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Performance Indicators for Drug Law Enforcement

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Research in 1992 put the cost of Australia's drug law enforcement (DLE) efforts at $320 million. The current cost is almost certainly much higher than this. It is impossible to determine whether this money is wisely spent. Figures showing the quantities of illegal drugs seized or the number of illegal drug dealers arrested fall far short of what is required. Reliance on crude indicators of success has fostered a view in some quarters that DLE has neither rational justification nor a meaningful role to play in harm minimisation. This view is mistaken. But if cynicism about DLE is not to become widespread amongst both the public and policy makers, police must take action to render it susceptible to objective evaluation.

To facilitate this process, this bulletin puts forward a set of possible DLE performance indicators for heroin, based on data which is already available or readily obtained. The indicators cover both the outcomes which DLE seeks to achieve and the strategies which it engages in to achieve them. That is, they provide a means of assessing police performance in minimising the harm associated with heroin and a means of gauging what police are doing to achieve this objective. There are many ways in which the indicators being put forward can be improved upon. Even the present rather rudimentary set of indicators, however, will require much closer cooperation between law enforcement and health agencies if it is to be implemented.

INTRODUCTION

One of the key corporate goals of policing is to limit the growth in, and, where possible, reduce the incidence of crime. A central problem of police management is to identify valid and reliable ways in which the achievement of this objective might be measured. For some categories of offending, such as break and enter, vehicle theft and robbery, the identification of performance indicators is straightforward. The police-recorded rate of offending may not be identical to the actual rate of offending but it normally follows it fairly closely. The success of strategies designed to reduce the rate of break and enter, vehicle theft or robbery can therefore be measured by examining the effect of such strategies on the recorded rates of these offences.

Measuring the performance of drug law enforcement is much more difficult. Because drug offences are virtually only ever recorded as a result of drug arrests, the recorded rate of drug crime is more a record of police activity than it is a measure of the frequency of illegal drug use. For this reason, police involved in drug law enforcement (DLE) cannot rely on the recorded rate of drug offences to judge the success of their policing strategies in reducing illegal drug use. There are also other complications. It makes intrinsic sense to reduce the incidence of break, enter and steal or robbery or assault because these offences cause obvious harm to readily identifiable victims. By contrast, illegal drug use does not always cause harm and, when it does, the person most immediately harmed is often the person committing the offence.

The lack of adequate DLE performance indicators has several unfortunate consequences. Firstly, it means that we cannot judge the value of public investment in DLE.[1] This investment is substantial. Research in 1992 put the cost of Australia's drug law enforcement efforts at $320 million (Marks 1992). The level of investment in DLE has almost certainly risen significantly since then. In the year ended June 1998 the NSW Police Service alone spent nearly $150 million on such enforcement (NSW Police Service 1998, p.43). As Sutton and James (1996) point out, not a great deal is known about the returns achieved on this investment. For all we know the money in question may have been either insufficient or, alternatively, better spent on drug treatment or primary prevention.

The lack of adequate DLE performance indicators also means police involved in

DLE are effectively excluded from the scrutiny which other areas of policing attract. In NSW, for example, trends in reported crime now form the backbone of the Operation and Crime Review Panel (OCR) process through which Local Area Command performance is assessed. This process involves presenting Local Area Commanders with data on trends in crime in their local area and asking them to detail the strategies they propose to undertake to address those trends. At regular intervals police are re-interviewed by the OCR panel about the success or failure of these strategies. DLE officers play no direct role within the OCR process. This means that they are not subject to the same level of accountability as police in other areas of crime control.

In Britain a great deal of work has been carried out to improve the measurement of DLE (see, for example, Chatterton, Varley & Langmead-Jones 1998). To date, however, little has been done in Australia. The ensuing discussion of performance indicators is not intended to provide a definitive solution to the problem. It is intended to outline one approach to how the problem might be solved.

There are several restrictions on the generality of the discussion which follows. First we concentrate on developing output and outcome indicators rather than the full suite of performance indicators needed to critically assess DLE policy.[2] Second, although the approach taken here could, with some modifications, be generalised to other drugs, for brevity we develop performance indicators only in relation to heroin. Third, to make the bulletin of immediate practical value, the indicators put forward are just those which can be developed using data which are available or readily obtainable.

Given the paucity of data routinely collected about the harms produced by illicit consumption, these constraints necessarily result in a less than satisfactory set of performance indicators. However the alternative: to put forward an ideal set of DLE performance indicators for which little or no data are currently collected, would only provide a recipe for continued inaction. Given the magnitude of Australia's heroin problem and the public investment in DLE, the task of developing DLE performance indicators must be regarded as urgent. The present set of indicators, while far from perfect, at least indicates that progress can be made without major investments in new data collection systems.

