

HEROIN MAINTENANCE: IS A U.S. EXPERIMENT NEEDED?*

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Introduction

Methadone maintenance has repeatedly been shown as the most effective available treatment for a large fraction of heroin addicts³. Given that fewer than half of entrants stay in the program for as much as one year and that most continue to use illegal drugs, the disappointing implication of that statement is that the United States has a weak armamentarium for dealing with the problem of heroin addiction⁴. Given that heroin addiction appears to be very long lasting, with so many addicts from the 1970s still frequently dependent on the drug and involved in high risk health and crime behaviors⁵, it is hardly surprising that there is a continuing interest in finding alternatives that would bring some surcease to both the user and society.

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³ Indicative of methadone’s global reach, at least among wealthy nations of predominantly European origin populations, the best book length review of methadone treatment is an Australian volume: Ward, Mattick and Hall (1992)

⁴ For example, Hall, Mattick and Ward (1998; p.46) cite studies showing no more than 50 percent in treatment even six months after entry. The classic study of methadone programs, showing the wide range of services delivered and outcomes achieved, is Ball and Ross (1991).

⁵ Hser, Anglin and Powers (1993) report on a 24 year follow-up of a cohort of heroin addicts recruited in 1962-1964. They found that of those interviewed in 1986, only 20 percent reported having been heroin abstinent during the previous three years.

Heroin maintenance has long been one of those alternatives. Maintenance clinics were part of the initial response to the Harrison Act and famously were shut down (a process of some years during the 1920s) after a close fought legal battle was resolved in favor of the hawkish Treasury. Some historians have pointed approvingly to the Shreveport and New Orleans clinics; others have focused on the mismanaged New York clinic to suggest that they did little good and much damage⁶. But the idea of providing heroin to addicts as a humane harm reduction measure has reappeared from time to time in the US drug policy debate, and, largely because of European developments, is moderately prominent once again in the mid-1990s.

So far attention has been on the possibility of conducting a demonstration or trial here; immediate implementation of heroin maintenance on a large scale is not being discussed. Yet, even the notion of a trial has been highly controversial. It is not merely drug hawks, unsympathetic to the plight of dependent drug users, who believe this notion is both morally and pragmatically flawed; even researchers, long involved in drug treatment and clearly very concerned about addicts' wellbeing, have been antagonistic. The prospects are bleak indeed.

We believe that a reasonable case can be made for a US trial. The recent Swiss trials, for all the methodological weaknesses of their evaluation, provide evidence of feasibility and a *prima facia* case for effectiveness. The downside risks of a trial in the United States seem slight and the potential benefits substantial. However the Swiss evidence does not provide an adequate basis to make a decision about the desirability of heroin maintenance as a policy option in the US. Extrapolating from foreign experiences is difficult in any field of social policy and it is easy to identify characteristics of programs, patients and context that render the Swiss trials weak evidence for projecting what would happen here. Hence, the need for US based trials.

That is not to say that the critics are without a case. Some issues can be resolved without a field trial. Heroin maintenance raises fundamental normative concerns; for some these trump

⁶ Musto (1987: Chapter 7) provides a good account of the operation of these clinics and the

any possible public health gains. Swiss pragmatism and American idealism may derive different conclusions from one set of results about the effects of providing a highly addictive drug to those who already crave it. In this paper, we identify some ethical issues, generally resolving them in favor of allowing for the possibility of adopting heroin maintenance if it proves to be substantially better than other modalities for a significant fraction of America's 600-800,000 heroin addicts. There are also important political arguments that have been raised as objections to a heroin maintenance trial; we see those as having more power. Finally, we consider programmatic arguments, identifying the limits of small scale experiments to answer fundamental questions.

The next section provides a brief review of Britain's long experience with heroin maintenance, highlighting the fact that British doctors have made very little use of their right to provide the drug in the last quarter century. The following section summarizes the implementation of the Swiss field trials and describes the reaction to it, in Switzerland, the US and elsewhere. That is followed by a discussion of normative and political issues. Finally, we identify the potential for a heroin trial in the US.

The British Experience

In a 1926 report, the blue-ribbon Rolleston Committee concluded "that morphine and heroin addiction ... must be regarded as a manifestation of disease and not as a mere form of vicious indulgence, Thus, if repeated attempts to withdraw a patient from cocaine or heroin were unsuccessful, "the indefinitely prolonged administration of morphine and heroin (might) be necessary (for) those (patients) who are capable of leading a useful and normal life so long as they take a certain quantity, usually small, of their drug of addiction, but not otherwise." (as quoted in Stears, 1997; 123). This led Britain to adopt, or at least formalize, a system in which physicians could prescribe heroin to addicted patients for maintenance purposes (Judson, 1973).

federal efforts to close them.

With a small population of iatrogenically addicted opiate users (numbering in the hundreds) the system muddled along for four decades with few problems (Spear, 1994).

The system was not very controversial through most of that period. When the Tory government in 1955 considered banning heroin completely, in response to international pressures rather than because of any domestic complaints about the system, the British medical establishment fought back effectively and the government eventually abandoned the effort. However, in detail the incident seemed to say more about the power of the medical establishment and its dedication to physician autonomy than about the success of heroin maintenance (Judson, 1973, pp. 29-34).

Then, in the early 1960s, a very small number of physicians began to prescribe irresponsibly and a few heroin users began using the drug purely for recreational purposes, recruiting others like themselves (Spear, 1994). The result was a sharp proportionate increase in heroin addiction in the mid-1960s, still leaving the nation with a very small heroin problem; there were only about 1500 known addicts in 1967 (Johnson, 1975). In response to the increase, the *Dangerous Drugs Act of 1967* greatly curtailed access to heroin maintenance, limiting long-term prescriptions to a small number of specially licensed drug-treatment specialists⁷. General practitioners were not unhappy to be rid of the responsibility for dealing with a population of long-term patients who were difficult to manage and showed only modest improvements in health over the course of treatment.

