Cannabis – Proposals for a Harm Reduction Strategy

October 2004 Revised April 2005

Introduction

Cannabis could legally be prescribed in the UK by a GP until 1971. The origins of cannabis prohibition can be traced back to the 1930's when a vigorous campaign was launched by the US Federal Bureau of Narcotics (headed by H. Anslinger), which portrayed cannabis as a potent narcotic inextricably linked to deviant behaviour. The use of cannabis or to use the term of the time "Reefer Madness˜ led to violent crime, heroin addiction, social menace and death.

'The World Health Organisation's cannabis report of 1955 said: "under the influence of cannabis, the danger of committing unpremeditated murder is very great; it can happen in cold blood, without any reason or motive, unexpectedly, without any preceding quarrel, often the murderer does not
even know the victim, and simply kills for pleasure". Six years later cannabis was prohibited internationally under the first United Nations Drug Convention'.

Today these views are generally considered extreme, however there is a major schism in the perception of cannabis. Proponents of cannabis use argue that it is a natural, relatively harmless drug with many beneficial properties and they claim that the image of cannabis has been tarnished by untruths, propaganda and myths [e.g. 1 & 2]. Prohibitionists and others claim that it is a toxic drug causing widespread harm for the individual and society. [e.g. 3 & 4].

Current reliable data suggests that cannabis use is typically experimental or intermittent in teenagers and adolescents, its use is generally discontinued by most in their mid to late 20's [5 & 6].

Worldwide cannabis is the most widely consumed illicit drug, with an estimated 146 million users. These figures have remained unchanged since the first World Drug Report in 1997 [7].

In the UK approximately 8.5 million people [8] have tried cannabis and over 3 million have used it in the past year. Among 11-15 year olds cannabis was the most frequently reported illicit drug used in 2002, used by 13%, among 16-24 year olds cannabis had been used by 27%, the same survey also reported that cannabis use increased sharply with age: 1 per cent of 11 year olds had used the drug in the last year compared with 31 per cent of 15 year olds; [9] According to the British Crime Survey 2000, cannabis was the most commonly used of all illegal drugs. Amongst 16 to 29 year olds, 44% had used it in their life, 22% in the last year and 14% in the last month.

Since the reclassification of cannabis in the UK in January 2004 some people have claimed that its use has increased, others claim that since reclassification use is less stigmatised and therefore people are more willing to admit using it. Whichever is correct the fact is that GP's and health professionals are now more likely to be asked for information regarding cannabis and its use.

Lenton & Single [10], made a distinction between Harm Reduction (HR) as a broad policy goal and HR as a strategy. They provided the following practical criteria for assessing whether a policy or program practices HR. First, the central defining characteristic of HR is a focus on the reduction of harm as a primary goal rather than the reduction of use per se; it must include strategies for those that continue to use as well as those aimed at reduction of use or abstinence; and there should be some attempt to evaluate whether these strategies will probably result in a net reduction in drug-related harm [10, p.213]. It is important to note that HR is not antithetical to abstinence-orientated program and supply reduction strategies. This paper will, accordingly, cast a fairly wide net and cover issues related to reduction/cessation of use and reduction of harms.

'Harm Reduction is a term that covers activities and services that acknowledge the continuing drug misuse of individuals, but seek to minimise the harm that such behaviour causes' (HM Government, 1998).

Cannabis and harm reduction

This paper has to have a fairly broad approach to HR issues for the following reasons.

The ability to make causal inferences about the harms associated with chronic use in particular is hampered by a lack of longitudinal research and delays in the manifestation of some adverse health and other effects.

To some people even the discussion of a HR strategy for cannabis is controversial, some MP's in particular may consider HR tacit approval of illicit cannabis use.

The emotive and often irrational policy debate (on both sides of the argument) is a major obstacle to the evaluation and realistic reduction of cannabis related harm, particularly when the type and extent of harms are disputed. As Jonas [11] asserts, 'a harm reduction strategy must be based on epidemiologic data about the actual incidence of real negative consequences of taking various drugs. Only once this is known, can we focus our efforts on reducing the actual negative consequences and on truthfully educating the public about those consequences which are irreducible. Unfortunately, there is very little such epidemiologic data available at present.

The exaggeration and minimalisation of harms by opposing camps in this debate compromises the provision of a consistent, believable message, measurement of the costs and benefits of HR initiatives and the evaluation of policy impact.

However, there is no doubt that health professionals require an awareness of the concerns regarding the probable harms that some people may encounter when using cannabis.

Research indicates that when used in particular ways, or by certain people, cannabis may be associated with a variety of health and other (e.g. social, employment) outcomes. These harms may be caused more directly by cannabis itself (e.g. health) or stem from current policies on cannabis use (e.g. legal).

For the sake of brevity only some of these harms, and associated HR strategies, are outlined below and issues considered to be of particular interest are highlighted. It should be stressed that the following discussion is not an argument for a particular legislative or policy position.