KEY ISSUES AND STEPS IN DEVELOPING DLE PERFORMANCE INDICATORS

Government programs of any kind consume resources to produce goods or 'services' which, in turn, are intended to achieve certain changes in the external environment. In the nomenclature of performance appraisal, the resources consumed are the program *inputs,* the goods or services produced by the program are known as its *outputs* and the changes in the external environment as a result of the program are known as program *outcomes.*

First attempts to identify measures of success in achieving program objectives often result in a confusion between the *outputs* of the program and its *outcomes*. This is especially true in DLE because so many people confuse the goals of DLE with its strategies. The media (and many elected officials), for example, commonly gauge the success of DLE by the number of offenders police catch and successfully prosecute. This is because they are accustomed to thinking of the process of arresting and prosecuting offenders as an end in itself rather than a means to an end (e.g. lower crime rates, reduced drug use etc.).

The starting point for any set of program performance indicators is a statement of the purpose or purposes of the program. Once the purposes of the program are agreed upon it is possible to identify measures of success in achieving those purposes (i.e. outcome indicators). Occasionally it is possible to measure the success (or failure) of programs directly. The outcome of most immunisation programs can be measured directly, for example, because it is possible to count the number of people who have contracted a disease against which people have been immunised. More commonly it is necessary to devise outcome indicators rather than outcome measures. Indicators provide indirect information about program success. The recorded rates of offences such as motor vehicle theft, break and enter and robbery, for example, are indicators of the corresponding actual rates because, although they do not reflect true levels of each crime, they are related systematically to those levels.

Once indicators or measures of the outcomes of a program have been identified, the next step is to identify output indicators. Output indicators provide information on the strategies an organisation is employing to achieve its program goals. If, for example, police arrest heroin dealers on the basis that this will deter people from selling heroin, then the rate of arrest for heroin dealing can be used to judge the extent to which police are pursuing this strategy. To take another example, if police seek to reduce the amount of heroin being consumed by disrupting the heroin distribution process, heroin user perceptions of the availability of heroin can be used as a DLE output indicator because those perceptions indicate the level of disruption police have caused.

There are three key issues to attend to in constructing DLE performance indicators. First and foremost we seek indicators which are both valid, in that they properly reflect variations in the process or events of interest, and reliable, in that they show consistent validity over time and place. Secondly, where possible, it is desirable to construct indicators for individual police districts or patrols. This is because both the magnitude of the heroin problem, and the law enforcement response to heroin, vary across regions. Without regional output and outcome indicators it is difficult to judge the success or failure of strategies in particular regions. Finally, it is important to construct indicators which give reasonably frequent snapshots of changes in output and outcome. The advantage of frequent and up-to-date measurements of output and outcome is that they enable more sensitive and timely adjustments to policy.

SETTING OBJECTIVES FOR DRUG LAW ENFORCEMENT

As a general rule, policy goals should never be impossible to accomplish. Although all Australian States and Territories prohibit heroin use it is simply unrealistic to believe that heroin use can be abolished altogether. Australia

already has more than 100,000 recent heroin users and that number is increasing (Australian Institute of Health and Welfare 1999). Perhaps more importantly, aggressive efforts to control heroin use can cause their own harmful side effects (Weatherburn, Lind & Forsythe 1999; Maher, Dixon, Lynskey & Hall 1998; Maher, Dixon, Swift, & Nguyen 1997). Recognising this, the Ministerial Council on Drug Strategy (Commonwealth of Australia 1998) sensibly commits Australian drug policy to reducing the harm associated with heroin (and other drug) use rather than abolishing such use altogether.

Prohibition, then, is best viewed as a means of reducing the harm associated with heroin rather than as the overarching goal of Australian national drug policy. It follows that, while law enforcement agencies might adopt a strategy of seeking to reduce the consumption of illicit drugs, drug use reduction is not a strategy which should be pursued regardless of the costs or consequences. Nor should drug use reduction be seen as the only means by which to reduce the harm associated with illegal drugs. Depending upon the harm, one might choose to influence the pattern of use or the monetary cost of use. One might even live with a higher level of use rather than embark on strategies which deter or discourage use but which increase the rate of disease, crime and corruption (see: Reuter & Caulkins 1995).

The National Drug Strategic Framework (Commonwealth of Australia 1998) does not provide a definitive list of the drug-related harms which the Framework is committed to reducing but three main categories of harm stand out. These are:

- crime or social problems (e.g. dangerous driving, child neglect) directly or indirectly stimulated by drug consumption,
- public health problems, including those associated with drug overdose and the spread of blood-borne viruses such as Hepatitis C and HIV,
- public order problems, including public drug dealing, drug intoxication in a public place and the spread of debris associated with illegal drug use.