Addicts could now be maintained long-term only in clinics. At the same time oral methadone became available as a substitute pharmacotherapy. British specialists proved as enthusiastic about this alternative as did their US counterparts, though initially they did not

⁷ The British have long complained about foreign descriptions of their system and in particular the nature of the 1967 changes (Strang and Gossop, 1994). The nuances of a system largely dependent on informal social controls are difficult to capture. Pearson (1991) provides a succinct version; Stimson and Oppenheimer (1982; Chapter 6) provide a fuller account. For current practice, see Strang et al. (1996).

expect long-term maintenance to be the norm and injectable methadone played a significant role. The fraction of maintained addicts receiving heroin fell rapidly. By 1975, just 4 percent of maintained opiate addicts were receiving only heroin; another 8 percent were receiving both methadone and heroin (Johnson, 1977). That reluctance to prescribe heroin remains true today; less than 1 percent of those being maintained on an opiate receive heroin (Stears, 1997). The strong and continued antipathy of British addiction specialists to the provision of heroin is a curious and troubling phenomenon for those who advocate its use⁸.

British research on the efficacy of heroin maintenance is quite limited. One classic study (Hartnoll et al., 1980) found that those being maintained on heroin did only moderately better than those receiving oral methadone. "[W]hile heroin-prescribed patients attended the clinic more regularly and showed some reduction in the extent of their criminal activities, nevertheless they showed no change in their other social activities such as work, stable accommodation or diet, nor did they differ significantly in the physical complications of drug use from those denied such a prescription" (Mitcheson, 1994; p.182). There was moderate leakage of heroin from the trial; 37 percent of those receiving heroin admitted that they at least occasionally sold some of their supply on the black market. An important factor in explaining the relatively weak results for heroin maintenance may have been the effort to limit doses; the average dose received by the patients, who had to bargain aggressively with their doctors, was 60 mg. of pure heroin daily⁹.

Mostly though there has been indifference in Britain for the last twenty-five years. This may in part reflect the much greater cost of providing heroin to a maintained patient; NHS reimbursement rules make this more difficult for the practitioner. The claims of one British practitioner (John Marks, operating in the Liverpool metropolitan area) as to the efficacy of heroin in reducing criminal involvement aroused controversy and hostility but little curiosity in

⁸ Trebach (1982; Chapter 7) provides an interesting account of why the shift to oral methadone occurred, emphasizing the discomfort of medical personnel with supporting the act of injection itself.

the British establishment. Observers from other nations, including Switzerland, were more interested (Ulrich-Votglin, 1997).

The Swiss Heroin Maintenance Trials

The Zurich government had attempted to deal with the city's severe heroin problem in the mid-1980s by allowing the operation of an open-air drug market behind the main train station. The Platzspitz was intended to minimize the intrusiveness of drug markets and to allow the efficient delivery of services, such as syringe exchange, to those who needed it. The city closed the Platzspitz in 1992 as a consequence of the migration of large numbers of heroin users from other parts of Switzerland and its sheer unsightliness (MacCoun and Reuter, forthcoming; Chapter 12).

Zurich authorities still sought an innovative approach and in January 1994 they opened the first heroin maintenance clinics, part of a three year national trial of heroin maintenance as a supplement to the large methadone maintenance program that had been operating for at least a decade. In late 1997 the federal government approved a large scale expansion, potentially accommodating 15% of the nation's estimated 30,000 heroin addicts (AAP NEWSFEED, December 25, 1997).

The motivation for these trials was complex. Two federal officials (personal communication) suggested that it was partly an effort to forestall a strong legalization movement. In their view the Swiss citizenry were unwilling to be very tough about enforcement but were also offended by the unsightliness of the drug scene. Heroin maintenance was likely to reduce the visibility of the problem, arguably an important consideration in Swiss drug policy. A 1991 survey found that only about 10 percent favored police action against all drug users but 57 percent favored suppression of open drug scenes (Gutzwiller and Uchtenhagen, 1997). For other

⁹ On the struggles between patient and doctor see Edwards (1969)

policy making participants, it was an obvious next step in reducing the risk of AIDS, which was very prevalent among IV drug users in Switzerland.

The decision was taken after very public consultations at the highest levels. An unusual “summit meeting” was held, at which the Swiss president¹⁰ and the heads of the cantonal governments approved an experiment to test whether heroin maintenance would reduce heroin problems. Public opinion was generally supportive; in a 1991 poll, 72 percent expressed approval of controlled prescription of heroin (Gutzwiler and Uchtenhagen, 1997)¹¹. The experiment was widely discussed in the media before implementation. An elaborate governance structure was established, including very detailed ethical scrutiny by regional ethics officers (Uchtenhagen et al, 1997). As an example of the care that was taken to protect the public health, enrollees were required to surrender their drivers license, thus reducing the risk of their driving while heroin intoxicated. Similarly, it was decided that once the government has provided heroin addicts with the drug, it incurred a continuing obligation to maintain those addicts as long as they sought heroin.

The original design involved three groups of patients receiving different injectable opiates: 250 receiving heroin, 250 morphine and 200 methadone. The early experience with morphine was that it caused discomfort to the patients and it was abandoned. Patients were reluctant to accept injectable methadone. As a consequence the final report focused on injectable heroin.

