



ANCD POSITION PAPER

Drug Testing

August 2013

Executive Summary

- Drug testing is used in a number of contexts in Australia and internationally. These uses include providing medical information within drug treatment, helping inform legal decisions, roadside drug testing, and detecting drug use among specific populations, such as in workplaces and schools.
- The aims which drug testing programs are proposed to meet, the rationale for their use, evidence of their effectiveness for meeting their aims, their other potential consequences, and the ethical and legal issues they invoke, all differ by context.
- Drug testing programs impose a burden on those tested, in terms of their infringement on individuals' bodily and information privacy. For a specific drug testing program to be acceptable, this burden must be outweighed by relevant factors present in the specific context of use. Such factors may include considerations of public safety or other significant public interests, or the consent of those undergoing testing.
- This paper focuses on drug testing as used within drug treatment, among parents in contact with child protection services, in schools, among welfare beneficiaries, and in the workplace.
- With regard to each of these contexts, the paper overviews the rationale for using drug testing or implementing a program of drug testing, the coherence of the rationale, the current evidence base for the use of drug testing in that context, and the ethical or legal issues raised.

- Within drug treatment, drug testing is primarily used in Australia to support medical decision-making. This is a valid medical usage to ensure that prescribed treatments will be safe and effective for patients. There is, however, a need to ensure that such testing does not outrun its medical use, and is used only to review and improve the individual's progress in treatment.
- Regarding parental drug testing to facilitate child protection decisions, drug tests may provide further information on particular families' situations. It is important that the use of drug testing in this context is cautiously considered. Where decisions to use drug testing are made within particular cases the information they provide should be considered supplementary to other information on the family situation. The possibility of false negatives or false positives needs to be carefully considered and addressed.
- There is little satisfactory evidence to support the use of drug testing in schools, but there are reasons for concern about potential negative effects and high costs, and evidence of other, non-intrusive methods that might better meet the aims of such drug testing programs. There should be a presumption against the use of drug testing programs in schools on the currently available evidence-base.
- There is no evidence that drug testing welfare beneficiaries will have any positive effects for those individuals or for society, and some evidence indicating such a practice could have high social and economic costs. In addition, there would be serious ethical and legal problems in implementing such a program in Australia. Drug testing of welfare beneficiaries ought not be considered.
- The evidence for the effectiveness of workplace drug testing programs to improve workplace safety is limited. There is potential for negative consequences for companies as well as employees, including high economic costs; and some evidence that other measures would be more likely to improve workplace safety. In addition there are problematic ethical and legal implications surrounding employee privacy. While the ANCD recognises that a stronger rationale and argument for drug testing of workers in safety-sensitive positions, or in positions of public trust and authority, can be given, there should be a presumption against a broader introduction of workplace drug testing.
- Drug testing programs are highly expensive. For example, the cost of implementing drug testing programs in Australian schools has been estimated be up to \$355 million. A program of drug testing welfare beneficiaries which operated for four months in Florida, USA, and discontinued benefits to those who tested positive, cost the state an estimated \$118,140, and ran at a net loss of approximately \$45,000. Drug testing programs are unlikely to have any economic benefits in most contexts.
- Whilst it is understandable why some might presume that drug testing is a useful strategy, it is high in cost, may have unintended adverse outcomes, and raises serious ethical and legal issues. Its drawbacks may be addressed, at least in part, if it is clearly demonstrated that drug testing effectively meets its aims and reduces risk. At least to date, however, the evidence does not support such a conclusion.

Introduction

Drug testing is used in a variety of settings in Australia and internationally. The aims of performing drug tests differ greatly by context, but include deterring drug use among specific populations, ensuring workers in safety-sensitive positions are not drug-impaired, screening particular populations in order to refer people who use drugs to treatment or other interventions, and supporting the decision-making processes of courts or state agencies.

Drug testing does, however, impose a burden on those tested. Undergoing a drug test can be invasive; it can violate individuals' bodily and information privacy; and many people experience it as humiliating or dehumanising. There is little to no evidence from controlled investigations that it is effective in meeting its aims in many of the settings in which it is used. Drug testing programs are often very expensive, and concerns have been raised about potential negative consequences.

The Australian National Council on Drugs (ANCD) is aware of the continuing calls to introduce drug testing programs in various settings, and has developed this position paper to examine the costs and benefits of drug testing, and drug testing programs. The ANCD supports evidence-based practice, and recognises the need for interventions introduced to be ethically acceptable, minimally intrusive, and developed consistently with best practice.

In considering whether and in what situations drug testing is acceptable, appropriate, or advisable, a number of factors need to be considered, and their relevance differs by context. These include, but are not limited to: the purpose of the drug testing; whether there is satisfactory evidence that drug testing is likely to fulfil this purpose; how people are selected to be tested; other (negative or positive) effects; the accuracy of testing technologies used; the availability of other methods for fulfilling the relevant purposes; and costs and cost-benefit ratios. Consideration also needs to recognise that since testing imposes a burden on those tested, the outcomes of testing should be sufficiently important to compensate for or outweigh this burden.

This ANCD paper focuses discussion on the use of drug testing in the contexts of drug treatment programs, child protection, people receiving welfare benefits, schools, and workplaces. The discussion examines features of these contexts relevant to the acceptability, appropriateness, and advisability of drug testing programs within each context. Before discussion of each specific setting, we provide background information on drug testing technologies and programs, and a brief discussion of some ethical and legal issues.

In reviewing Australian and international evidence relating to drug testing, the ANCD concludes that widespread adoption of drug testing should not occur, unless or until a stronger evidence-base emerges supporting its effectiveness, and there is information on how potential adverse outcomes and ethical difficulties can be addressed. A precautionary principle should prevail with regard to the introduction of any new drug testing programs. The ANCD acknowledges that there are reasons to use drug testing in some situations, such as for medical reasons related to treatment; and that a stronger argument for the use of testing can be given in other situations, such as roadside drug testing, or drug testing of workers in highly safety-sensitive positions. In cases such as the latter, drug tests should be one component of broader, rehabilitation-focused strategies to address potential harms arising from workplace drug use.

Drug testing technologies and programs¹

Drug tests can be performed on samples of the blood, breath (currently alcohol only), urine, saliva (more precisely, oral fluid), hair, and sweat. The methods differ in their windows for detection of drug ingestion. Hair and sweat testing are generally used to detect use over a period of weeks or months. Urine tests detect use during previous days or weeks, depending on the type of substance, while oral fluid testing detects use within a shorter period of hours or days. Table 1 provides indications of typical detection windows for different drugs according to one large Australian laboratory.

