Will drug use rise?
Exploring a key concern about decriminalising or regulating drugs

TRANSFORM
Getting drugs under control

About Transform Drug Policy Foundation

Transform is a UK-based NGO working in drug policy reform. It was established in response to the increasingly apparent failings of current national and international drug policy. Transform draws attention to the fact that drug prohibition itself is a major cause of drug-related harm to individuals, communities and nations, and should be replaced by effective, just and humane systems of government control and regulation. We provide evidence-based critiques of the war on drugs, new thinking on alternatives to current enforcement-led policy, and expertise on how to argue for reform. In addition to working with a broad range of media, civil society and professional groups globally, Transform advise national governments and multilateral organisations, and hold ECOSOC special consultative status at the UN.

Contents

Introduction

The drug policy reform debate has implications for a wide range of issues – from crime and health, to the economy and even the environment. But for many, the overriding concern is the effect that any policy change would have on levels of drug consumption (and, implicitly, the negative consequences that stem from it). Indeed, the fear that drug use will increase following any move away from a punitive approach is the most frequently raised and politically potent of all the objections to reform, appealing to worries about things such as the health and welfare of loved ones, increased public disorder and drugged driving.

Support for maintaining such an approach is typically predicated on three assumptions:

- That criminalising (or otherwise punishing) drug users is necessary in order to deter people from using drugs;
- that enforcement against the supply of drugs restricts their availability (and, in turn, their use) to a sufficiently worthwhile extent; and
- that levels of use are a good proxy measure for levels of harm, both to drug users themselves and wider society.

This report argues that this rationale for continuing with an enforcement-led approach to drugs is poorly supported by empirical research, and that alternative policies – in particular the decriminalisation of personal drug possession or the introduction of legally regulated drug markets – can produce better outcomes while also avoiding dramatic increases in use. It also makes the case that overall levels of drug use are not an accurate indicator of levels of drug-related harm, and should not be considered as such.

Given the pace at which real-world alternatives to criminalisation and prohibition have taken hold in recent years, and the extent to which drug policy reform has become a mainstream issue, there is now no shortage of claims and counterclaims about how different policies affect levels of drug consumption.

This report attempts to cut through this debate, addressing the widely held concern about increased use by reviewing the evidence acquired since the modern international drug control framework was established in the 1960s, and looking at what is known about other approaches to managing a range of substances. Ultimately, the intention is to provide a representative overview of what is known about the relationship between drug policy, drug use, and related harms.

But there is also a need to be frank about what is currently uncertain: the more far-reaching the departure from the *status quo*, the more scope there is for unpredictability. So while there is now a significant body of research into drug use under prohibition, there is still no perfect counterfactual to it. Although there is direct evidence of how decriminalising drugs affects levels of consumption, there is a much more limited empirical basis for inferring what the consequences would be of full-scale legalisation (which in any case can take many forms). That aside, taken together, the evidence presented in this report suggests the following broad conclusions:

- The importance of prevalence of use as an indicator of the success of drug policy is often overstated, at the expense of equally or more important indicators, such as problematic use or drug-related deaths;
- levels of drug use can be a poor proxy measure for levels of drug-related harm, and since such harm is the more important policy priority, more accurate, alternative indicators should be employed to measure it;
- the decriminalisation of drug possession for personal use has, at most, only a marginal impact on levels of drug use;
- legal drug markets that are highly commercialised and loosely regulated are likely to lead to significant increases in drug use compared with levels of use under prohibition with illicit markets;
- it is possible to create legal drug markets that are sufficiently regulated and taxed so as to avoid dramatic increases in drug use (including problematic use) compared with levels of use under

prohibition with illicit markets; and

- the effect of legalisation and regulation (however it is designed and implemented) on levels of drug use is likely to vary significantly depending on which drug or drugs are made legally available.

2. Drug use: the issues

2. a) Drug use and harm

The academic debate on drug policy reform is most commonly framed in utilitarian terms (although politicians and the public often view it through a moral lens). So when participants in this debate make their case for a particular approach, they tend not to appeal to the intrinsic rightness or wrongness of drug-taking, but to the magnitude of positive and negative *consequences* of drug-taking. Of course, different people with different values weight these various outcomes differently. So questions such as "Would legalisation be better than prohibition?" cannot, in the strictest sense, be answered scientifically. Nevertheless, the academic framing of the debate can and should be informed by empirical evidence.

Taking an archetypal consequentialist approach, MacCoun and Reuter (2001; 2011) recommend that different drug policy regimes be evaluated by their effect on the overall level of harm caused by drug use. They identify three factors that determine most of the harms caused by drug use: the number of users, the average number of doses per user, and the average harm produced per incident of drug use. Expressed more clearly, the relationship is:

Total Harm = Prevalence x Intensity x Harmfulness

Those who support legalising drugs (or other reforms that reduce or eliminate penalties for possession) typically ascribe most importance to the last element of this equation, and include not just harms to the drug user, but costs to wider society as well in their definition of harmfulness.

So supporters of reform highlight how prohibition and criminalisation can dramatically increase the risks associated with drug use itself, as the primary risks of many illicit drugs are a product not of their pharmacology, but of their being produced and supplied by an unregulated criminal market, with users directed to the criminal justice system, rather than the healthcare system. Street heroin mixed with potent adulterants such as fentanyl and used with shared needles in unhygienic environments, for example, carries far greater risks than pure, pharmaceutical heroin (diamorphine) used in a supervised clinical setting.

Added to this, the broader social costs stemming from drug use that are created or exacerbated by prohibition can include, among other things, the stigma and limited life chances that stem from a criminal conviction for drug possession, racial disparities in the enforcement of punitive drug laws, and the violence and conflict generated by street dealers and drug trafficking organisations. Such harms, it is argued, could be significantly reduced if the drug trade was moved above ground and legally regulated, or if users did not run the risk of being punished.

The logical extension of such a focus on harmfulness is that if an incident of drug use does not cause significant harm to the user or others (or lead to harmful use later), then it should not be a concern of public policy. So, it is argued, policy should seek to reduce overall harms – whether to the user or wider society – from problematic use, not necessarily to eliminate use *per se*. (This is discussed in more detail in section 2.c.)

By contrast, supporters of prohibition focus mostly on the first, and to a lesser extent the second, component of the equation above, rejecting changes to the *status quo* out of concern that drug use would increase if sanctions were reduced and/or a legal supply of drugs was established. After all, decriminalisation or legal regulation might cause total harm to rise if, despite reducing the average harm per incident of use, this was outweighed by a sufficiently large increase in the number of such incidents. And depending on the

extent of such an increase in use, that could ultimately mean higher levels of drug dependence, greater numbers of intoxication-related accidents, and/or drug-related deaths.

Both sides of the drug policy debate are therefore sometimes guilty of neglecting key factors that contribute to the overall amount of drug-related harm. Reformers are often reluctant to engage with the issue of whether, under a less punitive approach, use could rise to what would be, on net, more damaging levels; and advocates of prohibition rarely consider the proposition that an increase in use could be justified by a sufficiently large reduction in average harm.

As alluded to above, use reduction has tended to be the dominant aim of drug policy, with the priority usually a reduction in the number of people who use drugs (rather than a reduction in the intensity of their use). In the US, for example, the national strategy of the Office of National Drug Control Policy (2007: 1) has historically been framed almost exclusively in terms of reducing the prevalence of use (although this has begun to change in recent years).

2. b) The dominance of prevalence

The prevalence of drug use (the number of people using drugs in a given population) is clearly a legitimate concern under any policy model, but its status as the key indicator of the success or failure of drug policy stems in part from a simple lack of more accurate drug data systems. The production and use of illegal drugs is not something that market participants happily report to the authorities. Hence there is nothing like the kind of administrative data that exists for tracking activity in other, legal markets.

Drug arrests and drug-related deaths were originally used to monitor trends in drug supply and use, but these measures are highly imprecise: variations in the number of drug arrests, rather than signifying changes in consumption or production, can simply indicate changes in enforcement practices; and drug-related deaths are often multiply determined – an intoxicated

driver killing a pedestrian may be recorded as a traffic death, rather than as a consequence of drug use.

So when drug use grew to the point of being a central concern in the 1960s and 1970s, there was a concerted effort to devise better data systems. This led to the development of school-based surveys of drug use by youth, and surveys of drug use in the general population (often called "household population surveys").

Data limitations therefore played a major role in the prevalence of drug use assuming such importance in the evaluation of drug policy. But this situation is also partly a function of a culture that has, whether explicitly or implicitly, defined the consumption of certain drugs as intrinsically wrong and damaging.

Public perceptions of illicit drug use (and those who engage in it) have been distorted by more than a century of moral panics, early examples of which were driven by racial prejudice and, in the United States in particular, by an influential Temperance movement that considered the use of all psychoactive drugs – including alcohol – as a root cause of social decay (Berridge and Edwards, 1981; Jay, 2002; Musto, 1999; Courtwright, 2005).

But while attitudes towards alcohol use changed following America's failed experiment with alcohol prohibition, the use of other, more "foreign" drugs has remained highly stigmatised. Prohibition-era rhetoric was (and often still is) simply applied to a different range of substances, as can be seen in the UN convention that underpins today's international drug control regime. It describes drug addiction as a "serious evil … fraught with social and economic danger to mankind", one that the international community has a "duty to … combat" (United Nations, 1961: 1). This set the tone for the "war on drugs" declared by President Richard Nixon in the 1970s.

Against this backdrop, in which the use of certain drugs is conceived of as a threat to the very fabric of society, it is perhaps unsurprising that drug policy has

overwhelmingly focused on prevalence reduction. "Harm reduction" approaches – which seek to make drug use safer, rather than just reduce or eliminate it – have faced significant political obstacles, arguably because they focus less on the simple fact of whether a person uses drugs, and more on whether a person's drug use is having negative consequences (Harm Reduction International, 2016).

2. c) Prevalence of use as a measure of total harm

Clearly, drug use can, in itself, cause substantial harm to individuals, but it is by no means an inevitability. There are different types of drugs and drug-using behaviours, motivated by different priorities, which have different outcomes. It is far from the case that everyone who takes drugs becomes a chronic, dependent user, whose consumption is high-risk and likely to cause themselves and/or others harm.

Measuring the prevalence of drug use

The prevalence of drug use can be estimated by a number of methods, including wastewater-testing, or testing of arrestees, but is usually calculated from survey data. This is then augmented by population-specific research, such as school-based surveys (although these are less consistent across jurisdictions, complicating national comparisons). Many countries have established surveys that focus specifically on drug-taking behaviour, while others incorporate questions about drug use into general health surveys, or, as in the case of England and Wales, into national crime surveys. The context of the survey inevitably influences the type of questions that are asked and who responds to it (EMCDDA, 2009: 15) .