DLE policy is obviously concerned with the first and third of these problems although its role in reducing problems such as drug-caused child neglect may be argued to be peripheral. It is less frequently understood that DLE may also play an important role in containing or limiting public health problems associated with illegal drugs.

There are two reasons for this. First, there is evidence that *some* DLE practices may be inimical to public health and safety. Aggressive street-level DLE, for example appears to prompt some heroin users to engage in unsafe injection practices (Weatherburn, Lind & Forsythe 1999; Maher, Dixon, Lynskey & Hall 1998; Maher, Dixon, Swift, & Nguyen 1997). Safe injection practices are important in preventing the spread of diseases such as Hepatitis C and HIV-AIDS and, as such, are integral to harm minimisation. There is also evidence that excessive reliance on heavy penalties and asset confiscation to limit drug distribution tends to encourage drug market participants who are prepared to use violence to prevent their apprehension (Dorn & South 1990).

Second, and more positively, DLE may discourage heroin use (either by deterring people from using drugs or by encouraging users into treatment). Since the public health problems associated with any drug are closely related to the amount of the drug consumed by the general population (witness the damage done by alcohol and tobacco) any effect DLE has in constraining heroin use must be counted as a positive contribution to the goal of harm minimisation. That contribution may not be insubstantial. Weatherburn and Lind (1999) estimate that, even if DLE were responsible for deterring only 5 per cent of those Australians who do not currently use heroin, over 19,000 hospital episodes would be avoided as a direct result of DLE.[3]

For the purposes of this bulletin, then, we assume that the principal objectives of DLE policy in relation to heroin are to:

1. limit or reduce the crime problems associated with heroin,
2. limit or reduce heroin-related problems of public disorder and amenity,
3. assist in limiting or reducing heroin-related public health problems.

Note that there is an unavoidable tension between these objectives. The single-minded pursuit of some of them will place at risk the achievement of others. In particular, over-aggressive pursuit of objective one or two will compromise the pursuit of objective three. What matters, then, in judging the overall performance of DLE is not the level of success in achieving any one objective but the level of success in achieving all three. The next section addresses the question of how we choose a set of outcome indicators relevant to these objectives.

OUTCOME INDICATORS FOR HEROIN LAW ENFORCEMENT

Reducing the crime associated with heroin

There are no easy ways in which to monitor trends in the level of drug-related crime committed by individuals to fund their addiction. Given the strong association between heroin use and crime (Dobinson & Ward 1985; Dobinson & Ward 1987; Dobinson & Poletti 1989; Salmelainen 1995; Stevenson & Forsythe 1998; Baker 1998; Weatherburn, Lind & Forsythe 1999) it might at first sight seem sensible simply to monitor the incidence of crimes typically committed by heroin users (e.g. shoplifting, robbery, break and enter). But these offences are also committed by non-users of heroin and by those who seek to raise money to purchase drugs other than heroin (Salmelainen 1995; Stevenson & Forsythe 1998). It is impossible to estimate the proportion of property crime which is heroin-related with enough frequency or reliability to construct a useful performance indicator.

A second alternative is to monitor the number of heroin users. However not all heroin users turn to crime.[4] Those who only use intermittently or those on high incomes from legitimate sources do not need to resort to crime to fund their heroin purchases. Dependent drug users account for a disproportionate amount of all illicit drug consumption. They also account for a disproportionate amount of all crime and illness associated with illicit drug use (Weatherburn & Lind 1995, p. 47-48; Caulkins & Reuter 1997).

Dependent heroin users, however, are not in a position to commit crime at a high rate if they are incarcerated and much less likely to be committing crime at a high rate if they are in treatment (Hall 1996). The total number of dependent heroin users, the number of

dependent heroin users in treatment and the number of dependent heroin users in prison are therefore more useful indicators of the amount of crime associated with heroin use than the prevalence of heroin use.

The best overall estimate of the population of dependent heroin users is that provided by the National Drug Strategy Household Survey (Australian Institute of Health and Welfare 1999). This survey, which is conducted approximately every three years, asks respondents to state whether they have ever used heroin and the frequency of their heroin use. The frequency of use questions can be used to distinguish between 'regular' and 'irregular' users. On the assumption that regular users are generally dependent, the Survey can therefore be used to estimate the number of dependent heroin users.[5]

The vast majority of heroin users in treatment are in methadone maintenance treatment. This is the only treatment which has been reliably shown to reduce both heroin consumption and the crime associated with it (Hall 1996). The number of heroin users in methadone maintenance treatment can be obtained from State Health Departments. The number of dependent heroin users in prison can easily be estimated by including appropriate questions in the annual prison census conducted by the Australian Bureau of Statistics (Australian Bureau of Statistics 1998).[6] Some States (e.g. NSW) already conduct periodic surveys to determine what proportion of prison inmates are heroin users.

