Force in the sunshine state

*Nearly 40 years ago administrative blunders in California paved the way for what remains the most convincing test of **diverting** addicted **offenders** into treatment. As Britain gears up for its own mass diversion programme, this famous US study is more relevant than ever.*

Mike Ashton
Drug and Alcohol Findings

Nearly 40 years ago courts in California started ordering criminally convicted narcotic addicts into a treatment and supervision regime featuring regular drug tests, with a return to court as the sanction for misbehaviour. Though given little option, most offenders would have chosen the order in preference to the sentence otherwise awaiting them.

Parallels with the UK's drug treatment and testing orders are striking. That alone makes the study of the initiative (*Key sources* p. 25) arguably more relevant today than any research in the intervening decades – especially since a happy accident enabled it to be unusually rigorous. But the study has a far wider significance, being recognised by leading European commentators as "some of best evidence of the benefits of legal coercion"[1] and as the "key research" indicating that those who receive legally coerced treatment respond as well as others[2] – that "pressure pays".[3]

The initiative was known as the California Civil Addict Program. It was based on a civil commitment procedure which allowed a court to order anyone addicted to narcotics[4] – regardless of whether they had been convicted of an offence – into residential treatment followed by years of close supervision by parole officers *California's programme* p. 24. Admissions started in 1962 and over the following decade 1000 to 2000 people a year entered the programme.

Early work based on its own ambitious definition of success – three consecutive years of negative drug tests – had suggested that the expensive intervention[5] worked for just 1 in 6 parolees. In a study presented first in 1976, a team from the University of California showed that it worked for far more, though not in these absolutist terms. Crucially, William McGlothlin and colleagues adopted measures commensurate with the long-term nature of addiction and which revealed the benefits of treatment in terms of *reduced* drug use and crime.[6]

Among McGlothlin's colleagues was Douglas Anglin. His presence provides a unifying thread in research on coerced treatment dating back to his engagement in the California study in 1973.[7] Dr Anglin's work forms the backbone for this article.

McGlothlin's team aimed to interview 949 men[8] committed to the programme either in its first years (1962–1964) or in 1970. Interviews were conducted in 1974–75 when the 1964 admissions had been about three years out of commitment.

A creditable 88% of those available for interview were included in the study. They were asked to track back to the year before they had started using narcotics and then to recall their drug use and crime over the succeeding years, aided by anchor points from official records. Imprecision is to be expected, but should have affected treatment and control groups alike. The resulting 'white noise' would have obscured the benefits of the intervention rather than led to a false conclusion that it had worked.

The interviews revealed that commitment was picking up long-term, heavily addicted, criminally active drug users. Typically first arrested at age 15, they had spent a fifth of their lives in prison since starting to use narcotics at age 18. By their twentieth birthdays they were using heroin daily and had been doing so for five years before entering the programme.

The researchers devised three linked studies. At the core of all three was a sample who had progressed normally through the programme after being admitted in 1964, when initial teething problems had subsided. The two studies analysed here sought to answer the crucial questions about the intervention: did it work, and *how* did it work. Both involved comparing the 1964 sample with another sample, comparisons made possible by (for the researchers) rare strokes of good fortune.[9]

Golden Bullets

Essential practice points from this article

- Addicts diverted into treatment from prison are likely to be among the most entrenched and difficult cases. **Intensive, well staffed** interventions have the best track record.
- For those dependent on opiates, **maintenance** prescribing is the single most effective crime-reduction intervention.
- Offenders have more **incentive** to enter and engage with treatment if good progress reduces their sentence. Carving out part of a sentence for supervised treatment also maximises treatment recruitment and retention.
- The need for coerced treatment should be minimised by first providing attractive, accessible and effective **voluntary treatment**. Voluntary treatment entry is cheaper and does not entail curtailment of civil liberties.
- Re-sentencing addicts who **lapse** but are fundamentally doing well is an expensive way to create failures out of successes. However, incipient **relapses** should meet with a speedy treatment response.
- Close legal **supervision** stiffened by drug testing cuts crime and drug use even without treatment, but the benefits do not outlast the supervision.
- Greater and more lasting benefits can be achieved by **integrating treatment with supervision**: treatment reduces drug use, while legal pressure promotes treatment entry, retention and compliance.

