ing enzyme inhibitors, β blockers, and statins, and creates a potentially false gold standard for good medical care. The reader should not accept the conclusions of the Antithrombotic Trialists' Collaboration uncritically but rather read the original papers on which their conclusions are based.

Competing interests: JC is a member of the steering committee for the WATCH (warfarin antiplatelet therapy in chronic heart failure) trial that compares the effects of warfarin, aspirin, and clopidogrel on outcome of 4500 patients with heart failure. This trial is being conducted by the US Veterans Administration and is partly financed by Sanofi.

1 Antithrombotic Trialists' Collaboration. Prevention of death, myocardial infarction and stroke by antiplatelet therapy in high-risk patients. *BMJ* 2001;323:71-86.
2 The antiplatelet trialists' collaboration. Secondary prevention of vascular disease by prolonged antiplatelet treatment. *BMJ* 1988;296:320-31.
3 The antiplatelet trialists' collaboration. Collaborative overview of randomised trials of antiplatelet therapy - 1:Prevention of death, myocardial infarction, and stroke by prolonged antiplatelet therapy in various categories of patients. *BMJ* 1994;308:81-106.
4 Cleland JGF, Bulpitt CJ, Falk RH, Findlay IN, Oakley CM, Murray G, et al. Is aspirin safe for patients with heart failure? *Br Heart J* 1995; 74:215-9.
5 Cleland JGF. Anticoagulant and antiplatelet therapy in heart failure. *Curr Opinion Cardiol* 1997;12:276-87.
6 Cleland JGF, John J, Houghton T. Does aspirin attenuate the effect of angiotensin-converting enzyme inhibitors in hypertension or heart failure? *Curr Opin Nephrol Hypertens* 2001;10:625-31.
7 The Persantine-Aspirin Reinfarction Study (PARIS) Research Group. Persantine and aspirin in coronary heart disease. *Circulation* 1980;62:449-62.
8 The Aspirin Myocardial Infarction Study Research Group. The aspirin myocardial infarction study: final results. *Circulation* 1980;62:V79-84.
9 Klimit CR, Knatterud GL, Stamler J, Meier P. Persantine-aspirin reinfarction study. Part II. Secondary coronary prevention with persantine and aspirin. *J Am Coll Cardiol* 1986;7:251-69.
10 Breddin K, Loew D, Uberla KK, Walter E. The German-Austrian aspirin trial: A comparison of acetylsalicylic acid, placebo and phenprocoumon in secondary prevention of myocardial infarction. *Circulation* 1980;62:V63-V71.
11 ISIS-2 Collaborative group. Randomised trial of intravenous streptokinase, oral aspirin, both, or neither among 17,187 cases of suspected acute myocardial infarction. *Lancet* 1988; ii:349-60.
12 Jones CG, Cleland JGF. Meeting report - LIDO, HOPE, MOXCON and WASH Studies. *Eur J Heart Failure* 1999;425-31.
13 Pulmonary Embolism Prevention (PEP) Trial Collaborative Group. Prevention of pulmonary embolism and deep vein thrombosis with low dose aspirin: Pulmonary Embolism Prevention (PEP) trial. *Lancet* 2000;355:1295-302.
14 Lewis HD, Davis JW, Archibald DG, Steinke WE, Smitherman TC, Doherty JE, et al. Protective effects of aspirin against acute mycardial infarction and death in men with unstable angina. *N Engl J Med* 1983; 309:396-403.
15 Weil J, Langman MJS, Wainwright P, Lawson DH, Rawlins M, Logan RFA, et al. Peptic ulcer bleeding: accessory risk factors and interactions with non-steroidal anti-inflammatory drugs. *Gut* 2000;46:27-31.
16 McMahon AD, MacDonald TM, Davey PG, Cleland JGF. The impact of low-dose aspirin prescribing on upper gastrointestinal toxicity, renal toxicity and healthcare resource utilisation. Edinburgh: Chief Scientist Office, 2001:1.

