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BUILDING A SAFE, JUST  
AND TOLERANT SOCIETY

# The impact of mandatory drug testing in prisons

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Home Office Online Report 03/05

The views expressed in this report are those of the authors, not necessarily those of the Home Office (nor do they reflect Government policy).

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# Notes to tables

## Tables showing percentages

The row or column percentages may add up to 99 per cent or 101 per cent because of rounding. The varying positions of the percentage signs and bases in the tables denote the presentation of different types of information. Where there is a percentage sign at the head of a column and the base at the foot, the whole distribution is presented and the individual percentages add to between 99 per cent and 101 per cent. Where there is no percentage sign in the table and a note above the figures, the figures refer to the proportion of people who had the attribute being discussed, and the complementary proportion, to add to 100 per cent, is not shown in the table.

The following conventions have been used within tables:

- no cases
- 0 value less than one per cent

## Statistical significance

The term 'significant' was used throughout the report only when findings were found to be statistically significant. Statistical significance indicates that it is unlikely that a difference would be due to chance alone. Specifically, the likelihood that the difference shows an effect simply by chance is less than five per cent where  $p < 0.05$  or less than one per cent where  $p < 0.01$ . This is conventionally assumed to be infrequent enough to discount chance as an explanation for the finding.

Unless otherwise stated, changes and differences mentioned in the text have been found to be statistically significant at the 95 per cent confidence level.

## Small bases

Very small bases have been avoided wherever possible because of the relatively high sampling errors that attach to small numbers. In general, percentage distributions are shown if the base is 30 or more. Where the base is smaller than this, actual numbers are shown within square brackets.

## Tables showing odds ratios

In the analysis for this report, odds ratios were calculated when logistic regression was carried out. The logistic regression identified, from a range of variables, those which were independently related to specific characteristics/events.

# Executive summary

Since March 1996, a programme of mandatory drug testing (MDT) using urinalysis has been fully operational in all prisons. The primary aim of MDT is to measure the extent of drug use in prison and related trends, to detect and punish those using drugs and to generally discourage drug initiation and involvement among the inmate population. The programme also acts as a mechanism for referral of drug dependent prisoners into appropriate treatment. Given the substantial human and financial resource allocation required to operate the MDT programme, strategic information is required about its operation and impact. The MDT programme has several strands but the majority of testing is done under the random mandatory drug testing programme (RMDT) in which a fixed proportion of inmates in all prisons are randomly selected for testing each month. Previous research has cast some doubt on the extent to which RMDT provides a reliable measure of drug use. It has also been suggested that the perceived greater likelihood of detection of cannabis (with metabolites detectable for ten days or more in the case of heavy use) may result in some prisoners deciding to use drugs which have a relatively brief period of detection (heroin in particular).

Against this background, the Social Survey Division (SSD) of the Office for National Statistics (ONS) and the National Addiction Centre (NAC) were commissioned by the Home Office Research, Development and Statistics Directorate, on behalf of the Prison Service Drug Strategy Unit, to undertake a study of the current operation and impact of the MDT programme.

The study was designed to address four primary questions.

1. To what extent do RMDT data provide an accurate and statistically significant indication of the pattern of drug misuse in prison?
2. Is it possible to extrapolate from RMDT sample results to obtain a measure of drug use?
3. What levels of testing would be needed to give significant results for individual establishments, prison service regions and nationally?
4. Is there any evidence that the MDT programme influences frequency of drug use in prison, the types of drug used or the route of administration of the drugs?

The study also addressed, to a limited extent, the following subsidiary issues:

5. the extent to which the prison response to refused and failed MDT tests is appropriate and proportionate;
6. the extent of MDT-initiated referral to treatment and support programmes;
7. the most appropriate balance of the different types of testing in order to most appropriately meet the stated objectives of the MDT programme; and
8. the impact on the MDT programme of the increased emphasis on security measures and the new range of treatment and support programmes.

To meet these aims, the study contained three different elements.

- i. A survey of prisoners was carried out in a sample of prisons to gather information on episodes of drug use in prisons, prisoners' experience of drug use prevention measures in prison and the impact of these on attitudes and behaviours in relation to drug use. An additional element of this survey was the collection of oral fluid and hair samples for

drug testing, to provide a direct comparison between self-reported use and biological test results.