Unfortunately, while it is possible through the use of national survey data to obtain reliable *national* and *State-level* estimates of the number of dependent heroin users, the number of heroin users in prison and the number of heroin users in treatment, it is not possible to obtain such estimates at the level of individual police patrols or districts. It is also impossible at present to obtain estimates of the numbers in question with any frequency (e.g. on a quarterly basis). As we observed at the outset, the first problem makes it difficult to gauge the success of local DLE initiatives. The second makes it difficult to reach timely conclusions about their success (or failure).

There are two possible groups of indicators which avoid these problems. The number of dependent heroin users in an area is probably best reflected in the number of new cases of HIV and Hepatitis C infection, the number of heroin overdoses and the number of needles dispensed as part of the needle and syringe exchange program. In the short-term these three measures are probably the best Local Area Command-level indicator of the number of dependent heroin users.

In the longer term it would be useful to supplement these data with data drawn from the Drug Use Monitoring in Australia (DUMA) program presently being trialed in Sydney, Perth and Queensland and under consideration in other Australian States and Territories (Makkai 1999). DUMA provides quarterly information on the percentage of arrestees who test positive for, or report use of, a variety of illicit drugs. Such data do not provide a direct measure of the amount of drug-related crime in an area because individuals consuming illicit drugs need not necessarily be involved in crime as a result of their illegal drug use. As we have already noted, however, there is a well-documented relationship between heroin use and income-generating property crime. Thus, the DUMA survey probably provides a reasonable indicator of trends in the level of heroin-related property crime in a Local Area Command.

Reducing heroin-related problems of public disorder and amenity

Visible heroin dealing and the debris associated with heroin use usually arouse public anxiety and anger. They can also (partly as a result) reduce the quality of neighbourhood life and disrupt or interfere with commercial and business activity. Police are expected to play a key role in preventing and alleviating these problems. The best way to construct State-wide outcome indicators of police success in achieving this objective is through the use of public opinion surveys on attitudes toward, and/or experiences of heroin-related problems of public disorder and amenity.

Representative sample survey data on public perceptions of neighbourhood crime and public nuisance problems can be obtained in New South Wales from the annual Crime and Safety Survey. To measure the nature and scale of these problems, the Crime and Safety Survey (Australian Bureau of Statistics 1999) provides respondents with a list of possible problems and asks whether each of them is of concern in the respondent's neighbourhood and which, if any, is the main concern. The problem list does not specifically include heroin but it does include a category called 'illegal drugs'. Injecting drug use is the most common source of 'drug-related' problems of public amenity. Trends in the percentage of respondents who cite 'illegal drugs' as a problem in their neighbourhood would furnish a useful performance indicator for police progress in dealing with the public amenity problems created by heroin use.

Although the Crime and Safety Survey can be used to obtain information on drug-related problems of public amenity at fairly low levels of geographic aggregation (e.g. Statistical Division and Subdivision as defined by the Australian Bureau of Statistics), it would be prohibitively expensive to boost the sample size of the survey to measure improvements in public amenity/order within a shopping centre or neighbourhood. The Crime and Safety Survey is also only conducted annually. Ideally, Local Area (i.e. Patrol) Commanders need data on progress in managing heroin-related problems of public order and amenity at least twice a year and within particular areas or sites.

Regular representative sample surveys of public attitudes would provide the ideal solution to this problem but the cost of such surveys is probably prohibitive even if they are only conducted in areas where illegal drug use is posing a threat to public amenity. In their absence, the alternative is to rely either on the trend in complaints to police about heroin-related problems of public amenity/order at particular locations or on periodic surveys of the local community conducted by police as part of their street-patrol activity. The latter are to be preferred. Complaints can too easily be manipulated for political purposes. In interpreting the results of local opinion surveys, however, it must be remembered that public perceptions of and tolerance for problems in the local social environment are strongly influenced by the media.

Reducing or limiting heroin-related public health problems

As noted earlier, police have a role to play in reducing or limiting heroin-related

public health harms, both because of their potential to influence the frequency of heroin use and because their activities influence the willingness of heroin users to engage in safe injection practices and enter treatment for heroin use. We therefore need indicators of police influence in limiting heroin-related public health problems. Several of the indicators we have already identified can be used for this purpose, including the number of heroin users entering methadone treatment, the number of new HIV and Hepatitis C infections and the number of heroin overdoses.

Safe injection practice is also a key indicator of disease control but the number of needles dispensed cannot be used as an outcome indicator of the public health problems associated with heroin. Higher levels of needle exchange are almost certainly more a signal of growing heroin use than one of safer injection practice. A better alternative would be to explore injection practices in the context of the DUMA survey. Questions measuring the prevalence of various kinds of safe injection practice were used by Weatherburn, Lind and Forsythe (1999) to assess the impact of street-level DLE amongst heroin users in Sydney. These questions could easily be routinely included in the DUMA interview schedule.