The European Model Questionnaire recommends that countries ask questions on a minimum of six drugs: cannabis, ecstasy, cocaine, heroin, amphetamines and LSD. However, some drug use is rarely captured; certain surveys now include questions on some new psychoactive substances (NPS), but not all (the bewildering array of such products making it all but impossible), while the use of diverted prescription drugs is generally poorly monitored, leaving a messy and incomplete picture of drug use trends.

Moreover, the very nature of these surveys leads to underestimates of the true extent of drug use: people are generally reluctant to admit to illegal activity, and added to this, the most high-risk, problematic drug users are unlikely to be represented in surveys of households, given that they often live chaotic lives (Home Office, 2006). The most commonly used types of surveys therefore bias prevalence estimates towards conservatism, even if they do so consistently, in a way that can reliably reveal trends.

Three indicators are typically used to measure the prevalence of drug use in a given country or jurisdiction: lifetime prevalence, last-year prevalence and last-month prevalence. Of these three indicators, **lifetime prevalence** – the number of people who have ever used drugs – is the least useful, because by definition, such use cannot be reversed: even if people stop using drugs, they will remain lifetime users. Lifetime prevalence therefore tends to rise consistently over time. (This measure is, however, considered more useful for schoolchildren, as initiation into most drug use occurs in teenage years, so lifetime prevalence can provide a better snapshot of drug-use trends among this group.) **Last-year** and **last-month prevalence** are better proxy measures of current levels of drug use, and should be used to track emerging consumption trends (EMCDDA, 2002).

In fact, the *vast majority* of people who use drugs would not fit this description. The United Nations Office on Drugs and Crime (UNODC, 2015) – the agency that oversees the international prohibitionist drug control system – estimates that approximately 90% of people who use illicit drugs worldwide do so non-problematically.[1] Hence prevalence of use alone is not a particularly useful or accurate indicator of harm: it conflates both problematic and non-problematic drug consumption, even though the risks associated with each, and the responses that they call for, differ greatly.

A 17-year-old heavy user of crystal methamphetamine who is supplied by a criminal market and commits crimes to feed their habit, risks causing far greater harm to themselves and others than does a middle-aged, occasional cannabis user who grows their own plants. If the latter ceased their drug-taking while the former did not, the prevalence of drug use in this sample would fall by half, and yet would produce little, if any, change in total levels of health and social harm.

While this distinction between the relative harms associated with different types of drug use is acknowledged in the academic debate on reform, it is frequently overlooked in the public debate – politicians' press releases and media soundbites talk all too often about the prevalence of drug use as it were a single, homogenous phenomenon.

That overall prevalence of use is a poor proxy measure for aggregate harm can be seen from the situation in the UK. In 2014, Prime Minister David Cameron said: "We have a policy which actually is working in Britain: drug use is coming down" (quoted in Wallis Simons, 2014). The second part of this claim was essentially accurate at that time: the long-term picture was of a decline in the overall prevalence of drug use in the UK (although, since around 2010, use had actually

stabilised [Home Office, 2015]). Yet the picture is more complicated – and less impressive – when the broader context is examined.

The decline in overall levels of drug use that occurred in the previous decade was driven mostly by a reduction in the number of young people (aged 16-24) using cannabis, the most widely used illicit drug (see box, p. 10, for speculation on the causes of this trend). The use of other drugs has, however, proven more resilient. Between 2012/13 and 2014/15, the number of young people who took ecstasy in the past year almost doubled, to levels not seen since 2003, and young people's cocaine use also sharply increased over the same period (Home Office, 2015).

But despite this, overall prevalence was either in decline or stable. So does this consumption trend indicate that UK drug policy is "working"? A more useful indicator suggests not. Fewer people using drugs does not mean fewer people being harmed by drugs. The drug-induced mortality rate among adults in the UK was 55.9 deaths per million in 2013, almost three times the most recent European average of 19.2 deaths per million (EMCDDA, 2016). Official 2014 estimates for the whole of the UK are not yet available, but in England and Wales, drug-induced deaths reached the highest levels ever recorded (ONS, 2016). This trend is being driven by a complex mixture of factors, mostly related to opioid consumption. Nationally and locally, an ageing population of users, changes in available treatment options, and batches of particularly strong or contaminated opioids are behind the rise. These deaths, and the reasons for them, underline the importance of not taking headline figures on use as a simple determinant of policy success or failure.

It is also notable that, historically, governments tend to cite any change in levels of drug use as evidence to support their position: when use falls, it is heralded as a triumph that renders any debate about reform irrelevant; but when use rises, calls are made for enforcement efforts to be intensified. As such, a fixation on levels of use can often shut down vital discussions about policies that could deliver better outcomes.

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1. The UNODC defines "problem drug users" as "people who engage in the high-risk consumption of drugs, for example people who inject drugs, people who use drugs on a daily basis and/or people diagnosed with drug use disorders or as drug-dependent …" http://www.unodc.org/documents/wdr2014/World_Drug_Report_2014_web.pdf xvii

Declining cannabis use in England and Wales: possible causes

From 2000-14, levels of cannabis use among 15- to 34-year-olds remained stable or increased in many European countries, including France, Sweden, Denmark and Finland (EMCDDA, 2015b). In England and Wales, however, consumption among this group fell by almost half over the same period (EMCDDA, 2015a). Listed below are several possible explanations that have been put forward for this trend. (It should be noted that these are all speculative explanations, reflected by the references given for them, most of which are to news articles that feature interviews with drug policy experts, rather than peer-reviewed research. These proposed explanations should therefore be treated with caution, although they usefully illustrate how drug use is influenced by myriad factors, rather than policy alone.)

- The decline in tobacco smoking in the UK. The fall in the number of tobacco smokers, which predates the fall in cannabis use, may have helped de-normalise smoking more generally. And since Britons commonly consume cannabis in a mix with tobacco, fewer non-smokers may be taking up the drug (*The Economist*, 2015).
- The rise of high-strength "skunk". The UK cannabis market is increasingly dominated by more potent varieties of the drug that are unappealing to novice users given the higher probability of negative experiences (McVeigh and O'Neill, 2012).
- A cultural shift. The decline in young people's cannabis use is mirrored by similar, but less pronounced, declines in alcohol consumption and the use of other drugs, pointing to the possible emergence of a more abstemious and risk-averse youth culture (McVeigh and O'Neill, 2012; Benedictus, 2011).
- The rise of the internet and social media. Smart phones, the internet and gaming consoles may be having an effect on young people's behaviour in relation to drugs (Goldhill, 2014; Barnes, 2012). The rise of such technology may be reducing boredom or the amount of "dead time" that might otherwise be filled by casual drug use, or it may be reducing real-world interactions in which drug sharing or peer pressure come into play (Cabinet Office and Department of Health, 2015). Online photo sharing may also be increasing image and body consciousness, turning people off more unhealthy or unattractive drug-using behaviours.
- The rise of new psychoactive substances. Some young people may be switching from real cannabis to synthetic cannabinoids, such as "Spice", which mimic its effects and were, until a blanket ban in 2016, relatively cheaply and legally available via high-street "head shops". Comparatively little is known about levels of use of such substances (EMCDDA, 2015b).
- Societal changes. More young people are living at their parents' home than in previous years (ONS, 2011), which may be limiting opportunities for illicit behaviour such as cannabis use. The employment rate for 16-17-year-olds has also declined substantially over the past decade (ONS, 2013), potentially meaning fewer teenagers have the money to purchase cannabis.

2. d) Beneficial drug use?

The use of illicit drugs, even when moderate, controlled, and recognised as being relatively low-risk, is still typically characterised as antisocial or having net adverse effects. There is a general reluctance to accept or admit that currently illicit substances may confer any benefits to users or wider society.

In contrast, this point is often acknowledged with regard to the use of licit drugs. The UK government's 2012 Alcohol Strategy, for example, says:

> "In moderation, alcohol consumption can have a positive impact on adults' wellbeing, especially where this encourages sociability. Well-run community pubs and other businesses form a key part of the fabric of neighbourhoods, providing employment and social venues in our local communities. And a profitable alcohol industry enhances the UK economy" (HM Government, 2012: 3).

It is difficult to imagine any government making a similar statement in reference to illicit drugs, but the logic is sound: most currently illegal substances can be – and most often are – consumed responsibly, with negligible harm resulting either to users or wider society. (And where harm to wider society does occur, it is often a product of the criminal nature of the drug trade, rather than drug use itself.)

All of this is not to say that policy should not attempt to deter people (particularly young people or other vulnerable populations) from using drugs – especially in high-risk ways; it is simply to highlight the distinction between drug use and drug harm, and place this distinction within the context of the reasons why people take drugs in the first place.

Pleasure is the "great unmentionable" (Hunt and Evans, 2008) in drug policy research and the public debate on reform (Moore, 2008; Holt and Treloar, 2008) but given the central role it plays in motivating various forms of drug use, it must be factored into thinking around policy responses to changing levels of use. That pleasure – or any quasi-medical or lifestyle "benefit", such as relaxation, stress relief, or enhanced social experiences – is the primary desired outcome of drug use is indisputable, and for most drug users suggests a willingness to bear at least some degree of risk to achieve that outcome (Ritter, 2014).

Spectrum of psychoactive substance use

Beneficial use

Use that has positive health, spiritual or social effects, e.g., medical pharmaceuticals, stimulants – such as coffee or tea – to increase alertness, sacramental use of ayahuasca, therapeutic use of MDMA

Problematic use

Use that begins to have negative consequences for individual, friends / family, or wider society, e.g., use leading to impaired driving, binge consumption, harmful methods of administration

Casual / non-problematic use

Recreational, casual or other use that has negligible harmful health or social effects, e.g., moderate cannabis, cocaine or MDMA use in social settings

Chronic dependence

Use that has become habitual and compulsive despite negative health and social effects, e.g., long-term opioid dependence, which is funded through acquisitive crime

Adapted from: British Columbia Ministry of Health Services (2004)

In fact, there are countless pleasure-seeking activities – be it sport, sex, sunbathing, or the consumption of sugar or fatty foods – that people are willing to engage in despite their risks. Society therefore accepts that a certain level of risk is permissible in order to achieve certain pleasures. Sometimes – in the case of, say, motorbike racing or some extreme sports – the risks are very high, and may not only be tolerated, but viewed as an intrinsic part of the experience.

