for the increase.

The prison difference does not represent a change in relation to management of illicit drug offenders - in both 2003 and 2010 prisoners with illicit drug charges accounted for 10% of all prisoners. The same is true for AFP and Customs – identical percentages were applied to the total budgets in 2002/03 and 2009/10 to derive the estimated illicit drug costs. Thus, no change in policy can be ascribed from these findings.

In summary, for law enforcement, some of the changes in spending can be accounted for by changes in responses to illicit drugs. This is the case for the higher court costs (proportionally more illicit drug offenders in 2009/10) and magistrates court (proportionally less illicit drug offenders in 2009/10) but not the case for correctional services (same proportion of prisoners), state/territory policing, AFP or Customs. The lesson here is that it is important not to simply interpret increases in expenditure as a shift in policy focus regarding illicit drugs.

The harm reduction estimate decreased. This can be accounted for by reductions in funding of NSP. In 2002/03 NSP funding was estimated to be $36.8 million. By 2009/10 this had dropped to $28.75 million. This is a real decrease in policy spending, not attributable to methodological differences in the work.

The estimated expenditure on treatment has increased. Some of the difference appears to be methodological. For example, Moore (2005) excluded hospital based drug treatment (amounting to $25.6 million in the 2009/10 estimate). Overall the drug treatment estimate increased (above CPI). Opioid pharmacotherapy costs have also increased – the methodology was not substantially different.

Overall, the relative allocations between the four policy domains of prevention, treatment, harm reduction and law enforcement were not substantially different between the 2002/03 and the 2009/10 estimate, with law enforcement representing about 65%, prevention about 9% and treatment about 20% when methodological differences in the 2002/03 prevention estimate are taken into account (see Table 16). As shown in the more detailed analysis of law enforcement spending (Table 17), one cannot assume that increases in spending over time represent policy changes – conversely, some policy changes can account for spending differences.

Limitations

As with any study such as this, there are important limitations and caveats associated with the findings. As noted previously, the actual values are less important than the comparative percentage allocations between policy domains. This study does not provide advice about what the ideal spending proportions should be – it is descriptive alone, providing an estimate of what governments spend in the four policy domains. These expenditure items are not matched to outputs or outcomes – this is an area for further research.

'Top-down' spending refers to a costing approach where a proportion of total cost is allocated to a specific action or intervention. In contrast, micro or bottom-up costing involves an estimation process in which the base or unit costs of activities are calculated then multiplied by the amount of the activity. Bottom-up costing is generally employed when the fine detail of the project or program components are well defined. Top-down versus bottom-up can produce very different cost estimates (Chapko et al., 2009). The difference between them often depends on the assumptions and availability of data. The major limitation of top-down costing is that it assumes that everything in the denominator is equal. As noted elsewhere, this is not likely to be the case across many of the estimates provided here, such as different types of drug treatment, or different types of drug arrests. However, it was not possible to do bottom-up costing for the majority of the estimates and we strove for consistency of method, rather than using bottom-up where available. Despite our desire for complete consistency in a top-down approach, there were three exceptions: the correctional treatment costs, the research spending, and the NSP costs. It should be noted that none of these three estimates that used bottom-up represent a substantial contribution to the overall Australian drug budget. However, given that the NSP costs make up

the bulk of the one domain – harm reduction – the results for harm reduction need to be treated with caution.

A number of assumptions needed to be made throughout this study. For the prevention estimate, it was assumed that the average number of hours of school-based drug education does not vary between states/territories (and relied on Victorian data for those estimates); and it was assumed that 50% of year 9 and above drug education is devoted to illicit drugs, whereas 25% of year 8 and below is devoted to illicit drugs. This assumption was tested in the sensitivity analysis (see Table 13). Consistent with a top-down approach, the prevention estimate also assumes that all school hours are equivalent. For the drug treatment estimate it was assumed that the national administrative database for treatment (AODTS-NMDS) represents all the drug treatment that is provided within the specialist system. There may be reasons to assume that it under-represents the numbers of episodes of care because it may not cover every single drug treatment agency. Likewise there may be reasons to assume it over-counts episodes, due to multiple records for the same individual. The main estimate also assumes that the average unit of care cost by state/territory health departments is reasonably applied to every episode of care (that is, that the average represents the variability across different episode types). The cost per episode of care was tested in the sensitivity analysis (see Table 13). For correctional treatment, the average cost per prisoner derived from two research studies was applied to the Australian prisoner population. For the law enforcement estimate, the policing costs used NSW data (BOCSAR) to derive a proportion of all police incidents that were drug-specific (5.9%). This proportion was applied equally across all states/territories, assuming no jurisdictional differences. This proportion was tested in the sensitivity analysis (see Table 13). It was also assumed that 10% of state police budgets is expended on traffic safety and management (and hence state police budgets were reduced by 10% before applying the multiplier for drug incidents). For the estimate of court expenditure, cases were weighted by the average length of proceedings, which assumes that all drug-specific cases are represented by a statistical average. It was assumed that the correctional costs within the law enforcement policy domain did not include the drug treatment costs in correctional settings, collated under the drug treatment domain. Finally for the Australian Federal Police and for the Australian Customs and Border Protection Service, it was assumed that the proportion of all their activities that is drug related was 42% and 15.45% respectively. This is a significant assumption, but one which could not be further refined due to the absence of available data. Sensitivity analysis, applying a 10% variation was tested (see Table 13).