Drug	Urine test On-site	Urine test Lab-based	Oral fluid test On-site	Oral fluid test Lab-based
Cannabis (THC)				
Infrequent use	Up to 10 days	Up to 10 days	Less than 24 hrs	Less than 24 hrs
Chronic Use	30 days or longer	30 days or longer	Less than 24 hrs	Less than 24 hrs
Opiates	2-4 days	2-4 days	Less than 24 hrs	0-3 days
Amphetamines	2-5 days	Up to 2 weeks	Less than 24 hrs	0-3 days
Cocaine	2-3 days	2-3 days	Less than 24 hrs	0-3 days
Methamphetamines	2-5 days	2-5 days	Less than 24 hrs	0-3 days
Benzodiazepines	Up to 2 weeks	Up to 2 weeks	Less than 24 hrs	0-3 days

Source: Medvet Laboratories (2012)

Testing may be undertaken on-site using ‘point-of-collection testing’ (POCT) devices, or samples may be sent to a laboratory for analysis. In general, POCT devices are less expensive and provide more timely results, while laboratory analysis is more accurate and can better distinguish illicit from prescription drug use. These methods can also impact on detection windows (see Table 1).

These timeframes may have implications for the appropriateness of various drug testing programs. For instance, oral fluid testing has been endorsed in several industrial tribunal decisions as the most appropriate technique for workplace testing programs, because its shorter detection window is regarded as meaning it is more likely to overlap with impairment from drug use (for example, *Shell Refining (Australia) Pty Ltd vs CMFEU*; *Endeavour Energy vs Communications, Electrical, Electronic, Energy, Information, Postal, Plumbing and Allied Services Union of Australia and others*). Hair or sweat testing is used in some settings overseas where information on longer-term use patterns is sought, such as among parolees or for parental drug testing by child protection agencies.

It is worth emphasising that although matching drug testing method detection windows with the intended purpose of drug testing is a valid consideration, drug tests do not measure impairment. Tests detect the presence of a drug or its metabolites in a sample. This is distinct from measuring impairment and, in general, there is no way precisely to map drug test results onto impairment. The only exception in this regard, at present, is breath testing for alcohol, as the strong evidence base

¹ For more detail on topics in this section see Pidd and Roche (2011).

allows a conclusion that a blood alcohol content of 0.05mg per cent or higher indicates impairment (Pidd et al. 2011a). But for other substances, amounts ingested or the times at which it was ingested cannot be inferred, and many substances remain detectable long after the primary impairing effects have dissipated. There is no scientific agreement on what level of use would indicate impairment, and for some substances it is unlikely that such levels could be determined given the differing effects on individuals. Nor do drug tests provide information on whether or how a person's drug use has problematic effects on other aspects of their lives, or whether he or she is drug dependent. This limitation was well summarised more than 25 years ago by the US Council on Scientific Affairs:

Drug testing does not provide any information about patterns of drug use, about abuse of or dependence on drugs, or about mental or physical impairments that may result from drug use. (Council on Scientific Affairs 1987)

Any method of drug testing may result in false positives (incorrectly determining drug use has occurred) or false negatives (incorrectly determining drug use has not occurred). Testing devices and technologies are assessed in terms of their *sensitivity* (the proportion of positive samples correctly identified as such), *specificity* (the proportion of negative samples correctly identified as such), and *accuracy* (a combination of sensitivity and specificity). Pidd and Roche (2011) discuss several recent evaluations of drug testing devices and laboratories, which found widely differing levels of sensitivity, specificity, and accuracy among different commercial testing devices and for different substances. In a study focusing on urine POCT devices, for example, "accuracy for amphetamine detection varied from 66% to 100%, sensitivity from 16% to 100%, and specificity from 56% to 100% across urine devices. For cannabis, accuracy varied from 85% to 97%, sensitivity from 70% to 99%, and specificity from 90% to 100% across urine devices" (Pidd and Roche 2011). Laboratory testing, which is necessary to confirm any positive test according to Australian standards, is generally more accurate, but nor is it exact. One recent study which re-analysed testing samples in a large US hospital found there had been an error rate of 12 per cent (Pidd and Roche 2011).

Drug testing programs may be implemented in a number of ways, which can impact on their appropriateness in different contexts. Testing of a particular population (such as in the workplace, or of school students) may randomly select individuals, or be imposed on all individuals. Or testing may be targeted to individuals who meet particular criteria. For instance in workplace testing programs, testing may target those in safety-sensitive positions, or people who have been involved in accidents. Many school drug testing programs in the USA target students who are involved in athletics or other extra-curricular activities. Or, in some instances, testing will target those who are thought for other reasons to have problems with drugs or alcohol, as may occur in testing of parents engaged with child protection services.

Ethical and legal issues

This section provides a brief outline of the conceptual framework used in this paper to consider the ethical and legal issues involved with drug testing. We begin by recognising that drug testing imposes a burden on those individuals who undergo it. This burden is at least partly, and perhaps largely, constituted by a violation of those individuals' privacy. Drug testing violates privacy in the

senses of individuals' bodily privacy, and privacy of information.²

The right to privacy has been argued to be central to the fundamental values of liberal democracies, and legal analyses have derived privacy rights from commitments to democratic principles in Australia (Roche et al. 2008). Ethical analyses have also indicated the central role of privacy in democratic societies: respect for privacy has been analysed in terms of recognition of and respect for personhood; respect for individual agency; and the capacity of individuals to maintain their various relationships with others (Rachels 1975; Benn 1980; Reiman 1976). Bodily and information privacy are protected by law in Australia, including by laws relating to information privacy, assault and trespass, and defamation (Roche et al. 2008).

In recognising that drug testing does involve a violation of privacy, the ANCD also acknowledges that individuals' privacy rights are routinely regarded as being overridden by other concerns in various situations, and that our expectations of privacy differ by context. For instance, particular individuals' right to privacy is overridden in some situations by the needs of public safety. This explains, for example, why random drug and alcohol testing of drivers is acceptable;³ and why drug testing of airline pilots (and others in safety-sensitive positions) is more acceptable than of other employees.

The expectation that one can keep certain information private may thus be lowered or absent in situations where there are important interests at stake which conflict with this – and this may include interests other than public safety. For instance, withholding evidence in criminal enquiries, against the interests of justice, is not considered reasonable, even if divulging such evidence involves divulging information that would normally be considered private. Another example is people who hold positions of authority and public trust, who may reasonably be expected to relinquish their privacy to some extent or in some respects. Such 'role-specific' factors can sometimes override the right to privacy, which may explain why drug testing of police, correctional workers, or customs officials is often regarded as more acceptable than of other workers (see Prenzler 2006).