Participants in the trials were required to be at least 20 years old, to have had two years of intravenous injecting and to have failed at two other treatment attempts. These are hardly very tight screens. In fact most of those admitted had extensive careers both in heroin addiction and in

¹⁰ The Swiss presidency is not such an august position, being occupied in six month rotations by each member of the 7 person cabinet elected by parliament. Nonetheless, the president does represent at least temporarily the leadership of the federal government.

treatment; for example, in the Geneva site the average age was 33, with 12 years of injecting heroin and eight prior treatment episodes¹².

A decision to allow addicts to choose the dose they needed was critical; it removed any incentive to supplement the clinic provision with black market purchases and eliminated a potentially important source of tension in the relationship with clinic personnel¹³. A patient could receive heroin three times daily, 365 days of the year¹⁴. The average daily dose was 500-600 milligrams of pure heroin, a massive amount by the standards of US street addicts¹⁵. Faced with no constraint with respect to the drug that had dominated their lives and which had always been very difficult and expensive to obtain, patients initially sought very high doses. However they quickly accepted more reasonable levels that still permitted many of them to function in every day life, notwithstanding the relatively short acting character of heroin¹⁶.

The patient self-injected with equipment prepared by the staff, who could also provide advice about injecting practices as they supervised the injection. A daily charge of 15 Francs (ca. \$10) was charged to participants, many of whom paid out of their state welfare income. No heroin could be taken off the premises, thus minimizing the risk of leakage into the black market.

¹¹ Interestingly, the same survey found a noticeable increase in the percentage opposing controlled prescription between 1991 and 1994 (from 24 to 30 percent); this was a period when the trials were being debated publicly.

¹² As of this writing, only one document describing the full three year multi-site evaluation has been published. It is an 11 page "Summary of the Synthesis Report", which provides little quantitative detail. Hence we use here more detailed data from specific sites.

¹³ British doctors prescribe less than one third of this on average.

¹⁴ Some patients were permitted to inject more than once in a single session.

¹⁵ At \$1 per milligram, a low street price in recent years outside of New York, that would amount to \$500-600 per day in heroin expenditures alone. The actual figure is about one tenth of that.

¹⁶ Interesting comments on these dynamics are provided by Haemmig (1995). "People in the project tend to take too much of the drug. Many seem to have a concept that their only real problem in life is to get enough drugs. In the projects, for the first time in their lives, they can have as much as they need. In the course of time it gets depressing for them to realize that they have problems other than just getting enough drugs." (p.377)

Initially enrollment in the trials lagged behind schedule but after the first year enthusiasm among local officials increased sharply; consequently the trials ended up enlisting more than the initial targets and in a greater variety of settings than expected. Small towns (e.g., St. Gallen) and prisons volunteered to be sites and were able to enroll clients. Nonetheless some sites, such as Geneva, were never able to reach their enrollment targets (Perneger et al., 1998).

The project certainly demonstrated the feasibility of heroin maintenance. By the end of the trials, over 800 patients had received heroin on a regular basis without leakage into the illicit market. No overdoses were reported among participants while they stayed in the program. They had ended up choosing dosage levels that allowed them to improve their social and economic functioning¹⁷. A large majority of participants had maintained the regime that was imposed on them, requiring daily attendance at the clinic. For example, in Geneva 20 out of 25 patients received heroin on more than 80 percent of treatment days (Perneger et al., 1998).

Outcomes were generally very positive; we address the question of the appropriate controls below. Retention in treatment, a standard measure of treatment success, was high relative to rates found in methadone programs generally; 69 percent were in treatment 18 months after admission¹⁸. About half of those recorded as drop-outs in fact moved to other treatment modalities, some choosing methadone and others abstinence based modalities. One observer suggested that having discovered the limitations of untrammeled access to heroin, these patients were now ready to attempt quitting. Crime rates were much reduced as compared to treatment entry; self-reported rates fell by 60 percent during the first six months; this was supported by data from official arrest records. Self-reported use of non-prescribed heroin fell sharply and the percentage with jobs that were described as "permanent" increased from 14 percent to 32 percent and unemployment fell from 44 percent to 20 percent. Self-reported mental health improved

¹⁷ The Geneva site reported that they reached stable dosages within the first month.

substantially. Only three new HIV infections, probably related to cocaine use outside of the clinics, were detected. One interesting finding is that though many addicts were able to detach themselves from the heroin subculture, they were unable to develop other attachments. Given their weak labor force performance and estrangement over previous decade from non-addicts, this in retrospect is hardly surprising but points to the long-term challenge for psycho-social services. Cocaine use remained high during heroin maintenance.

The evaluation carried out by the Swiss government was led by Ambros Uchtenhagen, a leading Swiss drug treatment researcher. The trial design, primarily a comparison of before and after behavior of the patients and lacking a well-specified control group (Killias and Uchtenhagen 1996) limited the power of its findings. In the absence of a control group or random assignment, the natural metric for assessing the program was the success of methadone programs with similar patients, yet the heroin maintenance trial participants also were targeted with substantially more psycho-social services than the typical methadone patient. Critics asked whether the claimed success was a function of the heroin or the additional services (Farrell and Hall, 1998). The evaluation relied primarily on self-reports by patients, with few objective measures.

Only at the Geneva site was there random assignment between heroin and other modalities¹⁸. As compared to the controls, experimental subjects in Geneva were substantially less involved in the street heroin markets, were less criminally active generally and showed improved social functioning and mental health. On a number of other dimensions the two groups did not differ, though both improved; drug overdoses, precautions against AIDS and overall health status. Unfortunately the meticulous evaluation of that site was limited by a small sample size (25 in the experimental group and 22 controls) -- which biases analyses against rejecting the

¹⁸ Eighteen months was chosen as the assessment period because only a modest fraction had entered treatment more than 18 months before the agreed upon termination date for the trials as such.

¹⁹ Two sites apparently ran double blind studies but no results have yet been reported for those sites.

null hypothesis of "no difference"-- and a lack of detail on the treatments received by the controls.