It would not be possible to produce the estimates without such assumptions. We hope that the full documentation enables transparency in the results and the possibility for other research teams to develop contrasting estimates with alternate assumptions. The sensitivity analyses go some way to address these various assumptions and show that one critical aspect is the extent to which school based prevention is regarded as inclusive of social competencies training (which in the sensitivity analysis takes the prevention estimate to 20% of the drug budget allocation). Testing the law enforcement and treatment assumptions did not produce dramatically different percentage allocations to the policy domains: with drug treatment ranging between 20% and 23% of the Australian drug budget, and law enforcement between 61% and 69% of the Australian drug budget (see Table 14).

Finally, while the major drug policy items are included in this estimate, there are some areas which were not able to be covered. In the main these do not form a central part of government's direct responses to illicit drugs, but do contribute to the overall effort. Social welfare support was not included. More general prevention activities, such as strengthening communities and support for at-risk families, were not included. Neither of these items can be numerated specifically to

illicit drugs. There are some known harm reduction activities, such as outreach workers and peer support that were not able to be costed for this study. The estimate of expenditure related to policy administration did not include some known activities, such as the policy units within Commonwealth and state/territory government. Local government was not included. It is hoped that future iterations of this work will be able to include some of these items. Lastly, by way of reminder, this study estimated government costs alone, and perforce did not include private costs – whether they be costs incurred by individuals, such as pharmacotherapy dispensing fees, or health insurance costs for private treatment, private legal representation and so on.

Illicit drugs cause significant health, social and economic burdens on Australian society. That Australian governments invest in this area is essential. The amount that is invested, however, represents a tiny component of all government spending (0.8%; Table 12). The largest proportion is expended on law enforcement (66%). The extent to which this represents efficient spending cannot be ascertained from this study; new research examining the relative cost-efficiencies for each of the four policy domains is now required.

REFERENCES

Auditor General Victoria. (2003). Drug education in government schools. Melbourne: Government of Victoria. http://download.audit.vic.gov.au/files/20030326-Drug-Education-in-Government-Schools.pdf.

Australian Bureau of Statistics. (2010). Schools, Australia, Cat No. 4221.0. Canberra: Australian Bureau of Statistics. http://www.abs.gov.au/ausstats/abs@.nsf/mf/4221.0.

Australian Bureau of Statistics. (2011a). Consumer Price Index, Australia, Cat No. 6401.0, June 2011. Canberra: Australian Bureau of Statistics. http://www.abs.gov.au/ausstats/abs@.nsf/mf/6401.0.

Australian Bureau of Statistics. (2011b). Criminal Courts 2009-10, Cat No. 4513.0. Canberra: Australian Bureau of Statistics. http://www.abs.gov.au/ausstats/abs@.nsf/mf/4513.0.

Australian Bureau of Statistics. (2011c). Prisoners in Australia: 2010, Cat No. 4517.0. Canberra: Australian Bureau of Statistics. http://www.abs.gov.au/ausstats/abs@.nsf/mf/4517.0.

Australian Bureau of Statistics. (2012). Consumer Price Index, Australia, Cat No. 6401.0, September 2012. Canberra: Australian Bureau of Statistics. http://www.abs.gov.au/ausstats/abs@.nsf/mf/6401.0.

Australian Customs and Border Protection Service. (2010). Annual Report 2009-10. Canberra: Commonwealth of Australia. http://www.customs.gov.au/webdata/minisites/annualreport0910/index.html.

Australian Federal Police. (2010). Annual Report 2009-10. Canberra: Commonwealth of Australia. http://www.afp.gov.au/media-centre/publications/annual-reports/~/media/afp/pdf/a/afp-annual-report-2009-2010.ashx.

