HOW CAN DOMESTIC U.S. DRUG POLICY HELP MEXICO?

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ABSTRACT

Mexico's principal drug problems, the violence and corruption related to trafficking, are the consequence of the large U.S. market for cocaine, heroin, marijuana and methamphetamine. If the U.S. market disappeared, Mexico's problem would diminish dramatically, even with its own domestic consumption remaining.

Nonetheless, there is little that the U.S. can do to reduce consumption over the next five years that will help Mexico. The evidence is that enforcement, prevention, or treatment programs cannot make a large difference in U.S. consumption in that time period.

Prevention remains largely an aspiration. Few of even the most innovative programs have shown substantial and lasting effect, while almost none of the popular programs have any positive evaluations. Treatment can be shown to reduce both drug consumption and the associated harms of drug dependent clients. However, given the chronic relapsing nature of drug dependence, it is unlikely that treatment expansion will have large effects on aggregate consumption. Enforcement, aimed at dealers and traffickers, which has received the dominant share of funds for drug control, has failed to prevent price declines; thus supply side efforts are unlikely to reduce the demand for Mexican source drugs. Efforts to discourage users directly through user sanctions are too small scale to have any noticeable effect. However, it is possible that the incarceration of criminal offenders, though not explicitly targeted to reduce demand, has managed to lock up a substantial share of consumption.

The most promising interventions aim at reducing use among criminally active users under community supervision. Reducing drug use among parolees and probationers may lead to substantial reductions in drug consumption in a population that accounts for a substantial share of all U.S. cocaine and heroin consumption. Moreover, the results of a large-scale study of mandated desistance among probationers in Hawaii suggests that it is possible to scale this program so as to make a measurable different in a relatively few years. There are also epidemiological factors that may help lower U.S. consumption of cocaine, heroin, and methamphetamine.

The median forecast is that U.S. consumption of cocaine, heroin, marijuana, and methamphetamine will slightly decline over the next five years — a result that should provide some benefit to Mexico.

INTRODUCTION

Mexico's principal drug problems, the violence and corruption related to trafficking, are the consequence of the large U.S. market for cocaine, heroin, marijuana, and methamphetamine. If the U.S. market disappeared, Mexico's problem would diminish dramatically, even with its own domestic consumption remaining. Thus, it is easy to argue that the key to reducing Mexico's problems is vigorous efforts to reduce consumption in the United States.

Unfortunately, it turns out that there are numerous obstacles to obtaining a major reduction in U.S consumption in the next five years, the period used throughout this paper as the policy horizon. First, drug prevention programs, even if they were effective in substantially reducing the number of young Americans who started using drugs, would have almost no effect on total consumption in the U.S. in that period because they aim at individuals much younger than those who consume large quantities of drugs. Second, drug treatment, which does aim at those who are consuming most of the cocaine, heroin, and methamphetamine in the United States, can only make a modest difference in total consumption because it is characterized by high drop-out rates and regular relapse. Third, enforcement which aims to raise prices and make drugs less available has simply not shown a capacity to do that on more than an episodic basis. Incarceration does reduce demand for drugs but, after a huge increase in incarcerations over the last forty years, incarceration is not likely to increase in the near future.

Any promise for sharp reductions in total consumption lies in a new and just-tested program that is targeted at frequent users under criminal justice supervision.

While this paper is fairly pessimistic about the potential of U.S. policy to help Mexico, policy is only a modestly important factor in determining the demand for drugs. Culturally-formed attitudes towards the dangers and pleasures of drugs are much more influential. In addition, the use of drugs (apart from marijuana) is an epidemic phenomenon. The timing of epidemics, which occur independently of policy, have important and lasting effects. These other factors may, in the medium-term, help Mexico. The cocaine epidemic has been waning for many years as the number of regular users is declining and they are aging. The demand for cocaine has been falling for perhaps 20 years and, without the outbreak of a new epidemic, this trend is likely to continue. Marijuana trends throughout the Western world point to continuing declines, though there is more reason to doubt the persistence of that trend. For heroin and methamphetamine there is weaker evidence of decline. Nonetheless, it is likely that, absent an external disturbance, the U.S. demand for drugs from Mexico will decline.

For the purposes of this paper, we take that as desirable. It may, however, be that the current violence itself is in part engendered by the gradual decline in the U.S. market and that further declines will, for a while at least, increase the inter-gang

disputes over falling revenues. Nevertheless, in the long run, smaller consumption in the United States is surely going to lower the corruption and violence associated with drug trafficking in Mexico.

CHARACTERIZING U.S. CONSUMPTION

Our focus is the demand for illegal drugs in the United States. There are no tested models of the determinants of that demand. Economists have invested a great deal studying the responsiveness of demand for specific drugs to variations in price (see Grossman, 2004 for a recent review), but there is no reason to believe that the principal determinant of the demand for drugs is price. Drugs are fashion goods and spread in an epidemic fashion, as described below.

Epidemics historically begin when drugs are very expensive. Subsequent declines in price, as observed with cocaine and heroin, have not sparked new epidemics. Changes in beliefs regarding the desirability and harmfulness of a specific drug are, in fact, far more important in ending epidemics. Theories have yet to be fully developed, though Caulkins and collaborators have developed models in which the shape of observed epidemics can be accounted for by simple models about the evolution of beliefs in the wake of experience (e.g. Caulkins, 2007; Caulkins et al., 2004).

The epidemic model of drug use

Heroin is the drug that is classically associated with 'epidemics' (Hunt, 1974). The notion of a drug epidemic captures the fact that drug use is a learned behavior, transmitted from one person to another. Although there are individuals — drug importers and distributors — who consciously seek to create new markets for their drugs, it is now clear that almost all first drug experiences are the result of being offered the drug by a friend or family member. Drug use, thus, spreads much like a communicable disease; users are 'contagious' and some of those with whom they come into contact are willing to become 'infected.'