But with drugs, the overriding concern with reducing use has marginalised a more pragmatic and constructive debate about what motivates consumption, what level of drug-related risk or harm should be tolerated, and which policy approaches can help manage and moderate those risks. Instead, unlike with other risky pleasure-seeking activities, there is a range of groups and institutions dedicated to exaggerating potential harms and denying benefits. Rugby or American football, as played by the typical school student, is likely to carry far more risk of damaging the developing brain than cannabis, but there is no agency devoted to publicising those risks in the media.

3. The impact of different policy models on the prevalence of drug use

There are various approaches that can be taken in response to the use of currently illicit drugs, many of which – such as the introduction of harm reduction services or the intensification of enforcement efforts – can take place under a range of policy models. Rather than consider the impact of these kinds of relatively more incremental reforms on the prevalence of drug use, this report focuses on how, if at all, drug use differs under the three most commonly discussed overarching policy regimes. It will first look at drug use under prohibition, then under two options for reform – the decriminalisation of personal drug possession and the legal regulation of drug markets. It should be noted that there can be significant variation in the design and implementation of each of these policy models (drug prohibition in China is far more punitive than in the UK, for example). There is not space here to explore all the possible forms these policies can take, so this

The disconnect between levels of drug use and levels of harm: evidence from alcohol studies

As discussed, care must be taken when inferring levels of drug-related harm from levels of drug use. The two are far from equivalent; that is why other indicators must be considered in order to determine whether drug policy is promoting public health and safety effectively.

Evidence from studies of alcohol use illustrate this point further. As one cross-sectional survey of the effects of alcohol in Russia, the Czech Republic and Poland found: "Overall alcohol consumption does not suffice as an estimate of alcohol related problems at the population level" (Bobak et al., 2004). This was because the Czech Republic, despite having significantly higher levels of alcohol use than Russia, experienced far less alcohol-related harm, as measured by the proportion of people whose drinking causes difficulties with, among other things, their

relationships, work, physical, psychological or mental health and financial circumstances.

Emphasising the way in which culture and patterns of consumption are important determinants of harm, this result was attributed to the fact that Czechs, while drinking more often and more as a whole, consume relatively small amounts per occasion, whereas Russians' drinking is more concentrated – they drink less frequently, but consume large amounts of alcohol when they do (and such patterns of binge use tend to be associated with higher health and social harms). Studies of other countries have also found that low overall levels of alcohol use are by no means a guarantee of low levels of alcohol-related harm (Rossow, 2001; Ramstedt, 2001; Christie, 1965; Poikolainen, 1977; Room, 1974; Norström, 2001).

report inevitably draws its conclusions from a more generalised conception of these three models.

3.1. Prohibition

Prohibition-based policies seek to reduce drug use in two main ways. First, the threat of criminal sanctions is intended to deter people from using drugs, while at the same time conveying to wider society the unacceptability of such behaviour. Second, supply-side enforcement, in the form of measures such as drug crop eradications, drug seizures, and arrests of drug traffickers and dealers, is meant to significantly restrict (or eliminate, in the case of some countries) the availability of drugs, and in turn increase their price. Since demand for drugs is, to at least some degree, price elastic, higher prices should result in lower levels of drug use.

These two strategies for limiting drug use have been employed throughout much of the world over the past half-century. Consequently, there now exists a significant body of evidence on whether they actually achieve their stated aims, or at least fare better than other approaches.

3.1. a) Deterrence

Deterring people from using drugs is a complex business, and yet drug law enforcement, as traditionally carried out, takes an overly simplistic approach in its attempts to effect such change. Merely increasing the penalties for drug possession seems to have only a marginal impact on levels of consumption.

Evidence for this comes from three main sources: longitudinal studies following the impacts of changing laws, comparative analyses of jurisdictions with different enforcement models, and qualitative survey data.

In an example of the first type of research, the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) looked at the effects (if any) of reforms to various jurisdictions' cannabis laws over

time. Researchers examined data from nine European countries, to test what they call the "legal impact hypothesis" – essentially the theory that increased penalties will lead to a fall in drug use, and reduced penalties will lead to a rise in drug use. They concluded: "… in this 10-year period, for the countries in question, no simple association can be observed between legal changes and cannabis use prevalence" (EMCDDA, 2011a). In other words, the fact that some countries' cannabis laws became harsher and some became more lenient had no discernible effect on the number of people using the drug.

There are, however, caveats to this research. As discussed later, in the section on decriminalisation, statutory laws are sometimes only loosely related to enforcement practice on the ground, and sometimes only change after enforcement has done so first. So in the absence of more detailed variables, it is difficult to establish the non-effect of a formal reduction in penalties. But, irrespective of this, it can at least be said that the symbolic message sent by a change in legal sanctions doesn't seem to impact use.

Looking for a relationship between penalties and cannabis use
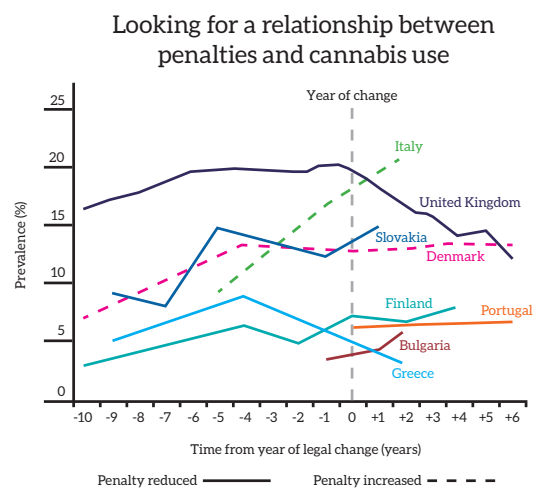
Source: EMCDDA (2011a)

It is not just legal changes *within* countries that appear to make little difference. Comparisons of different countries' approaches to drugs and their respective levels of drug use also produce the same result. A large-scale study using World Health Organization data from 17 countries found: "Globally, drug use is not distributed evenly and is not simply related to drug

policy, since countries with stringent user-level illegal drug policies did not have lower levels of use than countries with liberal ones" (Degenhardt et al., 2008). A 2014 evidence review by the UK Home Office came to the same conclusion, stating: "... we did not in our fact-finding observe any obvious relationship between the toughness of a country's enforcement against drug possession, and levels of drug use in that country" (Home Office, 2014: 47).

This disconnect between the intensity of drug law enforcement and prevalence of use is largely explained by the environmental and psychological factors that influence drug-using decisions (MacCoun, 1993; MacCoun and Reuter, 2001). Deterrence theory has its origins in a rational-choice model of social and economic behaviour, which assumes that people reason about the risks and rewards of their actions, making decisions based on what is most likely to produce the best outcomes. Hence if the perceived risk and severity of legal sanction is sufficiently high, it will outweigh the perceived benefits of drug use, with the result that fewer people will use drugs.

However, drug-taking decisions are more complex than this model presumes. The decision to use drugs is rarely based on a simple weighing up of pros and cons; more often the cognitive processing behind the action is effectively automatic, requiring little effort or attention, perhaps being triggered by environmental cues (Fentiman, 2011). The risk of legal sanction is therefore likely to rank lower among the thought processes that lead someone to use drugs.

Potential pleasure is typically a more important consideration than any potential penalties. This is because most individuals are disposed to present-oriented behaviour, and the perceived gains of drug-taking are relatively immediate and certain, whereas the legal sanctions for such behaviour are likely to be applied at a far later date, and in any case are not certain to be applied at all.

Indeed, penalties are unlikely to be at the forefront of users' minds given that, although many countries do arrest large numbers of people who use drugs, they are, in relative terms, only a small proportion of the total drug-using population. Data from several Western countries indicates that, throughout the mid- to late-1990s, the annual probability of being arrested for cannabis possession ranged from between 1% and 3%, making the chance of arrest for any given incident of drug use vanishingly low (Kilmer, 2002: 129-130). This goes some way to explaining the limited deterrent effect of punitive drug laws, as evidence suggests that, in terms of preventing illegal behaviour, certainty of punishment, while still not a particularly good predictor of levels of drug use, matters more than severity (Lenton, 2005; Kleiman and Hawken, 2008; MacCoun and Reuter, 2001; Nagin and Pogarsky, 2004; Lee and McCrary, 2005; Nagin, 2013). Somewhat underscoring the emptiness of much "tough on drugs" rhetoric, Paternoster (1987: 191), in his review of perceptual deterrence studies, concludes: "perceived severity plays virtually no role in explaining deviant/criminal conduct."

However, while the certainty with which punishment will be applied is marginally more important in deterring drug use than the severity of punishment, it is difficult to imagine how the chances of catching people in possession of small, easily concealable quantities of pills, powders and plants could be dramatically improved. Ignoring the question of whether criminalising ever greater numbers of people who use drugs is in fact desirable or even ethical, it is unlikely that even the most aggressive enforcement approach could increase the probability of punishment to sufficiently high levels (MacCoun and Reuter, 2001). At a minimum, it would put an even greater burden on already-stretched police resources, and involve an unprecedented infringement of civil liberties: in order to detect law-breakers, surveillance and searches of law-abiding people would have to be scaled up hugely.

The extent of the improvements that would need to be made to punitive, deterrence-based approaches is worth highlighting. Based on perceptual deterrence studies, it has been estimated that the certainty and severity of punishment accounts for just 5% to 10% of

the variance in cannabis use (MacCoun and Reuter, 2001). And yet other research into criminal activity more broadly potentially undermines even this very modest proposed effect. One review found that when the impact of informal social and personal controls – such as peer attitudes and the perceived morality of the act in question – was factored into behavioural models, the deterrent effect of formal legal sanctions became statistically non-significant (Williams and Hawkins, 1986).

Extra-legal factors are considered better predictors of drug use than the perceived severity and certainty of penalties (Williams and Hawkins, 1986), a finding that tallies with survey results showing non-drug users are more likely to cite a lack of interest, or a concern about health effects, rather than a fear of legal sanctions, as the main reason why they do not use drugs (Fountain et al., 1999; McIntosh et al., 2005; Rosenberg et al., 2008). Fear of legal sanction also plays virtually no role in

motivating people to stop using illegal drugs: the 2015 Global Drug Survey found that worries about getting caught by police were cited by only 3% of those who stopped taking cannabis and 2% of those who stopped using cocaine or MDMA (Pegg, 2015).