Health related harm

Cannabis has a very low acute toxicity [12] and is only a minor contributor to drug related mortality [13-14]. Dr Leslie Iversen respected member of the Royal College states 'cannabis is a safer drug than aspirin and can be used long-term without serious side effects' [15] GW Pharmaceuticals, the only company in the UK licensed to test medicinal cannabis states: "Hundreds of years of cannabis use provide for compelling evidence of safety. There is no reported death from cannabis use. Indeed, the therapeutic index for cannabis (the ratio between a normal and lethal dose) is estimated to be 40,000 to 1. The equivalent ratio for Aspirin is 23 to 1 and for Morphine is 50 to 1" [16]

On the basis of current use patterns, it has been estimated that cannabis produces only small to moderate public health risks and makes only a small contribution to the global burden of disease, compared with the most prevalent drugs, alcohol and tobacco [18 & 19].

The Advisory Council on the Misuse of Drugs report; (4.4.1) In general cannabis users smoke fewer cigarettes per day than tobacco smokers and most give up in their 30s, so limiting the long-term exposure that we now know is the critical factor in cigarette-induced lung cancer [19]
Cannabis use can increase the heart rate by 20-100 per cent above baseline. This increase is greatest in the first 10 to 20 minutes then decreases rapidly thereafter. The rate of decrease depends on whether smoked or oral cannabis is used, lasting three hours in the former and five hours in the latter (Graham 1986; Hall et al. 1994; Joy et al. 1999). Blood pressure is increased while the person is sitting and decreased while standing. The change from sitting to standing can cause faintness and dizziness due to the change in blood pressure. These cardiovascular effects are of negligible clinical significance because most cannabis users are young and healthy and develop tolerance to these effects (Hall 1994; 1998: Joy etal.)

Advisory Council on the Misuse of Drugs report (4.3.3) The cardiovascular actions of cannabis are similar to

the effects of exercise, and probably do not constitute a significant risk in healthy adolescents and young adults. [19]

Summary

Cannabis is not a totally harm free drug [19]. The primary concerns with using cannabis focus mainly on the possibility of respiratory disorders similar to those experienced by tobacco smokers and the risk of exacerbating existing mental health problems in some individuals. Many of the other possible risks from using cannabis remain unproven or inconclusive.
A summary of the available scientific literature and studies regarding health related harm concerning the use of cannabis indicates that the route of administration and type of cannabis used are the most important factors in a HR strategy.

Probable acute harms

The most probable adverse health effects of acute use are: negative psychological effects such as anxiety, panic and paranoia. These effects may be particularly pronounced in first time or inexperienced users. People may also experience disruption of cognitive function (e.g. memory, learning and temporal processing) panic attacks and psychomotor impairment. These effects do not generally persist beyond the period of intoxication. [20 & 21].

Cannabis use could be viewed as potentially disruptive of everyday behaviours reliant on complex cognitive processing. Psychomotor impairment may also increase the risk of accidents while driving or operating machinery.

Cannabis and alcohol, which are frequently used together, may be additive in their effects on psychomotor impairment and driving performance [22]. Thus, cannabis may amplify alcohol induced impairments.

There may be an increased risk of experiencing psychotic symptoms among some vulnerable individuals [23].

Probable chronic harms

The most probable effects of regular (daily or near daily), sustained use (over several years) are: a psychological cannabis dependence syndrome, characterized by a variety of cognitive, physical and behavioural symptoms, such as an inability to control use and continued use despite problems, [24].

Adverse respiratory effects (especially if tobacco is being used in conjunction with cannabis), such as chronic bronchitis and histopathological changes which may be precursors to cancer [25].

The method of administration is obviously a major mediator of this risk, however due to the emotive nature of a cannabis HR strategy alternatives to the conventional method of mixing cannabis with tobacco in a joint have not been widely explored within the context of HR. Cannabis and tobacco smoke contain many carcinogenic compounds and respiratory irritants [26 & 27]. In addition, many smokers who mix cannabis with tobacco are regular tobacco smokers. There is evidence that some of the negative respiratory effects of cannabis and tobacco may be additive [28]. Research conducted by Bud Buddies suggests that in some cases people are mixing tobacco with cannabis in a joint as they mistakenly believe it is necessary in order to use cannabis.

High-risk groups

Certain groups may be at a higher risk of developing the adverse acute and chronic effects of cannabis [see 17,27,28]. These include (but are not exclusive to): adolescents, pregnant women, those with respiratory or cardiovascular disease whose conditions may be aggravated by use, those with a co-morbid disorder, the co-occurrence of two or more substance use disorders (e.g. cannabis and alcohol use disorders), or substance use and other mental health disorders (e.g. substance use disorders and anxiety or depression) is relatively common [40]. In general, those with co-morbid disorders have been shown to experience greater disability and poorer outcomes than those with a single disorder [29 & 30].

