

The Policy Context of Roadside Drug Testing

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Abstract

Roadside testing of oral fluids for a suite of illegal drugs has been taking place in Victoria since late 2004, is now operating in some form in all of Australia's States and the Northern Territory. I suggest that the current roadside drug testing regimes have been introduced with insufficient rigour in the underlying policy analysis. The authorities state that it is a road safety initiative and not about punishing drivers for using illegal drugs, but this assertion can be challenged. The research evidence linking particular levels of drugs in the body and driving impairment is limited, no convincing evidence exists demonstrating that roadside drug testing improves traffic safety at the population level, the initiative fails to target some of the drugs the use of which has been demonstrated to be a traffic safety risk, the opportunity costs seem to have been ignored, and it may well fail the human rights test of proportionality.

Introduction

Roadside testing of oral fluids for illegal drugs has been taking place in Victoria since December 2004, is now operating in some form in all of Australia's States and the Northern Territory, and is under consideration in the Australian Capital Territory (ACT). In most jurisdictions (but not all) the drugs tested for are cannabis (THC), 'ecstasy' (MDMA) and methamphetamine. The legislation in all seven jurisdictions where testing is taking place permits police officers to stop a motor vehicle and require the driver to submit to an oral fluid (saliva) drug test even if the police officer has no reasonable suspicion that the driver's capacity to operate a motor vehicle safely is impaired by one of the target drugs or even that the driver has a detectable level of those drugs in the body. Although this is frequently referred to as 'random drug testing', just as the corresponding regime for alcohol is frequently called 'random breath testing', of course these appellations are wrong as no Australian police service actually implements random testing. Most apply a mix of highly targeted testing for illicit drugs and alcohol, as well as less targeted approaches that are intended to have a general deterrent impact on the broader community.

It is of considerable interest that the roadside drug testing initiative has been developed and implemented with virtually no consultation with the public or professional groups. The policy analyses which underlie them have occurred behind closed doors in a non-transparent manner and without the public

being aware of the scientific evidence justifying the initiatives. Police spokespeople and government ministers make claims about the impact of illicit drugs on driving and on road traffic crashes and fatalities without providing any supporting evidence for their claims. Indeed, frequently their claims are not supported by a body of scientific evidence.

Also of interest is the fact that the community is highly supportive of roadside drug testing. It has high face validity particularly because of the successes, in terms of traffic safety, of roadside breath testing for driver impairment caused by alcohol. But how justified are members of the community in putting their faith in roadside drug testing as a traffic safety initiative? Should the Australasian College of Road Safety develop a policy on roadside drug testing (targeted and/or untargeted) and the use of oral fluids for this purpose? The remainder of this paper addresses these issues.

The process of policy analysis

Before turning to some of the specifics of roadside drug testing I wish to highlight some key issues in the content and process of policy analysis, as I have concerns about the quality of the policy analyses that should underpin an expensive, highly intrusive policy initiative such as roadside drug testing.

Policy analysis is not decision-making. Rather, policy analysis is (or should be) a rational, comprehensive approach that produces the information needed by decision-makers. In other words, it is a decision support activity. Although many descriptions exist, one useful formulation of the steps that compose a rational approach to policy analysis is as follows:

- Formulate the problem.
- Set out objectives and goals.
- Identify decision parameters.
- Search for alternatives.
- Propose a solution or options (1, p. 60).