For and against

Cannabis control: costs outweigh the benefits

Alex Wodak and colleagues argue that the costs—to health, and fiscal and social—of controlling cannabis are greater than any benefits. In opposition, Colin Drummond lists the potential dangers of decriminalisation.

FOR Current debates on cannabis policy are dominated by attempts to establish the potential health costs of use of cannabis.[1] While accurate assessment of the potential harms of cannabis is desirable, it is at least as important to estimate the costs—which are usually ignored—of current cannabis controls.

High costs of control noted decades ago

Perhaps doctors have often led the search for less harmful drug policies because the premier axiom of medicine is "first, do no harm." In 1893 Britain's Indian Hemp Drugs Commission concluded that excessive use of cannabis was uncommon and that moderate use produced practically no ill effects. In 1926, Sir Humphrey Rolleston, then president of the Royal College of Physicians, chaired a committee that recommended against criminalising opiates.[2] Similarly, Dr W C Woodward, counsel to the American Medical Association, testified in Congress in 1937 to the lack of evidence justifying criminalisation of cannabis[3] and several other commissions in Britain, Canada, and the United States have come to similar conclusions.[4] In 1972, an American presidential commission concluded that marijuana "does not warrant" the harmful consequences of "criminal stigma and threat of incarceration."[5] In 1978, President Carter told Congress that "penalties against the use of a drug should not be more damaging to an individual than the use of a drug itself; and where they are they should be changed. Nowhere is this more clear than in the laws against the possession of marijuana."[6] Unfortunately, little has changed since President Carter uttered these words. The UK Police Foundation's review of cannabis policy in 2000 was the most recent senior international committee to reach the same verdict: "Our conclusion is that the present law on cannabis produces more harm than it prevents."[7]

Social costs

Beyond the substantial fiscal costs of enforcing the prohibition of cannabis, the social costs of such policies are considerable. Around the world each year, the lives, education, and careers of hundreds of thousands of people are damaged by the stigmatising experience of arrest. Families face lost incomes and emotional stress. Many cannabis users are already socially disadvantaged, so for them criminal penalties for possession of cannabis often entail additional costs, including disruption of relationships and loss of housing and employment.[8] Current cannabis controls

Alcohol and Drug Service, St Vincent's Hospital, Darlinghurst, NSW 2010, Australia
Alex Wodak *director*
Department of Sociology, University of California, Santa Cruz, CA 95064, USA
Craig Reinarman *professor*
Center for Drug Research, University of Amsterdam, 1091 GM Amsterdam, Netherlands
Peter D A Cohen *director*

BMJ 2002;324:105–8

drive a wedge between parents and their children, health professionals and their patients, teachers and their students, and police and their communities. It is impossible for the many young people who use cannabis today to obtain reliable information about the concentration of psychoactive ingredients or the purity of samples they purchase, or even about less harmful ways of using the drug. Consequently, current cannabis policies are inimical to desirable public health outcomes.

Other serious costs are borne by communities. Despite its criminalisation, the use of cannabis has become so normalised that it is seen throughout most Western nations. Prohibition in the face of strong and consistent demand inevitably results in supplies being provided from illegal sources. The unregulated black market brings consumers of cannabis into direct contact with sellers of other illicit drugs. For example, in identical surveys of random samples of experienced marijuana users, 55% of respondents in San Francisco reported that they could buy other illicit drugs where they bought cannabis. In Amsterdam, where cannabis sales are regulated and rarely attract criminal sanctions, only 17% could get other illicit drugs from their source of cannabis.[9] Allocating police to enforce the laws against cannabis reduces resources available to enforce laws against more serious crimes. The riches available in black markets increase the risk of serious corruption. During the last decade, royal commissions in two Australian jurisdictions concluded that police corruption was rampant and linked to drug prohibition.[10]

Liberalising control does not increase use

The justification for cannabis prohibition is that it is supposed to reduce demand and supply, thereby reducing use and thus overall adverse health consequences. But demand, supply, and use have all varied widely over time, quite irrespective of controls. Evidence suggests that use is not increased by less intensive control. In the 11 American states that effectively decriminalised cannabis use in the 1970s, use has not risen beyond that experienced by comparable states in which it is prohibited.[11] Similarly, the Netherlands for all intents and purposes decriminalised cannabis 25 years ago, but the prevalence there has remained roughly parallel to that in Germany and France and well below that in the United States.[12]