At the onset of an epidemic, rates of initiation in a given area rise sharply as new users of a drug initiate friends and peers (Caulkins et al., 2004). Long-term heroin, cocaine, and crack addicts are not particularly 'contagious.' Instead, they are often socially isolated from new users. Moreover, they usually present an unappealing picture of the consequences of addiction to the specific drug. In the next stage of the epidemic, initiation declines rapidly as the susceptible population shrinks because there are fewer non-users and because the drug's reputation sours as a result of better knowledge of its effects. The number of dependent users stabilizes and, typically, gradually declines.

Most Western countries have just one discrete heroin epidemic. The Netherlands and the United States, for example, both experienced an epidemic of heroin use

between the late 1960s and early 1970s. Since then each has had only moderate endemic levels of initiation.

The model is best tested for heroin but is not restricted to that. The U.S. has been through four drug epidemics in modern times; heroin (ca. 1968–73), cocaine powder (ca. 1975–1985), crack cocaine (ca. 1982–1988), and methamphetamine (ca. 1990–2000).

No one claims to have a model that predicts when an epidemic might start. Many mocked those who predicted the coming of an "ice" epidemic (involving a crystalline form of methamphetamine) in the early1990s (see Jenkins, 1994 for a history of the "ice" panic) but no one has been able to explain why methamphetamine broke out of its long-time niche in San Jose and a few West Coast cities around that same time. Nor can anyone explain why the pattern of methamphetamine use across cities (as measured by arrestee drug testing) remains so patchy.

In summary, the United States in 2010 is in a post-epidemic phase for all drugs that involve Mexico. A major new drug epidemic might emerge from among the many synthetics that enter the market each year but there is no clear reason to believe that Mexico will have an important role for that new drug.

ESTIMATING AMERICAN DRUG CONSUMPTION

We have an interest in both the absolute level of U.S. consumption of drugs, which determines Mexican earnings, and in the trend over time. The only evidence on trends in consumption is from the 1990s and from an unrelated estimate of total consumption for 2005.

During the 1990s, the Office of National Drug Control Policy commissioned a research organization (Abt Associates) to produce estimates on at least three occasions. These estimates are of (1) the number of "chronic users" of cocaine, heroin and methamphetamine, defined as those who used the drug more than eight times in the previous 30 days; (2) the total consumption of those three drugs, plus marijuana; and (3) expenditures on the four drugs. I emphasize consumption rather than prevalence or domestic expenditures as most relevant to Mexico's violence and corruption:

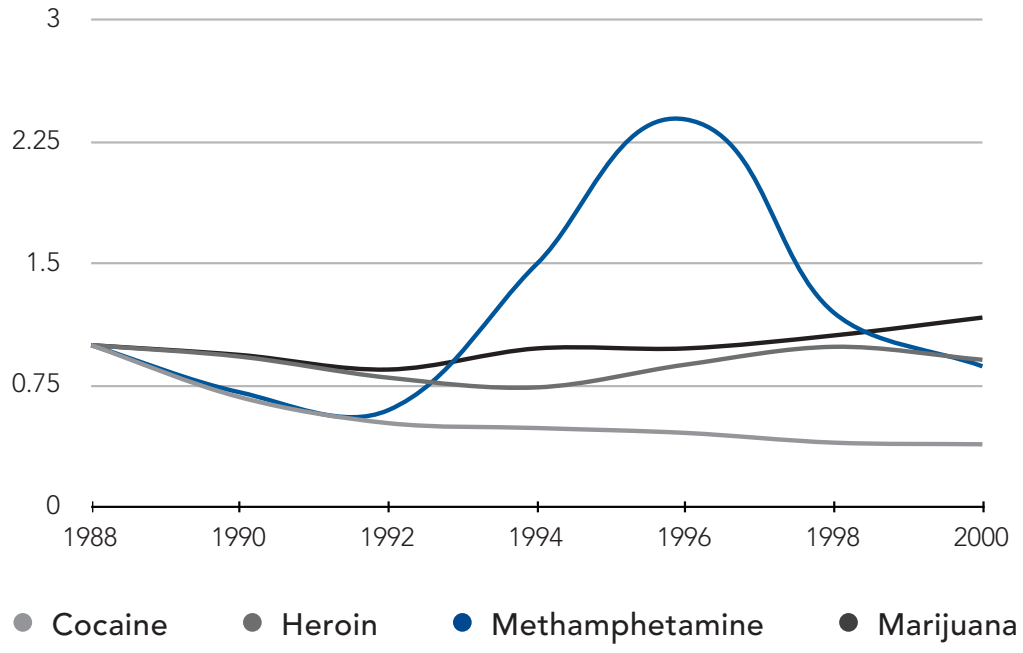
Table 1 provides the most recent consumption estimates, covering the period 1988 to 2000, though the final year itself was a projection.[1] It shows that total consumption of cocaine declined throughout this period — sharply in the early part and then more gradually. The other drugs have complex patterns; heroin fluctuates modestly around 13 tons and methamphetamine increased sharply from 1990 to 1996 before then falling by almost two-thirds over the next four years. Marijuana, after falling by one ninth between 1988 and 1992, rose by about one quarter through 2000.

[1]A more recent estimate, through the year 2003 was prepared, as indicated by a brief reference to it in the *National Drug Control Strategy 2005*. It was never released by ONDCP.