Comparison 1 Did it work?

The first stroke of good fortune provided as perfect a control group as one could hope for without artificial allocation. It meant the researchers were able to compare addicts who had been through the programme with others who *should* have gone through it, but who had escaped on a technicality.

In its first two years 2423 people were committed. Wholesale administrative errors allowed nearly half to overturn the order – a disaster for the authorities, a godsend for researchers. 292 addicts admitted in 1962 and 1963 but released before completing the residential phase formed the control group. Most had spent little time in treatment and the mistakes which led to their release were (from the study's point of view) random. This meant they were very similar to the treatment group – 289 patients admitted in 1964 who *had* been processed as intended. Remaining differences were minimised by matching the samples.

The result was two groups of addicts essentially the same except that most of one had been subject to normal criminal sanctions whilst most of the other had been diverted into treatment and supervision. The study's power and lasting relevance derives from this serendipitous provision of randomly selected controls[10] without having to compromise real-world relevance by interfering with normal procedures.

The main methodological glitches would have made it harder for commitment to show its worth, setting it a particularly stringent test. Many of the treatment sample left commitment early while some controls were re-committed following the abortive first attempt. The effect was to narrow the gap between them. Instead of 100% versus 0%, over the first five years 88% of the treatment sample were in the programme compared to 21% of controls. On return to court half the controls received sentences which restricted their freedom to commit crimes and use drugs. Before the interview they had a year and a half longer for 'natural' recovery to occur.

Treatment and testing sentences for drug offenders are bringing Britain ever closer to the model tested in California

Two main questions were asked of civil commitment. First, did it suppress drug use and crime during the seven years of supervision? Second, did the suppression outlast supervision? Answers were supplied by comparing the parolees' behaviour after entering the programme with their behaviour before entering it. Again a high hurdle was set for the initiative, as this baseline period dated from when they first started to use narcotics, taking in years when both drug use and crime had yet to escalate to the levels which led to commitment.

Any similar changes among the controls were subtracted from those of the treatment group, taking account of the fact that not all the improvements were due to commitment. Even after fleeting contact, controls too cut their drug use and crime. The final figure provided a measure of *the benefits conferred by commitment over and above the normal criminal process*. With these hurdles to surmount, if commitment still proved beneficial this could be considered both a robust finding and a minimal estimate of its worth.