Those with schizophrenia may be particularly susceptible to the effects of cannabis. There is some evidence that use may exacerbate psychotic symptoms in those with the disorder, and long-term, heavy use may precipitate schizophrenia in vulnerable individuals [31].

A recent Australian publication reported on a study which modelled the effects on the prevalence of schizophrenia over the lifespan of cannabis in eight birth cohorts: It derived predictions as to the number of cases of schizophrenia that would be observed in these birth cohorts, given the following four hypotheses:

That there is a causal relationship between cannabis use and schizophrenia
That cannabis use precipitates schizophrenia in vulnerable persons
That cannabis use exacerbates schizophrenia
That persons with schizophrenia are more liable to become regular cannabis users.

The results indicated that there was a steep rise in the prevalence of cannabis use in Australia over the past 30 years and a corresponding decrease in the age of initiation of cannabis use. There was no evidence of a significant increase in the incidence of schizophrenia over the past 30 years. Data on trends re the age of onset of schizophrenia did not show a clear pattern. Cannabis use among persons with schizophrenia has consistently been found to be more common than in the general population.

The report concluded that: 'Cannabis use does not appear to be causally related to the incidence of Schizophrenia, but its use may precipitate disorders in persons who are vulnerable to developing psychosis and worsen the course of the disorder among those who have already developed it'. [16]

However it is interesting to note that some schizophrenia sufferers have reported that cannabis use 'silences the voices' and the higher incidence of cannabis use amongst sufferers may not be indicative of a direct link between use and the onset of the illness [16a]. GW Pharmaceuticals are currently conducting stage III trials regarding the use of a cannabis medication as a treatment for schizophrenia [16b]. More research is required in this field.

The world-renowned Otago University study which has followed 1,000 Dunedin-born people for over 30 years has prompted the researchers to recommend "delay onset of use until at least young adulthood" The research indicates that problems occur for genetically vulnerable adults who use cannabis while their brains are still developing

The study says a link between cannabis and mental illness depends on a specific genetic disposition. But even then, only 15 per cent of the people with the gene will develop cannabis-related psychotic behaviour, and only if they use it as adolescents.

Other studies have identified a connection between cannabis and psychotic behaviour but this research - a combined effort by Otago University, London's King's College and the University of Wisconsin - has taken it a step further by pinpointing the exact gene.

The study repeatedly questioned 803 participants in the Dunedin Multidisciplinary Health and Development Study about their cannabis use when aged 13, 15 and 18.

When they were 18, 27 per cent said they used cannabis at least once a month, some every day. By the time they were 26, 3 per cent overall had developed some recognised psychosis: 1 per cent had schizophrenia and 2 per cent had milder conditions.

The study defined psychosis as "a period of more than a month in the past year when the individual constantly experiences hallucinations, delusions, loss of pleasure, low motivation for normal activities and disorganized behaviour".

Researchers questioned the 803 study members, and their family and closest friends.

Among those in the study who used cannabis as teenagers, the rate of psychosis was 8 per cent. But when broken down further to those who had the cannabis-vulnerable gene, the rate of psychosis was 15 per cent.

The gene is called COMT and everyone has two copies - one inherited from each parent - which then develop into one of three different combinations. The cannabis-vulnerable combination occurs in 25 per cent of the population.

One of the researchers, Associate Professor Richie Poulton of Otago, says the findings carried an important message for a small part of the population.

"We are talking about a very real increase in risk but it is constrained to the minority of people during a particular period of their development."

People should not be alarmist about the findings or "interpret this as supporting extreme views either that cannabis is extremely harmful or the reverse.

"Neither position is supported by the facts and people that promulgate those ideas do the youth of any country a disservice".

In terms of the total population, he said cannabis-related mental illness was not a major health risk.

Medicinal users of cannabis

Medicinal users will take cannabis in the self-treatment of a wide range of conditions, including: arthritis, cancer, epilepsy, glaucoma, HIV, MS, chronic pain and many others. For most people cannabis is seen as a 'last resort' when conventional allopathic treatments have failed [16c]

Many medicinal users would seem to benefit most from ingested cannabis. When ingested a metabolite 11-Hydroxy-Tetrahydrocannabinol is produced, this metabolite is four times more psychoactive than ?9-Tetrahydrocanabinol which is the 'active' ingredient inhaled from a joint, pipe or vaporizer, 11-Hydroxy-THC is not produced when cannabis is inhaled.

For HIV sufferers or people suffering from weight loss due to eating disorders inhalation maybe the most effective method of delivery.

The Medicinal Uses of Cannabis and Cannabinoids list the following absolute contraindications for a cannabis-based medicine: [32]

There is evidence that cannabis might precipitate a psychotic illness, particularly in those who are at risk of developing such a disorder in the future. Therefore until there is sufficient evidence, a history of psychosis should remain an absolute contraindication (Hall, 1999)

There is evidence that there may be an interaction with levodopa and similar anti-parkinsonisim drugs. Therefore use of this group of drugs is currently considered to be an absolute contraindication

Drugs using cytochrome P450 3A4 enzyme as their exclusive mode of metabolism (theoretically fentanyl could be a problem), until further experience is gained.