TABLE 1: TOTAL CONSUMPTION OF FOUR DRUGS, 1988–2000 (METRIC TONS)

	Cocaine	Heroin	Methamphetamine	Marijuana
1988	660	14.6	22.7	894
1989	576	16.6	19.0	866
1990	447	13.6	16.1	837
1991	355	12.5	10.0	793
1992	346	11.7	13.6	761
1993	331	11.2	18.9	791
1994	323	10.8	34.1	874
1995	321	12.0	54.2	848
1996	301	12.8	54.3	874
1997	275	11.8	35.3	960
1998	267	14.5	27.2	952
1999	271	14.3	18.3	1028
2000	259	13.3	19.7	1047

GRAPH 1: TRENDS IN TOTAL CONSUMPTION OF FOUR DRUGS, 1988–2000



Source: ONDCP 2001. (normalized to 1988 value)

TABLE 2: ESTIMATES OF U.S. CONSUMPTION BY DRUG, CA.2005

	Weight (metric tons)	Expenditures ($ mil.)
Cocaine	381	52,910
Heroin	14	7,152
Methamphetamine	32	3,485
Marijuana	2947	16,990

These are the best available estimates of trends, albeit now distant ones. What is striking is how unstable these estimates are; estimates published by the same research group only one year earlier showed quite different trends over time. For example, estimates published in 2000 showed a one third decline in heroin consumption early in the 1990s, followed by a resurgence in the following three years, leading to essentially an unchanged total by 1994. This finding is quite discrepant with the estimates published in 2001 and shown in Table 1.

There are no published estimates of this series after 2000. A more recent estimate of these figures is available but not as part of a time series. Kilmer and Pacula (2009) synthesize many sources to produce a series of estimates that are consistent across rich, consuming countries for, approximately, the year 2005. Their figures for the U.S. are provided in Table 2.

Despite the lack of estimates of the total market since 2000, there are indirect indicia of declining demand for all four drugs except heroin. In the case of cocaine, for instance, there has been a steady and substantial aging of the population seeking treatment. In the 1992 national treatment data, 40% of clients were under the age of 30 and by 2006, that figure had dropped to 26% (Pollack, Reuter and Sevigny, forthcoming). The fraction of clients over the age of 40 rose from 15% to 47% over the same period. This finding was not the consequence of an epidemic of new use among older individuals but, rather, it represented the aging of those who were caught in the earlier epidemics. For methamphetamine, the aging of the treatment population is less dramatic but also marked.

For marijuana, we rely on the National Survey on Drug Use and Health (NSDUH), which has much better coverage of that drug than of cocaine, heroin and methamphetamine; all but marijuana are typically used by individuals who have chronic problems that reduce their participation in household surveys. The NSDUH marijuana data have shown not so much epidemics as medium-term cycles of use. The prevalence among 18 year olds rose sharply in the second half of the 1970s and then fell steadily and substantially over the next decade. It rose again after 1991 , never reached the levels of 1980, and has fallen slightly since about 2003. The most recent upturn followed by a downturn mirrors what has happened in many other Western nations over roughly the same period (Room et al, 2010; Chapter 3).

Heroin epidemics are far more complicated. Those caught in the first epidemic, which occurred roughly between1967 and 1973, are now mostly dead (see Hser, Hoffman, Grella and Anglin, 2003) and have been replaced by younger cohorts, spread over many birth years. Thus there have been increases in the fraction of heroin clients over the age of 40 and between 20 and 30.

There are no documented estimates of the share of Mexican drug revenues from each specific drug. A cursory calculation based on the 2005 distribution of revenues across the four drugs and taking into account other information about the contribution of Mexican domiciled actors, suggests that the ranking of the drugs in terms of revenues to Mexican residents is as follows: cocaine, marijuana, heroin and methamphetamine. But these are highly speculative claims and the DEA routinely asserts that marijuana is the most important of the drugs for the Mexican traffickers (Perkins and Placido, 2010).

PROGRAMS AIMED AT REDUCING DEMAND[2]

Prevention

A substantial number of programs have been developed that aim to reduce the number of adolescents who try illegal drugs. Most programs have shown little effect but a few have delayed the initiation of drug and alcohol use (Faggiano et al., 2005). For example, a small number of reputable studies find that specific family-based or classroom management programs are able to prevent drug or alcohol use. An important characteristic is that these programs attempt to improve behavior and social skills more generally, within the family or classroom environment. They do not focus exclusively or specifically on drug or alcohol use per se and indeed have a variety of effects beyond drugs and alcohol.[3] The record for specialized programs is fairly dismal; purely didactic prevention programs and some of the most widely used ones, such as the Drug Abuse Resistance Education (DARE), have no evidence of effectiveness, whether delivered through the mass media, in the community, or in the classroom (West and O'Neal, 2004).

Economic analyses indicate that prevention programs may be cost-effective even if they are only modestly effective because they are relatively inexpensive and even small changes in use rates over the lifespan of the user can be valuable Societies tend to make a small investment in prevention and, on average, they reap a small return. Poor choices of programs can result in no benefit. However, even the wisest choices will not generate a large benefit. (Caulkins et al., 2002).

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[2]This section draws on Babor et al, 2010.

[3]One study (Caulkins et al., 1998) found that the non-drug benefits from these programs, in particular the reductions in cigarette use, outweighed the drug effects.

These programs are usually targeted at children who are 10–15 years old for two main reasons. First, elementary and middle schools are thought to have more ability to deliver such messages compared to high schools in large part because of absenteeism. Second, these are the years in which children are most susceptible to the messages themselves. The peak years of initiation are a little later (15–17) but those who start earlier are more likely to become frequent users or abusers of illicit drugs.

The evidence on mass media campaigns has been consistently negative(e.g. Orwin et al. 2005). What does seem to work are effective classroom management and other factors associated with good school performance generally (e.g., Kellam et al., 2008)

Treatment

In contrast to the prevention evaluation literature, there are numerous encouraging findings with respect to treatment, particularly for those who are dependent on heroin; for an accessible and relatively brief recent review see Chapter 9 of Babor et al. 2010. There is now a long, rich set of studies which demonstrate that methadone maintenance can substantially reduce consumption of illicit heroin by those in treatment (e.g. Uchtenhagen et al., 2004). More recently, this result has been extended to include buprenorphine, another substitute for heroin (see e.g. Johnson et al., 2000).[4] For other drugs, the results are less positive; no substitutes have been found for the stimulants or marijuana. Nonetheless, there are modestly positive findings for a variety of treatments (e.g. contingency behavioral therapy) aimed at users of cocaine and quite positive ones for marijuana (Marijuana Treatment Research Project, 2004), though the primary result was reduction in marijuana use rather than abstinence.