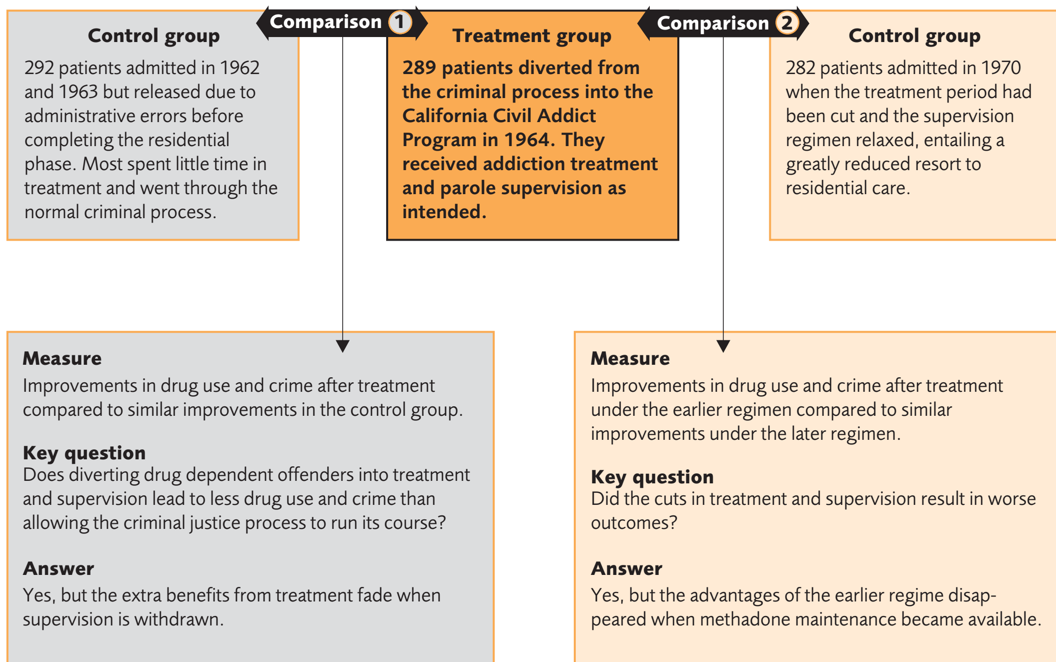
Significant cuts in drug use and crime

The relevant findings relate to periods when the samples were not detained and were free to commit crimes and use drugs. Broadly, compulsory residential treatment was followed by immediate falls in drug use and crime which subsequent supervision helped to maintain.

Just before commitment both groups spent three-quarters of their time in daily narcotic use. Following residential treatment this fell to less than a quarter. At the same time controls were spending half their time in daily drug use. For non-drug crime results were similar – both groups spending half their time in crime before admission, falling to under a quarter for treated addicts but barely dropping at all among the controls *Results from comparison 1*.

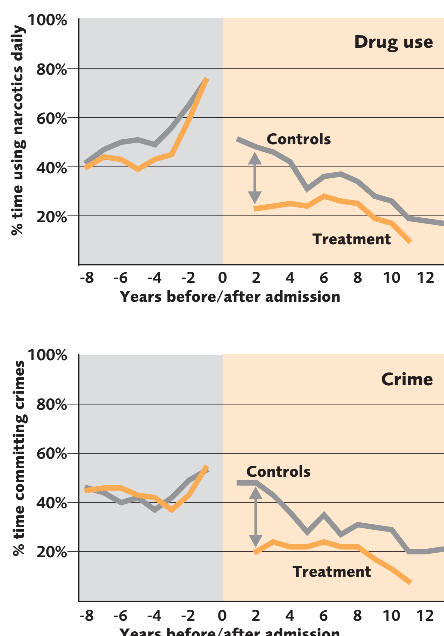
On both measures controls gradually improved. Nevertheless, throughout the supervised phase (first seven years) the committed addicts maintained their advantage. Relative to controls, they spent 15% less time in daily narcotic use and 12% less offending, committed a third fewer crimes, gained a third less from those crimes, and were more likely to be employed – all statistically significant findings. Imprisonment was also 70% more common among the controls. Fewer officially recorded non-drug arrests (and a similar trend in drug arrests) confirmed the self-reports.

The study's design



After supervision had ended the treated group were still doing better than controls, but the differences were smaller and most were not statistically significant. Significant results included 20% less time under legal supervision, a quarter less income from crime, and 10% more time living in the community without using narcotics daily. Drug use was no longer significantly reduced and urinalyses at the time of the interview showed that 45% of both groups had recently used heroin. It wasn't that once free of supervision the committed addicts had reverted to their old ways, more that those who had escaped commitment got better, a trend which had much to do with the advent of methadone maintenance.

The researchers' conclusions seem fair: "the Civil Addict Program clearly reduces narcotic drug use and associated behaviour ... during the commitment phase [and] to a lesser extent ... subsequent to discharge." To this we need only add an important rider: ... *relative to the criminal procedures and voluntary treatment options available at the time.*



After release from residential rehabilitation, treated addicts spent far less time than controls using narcotics and committing crimes.

↕ The crucial gaps, but they did narrow over time and when methadone maintenance helped controls to curb their drug use.

Results from comparison ①

The long view

Remarkably, the two 1960s samples were re-interviewed in 1985-86, up to 24 years after being ordered into civil commitment[11] and on average nearing their fiftieth birthdays. For the group as a whole little had changed over the 11 years since their last interview – except, that is, for a disturbingly high death rate. 28% had died, nearly 1 in 8 every ten years; a third of the deaths were overdoses. Continued narcotic use was clearly a factor. Under a quarter were abstinent from narcotics or legal substitutes without being forced to be so by virtue of prison or death. In urinalyses about a quarter of the sample tested positive or refused the test, only 5% less than 11 years before.