The major barriers to reconsideration of the punitive prohibition of cannabis are political, not scientific or legal

There is an increasingly widespread view that international attempts to control cannabis by prohibiting its use have failed and cannot be remedied. Numerous professional associations in medicine, public health, law, and criminology have recognised this failure and the enormous collateral costs of prohibiting cannabis and have recommended consideration of less harmful regulatory alternatives.[13] The Single Convention (1961), the treaty providing the major legal framework for international prohibition of cannabis, states that "a party [government] shall, if in its opinion the prevailing conditions in its country render it the most appropriate means of protecting the public health and welfare, prohibit [the use of cannabis]."[14] Where is the compelling evidence that protection of public health and welfare is "most appropriately" served by the present laws on cannabis? Regulation of cannabis would not breach any nation's international treaty obligations. The major barriers to reconsideration of the punitive prohibition of cannabis are political, not scientific or legal.

The belief that more intensive law enforcement will achieve better public health outcomes represents a triumph of hope over experience

All drugs have risks. Cannabis is not harmless, but adverse health consequences for the vast majority of users are modest, especially when compared with those of alcohol or tobacco. Attempts to restrict availability of cannabis by more intensive law enforcement have been expensive, ineffective, and usually counter productive. The belief that more intensive law enforcement will achieve better public health outcomes represents a triumph of hope over experience. If we discovered that a drug we had been using failed to relieve patients' symptoms and produced unpleasant side effects, would any of us increase the dose?

It is time to acknowledge that the social, economic, and moral costs of cannabis control far exceed the health costs of cannabis use. The search should begin for more effective means to reduce the harms that can result both from cannabis and from our attempts to control it.—Alex Wodak, Craig Reinarman, Peter Cohen

Competing interests: None declared.

1 Strang J, Witton J, Hall, W. Improving the quality of the cannabis debate: defining the different domains. *BMJ* 2000;320:108-10.
2 Departmental Committee on Morphine and Heroin Addiction. *Report*. London: HMSO, 1926.
3 US Congress, House Ways and Means Committee. Hearings on HR 6385: Taxation of Marijuana. 75th Congress, 1st session, 27 April 1937:91-4.
4 Indian Hemp Drugs Commission, Royal Army. Marijuana. 1893-4. Cited in: Trebach A. Ignoring the great commission reports. *Drug Policy Letter* 1989 Sept/Oct:5.
5 National Commission on Marihuana and Drug Abuse. *Marihuana: a signal of misunderstanding*. Washington, DC: US Government Printing Office, 1972:150.
6 Carter J. President's message to Congress on drug abuse. In: Strategy Council On Drug Abuse. *Federal strategy for drug abuse and drug traffic prevention*. Washington, DC: US Government Printing Office, 1978:66-7.
7 Police Foundation of the United Kingdom. *Drugs and the law: report of the independent inquiry into the Misuse of Drugs Act of 1971*. London: Police Foundation, 2000.
8 Lenton S, Humeniuk R, Heale P, Christie P. Infringement versus conviction: the social impact of a minor cannabis offence in South Australia and Western Australia. *Drug Alcohol Rev* 2000;19:257-64.
9 Reinarman C, Cohen P, Sas A, Boellinger L, Quensel S, Kolte B. Drug use prevalence and discontinuance in Amsterdam, San Francisco, and Bremen. 11th international conference on the reduction of drug related harm, Jersey, 9-13 April 2000.
10 Wood JRT. *Royal commission into the New South Wales police service*. Syndey: Government of the State of New South Wales, 1997.
11 Single E. The impact of marijuana decriminalization. *J Public Health Policy* 1989;10:456-66.
12 European Monitoring Centre for Drugs and Drug Addiction. *Annual report on the state of the drugs problem in the European Union*. Lisbon: Office for Official Publications of the European Communities, 2000.
13 Reinarman C, Levine HG. *Crack in America: demon drugs and social justice*. Berkeley: University of California Press, 1997:345-52.
14 *Single Convention on Narcotic Drugs*. Article 2.5.b. Geneva: United Nations, 1961.