The results must be placed in the context of Mexico. The outcome of primary interest for our analysis is how much treatment can reduce the consumption of drugs, since that is how the U.S. affects Mexico. The levels of drug use related crime in the United States, on the other hand, has minimal consequence for Mexico. In economic analyses of treatment interventions, crime reduction provides the most conspicuous and, sometimes, the dominant benefit (e.g., Cartwright 1998 Flynn et al. 2003; Godfrey et al., 2004;). Much of the estimated benefit of substance abuse treatment arises from the minority of patients who, before treatment, commit serious offenses. The social benefits of crime reduction are much smaller for the median client and are smaller for marijuana than for other substances that are more correlated with felony offending.

[4]Buprenorphine is longer acting than methadone and has perhaps less abuse potential. It is still not widely used in the United States but is commonly used by private practitioners in France (Emanuelli, 2006).

An informal scan, which is the only possible method at present, suggests that no democratic nation with a major opiate problem has managed to cut the number of regular users sharply within a decade, even when a large share of those eligible are served by treatment services. The Netherlands, for instance, are committed to the provision of treatment for anyone in need. It provided treatment to an average of 15,000 heroin users annually throughout the 1990s — about 50% of the heroin dependent population. Yet in 2001, the estimated number of heroin-dependent persons was 28–30,000 — essentially unchanged from the 1993 estimate. This result is not just the result of including some of those in treatment; many patients remain active heroin users (National Drug Monitor, 2003).

The stability of numbers in the Netherlands does not represent the consequence of high initiation canceling out the effects of high treatment success. Data on treatment clients suggested that very few of those dependent on heroin in 1999 had started use during the preceding decade. In 1989, the median age of those in treatment in Amsterdam was 32 while in 2002 the median age was 43. (National Drug Monitor, 2003). Many other Western nations also experienced an aging of the heroin dependent population during the 1990s.

Similar statements may hold for Australia and Switzerland, two other countries committed to a generous supply of decent quality treatment services.

Treatment is generally acknowledged to be useful, frail, and incomplete. Viewed at the population level, treatment is cost-effective and perhaps cost-saving. Viewed at the client level, treatment reduces but rarely fully halts problems of alcohol use or the use of illicit drugs. Most clients are imperfectly adherent to "good" programs and many clients will continue their use at some level after treatment is completed.

The NTORS (National Treatment Outcome Research Study) study in the United Kingdom, the most recent large-scale longitudinal research, illustrated both the benefits and the limitations of treatment intervention. Treatment induced large declines in heroin use and in the use of non-prescribed methadone and benzodiazepines. Rates of acquisitive crime and drug-selling also declined by large margins.

Treatment was markedly less effective in other domains. Even five years later, most respondents continued to report some recent use of at least one target substance. Among methadone patients, 61 percent reported recent heroin use. Only 26 percent reported that they had not recently used any of the examined target drugs. Among residential treatment clients, 51 percent reported recent heroin use and only 38 percent reported no recent use of any target drug. Compared with results for opiates, treatment proved less effective in reducing crack cocaine use and many clients left treatment within three months. Similar results are reported in DATOS (Drug Abuse Outcome Study), the most recent large-scale longitudinal treatment study in the U.S. (Hubbard et al., 2003).

Treatment for heroin and cocaine use reduces individual demand for these substances. However, the aggregate reductions have been surprisingly slight, due to both high rates of continued use during treatment and to high relapse rates.

Enforcement

Even compared to treatment and prevention, enforcement is a heterogeneous category of interventions, ranging from efforts to eradicate poppy growing in Afghanistan to street sweeps against buyers in inner city neighborhoods that serve as markets. Two general characteristics of these interventions are (1) a near-total absence of impact or outcome evaluation and (2) a near-total absence of public and policymaker demands that such evaluations be performed.

There is, at present, no empirical basis for estimating how much any of these enforcement efforts contribute to reductions in drug use and related problems, let alone a basis to evaluate the broad costs and benefits of competing enforcement approaches for society. Research gaps reflect methodological problems (for example, absence of small area drug indicators to match with enforcement intensity measures) and the view that drug enforcement is a moral obligation, for which the term "crusade" is not too strong in the United States. Prevention and treatment have been more carefully studied in part because policymakers and clinicians have demanded that these evaluations be done to justify program funding. Absent similar demands, we have no comparable body of evaluation research pertaining to law enforcement interventions.

The case for enforcement aimed at higher levels of the drug trade is narrow. Interdiction and source country controls aim to raise prices, reduce availability, signal social disapproval, and, perhaps, reduce the political influence of drug suppliers in source countries. Yet the impact of these policies remains hard to measure credibly. Only one study finds that interdiction raised prices and treatment admissions (Crane, Rivolo and Comfort, 1997) but it has been extensively critiqued for methodological flaws by the National Research Council (Manski, Pepper and Thomas, 2000).[5] Other simulation studies have found that interdiction, at least by the U. S., is unlikely to raise drug prices or to restrict drug availability (e.g. Caulkins, Crawford and Reuter, 1993).

Current research does not imply that interdiction should be eliminated. Smuggling cocaine and heroin is expensive, costing approximately $15,000 to move one kilogram of cocaine from Bogotá to Miami. Interestingly, Federal Express would charge less than $100 to move (much more reliably) a kilogram of legitimate white powder between the same cities. The combination of illegality and some enforcement seems to generate higher prices and, thus, somewhat lower drug use. Illegality surely deters some potential users, in part because of availability effects (MacCoun and Reuter, 2001). Yet because of gaps in the available research, there is no empirical basis for assessing whether current interdiction efforts, at the margin, should be increased or reduced.