So although punitive drug laws are often justified on the grounds that they "send a message" about the unacceptability and dangers of drug use, there is little evidence that this message gets through to users, or has any significant impact if it does. The extent to which criminal penalties are a deterrent to drug use is at best marginal relative to that of other factors; informal social controls play a far greater role in regulating drug consumption (MacCoun, 1993; MacCoun and Reuter, 2001). It is therefore possible that such controls would continue to constrain levels of drug use even after legal sanctions for possession are significantly reduced or eliminated entirely, especially if drug-market regulations are well designed.

The failure of the deterrent effect: evidence from high-risk drug users in the UK

No. of dependent users notified to the
UK Home Office, 1960-96
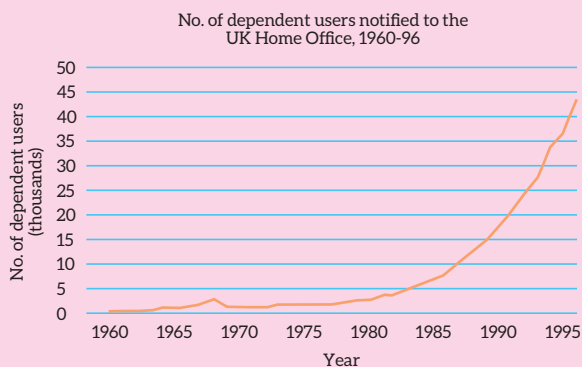
Source: Reuter and Stevens (2007)

Criminal penalties for drug possession were introduced in the UK by the Drugs (Prevention of Misuse) Act, 1964. This was followed by the Misuse of Drugs Act in 1971, which established the ABC drug classification system that included a hierarchy of penalties for possession. Despite this, the number of high-risk, dependent drug users known to services in the UK rose from around 2,000 in 1970, to more than 40,000 in 1996, when the notification system was ended. As Reuter and Stevens (2007: 25) conclude:

"Few health indicators have shown such rapid deterioration over such a long period." The number of opiate-related deaths in England and Wales also rose from less than 50 in 1975 to 952 in 2014. Introducing punishment as a response to drug use, far from reducing levels of dependence and related health harms, therefore in fact saw them rise even higher.

When the typical profile of people who engage in high-risk drug use is considered, the futility of a punitive approach becomes even more apparent. People with heroin and crack dependencies in particular, who are both likely to already have a criminal record and whose demand for their drug of choice is generally resistant to any interventions, are also the population creating the vast majority of drug-related social and economic costs in the UK (Godfrey et al., 2002). Thus the population who use drugs most closely associated with the social and health harms created by prohibition are also the group least likely to be susceptible to its deterrent effects.

All of which is not to say that laws cannot shape behaviour; they clearly can. Drug laws and related regulations may have important declarative effects – restricting drug use by expressing and reinforcing social norms against it, as has happened in many countries with regard to tobacco smoking in public spaces, and with better enforcement of age restrictions for alcohol consumption. But there is little evidence that trying to express disapproval of drug consumption using the blunt instrument of criminal penalties for possession is an effective way of doing this. In fact, laws and enforcement within a legal, regulated market which can reinforce social controls, should be distinguished from enforcement *against* an illegal, unregulated market.

3.1. b) Reducing availability by restricting supply

Given that demand for drugs appears to be largely unaffected by the threat of punitive sanctions for users, it is perhaps no surprise that the supply and availability of drugs has proven similarly persistent, particularly in light of the huge financial incentives for criminals to meet this demand.

"Drug availability" is a potentially complex and often inadequately defined suite of interrelated variables. The UK government, for instance, has never developed a methodology for assessing it, despite often citing reductions in availability as a key aim of its drug policy (Rolles, 2009). Nevertheless, it is typically assumed that data on, among other things, drug prices, potency and purity, and people's perceptions of how easy it is to obtain drugs are all facets of this multivariate construct (EMCDDA, 2011b).

There must, necessarily, be a point at which availability becomes so low and prices so high that use of a given drug becomes impractical or effectively impossible, but supply-side enforcement only rarely appears to curtail the illicit trade to the extent needed to bring about non-trivial reductions in the use of a given substance (Reuter and Stevens, 2007: 63-64; MacCoun and Reuter, 2001: 77).

Most of the price effects of prohibition are due to what have been referred to as the "structural consequences of product illegality" (i.e., inefficiencies generated by producers, traffickers and dealers having to operate covertly [Reuter, 1983]). So while it is clearly true that the simple illegality of drugs artificially inflates prices far beyond what they would be in a commercial legal market, the intensity of supply-side enforcement seems to make little difference. Reviewing the relevant literature, Pollack and Reuter (2014: 1) conclude: "… there is little evidence that raising the risk of arrest, incarceration or seizure at different levels of the distribution system will raise prices at the targeted level, let alone retail prices." A key issue here is that farm-gate drug prices are so low relative to street-level prices that even if drug production levels are significantly reduced, or if seizure rates increase dramatically, any impact on the final prices paid by users will most likely be negligible; increased production costs can easily be absorbed due to the huge mark-ups that are applied throughout the supply chain (Reuter and Stevens, 2007: 63). This inability of enforcement to affect price was illustrated in 2003, when despite global cocaine seizures rising to record levels, there was actually a slight decrease in the price of the drug in most major consumer markets (UNODC, 2005: 12).

While drug prices regularly fluctuate, internationally, the long-term trend is of price declines despite ever-increasing resources directed towards interdiction. Pointing to the resilience of drug supply and availability, data from official surveillance systems which monitor changes in the illicit trade show that, over the past two decades, while seizures of heroin, cocaine and cannabis in major production markets have generally increased, the average inflation-adjusted and purity/potency-adjusted prices of these drugs has decreased dramatically (Werb et al., 2011):

- In the US, average prices of heroin, cocaine and cannabis decreased by 81%, 80% and 86% respectively, between 1990 and 2007.
- In Europe, during the same period, the average price of opiates and cocaine decreased by 74% and 51% respectively.

- In Australia, the average price of cocaine decreased by 14%, while heroin and cannabis prices decreased 49% between 2000 and 2010.

And between 1990 and 2007, the average purity/potency of heroin and cocaine in the US increased by 60% and 11% respectively (Werb et al., 2011). If prohibition was successfully reducing the availability of these drugs, then, as with price, the reverse trend would likely be observed, as suppliers and dealers dilute their products with adulterants in order to increase their volume.

When assessed by these proxy measures, it is clear that supply-side enforcement has, at best, only a limited impact on drug availability. Where such enforcement is most effective is in limiting availability to those wishing to make occasional impulse purchases. This is in contrast to heavy, dependent users, who are willing to expend more effort in seeking out drugs, and those who use more regularly, who will simply establish a reliable supply, whether it be a regular dealer, or an identified place where they can purchase. But for casual users, enforcement matters more, by imposing so-called "search costs" – the time and effort required to find a dealer willing to sell. If arrests of drug suppliers increase, users could find it more difficult to access the drug they wish to buy. However, the extent to which this scenario plays out in the real world is questionable given the speed with which dealers are replaced in many cities.

Indeed, research broadly corroborates the notion that greater supply-side enforcement purchases little incremental gain in terms of reductions in use. Mazerolle et al. (2005) reviewed the findings of 155 studies into 132 separate drug law enforcement interventions. Those studies which specifically evaluated the impact of supply-side measures on levels of use produced scant evidence that they reduce drug consumption. In many cases, localised crackdowns on drug markets, rather than resulting in fewer people using drugs, simply displaced users to markets in other areas.

What the UNODC (2008: 216) calls "substance displacement" can also occur following an escalation of enforcement efforts: when the supply of one drug is temporarily disrupted, dealers and users turn to similar, more available products. This dynamic can be seen with the surge in popularity of mephedrone in the UK in the late 2000s, which was triggered, at least in part, by a sudden shortage of ecstasy (MDMA). After 33 tonnes of sassafras oil, one of the main precursors of ecstasy, was seized in Cambodia in June 2008, MDMA supply was dramatically curtailed – a rare success for supply-side enforcement. But the UK drug market did not contract; instead, it adapted, and the use of mephedrone – which produces similar effects to ecstasy – took off (Appendino et al., 2014).

More recently, illicit chemists have found a way of synthesising MDMA without the need for sassafras oil, thereby bypassing this bottleneck in production (Sacramento, 2014). As a consequence, availability and purity has increased, with MDMA use rising at the expense of some new psychoactive substances that, like mephedrone, mimic MDMA's effects.

While drug availability, as measured by prices and purity, appears to have increased over recent decades, the picture is less clear-cut when measured by people's perceptions of how easy it is to access drugs. The Monitoring the Future (MTF) survey has tracked adolescent drug trends in the US since the mid-1970s. It shows that the perceived availability of some drugs, most notably amphetamines, crack, crystal methamphetamine and cocaine, has declined over the past 40 years – in some cases, quite substantially (Johnston et al., 2014).

This trend has been accompanied by decreases in the use of these drugs (although similar declines in the perceived availability and use of other drugs, such as cannabis, ecstasy and heroin have not been observed). However, there is little reason to think that enforcement measures are responsible for it, particularly given their lack of impact on drug prices and purity during the period of decline.

Making the supply of drugs uneconomic

An additional mechanism through which supply-side enforcement is intended to reduce drug availability and, ultimately, use, is by rendering it unprofitable for traffickers and producers. If the quantity of drugs seized is sufficiently high, then the available profit margins will shrink to such an extent that there is no financial incentive for involvement in the illicit trade.

However, this aim appears to be unrealistic, exaggerating the degree to which law enforcement is able to disrupt the drug market. The UK Prime Minister's Strategy Unit (2003: 73) has estimated that Britain would have to consistently seize 60% of traffickers' supply in order to put them out of business. Illustrating the near-impossibility of this task, from 2000 to 2006, heroin seizures within Scotland typically amounted to just 1% of the total amount of heroin consumed (McKeganey et al., 2009).

In contrast, MTF data on cigarettes highlights how perceptions of drug availability can vary as a result of regulation in a legal market: given their legal status, cigarettes are not in short supply but have been subject to greater enforcement efforts aimed at restricting underage sales, and their perceived availability has declined significantly in recent decades (Johnston et al., 2014: 41).

It is also difficult to determine the direction of causality: are fewer people using certain drugs because they perceive them to be harder to obtain, or are they perceived as harder to obtain because fewer people are using them? If a drug goes out of fashion, or if there is an increase in its perceived risks, people may be less likely to seek it out or to come into contact with it, leading them to perceive its availability as low, even if, in actual fact, it is still in plentiful supply. The extent to which drug use is demand- or supply-led is therefore hard to establish.