In some contexts, consent to being tested may also be ethically relevant (though nor should we consider consent a justificatory 'catch-all'). This may be another part of the reason that expecting law enforcement officials to submit to drug testing is more generally accepted than testing of other workers, since people in these kinds of employment could be regarded as having given de facto consent to lowered privacy in virtue of their employment decisions. Similar considerations may apply to drug testing of elite sportspeople.

These examples show that, even though drug testing infringes upon privacy, this does not imply that it is never acceptable. Rather, it implies that when considering any proposal to perform drug tests in some particular context, we need to consider what feature or features of that context could justify that infringement. The most usual, and perhaps most compelling, considerations in this regard likely relate to public health and safety, but there are other considerations which may be compelling in

² The testing situation itself can also be experienced as intrusive, particularly for urine testing, as urine samples may need to be given under supervision. Concerns have been raised about gender and cultural sensitivity of these supervision situations, as well as the potential for sexual misconduct.

³ Whilst the ANCD acknowledges the acceptability of random roadside drug or alcohol testing, it should also be noted that the evidence base for testing for drugs other than alcohol is less robust, and that there are no agreed levels at which the presence of other drugs indicate impairment.

some contexts and not in others.

Of course, the ethical acceptability of imposing drug testing onto a particular group of people does not only depend on the presence or absence of such justifying factors, since as we have recognised, it does constitute a burden and an infringement on privacy rights. That is, even where drug testing is ethically and legally justifiable, it may not necessarily be advisable. As such, the ethical acceptability of drug testing is also affected by the evidence on how likely such tests are to meet their aims, the extent and nature of unintended adverse outcomes and, importantly, whether there are *other* methods which could be used to meet those aims and which would not involve an infringement of individual rights.

In the following sections we examine the use of drug testing in different contexts, with differing aims, rationales, evidence of effectiveness, potential positive and negative effects, and particular ethical and legal issues.

Drug testing in drug treatment

Drug testing is used in some drug treatment contexts; in Australia this primarily applies to people on pharmacotherapy programs. The aim of such testing is to obtain information to support medical decision-making. That is, clinicians use drug tests to establish uptake of prescribed medication and the presence of any non-prescribed drugs in a patients' system. This testing provides information relevant to ensuring that the treatment regimes prescribed will be safe for patients and best meet their medical needs.⁴

Some international studies have examined another use for drug testing in treatment contexts, involving linking negative test results to rewards, or positive test results to punitive measures, as a way to support treatment aims. There is a strong evidence base for positive reinforcement through linking treatment adherence to rewards (also known as 'contingency management') (Hartzler et al. 2012). Punitive uses, where drug test results are linked to negative outcomes, however, may not have positive effects in the long term (Defulio et al. 2009). The punitive and coercive nature of such programs can imply a lack of trust in the patient, which can have its own consequences. The ANCD does not support widespread adoption of such punitive uses, noting their limited efficacy coupled with the potential for serious negative consequences for individuals in such approaches.

Australia's pharmacotherapy guidelines recognise this lack of evidence, and state that drug testing of people on pharmacotherapy programs should only be used for medical purposes; it is not to be used as a deterrent or linked to punitive measures. The *National Pharmacotherapy Policy*⁵ states:

Urine testing should only be undertaken with good reason, such as in the initial

⁴ Drug testing is also undertaken to assess the efficacy of some treatments for reducing use of illicit drugs or assess treatment compliance in the context of research. This will not be addressed in this paper as such use falls under research regulations. It may also be used in research contexts to confirm confidence in self-report. There has been some criticism of this use as it appears to assume that research participants are not truthful, and there is inconsistent evidence about whether it adds evidentiary value.

⁵ Most jurisdictional documents either repeat this advice, or refer to the national policy.

assessment of an individual, to confirm the clinical history or as part of program evaluation. Urine testing can also be useful when clients are unstable (such as in the early stages of pharmacotherapy treatment) and when there is some uncertainty about their drug use. There is little evidence to support the use of urine drug monitoring as a deterrent against unsanctioned drug use. Test results should be used, in collaboration with the client, to review and improve the individual's progress in treatment. (Australian Government Department of Health and Ageing 2007)

The current *Clinical Guidelines and Procedures for the Use of Methadone in the Maintenance Treatment of Opioid Dependence*, a national document produced by an expert committee, repeats these points, adding that "Methadone programs should not be punitive". It also clarifies that although Medicare allows for 21 urinalysis tests⁶ per patient per year, "It is expected that the average number of tests will be significantly lower than this maximum and will decrease the longer a patient has been in treatment" (Henry-Edwards et al. 2003).

Despite this, patients may be asked by the prescriber or provider of a pharmacotherapy to provide a test sample at their discretion, and the use of tests may at times not conform to these guidelines. If testing is overused, an unnecessary burden is placed on individuals in treatment (and there are additional unnecessary costs for the health system). There are also indications that people on pharmacotherapy programs are not always properly informed of the purpose of drug testing or what will happen to the results. Where this purpose is, or is misunderstood as, surveillance or punishment, this could affect treatment uptake or have other undesirable effects on treatment engagement, retention, and effectiveness of programs. While drug testing can provide important medical information to clinicians, testing should be limited to that which is needed for treatment in line with national policies and guidelines, and care needs to be taken in making the purpose of any testing undertaken transparent to those tested.

Drug testing and child protection services

Drug tests are sometimes used among parents of children who are considered 'at risk' by child protection agencies. In Australia such testing is not broadly used, and usually occurs in relation to decisions by child protection agencies to remove or restore a child to his or her parents, where the parent has some history of drug problems. Again, the aim of these tests is to facilitate decision-making. Drug testing may provide additional information on parental drug use that could be relevant to a child's welfare (Moller et al. 2010). The rationale for seeking to assess drug use is that people who are using drugs may be less able to care for children; a significant proportion of substantiated child protection cases have been found to involve drug or alcohol problems (Scott 2002). A second aim of programs in some locations (such as Canada, see Fraser (2001)) is to help families stay together in the longer term, or improve overall parenting, through identifying parents who have drug or alcohol problems and referring them to treatment. Some have also suggested that drug testing could form part of an approach which uses improving one's parenting capacity as a motivator

⁶ The current (April 2013) number available per year is 36, though this is subject to change (personal communication, Department of Human Services, 11 April 2013).

to address alcohol or drug problems (Famularo et al. 1988).

Current Australian policies have drawn on a 2006 study undertaken by National Drug and Alcohol Research Centre (NDARC) researchers into the costs and utility of parental drug testing in child protection (Wood et al. 2006). This study recognised that although there are established correlations between parental drug or alcohol problems and child neglect or maltreatment, there is no clear causal link between the two. It is important to remember that parents with drug or alcohol problems do not necessarily have lower parenting capacity than others (Testa and Smith 2009). Furthermore, drug test results do not identify problematic drug use. They provide biological information at a particular point in time, but without contextual information on any drug use detected, or on other issues that may be present. The potential for false negative or false positive assessment of risk based solely on drug tests is evident.