Because U.S. interdiction strategies appear rather unsuccessful in raising drug prices, the available research does not provide much guidance about what would actually happen if supply-side enforcement policies achieved greater market effects. Recent data suggest that some interdiction-like activity may have been responsible

[5]It is worth noting that Crane et al. analyzed the short-term effects of interdiction, while the review focused on long-term effects. (Jon Caulkins, personal communication)

for a sharp decline in Australia's heroin availability starting at the end of 2000 (Degenhardt, Reuter, Collins and Hall, 2005). An analysis of this Australian experience may provide useful insights for policymakers in other industrial democracies. At present it is impossible to establish precisely what the Australian Federal Police did that led to a tightening of the market.

Low-level enforcement has a broader set of mechanisms to address drug problems. In particular, a police focus on street distribution can make dealers more discreet and thus hinder new users finding suppliers.

Even if street enforcement aimed at retailers and buyers has little ultimate effect on drug availability, the arrest process itself can further secondary and tertiary prevention by sweeping users into treatment. Kuebler et al (2000) found that enforcement aimed at closing down open drug scenes in Zurich led to an increase in the demand for methadone maintenance treatment. If substantial relapse poses high risk of arrest and thus return to treatment as an alternative to penal sanctions, criminally-involved drug users are more likely to halt or reduce their substance use. Treatment may be frail, but it is likely to work better if providers have more opportunities to treat the same person. Existing evidence suggests that treatment episodes motivated by criminal justice pressure are no less successful than those with other motivations, (Miller and Flaherty, 2000; or for a more recent study of European outcomes, McSweeney et al., 2007).

Incarceration of drug users is one element of enforcement that is likely to reduce demand. Very few users are imprisoned solely for possession offenses, as indicated by self-report from the inmates themselves. Though many are formally convicted of drug possession charges, those convictions are usually the consequence of plea bargains and, often, the true offense was distribution or some other serious involvement in the drug trade (Sevigny and Caulkins, 2004). However, it is still the case that a majority of those incarcerated, whether in prison (state and federal) or jail (local), are themselves heavily drug involved (Pollack, Reuter and Sevigny, forthcoming); most have not merely used drugs but appear to be dependent on one or more drugs. They are sentenced to prison either because they are convicted of drug selling or of property or criminal offenses. The result is that around 2003[6], there were almost as many drug abusers incarcerated as were in formal treatment systems.

Non-traditional programs

Drug courts are an interesting effort to combine criminal justice and treatment resources for drug-related offenders. Drug court participants appear to have better legal and drug-use outcomes than comparable non-participants (Gottfredson, Najaka and Kearley, 2003). Similarly, UCLA public policy professor, Mark Kleiman,

[6]The vagueness on timing is a consequence of the different years in which data were collected from prisons (2002) and jail (2003). The surveys of prisoners and jail inmates are conducted only every 5–7 years.

has been arguing for twenty years for "coerced abstinence." in effect making the criminal justice system an explicit recruiter for treatment and other ways of reducing individual drug use, a suggestion I address in detail below.

Stricter controls on precursor chemicals appear to have at least short-term effects on methamphetamine consumption (e.g. Cunningham and Liu, 2003). Workplace testing is argued by some to have led to reductions in adult drug use, by threatening job loss (French et al., 2004). Evaluations of school testing programs provide hints that these, too, might reduce adolescent substance use.

PROSPECTS FOR REDUCING DEMAND THROUGH THESE PROGRAMS

In each of the following instances, I first consider the likelihood that the program could make a large difference and then the barriers to expansion. I do not include prevention because of the arguments in the prior section; regardless of whether it can be effective in reducing initiation in the targeted age group, it cannot substantially reduce the demand for drugs in the United States in the next few years.

Research suggests that heroin should be separated from the other drugs for these purposes.

Treatment by Expanding Methadone and Buprenorphine

The low fraction of U.S. heroin addicts in opiate substitution treatment is striking when compared to other countries that also have major heroin problems. A number of Western countries have 50–70% of heroin addicts in opiate substitution treatment; these include Australia, Switzerland and the United Kingdom (Reuter and Trautmann, 2009). In the United States it is probable that fewer than one-third are in such treatment at any one time.[7] Expanding methadone and burprenorphine could make a noticeable difference to U.S. consumption of heroin.

That it is possible to expand such treatment rapidly is evidenced by Baltimore's experience. Baltimore's distinction as a drug city has been the persistence of a very large heroin problem over a period of four decades. With a sharp increase in aid from local foundations and 'NGOs' as well as from city and state government during the late 1990s, there was a large increase in the number of methadone slots throughout the city. Even though there was probably a moderate decline in the number of heroin addicts in Baltimore during this period, the number of individuals entering treatment increased by 15% from 2000 to 2005 (Reuter, 2009).

[7]The number of admissions with heroin as the primary drug of abuse in 2007 was 246,871 (http://www-dasis.samhsa.gov/teds07/teds2k7a508web.pdf)]. The 2000 estimate of chronic heroin users was 880,000. Assume the number has continued to decline and is now only 750,000 (a 15% decline in those 7 years) this would generate a treatment rate of approximately one third.

Expanding Other Treatment Modalities

Other forms of treatment rely more heavily on skilled personnel. Thus, the possibility of expansion is dependent upon the availability of those personnel. Rapid expansion has not occurred in decades so it is difficult to judge whether it is possible to make large increases in a few years.

The recently passed Patient Protection and Affordable Care Act will pose a test. The Act expanded coverage to a large number of low-income individuals and households. The minimum coverage specified in the Act includes "parity" for mental health problems. In other words, the coverage should be comparable to that for physical health problems. Substance abuse is included in the list of mental health conditions for which coverage is provided. As a result, a large fraction of the population dependent on cocaine, heroin and methadone may now be able to purchase treatment services. How this will work out is impossible to predict; there are far too many parameters that are still to be determined at the state level. For our purposes, it is important to note that the state exchanges, which implement this program, will not be functioning before 2014.