Moreover, perceived availability often rises and falls independently of prevalence of use. The MTF survey notes that the decrease in the perceived availability of cocaine "does not map well onto the pattern of actual use, suggesting that changes in overall availability have not been a major determinant of use" (Johnston et al., 2014: 20). Hence despite cocaine use in the US falling dramatically during the mid- to late-1980s, the perceived availability of the drug actually increased over the same period (before stabilising and then falling significantly in the late-2000s). This undermines the idea that supply-side enforcement is necessary to reduce availability and, in turn, levels of use. In this instance, broader cultural changes and greater risk awareness among young people have been cited as the most likely explanations for the decrease in cocaine consumption (Bachmann et al., 1990); indeed, perceptions of risk increased sharply around the time that use was falling (Johnston et al., 2014: 21).

3.1. c) Levels of drug use under prohibition

As the spiritual home of the so-called war on drugs, and as the most vigorous enforcer of prohibition in the Western world, it is probably most appropriate to look to the United States for an indication of the success of prohibitionist policies in reducing levels of drug consumption.

As mentioned, over the past 40 years, the use of certain illicit drugs has declined among adolescents in the United States, and this decline has to some extent been mirrored among the general adult population. The National Survey on Drug Use and Health (ONDCP, 2014) has tracked four drug trends since the late 1970s – past-month use of any illicit drug, past-month use of cannabis, past-month cocaine use and lifetime heroin use. It has also monitored the lifetime use of methamphetamine since 2002. Although the survey omits questions on a range of other drugs, and methodological changes mean that comparisons

between older and more recent figures should be treated with caution, there are some widely accepted trends that can be identified. While lifetime heroin use has increased over the past 40 years, the other four measures of use have all declined, with the decline most pronounced for cocaine, the consumption of which fell sharply from the mid-1980s before declining more steadily during the 1990s and 2000s.

However, there are caveats to these declines that point to a more mixed record of success. The main issue is the time period over which consumption trends are measured. Over the past 40 years or so, there certainly has been a decrease in the proportion of the population using drugs in the United States. But the late 1970s and early 1980s were historic high points, after which use dropped significantly before stabilising or in fact increasing. For example, the percentage of the population that reported using any illicit drug in the past month declined by more than half between 1979 and 1992 – from 14.1% to the historic low of 5.8%, before rebounding by half, to 9.2% today. So although it is true to say that illicit drug use is lower now than it was when records began, there has been a 20-year period (1992-2012) during which consumption has been on the rise. This is despite ever-increasing expenditure on punitive drug law enforcement.
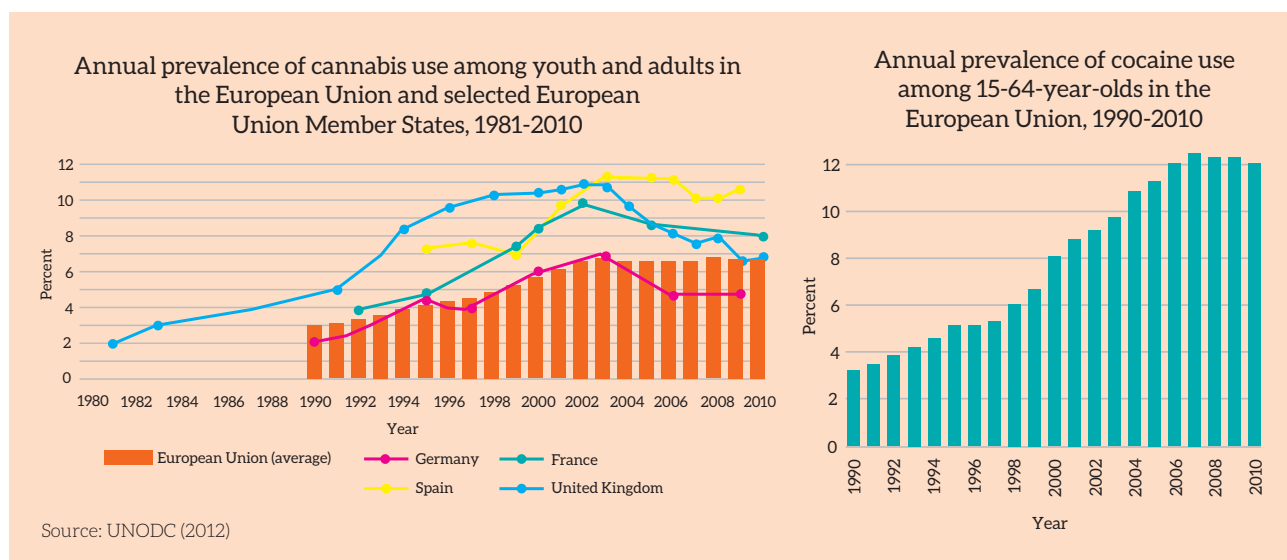
Moreover, as Caulkins (2005: 5) highlights, "total drug consumption does not always follow the number of users." Hence the seemingly impressive reduction in

the number of cocaine users in the 1980s is tarnished by the fact that the quantity consumed stayed the same throughout this period, as heavy users accounted for a larger fraction of the user population.

As with the United States, it is similarly difficult to make broad generalisations about the drug use situation in Europe over the same period. In some countries, drug use has gone up, and in others it has gone down. Overall, however, average annual prevalence in the European Union appears to have risen.

Globally, one thing is clear: the number of people using illicit drugs has not diminished – notably not since world leaders came together under the slogan "A drug-free world – we can do it!" at the 1998 United Nations General Assembly Special Session on the World Drug Problem (Blickman, 2008). In fact, since then, despite the dominance of an enforcement-led approach, global drug production and consumption have increased. Reuter and Trautmann (2009: 16) summarise the situation as follows:

"The global drug problem clearly did not get any better during the UNGASS period. For some countries (mostly rich ones) the problem declined but for others (mostly developing or transitional) it worsened, in some cases sharply and substantially... In aggregate, given the limitations of the data, a fair judgment is that the problem became somewhat more severe."

Annual prevalence of cannabis use among youth and adults in the European Union and selected European Union Member States, 1981-2010

European Union (average) — Germany — France — Spain — United Kingdom

Annual prevalence of cocaine use among 15-64-year-olds in the European Union, 1990-2010

Source: UNODC (2012)

3.1. d) Levels of alcohol use under Prohibition in the United States

Prohibitions can and do have some effect in terms of reducing or constraining consumption; but these effects are often short-lived and come at great financial and social cost. An instructive example is alcohol prohibition in the United States, which lasted from 1920 to 1933. Although alcohol consumption had begun to decline in the years leading up to Prohibition, it dropped even more sharply once the new law came into effect. Yet this decline was only temporary; by around 1929, consumption had rebounded to somewhere between 60% and 70% of pre-Prohibition levels (Miron and Zweibel, 1991; Dills et al., 2005). This occurred despite a consistent and significant increase in enforcement spending during that period: appropriations for the federal Prohibition Bureau rose from $6.3 million in 1921 to $13.4 million in 1930 (Miron and Zweibel, 1991).

However, while expenditure escalated and produced only a limited effect on use, there is evidence that Prohibition led to a significant reduction in cirrhosis deaths (Dills and Miron, 2003), and had an impact on alcohol-related domestic violence.

An absence of reliable data has led to some dispute over the extent to which Prohibition should be judged a success, but there is a general consensus on two points: "Prohibition almost certainly reduced alcohol consumption, at least in its early years, and it promoted organized crime" (MacCoun and Reuter, 2011: 8). Yet widespread corruption, higher homicide rates, a violent illicit market, and health costs from consumption of unregulated products proved to be too a high price to pay for a relatively short-term decline in alcohol use and related problems, particularly given that around the same time, other nations, such as Australia and Great Britain, achieved greater reductions in alcohol consumption than the US simply through tight regulation (Levine and Reinarman, 2004).

3.2. Decriminalisation

"Decriminalisation", when discussed in relation to drug policy, is not a clearly defined legal term. While often mistakenly confused with the legalisation of drugs, decriminalisation is in fact generally understood to mean the removal of criminal penalties for possession of small amounts of certain drugs for personal use. Under a decriminalisation approach, possession generally remains an offence that may be subject to a civil or administrative sanction, such as a fine or mandatory treatment assessment, and whatever drugs found are confiscated.

Depending on how the policy is defined, there are around 25 to 30 countries that have carried out some form of decriminalisation of either cannabis or all drugs (Eastwood, Fox and Rosmarin, 2016). However, there is considerable variation in how decriminalisation policies are implemented in different jurisdictions, in terms of quantity thresholds (the amount of drugs deemed to be for personal use or for supply to others), the nature of civil sanctions (which can range from no sanction to large fines, or confiscation of passport or driving license), and who is responsible for enforcing them (police, judges, social workers and/or health professionals). Unlike the legal regulation of drugs, decriminalisation of this kind is permitted within the UN drug conventions and has been endorsed by a wide range of UN agencies (Bewley-Taylor and Jelsma, 2012; Murkin, 2015).

In keeping with the finding that punitive laws do not significantly deter drug-taking, evidence from some of the most high-profile of these real-world reforms shows that removing criminal penalties for personal drug possession does not result in significant increases in the prevalence of drug use. Evidence from around the globe suggests this is true whether the decriminalisation process was accompanied by greater investment in health and harm reduction measures (as it was in Portugal, for example), or not (as was to varying degrees the case in the US, the Czech Republic and Netherlands). Such investment is, of course, desirable under any policy regime.

3.2. a) Portugal

Portugal decriminalised the possession of all drugs in 2001, and levels of drug consumption have changed relatively little in the years since. Drug use among the general population had risen slightly when measured in 2007 (a trend in line with other, similar countries [Hughes and Stevens, 2010]), but this increase was mostly restricted to a change in lifetime use, which, as discussed earlier, is the least useful prevalence indicator. Past-year and past-month drug use remained stable, and when last measured in 2012 were actually marginally lower than in 2001 (Murkin, 2014). The same trend was also observed among people aged 15 to 24, the population most at risk of starting to use drugs for the first time. The apparent decline in recent drug use was mirrored by a reduction in the proportion of people who had previously used an illicit drug but no longer do (from around 45% to under 30% between 2001 and 2012).