- ii. Qualitative in-depth interviews were conducted with different groups of prison staff to consider how the MDT programme is actually conducted in prison and whether the process can be manipulated, attitudes to the MDT programme among prison staff and their feelings towards it being used as a performance measure.
- iii. Secondary analysis of data on drug use in all prisons in England and Wales, obtained from the 1997 survey of psychiatric morbidity of prisoners, combined with the random MDT programme results for that year, was carried out to investigate the relationship between random MDT results and self-reported drug use (aggregated to the prison level) across all establishments.

### Overview of the pattern of self-reported drug use in the survey (Chapter 3)

About two in five prisoners (39%) had used some illicit drug at some time in their current prison, one in four (25%) said they had used drugs in the past month and about one in six (16%) in the past week. When use *in the past week* is considered (an indicator of the relative frequency of drug use), the highest prevalence was found in training prisons (21%) and local/remand prisons (16%), while significantly lower rates were found in other types of establishments. There is very little injecting drug use in English and Welsh prisons: only one per cent of prisoners (14) reported having injected in the current prison.

Cannabis and opiates<sup>1</sup> (mostly heroin) were the drugs most often reported as having been used by prisoners. About a third had used cannabis and about a fifth opiates at some time in their current prison, while about one in ten prisoners reported using each of these types of drug in the past week. When the number of episodes of drug use within a week are considered, opiates are used slightly more frequently than cannabis in the prison system as a whole (25 compared with 21 episodes per 100 inmates per week) but the difference is not statistically significant. In local prisons, open prisons and Young Offender Institutions (YOIs) more people reported using cannabis than opiates in the past month. In YOIs there was very little use of opiates at all. In training prisons use of cannabis and heroin was reported about equally, while in women's prisons and dispersal prisons opiate use was reported by a larger proportion of inmates than cannabis use in the month prior to interview.

However, the levels of drug use in prison need to be considered in the context of prisoners' levels of use outside prison. The proportion of inmates who reported using drugs in the year before coming to prison was 70 per cent, and 66 per cent reported using drugs in the month before prison. Cannabis was the most commonly reported drug, used by just over half the sample, while about a third used opiates, mainly heroin. Crack cocaine had been used by almost a quarter of prisoners in the month before coming to prison. Poly-drug use was very common. For example, over 90 per cent of opiate users in the year before coming to prison also used at least one other type of drug. Therefore, it is clear that entry into prison is associated with a very significant reduction in drug consumption of all types. The route of administration also changes, as there is a reduction in injecting drug use. A small proportion of inmates (2%) started (or re-started) using drugs while in prison. There is also evidence that a proportion of inmates change the types of drugs used, as five per cent of inmates were classed as new users/restarters of cannabis and four per cent as new users or restarters of opiates. Although the proportion of prisoners starting to use drugs, particularly opiates, in prison or changing to opiates from other drugs is quite small, the size of the population means that this represents quite a substantial number of people and must be a cause for concern. A

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<sup>1</sup> For simplicity, this report uses the term opiates rather loosely to include, when necessary, methadone and other opioids. Since methadone must be tested for separately from opiates and very little illicit methadone is used in prison it is mainly opiates that are being considered in the report.

small proportion of these individuals reported being on prescribed methadone before prison and the cessation of methadone is likely to be associated with restarting heroin. Other work has indicated that a substantial minority self-report heroin initiation *de novo* in prison, that study indicated that overall time in prison and the number of times the person had been imprisoned very significantly increased the risk of heroin initiation in prison (Boys *et al* 2003). Overall, in a group of people who are very entrenched in the criminal justice system at a point in time where they are highly vulnerable to drug initiation, it is hard to disentangle what is a specific prison effect and what is a broader life trajectory effect on young adult drug initiation.