Health related harm reduction

There are a number of strategies available to reduce the harms associated with the adverse health outcomes listed above. Some target the reduction of specific harms without necessarily entailing major changes in frequency or quantity of use, others may be more orientated to the reduction or cessation of use. However, encouraging cannabis abstinence without tackling the underlying causes of stress is likely to result in the emergence of additional and greater stress-related problems.

[Advisory Council on the Misuse of Drugs, Drug Misuse and the environment, 1998] "9.47 Deprivation gives rise to personal distress and psychological discomfort of a kind which can result in depressive illness as well as lesser and more amorphous types of mood disturbance. In such circumstances mind-acting drugs (including illicit drugs) can be used as self-medication to relieve distress or as a substitute source of excitement and good feelings"

"Drug abuse continues to emerge as a strategy among youth to cope with the problems of unemployment, neglect, violence and sexual abuse" [United Nations Commission on Narcotic Drugs, Youth and drugs: a global overview, 1999]

Be aware that some users perceive cannabis use to be a form of harm reduction in itself, because they believe that it creates fewer problems for them than other drugs such as alcohol [33]. Others may be using cannabis for self-treatment of symptoms caused through illness or disease e.g. MS or chronic pain. As with other drugs, information is the first weapon against harm. It is well known that knowledge does not necessarily ensure behavioral change. However, the provision of accurate and empirically based, non-sensational, timely and acceptable information on the probable risks associated with short and long term cannabis use is a vital aid for users making informed decisions about whether, or how, to use cannabis, and when use might be becoming a problem.

The first step in advising on HR is information gathering, e.g. type of cannabis used, frequency of use, amounts of cannabis used, method of administration, the reason for use (e.g. maybe recreational or medicinal) the following factors also need to be considered, individual health history, age and any possible aggravating factors.

The most important issue in HR is the type of cannabis being used. One of the most common forms of cannabis available in the UK is cannabis resin, also known as 'rocky' or 'soapbar' this form of cannabis only contains 5-8% actual cannabis, the remainder is made up of plastic (for binding), henna or coffee (for colouring), diesel (to aid combustion), ketamine and other adulterants. Rocky/soapbar is not to be confused with hash (hashish) which is a concentrated from of cannabis made by removing trichomes from the female cannabis plant and pressing into solid blocks. Many cannabis users will not be aware of the type of 'solid' cannabis being used, an indication can be inferred from the cost, e.g. Rocky/soapbar/resin is approximately £40.00 to £50.00 an ounce, the cost of hash is dependant on quality e.g. Lebanese is in the region of £90.00 and herbal cannabis (again dependent on the variety and quality) varies from £100.00 to £140.00 per ounce [34]

The most obvious and easiest advice to give in order to reduce harm is not to smoke. However, this is not necessarily acceptable or desirable to many users many of whom may simply wish to minimize the risk associated with use. It is important not to underestimate the benefits cannabis use is perceived to provide (e.g. relaxation, 'helps me chill'), which may be powerful motivators for continued use despite the simultaneous recognition of cannabis related problems.

An alternative to smoking cannabis mixed with tobacco would be to smoke cannabis in a pipe without the addition of tobacco; this approach would remove the additional factor of nicotine addiction and the obvious risks associated with tobacco. This course of action does not infer that the smoking of cannabis 'pure' in a pipe is harmless as the very act of combustion produces health damaging hydrocarbons

If inhalation were the preferred method of administration the use of a vaporizer would be preferred within the context of HR. The main active ingredient in cannabis (THC) is not contained within the structure of the cannabis plant itself, it is contained in small mushroom like structures (trichomes) which are found predominately on the flowers of the female cannabis plant. A study has demonstrated that a vaporizer can successfully generate THC at 185°C, a good quality vaporiser will operate in the temperature range of 180 to 225°C this is below the flashpoint of cellulose (plant material) and the lack of combustion completely suppresses benzene, toluene, and naphthalene formation. [35]. Study results indicate that vaporization can deliver doses of cannabinoids with a drastic reduction in pyrolytic smoke compounds [36]

When cannabis is smoked in a joint temperatures of 700 to 900°C are reached, this produces noxious pyrolytic byproducts [36]. As decent vaporizers cost from £100.00 to £400.00 many users will be reluctant to purchase such an expensive device for the HR benefits alone, it may be worth mentioning that by burning cannabis in a joint 50% of the THC is destroyed by the act of combustion and as a vaporizer avoids the burning process there is a cost saving benefit. The initial cost of a vaporizer could be recouped in a matter of months, as the amounts of cannabis used to achieve the effect desired by the user would be reduced.