Enforcement

There is no evidence that the intensified enforcement of the last thirty years has raised prices or reduced availability of the principal drugs. There are official claims that retail cocaine prices have risen post-2007, perhaps as a consequence of disruptions in Mexico (DEA, 2008). Similar claims have been made in recent years that were later contradicted by more careful analysis of the data (Walsh, 2007). However, even if true, this does not give guidance as to how increased enforcement in the U.S. can increase prices on a sustained basis.

Cutting demand through incarceration has been an unintended though predictable consequence of the massive increase in imprisonment. Incarceration rose massively over the period 1977 to 1999, more than tripling. It has grown much more slowly since then, though even that growth is surprising since rates of serious crimes have continued to decline. The current fiscal crisis has spurred further discussion of the possibility that budget difficulties will lead states to finally reduce their levels of incarceration. In fiscal year 2010, 26 states reduced funding for corrections, a reversal of the decades-long trend of rising expenditures (Scott-Hayward, 2009). Whether or not budget cuts lead to prisoner population decreases, it is highly unlikely that incarceration will increase greatly over the next five years and, hence, unlikely that more drug users will be imprisoned.

Even with declining prison populations, however, the number of inmates who are frequent users of expensive drugs may continue to rise. This finding again reflects the aging of the populations of cocaine and methamphetamine users. Their aging means that they will present longer records and histories of addiction and

failed treatment with each successive encounter with the criminal justice system. Unfortunately, there is no basis for estimating the size of this effect.

Drug courts, perhaps, have promise in reducing the demand for drugs since they allow for frequent monitoring of high rate users along with rapid sanctions. However, as Bhati et al. (2008) document, the numbers of clients currently handled by drug courts is so small (approximately 50,000 per annum) that they do not have any substantial impact on crime or drug use. More recently, Pollack, Reuter and Sevigny (forthcoming) demonstrate that the current eligibility requirements of drug courts are so restrictive that these courts are unlikely in their current configurations to reduce the prison or jail population. Typically, a drug court excludes defendants who have prior convictions for violent crimes; an experienced cocaine, heroin or methamphetamine user is very likely to have such a conviction in his long criminal record. The drug courts would have to substantially broaden their eligibility criteria in order to make a major contribution to reducing drug consumption in the U.S. I do not see signs that this will occur.

COERCED ABSTINENCE/MANDATORY DESISTENCE

I single out this program because it is the one intervention that has promise for making a substantial contribution to reducing the consumption of expensive drugs in the United States over the course of the next five years. The idea was developed almost twenty years ago by UCLA's Mark Kleiman (1992; 1998) who based it on a number of simple findings from behavioral economics, psychology, and public policy. A large number of offenders are under community supervision at any one time, whether it be pretrial release, probation, or parole. Because they have been arrested or convicted, the government can subject these individuals to random drug tests and, indeed, does from time to time.

What makes this important for present purposes is that the population under community supervision appears to account for a large share of the total consumption of cocaine, heroin, and methamphetamine. This population also shows high rates of marijuana use but does not account for a large share of the total.

Coerced abstinence involves making sanctions certain, immediate, and relatively mild rather than (as is normally the case) random, delayed, and severe. Such interventions have not received widespread evaluation. The small number of existing studies have found that such programs have the predicted effects on recidivism. Until 2009, were no efforts to implement them on a large scale.

Recently, Hawaii's Opportunity Probation with Enforcement (HOPE) program [8]has implemented the approach for the entire probation population of the state. The

[8]Probationers in Hawaii were randomized into two groups. The control group received the usual level of monitoring and services. The experimental group were subject to frequent and random monitoring. Testing positive for drug use or failure to turn up for a scheduled test resulted in a modest penalty delivered immediately on detection.

TABLE 3: HOPE EXPERIMENTAL RESULTS

	HOPE	Control
No-shows for probation appointments (average of appointments per probationer)	9%	23%
Positive urine tests (average of tests per probationer)	13%	46%
New arrest rate (probationers rearrested)	21%	47%
Revocation rate (probationers revoked)	7%	15%
Incarceration (days sentenced)	138 days	267 days

results of a random assignment evaluation have been very promising; very few of those enrolled in the program fail more than twice and the recidivism rates have been dramatically lower than for the probation population previously. For example, only 21% of HOPE subjects were rearrested in the 12-month evaluation window, compared to 46% amongst those on routine probation conditions.

These results along with a clear articulation of the theory underlying the model by Mark Kleiman and others have given this intervention a great deal of political and professional prominence. HOPE-like experiments are being considered in a number of states. It offers the prospect of a large-scale intervention that could be implemented relatively rapidly and without requiring the development of a new expertise in the probation community.

However, for those interested in promoting drug treatment as a major intervention to reduce the incarcerated population, it is striking that coerced abstinence does not necessarily involve treatment. Probation officers want their clients to desist from drug use, and this program gives them the tools to motivate and monitor abstinence. Many drug-involved offenders do not satisfy screening criteria for actual dependence. It is unclear whether many of the successful clients entered drug treatment programs or whether these individuals needed such services. The adverse consequences of a failed urine test have been enough to generate abstinence. Whether abstinence will

continue post-supervision is an open question but in making a judgment about the utility of coerced abstinence, relapse is the common experience post-treatment.

The HOPE evaluation involved experienced offenders at risk of jail or prison. Probationers assigned to HOPE were significantly less likely to produce positive drug tests or to be arrested over a 12-month study period. These offenders spent about one-third as many days in prison on revocations or new convictions (See Table 3, reproduced from Hawken and Kleiman, 2009).