## Overview of prisoners' reported experience of the MDT programme (Chapter 4)

Two thirds of prisoners studied (67%) said they had participated in some variant of the MDT programme in the past, either in the current establishment or in other prisons. This was most commonly on the random testing programme (RMDT) (59%) followed by testing on suspicion (21%). Only three per cent of those with experience of being selected for testing said they had refused a test in the current prison and a similar proportion said they had attempted to cheat. Just under one in four of all prisoners had tested positive for at least one drug – nine per cent in the current prison and 15 per cent in a previous prison only. A slightly higher proportion had tested positive at some time for cannabis (18%) than opiates (12%) but there was no such difference for positive tests in the current prison (5% had tested positive for both drugs). Knowledge of the negative sanctions associated with MDT was high, with only 16 per cent of prisoners saying they did not know what sanctions were used for positive MDT tests in the current prison.

In the following sections, headline findings relating to each of the primary questions and subsidiary issues are summarised. It is important to note that the main focus is on cannabis and opiate use as these are the main drugs used in prisons in England and Wales as shown by both self-reports of use and RMDT results.

## Findings relating to the four primary questions

### Q1. To what extent do RMDT data provide an accurate and statistically significant indication of the pattern of drug misuse in prison? (see Chapter 5)

The percentage of prisoners reporting drug use in the current prison term was generally higher than RMDT positivity rates (median rates being 42% versus 17% for cannabis and 14% versus 4% for opiates in the 1997 data set). For the 1997 data set, there was a reasonably strong and statistically significant correlation between self-report and MDT positivity rates for each prison establishment, although the survey prevalence estimates explain less than one quarter of the variation in the MDT test results. However, further analyses revealed that, while self-reported use was the factor most strongly associated with RMDT cannabis positivity rates, opiate RMDT positivity rates were more strongly associated with prison level factors – in particular the type of prison – than with levels of self-reported use.

For the 2001 data set, regression analysis also indicated that the overall correspondence between self-reported use and positivity rates was lower for opiates than for cannabis. Variation in self-reported opiate use in the past week explained less than a third of the variation in positivity rates, whereas cannabis use accounted for over half of the variation in cannabis RMDT positivity rates.

Further work examined whether there was evidence that the way the MDT programme is conducted in prison influences the relationship between MDT positivity rates and the level of drug use. Regression models indicated that the rate of refusals and the size of the prison were inversely associated with the RMDT positivity rates for cannabis. These variables together with self-reported cannabis use in the past week explained three-quarters of the

variation in RMDT positivity. However, none of the process variables available were associated with RMDT opiate positivity rates. This suggests that refusals at RMDT are due to prisoners who would test positive for cannabis not opiates.

## Q2. Is it possible to extrapolate from RMDT sample results to obtain a measure of drug use? (see Chapter 5)

Theoretical exploratory analyses were performed to investigate the feasibility of using RMDT positivity to determine the overall level of drug taking. These suggested that opiate RMDT positivity rates would approximately parallel the number of episodes of use (although at a markedly lower level) while cannabis positivity would more nearly indicate the number of cannabis users and be less sensitive to the frequency of use within a month.

The extent to which it is possible to construct useable predictive models for cannabis and opiate use in the past month from RMDT positivity rates was then explored using the 2001 data set. For cannabis the best fitting model used a simple linear regression using positivity plus refusals as the predictor. For opiates a model using transformed data fitted slightly better than the simple linear model.

The model for cannabis was a better fit than that for opiates but there was still considerable discrepancy between observed and expected rates when the model was applied to the figures obtained for the prison clusters in the 2001 survey. This suggests that such models are unlikely to be particularly useful in practice.

## Q3. What levels of testing would be needed to give significant results for individual establishments, prison service regions and nationally? (see Chapter 5)

The analyses lead to the conclusion that at the national level RMDT rates provide a reasonable indication of levels of drug use, particularly for cannabis, which can be used for monitoring purposes over time. The accuracy of an estimate, shown by the standard error of the estimate, obtained from any sample depends upon a number of factors. The key factor will be the number of tests on which the estimate is based, and this is a factor which the RMDT programme design can determine.

RMDT positivity rates at the national level can detect a change between years of less than half a percentage point in the positivity rate. At the regional level this precision is reduced, nevertheless, changes of one percentage point or more in annual positivity rates should still be detectable. At the establishment level, the size of sample varies widely and even the annual figures provide estimates with wide confidence intervals for most positivity estimates. In other words, at the establishment level the numbers on which the rates are based are small and the likely error in the estimates is significantly greater. The precision of estimates across a range of establishment sizes and positivity rates is illustrated in the report.