It is difficult to know what is an appropriate control group to use for assessing these results in even a crude sense. The Swiss trials involve experimental programs which are likely to be undertaken by the higher quality program operators with more staff esprit and to be administered with greater fidelity than routine methadone maintenance. Possibly it is most appropriate to compare their outcomes with those of methadone when it was a new pharmacotherapy in the early 1970s. Hall, Mattick and Ward (1998?) note in the same spirit that programs which participate in Randomized Control trials of methadone maintenance show substantially higher retention rates than other programs.

Unsurprisingly, heroin maintenance turned out to be far more expensive than methadone maintenance. It required three times daily attendance and provision of injecting equipment, while methadone is dispensed typically on a three times a week basis, with take-homes being allowed to most experienced patients. Moreover the Swiss researchers report that it has, so far, been expensive to provide sufficient quantities of pure heroin, given that there has previously been only a tiny legitimate market for the injectable form. The evaluators estimated total daily cost per patient per day at about 50 francs (\$35), roughly twice the daily cost for a standard methadone programme. Though the initial estimates are that the benefits per day of enrollment are 96 Swiss francs (including only savings on criminal investigations, jail stays and health care costs), this hardly settles the matter of whether these additional costs are justified, particularly since most of the benefits accrue to a different government sector.

The Response

Since political considerations are so central to this issue, we briefly describe here the response engendered by the Swiss trials both at home and abroad.

Domestically the trials became the focus of the two wings of Swiss opinion, which used the very open referenda process²⁰. One group (“Youth Without Drugs”) obtained enough signatures to place on the ballot a measure that would “exclude further controlled prescription experiments and methadone, end attempts to differentiate between soft and hard drugs and focus prevention programmes on deterrence only.” (Klingemann, 1996; p.733). Shortly after the launching of the Youth Without Drugs initiative, an opposing group was created (with a cumbersome name [“For a reasonable drug policy – tabula rasa with the drug mafia”]), advocating a new Constitutional article stating that “the consumption, production, possession and purchase of narcotics for individual use only is not prohibited.” They also obtained the 100,000 signatures necessary for putting their proposal on the ballot.

The federal government opposed both initiatives. In the vote on the abstinence initiative in September 1997, almost four years after the “Youth without Drugs” group had gathered their signatures, 70 percent of voters were against the proposition²¹. This strong majority provided important support for the government in its decision on extending the trials into a second phase. A second referendum on the legalization initiative was handily defeated in November 1998.

The heroin trials also proved controversial internationally. The International Narcotics Control Board, a UN agency which *inter alia* regulates the international trade in legal opiates, very reluctantly authorized the importation of the heroin required for the trials (Klingemann, 1996). The INCB required, when approving the initial importation of heroin, that the Swiss government agree to an independent evaluation by the World Health Organization but that evaluation had still not appeared by December 1998, even though the trials themselves were completed in December 1996 (McGregor, 1998).

²⁰“The Swiss vote in more referendums than anybody else. Each year they are asked three of four times to take part in national votes – not to mention referendums in the cantons and communes..” *The Economist*, October 17, 1998; p.58

The INCB expressed its concern about the proposed expansion of the trials (INCB, 1998). Its officials used unusually strong language for a United Nations agency, especially when dealing not with a pariah country such as Afghanistan or Burma but a veritable bulwark of international respectability, the home of the World Health Organization among many UN agencies. The director general of the INCB said “Anyone who plays with fire loses control over it.” He also claimed that it would send “a disastrous signal to countries in which drugs were produced”; these nations were asking why they should cut back cultivation “when the same drugs were being given out legally in Europe.” The Board’s annual report more diplomatically regretted the proposed expansion of the scheme before the completion of the WHO evaluation.

The Swiss trials sparked interest in other wealthy nations. The Dutch government committed itself to launch a trial of injectable heroin for purposes of addiction maintenance (Maginnis, 1997). This came after almost fifteen years of inconclusive discussions about such trials, following a rather murky episode in which the Amsterdam municipal health authority had attempted to maintain about 40 addicts on morphine (Derks, 1997). That Switzerland was willing to take on the disapproval of the international community was undoubtedly helpful in pushing the Dutch government to launch a trial involving 750 addicts.

In Australia, the trials also helped spark interest in a feasibility study in Canberra, which has a substantial heroin addiction problem (Bammer and McDonald, 1994). Only the personal intervention of the prime minister in 1997, overriding a decision by a council of state and federal ministers, prevented the study from moving to the next pilot stage. There have been expressions of interest from Denmark as well.

²¹ An earlier referendum confined to Zurich and focused merely on the continuation of funding for the pilot scheme was also approved by over 60 percent of the vote (Associated Press “Swiss Voters Approve Heroin Distribution Programs”, December 1, 1996)

Heroin Maintenance in The United States (post 1950)

Surprisingly, there was some discussion of a heroin maintenance trial during the period 1950-1970, when heroin dependence was a fairly invisible, and probably minor problem. Indeed in 1957, the Interim Report of the joint Committee on Narcotic Study of the American Medical Association and the American Bar Association recommended exploring the possibility of an experiment in outpatient heroin maintenance (Bayer, 1976). However the most significant episode of modern times occurred in the early 1970s, near the height of the US heroin epidemic, when serious consideration was given to a trial of heroin maintenance in New York City. Though the incident occurred 25 years ago, it is worth briefly describing because it illustrates the continuity, perhaps even stagnation, of drug policy debates²².