Evidence surrounding whether parental screening or treatment for alcohol or drug problems linked to drug testing programs reduces the likelihood of future child maltreatment or neglect, or aids children in other ways, does not provide clear guidance. Though some studies have indicated positive effects for children and families, there are some conflicting findings (with some studies actually reporting a negative effect on children of parental drug or alcohol treatment) (Testa and Smith 2009). A complication in such research is that among the parents of children engaged with child services who have drug or alcohol problems, a number of other factors may be present that are also risk factors for child neglect or maltreatment. These include low education levels, mental health problems, poverty, domestic violence, and social isolation (Scott 2009; Testa and Smith 2009). As such, addressing drug or alcohol problems while neglecting other difficulties experienced by families may have limited results.

Nonetheless, as the NDARC study acknowledged, in some cases, drug use can impact negatively on parenting capacity, and this is more likely in cases where there is heavy, frequent use or dependence (Wood et al. 2006). In line with such considerations, as well as detailed analysis of research results, Wood and colleagues (2006) concluded that drug testing may be of use in cases where there is reasonable suspicion of drug use, but that blanket parental drug testing by child protection services would be of limited use. Blanket testing would also have the potential for negative consequences, such as undermining relationships between families and case-workers. Drug testing should therefore be considered on a case-by-case basis, as part of a broader strategy, but not routinely undertaken, nor uniquely relied upon. The report also provides a number of recommendations for best practice, including repeated tests over a period of time (to detect patterns of drug use more likely to affect parenting). It is important that this information is regarded only as one source of information among others of family contexts and circumstances, not as a sole basis for decision-making. Given the lack of evidence that parental drug testing programs are effective for their aims, the ANCD believes that use of drug testing should be cautiously considered case-by-case, until further evidence is available.

In regard to using drug tests as motivators to reduce or cease use, via a linkage to the motivation to look after one's children, it is important to note that drug testing *itself* does not reliably reduce drug use (Wood et al. 2006). Whilst the powerful motivation to keep one's children might potentially be harnessed in ways that are beneficial to children, as well as their parents, the use of drug testing in

the development of this idea into a workable and effective program has not been demonstrated.⁷ Since the removal of children from parents can be devastating for all parties, with significant long term effects, further research on how parents with drug or alcohol problems can be supported in treatment is worthwhile. There is also a documented need for more family and child sensitive alcohol and drug treatment services, and further integration of child services and adult alcohol and drug services (Scott 2009). Whether drug testing, or other interventions or screening methods, could play a role in such support is one question within broader issues which require a more developed evidence-base.

Drug testing in schools⁸

Random drug testing of school students has occurred in Russia, the Philippines, and in independent boarding schools in Britain (Gerada and Gilvarry 2005; DuPont et al. 2013). In Europe some schools have used ‘for-cause’ testing, i.e. testing of students who are suspected for other reasons to have a drug use problem. In the USA, about a quarter of school districts are thought to have student drug testing policies and half to test student athletes, and random testing of athletes and others engaged in extra-curricular activities has been found reasonable by the US Supreme Court (DuPont et al. 2013). In Australia, drug testing has been introduced by several private schools.

The aim of such testing is to improve the health and wellbeing of young people by identifying drug problems. As the value of early interventions in drug use problems has been shown, testing is usually regarded as a screening mechanism, enabling those testing positive to be referred to appropriate treatment or interventions (Roche et al. 2008). It has also been argued that drug testing programs could act as a deterrent to drug use initiation, and provide students with a way to resist peer pressure to try drugs (Roche et al. 2008).

Issues with this rationale include that the deterrent power of drug testing (and the proportion of students who use drugs who experienced peer pressure) are not known; and that drug tests can often be evaded (depending on how programs are implemented), or samples substituted or manipulated (Roche et al. 2008). It is also important to note that the proportion of school students who regularly use drugs may be too low for random testing to identify any significant proportion of drug users (Roche et al. 2008). In the most recent Australian Secondary Students Alcohol and Drug Survey, while 15 per cent of students aged 12–17 had tried cannabis in their lifetime, few of these were counted as regular cannabis users (using cannabis more than 10 times in the previous year): 4.6 per cent of males and 2.7 per cent of females were regular users. Rates for other illicit drugs were much lower. Lifetime use was reported as 3 per cent for hallucinogens, 3 per cent for amphetamines, 2 per cent for opiates, 2 per cent for cocaine, and 3 per cent for ecstasy; but proportions of those using these drugs regularly were all indicated to be less than 1 per cent (White and Bariola 2012).

⁷ See Dawe et al. (2003) for detail on the Parents Under Pressure program, which can be described as utilising this idea, but which does not involve the use of drug testing.

⁸ This section draws heavily on a comprehensive report on this topic published by the ANCD in 2008, *Drug Testing in Schools: Evidence, impacts and alternatives*, undertaken by researchers at the National Centre for Research and Training on Addiction (Roche et al. 2008). See the report for more detail on this topic.

The evidence surrounding drug testing in schools is overall of low quality, and results are not consistent (Roche et al. 2008). Declines in drug use were reported in some schools with drug testing programs. These reports generally relied on the number of positive tests declining over time, however, and this may have had other causes for which studies did not control. These include the presence of other interventions introduced alongside testing, and increased test evasion or sample substitution by students. Other studies have found no correlation between testing and reduced drug use. Roche and colleagues concluded that “there are no sound research data to provide evidence of its effectiveness” (2008).

In addition, concerns have been raised about potential negative consequences of drug testing of school students, although it should be noted that clear evidence on the probability or extent of these consequences is also lacking. Students may have to reveal other medications they have been prescribed, which involves a breach of confidentiality. There is the potential to divert students into use of other drugs (such as new synthetic drugs) which are not tested for or are less likely to show on tests, but may be more harmful – or to divert students from illicit drug to alcohol use (Roche et al. 2008). Many students find the experience of being drug tested distressing, and this could affect a much broader population than that affected by drug use problems. The distrust of students shown by random testing may be detrimental to the learning environment; impact on student-teacher (or even child-parent) relationships negatively; create a negative school environment; or make any drug use more secretive, discouraging students from asking for help (Roche et al. 2008). Overall, testing may increase disconnection from schools which, paradoxically, is a risk factor for alcohol and drug problems (as well as for other risky behaviours, depression, and poor health) (Roche et al. 2008). Drug testing may also identify people who have used drugs casually or experimentally, but do not have a dependence problem. This could in some cases transform such use into something more problematic, or be harmful in other ways (Gerada and Gilvarry 2005).