If HOPE were implemented on a wide scale nationally, it might cut consumption of cocaine, heroin, and methamphetamine substantially. Hope, then, is the program with the most promise to aid Mexico in the near future.

CONCLUDING COMMENTS

Though there is a political consensus in support of demand reduction programs as a way for the United States to ameliorate Mexico's drug problems, there is little that can be done with the mainstream programs that will make a noticeable difference in the next five years. Prevention is largely irrelevant, since it affects consumption of drugs only with a very long lag, assuming it works at all. Even if no new teenagers started using drugs in the next five years, it would make minimal difference to the demand for drugs from Mexico.

For treatment, the pessimism has more complex sources. Treatment does make a difference to drug use by addicted users, but the major gains are from reductions in crime rather than in drug use. A cursory calculation, which is the best one can do, suggests that an expansion of cocaine treatment places by 25%, a massive expansion by historical standards, might reduce cocaine consumption by only 6%.

Furthermore, there has been no recognition that U.S. interdiction of Mexican drugs may have a negative effect on Mexico. There are two consequences of an increased interdiction rate. The first is what the interdictors focus on, namely that the cost of delivering drugs to final consumers rises. As a consequence, the price rises and less is consumed. However, there is a second countervailing effect that is never recognized, even though it was first described by Donald Henry in 1988 (Reuter, Crawford and Dave, 1988; Appendix D); in order to deliver a kilogram of heroin to the final user, more kilograms must be shipped from the source countries. Henry showed that this second effect, under most reasonable assumptions about supply and demand elasticities, was larger than the first. The result is that though fewer tons of heroin are consumed so a larger number of tons are shipped from the producer countries, thus worsening their domestic problems.

Finally, it is worth mentioning the California ballot initiative for giving counties in that state the option of creating regulated marijuana production, as well as legalizing the sale and consumption. If that were to pass in November 2010, it could substantially reduce the U.S. demand for Mexican produced marijuana, simply by

eliminating California's demand for imports (Kilmer et al., 2010). It may turn out to be difficult to prevent smuggling from California, so that Mexico could lose a substantial share of the total U.S. national market. Though the early polls suggests a majority of potential voters in favor, the history of California initiative voting suggests that support tends to decline as the election gets closer.

REFERENCES

Babor T.F., Caulkins J.P., Edwards G., Fischer B., Foxcroft D.R., Humphreys K., Obot I.S., Rehm J., Reuter P., Room R., Rossow I., and Strang, J. (2010) Drug Policy and the Public Good. New York, NY: Oxford University Press.

Cartwright W.S. (2000) Cost-benefit analysis of drug treatment services: Review of the literature. Journal of Mental Health Policy and Economics 3: 11–26.

Caulkins J.P. (1998) An Ounce of Prevention, A Pound of Uncertainty. Santa Monica, CA: RAND

Caulkins J.P. (2007) The need for dynamic drug policy. Addiction 102(1): 4–7.

Caulkins J.P., Behrens D.A., Knoll C., Tragler G., and D. Zuba. (2004) Modeling dynamic trajectories of initiation and demand: The case of the U.S. cocaine epidemic. Health Care Management Science 7(4): 319–29.

Crane B.D., Rivolo A.R., and Comfort G.C. (1997) An Empirical Examination of Counterdrug Interdiction Program Effectiveness. Alexandria, VA: Institute for Defense Analysis.

Cunningham J.K. and Liu L.M. (2003) Impacts of federal ephedrine and pseudoephedrine regulations on methamphetamine related hospital admissions. Addiction 98: 1229–37

Degenhart L., Reuter P., Collins L. and Hall W. (2005) Evaluating factors responsible for Australia's heroin shortage. Addiction 100: 459–69

Drug Enforcement Administration (2008) U.S. cocaine market disrupted; prices continue 21-month surge. News release (Dec 11). Available at: http://www.justice.gov/dea/pubs/pressrel/pr121108.html

Emmanuelli J. and Desenclos J.C. (2005) Harm reduction interventions, behaviors and associated health outcomes in France, 1996–2003. Addiction 100: 1690–700.

Faggiano F., Vigna-Taglianti F.D., Versino E., Zambon A., Borraccino A., and Lemma P. (2005) School-based prevention for illicit drugs' use. The Cochrane Database of Systematic Reviews **2**, article no.: CD003020. DOI: 10.1002/14651858.CD003020.pub2.

Flynn P.M., Joe G.W., Broome K.M., Simpson D.D., and Brown B.S. (2003) Recovery from opioid addiction in DATOS. Journal of Substance Abuse and Treatment **25**: 177–86.

French M.T., Roebuck M.C., and Kébreau Alexandre P. (2004) To test or not to test: do workplace drug testing programs discourage employee drug use? Social Science Research **33**: 45–63.

Godfrey C., Stewart D., and Gossop M. (2004) Economic analysis of costs and consequences of the treatment of drug misuse: 2-year outcome data from the National Treatment Outcome Research Study (NTORS). Addiction **99**(6): 697–707.

Grossman M. (2004) Individual behaviors and substance abuse: The role of price. NBER Working Paper No. 10948. Cambridge, MA: National Bureau of Economic Research.

Harrell A., Cavanagh S., and Roman J. (1998) Final Report: Findings from the evaluation of the D.C. Superior Court Drug Intervention Program. Washington, DC: Urban Institute.

Hawken A. and Kleiman M.A.R. (2009) Managing Drug Involved Probationers with Swift and Certain Sanctions: Evaluating Hawaii's HOPE. Washington, D.C.: National Institute of Justice.

Hser Y.I., Hoffman V., Grella C.E., and Anglin M.D. (2001) A 33-year follow-up of narcotics addicts. Archives of General Psychiatry 58: 503–8.

Hubbard R.L., Craddock S.G., and Anderson J. (2003) Overview of 5-year followup outcomes in the Drug Abuse Treatment Outcome Studies (DATOS). Journal of Substance Abuse Treatment. 25(3): 125–34.