OUTPUT INDICATORS FOR DRUG LAW ENFORCEMENT

DLE strategies

Having identified suitable indicators of the *outcomes* of DLE the next step is to identify suitable indicators of its *output*. Since the outputs of DLE are intended to exert a favourable influence on outcomes, output indicators should be chosen with close regard to the strategies employed by drug law enforcers. We begin, then, by briefly reviewing these strategies.

While some would argue that drug law enforcement should have supply-control as its principal focus (see: Green & Purnell 1996), in practice police can influence the heroin market through both demand-side and supply-side strategies. Supply-side enforcement involves efforts to disrupt the market for heroin through measures such as crop eradication, interdiction and the arrest of importers and distributors. Demand-side enforcement involves efforts to restrict the demand for heroin, either by deterring non-users from trying the drug, or by creating incentives for existing heroin users to give up the drug or to use it less frequently.

The role of drug law enforcement in deterring people from ever using drugs remains unclear (MacCoun 1993). Perhaps the most effective demand-side DLE tactic is to encourage existing users to give up the drug or consume less of it by making it difficult for heroin users to 'score'. In fact the time, effort and risk involved in 'scoring' heroin (sometimes known as the 'buy-time') is believed by some researchers to play a significant role in discouraging demand and is one of few aspects of the heroin market which police can directly influence (Moore 1972; Kleiman 1992; Weatherburn, Lind & Forsythe 1999). The time, effort and risk involved in scoring heroin can be increased by 'harassing' known heroin users or by targeting street-level heroin dealers through tactics such as surveillance, the use of informants and 'buy/busts' (in which undercover police seek out suspected heroin dealers, offer to purchase heroin and then arrest the dealer when he or she makes an offer to sell heroin). Since each dealer generally has a number of clients, the removal of a dealer from the market can exert a very disruptive effect.

The potential for supply-side enforcement to disrupt the heroin market stems from two main sources. Firstly, intense DLE can make it hard or risky to obtain the drug, at least in certain geographic areas. Secondly, as with any business, those involved in heroin trafficking will inevitably demand financial compensation for the risks (arrest, prosecution, imprisonment) and costs (heroin and asset seizure) they face. If these risks increase, traffickers who do not obtain adequate financial compensation will be tempted to leave the heroin market. Those who remain will demand higher profits for the added risks they face. In theory, at least (although see below), the need for higher profits should force up the cost of heroin at street level and/or drive down its purity and/or availability, thereby reducing aggregate demand for the drug.

The tactics police use to deal with the public amenity problems created by heroin markets are similar to those employed to disrupt heroin markets. Police generally rely on uniformed patrols exercising their 'stop and search' powers in the areas where the problems exist. The threat or actual use of these powers increases the risks and costs associated with carrying heroin or loitering with the intention of purchasing or selling heroin. Even if this sort of pressure does not encourage heroin users to enter treatment it may have the effect of dispersing them, thereby alleviating the public amenity problems they cause.

Sometimes police also engage in 'crackdowns'. While police 'crackdowns' can vary in form, most involve an intense period of police enforcement activity over a short period in a defined geographic area. The aim of such activity is to arrest individuals involved in drug-related illegal activity and/or encourage heroin users and dealers to move elsewhere. Once again, these tactics may do nothing to alter the aggregate demand for heroin or the crime associated with it, but there is some evidence that they can help temporarily alleviate the public amenity problems created by heroin markets (Weisburd & Green 1995).

OUTPUT INDICATORS FOR DEMAND-SIDE ENFORCEMENT

If the risk of detection, arrest and prosecution for heroin use acts as a deterrent to potential users, the fraction of the population deterred from heroin use by those potential consequences would serve as a useful output indicator for DLE. Unfortunately, although the deterrent effect of DLE has occasionally been explored in surveys of self-reported drug use among Australian secondary school students (Criminal Justice Commission 1994, p. 108), there are no extant data sources from which this fraction might regularly be computed. This is a significant gap in the range of DLE performance indicators which should be remedied. It could be remedied either through the National Drug Strategy Household Survey or through the surveys on drug use regularly conducted among Australian secondary school students.

The rate of entry into treatment in response to demand-side enforcement is more easily measured. Most heroin users

enter treatment as a result of prolonged and aversive interaction with police, the burden of financing a heroin habit, the risks and difficulties involved in scoring heroin and/or the family problems created by dependence on heroin (Weatherburn, Lind & Forsythe 1999). From a police perspective it is particularly important to get heroin-dependent property offenders out of the heroin market because this group commits a disproportionate amount of property crime (Stevenson & Forsythe 1998). This suggests that the rate of arrest of heroin-dependent property offenders and the perceived risk/effort involved in 'scoring' heroin would be two useful output indicators for demand-side DLE. Since most police crime recording systems have a facility for recording whether a crime is 'drug-related' the former should be readily available to police from their own records. Data on the latter can readily be obtained through DUMA.