Further, even though student drug testing is not intended to be punitive – indeed, this would undermine its stated aims – it may become so if implemented on a larger scale. In the USA, despite federal guidelines stating that student drug testing should not be used punitively, a large survey of how positive test results were dealt with by US public school districts found that (in addition to non-punitive outcomes) 45 per cent notified law enforcement, 31 per cent suspended students from school, and 65 per cent suspended students from athletic programs (Ringwalt et al. 2009). Drug testing could thus contribute to increasing suspensions or expulsions, among those young people who are most in need of supervision.

Drug testing programs of this kind are also very costly, and “likely to exceed most schools’ entire expenditure on drug education, prevention or counselling” (Gerada and Gilvarry 2005). Roche and colleagues developed a detailed cost estimate for different types of drug testing program in Australia. They estimated costs of between \$12 million and \$302 million using urine tests; or from \$16 million to \$355 million using oral fluid tests, per year or testing cycle for all schools (the lower figures are for ‘for-cause’ testing; the higher for testing whole school populations) (Roche et al. 2008). In one US district, the drug testing program cost \$35,000, and detected 11 drug using students (Gerada and Gilvarry 2005).

Nonetheless, such programs continue to be introduced, and in the USA in particular much weight has reportedly been given by policymakers to several small, poor quality studies (Gerada and

Gilvarry 2005). The expansion of programs may also be partly driven by a high acceptability among parents (DuPont et al. 2013). Some private schools in Australia have introduced drug testing programs which operate with the consent of parents and/or students. Australian law does recognise children's privacy rights more strongly than does US law. In the USA, children have lower expectations of a right to freedom from government interference (Roche et al. 2008). Australian law, in contrast, recognises limits to schools' duty of care outside of school hours, and in case law it has been recognised that there are reasons to show trust to school students (including aiding their development). Australia also recognises the International Convention on the Rights of the Child, which states that a child should be free from "arbitrary or unlawful interference with his or her privacy" (cited in Roche et al. 2008). As such, any attempt to broaden drug testing of school students significantly in Australia is unlikely to be legally acceptable. Private schools who may be considering implementing a drug testing program should have access to information on the evidence and issues surrounding such programs, and program costs.

In summary, there is little reason to conclude that drug testing in schools would meet its aims in supporting the health and welfare of young people. There is however reason to conclude that such programs would be high in cost and would invoke complex legal and ethical issues, and the potential for these programs to have negative effects for young people mandates caution. In addition, there are alternatives available for meeting the aims for which these programs are proposed. These include brief interventions and motivational interviewing; and improved, evidence-based school drug education programs. Unlike drug testing, some of these programs have been subject to rigorous evaluation and been found effective (Roche et al. 2008). We therefore conclude that there should be a presumption against the introduction of drug testing in schools, unless or until more satisfactory evidence can be offered, and the legal and ethical problems and potential for adverse effects addressed.

Drug testing of welfare beneficiaries

Drug testing of welfare beneficiaries has been proposed in a number of countries, including Australia. In the USA, a number of states have recently passed legislation enabling drug testing of welfare beneficiaries: Florida and Missouri in 2011; Arizona, Georgia, Oklahoma, Tennessee, and Utah in 2012; and Kansas and Texas thus far in 2013. This is despite the program in Florida having been challenged by the American Civil Liberties Union (ACLU) and ruled unconstitutional in a Federal District Court. In the United Kingdom, welfare beneficiaries may be required to undertake drug testing if they have breached other welfare conditions (such as undertaking job searches); a drug test can be ordered by welfare agency workers as part of larger programs which seek to increase employment participation by identifying and then removing barriers to work (Harris 2010).

The aim of drug testing welfare beneficiaries is most often stated to be to identify people who use drugs in order to refer them to treatment, with the longer-term aim of increasing their capacity to find and maintain work. This can be regarded as part of broader trends in employment participation policies towards promoting the 'active participation' of welfare beneficiaries in seeking work. Some of the proposed programs make such treatment either mandatory or coerced, denying or limiting

benefits for those who do not take up or complete treatment. Other programs simply remove benefits from people who test positive or refuse to be tested. As such, another aim of drug testing welfare recipients is deterrence. In addition, such programs are sometimes proposed with the aim of protecting state funds from being used to finance drug use or maintain drug dependency, and reducing overall welfare spending.

There is limited evidence available on the effectiveness of drug testing welfare recipients for deterrence of drug use, increasing employment participation, or reducing welfare spending. There are, however, several sources that are informative, or provide evidence indirectly bearing on these programs. First, some data is available on the program of drug testing welfare applicants in Florida, which operated for four months in 2011 before its enabling legislation was overturned. The ACLU has stated that of 4,086 people tested in this time, 108 (or 2.6 per cent) tested positive for drugs, most commonly marijuana. Forty additional people did not take the test. Under this program welfare applicants needed to pay for the test themselves initially, and those testing negative were then reimbursed by the state. The total cost to the state of the program was estimated to be \$118,140 — around \$45,000 more than the state would have paid in benefits to those whose benefits were discontinued after testing positive (Bloom 2012). Data on outcomes for those denied benefits, treatment referrals, and related matters are not available.

An analysis of some indirect evidence relating to drug testing welfare recipients was developed by a group of Canadian experts in response to a policy proposed in Canada in the early 2000s. They argued that the policy, which involved mandatory drug testing linked to mandatory treatment, involved a “simplistic perspective of the nature of addiction” (Giesbrecht and MacDonald 2001). The group recognised that there is evidence to suggest that treatment of people with drug problems could lead to better employment outcomes, and that mandatory treatment would likely increase treatment uptake. However, they also discussed flaws with the rationale for drug testing welfare recipients. First, they noted a lack of clear evidence that drug dependence, or drug use-related problems, are more prevalent among people on welfare than among the employed; indeed, a classic study estimated that in the USA about 70 per cent of people who use drugs were employed (in Giesbrecht and MacDonald 2001). In Australia, 25 per cent of unemployed people and 16 per cent of employed people reported using an illicit drug in the previous year in 2010 (Australian Institute of Health and Welfare 2011; see also Pidd et al. 2008b). Use in the previous year does not, however, clearly relate to having drug use-related problems, or to dependence. Although there is evidence that associates unemployment with drug use, particularly heavy or dependent use, this does not imply that any use of drugs will decrease employment capacities. In 2010, 14.7 per cent of Australians — around 3 million people — reported having used an illicit drug in the previous year, a much higher number than those whose employment capacities are affected by drug use. As such, there is no clear evidence that drug use in and of itself is a barrier to employment for a significant proportion of people — nor that it is a more significant barrier than other factors, such as transport problems, mental or physical health problems, or discrimination.