Department of Addictive Behaviour and Psychological Medicine, St George's Hospital Medical School, London SW17 0RE
Colin Drummond
reader in addiction psychiatry

AGAINST Proponents of legalisation would have you believe that it is a harmless form of recreational pleasure. It is used mainly by responsible adults and the government has no place in interfering. Penalties for possession and use are disproportionate to the threat posed to the individual user or to society. Very few are harmed by its use: only a reckless minority gives responsible users a bad name by association. Besides, criminalisation fuels rather than prevents an illegal trade and fails to stamp out availability.

The above refers not to cannabis, but to handguns. The United Kingdom's already strict pre-1996 firearms laws did not protect the innocent from the 1996 Dunblane tragedy, though on a wave of popular support from the media the UK government afterwards rapidly almost completely outlawed possession and use of handguns. Now the pro-cannabis legalisation lobby, supported by the same parts of the media that were outraged by Dunblane, seeks to legalise cannabis.

Health risks of cannabis

The pro-cannabis lobby conveniently overlooks the serious health effects of cannabis, pointing to its safety record in comparison with other illicit and legal drugs, such as tobacco and alcohol. The lobby would have us believe that cannabis never killed anyone. It is true that cannabis is relatively safe in overdose compared with heroin, but it is far from harmless in the longer term, particularly for heavy or regular users. The World Health Organization has concluded that cannabis, when smoked, is twice as carcinogenic as tobacco.[1] It causes carcinoma of the lungs, larynx, mouth, and oesophagus as well as other chronic pulmonary diseases,[2] with evidence of a dose-response relation.[3] These carcinomas appear earlier than cancers that are purely the result of tobacco smoking. Cannabis increases the risk of death in people with heart disease.[4] Furthermore, cannabis is now 10 times as pure as it was 20 years ago, which points to potentially greater health risks than earlier research has identified.[5]

In vulnerable individuals, cannabis precipitates schizophrenia and other psychotic disorders and worsens their course.[2 6] It is worth remembering that about 15% of schizophrenic patients commit suicide. This is not to mention other clear adverse psychological effects of cannabis, including depression, anxiety, and violent behaviour.[6] Cannabis has up to 60 psychoactive ingredients, so it is hardly surprising that it is bad for the mental health of many vulnerable people.

Apart from death, cannabis also causes dependence in about 10% of users and in 50-90% of regular users.[2] The number of cannabis users seeking specialist help has doubled in the past 10 years, accounting for 10% of attendances at drug treatment clinics in the United Kingdom.[7] This is likely to be an underrepresentation, as most clinics tend to be geared more towards helping users of opiates. Also included among the risks are impairment of cognitive function, reduced academic achievement, teratogenic effects, immunosuppression, impaired fertility, and increased promiscuity and sexually transmitted diseases in regular users.[2 5 6 8] As Henry has recently pointed out "it is perilous for the voice of science to be drowned out by campaigners for legalisation who are dismissive of the mounting evidence on dependence and harm."[9]

The effect of cannabis intoxication on cognitive and motor functions is another aspect of the harm it does. Research on the adverse effects of cannabis in vehicle accidents is complicated by confounding factors such as alcohol intoxication, although in one UK study of fatal road accidents, no alcohol was detected in the bodies of 80% of people found positive for cannabis at necropsy.[10] It is now recognised that the separate effects of alcohol and cannabis on psychomotor impairment and driving performance are approximately additive.[2] And yet because of the absence of a roadside test equivalent to the breathalyser for alcohol, cannabis is much more difficult for the police to detect accurately. All of this points to appreciable social, health, and economic hazards of cannabis.