The steps 'search for alternatives' and 'propose a solution or options' are of particular interest to us here as I suggest that the policy analyses underlying roadside drug testing have been especially shallow in these areas. One of the keys to successful policy analysis is taking great care in judging the alternatives, but this is the hardest of the steps. Bardach (2, p. 26), the author of what is arguably the most prominent text book in the field, clarifies the problem:

Please note that evaluative criteria are not used to judge the alternatives, or at least not directly. They are to be applied to the projected outcomes. It is easy to get confused about this point—and to get the analysis very tangled as a result. This confusion is encouraged by a common-sense way of speaking: ‘Alternative A looks to be the best; therefore let’s proceed with it.’ But this phrasing ignores a very important step: the complete formulation is ‘Alternative A will very probably lead to Outcome O^A, which we judge to be the best of the possible outcomes; therefore, we judge Alternative A to be the best.’ Applying criteria to the evaluation of outcomes and not of alternatives makes it possible to remember that we might like O^A a great deal even if, because we lack sufficient confidence that A would actually lead to O^A, we decide not to choose Alternative A after all. With that judgment on the table, it would be possible to look for other alternatives with a greater likelihood of producing O^A.

The issue is focusing on outcomes rather than on implementation steps. It is concerned with identifying those interventions which are most likely to produce the desired outcomes in the most cost-effective manner and with the minimum level of unintended adverse consequences.

What outcomes are we aiming to achieve with roadside drug testing?

The introduction of roadside testing of oral fluids for the three illegal drugs listed above in Victoria in December 2004 was the first time in the world that police had been given a legislative mandate and other resources to test drivers’ oral fluids for illicit drugs even where there is no suspicion that the driver is impaired by those drugs. The Victorian Government has an ‘Arrive Alive’ web page titled ‘Random roadside drug testing’ that states that ‘The random roadside saliva testing is aimed at making Victoria’s roads safer for everyone *by reducing the incidence of drug driving*’ (<http://www.arrivealive.vic.gov.au/node/80>, my emphasis).

Another example comes from the ACT: in an 8 April 2008 media release, Mr John Hargreaves MLA, the then ACT Minister for Transport and Municipal Services, stated (my emphasis):

I needed to be certain that *the testing was about road safety* and not about catching drug users and punishing them for using drugs rather than endangering other road users. As a Minister, I will do whatever I can to improve road safety but I am not going to be involved in punishing ACT drug users for their addiction.

It is clear, from these quotations that the objective of

governments in introducing roadside drug testing is to improve traffic safety. But do the policy analyses indicate that there is a high probability of achieving this goal or, as we have been warned by Bardach in the quotation above, have we fallen into the trap of choosing an alternative which is superficially attractive but is not necessarily the best way of attaining traffic safety objectives? An analysis using logic modelling is helpful.

What is the logic model?

Logic modelling (3) has now become commonplace in both policy analysis and policy evaluation, as well as other areas of research. It has been defined as ‘An articulated model of how a program or project is understood or intended to contribute to its specified outcomes and that focuses on intermediate outcomes rather than tightly specified processes...’ (4, p. 232). So what is the apparent logic model that underlies roadside drug testing? What is the causal chain that links activities to outcomes? The logic model appears to be something like this:

- Some people use illegal drugs.
- Some of them drive after doing so.
- Some of the drivers will be impaired by the drugs to the extent that the impairment will cause a crash.
- Roadside drug testing will reduce the prevalence of drug-impaired driving through general deterrence and specific deterrence.
- This will reduce the incidence of crashes to such an extent as to improve traffic safety.
- The level of improvement in traffic safety will be measurable at the population level.

It would be a valuable exercise, but one which is beyond the scope of this paper, to estimate the numbers of people, drivers and incidents at each steps in the logic model. It is straightforward to start with existing data on the number of people who use illegal drugs and the proportion who drive after doing so.¹ Because of the very limited research evidence usable in the policy context on the relationship between illicit drug use and driving impairment it would be difficult to estimate the number impaired by the drugs to the extent that the impairment will actually cause a road crash, but the number must be very low. The evidence available to date on the deterrence effect of roadside drug testing is disappointing, with levels of driving after using illicit drugs not having fallen in Victoria in the four years in which the regime has been so prominently operating (7). This means that, on current evidence, there is little likelihood of roadside drug testing as it