Many people mistakenly believe that smoking cannabis in a water pipe is HR; the opposite is actually the case, the assumption that tar is insoluble in water and by therefore drawing smoke through water 'purifies' is partly correct. However THC is also insoluble in water, the net effects of using a water pipe is that more smoke has to be inhaled to compensate for the THC filtered out via the water. A user of cannabis will effectively inhale up to 30% more tar by using a water pipe than by using cannabis in an unfiltered joint. [35 & 36]

There are no reported long term health effects associated with ingesting cannabis, the World Health Organisation state "There appears to be little or no human or animal evidence that acute or chronic use of cannabinoids affects

liver function. There is reasonable animal evidence that cannabinoids decrease intestinal motility and delay gastric emptying. There is no evidence of significant symptoms of constipation as a consequence, and, as typically used, cannabis has minimal effects on the absorption of alcohol" [37]

Adverse psychological effects.

For people who are prone to experiencing anxiety, paranoia and panic when using cannabis, the best advice is not to use. For those who choose to continue, sensible guidelines such as, setting limits on the amount smoked, not mixing cannabis with drugs that could heighten such feelings and smoking in a safe environment with trusted friends who can provide reassurance, may limit their occurrence or the severity of their effects. It is important for users to be aware that for most, such unpleasant feelings will pass after a few hours. Those who are schizophrenic or are prone to psychotic symptoms need to be aware of the possibility of exacerbating such symptoms or precipitating a schizophrenic episode. While limiting use may alleviate minor psychological discomfort in most users, in this group abstinence may be the most advisable HR measure. [17,23,24,32]

Psychomotor impairment.

The extent to which cannabis is implicated in accidents is much debated; any psychomotor impairment may increase the likelihood of harm in an unexpected situation or emergency placing the user and others at risk. Cannabis intoxication is not advisable before or whilst driving a vehicle or operating machinery, especially if the task is unfamiliar or requires sustained attention. In particular, people should be advised against mixing cannabis and alcohol in this context

Respiratory harm.

Not sharing joints and bongs and cleaning smoking equipment regularly can decrease the risk of spreading infectious disease such as influenza. Ingesting cannabis or vaporizing will eliminate smoking-related harms. There may be some resistance to this recommendation as it is difficult to titrate the dose when consumed orally, also when inhaled the effects of cannabis can be felt within 10 to 20 seconds, ingestation will take 1 to 2 hours for the effects to be felt [3 & 32].

As most users prefer smoking, not mixing with tobacco, smoking joints rather than water pipes and avoiding deep inhalation, may reduce harm.

It has also been suggested that smoking higher potency cannabis may reduce the amount of smoke inhaled because users would become intoxicated more quickly [e.g. 38].

"Increased potency may have little or no adverse effect if users are able to titrate their dose to achieve the desired state of intoxication. If users do titrate their dose, the use of more potent cannabis products would reduce the amounts of cannabis material that was smoked, thereby marginally reducing the respiratory risks of cannabis smoking". (6.14) [Cannabis: The Scientific and Medical Evidence Lords Science & Technology Select Committee 1998]

Cognitive impairment.

The impairment associated with chronic use may be very subtle and not easily extrapolated into everyday situations. However, impairments of attention and memory suggest that, if users are concerned about the impact of regular use on their daily performance and interactions with others, they seek assistance to moderate their use, or at least limit their consumption.

Dependence

Cannabis dependence has often been trivialized or even dismissed and while many users can control their use without assistance [e.g. 39], some experience significant problems and seek professional help to reduce or cease use. HR strategies will vary according to how entrenched use patterns and associated problems have become, and the goals of the individual concerned.

In an interview study (Robson & Bruce, 1997) in 201 problem and 380 'social' drug users using the well vali-

dated Severity of Dependence Scale (SDS). Scores (maximum being 15) in the problem group were 12.9 for heroin, 6.1 for amphetamine, and 5.5 for crack cocaine. Cannabis SDS score was 2.6 and comparable with those of LSD 3.1 and Ecstacy 1.3, two drugs which are generally not associated with dependence. [32]

For individuals requiring assistance in combating a possible dependence on cannabis, some self help materials using a cognitive behavioural approach have been developed to assist in the treatment of cannabis dependence, although plausible, none of these materials have been evaluated independently [40]. There is a requirement for systematic development of more comprehensive interventions designed for cannabis dependence, there are few current treatments and those limited treatments available are adaptations of alcohol interventions [e.g. 41].

Legal and social harm

A range of harms stem from the criminal justice system, which aim to prohibit the use of cannabis. Cannabis using individuals, their families and friends may experience these harms; the consequences of the application of the criminal law against cannabis users may be at least as significant as those that flow directly from cannabis uses itself. General indications are that most people who receive a criminal conviction for a minor cannabis offence are otherwise law-abiding. While a conviction can have significant adverse impacts on employment, further involvement with the criminal justice system, relationships and accommodation, it fails to deter cannabis use in many of those convicted [8].