Lifetime prevalence, past-year prevalence and past-month prevalence of drug use among all adults (aged 15-64) in Portugal
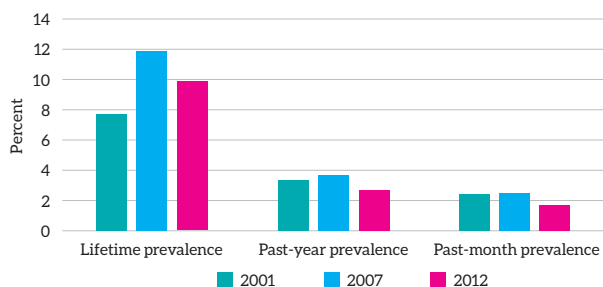
Among school students, too, there is no evidence that decriminalisation led to increases in drug use. From around the time that the policy was introduced until 2007, there was a marked decline in consumption across several age ranges (Hughes and Stevens, 2010). However, when measured again in 2011, this initial decrease had been reversed, and prevalence of use had returned to roughly the same levels recorded in 2001 (Murkin, 2014).

Overall, it is clear that decriminalisation had little to no effect on the prevalence of drug use in Portugal. But it may be argued that, although the country's decriminalisation policy certainly reduced penalties

for drug possession, it did not eliminate them entirely. Personal drug possession is still an administrative offence, and may therefore be punishable by fines or community service, for example. As such, in theory, there could be some residual deterrent effect from these sanctions. But in reality, would their removal lead to a significant rise in use?

When people are caught with drugs in Portugal, they are often referred to a "Commission for the Dissuasion of Drug Addiction", which decides what penalty (if any) the person should face. However, the majority – around 80% – of those who appear before the commissions have their cases "suspended" – i.e., do not receive any penalty at all (EMCDDA, 2013). Furthermore, even when non-criminal administrative sanctions are included, the country has one of the lowest offence rates for drug possession in Europe (Vuolo, 2013: 151). This undermines the idea that Portugal's drug policy is, at its core, still based on the application of punitive sanctions, and that these sanctions are responsible for the negligible changes in consumption post-2001.

The shift away from criminalising or otherwise punishing drug users, combined with increased investment in health, welfare and treatment services, was also intended to de-stigmatise drug consumption and create an environment in which those in need of support are better able to access it. Portuguese drug policy officials argue that, in this regard (but also in many others), the reform has been successful (*The Economist*, 2009; Hawkes, 2011), and there is evidence to support their claims, as between 2000 and 2008, the number of people in day-treatment centres or opioid substitution treatment rose from 29,204 to 38,532 (Laqueur, 2015).

3.2. b) The Czech Republic

While Portugal, despite having decriminalised personal drug possession, has levels of use well below the European average, the situation in another country that follows a similar approach is markedly different. The Czech Republic decriminalised the personal possession of drugs in 2010, and has some of the

highest levels of drug consumption in Europe (Csete, 2012). But what is relevant is whether use increased to these levels after decriminalisation. The country decriminalised the personal possession of drugs in 2010, after conducting a cost-benefit analysis of criminal laws that were introduced in 2000 (Zabransky et al., 2001). The analysis found that the introduction of criminal penalties had not reduced the availability of drugs, that the social costs associated with drug use had increased significantly during the time the penalties were in force, and that the penalties had failed to prevent drug use rising. It was these negative outcomes that prompted the Czech government to (re-) decriminalise drug possession.

Importantly, although levels of drug use in the Czech Republic have historically been relatively high, they changed little following decriminalisation: lifetime, past-month and past-year prevalence of the use of a range of drugs remained more or less stable. In some cases, there were slight increases, and in other cases, slight declines (EMCDDA, 2015c).

3.2. c) South Australia

Intra-national comparisons of drug use and drug laws also point to decriminalisation having little to no effect on levels of consumption. In 1987, the state of South Australia introduced what was called the cannabis expiation notice (CEN) scheme, which replaced criminal penalties for cannabis possession with civil penalties in the form of fines ranging from $50 to $150 (Single et al., 1999). The scheme also decriminalised the home cultivation of cannabis, initially allowing for up to ten plants, before being reduced to three plants in 1999, and now only one plant.

Following these reforms, there was no increase in rates of recent (weekly) cannabis use, but there was a rise in the prevalence rate for lifetime use. However, this rise was not attributed to decriminalisation, because the increase in South Australia was not greater than that seen over the same period in other states that did not decriminalise (Kilmer, 2002; Donnelly et al., 1998).

Analysis of the effects of South Australia's decriminalisation policy is, however, complicated by a subsequent "net-widening" effect that was observed. Because the CEN scheme enabled the police to process minor cannabis offences with greater ease, and because it reduced police discretion to give informal cautions, the number of people receiving civil penalties increased from around 6,000 in 1987/88 to roughly 17,000 in 1993/94 (Christie and Ali, 2000). Due to implementation issues, a relatively low proportion of those given fines actually paid them, triggering criminal convictions in most instances. As such, the expiation system may, ironically, have led to more convictions than would have taken place without it (Christie and Ali, 2000). But regardless of the direction of change in the law – whether, on balance, it was more or less punitive in practice (if not intent) – the majority consensus among researchers is that the CEN scheme did not have an effect on the prevalence of cannabis use in South Australia.

3.2. d) The United States

A similar intra-national comparison of decriminalisation in practice comes from the US, where from 1973 to 1978, 11 states reduced the penalties for cannabis possession, making it punishable only by a modest fine (Single, 1989). Early studies into the effects of these reforms found they had no impact on levels of cannabis consumption in the states in question. However, later research suggests that some of these studies may have been flawed, because they treated all of the states' reforms as equivalent decriminalisation approaches, when there was in reality significant variation between some of these policies: while some states had genuinely decriminalised cannabis, others had merely reduced the severity of sanctions while keeping cannabis possession a criminal offence (Pacula, Chriqui and King, 2004). More recent research that better accounts for these policy differences indicates that reduced penalties for cannabis possession were associated with increases in use, albeit relatively small ones.

3.2. e) The European Union

Finally, a 2013 study of European Union member-states that took into account not only countries' stated drug policy regime, but also actual arrest rates for drug possession offences, actually found that lower arrest rates and decriminalisation were both associated with *lower* levels of last-month drug use (Vuolo, 2013). The extent of this association – which was, statistically, "among the strongest and most consistent findings" – was such that in countries where criminal penalties for personal possession have been eliminated, young people have a 79% lower odds of having used drugs in the last month.

Drug consumption rooms: decriminalisation on a highly localised scale
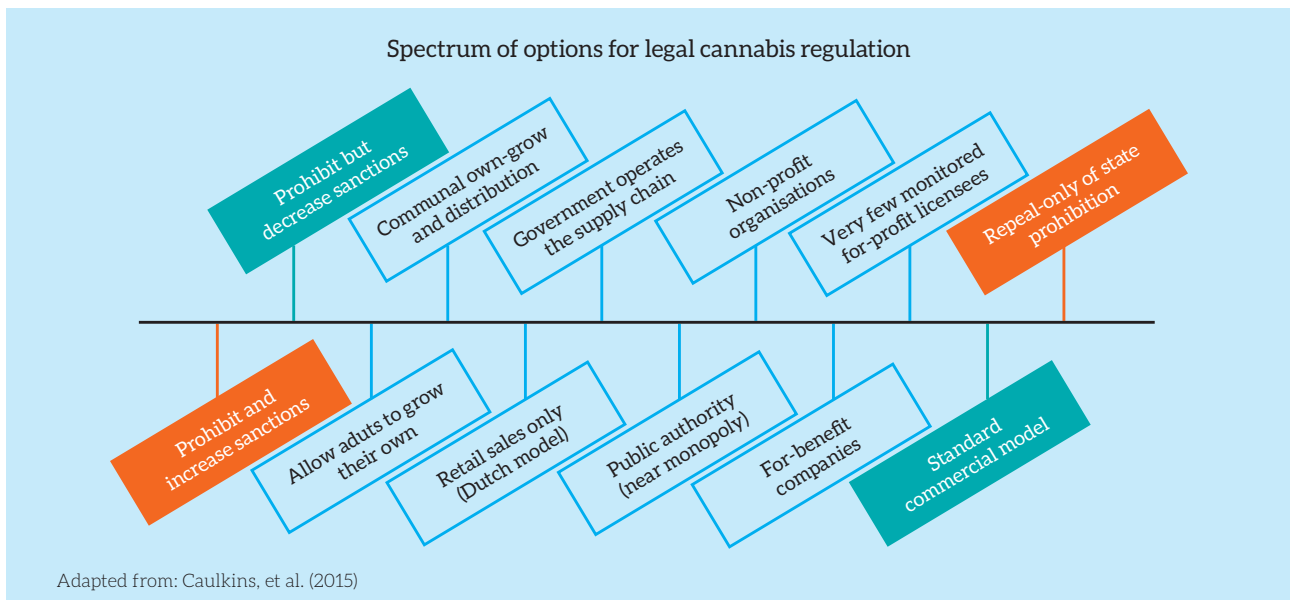
Drug consumption rooms (DCRs) provide a space where people can consume legally or illegally obtained drugs in a safe and hygienic environment, under the supervision of trained medical staff. Since 1986, more than 90 DCRs have been set up in nine countries, and while primarily considered an effective harm reduction measure, they are also localised decriminalisation initiatives, as in and around such facilities, users are not subject to the legal sanctions for drug possession that they would otherwise face on the street. Despite eliminating such penalties, there is no evidence that DCRs increase levels of drug use or risky patterns of consumption (EMCDDA, 2010). There is, however, evidence that they have a range of positive outcomes, including reducing the incidence of fatal overdoses, helping to establish and maintain contact between drug users and health and social services, and reducing public order problems (EMCDDA, 2010; Zobel and Dubois-Arber, 2004; Debeck et al., 2011).

3.3. Legal regulation

Those on the reform side of the drug policy debate sometimes conflate the proven, real-world effects of decriminalising drugs with the predicted effects of legalising and regulating them. Many cite the finding that lessening or removing penalties for drug possession does not appear to increase use as evidence that the legal regulation of drugs would not lead to significant increases in consumption. But while this is an important point to make, undermining, as it does, one of the central justifications for prohibition, there are other considerations to take into account as well.

Although decriminalisation and legal regulation both involve the removal or reduction of legal sanctions for users of currently illicit drugs, under decriminalisation, the supply of drugs remains prohibited, so it is only the removal or modification of any user-level deterrent effect that may influence levels of consumption. By contrast, when considering possible changes in use under legal regulation, it is necessary to factor in not just the absence of this putative deterrent effect, but also changes to how drugs are made available, how they are promoted (if at all), and how social and cultural norms around their use might evolve, all of which are likely to affect levels of consumption.