So called benefits of legalisation

The pro-legalisation lobby claims potential benefits of legalisation in terms of curtailing the black market. But even in Holland, where cannabis has been quasi-decriminalised, some two thirds of the supply of cannabis takes place outside the regulated "coffee shop market."[8] Further, with 1/8 ounce of cannabis costing on average as little as £5 in the United Kingdom,[8] it would be difficult if not impossible for a legal, regulated, and taxed market to undercut the illegal drugs pushers. Just the same problems attend the growing illicit trade in "bootleg" alcohol and tobacco imported from mainland Europe to Britain, bypassing any regulation of sale, particularly of sale to vulnerable children.

The pro-cannabis lobby conveniently overlooks the serious health effects of cannabis

Even the much vaunted advantages of cannabis for medical purposes have yet to be proved: so far the evidence suggests that cannabis has more adverse effects than do existing recognised treatments.[11 12] If it does emerge that cannabinoids are efficacious in certain medical conditions, their licensing as medicines does not require any legal action and is a completely different matter from legalisation of recreational use of cannabis.

In any case, comparison with licit drugs such as tobacco and alcohol hardly provides a model for legalisation. Alcohol claims in excess of 40 000 lives a year in Britain[13] and tobacco some 120 000.[14] No similar estimate is available for cannabis, and no one knows what would be the final toll from its legalisation.

Is deregulation practicable?

The cannabis "industry" is big business, accounting for a reported £4000m turnover a year. The recent share flotation of GM Pharmaceuticals, which manufactures cannabinoids for medical purposes, raised £25m and was six times oversubscribed. With legalisation, it would not be long before the discredited tobacco industry would find new markets for cannabis products. This same tobacco industry—which is roundly criticised for marketing a killer product and for its lack of ethics and its cynical exploitation of the

vulnerability of the addicted public by concealment of the health risks—is hounded by the same press that now advocates legalisation of cannabis.

The pro-cannabis lobby would have us believe that a legal cannabis market could be successfully regulated by the UK government, when successive governments have for years failed to act decisively against the tobacco industry and are still failing to deal effectively with the alcohol industry. Two years on, we still await the government's response to Alcohol Concern's proposals for a national alcohol strategy.

The evidence base of the harms caused by cannabis is undoubtedly incomplete and the evidence in some cases is conflicting and confounded, but legalisation of cannabis would, on the basis of what we currently know, lead to increased use and increased harm to public health. As was the case with our old gun laws, no amount of regulation of a legal market would protect vulnerable individuals such as children and mentally ill people.

What we need instead is better public education on the true risks of cannabis and greater availability of treatment for people who are addicted. If there is to be any change in the law in relation to cannabis it should be in terms of the way the law is enforced, including greater consistency throughout the country, and a review of the penalties for possession, rather than any change in the statutes or any departure from international drug conventions. There should be greater emphasis on helping people experiencing problems with cannabis to obtain appropriate treatment.

Perhaps only a minority would be killed or injured by the legalisation of cannabis. But this would be of no comfort to you if your son or daughter was killed by a drug driver or sectioned into psychiatric hospital with a drug induced psychosis. The UK home secretary, David Blunkett, would be well advised to consider more fully the health risks of cannabis before proceeding with his decriminalisation proposal. Reducing police and court time through decriminalisation is likely to be at the expense of public health.—Colin Drummond

Competing interests: None declared.