Australian Federal Police. (2011). History of the AFP, from http://www.afp.gov.au/about-the-afp/our-organisation/history.aspx

Australian Institute of Health and Welfare. (2011a). Alcohol and other drug treatment services in Australia 2009-2010. Canberra: Australian Institute of Health and Welfare. http://www.aihw.gov.au/publication-detail/?id=10737420496.

Australian Institute of Health and Welfare. (2011b). National Opioid Pharmacotherapy Statistics Annual Data collection: 2010 report. Canberra: Australian Institute of Health and Welfare. http://www.aihw.gov.au/publication-detail/?id=10737419328.

Black, E., Dolan, K., & Wodak, A. (2004). Supply, demand and harm reduction strategies in Australian prisons: Implementation, cost and evaluation *ANCD Research Paper 9*. Canberra: Australian National Council on Drugs. http://www.ancd.org.au/images/PDF/Researchpapers/rp9_australian_prisons.pdf?phpMyAdmin=rGQ2XkOOsKjMp24r2sFwuVc5ibb.

Botvin, G. J., & Griffin, K. W. (2003). Drug abuse prevention in schools. In Z. Sloda & W. J. Bukoski (Eds.), *Handbook of Drug Prevention: Theory, Science, and Practice* (pp. 45-74). New York: Kluwer Academic/Plenum Publishers.

Chapko, M. K., Liu, C. F., Perkins, M., Li, Y. F., Fortney, J. C., & Maciejewski, M. L. (2009). Equivalence of two healthcare costing methods: Bottom-up and top-down. *Health Economics, 18*(10), 1188-1201.

Commonwealth Director of Public Prosecutions. (2010). Annual Report 2009-10. Canberra: Commonwealth of Australia. http://www.cdpp.gov.au/Publications/Annual-Reports/CDPP-Annual-Report-2009-2010.pdf.

DeBeck, K., Wood, E., Montaner, J., & Kerr, T. (2009). Canada's new federal 'National Anti-Drug Strategy': An informal audit of reported funding allocation. *International Journal of Drug Policy, 20*(2), 188-191.

Department of Health and Ageing. (2007). Portfolio Budget Statements 2007-08. Canberra: Commonwealth of Australia.

http://www.health.gov.au/internet/budget/publishing.nsf/Content/2007-2008_Health_PBS.
Director of Public Prosecutions. (2010). Annual Report 2009-10. Adelaide: Government of South Australia. http://www.dpp.sa.gov.au/03/2009-2010.pdf.
Director of Public Prosecutions Tasmania. (2010). Annual Report 2009-10. Hobart: Tasmanian Government. http://www.crownlaw.tas.gov.au/__data/assets/pdf_file/0009/153864/ar2009-10.pdf.
Director of Public Prosecutions Victoria. (2010). Annual Report 2009/10. Melbourne: Victorian Government. http://www.opp.vic.gov.au/getattachment/7a545a3f-3377-4f1d-b7e9-1b63b06d1345/opp_annual_report_2009_10-full.aspx.
Director of Public Prosecutions: Northern Territory of Australia. (2010). Annual Report 2009-2010. Darwin: Northern Territory Government. http://www.nt.gov.au/justice/dpp/docs/annual_report_2009_10.pdf.
EMCDDA. (2008). Towards a better understanding of drug-related public expenditure in Europe. Brussels: European Monitoring Centre for Drugs and Drug Addiction. http://www.emcdda.europa.eu/publications/selected-issues/public-expenditure.
Goh, D., & Moffat, S. (2011). New South Wales recorded crime statistics 2011. Sydney: NSW Bureau of Crime Statistics and Research. http://www.bocsar.nsw.gov.au/lawlink/bocsar/ll_bocsar.nsf/vwFiles/RCS2011.pdf/$file/RCS2011.pdf.
Hughes, C., & Ritter, A. (2008). Monograph No. 16: A summary of diversion programs for drug and drug-related offenders in Australia *DPMP Monograph Series*. Sydney: National Drug and Alcohol Research Centre.
KPMG. (2010). Further evaluation of the Medically Supervised Injecting Centre during its extended trial period (2007-2011): Final report. Sydney: NSW Health. http://www0.health.nsw.gov.au/resources/mhdao/pdf/msic_kpmg.pdf.
Legal Aid Commission (ACT). (2010). Annual Report 2009-2010. Canberra: Legal Aid Commission (ACT). http://www.legalaidact.org.au/aboutus/whoweare/corporateinformation/annualreports.php.
Legal Aid Commission of Tasmania. (2010). Annual Report 2009-2010. Hobart: Legal Aid Commission of Tasmania. http://www.legalaid.tas.gov.au/Publications/AnnualReport0910/2010%20Annual%20Report.pdf.
Legal Aid New South Wales. (2010). Annual Report 2009-2010. Sydney: Legal Aid New South Wales. http://www.legalaid.nsw.gov.au/publications/annual-reports/annual-report-2009-2010.
Legal Aid Queensland. (2010). Annual Report 2009-10. Brisbane: Legal Aid Queensland. http://www.legalaid.qld.gov.au/publications/Reports/annual-report/annual-report-archives/2009-10/Pages/default.aspx.
Legal Aid Western Australia. (2010). Annual Report 2009-2010. Perth: Legal Aid Western Australia. http://www.legalaid.wa.gov.au/LegalAidServices/About/Documents/Annual_report_2009-2010.pdf.
Legal Services Commission of South Australia. (2010). 32nd Annual Report 2009-2010. Adelaide: Legal Services Commission of South Australia. http://www.lsc.sa.gov.au/cb_pages/files/Annual%20Report.pdf.
Mayhew, P. (2003). Counting the costs of crime in Australia: Technical report. *Technical and Background Paper Series, No. 4*. Canberra: Australian Institute of Criminology. http://aic.gov.au/documents/B/F/D/%7BBFD22E46-3E66-431A-B74D-F76661CCB103%7Dtbp004.pdf.