After their civil commitment little more seems to have happened to enable those who continued to use drugs to change their ways. In any given year less than 1 in 10 of the samples accessed treatment. However, they were well into their 30s before methadone maintenance became available. Addicts in the 1950s may also have been a particularly deviant group compared to those who adopted this lifestyle when it had become less rare; later cohorts might have presented a more encouraging picture. That argument would also caution against assuming similar outcomes in the UK, as would the make-up of the samples (mainly of Mexican origin) and differences between the UK and the USA in health provision and drug treatment.

Comparison ② How did it work?

Another serendipitous procedural change permitted a second comparison – not to assess *whether* the programme worked, but *how*. The 1964 treatment group was this time compared to another treatment group, one admitted in 1970. In between the treatment period had been cut and the supervision regimen relaxed so that lapses did not automatically entail a return to the therapeutic community ▸ *California's programme* p. 24. Did this lead to worse outcomes?

This time it was more difficult to match the samples. By 1970 polydrug use had become more common and few people were committed unless convicted of a serious offence. The 1970 sample was in some ways less promising: they were more criminal yet had spent less time under parole supervision. However, they were similar enough for it to be possible to link outcomes to changes in treatment and supervision. Some of these changes were down to the commitment programme, but one was not: the advent of methadone maintenance, which about a quarter of the patients[12] entered during their commitment period.

Compared to the pre-commitment years, drops in time spent in narcotic use or crime were much steeper after the longer rehabilitation period enforced on the earlier sample. At first the stricter supervision they moved on to also seemed to work better than the more relaxed regimen. It might have worked even better had it been not quite so severe with minor violators, whose recovery was interfered with rather than accelerated by a return to eight or more months of rehabilitation.

But the stricter regimen's advantage was short-lived. When at the start of the 1970s methadone maintenance came on stream, the later admissions improved to at least the level of the earlier sample. This voluntary treatment option appears to have compensated for the less intensive commitment regimen of the 1970s.[13]

Whether adding drug testing to parole supervision created extra benefits was addressed by pooling the two 1960s samples and comparing the behaviour of people under different kinds of supervision. The testing regimen of the civil commitment programme was associated with the lowest time spent in crime or drug use and a better employment record, but other forms of supervision and testing did almost as well. Both were considerably better than supervision *without* testing, during which time spent in crime and drug use and average income from crime were roughly double.

California's legacy

The lasting significance of the California Civil Addict Program study is apparent on two fronts: what it tells us about coerced treatment, and what it tells about how to research treatment.

Legal supervision supports treatment

In a recent account of his centre's contribution to drug research and policy, Douglas Anglin elevated the civil commitment study to a starring role.[14] Since the early reports, more sophisticated analyses have fine-tuned but have not overturned the early conclusions.

Most fundamentally, the analyses established that addiction and crime co-varied. Either side of periods of addiction, low levels of subsistence crime help fund "basic necessities"; during addicted periods, "the need to purchase narcotics primarily motivates the high volume of income-generating criminality". It is as if, for the addict, drugs become another of life's necessities, with a vastly inflated price tag due to their illegality. In turn, the need for income escalates to a degree which most can only

satisfy through crime. While addicted the California samples raised ten times more money through property crime than during non-addicted periods.

The implication is that successfully addressing addiction will dramatically cut property crime, exactly what Anglin found in California. But what *is* successful? For addicts subject to the criminal justice system, his work showed that legal supervision is effective in itself, especially when contact is frequent and reinforced by drug testing and sanctions for use. However, usually the benefits do not outlast supervision and are not as great as those achieved by treatments such as methadone maintenance. Anglin argued that integrating the two in an individualised mix offers the best chance of success: treatment reduces drug use, while legal pressure promotes treatment entry, retention and compliance. In this vision the legal process is at the service of treatment, not the other way round.

Anglin still believes that such an approach should be applied not just to convicted offenders, but (as in California) to all identified addicts. To identify them he recommends drug testing everyone arrested and assessing those who test positive for treatment – the procedure more or less emerging in Britain ▶ *A script for Britain?*.