Some 3.0% of the general population aged 14 years and above reported that they had driven a vehicle ‘while under the influence of illicit drugs’ in the year before they were surveyed in 2007 (5) and a similar proportion of drivers who volunteered to provide a saliva sample in a Queensland study (3.5%) were positive to an illegal drug (6). The Victorian roadside drug testing regime shows a positive test rate of approximately 1.7% (Victorian Transport Accident Commission media release 1 August 2008). This may be compared with 11.9% of the general population reporting that they had driven ‘under the influence of alcohol’ in the 2007 National Drug Strategy Household Survey (5), and the 0.1%-0.5% of drivers usually detected through ‘random breath testing’ programs with blood alcohol concentrations exceeding 0.05g%.

is currently implemented actually causing a reduction in road crash incidence and fatalities that is measurable at the population level.

Is there a convincing body of research evidence demonstrating that roadside drug testing achieves the policy objective of reducing motor vehicle crash incidence?

The logic model presented above provides little encouragement that roadside drug testing, as currently implemented, is likely to achieve significant traffic safety goals. Going beyond the logic model to the research evidence is informative.

First, no conclusive body of literature exists supporting the proposition that roadside drug testing reduces the incidence or severity of road crashes. This is despite the fact that over 62,000 tests of drivers' oral fluids were conducted in the State of Victoria between December 2004 and July 2008 ((Victorian Transport Accident Commission media release 1 August 2008) and that various types of roadside drug testing have been used in other countries for much longer periods.

Secondly, the Victorian evidence about driving among people who regularly use illicit drugs demonstrates no evidence of a deterrent effect. The proportion of Melbourne regular users of MDMA and related drugs who reported that, in the previous 12 months, they have driven soon after taking a drug, was 63% in 2004, 58% in 2005, 68% in 2006 and 71% in 2007 (7).

Thirdly, evidence comes from Sweden where a policy commenced in July 1999 making it an offence for people to have any detectable level of illicit drugs in the body, a 'zero tolerance' approach. Research in that country has shown that high levels of detections of illicit drugs among drivers continue to occur, there have been no research reports showing any reduction in crash incidence or fatalities that are considered to be caused by the drug testing regime, and a very high level of re-arrests of offenders occurs: 68% over four years with an average number of arrests of 3.4 (8).

What are the opportunity costs?

I wonder if decision-makers and their policy advisers have quantified the opportunity costs of moving rapidly to legislate and implement roadside drug testing of oral fluids for illicit drugs? Some of the core opportunity costs might be as follows:

- Failure to implement other interventions that are more efficacious and cost-effective.
- Fewer roadside ('random') breath tests for alcohol impaired drivers.
- A drain on policing resources.
- Loss of community confidence in the legitimacy of law enforcement if it became apparent to the public that this intrusive intervention does not achieve its promised traffic safety goals.

Are there other ways of attaining the road safety goals more effectively?

It would be of great interest to know the extent to which the policy analyses that concluded with recommendations to introduce roadside oral fluid testing for illicit drugs addressed other options for attaining road safety objectives. Did the policy analysts consider more effective use of interventions with known efficacy rather than embark on an intervention which has a shallow and inconsistent evidence base and is not supported through a program logic analysis? Other initiatives that could have received attention include the following:

- More effective and more intense enforcement of roadside breath testing for alcohol impaired drivers. Roadside breath testing is clearly an effective intervention which has the support of the community, but some evidence exists suggesting that new approaches are needed if we are going to achieve further benefits in this area. This includes, for example, implementing testing regimes that are truly random and applying what is known about the optimal testing intensity (for example, number of tests by unit of time by road distance) (9). It is noteworthy, however, that recent research suggests that roadside breath testing has low relative cost-effectiveness: '...although random breath testing is cost-effective and is already being implemented in Australia, the same amount of \$71 million that is currently spent on random breath testing would, if invested in more cost-effective interventions, achieve over ten times the amount of health gain (10, p. 6).
- We have very little evidence that the illicit drugs currently targeted in roadside drug testing regimes—MDMA, THC and methamphetamine—are causally related to road crash incidence to an extent that they are likely to have an effect at the population level (11), although some of the culpability studies suggest, but cannot demonstrate, that this is the case (12). (The responsibility/culpability studies are frequently misused, with people treating the odds ratios produced by the studies as if they are direct measures of relative risk.) On the other hand, there is a body of evidence indicating that prescribed benzodiazepines and opioids are significantly and causally related to road crash incidence (13) but these drugs are not targeted in the current roadside drug testing regime in most of the Australian jurisdictions. The reason given, that it is legislatively and administratively neater to target the drugs for which there is no legitimate medical use, is unconvincing.
- Evidence is rapidly emerging that mandating electronic stability controls in motor vehicles can have very significant impacts on traffic safety. For example, a recent systematic review has concluded that this intervention can reduce fatal single-vehicle car crashes by 30-50% and among SUVs by 50-70%, and can reduce fatal roll-over crashes by 70-90% (14).

It could be argued, then, that a more systematic and intense application of what we know already works to improve traffic safety would have been preferable to introducing a new intervention of questionable or unknown efficacy and cost-effectiveness.

What are the human rights considerations?

It appears that the human rights considerations have been largely ignored in policy analyses on roadside drug testing. This probably reflects the fact that Australia does not have national human rights legislation and that the Victorian regime was introduced before the passage of that State's Charter of Human Rights and Responsibilities Act 2006. There are some in society, including parliamentarians, who fail to embrace contemporary thinking about human rights. For example, in speaking in the Legislative Assembly for the ACT in support of a Bill he had introduced to provide for roadside oral fluid testing for illicit drugs in the ACT, the then opposition front bench Mr Steve Pratt MLA stated that the Government had not itself legislated because it has been '...blindsided by lobbyists who talk about the human rights aspects involved in random roadside drug testing' (<http://www.hansard.act.gov.au/hansard/2008/week04/1165.htm>).

This wholesale dismissal of the significance of human rights in policy analysis is in stark contrast to the position adopted by the ACT Human Rights Commissioner, Dr Helen Watchirs (15). She has concluded that significant human rights issues exist in oral fluid testing for illicit drugs among drivers in situations where there is no reasonable suspicion that the driver is impaired by illicit drug use.

Watchirs has identified the human rights considerations that need attention in this context (15, p. 2, her emphases):

Authorising police to conduct random drug testing of motorists involves the provision of saliva or blood without the request being based upon a reasonable suspicion. In human rights terms this overreaching powers would amount to:

1. arbitrary detention/arrest of the individual, contrary to s.18 of the [ACT Human Rights Act];
2. subjecting people to have medical treatment without free consent - s.10(2);
3. an arbitrary interference with their privacy, violating s.12 of the [ACT Human Rights Act];
4. arguably creating problems of an unfair trial; and
5. negatively impacting on children's rights.

Watchirs goes on to explain that the proportionality test needs to be applied to weigh the human rights of individual drivers with the rights of the community by determining if the proposed intervention is in the public interest, if the intervention is rationally connected to the objective, and to what extent the intervention impairs drivers' rights to freedom. The human rights considerations are important and should not be arbitrarily dismissed just because of the face validity of roadside drug testing.

What has propelled this policy if it is not evidence of relative cost-effectiveness in attaining traffic safety objectives?

In the absence of a body of evidence that roadside drug testing of oral fluids for illicit drugs is both efficacious and relatively cost-effective (compared with other proven traffic safety interventions), why has this policy been so readily taken up with virtually no public debate on the matter? Four possibilities come to mind.

First, our society is enamoured of technology so I wonder if the recent availability of oral fluid testing technology has actually been a driver of policy? Self-evidently, until recent years when the testing technology became available it was not possible to implement an oral fluids roadside drug testing program. Instead, police officers applied standardised behavioural tests for drug-related impaired driving, the results of which were used to obtain convictions of driving under the influence of the drug (16).