The Vera Institute, then a young but already well respected social policy research institution with its roots primarily in criminal justice, initiated plans to test heroin maintenance in the United States, having been impressed by the apparent success of the British in keeping its own heroin addict population to manageable numbers²³. It proposed a pilot program for New York City in which heroin would be provided to addicts for an initial period of perhaps three months, before switching them to methadone or an abstinence regime. The rationale was to use the heroin as a means of persuading recalcitrant addicts to enter programs. If a first batch of 30 patients performed well in this regime, then a second set of 200 patients would be selected and randomly assigned to either the same regime or to methadone maintenance. Only then would a large scale implementation be tried.

Though far from a long-term heroin maintenance scheme, this generated extremely hostile reactions from all quarters. Harlem's Congressman Charles Rangel said: "[I]t is

²² A lengthy informal description, emphasizing the politics, can be found in Judson (1973; pp126-140).

imperative that we dispel some of the myths about the British system of drug treatment so that the American people will open up their eyes and recognize heroin for what it is--a killer, not a drug on which a human being should be maintained..." The head of the predecessor agency to DEA asserted: "[I]t would be a virtual announcement of medical surrender on the treatment of addiction and would amount to consigning hundreds of thousands of our citizens to the slavery of heroin addiction forever." Vincent Dole, one of the two developers of methadone, published a *Journal of the American Medical Association* editorial attacking the notion on many grounds, such as the impossibility of finding stable doses or the implausibility that a small scale demonstration could establish the feasibility of providing services to 250,000 heroin users. Even the reliably liberal *New York Times* published negative stories, for example citing a Swedish psychiatric epidemiologist as suggesting "you could easily get up to three or four million addicts in five years. Heroin maintenance? Only those who don't know anything about addiction can discuss it."²⁴

Each of these critics could be discounted for representing a specific interest group or bias. Rangel represented the most hard hit population group, African-Americans, who had a deep suspicion that drugs were being employed to reduce black anger following the urban riots of the late 1960s. Law enforcement agencies are notoriously conservative. The researcher responsible for developing a substitute medication for heroin was hardly likely to be an enthusiast for returning to the original drug. Sweden was, as a nation, harshly anti-maintenance, even against methadone. But with so many different enemies, ultimately the proposal had no friends. It simply disappeared.

²³ Judson reports that originally a Vera research group had viewed the British maintenance regimes as unsuccessful and had projected very large increases in the number of addicts. When those increases were not realized, they changed their view of the British programs.

²⁴ All cites taken from Judson (1973, pp.131-132).

A few years later the National League of Cities considered endorsing trials of heroin maintenance in several cities. After much debate, the NLC reaffirmed its support for such trials but as Senay, Lewis and Millar (1996) report "thereafter the topic receded into obscurity" (p.192). They also report that later research proposals died either because of scientific review, which David Lewis (a participant in the original Vera proposal) thought was correct²⁵ or, in one case, because the NIDA National Council (intended to advise the institute on policy issues) overruled a scientific panel.

In the United States political reaction to the recent Swiss trials was illustrated by hearings held by a House subcommittee.²⁶ The Subcommittee called as witnesses from Switzerland two doctors with long records of hostility to both needle exchange and heroin maintenance. One (Ernst Aeschbach) was on the board of the "Youth without drugs" group, the principal group responsible for an initiative to end heroin prescribing (chapter 12). The other (Erne Mathias) asserted that there was a conspiracy, initially supported by the East German or Soviet intelligence agencies, to create narco states in Europe; Switzerland had been targeted when the Netherlands acquired too controversial a reputation. Most members, both Democratic and Republican, were delighted with the Swiss witnesses, who were supported by two hawkish US witnesses who also condemned the trials. Sample comments included: "Giving away free needles or doctor-injected heroin is simply,a fast track to moral corruption and the first step towards genuine disintegration of public security."²⁷ No Swiss researcher or official associated with the trials was given an opportunity to testify.

²⁵ Charles O'Brien, a member of the review committee, confirms that the proposals failed on their scientific merits.

²⁶ The National Security, International Affairs and Criminal Justice Subcommittee of the House Government Reform and Oversight Committee.

²⁷ Congressman Hastert (R-Ill.), [elected Speaker in 1999] introducing the hearing. Readers unused to reading Congressional statements should be warned that they are often inflammatory. However, even by contemporary Congressional standards, these seem extreme.

Still the proposal recurs. David Vlahov, a professor at the Johns Hopkins School of Public Health proposed once again in 1998 to undertake a trial.²⁸ The usual chorus of disapproval was instantaneous. Maryland's Democratic governor said: "It doesn't make any sense. It sends totally the wrong signal." The Lieutenant Governor expanded on this slightly. "It's much better to tell young people that heroin is bad. This undermines the whole effort." Even Mayor Kurt Schmoke, a leader in liberal drug policy, distanced himself from the proposal and censured his health commissioner for endorsing it. It was also reported that "many addiction experts say funding for traditional drug treatment falls far short of the demand, and heroin maintenance is a dubious distraction from proven remedies for drug abuse."²⁹

Considerations for Deciding on a United States Trial

Perhaps the principal accomplishment of the Swiss trials was simply to show that heroin maintenance is possible, a matter which previously had been in question. For example, Kaplan (1983) doubted the feasibility of even an experiment in heroin maintenance, raising a host of possible objections, from community rejection of sites at which addicts could be found nodding off (p.175) to heroin diversion by employees. At least in the context of a wealthy, well-ordered society, the Swiss have shown that it is possible to maintain large numbers of otherwise chaotic addicts on this drug in a way that the community finds acceptable and without any dire consequences to the health and safety of the community or participants. Indeed, the addicts' ability to operate in society appears to have been enhanced.

Normative Issues

Feasibility is not desirability. Heroin maintenance has a contradiction at its heart. Having chosen to prohibit the drug, society then makes an exception for those who cause sufficient damage, to themselves and society, as a consequence of their violation of the prohibition.