Legal regulation does not refer to one single policy approach; it can take many forms. For cannabis, for example, the graphic overleaf illustrates that there is a spectrum of regulatory options. At the more permissive end of the spectrum are minimal controls over a commercially driven free market, while at the more restrictive end is a market that limits availability to home cultivation, with everything from a government monopoly and a market run by non-profit companies in between.

Spectrum of options for legal cannabis regulation

Prohibit but decrease sanctions · Communal own-grow and distribution · Government operates the supply chain · Non-profit organisations · Very few monitored for-profit licensees · Repeal-only of state prohibition

Prohibit and increase sanctions · Allow aduts to grow their own · Retail sales only (Dutch model) · Public authority (near monopoly) · For-benefit companies · Standard commercial model

Adapted from: Caulkins, et al. (2015)

The devil is in the detail when it comes to whether legal regulation will be net positive or negative for public health and safety. Kilmer (2014), for example, identifies 'eight Ps', key elements of a legal cannabis market for which regulation must be well-designed if the market is to be effective in minimising social and health harms. These are: production, profit motive, promotion, prevention, potency, purity, price, and permanency (i.e., the flexibility to significantly alter or abolish the market if it is deemed unsuccessful).

There is currently only limited direct evidence of the impact of any kind of legalisation and regulation on levels of drug use. Some of the most far-reaching instances of a formerly illicit drug being legalised and regulated for non-medical use are only just taking place. The world's first, large-scale, *de jure* legally regulated cannabis markets are currently being, or have only relatively recently been, established – on a national level in Uruguay, and on a state/jurisdiction level in four US states and Washington DC. Of these, only two jurisdictions' markets – the states of Washington and Colorado – have been operational long enough to generate any initial data.

Along with evidence from alcohol and tobacco regulation, this and several other real-world reforms can provide relevant insights into the kinds of regulatory measures that can be used to manage impacts on levels of use. These include 40 years of

a *de facto* legal cannabis market in the Netherlands; the cannabis social club system in Spain; the repeal of national alcohol prohibition in the United States; and heroin prescribing, which has taken place in one form or another for several decades, in a number of countries.

Before discussing the lessons that can be learned from these examples, a good place to start is with existing research that attempts to quantify the likely impact of legal regulation on consumption. Despite there being a spectrum of options for regulating legal drug markets, most estimates of potential changes in prevalence of use are based on the assumption that currently illegal drugs would be bought and sold within a highly commercialised legal market, subject to a degree of regulation similar to that currently applied to the alcohol trade in the US and other Western countries.

3.3. a) The impact of price changes

Research in this area has focused primarily on cannabis, with much consideration given to how post-legalisation price changes might affect consumption. Assuming that cannabis was legalised under a US alcohol-style model of regulation, it is generally assumed that the price of cannabis would fall significantly, driven down by commercial competition, the emergence of economies of scale, and the removal of a risk premium associated with the illicit economy. As shown for a range of

substances, both legal and illegal, drug use is responsive to price. Hence it can be said with a large degree of certainty that price decreases would be accompanied by increases in consumption. The most widely cited estimate of the price elasticity of cannabis (the degree to which demand changes with price) is -0.54, meaning a 10% decrease in price would lead to a 5.4% increase in consumption if not mitigated by other measures (Kilmer et al., 2010). This figure would naturally vary depending on the drug in question.

Since becoming operational in 2014, prices in the legal, commercial cannabis markets in Colorado and Washington State have begun to fall (Kleiman, 2015), and without regulatory controls to prevent prices declining even further, it has been suggested that the pre-tax price of a cannabis joint in such markets could potentially fall to as low as 1% of its current level, making it as expensive as a tea bag (Caulkins, 2010). Based on the price elasticity estimate above, even if cannabis were subject to high taxes, prices could potentially fall so low as to trigger at least a doubling of consumption. While as previously noted, drug use and drug harm are not directly equatable, this nonetheless underscores the importance of price controls, and of regulation more broadly, in determining the outcomes produced by legal drug markets.

Price controls have long been debated in relation to the alcohol market, with public health officials and the drinks industry naturally clashing over the question of their effectiveness in terms of reducing use. But there is now strong evidence, reviewed in two meta-analyses of more than 100 studies, that when alcohol prices go up, consumption goes down (Gallet, 2007; Wagenaar et al., 2009). This is a statistically robust relationship that holds for consumption patterns of varying intensity.

Minimum unit pricing (MUP), whereby government sets the "floor" price that must be charged for alcoholic drinks, is one of the most frequently discussed ways of safeguarding against the significant price declines that occur in a more commercially oriented free market. MUP was introduced in Canada's Saskatchewan province in 2010, and the move has been associated

with reductions in alcohol use and related fatalities (Stockwell et al., 2012; Zhao et al., 2013). Given the weight of evidence that such measures promote more moderate alcohol consumption, they clearly merit consideration from policymakers contemplating how to establish a new legal drug market without precipitating markedly higher levels of use.

3.3. b) Non-price factors

Legalisation will also have a range of "non-price" effects on consumption; the relative attractiveness of drug use is not just about how much it costs consumers. Indeed, the benefits to consumers of buying from a legal market are a major reason why legalisation has the potential to reduce the size of the equivalent criminal market.

Depending on how they are regulated, drugs, once legal, could be even more readily available than at present. The convenience of being able to access a reliable supply of a given drug from a licensed outlet, rather than sourcing them from dealers operating in a criminal market, clearly has added appeal. The same goes for the quality and consistency of the product, which along with proper labelling, could reduce the health risks associated with each incident of drug use. A greater range of appealing products – cannabis-infused drinks, edibles, and cannabis e-cigarettes (which avoid most smoking-related risks) are salient examples – could also help create a broader consumer base. And most obviously, advertising and other promotional activities could be designed with the express intention of increasing use.

As discussed above, evidence from psychological research and places that have implemented decriminalisation policies suggests that it is informal personal and social controls, rather than legal status, that are the key determinants of whether or not people use drugs. However, this is not to say that the law cannot reinforce or undermine these controls. While decriminalisation does not appear to function as an endorsement of drug use – a signal to the public that drug use is now more socially acceptable – legalisation, under which all sanctions for possession and use are

removed, and the availability of drugs permitted, would likely send a stronger message. Particularly for people who (whether consciously or not) prioritise adherence to social norms, the simple illegality of an act may, independently of the sanctions associated with it, prevent people from engaging in it. Legalisation might therefore have a "symbolic threshold effect" for some people that is absent under decriminalisation, because the latter reform, while changing the severity of the penalties linked to drug use, does not alter its prohibited status.

Other social deterrence factors – such as the shame or embarrassment experienced as a result of behaviour considered outside of accepted societal standards – are likely to be affected by moving drug use from the "wrong" to the "right" side of the law for some people.

For cannabis, it has (rather speculatively) been estimated that changes to these informal controls, along with other non-price effects of legalisation on consumption, could generate an increase in past-month use somewhere in the range of 5% to 50% (MacCoun, 2010). Once again, the role of regulation is key here: if it is used to avoid or at least mitigate some of the non-price effects of legalisation that will tend to increase use, then increases in consumption are likely to be towards the lower end of this range of estimates. Evidence from tobacco regulation, for example, has shown that comprehensive bans on advertising are effective at reducing consumption (Henriksen, 2011). Similarly, since a greater concentration of alcohol outlets is associated with increased alcohol use (Popova, et al., 2009; NASADAD, 2006), controls on the location and density of drug outlets are likely to constrain any related increases in consumption.

Regulation may also help shape the impact of legalisation on the social deterrence factors and related use levels specifically. While a changing of legal status may provoke an increase in consumption among certain groups, stringent and responsible regulatory controls are likely to moderate this effect. The adoption of such controls for tobacco products, combined with better education and prevention efforts, has fostered a norm

of social disapproval for smoking, contributing to a 50% decline in prevalence in some Western countries over the past 30 years (HSCIC, 2013; Australian Government Department of Health, 2015). Crucially, it was not necessary to prohibit cigarettes, or criminalise smokers, in order to achieve this outcome.

The evolution of tobacco regulation and the prevalence of smoking in Australia
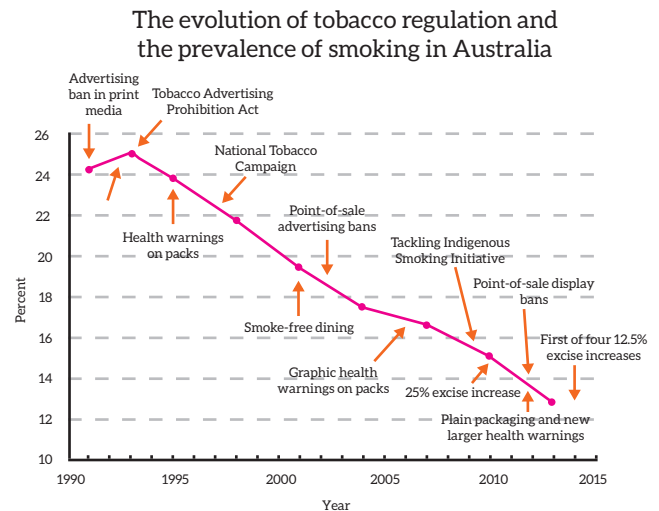
Source: Australian Government Department of Health (2015)

3.3. c) Cannabis "coffee shops" in the Netherlands

Further support for the idea that well-designed regulation can help prevent dramatic increases in drug use comes from the Netherlands, where a quasi-legal market for cannabis has operated since 1976. The country has effectively decriminalised the personal possession and use of cannabis for adults, but unlike similar decriminalisation approaches that have been implemented elsewhere, it additionally tolerates the existence of outlets for low-volume cannabis sales – the well-known "coffee shops" – within a formalised framework. Since the introduction of this policy of non-enforcement, various licensing conditions have been established in order to regulate the sale of cannabis – which is still technically illegal – from these commercial retail outlets.

A notable feature of the approach taken in the Netherlands is that it maintains a prohibition on the supply of cannabis to the coffee shops. This has had the effect of preventing dramatic declines in cannabis prices, as growers and traffickers must still

operate illegally, producing and transiting cannabis in economically inefficient ways, as well as applying significant mark-ups to compensate for the risks of apprehension by law enforcement. Hence when analysed in 2005, cannabis prices on the Netherlands' quasi-legal market were comparable to cannabis prices on the illicit market in the US (MacCoun, 2011). The Netherlands is therefore an example of (user-level) legalisation without dramatic price decreases, which, as discussed, could potentially produce large increases in consumption.