Other issues with the above rationale are evident when we consider how any such program would operate. Since having used a drug does not in itself mean that a person’s employment capacities are affected by drug use, where drug testing of welfare beneficiaries did detect use, further clinical assessment would be needed before any action was taken. As well as adding to costs, this reminds

us that it is not appropriate for treatment decisions to be made by government workers or agencies that do not have relevant medical or specialist training (Giesbrecht and MacDonald 2001).

There would also be reasons for serious concern about the negative consequences of denial of benefits on the basis of a positive test. Some studies undertaken in the USA indicate that denying benefits to people who are drug dependent could result in increases in poverty, crime, and homelessness, and in higher health and social costs. These are serious consequences both for individuals losing benefits, and for the general community. One study of people whose welfare benefits were discontinued when a decision was made to no longer count substance dependence as a disability reported worsening psychiatric comorbidities among this group (Giesbrecht and MacDonald 2001; see also Watkins and Podus 2000). This study also found that drug use levels remained the same over time among those who had lost their benefits. In comparison, among a control group of people who retained their benefits (due to the presence of another recognised disability), drug use levels fell from 75 per cent to 63 per cent. This undercuts the assumption that having welfare benefits could encourage drug use (Watkins and Podus 2000; see also Harris 2010).

Finally, but importantly, such programs are highly problematic in ethical and legal senses. Even leaving aside arguments relating to welfare rights, making welfare payments conditional on abstinence from drugs is not a fair policy, because it does not plausibly take into account the commonality of relapse into drug use among people who are dependent. Such programs make assumptions about the nature of choice and drug use that do not fit with our knowledge of drug dependence. It is, perhaps, reasonable that welfare beneficiaries can expect some loss of privacy, such as in reporting details of their income and other personal details to welfare agencies. But the expectation that beneficiaries divulge such information (and meet other conditions such as undertaking job searches) is very different from a requirement to allow an invasion of bodily privacy using tests of a humiliating nature. This recognition is particularly important within a system in which it is important to promote resilience and empowerment among clients – but which, recent research has indicated, is already experienced as dehumanising, humiliating, and belittling to engage with for many people (Murphy et al. 2011). Such experiences can be particularly damaging to those experiencing drug use problems, and be counterproductive to treatment aims, as well as employment aims. The proposal to drug test this group is of serious concern as an additional imposition upon a segment of society that already bears so many burdens, and is heavily monitored. Furthermore, it is unlikely that such a policy could currently be legally instituted in Australia, as severe dependence on drugs has been recognised as a disability for the purposes of the *Disability Discrimination Act 1992*.

Drug testing of welfare beneficiaries thus lacks evidence as a method to support employment participation or to reduce drug use or related harms. The small amount of (direct and indirect) evidence available seems to indicate that it is more likely to increase harms and costs, both to welfare beneficiaries and the general public, than it is to achieve its stated aims. The ANCD therefore believes that drug testing of welfare beneficiaries is based on a faulty rationale and incorrect assumptions about people who use drugs, the nature of drug dependence, and the effects of drug testing, and would emphasise that drug testing welfare beneficiaries is legally and ethically questionable.

Drug testing in the workplace

In Australia, the practice of drug testing employees in the workplace primarily occurs within industries where work can be safety-sensitive, such as mining or transport. In some industries, such as aviation, drug testing of those in safety-sensitive positions is mandated by legislation. Police, correctional workers and customs officials may also be tested, and there have been proposals to expand testing to other occupations, such as teachers, nurses, or office workers within the mining and transport industries.⁹

Aims of workplace drug testing

The most usual aim of workplace drug testing programs in Australia is to improve workplace safety. As impaired workers may cause workplace accidents, injuries, and fatalities, identifying and removing impaired workers is a safety measure. Drug testing has also been proposed to improve safety through deterring drug use among workers. Organisations have clear interests in preventing such harms (which include but are not limited to their financial interests), and are obliged by workplace health and safety legislation to ensure the safety of their workers and the general public. In some cases, employee drug testing may also aim to ensure employee integrity or trustworthiness, most notably in the drug testing of law enforcement officials.

A series of rulings by industrial tribunals, which have shaped Australia's approach to workplace drug testing, have indicated that the above are appropriate aims of workplace drug testing programs. Such decisions have recognised that, even within industries where work may be safety-sensitive, employers should not attempt to detect drug use that occurs outside of work and has no impact on job performance: employers should not police their employees' private behaviour, or seek to impose on them any particular moral or lifestyle choices¹⁰ (this does not apply to drug testing for the purpose of ensuring integrity for some kinds of positions; discussed further below). Nor is there a basis in Australia to drug test for the purpose of increasing productivity. This is partly because workers' productivity can be (and in workplaces generally is) assessed by other means, and in any case drug tests do not provide direct information bearing on productivity. But it also reflects that such an aim is not one that could justify the infringement of privacy involved in testing (see Independent Inquiry into Drug Testing at Work 2004; Privacy Committee of New South Wales 1992).

Prevalence and harms of workplace drug use

⁹ We do not consider drug testing in sport directly in this paper, as the drugs of concern, technologies used, and resources available for testing of elite sportspeople mean the issues are quite different. However, we note increasing uses of drug testing within club-level sports, and reports of increases in the use of performance-enhancing drugs in the community, as issues of concern; and consider the issues surrounding drug testing in sports to partly overlap with those considered in this section.

¹⁰ In this regard, Australia differs significantly from the USA, where there is a legislative basis for testing purely for the purpose of ensuring that employees do not use drugs, in the *Drug-Free Workplace Act 1990*; comparisons with the USA may be part of the impetus for Australian programs, but the legal situation differs significantly.

Research on the extent of workplace and workforce drug use in Australia has been undertaken on a population scale at the National Centre for Education and Training on Addiction (NCETA), drawing on data collected in the National Drug Strategy Household Survey (NDSHS) every three years. In addition, a number of studies have investigated drug use within specific sectors or industries. Secondary analysis of data from the 2007 NDSHS found that:

- the workplace was the usual location of alcohol consumption for 8.7 percent of workers;
- the workplace was the usual location of illicit drug consumption for 0.9 percent of workers;
- 5.6 percent of employed respondents had attended work under the influence of alcohol in the previous year; and
- 2 percent of employed respondents had attended work under the influence of illicit drugs in the previous year. (Pidd et al. 2011b)

Variables associated with using drugs at work or attending work under the influence of drugs included being young, male, never married, having no children, and using more than one drug (Pidd et al. 2011b). Some sectors and occupations also had significantly higher rates of drug use at work or attending work under the influence of drugs. Illicit drug use at work was most commonly reported by those in the transport (1.9 percent), construction (1.5 percent), and hospitality sectors (1.4 percent). Alcohol use at work was most commonly reported in the hospitality (18.6 percent), financial services (14.7 percent) and services sectors (11 percent) (Pidd and Roche 2011). Other studies have raised concerns about drug use among transport workers, agricultural workers, and the 'fly-in-fly-out' workforce, among others (for example see Pidd et al. 2008a; b; Davey et al. 2007; Mayhew and Quinlan 2006; Pedrana et al. 2008).