²⁸ "Test of heroin maintenance may be launched in Baltimore" *Baltimore Sun* 10 June 1998

²⁹ All quotes from "Heroin maintenance quickly stirs outrage" *Baltimore Sun* 12 June 1998

Society's decision is only to set the damage level that entitles a user to access. It can require that an addict cause a lot of damage in order to gain access; that is expensive (in terms of crime and health risks) and inhumane. However if the barrier is set low, then access to heroin becomes too easy and the basic prohibition may be substantially weakened.

Linked to that is a revulsion against the government itself providing the prohibited drug. A purely private market would probably raise far fewer objections but is implausible. The impoverished condition of so many American heroin addicts and society's desire to require that the drug be provided in the context of other services aimed at helping them overcome problems other than the addiction itself mean that the state will certainly have a central role in the funding and regulation of heroin maintenance, if not in its provision. Thus the innovation is more disturbing than merely removing a restriction on the right of private provision.

We present this as a normative argument distinct both from the political issue of whether such a role can obtain popular support and the related argument that heroin maintenance would reduce the effectiveness of the basic prohibition by "sending the wrong signal" (MacCoun, 1998). The state has moral as well as programmatic purposes; providing a prohibited substance that has caused so much harm will appear to some as normatively inconsistent, no matter what benefits it yields. Similar normative concerns are often voiced about the inconsistency of current policies toward alcohol, tobacco and other drugs, though to little effect.

In highlighting this problem, we should also identify a potential misunderstanding. There might be a concern that "normatively inconsistent" messages will lead to increased drug use and drug-related harms; if so, it can be answered empirically, and the Swiss trials and possible U.S. trials becomes relevant. On the other hand, the view that inconsistent government messages are intrinsically undesirable (irrespective of their consequences) is a purely normative matter that no empirical study can address.

Heroin maintenance presents other conceptual problems. Providing heroin in accord with the desires of the patient may allow for the delivery of psycho-social services that do indeed assist

the addict in dealing with his or her problem. But a case can be made that heroin maintenance of itself is social policy not medicine; indeed, the INCB's objections to authorizing the shipments of opiates to Switzerland emphasized just that. Arguably, interventions that blur the boundaries between social policy and therapeutic treatment exploit and perhaps weaken the bonds of legitimacy and trust that underpin the medical relationship.

These are issues that can be addressed without an American field trial. For some decision makers these are troubling considerations that might nonetheless be waived if it were shown that the reductions in disease and crime were large enough. But other decision makers might feel that there are no findings of efficacy that could surmount the obstacles presented by these moral concerns—though it should be noted that similar objections against methadone largely gave way in the face of overwhelming evidence of reduced criminality, morbidity, and mortality.

Political Considerations

Another class of concerns that vitiate the need for a trial is political. Methadone advocates and researchers express a concern that heroin maintenance would undermine public support for maintenance therapy more generally, in particular for methadone. New York Mayor Giuliani's August 1998 attack on methadone maintenance for its failure to move addicts to abstinence³⁰ is a reminder of how thin is the foundation of public understanding on which those programs rest, notwithstanding that he backed away from this position six months later. After all it was only ten years ago that the White House Conference on Drug Abuse (1988) produced a report which opposed methadone maintenance. A population which doubts the morality of providing a relatively unattractive narcotic such as methadone is likely to be extremely skeptical about providing the demonized heroin. If it were offered, then methadone maintenance might come under renewed attack.

³⁰ *New York Times* August 1998 Details

Wayne Hall (personal communication) argues that in Australia the controversy over a small scale heroin maintenance trial in Canberra has given new ammunition to those who oppose both methadone maintenance and needle exchange. It is easy to caricature the idea of heroin maintenance and that caricature rubs off on programs that have similar goals, to reduce drug related problems without simply persuading or forcing addicts to quit habit forming illegal drugs. Moreover the claim of a heroin “crisis” that served as justification for taking a trial seriously may have backfired by supporting calls for greater toughness in a country which sometimes waves the banner of harm reduction over its drug policies.

A related political argument focuses on the allocation of research resources. The budget for treatment innovations is limited; one can reasonably question whether, given the political obstacles to heroin maintenance, the marginal dollar should go into trials of a program that is unlikely to be implemented. This is certainly a conservative view of social innovation generally. A research program on heroin maintenance is clearly a long-term effort. Predicting the political climate for maintenance ten years from now is a very risky enterprise.

Moreover the Swiss experience demonstrates is that in a wealthy society which values order and sobriety it is possible to build a base of popular support for heroin maintenance. Switzerland is a somewhat paternalistic society and its citizens may be less troubled by some of the normative issues discussed here, though there is little positive evidence to support that. Sigelman (1986) describes a welfare system which is mixed in this respect. The United States is at the opposite end of that particular spectrum, with its ideology of individualism and distaste for state support generally. But this poses the political question in a more positive light; what one can learn from Switzerland about how to build popular support for a heroin maintenance trial.

Programmatic Concerns

National stereotypes are an important consideration in the argument for a US trial. Americans see Switzerland as a fairly homogenous and orderly society, where program operators can be trusted and even heroin addicts are probably given to following rules. Though Swiss

addicts in fact have high rates of criminality, they are (like European addicts and criminals generally) vastly less violent than their American counterparts. The kind of fraud that has characterized the US methadone industry from time to time is at least not reported and not raised as a serious problem even by methadone opponents. Thus the need for a demonstration to determine whether *inter alia* American program operators could be monitored and coerced effectively enough that diversion would be a minor problem and whether American addicts would be capable of meeting the demands imposed by a three times a day clinic attendance.