Abstinence inappropriate yardstick

The California study pioneered advances in research methodology without which our understanding of addiction would be much the poorer. In an era when lasting abstinence was the recognised yardstick of success, Anglin and colleagues adopted measures commensurate with the long-term nature of addiction and capable of revealing the benefits of treatment in terms of *reduced* drug use and crime.[15] If staying completely free of crime and drugs had been the outcomes measured, the authorities might have judged the California programme a flop. Diversion into treatment might have been set back years, perhaps decades, as legislators drew the mistaken conclusion that only prison worked.

The 24 years over which the California addicts were followed up symbolises the study's 'addiction career' perspective. Evaluations which record large post-treatment drops from prodigious pre-treatment drugs and crime tallies sometimes assume that these represent lasting gains entirely due to treatment.[16] In the case of civil commitment, these assumptions would have been incorrect. Charts of time spent in narcotic use and crime show a classic pre-intervention peak with substantial drops following the attempt at commitment, even when virtually no treatment had been received – a reminder of the need for control groups if we are to avoid seriously overestimating the impact of treatment.[17]

California's programme

California's programme grew out of a parole experiment in which outcomes with addict offenders improved if officers were trained in addiction, had caseloads small enough (30) for them to work intensively with clients, and were armed with regular drug testing. This supervisory regime was the model for the community phase of the civil commitment programme, its main innovation being the preceding phase of residential rehabilitation.

The intention was to sweep up California's addicts and both to rehabilitate and control them, so the laws passed in 1961 allowed anyone to be detained by the courts purely because they were addicted or were thought to be in danger of becoming addicted. But in practice the regime acted more like a diversion programme for offenders. Within a year, nearly 9 in 10 patients were admitted following a conviction and many of the remainder faced criminal charges.

Committed addicts faced seven years of close supervision beginning with at least six months (and typically 15 months) treatment in a therapeutic community located in a prison or behind the 12-foot high fences of a rehabilitation centre. Professional psychomedical input was minimal; mutual help in the form of intensive group therapy plus work, training and education filled the days.

Before leaving the community residents met parole officers who submitted a release plan routinely covering topics such as accommodation and employment, but not treatment. Before 1970 post-rehabilitation supervision was unyielding, at first requiring frequent contact and at least three drug tests a month. Loss of contact for just three days, drug use or heavy drinking, associating with addicts, or just being unenthusiastic about getting a job, usually resulted in another eight months in the therapeutic community. Parolees were discharged to a normal life only after 36 months of negative drug tests or completing their seven years.

Staff and parolees dubbed the regime, "You use, you lose". Soon though the courts and later the parole agents moved to a more measured approach. Courts largely refused to commit offenders to detention if the conventional sentence would have been less severe, and prosecutors did not force unwilling offenders in to treatment. The result was that by the early '70s just 15% of serious addict offenders were committed, very far from the ambition to capture and control all California's addicts. From 1970 the period of residential rehabilitation was cut by 60%. On release parole violators were much less likely to be returned to the institution, and those who were stayed for a shorter time. As long as the addict was basically doing well, occasional drug use was tolerated.[22]

Throughout the 'carrot' for offenders was that charges were usually dropped if they were discharged as successes or completed the seven years' commitment. At worst, their time on commitment would be subtracted from any sentence imposed. Since the courts had moved to committing only those otherwise facing a lengthy sentence, most offenders had nothing to lose, but something to gain, from complying with the programme.

Postscript: what role for coercion?

After California came New York and then in 1967 US federal statutes enacted civil commitment nationwide, feeding the hospitals at Fort Worth and Lexington with 10,000 addicts over the next six years. Through the extensive research into these patients, civil commitment has left a valuable legacy, even if the procedure itself is out of fashion. The findings from California came too late to intercept cost-driven cuts. Financial stringencies have compromised similar initiatives elsewhere, failing to take account of the savings they can create. Such programmes can also be undermined by the punishment ethos of criminal justice practitioners and by failures made inevitable by underfunding.[18] However, in the USA the decisive blow to civil commitment was the unwillingness of legislatures to allow sentences to be shortened in order to provide incentive and space for treatment.[19] On the positive side, the need for civil commitment has been reduced by prison-based treatment and more attractive voluntary treatment options.[20]