OUTPUT INDICATORS FOR SUPPLY-SIDE ENFORCEMENT

The development of suitable output indicators for supply-side DLE is perhaps the most challenging task among those involved in setting up DLE performance indicators. If supply-side DLE increases the cost of heroin and/or reduces its availability and quality (i.e. purity) in theory it should work to discourage people from using heroin, encourage heroin users out of the heroin market and/or reduce the amount of heroin that existing users consume. At face value, therefore, the price, purity and availability of heroin would seem potentially valuable output indicators for supply-side DLE, the more so because they are relatively easy to measure.[7]

The street price of heroin, however, (or, more precisely, its price/purity ratio) is a somewhat ambiguous indicator of the efficacy of supply-side DLE. Aggregate heroin consumption may fall with increases in the price of heroin but the effect of this in terms of crime depends upon whether the demand for heroin is what economists call 'price-inelastic'. Technically, demand for heroin is price-inelastic if an x per cent increase in the price of heroin produces a smaller than x per cent decrease in demand. Loosely speaking, however, demand for heroin is inelastic if increases in the price of heroin only exert a weak effect on the amount of heroin consumed.

Now it can be shown that, if the demand for heroin is price-inelastic, then increases in the price of heroin will reduce demand for the drug but overall expenditure on heroin will still increase (Wagstaff & Maynard 1988). This is because the amplifying effect of a heroin price increase on overall heroin expenditure will be larger than the dampening effect of a reduction in the quantity of heroin being consumed. If expenditure on heroin increases we can expect the crime required to purchase it also to increase. So if demand for heroin is price-inelastic and supply-side DLE pushes up the price of heroin, the result will be more rather than less income-generating property crime. If demand for heroin is price-elastic, on the other hand, increases in the price of heroin will result in a drop in heroin consumption *and* heroin-related crime.

What do we know about the price-elasticity of heroin? Briefly, the available evidence suggests that demand for most illicit substances is fairly elastic (Caulkins & Reuter 1998) but no certainty can be attached to this.

A further problem is that heroin price, purity and availability are affected by factors beyond the control of State law enforcement agencies. The Australian Customs Service and the Australian Federal Police, for example, both influence the flow of heroin across the customs barrier. Policy changes and expenditure on DLE in the source countries where heroin is produced also influences the price, purity and availability of heroin in Australia. These extraneous influences may give rise to the impression that State-level efforts to increase the price and reduce the purity and availability of heroin have failed when, without those efforts, heroin might have been more available, cheaper or purer.

These considerations suggest that it would be preferable to use more direct measures of output. Since supply-side DLE policy is directed at increasing the risks and costs associated with heroin trafficking, one would like to be able to measure these risks and costs. Yet it is impossible to determine the proportion of all heroin traffickers apprehended by police, the proportion of all heroin imported police seize and the proportion of all drug trafficking assets police succeed in confiscating. Police can measure the *number* of people convicted for heroin dealing or trafficking, the average prison term imposed on those convicted, the quantity and frequency of heroin seizures and the dollar value of any assets confiscated. Some of these more immediate output indicators, however, also have their problems.

To begin with, as Wagstaff and Maynard (1988) point out, a growth in the number of heroin seizures or the quantity of heroin seized may signal increased police effectiveness but it may also signal an increase in the rate of importation of heroin due to exogenous factors. Furthermore, police can manipulate trends in indicators, such as the quantity of heroin seized or the number of high-level traffickers convicted, simply by changing their tactics. A shift in focus up the supply chain, for example, will probably improve the quantity of heroin seized and the number of high-level traffickers convicted, even if it also results in a drop in the total number of heroin seizures and the overall number of arrests for heroin dealing.

Such a shift in focus would be of little concern were it known that high-level DLE is more effective in disrupting the market for heroin. But it is possible to argue that heroin markets are more effectively disrupted through enforcement against low-level suppliers than against high-level distributors (Moore 1972; Kleiman 1992). The same problem applies to other aspects of supply-side DLE. Many police believe, for example, that it is better to arrest a small number of people and, in so doing, destroy an entire heroin distribution ring, than it is to arrest a large number of people from each of several rings. Once again, however, the assumption lacks supporting evidence. The result is that we cannot readily identify an ideal set of output indicators for supply-side DLE.