There is some data available indicating that drug use is associated with increased absenteeism and lower productivity, and employer interest in drug testing programs internationally was partly stimulated by such evidence. Early estimates of the effects of drug use on productivity, however, are now thought to have over-estimated significantly (DeCew 1994). Analysis of the 2004 NDSHS found that one percent of the workforce reported illicit drug-related absenteeism, and 3.7 percent reported taking at least one day off work in the three months prior to the survey due to alcohol use (Pidd et al. 2008a). Employees who used illicit drugs were more likely to report absenteeism from illness or injury than non-drug using employees (Pidd et al. 2008b). Alcohol-related absenteeism has been estimated to cost between \$437 million and \$1.2 billion per year, and worker illnesses attributed to drug use to cost \$2 billion annually (VicHealth 2012).

There is a small amount of evidence surrounding the role of drugs in workplace accidents, injuries and fatalities, but this evidence is often methodologically limited. Some research studies (including international studies) have indicated that workers who engage in risky drinking are more likely to be involved in workplace accidents, although this research has typically needed to measure overall alcohol or drug consumption levels or patterns, rather than workplace impairment (Pidd and Roche 2011). A large Australian review estimated that between 3 and 11 percent of non-fatal workplace injuries in Australia were associated with high-risk alcohol use (VicHealth 2012). The literature review conducted by NCETA concluded that while it is likely that drug use does contribute to

accidents, injuries and fatalities, other factors such as workload, fatigue and poor working conditions are likely to make greater contributions (Pidd and Roche 2011). This conclusion is consistent with that of an 18-month independent inquiry into workplace drug testing undertaken in the United Kingdom in the early 2000s (Independent Inquiry into Drug Testing at Work 2004).

Effectiveness and cost effectiveness of workplace drug testing

The available evidence from well-controlled studies on the effectiveness of drug testing in the workplace for improving safety is inconclusive, but there are some indications that its effectiveness is likely to be limited. Some studies have demonstrated a correlation between workplaces having a drug testing program, and reduced rates of accident or injury. However, other studies have found no effect or a small effect of the existence of a drug testing program on accident and injury rates. In general, those studies which have found limited or no correlations have been methodologically stronger (Pidd and Roche 2011).

Similarly, research into the effectiveness of drug testing for reducing drug use among employees is limited. Several studies have demonstrated that workplaces using drug testing often see a decline over time in the rate of positive test results. However, there is also some evidence to indicate that rates of positive drug tests may not accurately reflect actual rates of drug use in the workforce (Walsh 2008). This suggests that declines in positive test results may be at least partly due to workers developing methods of evading testing or substituting specimens (Berge and Bush 2010), or switching to using drugs for which they will not be tested.

Workplace drug testing is unlikely to be cost-effective for most workplaces or positions. The costs of employee drug testing differ depending on the type of testing used and its method of implementation; but similarly to the school testing costs described above, they are likely to be high. As well as the costs of drug testing devices and laboratory confirmations, there are costs in staff time to administer and take tests, training staff in test procedures, test preparation times, and costs of test tracking and recording. Gains from employee drug testing programs are difficult to estimate given the issues noted above with measuring their effects. However, cost-effectiveness studies conducted for programs in specific organisations or sectors have indicated that drug testing is unlikely to be a cost-effective way to prevent or reduce accidents, injuries, or fatalities, or to reduce employee drug use. For example, one program in the USA detected one drug user among 2,392 people tested, at a cost of over \$93,000 (Pidd and Roche 2011). Pidd and Roche suggest that the rate of drug use in the workforce may be too low for drug-testing programs to be likely to be cost-effective. However, the cost-effectiveness of workplace drug testing may also differ for safety-sensitive positions (Pidd and Roche 2011).

No reliable and sufficiently relevant studies on the effectiveness of drug testing of police or others in positions of authority or public trust have been located.¹¹ The cost-effectiveness of such programs is also likely to be very difficult to measure.

¹¹ One study indicating reduced illicit drug use among police in Afghanistan associated with drug testing has been published (Arfsten et al. 2012), but the context of drug use in Afghanistan prohibits making inferences from this result to other contexts.

Unintended consequences

Workplace drug testing may have unintended negative consequences for companies and employees. There is little research on these consequences, but here we note some negative consequences which may derive from implementing drug testing programs. Surveys undertaken in the USA indicated that workers experienced being drug tested as humiliating, as an invasion of privacy, or as displaying an undeserved lack of trust by the employer (Comer 1993). A large-scale survey of companies with drug testing programs “reported employee resentment as a major problem” (Comer 1993), and other studies have noted that job applicants who are drug tested may react by being less loyal and productive (Roche et al. 2008). Another US study found that companies with drug-testing programs were overall 29 per cent less productive than companies without such programs (but note that this study did not establish a causal relationship between drug testing and productivity) (Shepard and Clifton in Pidd and Roche 2011). Shepard and Clifton (1998) argue that where the type of program introduced is not acceptable to workers, it may reduce employee loyalty, morale and productivity, or have negative impacts on workplace culture or relationships between managers and staff.

This is consistent with the experience of some Australian companies who have introduced drug testing of workers in safety-sensitive positions, which experienced problems of divisiveness in the workplace, particularly when management or some groups of workers have not needed to undergo testing (e.g. see Holland 2003). In some cases, legal or industrial action has resulted when workplace drug testing has been introduced. Individual employees may mount legal challenges when dismissed or disciplined on the basis of positive drug tests results, which carries costs for employers (and underscores the importance of undertaking confirmatory tests of any positive results). False positives could result in errors that are costly to both individuals and to companies. There have also been a number of industrial disputes in Australia when companies have attempted to introduce drug testing, with unions disputing whether and how employers can impose drug testing requirements on employees. These challenges can be very costly as well as disruptive of work (examples include *Shell Refining (Australia) Pty Ltd vs CMFEU*; *Endeavour Energy vs Communications, Electrical, Electronic, Energy, Information, Postal, Plumbing and Allied Services Union of Australia and others*; *South Blackwater Coal vs CMFEU & CEPU*; *Holcim Australia v Transport Workers’ Union of New South Wales (TWU)*).