In Britain today, drug testing of arrestees, nationwide arrest referral schemes, and sentencing options such as drug treatment and testing and drug abstinence orders,[21] are bringing us closer to the model tested in California. Perhaps the two most pertinent lessons of that and other studies from the same stable are, firstly, that maximising voluntary treatment entry is cheaper and entails less questionable curtailment of civil liberties, but secondly, that intensive and high quality treatment and supervision may still be needed to deal with the minority for whom compulsion is either the only way forward, or for whom it is justified by their impact on society.

THANKS

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CONTACT

For more information and to contact researchers visit the web site of the UCLA Drug Abuse Research Center at http://www.medsch.ucla.edu/som/npi/DARC.

LINKS

Pressure pays issue 2, p. 4–7. Nugget **4.12**

KEY SOURCES

McGlothlin W.H., Anglin M.D., *et al.* *An evaluation of the California Civil Addict Program.* US Dept. Health, Education, and Welfare. 1977.

McGlothlin W.H., Anglin M.D., *et al.* "A follow-up of admissions to the California civil addict program." *American Journal of Drug and Alcohol Abuse*: 1977, 4(2), p. 179–199.

Reports of the original study and the main sources for this article. Unreferenced statements are based on these texts.

Hser Y., Anglin M.D., *et al.* "A 24-year follow-up of California narcotics addicts." *Archives of General Psychiatry*: 1993, 50(7), p. 577-58.

24 years on for the addicts committed to treatment in the 1960s.

Anglin M.D., *et al.* "Drug use and crime: a historical review of research conducted by the UCLA Drug Abuse Research Center." *Substance Use and Misuse*: 1998, 33(9), p. 1908.

Includes cogently and passionately expressed policy recommendations.

Copies: for all apply DrugScope, 0207 928 1211.

1 Hough M. *Drug misuse and the criminal justice system: a review of the literature*. Home Office Drugs Prevention Initiative, 1996.

2 Turnbull P.J., *et al. Demand reduction activities in the criminal justice system in the European Union. Final report*. European Monitoring Centre For Drugs and Drug Addiction, 1997.

3 Bean P. "Pressure pays." *Drug and Alcohol Findings*: 1999, 2, p. 4-7.

4 In the USA, a legal term covering opioids and cocaine as well as other illegal drugs.

5 Costs exceeded the costs of imprisonment.

6 Anglin M.D. "The efficacy of civil commitment in treating narcotic addiction." In: Leukfield C.G., *et al, eds*. *Compulsory treatment of drug abuse: research and clinical practice*. US National Institute on Drug Abuse, 1988.

7 Anglin M.D. *A follow-up of civil addict program methadone maintenance admissions*. Unpublished doctoral dissertation. University of California, 1980.

8 The numbers of women were thought too small for statistical analysis.

9 Whilst some of the results were subjected to statistical tests (these are flagged) many were not but were sufficiently clear-cut to be taken seriously.

10 Up to a point. Some whose commitment was flawed did not challenge the decision, mainly those who would otherwise have received stiffer sentences.

11 Hser Y., Anglin M.D., *et al*. "A 24-year follow-up of California narcotics addicts." *Archives of General Psychiatry*: 1993, 50(7), p. 577-58.

12 Anglin M.D., 1988, op cit.

13 Anglin M.D, 1980, op cit.

14 Anglin M.D., *et al*. "Drug use and crime: a historical review of research conducted by the UCLA Drug Abuse Research Center." *Substance Use and Misuse*: 1998, 33(9), p. 1871–1914.

15 Anglin M.D., 1988, op cit.

16 Anglin M.D., *et al*, 1998, op cit.

17 Anglin M.D., 1988, op cit.

18 Anglin M.D., *et al*. "Ensuring success in interventions with drug-using offenders." *Annals AAPSS*: 1992, 521, p. 66–90.