A controversial strategy aimed at reducing potential harms arising from drug related impairment in the work place is drug testing, this policy has been criticized by some commentators who argue that it measures drug exposure rather than actual impairment [e.g. 42]. Cannabis is detectable in body tissue for up to several weeks, such testing is not an accurate reflection of recent use or impairment. While such program may provide benefits by acting as a deterrent to drug use for some [42], these must be traded against potential social costs.

Legal issues for cannabis users

Many users may be unaware of the consequences of a cannabis conviction or wrongly believe they are trivial. Some people believe that cannabis (since reclassification) is legal, whatever the motivation for using cannabis an awareness of the personal ramifications is essential.

The application of law enforcement and associated penalties in relation to cannabis offences differ greatly throughout the UK, since the reclassification of cannabis to a class C drug the use of police cautions has increased, however it should be stressed that even a caution for a cannabis offence may well exclude people from some forms of employment e.g. working with children.

Tenants in rented accommodation (especially council tenants) should be made aware that a conviction for using cannabis in the home could result in eviction as a landlord ‘knowingly permitting cannabis to be smoked on the premises’ is committing an offence under section 8 of the Misuse of Drugs Act.

Dangers in obtaining cannabis

There are potential harms in obtaining cannabis, due to its illegality the ‘market’ is unregulated and many ‘dealers’ will have other forms of illegal drugs available. Vulnerable people such as medi-users (e.g. MS sufferers) may be exposing themselves to the additional dangers of assault and robbery by contacting ‘street dealers’ many of which will be dealing in cannabis (and other drugs) to finance their own habit.

Some people practice their own for of HR by avoiding criminal associations and the inherent dangers therein by cultivating for their own personal use, cultivation is despite reclassification an offence which carries a maximum sentence of 14 years imprisonment and is treated as a more serious matter than mere possession by the courts and the police.

Adolescents

There is a great deal of political (and media) pressure for the widespread implementation of school based drug-testing, the overall objective of random drug testing is a reduction in the number of pupils using illicit drugs. However, there is a danger that as cannabis is detectable in the body for several weeks rather than abstaining

from illicit drug use pupils will merely use a potentially more damaging drug that is not detectable for such a period. An inquiry funded by the Joseph Rowntree Foundation, the Network of European Foundations and with help from the charity Drugscope has published the following information on drug detection times, amphetamines can be detected from 1 to 4 days after use, cannabis up to 30 days, cocaine 2 to 5 days, LSD 1 to 4 days, ecstasy 1 to 4 days and opiates (including heroin) 1 to 4 days [8].

There is also the added harm of a 'false' drug test positive, the manufacturers of the test kit Preventx, which is approved for drug testing in schools claims that their test is 97% accurate. A school randomly testing 10 pupils a week, will in a year produce in the region of 10 false positive results, the effects of these false positives could have serious effects on the pupil and their families. There is evidence to support that the consumption of bread containing poppy seeds can indicate a false positive for opiates.

In America there have been reports of non-drug taking pupils selling their urine to illicit drug users for the sole purpose of defeating urine based tests, unless we are going to insist that pupils urinate under supervision then the overall aim of the tests i.e. a reduction in illicit drug taking is not likely to be achieved.

In fact, some drug testing programs have been shown to increase the likelihood of subsequent substance use [43]. There is a powerful argument that the subject of drug use in society (and schools) should at least be based on educational principles rather than drug ideology and be consistent with a range of harm reduction objectives [44].

Cannabis myth

There is little or no scientific evidence to substantiate claims that the potency of cannabis has increased substantially since the 1960's, sensational tabloid headlines denouncing genetically modified cannabis actually refer to small increases in potency brought about through selective breeding to create new strains and improvements in cultivation techniques. Apparatus for measuring levels of THC in cannabis was not available until the late 1970's and as THC degrades when exposed to light and air it is extremely unlikely that a suitable sample of cannabis from the 1960's would be available to produce a reliable analysis comparison. So called strong preparations of cannabis are not a new phenomena, in the Victorian period, pharmacists produced tinctures of cannabis with levels of 25% THC [45]. Samples of cannabis oil which is the end result of an extraction process using alcohol or butane have measured levels of up to 50% THC [1, 46 & 47].

What more can doctors do?

As previously mentioned, with the increased focus on cannabis use in general, there is an important role for health professionals in providing accurate information to users (and potential users) on cannabis, the associated harms and harm reduction.

However, the most vulnerable group of cannabis users has to be the medicinal user. Health professionals can further assist with HR by entering the political debate by calling for a change in the law on compassionate grounds to allow the legitimate use of cannabis for those with a proven medical need.

[Cannabis: The Scientific and Medical Evidence Lords Science & Technology Select Committee 1998] states

(7.29) 'Heroin (diamorphine) may be prescribed (it is a Class A drug under the Misuse of Drugs Act, yet in Schedule 2 to the 1985 Regulations). Dr Notcutt observes that there is no evidence that heroin abuse is thereby encouraged, and lists several other drugs of potential abuse which are used unlicensed in chronic pain' (p 105).
(8.4) 'We recommend that research be promoted into alternative modes of administration (e.g. inhalation, sublingual, rectal) which would retain the benefit of rapid absorption offered by smoking, without the adverse effects'.