The absence of convincing research evidence as to the levels of most illicit drugs detected in the body that are needed to create impairment to such an extent that an elevated risk of road crash exists, has led the seven Australian jurisdictions to introduce per se legislation modelled on the successful approach used with alcohol. As one reviewer has concluded, 'The approach adopted in Australia is one in which the detection capability of the technology, rather than the demonstration of performance impairment, is used to define illegal behaviour' (17, p. 107).

The public has taken on faith assertions about the accuracy of the testing technology used in the different States and Territories of Australia, although authorities in other jurisdictions do not share this confidence. For example, a review recently published by the European Monitoring Centre for Drugs and Drug Addiction concluded that:

Roadside detection mechanisms, whether traffic police with special training, or testing of drivers' biological samples, continue to suffer accuracy concerns, with even the newer technological advances not being considered reliable enough by an international testing project to be recommended for use in EU countries (18, p. 128).

Secondly, once the Victorian Government introduced its oral fluid testing regime there was considerable pressure on the other States and Territories to follow suit. This is the 'catch-up' and 'leap-frogging' phenomenon frequently seen in Australian public policy. Considerable pressure has been placed on governments to follow the Victorian lead, otherwise they could be accused of failing to implement what is seen as an important and useful traffic safety initiative.

The fact that the Government of a large Australian State had implemented the program, apparently successfully and with little opposition, meant that the pressure on the other jurisdictions to conduct sound policy analyses would have been

much less than if they were implementing it without the Victorian model already being in place.

Thirdly, I wonder if the roadside drug testing for illicit drugs is not predominantly a traffic safety intervention but is actually the putting into operation of negative attitudes towards the currently illegal drugs and towards the people who use them? The Australian legislation generally provides that the results of roadside testing of oral fluids for illicit drugs can only be used in prosecutions under road traffic legislation and cannot be used, for example, as evidence for a charge of self-administration of an illicit drug. While this is pleasing in terms of protecting human rights, it still leaves open the possibility that a desire to criminalise non-mainstream behaviour, in this case the use of certain drugs, is mingled with a desire to improve traffic safety. As Australian scholars have explained:

The illegality of cannabis has promoted a zero tolerance approach in Australia, with any detectable amount of the drug tested constituting an offence. On this policy, the definition of a per se level is irrelevant because road safety benefits are secondary to enforcement of drug laws (11, p. 102).

Why has the policy not been evaluated?

I am not aware of any comprehensive program to evaluate any of the Australian jurisdictions' roadside drug testing programs. With the Victorian initiative having been in place for over four years, the public would be justified in expecting that we would have not just an evaluation strategy but also the results of evaluation research. Unfortunately we have neither. The only information publicly available on the impacts of these interventions are limited data on the numbers and proportions of positive tests for the various drugs and data on the prevalence of drugs in the bodies of people killed in road crashes. Neither of these indicators is useful for evaluating the efficacy and cost-effectiveness of roadside drug testing.

A thorough policy and program evaluation would look something like this:

- A statement of goals of the intervention
- A statement of the intervention logic
- A thorough description of the intervention
- Development of policy-relevant performance indicators covering:
 - o Inputs e.g., funds, equipment, personnel, etc.
 - o Activities e.g. roadside drug test numbers, locations, time of day, random vs targeted, etc.
 - o Outputs e.g., positive detections, false positives, sanctions applied, etc.
 - o Outcomes e.g., impact on incidence of road crashes, drug driving recidivism, self-reported prevalence of drug driving, community's and drug users' attitudes, etc.

Surely, if we are really dealing with a traffic safety issue, the key indicator is impact on the incidence of road crashes and injuries and fatalities in those crashes. Why has no one conducted an interrupted time series analysis, for example, on the Victorian data? The necessity for such an approach to evaluation seems to me self-evident and the failure to implement it difficult to understand.

Can we apply to illicit drugs the successful model of roadside breath testing for alcohol impairment?