- The Dutch system emerged in several stages, each of which is recognised as having distinct effects on levels of cannabis use (MacCoun, 2011).
- The first stage (roughly from the mid-1970s to mid-1980s), during which there were only a relatively small number of coffee shops in operation, produced no detectable impact on consumption.
- The second stage (roughly from the mid-1980s to mid-1990s) saw a significant increase in cannabis use, at a time when prevalence in many other Western countries was either stable or in decline. This increase has been attributed to the rapid proliferation and commercialisation of coffee shops that took place during this time, an effect that is in keeping with evidence from the commercialisation of tobacco and alcohol.

However, from the mid-1990s to mid-2000s, there was a reversal of this trend: cannabis use in the Netherlands declined during a period in which it was increasing in other European countries. It has been argued that this decline is most plausibly explained by improvements to the way the coffee shops were regulated, as it coincided with the introduction of greater restrictions on advertising and marketing, the closure of nearly 40% of outlets, and a raising of the legal age for cannabis purchases from 16 to 18.

Thus while the use of a given drug may rise once it is legalised, the extent of any such increase is likely to be dramatically lower if commercial promotion is resisted, sufficiently stringent regulations are imposed, and prices are kept relatively high. There must also be

scope to adjust regulations in order to deliver improved outcomes as a drug market beds in.

3.3. d) Cannabis social clubs in Spain

Spain offers another example of how a non-commercial approach can limit increases in drug consumption in an (effectively) legal market. Since the 1990s, the country has tolerated the establishment of cannabis social clubs, informal non-profit associations through which registered members can collectively produce cannabis for personal consumption.

Catalonia is one of the areas most closely associated with the cannabis social club system, and while there was a proliferation of clubs in the region from 2007 to 2011, it did not lead to a dramatic increase in use. In fact, during this period, cannabis use actually declined among the general population (Franquero and Bouso Saiz, 2015). The absence of commercial marketing or a profit motive to increase consumption or initiate new users, combined with the clubs' relatively restrictive membership policies and culture of on-site use, likely played a role in this trend, helping to limit availability and restrict consumption to existing cannabis users.

3.3. e) The repeal of alcohol prohibition in the United States

If alcohol prohibition is a useful historical example of how such an approach affects drug consumption, then its repeal can also provide insights into the likely impact of legalisation and regulation. While alcohol use is now significantly higher than it was under Prohibition, there was no sudden explosion in consumption once the law was changed. MacCoun and Reuter (2001: 304) note that "[t]he most sophisticated estimates suggest barely any increase in total consumption in the 5 years following Repeal", while Levine and Reinarman (2004) state that it was not until the end of the 1960s, 35 years after repeal, that *per capita* alcohol consumption rose to the pre-Prohibition levels of 1915. They attribute this to the strict regulatory policies established following the end of Prohibition, which were eventually relaxed in response to industry lobbying. In stark contrast to

today's more lax regulatory climate, 15 states initially opted for state monopolies, while only nine permitted retail sales of alcohol without food (MacCoun and Reuter, 2001: 168). Delivering their assessment of the changing alcohol policy landscape at the time, Levine and Reinarman's (2004) conclude: "Whatever public health benefits prohibition achieved in terms of reducing consumption, alcohol regulation in the 1930s and early 1940s accomplished them as well."

3.3. f) Colorado's commercial cannabis market

Colorado voted in favour of legalising cannabis for recreational use in November 2012. It is too early to say what the true impact of a commercial cannabis market has been on consumption, as the latest data on use only goes up to 2014, the year that the first retail cannabis stores opened. However, the legalisation ballot initiative, Amendment 64, became law on 10 December 2012, enabling adults aged 21 or older to possess cannabis, grow up to six cannabis plants themselves, and give up to one ounce to other adult users. So while not particularly revealing at this stage, the available data provides a limited indication of the effect that a year or so of such legal activity has had on cannabis consumption.

- The Healthy Kids Colorado Survey (2013) found that, in 2013, 20% of high school students admitted using cannabis in the preceding month, and 37% said they had at some point in their lives. Both of these figures are lower than the national averages (23.4% and 40.7% respectively), which are recorded by the National Youth Risk Behaviour Survey (CDCP, 2013)
- Looking at a different youth demographic, the National Survey on Drug Use and Health found that, although cannabis use among adolescents (aged 12-17) and young adults (aged 18-25) both rose slightly in Colorado between 2011/12 and 2013/14, these increases were not statistically significant (SAMSHA, 2015)
- While arguably a lesser public health concern, there have, however, been statistically significant

increases in cannabis use among adults in Colorado, but these are in line with broader national patterns, including states that have not legalised cannabis. Between 2011/12 and 2013/14, past-month cannabis use amongst those aged 26 and above in Colorado rose from 7.6% to 12.45%, while use among those aged 18 and over rose from 10.4% to 15.17% (SAMHSA, 2015)

To date, the rises in adult cannabis consumption seen in Colorado are broadly in line with changes seen elsewhere in the US. However, they may, to some extent, be driven by a greater willingness to admit to cannabis use now that it is legal in the state, rather than an actual change in the number of users. The novelty and publicity around the newly legal market may also have been a factor, as curious older users in particular exercise their new freedoms. It is too early to say what will happen as this novelty wears off, but further increases in consumption would not be surprising given the commercial nature of the market.

3.3. g) Heroin prescribing

At the other end of the regulatory spectrum is heroin prescribing, or "heroin-assisted treatment" (HAT), through which dependent heroin users who have proven resistant to other forms of treatment obtain pharmaceutical heroin (diamorphine) from licensed pharmacists or doctors. Because HAT is considered a medical intervention, it is permitted under international drug conventions, even though it is effectively a form of legalisation. Indeed, for heroin users, entering HAT represents a move from illegal to legal supply, albeit supply within a strictly regulated medical framework. Such treatment programmes are in operation in a number of countries, including the UK, the Netherlands, Switzerland, Denmark and Germany, and trials have been run in Canada, Spain and Belgium.

There is strong evidence from many places, over many decades, demonstrating that providing existing heroin users with a strictly controlled, legal supply of the drug can be an effective way of reducing the harms it cancause, both to users and wider society,

without leading to increases in drug consumption (Strang et al., 2015).

A systematic review (Ferri et al., 2011) carried out by the Cochrane Collaboration (widely considered the "gold-standard" source of evidence-based healthcare information) found that, for long-term, dependent heroin users who have proven resistant to other forms of treatment, HAT can:

- reduce criminal activity;
- reduce the risk of incarceration;
- reduce the risk of death;
- increase the likelihood of staying in treatment; and
- reduce the use of "street" heroin and other illicit substances.

4. Conclusions

As this report has attempted to show, the relationship between drug policy and levels of drug use is a great deal more complex than is commonly assumed. Changes in the consumption of a given drug are influenced by far more than just legal status and enforcement practices. Drug use is more likely to rise and fall in line with broader cultural, social or economic trends; the number of users arrested or trafficking organisations destroyed, and the severity and certainty of punishment, seemingly make little difference.

In particular, the stark lack of evidence that legal sanctions are a meaningful deterrent to drug use should prompt governments to urgently consider decriminalising the possession of drugs for personal use. This is no longer a fringe position; it has the support of the World Health Organization (WHO), UNAIDS, the UN Office on Drugs and Crime,[2] the UN Development Programme, present and former UN Secretaries-General, the Organization of American States, the UK government's Advisory Council on the Misuse of

Drugs, the American Public Health Association, and countless NGOs, academics, health professionals and law enforcement officials (Murkin, 2015).

The use of criminal sanctions is the most serious action a state can take against its citizens; removing such penalties for people who use drugs therefore represents an important step towards a more humane approach, as well as being an effective means of saving money and redirecting police resources. Moreover, the benefits of such an approach are likely to be greatest for the most at-risk drug users; as the WHO (2014: ch. 5) has stated, decriminalisation is a "critical enabler" of access to, and uptake of, HIV interventions and services.

While the number of places that have implemented decriminalisation policies means there is strong empirical evidence that they do not increase drug use to any significant degree, less is known about the potential impact of establishing legally regulated drug markets. The policy approaches outlined in the final section of this report do not allow cast-iron predictions to be made about how large-scale systems of legal regulation would affect levels of drugs use, but they do suggest that the risk of dramatic increases in consumption can be mitigated.

Well-managed legal markets that are cautiously and incrementally introduced, and that learn from the mistakes made with alcohol and tobacco regulation – by, for example, preventing price declines, limiting the range of drug products available, investing in risk education, treatment and prevention, and enforcing a ban on advertising or promotion – are likely to ensure that the benefits of legalisation do not come at the expense of an unprecedented rise in use and related harms.

A number of jurisdictions have already begun legalising and regulating cannabis, and the evidence from these innovations is only beginning to emerge. For those that will inevitably follow, consideration should be given to avoiding the risks of over-commericalisation, and prioritising public health over private profit in the design of regulatory frameworks. Policy makers

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2. Although the agency subsequently backtracked on its support. For more, see Rolles, S. (2015) 'The truth behind the UNODC's leaked decriminalisation paper', Transform Drug Policy Foundation. http://www.tdpf.org.uk/blog/truth-behind-unodcs-leaked-decriminalisation-paper

should therefore examine the possibility of organising supply through not-for-profit entities, such as cannabis social clubs or community-interest cooperatives, or non-commercial market mechanisms, such as partial or complete state monopolies on the drug's trade. This is the most cautious, evidence-based way of proceeding with legal regulation from a public health perspective. But experiments with legal regulation should not stop at cannabis. Governments should also start exploring how, in practice, other drugs might be regulated. The evidence on heroin prescribing in particular suggests that making higher-risk drugs available to dependent users, in a tightly controlled manner, via medical professionals, can produce substantial benefits.

Finally, and crucially, it is important to reiterate the need to move away from a narrow focus on prevalence of drug use as the key indicator of policy success. Levels of use are only important in so far as they reflect levels of overall drug-related harm. Preventing or reducing drug use that causes harm is an appropriate policy goal; preventing or reducing use for its own sake is not.

To seriously address overall harm, drug policy should be assessed using a broader range of metrics – impacts on crime, health, international development, security, human rights, the environment and the economy should all be front and centre when exploring new approaches and evaluating current ones. This more holistic strategy, combined with a fundamental shift away from criminal justice responses, is the way to ensure the international drug control system achieves its original aim of protecting the health and welfare of mankind.

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