What is considered an adequate level of precision will depend on the purpose for which the information will be used and practical considerations may also mean that a less than perfect sampling procedure is adopted. As the MDT programme is currently configured, a fixed proportion of the inmate population in each prison is tested each month. This results in tests being spread fairly evenly over the entire prison estate, although larger prisons test a smaller proportion of their population than smaller prisons. However, for comparing rates between individual prisons, the most efficient design would have the same absolute number of people being tested in each prison (although in very small establishments this could be reduced if it resulted in testing a very large proportion of the establishment population).

The effect of this alternative approach on the precision of the rates is illustrated for a level of testing of 25 tests per prison per month which gives an overall level of testing a little lower than that currently undertaken. At the national level, with about 10,000 fewer tests undertaken each year, the precision of the estimates is almost unchanged. There is little difference at regional level either. At the establishment level there is a small gain in precision in smaller establishments and a loss in larger establishments where there is a very large decrease in the

number of tests being undertaken. However, the estimates still have wide confidence intervals and at this level of testing only differences between annual positivity rates in excess of about five percentage points will be statistically significant and for quarterly estimates differences would need to be in excess of 10 percentage points to be considered a true difference. In order to detect smaller differences between the annual positivity rates in establishments, a marked increase in sample size would be required. For example, for an annual difference between five per cent and seven per cent to be statistically significant the sample size in each establishment would need to be about 900, or 75 per month, which would be well over double the number of tests currently being carried out nationally.

#### Q4. Is there any evidence that the MDT programme influences frequency of drug use in prison, the types of drug used or route of administration of the drugs? (see Chapter 6)

The overall RMDT positivity rates have declined since 1997, which is largely due to a decline in cannabis positivity while opiate use has remained apparently unchanged. A similar picture of the change in drug use in prisons is obtained when comparison is made between data from the 1997 survey of psychiatric morbidity among prisoners and the survey conducted in 2001 as part of this research project. This decline in drug use in prison has taken place against the backdrop of fairly steady rates of use in the general population and an increase in heroin and crack cocaine use and stable cannabis use rates among the offender population outside prison.

It is difficult to isolate the impact of MDT in this decrease in drug use from other drug control measures in the prison regime. Evidence for the impact of MDT on drug use frequency was addressed by examining prisoners' reports about their past and future drug use and whether their intentions to use drugs are influenced by their prior participation in MDT and their expectations about future testing and penalties they may receive. Prisoners' reports showed that there was a reduction in the proportion using drugs in prison compared with the period immediately before coming to prison: for cannabis from 51 per cent to 19 per cent and for opiates from 30 per cent to 14 per cent. The in-prison heroin users used relatively more frequently than the cannabis users, suggesting that any impact of MDT or other aspects of the prison regime is greater on cannabis than heroin.

Among those who had used illicit drugs before but not in prison, the most common reason given was that they did not need them. This suggests that drug use reduction activities, of which the MDT programme is an important part, may have a deterrent effect for some prisoners but that other aspects of an inmate's experience of being in prison may be as important or more important. Inmates who had used drugs in the past week most often said they used them because they needed them or wanted the effect (65%) and that they were easily available (57%). This suggests that, among this group of drug users, habit, addiction and availability are key factors influencing use and that the deterrent effect of programmes such as MDT is limited.

The majority of inmates said they were extremely unlikely to use cannabis or opiates in prison. Overall, 77 per cent said they were extremely unlikely to use heroin and 61 per cent said they were extremely unlikely to use cannabis in their current prison in the future. Conversely, while 13 per cent said they were likely or extremely likely to use heroin, the equivalent figure for cannabis was 22 per cent. For heroin, there was little difference in perceived likelihood of using heroin on leaving prison compared with in the current prison. In contrast, a much larger proportion of inmates thought they were extremely likely to use cannabis after leaving prison than was the case for use in prison. This suggests a greater impact of drug reduction measures in prisons, including MDT, on cannabis use than on heroin use.

Regression models indicated that the main factors associated with a higher likelihood of cannabis use in the current prison in the future were: previous use in prison, younger age, prison type, shorter time served, being on remand or unsentenced, having no previous experience of RMDT and the number of adjudications. The factors associated with likelihood of heroin use were previous use in the current prison, age and type of prison, while sentence length and experience of RMDT testing were only marginally significant. The greater impact of



previous RMDT experience on likelihood of using cannabis provides further evidence to suggest that MDT has a greater impact on cannabis use than for heroin.