Hunt L.G. (1974) Recent spread of heroin use in the United States. American Journal of Public Health 64(suppl.): 16–23.

Jenkins P. (1994) The ice age: the social construction of a drug panic. Justice Quarterly 11(1): 7–31.

Johnson R.E., Chutuape M.A., Strain E.C., Walsch S.L., Stitzer M.L., and Bigelow G.E. (2000) A comparison of levomethadyl acetate, buprenorphine, and methadone for opioid dependence. New England Journal of Medicine **343**: 1290–7

Kellam S. , Reid J. , and Balster R.L. (2008) Effects of a universal classroom behavior program in first and second grades on young adult outcomes . Drug and Alcohol Dependence **95** , Suppl 1 , S1 — 104 .

Kilmer B. and Pacula R. (2009) Estimating the size of illicit drug markets: a demand side approach. In: Reuter P. and Trautmann F. (eds.) Assessing the Operations of the Global Illicit Drug Markets, 1998–2007: 99–156. Report for the European Commission. Available at: http://ec.europa.eu/justice_home/doc_centre/drugs/ studies/doc_drugs_studies_en.htm

Kilmer, B., Caulkins, J., Pacula R., MacCoun, R. and Reuter] (2010) *Altered State? Assessing marijuana legalization could affect marijuana consumption and public budgets in California* RAND Occasional Paper

Kleiman M.A.R. (1992) Against Excess: Drug Policy for Results New York, NY: Basic Books.

Kleiman M.A.R. (1997) Coerced Abstinence: A Neo-Paternalistic Drug Policy Initiative. In: Mead L (ed.) The New Paternalism. Washington, DC: Brookings Institution Press.

Kleiman M.A.R. (2009) When Brute Force Fails: How to Have Less Crime and Less Punishment. Princeton, NJ: Princeton University Press.

Kleiman M.A.R. and Hawken A. (2008) Fixing the parole system. Issues in Science and Technology 24(4): 45–52.

MacCoun R.J. and Reuter P. (2001) Drug War Heresies: Learning from Other Vices, Times and Places. New York, NY: Cambridge University Press.

Manski C.F., Pepper J.V., and Thomas Y. (eds.) (2000) Two Studies of Drug Interdiction. Washington, DC: National Academy Press.

Marijuana Treatment Project Research Group (2004) Brief treatments for cannabis dependence: Findings from a randomized multisite trial. Journal of Consulting and Clinical Psychology 72: 455–66.

McSweeney T., Stevens A., Hunt N., and Turnbull J. (2007) Twisting arms or a helping hand? Assessing the impact of "coerced" and comparable "voluntary" drug treatment options. British Journal of Criminology 47(3): 470–90.

Miller N.S. and Flaherty J.A. (2000) Effectiveness of coerced addiction treatment (alternative consequences: A review of the clinical research. Journal of Substance Abuse Treatment 18(1): 9–16.

Office of National Drug Control Policy (2000) What America's Users Spend on Illicit Drugs 1988–1998. Washington, DC: ONDCP.

Office of National Drug Control Policy (2001) What America's Users Spend on Illicit Drugs 1988–2000. Washington, DC: ONDCP.

Orwin R. , Cadell D. , C hu A. , Kalton G. , Maklan D. , Morin C. , Piesse A. , Sridharan S. Steele D. , Taylor K. , and Tracy E. (2006) Evaluation of the national youth anti-drug media campaign: 2004 report of findings. Washington, DC : National Institute on Drug Abuse.

Perkins K.L. and Placido A.P. (2010) Statement before the U.S. Senate Caucus on International Narcotics Control (May 5, 2010). Available at: http://www.fbi.gov/congress/congress10/perkins050510.htm

Pollack H., Reuter P., and Sevigny E. (forthcoming) If drug treatment works so well, why are so many drug users in prison? NBER Working Paper. Cambridge, MA: National Bureau of Economic Research.

Reuter P. (2009) Can Heroin Maintenance Help Baltimore: What Baltimore can Learn from the Experience of other Cities. Baltimore, MD: Abell FoundationReuter P., Crawford G., and Cave J. (1988) Sealing the Borders. Santa Monica, CA: RAND.

Reuter P. and Trautmann F. (eds.) (2009) Assessing the Operations of the Global Illicit Drug Markets, 1998–2007. Report for the European Commission. Available at: http://ec.europa.eu/justice_home/doc_centre/drugs/studies/doc_drugs_studies_en.htm

Room R., Fischer B., Hall W., Lenton S. and Reuter P. (2010) Cannabis Policy: Moving Beyond Stalemate. Oxford: Oxford University Press

Scott-Hayward C.S. (2009) The Fiscal Crisis in Corrections: Rethinking Policies and Practices. New York, NY: Vera Institute of Justice.

Sevigny E, Caulkins J. (2004) Kingpins or mules? An analysis of drug offenders incarcerated in federal and state prisons. Criminology and Public Policy 3(3): 401–34

Uchtenhagen A., Ali R., Berglund M., Eap C., Farrell M., Mattick R., McLellan T., Rehm J., and Simpson S. (2004) Methadone as a medicine for the management of opioid dependence and HIV/AIDS prevention. Geneva, Switzerland: World Health Organization.

U.S. Department of State (2010) International Narcotics Control Strategy Report 2010. Washington, DC: Department of State.

Walsh J. (2007) Connecting the Dots: ONDCP's (Reluctant) Update on Cocaine Price and Purity. Washington, DC: Washington Office on Latin America. http://www.wola.org/media/Connecting%20the%20Dots%204-23-2007.pdf

West S.L. and O'Neal K.K. (2004) Project D.A.R.E. outcome effectiveness revisited. American Journal of Public Health 94: 1027–9.

Alexa Briscoe provided invaluable research assistance.