8.9 'Unlike cannabis itself, the cannabinoid THC (dronabinol) and its analogue nabilone are already accepted by the Government as having medical value (paragraphs 5.11-17) producing the anomaly that, while cannabis itself is banned as a psychoactive drug, THC, the principal substance which makes it psychoactive, is in legitimate medical use'.

(8.6) ‘We therefore recommend that the Government should take steps to transfer cannabis and cannabis resin from Schedule 1 to the Misuse of Drugs Regulations to Schedule 2, so as to allow doctors to prescribe an appropriate preparation of cannabis, albeit as an unlicensed medicine and on the named-patient basis and to allow doctors and pharmacists to supply the drug prescribed’.

Perhaps it is this role, as promoters of political change that doctors can be most effective.

Acknowledgement

J. Ditchfield, S. Lucas Brewer of Bud Buddies, (HYPERLINK "http://www.budbuddies.com" www.budbuddies.com) a non-profit medicinal marijuana co-operative founded to assist those with a proven medical requirement with advice and the supply of cannabis and herbal cannabis preparations.

References

[1] Grinspoon L, Bakalar JB. Marihuana, the forbidden medicine. New Haven, CT: Yale University Press, 1993.

[2] Zimmer L, Morgan JP. Marijuana myths, marijuana facts: a review of the scientific evidence. New York: The Lindesmith Center, 1997.

[3] Nahas G, Latour C. The human toxicity of marijuana. Med J Aust 1992;156:495.

[4] Walters E. Marijuana: an Australian crisis. Malvern, Australia: E. Walters, 1993.

[5] Bachman JG, Wadsworth KN, O˜Malley PM, John-ston LD, Schulenberg JE. Smoking, drinking, and drug use in young adulthood: Mahwah, NJ: Lawrence Erlbaum Associates, 1997.

[6] Chen K, Kandel DB. The natural history of drug use from adolescence to the mid-thirties in a general population sample. Am J Public Health 1995

[7] United Nations World Drug Report 2004

[8] Drugscope, www.drugscope.org

[9] Smoking, drinking and drug misuse among young people in England 2002. Survey, commissioned by the Department of Health 2002

[10] Lenton S, Single E. The definition of harm reduction. Drug Alcohol Rev 1998; 17:213.

[11] S. Jonas, Panel discussion on the topic, "Should public health adopt a harm reduction drug control strategy?" at the annual meeting of the American Public Health Association, Atlanta, GA, November 12, 1991.

[12] Rosenkrantz H. Cannabis, marihuana, and cannabi-noid toxicological manifestations in man and animals. In: Fehr KO, Kalant H. eds. Cannabis and health hazards: proceedings of an ARF/WHO Scientific Meeting on adverse health and behavioral con-sequences of cannabis use. Toronto: Addiction Research Foundation, 1983:91.

[13] Andreasson S, Allebeck, P. Cannabis and mortality among young men: a longitudinal study of Swedish conscripts. Scand J Soc Med 1990;18:9

[14] English DR, Holman CDJ, Milne E, et al. The quantification of drug caused morbidity and mortality in Australia, 1995 edn. Canberra: Commonwealth Department of Human Services and Health, 1995.

[15] The Science of Marijuana, by Dr Leslie Iversen of Oxford University's department of pharmacology 2004

[16] Degenhardt L, Hall W, Lynskey M.: National Drug and Alcohol Research Centre, University of NSW, NSW 2052, Sydney, Australia. l.degenhardt@unsw.edu.au)

[16a] Ditchfield J. ‘Schizophrenia and Cannabis Use’, the personal experiences of cannabis use from those suffering with Schizophrenia HYPERLINK "http://www.budbuddies" www.budbuddies 2003.

[16b] GW Pharmaceuticals, HYPERLINK "http://www.gwpharm.com" www.gwpharm.com

[16c] Ditchfield J. ‘Organic Medi-Weed Cultivation’ the cultivation of organic cannabis and its application to health, HYPERLINK "http://www.budbuddies.com" www.budbuddies.com 2004

[17] Hall W. Assessing the health and psychological effects of cannabis use. In: Kalant H, Corrigall W, Hall W, Smart R, eds. The health effects of cannabis. Toronto, Canada: Centre for Addiction and Mental Health, 1999:3

[18]] Murray CJL, Lopez AD. Quantifying the burden of disease and injury attributable to ten major risk factors .In: Murray CJL, Lopez AD, eds. The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020. Cambridge, MA: Harvard School of Public Health, 1996:295

[19] 'The classification of cannabis under the Misuse of Drugs Act 1971' The Advisory Council on the Misuse of Drugs 2002 HYPERLINK "http://www.doh.gov.uk/drugs/acmd/cannabisreportmar02.pdf" www.doh.gov.uk/drugs/acmd/cannabisreport-mar02.pdf

[20] Beardsley PM, Kelly TH. Acute effects of cannabis on human behavior and central nervous system functions. In: Kalant H, Corrigall W, Hall W, Smart R, eds. The health effects of cannabis. Toronto: Centre for Addic-tion and Mental Health, 1999:129.