Such a trial could also be structured to answer a charge of some critics that heroin maintenance is simply not an important policy innovation because it will bring in few addicts not currently in treatment (Farrell and Hall, 1998). The initial Swiss recruitment difficulties suggest that few addicts will enter heroin maintenance programs, no matter how attractive they sound in theory. For example, the Geneva site found that only one member of the control group entered the heroin program when access was provided. Conducting the trials in smaller cities, where they could reach a significant proportion of the total heroin addict population, would permit assessment of their attractiveness.

Ironically, evidence that puritan critics are incorrect in claiming that these programs amount to providing chocolate to chocolaholics is that they are not attractive enough to the intended clients to make much of a difference. The programs can be effective and immoral or ineffective and moral. The maintenance regime, with its highly routinized provision of the mythologized drug in a sterile environment, may fall betwixt and between for most heroin addicts. It takes the glamour from the drug that has dominated their lives, without providing any cure for their addiction. Some informal inquiries among Zurich addicts early in the trial elicited the response that heroin maintenance was a program for “losers” (Hall, personal communication). It may do little more than improve the performance of a small fraction of those who would otherwise choose methadone but prove erratic participants in that modality. The second stage expanded Swiss program will help answer that question.

Even if the evaluation results hold up on tighter inspection and heroin outperforms methadone in terms of improving health and reducing crime among participants, some important empirical questions about population effects may remain unanswered. The Swiss evaluation has been patient focused. This elides one of the basic concerns of opponents, namely that broad availability of heroin maintenance will increase the attractiveness of heroin use or even of drug use more generally. Answering that question requires more than pilot programs, since it is precisely a function of scale. Evaluations of small-scale pilot projects have inherent limits, a point made by Vincent Dole (1972) in the context of the Vera initiative. Again, that argues for trials in a smaller city where experimental programs might have observable population effects.

It is worth noting though that large-scale expansion of heroin maintenance, if it substantially reduces addict involvement in heroin use and selling, may also have the benign effect of making heroin less accessible to new users. Markets are now primarily supplied at the retail level by long-term addicts; if these mostly withdraw, then non-addicted users, particularly experimenters, may have difficulty finding a regular source with substantially shrunken street markets.³¹

One can argue that the reduction in harmfulness might make heroin use more attractive (see MacCoun, 1998). In particular, someone who initiates with black market heroin when heroin maintenance is available might reason that if she does become dependent, her habit will be supported by doses of predictable purity and potency, at a modest price, from a reliable and safe source. At the margin, this is possible, though it is hard to imagine someone with the foresightfulness to reason this way who would knowingly choose to become "enslaved" to a drug, no matter the source. Moreover, such a person would have to knowingly accept the substantial risks of using black market heroin for a period of years before becoming eligible for a

³¹ Treatment also has this effect, drawing from markets individuals who are both users and sellers, thus simultaneously affecting demand and supply. For an analysis of this phenomenon see Caulkins et al., 1996

maintenance program. One might also argue that heroin maintenance would reduce the likelihood that an addict would become abstinent. We find this compelling in the abstract, but the argument loses some of its force when one considers the remarkably long duration of heroin "careers" in the current system (e.g., Hser, Anglin, & Powers, 1993). At any rate, such prevalence-increasing effects might be counterbalanced by the substantial reduction in black market access that would result when current addicts stop frequenting (and running) those markets.

Conclusion

The harshness of reactions in the international community to the Swiss trials illustrates the difficulty faced by nations interested in testing harm reduction innovations. Whereas Dutch coffee shops, the other much disapproved of harm reduction innovation, could arguably be viewed as undercutting the sovereignty of neighboring countries because of drug tourism, the Swiss heroin maintenance programs were clearly restricted to that nation's own citizens. Rather than enthusiasm about the promising findings of the trials, the undoubted weaknesses of the evaluation were seized on for accusations of irresponsibility. There was no recognition that current policies, in particular the tough enforcement of prohibitions, have a much thinner research base supporting them. Aggressive crack-downs, even if they have no demonstrable benefits and highly visible harms in terms of increased violence, get no such international condemnation.

What is so striking here is that all this hostility is engendered not by a policy idea but simply by a proposal to conduct a demonstration or trial. Clearly there are serious ethical issues to government provision of a prohibited drug. Though it is not precisely a slippery slope, heroin maintenance goes further down a path started by methadone maintenance and needle exchange, two programs we endorse heartily. We confess to some squeamishness about heroin maintenance. It is easier to feel than to articulate the qualitative breakpoint between it and the other two programs. Needle exchange and methadone maintenance each help the addict meet her need in a safer way. Methadone maintenance does so in a way that is less pleasurable than heroin

but that is not true of needle exchange. But providing a full rather than an empty needle seems a substantial step, perhaps because needles of themselves are so often seen as benign, the source of cure rather than illness. One can object to facilitating pleasure on either consequentialist or deontological grounds; we explore these matters in our forthcoming book.

Even some of the empirical objections cannot readily be answered through a small scale trial in a very large city. But it is still difficult to account for the indignation and the willful misrepresentation of foreign experiences (Britain in the 1970s; Switzerland in the 1990s). If a substantial percentage of current heroin addicts were to participate, which is by no means certain, heroin maintenance would result in large gains in health, social functioning and criminal justice costs.

We return to our initial point. Society's tools for alleviating the problems of heroin addiction are weak. Heroin maintenance offers some prospect of helping. It is worth serious consideration, certainly more than the hasty dismissal that it routinely receives from so many participants, researchers included.