Other negative effects, primarily for employees themselves but impacting on companies, include that drug testing can increase employee stress and alienation. This is obviously a negative effect in itself, but has also been argued to potentially contribute to increased drug use (Comer 1993). Workplace drug testing could also encourage employees to switch to other drugs to avoid detection. In Australia there are anecdotal reports of workers switching from cannabis to methamphetamine use, as methamphetamine has a shorter window of detection; or from cannabis to synthetic cannabinoids, some of which may not appear on drug tests. Such trends are of concern, since some drugs which have a shorter window of detection are more dangerous, and the risks of emerging synthetic drugs are unknown.

Conclusions

Workplace drug testing violates the bodily privacy of employees, and can be considered to violate information privacy whenever it reveals information about an individual that is not relevant to the performance of his or her job. This may include drug use that occurs outside of work hours and has no impact on the employee's job performance, but also the use of prescription medications, and other health issues. Any workplace drug testing programs in operation need to be implemented in such a way that this information cannot impact negatively on employees, and is stored securely and destroyed as appropriate.

As discussed above, we recognise that privacy rights can be overridden by competing interests in some situations. In the workplace, such potentially overriding factors include efforts to ensure public safety, and the integrity of people in positions of public trust and authority. De facto 'consent' associated with role-specific lowered expectations of privacy may also be a factor with regard to the latter. But, even where workplace drug testing is justified by such factors, it may nonetheless not be advisable. Employers considering implementing such programs should be made aware of the current evidence-base on the effectiveness and cost-effectiveness of workplace drug testing programs for improving safety, including its high hidden costs. It is also important that such testing does not displace a focus on other ways of improving workplace safety, such as addressing other, reportedly more significant safety risk factors. These include long shifts, dirt, noise, and negative workplace culture or conditions. The Independent Inquiry in the United Kingdom noted evidence that the most effective way to improve workplace safety was likely to be improving management systems (this was also indicated to be the most effective way to increase productivity and reduce absenteeism), and that this would be far more cost-effective for many companies than drug testing programs (Independent Inquiry into Drug Testing at Work 2004).

Furthermore, any drug testing programs that are introduced should be implemented in such a way as to minimise burdens imposed on those tested. This could include, for example, minimising the invasiveness of testing by careful selection of testing methods (Pidd and Roche 2011).¹² Research undertaken at NCETA has derived a number of more specific principles for best practice for workplace drug testing programs. They include linking of results to counselling and assistance rather than punitive outcomes, allowing for employee input into the development of any drug testing programs, allowing for the right of appeal, and optimally, linkages to treatment and support (Pidd et al. 2011a). There is some evidence to indicate that testing combined with these other strategies can be effective, and that introducing drug testing as part of a broader strategy displaces the punitive focus of drug testing programs, making it more acceptable to many employees (Pidd and Roche 2011).

Finally, it is worth noting that while drug use can have detrimental consequences at workplaces, workplace culture and conditions also have important influences on the overall drug consumption of

¹² Oral fluid testing is often found less invasive in bodily terms. It may also be considered less invasive of informational privacy, due to its shorter detection windows. However, oral fluid testing is a relatively new technology and is currently less accurate than more invasive methods such as urinalysis or blood tests. Another concern with this method is that it may be less reliable for detecting some drugs (such as cannabis) (Moore 2012; Milman et al. 2012). Breath testing is also generally thought less invasive than other methods, for information on alcohol use.

the workforce. A limitation of workplace drug testing is that it does not address the community or workplace factors that might contribute to drug use; but workplaces themselves have a role to play in public health. For this reason the workplace has been identified as an important setting for health promotion practices, including interventions which aim to prevent or treat harmful drug use (VicHealth 2012). While drug testing programs can be very expensive for employers and could involve the negative unintended consequences discussed above, it may be in employers' interests to introduce other measures to reduce drug use and related harms in their workforce. Ways to enhance access to treatment and support, health promotion programs, and web based interventions are all promising areas, although further evaluation of existing programs to develop future evidence-based programs is needed (VicHealth 2012). The implementation of programs such as workplace counselling and support programs, enhanced access to external support, or programs to improve workplace culture and conditions, may be more effective than drug testing and, since they do not involve an infringement on privacy rights, bypass many of the problems discussed throughout this paper.

Recommendations

1. The ANCD recommends that widespread adoption of drug testing should not occur (with the exception of random roadside testing for alcohol). Given the current lack of a strong evidence-base for drug testing programs to meet the aims for which they are proposed, and since in most contexts drug testing involves difficult ethical and legal issues and has the potential for negative consequences, we recommend a general presumption against the use of drug testing, unless a stronger evidence-base emerges about its effectiveness. The ANCD acknowledges that there are uses for drug testing in some contexts, such as medical uses, or testing of workers in highly safety-sensitive positions in the context of a broader workplace drug strategy; but in considering any drug testing program, a precautionary principle should prevail.
2. Regarding drug testing within drug treatment, there is a need to ensure that drug testing of people on pharmacotherapy programs is used, in collaboration with the patient, only to review and improve the individual's progress in treatment.
3. As with any procedure that is part of medical treatment, the purpose of drug testing should always be made clear to people who are tested in the course of receiving pharmacotherapy. Pharmacotherapy patients should also receive information on their rights surrounding the results of any positive tests and access to the results by third parties.
4. Regarding drug testing of parents in contact with child protection services, there is a need for further research into how parents with drug use problems can be supported in treatment, including the use of drug testing where appropriate and considered as one among other potential screening tools.
5. There should be a presumption against the use of drug testing programs in schools, and any Australian schools considering a drug testing program should be made aware of the current evidence-base surrounding its effectiveness and potential negative consequences, its high costs, and the ethical and legal issues it invokes.
6. Evidence-based interventions for reducing drug use and related harms among school students, such as motivational interviewing or rigorously tested drug education programs, should be further developed and encouraged as more appropriate interventions for these aims than drug testing.
7. Programs of drug testing welfare beneficiaries for the purposes of referral to treatment, deterrence, or reducing welfare spending, should not be implemented.
8. Employers considering workplace drug testing programs should be made aware of the current evidence-base on the effectiveness and cost-effectiveness of workplace drug testing programs for improving safety, including its high hidden costs and potential adverse outcomes, and of the existence of other methods to improve workplace safety.
9. Awareness that factors such as fatigue, stress, poor working conditions, and workplace culture play a greater role in workplace safety than does drug use, should be promoted among employers and employer bodies.

10. Where there are workplace drug testing programs, these should take all possible measures to minimise burdens on employees, and should follow best practice approaches including being accompanied by programs providing assistance, support, education and referral where appropriate, and being focused on rehabilitation rather than punishment.

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