[21] Smiley A. Marijuana: on road and driving simulator studies. In: Kalant H, Corrigall W, Hall W, Smart R, eds. The health effects of cannabis. Toronto: Centre for Addiction and Mental Health, 1999:172

[22] Chesher G. The effects of alcohol and marijuana in combination: a review. Alcohol Drugs Driving, 1986;2:105

[23] Hall W, Degenhardt L. Cannabis use and psychosis: a review of clinical and epidemiological evidence. Aust NZ J Psychiatr, 2000;43:26

[24] Hall W., Pacula R.L. Cannabis use and dependence: public health and public policy. Cambridge University Press, 2003.

[25] Tashkin DP. Cannabis effects on the respiratory system. In: Kalant H, Corrigall W, Hall W, Smart R, eds. The health effects of cannabis. Toronto: Centre for Addiction and Mental Health, 1999:313.

[26] Institute of Medicine. Marijuana and health. Wash-ington, DC: Institute of Medicine, National Academy Press, 1982.

[27] Leuchtenberger C. Effects of marihuana (cannabis) smoke on cellular biochemistry of in vitro test systems. In Fehr KO, Kalant H, eds. Cannabis and health hazards. Toronto: Addiction Research Foundation, 1983:177

[28] Tashkin DP. Cannabis effects on the respiratory system. In: Kalant H, Corrigall W, Hall W, Smart R, eds. The health effects of cannabis. Toronto: Centre for Addiction and Mental Health, 1999:313

[29] Andrews G, Hall W, Teesson M, Henderson S. The mental health of Australians. National Survey of Mental Health and Well-being report 2. Canberra: Mental Health Branch, Commonwealth Department of Health and Aged Care, 1999

[30] Kessler RC. Epidemiology of psychiatric comorbidity. In: Tsuang MT, Tohen M, Zahner GE, eds. Textbook in psychi-atric epidemiology. New York: Wiley, 1995:179

[31] Hall W, Degenhardt L. Cannabis use and psychosis: a review of clinical and epidemiological evidence. Aust NZ J Psychiatr, 2000;43:26

[32] The Medicinal Uses of Cannabis and Cannabinoids, Pharmaceutical Press, www.pharmpress.com

[33] Reilly D, Didcott P, Swift W, Hall W. Long-term cannabis use: characteristics of users in an Australian rural area. Addiction 1998;93:837

[34] Independent Drug Monitoring Unit, HYPERLINK "http://www.idmu.co.uk" www.idmu.co.uk

[35] Cannabis vaporization: a promising strategy for smoke harm reduction. Author: Gieringer D.H.: Journal of Cannabis Therapeutics: 1 (3/4), 2001, p.153-170

[36] Cannabis vaporizer combines efficient delivery of THC with effective suppression of pyrolytic compounds.
Author: Gieringer D., St Laurent J., Goodrich S: Journal of Cannabis Therapeutics: 4(1), 2004, p.7-27.

[37] 11.2 Effects of cannabinoids on the liver and gastrointestinal tract Cannabis: a health perspective and research agenda WHO

[38] Gieringer D. Marijuana water pipe and vaporizer study. Newsletter of the Multidisciplinary Association for Psychedelic Studies 1996;6.

[39] Swift W, Hall W, Copeland J. Characteristics of long-term cannabis users in Sydney, Australia. Eur Addict Res 1998;4:190

[40] Grenyer B, Solowij N, Peters R. A guide to quitting marijuana. Sydney: National Drug and Alcohol Research Centre, 1995.

[41] Zweben JE, O˜Connell K. Strategies for breaking marijuana dependence. J Psychoactive Drugs 1992;24:165

[42] Allsop S, Phillips M. An overview of drug testing in the workplace. In: Midford R, Heale P, eds. Under the influence? Issues and practicalities of alcohol and other drug testing in the workplace. Perth: National Centre for Research into the Prevention of Drug Abuse, 1997

[43] Hawthorne G, Garraed J, Dunt D. Does Life-Education˜ s Drug Education Program have a public-health benefit? Addiction 1995;90:205

[44] Paglia A, Room R. Preventing substance-use prob-lems among youth: a literature review and recommendations. Toronto: Addiction Research Foundation, 1998.

[45] Transactions of the Medical and Physical Society of Bengal, 1838-1840, pp. 421-461

[46] On the Preparations of the Indian Hemp, By W.B. O'Shaugnessy, M.D., Assistant-Surgeon, and Professor of Chemistry, & c. In the Medical College of Calcutta. Presented October, 1839

[47] Earleywine and B. Mirken, The 'Potent Pot' Myth, DrugSense Weekly, Friday 23 Jul 2004