Bibliography

- Ball, J and A. Ross (1991). *The Effectiveness of Methadone Maintenance Treatment: Patients, Programs, Services and Outcomes*. New York: Springer-Verlarg.
- Bammer, G.and D.McDonald (1994). Report on a Workshop on Trial Evaluation. In *Issues for Designing and Evaluating a 'Heroin Trial'*. Working Paper Number 8, Canberra, Australia. National Center for Epidemiology and Population Health.
- Bayer, R. (1976). "Heroin Maintenance: An Historical Perspective on the Exhaustion of Liberal Narcotics Reform." *J. Psychedelic Drugs*, 8, 157-165.
- Derks, J. (1997). "The Dispensing of Injectable Morphine in Amsterdam: Experiences, Results and Implications for the Swiss Project for the Medical Prescription of Narcotics" in Lewis et al. (eds.), 167-179.
- Dole, V. (1972). Editorial *J. American Medical Association*, 220, 1493.
- Edwards. G. (1969). "The British approach to the treatment of heroin addiction." *Lancet*, I, 768-772.
- Farrell, M. and W.Hall (1998, February 28). "The Swiss Heroin Trials: Testing Alternative Approaches." *British Medical Journal*, 316, , 639.
- Gutzwiller, F. and A. Uchtenhagen (1997). "Heroin Substitution: Part of the Fight Against Drug Dependency." in Lewis et al.
- Haemmig, R. B. (1995). "Harm Reduction in Bern: From Outreach to Heroin Maintenance." *Bulletin of the New York Academy of Medicine*, Winter, 371-379.
- Hall, W., Mattick, R. and J. Ward (1998). "The effectiveness of methadone maintenance treatment 1: Heroin use and crime." in Ward, J.; Mattick, R.; and W. Hall (eds.) *Methadone Maintenance Treatment and Other Opioid Replacement Therapies* Amsterdam, Harwood: Academic Press, 17-58.
- Hartnoll, R. et al. (1980). "Evaluation of Heroin Maintenance in a controlled trial." *Archive General Psychiatry*, 37, 877-884.

- Hser, Y-I, Anglin, M.D. and K. Powers (1993). "A 24 year follow-up of California narcotics addicts." *Archives of General Psychiatry*, 50, 577-584.
- International Narcotics Control Board (1998). *Report of the International Narcotics Control Board for 1997*, Vienna.
- Johnson, B. (1975). "Understanding British addiction statistics." *Bulletin on Narcotics*, 27, 49-66.
- Johnson, B. (1977). "How Much Heroin Maintenance (Containment) in Britain?" *The International J. of the Addictions*, 12, 361-398.
- Judson, H. (1974). *Heroin Addiction in Britain: What Americans Can Learn from the English Experience*. New York: Harcourt, Brace and Jovanovich.
- Kaplan, J. (1983). *The Hardest Drug: Heroin and Public Policy*. Chicago: University of Chicago Press.
- Killias, M. and A.Uchtenhagen (1996). "Does Medical Prescription Reduce Delinquency Among Drug-Addicts? On the Evaluation of the Swiss Heroin Prescription Projects and its Methodology." *Studies on Crime and Crime Prevention*, 5, 245-256.
- Klingemann K.K. (1996). "Drug Treatment in Switzerland: Harm Reduction, Decentralization and Community Response." *Addiction*, 91, 723-736.
- Lewis, D.; Gear C.; Laubli Loud, M.; Langenick-Cartwright, D. (eds.) (1997). *The Medical Prescription of Narcotics: Scientific Foundations and Practical Experiences*. Seattle: Hogrefe and Huber Publishers.
- MacCoun, R (1998). "The Psychology of Harm Reduction." *The American Psychologist*, 53, 1199-1208.
- McGregor, A. (1998). "WHO accused of slowness in evaluating Swiss heroin-addiction treatment." *Lancet*, 351, 891.
- Maginnis, R. L. (1997). *Night Gallery: Heroin Giveaways go Global*. Family Research Council. [<http://www.frc.org/insight/is97j1dr.html>].

- Mitcheson, M. (1994). "Drug Clinics in the 1970s" in Strang, John and Michael Gossop (eds.). *Heroin Addiction and Drug Policy: The British System*. Oxford: Oxford University Press.
- Musto, D (1987). *The American Disease*. New York: Oxford University Press.
- Pearson, G. (1991). "Drug Control Policies in Britain" in Tonry, M (ed.) *Crime and Justice: An Annual Review of Research*, Vol. 16. Chicago: University of Chicago Press, 1991.
- Perneger, T. V.; Giner, Francisco; del Rio, Miguel; Mno, Annie (1998). "Randomised trial of heroin maintenance programme for addicts who fail in conventional drug treatments." *British Medical Journal*, 317, 13-18.
- Rettig, R and A. Yarmolinsky (eds.) (1995). *Federal Regulation of Methadone Programs*. Washington, D.C.: National Academy Press.
- Spear B. (1994). "The early years of the 'British system' in practice" in Strang, J.and M.Gossop (eds.). *Heroin Addiction and Drug Policy: The British System*. Oxford: Oxford University Press,3-28.
- Stears, A. (1997). "The British Drug Treatment System: Personal Perspectives" in Lewis et al., 122-129.
- Strang, J. and M. Gossop (1994). "The 'British System': Visionary anticipation or masterly inactivity?" in Strang, J.and M.Gossop (eds.). *Heroin Addiction and Drug Policy: The British System*. Oxford: Oxford University Press,.342-351.
- Trebach (1982). *The Heroin Solution*. New Haven: Yale University Press.
- Uchtenhagen, A.; Gutzwiller, F.,Dobler-Mikola A. (1997). *Programme for a medical prescription of narcotics: Final Report of the Research Representatives. Summary of the synthesis report*. Zurich: University of Zurich.
- Ulrich-Vogtlin, U. (1997). "An Overview of the Projects" in Lewis et al. (eds.) 76-79

White House Conference on a Drug Free America (1988). *The White House Conference for a Drug Free America: final report, June 1988.* Washington, D.C.: U.S. Government Printing Office.