McDonald, D. (2006). Australian Capital Territory Government expenditure on preventing and responding to drug abuse, 2004-05. Canberra: Alcohol and Other Drug Policy Unit, ACT Health.

McFadden, M., & Mwesigye, S.-E. (2001). Estimating the economic value of AFP fraud and drug investigations. *Platypus Magazine, 73*(December), 11-14.

Mental Health and Drug and Alcohol Office. (2013). Mental Health and Drug and Alcohol Office (MHDAO) homepage. Retrieved 1 May, 2013 http://www.health.nsw.gov.au/mhdao/pages/default.aspx

Ministerial Council on Drug Strategy. (2011). The National Drug Strategy 2010-2015: A framework for action on alcohol, tobacco and other drugs. Canberra: Commonwealth of Australia. http://www.nationaldrugstrategy.gov.au/.

Moore, T. J. (2005). Monograph No. 01: What is Australia's "drug budget"? The policy mix of illicit drug-related government spending in Australia. *DPMP Monograph Series*. Fitzroy: Turning Point Alcohol and Drug Centre.

NCHECR. (2009). Return on investment 2: Evaluating the cost-effectiveness of needle and syringe programs in Australia. Canberra: Department of Health and Ageing. http://www.health.gov.au/internet/main/publishing.nsf/Content/C562D0E860733E9FCA257648000215C5/$File/return2.pdf.

NSW Bureau of Crime Statistics and Research. (2011). New South Wales Criminal Court Statistics 2010. Sydney: Department of Attorney General and Justice. http://www.bocsar.nsw.gov.au/lawlink/bocsar/ll_bocsar.nsf/vwFiles/CCS2010.pdf/$file/CCS2010.pdf.

Office of National Drug Control Policy. (2010). 2010 National Drug Control Strategy. Washington DC: Office of National Drug Control Policy. http://www.whitehouse.gov/sites/default/files/ondcp/policy-and-research/ndcs2010_0.pdf.

Office of National Drug Control Policy (2012). National Drug Control Budget – FY 2012 Funding Highlights. Washington DC: Office of National Drug Control Policy. http://www.whitehouse.gov/sites/default/files/ondcp/policy-and-research/fy12highlight_exec_sum.pdf

Office of the Director of Public Prosecutions. (2010a). Annual Report 2009-2010. Brisbane: Queensland Government. http://www.justice.qld.gov.au/__data/assets/pdf_file/0007/75094/odpp-annual-report-09-10.pdf.

Office of the Director of Public Prosecutions. (2010b). Director of Public Prosecutions: Annual Report 2009-2010. Canberra: ACT Government. http://www.dpp.act.gov.au/__data/assets/pdf_file/0009/237258/AR2009-2010.pdf.

Office of the Director of Public Prosecutions for the State of Western Australia. (2010). 2009/2010 Annual Report. Perth: Western Australian Government. http://www.dpp.wa.gov.au/_files/Annual_Report_2009_10.pdf.

Ramstedt, M. (2006). What drug policies cost. Estimating drug policy expenditures in Sweden, 2002: work in progress. *Addiction, 101*(3), 330-338.

Reuter, P. (2006). What drug policies cost. Estimating government drug policy expenditures. *Addiction, 101*(3), 315-322.