1 World Health Organization. Programme on substance abuse. *Cannabis: a health perspective and research agenda*. Geneva: WHO, 1997.
2 Hall W. Reducing the harms caused by cannabis use: the policy debate in Australia. *Drug Alcohol Depend* 2001;62:163-74.
3 Zhang ZF, Morgenstern H, Spitz M, Tashkin DP, Yu GP, Marshall JR, et al. Marijuana use and increased risk of squamous cell carcinoma of the head and neck. *Cancer Epidemiol Biomarkers Prev* 1999;8:1071-8.
4 Hall W, Solowij N, Lemon J. *The health and psychological effects of cannabis use*. Canberra: Australian Government Publication Service, 1994. (National Drug Strategy monograph No 25.)
5 Ashton CH. Pharmacology and effects of cannabis: a brief review. *Br J Psychiatry* 2001;178:101-6.
6 Johns A. Psychiatric effects of cannabis. *Br J Psychiatry* 2001;178:116-22.
7 Runciman R. *Drugs and the law: report of the independent inquiry into the Misuse of Drugs Act 1971*. London: Police Federation, 1999.
8 House of Lords Select Committee on Science and Technology. *Cannabis: the scientific and medical evidence*. London: Stationery Office, 1998.
9 Henry J. A voice for science in drug debate. *Times* 2000 Oct 28. www.newsint-archive.co.uk (accessed 28 Dec 2001).
10 Department of Environment Transport and Regions. *Report on incidence of drugs in road accident victims: interim results of survey*. London: Department of Transport Publications, 1998.
11 Tramer MR, Carroll D, Campbell FA, Reynolds, DJM, Moore RA, McQuay HJ. Cannabinoids for control of chemotherapy induced nausea and vomiting: quantitative systematic review. *BMJ* 2001;323:16-21.
12 Campbell FA, Tramer MR, Carroll D, Reynolds DJM, Moore RA, McQuay HJ. Are cannabinoids an effective and safe treatment option in the management of pain? A qualitative systematic review. *BMJ* 2001;323:13-6.
13 Royal College of General Practitioners. *Alcohol: a balanced view*. London: RCGP, 1986.
14 Raw M, McNiell A, West R. Smoking cessation guidelines for health professionals: a guide to effective smoking cessation interventions for the health care system. *Thorax* 1998;53 (suppl 5):S1-38.

A memorable patient

The devil in the detail

Reading of demonic possession in the *BMJ* of 6 October ("A memorable patient" 2001;323:794), I was reminded of a salutary experience in the warmth of a Cypriot night many years ago. It had been a warm September evening with the temperature close to 27°C, the sort where you sit out in the gentle breeze, watching the brilliant stars, enjoying a brandy-sour (when not on duty), and reflecting on life as a young army doctor on a Mediterranean island.

I was the duty casualty doctor at a military hospital and was called in the small hours of the morning to see an hysterical patient causing problems in casualty. I arrived to find a young officer cadet thrashing about on the bed, having just been admitted in delirium from a training exercise. He was one of the Royal Military Academy Sandhurst cadets on their regular overseas exercise.

The patient's incoherent babblings were causing real concern, and, while I was trying to take a history and then examine the individual, the duty psychiatrist was called. It was going to be some 15 or 20 minutes before he could arrive, and so the normal observations for admission were being duly performed by one of the nurses. My history taking efforts were rewarded with a confused message from the young African cadet, who was speaking in a broad dialect. He asserted in a loud muddled voice that he had had a spell cast on him and kept repeating that his witchdoctor had said he was going to die. This message became more and more positive, to such a degree that I used my initiative and rang the appropriate high commission to seek advice. They were not too pleased to be called before dawn but did say that they would speak with someone more senior and call back.

In the background, the young nurse was diligently recording pulse, blood pressure, respiration, and temperature and eventually plucked up enough courage to tell me that the thermometer was broken. Investigating this diversion while we awaited the psychiatrist (who was going to master the situation and relieve me of my difficult patient), I checked the thermometer and found it to be intact. The nurse, meanwhile, had gone one better and found the low-reading thermometer to take the cadet's temperature again. After three readings, it was found to be 32°C.

We (should I write I?) had neglected to discover that, while we were in the warm calm of a seaside location, the cadet exercise had been up in the hills. It had been showery, and the young man had become soaked and subjected to a considerable wind-chill for several hours.

He was warmed gently and within two hours spoke with a wonderfully cut-glass English accent, reflecting his public school and university education, by inquiring, "I say, old chap, I hope I haven't been too much of a nuisance, but I don't seem to remember much of the past few hours. Could you let me know what has been happening?"

The psychiatrist was amused, the witchdoctor was not needed, I kept quiet, and the nurse was congratulated on persisting with and declaring her thermometer problem.

K Edgington *consultant occupational physician, Airport Medical Services, Gatwick*