Perhaps the best option in the circumstances is not to rely on any one indicator but to establish indicators both for the intermediate outputs of supply side DLE (i.e. heroin price, purity and availability) and for those outputs which are more direct. Given the strategies routinely employed to combat the supply of heroin, the latter class of indicators should include:

- the number of convictions for supplying heroin (both by

individuals who are supplying heroin primarily to fund their own heroin use and those who are supplying heroin solely for financial gain),[8]

- the average prison sentences imposed on heroin suppliers,
- the number of heroin seizures,
- the quantities of heroin seized,
- the percentage of convicted traffickers from whom assets are confiscated, and
- the dollar value of assets seized.

No one of these measures can be regarded as definitive but the use of multiple indicators should reduce the risk of error in the identification of trends (on the benefits of checking for convergent validity see: Flaherty, Kotranski & Fox 1983, 1986; Riley, Wagenfeld & Sonnad 1981; Rootman 1988; NIDA 1995).

OUTPUT INDICATORS FOR POLICING HEROIN-RELATED PUBLIC AMENITY PROBLEMS

There are several options for output indicators in relation to public amenity/order policing. One option is to count the number of times police exercise their 'stop and search' powers since this is one measure of the intensity of their drug-market patrolling activity. Uncritical and excessive use of police powers, however, can easily result in the appearance and/or reality of police abuse. Police do not need to maximise their use of stop and search powers to exert a deterrent effect on open drug-dealing. The frequent presence of uniformed officers is probably enough to achieve this outcome. One useful output indicator for policing heroin-related public amenity problems, therefore, might be the aggregate amount of time per week which uniformed officers spend patrolling areas which suffer from drug-related problems of public amenity.

Of course, uniformed patrolling of areas with drug-related public amenity problems would achieve very little in the way of deterrence if it were not backed up from time to time by arrests for involvement in drug-related crime. Because there are always fewer sellers than buyers and because sellers are easier to detect than buyers, arresting those who sell or attempt to sell heroin on the street is probably a more efficient tactic for disrupting open drug markets than arresting those who buy or attempt to buy heroin. Note that the conviction rate of people who supply heroin at street level has already been identified as an output indicator for supply-side enforcement.

CONCLUSION

We have defined a possible set of outcome and output indicators for DLE. A list of the proposed indicators, their sources and the frequency with which they can be monitored is provided in Appendix A. The indicators can all be constructed from data which is either available now or easily obtained in New South Wales and most other Australian States.

There is no doubt that the indicators put forward here could be improved upon. The self-imposed requirement that the indicators put forward all be able to be constructed from readily available data in some instances seriously restricts their quality. All the same, slight changes to current data collection programs could easily produce worthwhile improvements. The public amenity problems generated by the heroin market, for example, could be better measured by including questions in State Crime and Safety Surveys dealing more specifically with heroin or injecting drug use-related problems of public amenity, or by conducting special purpose surveys in areas with significant problems.

If the sample size of the National Drug Strategy Household Survey were expanded it would be possible to obtain more reliable estimates of the size of the population of regular heroin users in each State. Likewise, extension of the DUMA program to a wider range of sites would give a better regional picture of the performance of police involved in DLE. The development of more efficient tests for drug-driving would greatly improve the quality of both output and outcome measures for police efforts to reduce driving by people under the influence of heroin. It may also turn out that there is scope within existing datasets to estimate some of the risks and costs associated with supply-side DLE, such as the proportion of heroin seized.[9]

Further improvements in the indicators of DLE effectiveness will in the long run require a much better understanding of the effects and effectiveness of DLE policy. In many cases the indicators we have put forward depend upon assumptions which are not well grounded in evidence. For example, we know very little about the long-term effect of supply-side DLE on the price, purity and availability of heroin, the deterrent effects of police activity on entry into the heroin market, the relative importance of risk and cost as determinants of willingness to import/distribute heroin, the price-elasticity of demand for heroin or the effects of police patrols on the public amenity problems associated with injecting drug use. It will always be difficult to construct performance indicators for DLE while we remain so uncertain about its basic effects.

The fact that it is possible to improve upon the indicators put forward in this bulletin, however, ought not to be used as an excuse for further delay in the development of DLE performance indicators. Police in Australia have been much slower to see the need to objectively evaluate their efforts to contain the harm caused by illegal drugs than their colleagues in the fields of medicine and public health. This has created an impression in some quarters that DLE has neither rational justification nor a meaningful role to play in the pursuit of harm minimisation. In fact there is a common view that DLE and harm minimisation are contradictory approaches to illicit drugs. This view may be gravely mistaken but it cannot be corrected without determined efforts by police to rigorously evaluate and report objectively upon the success of their efforts to reduce the harm associated with heroin.