An understandable response to anybody questioning the validity of policies covering roadside testing of oral fluids for illegal drugs is to point out that random breath testing for impairment has been highly effective in reducing road traffic crashes and fatalities. Sound evidence is available supporting this finding and, especially importantly, demonstrating the causal mechanisms in operation (19). Observers point out that, if we had not implemented roadside breath testing simply because it was a new initiative and therefore had not been evaluated, then we would never have achieved the great benefits to society produced by this intervention.

Drug driving is different, however. In the case of roadside breath testing, the evidence was already in place, from the Grand Rapids (20) and other studies. These studies had provided information on how alcohol not only impairs driving to such an extent as to significantly increase the risk of the crash, but also documented the dose-response relationships. This enabled policymakers to make decisions on cut-off levels for blood alcohol concentrations in drivers. The result is the 0.05g%, 0.08g% or 0.1g% cut-offs used in various jurisdictions for the purposes of a per se drink (not drunk) driving offence. Subsequent research has confirmed the appropriateness of the 0.05g% cut-off level that applies to most drivers in Australia (21).

The few case control studies that have been conducted provide little information on the contribution of illicit drugs to road crashes, let alone the levels of particular types of drug in the body that correlate with particular levels of impairment and with the relative risk of a crash. It is acknowledged that these studies are difficult to undertake and those that have been attempted have serious limitations, making their findings questionable (22). Culpability studies have been undertaken (12, 23, 24) and are frequently quoted as evidence for the strength and nature of the relationship between illicit drugs and driving, but far more is extrapolated from them than the studies actually reveal. They do not provide direct measures of relative risk and fail to deal with key confounders of the relationship between drug use and drug driving, particularly how willingness to engage in risky behaviour may be causally and independently related to both drug use and to road crashes. The methodological limitations of individual culpability studies, with different studies showing opposite results, militate against their usefulness for policy purposes (22).

As the European Monitoring Centre for Drugs and Drug Addiction concludes, the issues are complex:

...it is difficult to apply the [blood alcohol concentration] parallel to other psychoactive substances because of the vastly different pharmacological natures of the range of substances involved, the limitations of experimental and epidemiological research in trying to determine such a cut-off level, the ethical considerations involved in its enforcement, and the question of combining or separating drug abuse control and road safety measures. Specifically, it is unacceptable to some that a driver be punished for driving with an amount of drug that has no relevant effect on driving, while it is equally unacceptable to others to condone illicit drug use by stating that up to a certain threshold, it will not be punished...On top of all this complexity comes the finding that a considerable number of drivers have been found to have multiple drugs, including alcohol, in their blood, some combinations of which have been proven to have synergistic effects (18, pp. 128-9).

Conclusion

This commentary has addressed one domain of traffic safety policy. It is not an argument for or against the roadside testing of drivers for the presence of illicit drugs in saliva. If this initiative were found to be a cost-effective instrument for achieving traffic safety objectives I am sure that all readers would support it. My argument, however, is that roadside oral fluid testing for illegal drugs, the initiative known as 'random drug testing', has been developed and implemented without a transparent policy analysis underlying it. It is a highly intrusive intervention with significant implications for human rights. It does not have a sound evidence base in research and a program logic analysis raises questions as to the likelihood of achieving its traffic safety goals of reduced crash incidence, injuries and fatalities.

The Australasian College of Road Safety has formal policies covering drink-driving and the impacts of prescribed and over-the-counter pharmaceutical products on traffic crash incidence (<http://www.acrs.org.au/collegepolicies>). Considering the high prevalence in Western nations of driving after using the currently illegal drugs, and the fact that all but one of Australia's States and Territories have legislated to create a per se offence of having any detectable level of certain illegal drugs in the body, the College may care to consider developing a policy on roadside drug testing. In doing so it might address (1) the strength of the evidence base for this intervention in terms of the likelihood that it will reduce road crash incidence to such an extent as to be measurable at the population level, and (2) the desirability of conducting policy and program evaluation research into the existing roadside drug testing regimes.

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