19 Anglin M.D., *et al*, 1998, op cit.

20 Jaffe J.H. *ed. Encyclopedia of drugs and alcohol. Volume 1*. Macmillan, 1995, p. 706–708.

21 Home Office. "Protecting the public – crime fighting plans unveiled." Press Release 058/2000, 16 March 2000.

22 Anglin M.D., 1988, op cit.

23 Anglin M.D., *et al*, 1992, op cit.

24 *The Criminal Justice and Court Services Act*. Home Office, 22 December 2000. http://www.homeoffice.gov.uk/cpg/cjcsbill.htm.

25 "Criminal Justice and Court Services Bill." *Hansard*: 28 March 2000, col 225.

26 "Criminal Justice and Court Services Bill." op cit.

27 *The Criminal Justice and Court Services Act*, op cit.

28 Paul Boateng. *Hansard*: 22 March 2000, col. 559W.

29 Anglin M.D., *et al*, 1998, op cit.

30 Anglin M.D., 1988, op cit.

31 Rosemary Jenkins, Department of Health, *Drug Treatment 2000 Conference* 29–30 March 2000 at Hinckley.

32 Donald Lavoie, Substance Misuse Advisory Service, *Drug Treatment 2000 Conference*, op cit.

A script for Britain?

In the early 1990s Douglas Anglin co-authored a prescription for drug treatment for offenders.[23] In some respects it could have formed the basis for the UK government's current crime-reduction plans, though in others it challenges us to really give treatment a chance.

Anglin argued for testing of all arrestees with a focus on heroin and cocaine, the same focus as the UK's arrestee testing proposals, though these are limited to arrests for property crimes or offences related to the use of class A drugs.[24] Their principal target is drug-related acquisitive crime. Suspects who test positive will not be forced into treatment, but they will be offered access to it through arrest referral schemes.[25] Criminal penalties await those who refuse drug testing. For many the incentives to at least go through the motions will be compelling, bringing the British proposals close to Anglin's call for all identified drug users to be assessed for treatment.

Anglin's view that regular urine testing is central to successful supervision of drug using offenders is shared by the UK government. However, his call for supervision (and, by implication, treatment funded though the criminal justice system) to last at least five years to match the long-term nature of addiction is unlikely to be heeded. Also unrepresented in Britain is an incentive as well as a punishment system, enabling good progress to be rewarded by graduated withdrawal of legal constraints or early release from supervision.

There will be problems too in implementing Anglin's insistence on flexibility. He argued that some level of continued drug use is to be expected and must be accepted. Supervision officers should have the discretion to deal with slips which do not threaten the offender's overall progress, while making a rapid treatment response to re-addiction. Similarly, he points out that zero tolerance to drug use on the part of treatment providers will merely ensure a high drop/throw out rate, poor retention, and poor outcomes.

This research-based advice is at variance with the Home Office's determination to show that probation is not a soft option.[26] Probation officers now have to return offenders to court on the second unacceptable failure to comply with a probation order. Other than in exceptional circumstances, the court must impose a custodial sentence.[27] Similarly, offenders subject to drug abstinence orders will be allowed one unacceptable slip over a 12-month period (and perhaps not even that) before normally being returned to court.[28] Unless the limits of 'unacceptability' are adjusted, frequent urine testing will provide so many opportunities for orders to be breached that treatment risks being severely disrupted, especially since Anglin's call for methadone maintenance to be continued through a period of custody is not current UK practice. Penalties for non-compliance are also likely to deter disclosure of drug use even to treatment staff and to impede development of the trust Anglin saw as essential to effective treatment.

> *Anglin's advice is at variance with the Home Office's determination to show that probation is not a soft option*

Anglin's support for coerced treatment is tempered by the recognition that voluntary treatment entry is cheaper, and that much more can and should be done to provide attractive treatment slots and to encourage/enable addicts to enter them.[29] His warning that without first alleviating waiting lists for voluntary treatment, coercing addicts into treatment "will only exacerbate the … situation"[30] will resonate with UK treatment providers, facing an anticipated annual increase of at least 25,000 referrals from arrest referral schemes and treatment orders on top of the 58,000 new clients currently seen.[31] Though millions are being pumped into drug treatment in Britain, the increase in funding is unlikely to match the growth in demand.[32]