It is clear from the foregoing analysis that a much greater exchange of data between Health and Police Departments is going to have to occur if police are to fulfil their obligation to make ameaningful contribution to harm minimisation. Data exchange between Government agencies is a somewhat fraught affair at the best of times. Health authorities have in the past shown a particular reluctance to provide data to police. That concern is understandable and legitimate where the information being sought concerns or could identify particular individuals. It is neither understandable nor legitimate if the information being sought is to be used solely to evaluate police performance in minimising the harm associated with illicit drugs.

APPENDIX A

Summary of proposed indicators, data sources and data availability

Indicator	*Source*	*Target of measure*	*Frequency*
OC1	School survey data	crime problems	every 3 years
OC2	State corrections data	crime problems	annually
OC3	State health data	crime/health problems	annually
OC4	State ambulance data	crime/health problems	quarterly
OC5	State health data	crime/health problems	quarterly
OC6	State health data	crime/health problems	quarterly
OC7	DUMA	crime problems	quarterly
OC8	DUMA	health problems	quarterly
OC9	Public opinion survey data	public amenity problems	six monthly
OP1	DUMA or arrest records	demand-side enforcement	quarterly
OP2	DUMA or arrest records	demand-side enforcement	quarterly
OP3	DUMA	supply-side enforcement	quarterly
OP4	DUMA	supply-side enforcement	quarterly
OP5	Court/police records	supply-side enforcement	quarterly
OP6	Court/police records	supply-side enforcement	quarterly
OP7	Police records	supply-side enforcement	quarterly
OP8	Police records	supply-side enforcement	quarterly
OP9	Police records	supply-side enforcement	quarterly
OP10	Police records	supply-side enforcement	quarterly
OP11	Police records	public amenity enforcement	quarterly
OP12	Police records	public amenity enforcement	quarterly

Indicator Codes : OC = outcome indicator, OP = output indicator

OC1	=	Number of dependent heroin users
OC2	=	Number of dependent heroin users in prison
OC3	=	Number of dependent heroin users in treatment
OC4	=	Number of heroin overdoses
OC5	=	Number of new HIV and Hepatitis C infections
OC6	=	Number of needles and syringes dispensed
OC7	=	Number of arrestees (by site) testing positive to heroin use
OC8	=	Number of arrestees who report sharing needles to avoid apprehension by police
OC9	=	% who regard illegal drugs as a crime or public nuisance problem in their neighbourhood
OP1	=	Number of arrests of heroin-dependent property offenders
OP2	=	% DUMA arrestees who perceive scoring heroin as 'risky/difficult'
OP3	=	Average price of heroin at street level
OP4	=	Average purity of heroin at street level
OP5	=	Number of convictions of major (i.e. above street-level) heroin dealers
OP6	=	Average prison term imposed on heroin dealers convicted
OP7	=	Number of heroin seizures
OP8	=	Quantity of heroin seized
OP9	=	Number of convicted drug offenders from whom assets are seized
OP10	=	Dollar value of assets seized
OP11	=	Time spent in DLE street-patrol activity
OP12	=	Number of convicted heroin user/dealers

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NOTES

1 See Sutton and Maynard (1994) for an interesting attempt to assess the cost-effectiveness of enforcement activity in the UK illicit heroin market.

2 A complete set of DLE performance indicators would include indicators for resource input and process. The former indicators capture the monetary, human and/or capital resources invested in DLE. The latter capture how those resources are consumed internally by police organisations.

3 In 1996/97, for example, there were 2,835 hospital episodes attributable to the 0.7 per cent of the population who engaged in opiate use. If the absence of law enforcement had prompted only an additional 5 per cent of the non-using population to use heroin and they had been hospitalised at the same rate as those presently using heroin, there would have been an additional 19,845 hospital episodes related to heroin (see Weatherburn & Lind 1999).

4 Nor do all heroin users suffer disease. In fact indices of use and harm for injecting drug users have been found to move in quite contradictory directions, depending upon the pattern of use and the population using the drug (Caulkins & Reuter 1997).

5 An alternative is to use the three yearly State-based surveys of drug use among secondary school students. These surveys have the advantage of focusing on a younger population but would miss many adult heroin users involved in crime.

6 Note that heroin users in prison are not counted in the National Drug Strategy Household Survey.

7 The price and availability of heroin at street level can be assessed within the DUMA program by asking arrestees to report on their experience of each of these aspects of the heroin market over a specified (recent) period. The purity of heroin at street level can be assessed by testing the purity of heroin obtained from those charged with having small quantities of the drug in their possession (cf. Weatherburn & Lind 1997).

8 Street-level dealing in this instance could be defined as dealing in quantities below some defined level (e.g. one gram). Note that because the law does not distinguish between heroin user/dealers and dealers who do not use heroin, data on this would have to be kept by police themselves.

9 For an approach to this problem in the context of US cocaine consumption see Rydell and Everingham (1994).

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