Rigter, H. (2006). What drug policies cost. Drug policy spending in the Netherlands in 2003. *Addiction, 101*(3), 323-329.

Ritter, A. (2009). Situation of drug related research in Australia. In M. F. G. Buhringer, L. Kraus, J. Marsden, T. Pfeiffer-Gerschel, D. Piontek, K. Karachaliou, J. Kunzel & G. Stillwell (Ed.), *Comparative Analysis of Research into Illicit Drugs in the European Union* (pp. 216-238). Brussels European Commission: Directorate-General for Justice, Freedom and Security.

Ritter, A. (2010). Conceptualising 'balance' in national drug policy. *Drug and Alcohol Review, 29*, 349-351.

Rollings, K. (2008). Counting the costs of crime in Australia: A 2005 update. Research and public policy series no. 91. Canberra: Australian Institute of Criminology. http://aic.gov.au/documents/9/A/3/%7B9A333836-6275-4855-9C0B-20FB05B05992%7Drpp91.pdf.

Saha International. (2008). Economic Evaluation of the Medically Supervised Injecting Centre at Kings Cross (MSIC). Report to NSW Health, August 2008.

Soole, D. W., Mazerolle, L., & Rombouts, S. (2005). Monograph No. 07: School-based drug prevention: A systematic review of the effectiveness on illicit drug use *DPMP Monograph Series*. Fitzroy: Turning Point Alcohol and Drug Centre

Steering Committee for the Review of Government Service Provision. (2009). Report on Government Services 2009. Melbourne: Productivity Commission. http://www.pc.gov.au/gsp/rogs/2009.

Steering Committee for the Review of Government Service Provision. (2010). Report on Government Services 2010. Melbourne: Productivity Commission. http://www.pc.gov.au/gsp/rogs/2010.

Steering Committee for the Review of Government Service Provision. (2011). Report on Government Services 2011. Melbourne: Productivity Commission. http://www.pc.gov.au/gsp/rogs/2011.

Steering Committee for the Review of Government Service Provision. (2012). Report on Government Services 2012. Melbourne: Productivity Commission. http://www.pc.gov.au/gsp/rogs/2012.

Swiss Confederation. (2006). Switzerland's national drugs policy: The federal government's third package of measures to reduce drug-related problems (MaPaDro III) 2006-2011. Bern: Swiss Confederation. http://www.bag.admin.ch/themen/drogen/00042/00624/03048/index.html?lang=en.

The Office of the Director of Public Prosecutions New South Wales. (2010). Annual Report 2009-2010. Sydney: NSW Government. http://www.odpp.nsw.gov.au/annual%20reports/2010%20AnnRep%20final.pdf.

Tsilaajav, T. (2009). Costing study for selected hospitals in the Philippines, Technical assistance to the Health Sector Policy Support Programme in the Philippines (EC-TA HSPSP), Final Report: Department of Health, Philippines. http://www.doh.gov.ph/sites/default/files/Costing%20Study%20for%20Selected%20Hospitals%20in%20the%20Philippines.pdf.

Victoria Auditor-General. (2003). Drug education in government schools. *Performance Audit Report No. 85*. Melbourne: Government of Victoria. http://download.audit.vic.gov.au/files/20030326-Drug-Education-in-Government-Schools.pdf.

Victoria Legal Aid. (2010). Fifteenth statutory annual report 2009-10. Melbourne: Victoria Legal Aid. https://www.legalaid.vic.gov.au/sites/www.legalaid.vic.gov.au/files/vla-annual-report-2009-10.pdf.

Victorian Department of Human Services. (2010a). Annual Report 2009-2010. Melbourne: Victorian Government.

Victorian Department of Human Services. (2010b). National Needle and Syringe Programs Strategic Framework 2010-2014. Canberra: Commonwealth of Australia. http://www.health.gov.au/internet/main/publishing.nsf/Content/0CF549E9268148FCCA2578000008F55B/$File/frame.pdf.

Walsh, J. (2004). Fuzzy logic: why the White House drug control budget doesn't add up. *Drug Policy Analysis Bulletin,* http://www.fas.org/drugs/issue10.htm#1.

Warren, E., Viney, R., Shearer, J., Shanahan, M., Wodak, A., & Dolan, K. (2006). Value for money in drug treatment: Economic evaluation of prison methadone. *Drug and Alcohol Dependence 84*, 160-166.

Western Australian Drug and Alcohol Office. (2010). Annual Report 2009/10. Perth: Government of Western Australia. http://www.dao.health.wa.gov.au/DesktopModules/Bring2mind/DMX/Download.aspx?Command=Core_Download&EntryId=336&PortalId=0&TabId=211.