For both cannabis and heroin, the factor most strongly associated with a perceived likelihood of using the drug after release from prison was use prior to coming to prison, indicating that while being in prison is reducing prisoners' drug use, for many people this change may only be temporary.

In order to obtain information on the relative importance of addiction or need and fear of detection on drug use in prisons a further logistic regression analysis was carried out. This considered the extent to which levels of previous drug use and dependence and also the level of concern about the penalties associated with the RMDT programme were associated with and predicted perceived likelihood of future use in prison. These analyses focused on people who had used drugs in the year before prison only.

For both cannabis and heroin use in prison in the future, a lack of knowledge of the penalties associated with testing positive or a high level of concern about the penalties were both significantly associated with a lower perceived likelihood of using the drug. However, the effect was larger for cannabis than for heroin. This suggests that the MDT programme is having a deterrent effect on some people and provides further support for a greater impact on cannabis use.

Among cannabis users before prison, both the use of opiates before prison and stimulant dependence were associated with a higher perceived likelihood of use of cannabis in the future in prison. Similarly, in the case of opiate users before prison, opiate and stimulant dependence was associated with an increased likelihood of using heroin in the future in prison. This appears to confirm the relative importance of habit and addiction in determining drug use in prisons. As in previous analyses the type of prison was quite strongly associated with likelihood of drug use. Inmates of YOIs and local prisons were most likely to think they would use cannabis but, for heroin, inmates of training prisons indicated a particularly high likelihood of use whereas those in YOIs were particularly unlikely to think they would do so.

It has been suggested that the RMDT programme might encourage people to start using heroin in preference to other drugs. The survey identified a small group of prisoners (6% of the sample) who had used heroin in their current prison when they had not been using it in the month before coming to prison. Most of these had used other drugs in the month before entering prison, often stimulants, and a third had used opiates in the year prior to coming to prison. The main reason given for this change to heroin was ease of availability but some said that it was because heroin is less easily detected. A larger group (25% of prisoners) had stopped using cannabis since they had been in prison, most commonly because of fear of getting caught. The data suggest that only a very small proportion of prisoners (about 1% of the prison population as a whole) have changed from using cannabis to using heroin for a range of reasons including fear of detection by MDT.

In terms of route of drug administration, there was no evidence that the MDT programme is encouraging injecting drug use. Comparatively little injecting of drugs was reported (only 1% reported injecting at all in the current prison) and this is much lower than the level of injecting drug use before prison.

## Findings relating to the subsidiary issues

### Q5. The extent to which the prison response to refused and failed MDT tests is appropriate and proportionate. (see Chapter 7)

The data gathered by these studies suggest that prisoners who refuse a test are treated more harshly than those who test positive on MDT. These inmates were more likely to be given added days and cellular confinement as a punishment and none of them went unpunished. There generally seems to be little distinction made in terms of severity of punishment between

testing positive for cannabis and opiates. Those testing positive on MDT more than once report a higher rate of all penalties except a caution and 'other' penalties suggesting there may be more leniency towards those who test positive only once.

#### Q6. Extent of MDT-initiated referral to treatment and support programmes (see Chapter 7)

In the qualitative study considerable variation in practice with respect to MDT-initiated referral to treatment was indicated. The CARAT drug programme (designed to provide an integrated drug treatment service based within and across Prison Service areas) was generally regarded very positively by prison staff but the lack of detoxification provision was also often commented on. The results of the survey of prisoners suggest that MDT-initiated referral to treatment is limited. Provision of treatment programmes for drug users appears from the survey to be highest in YOIs and women's prisons and lowest in open and dispersal prisons. Inmates who had experienced the programmes rated drug rehabilitation programmes as most useful and referral to CARAT workers the least useful form of treatment. Almost half of the inmates who had used heroin in prison but had not had any treatment (46%) said they wanted help for their drug use.

#### Q7. The most appropriate balance of the different types of testing in order to most appropriately meet the stated objectives of the MDT programme. (see Chapter 7)

The random element of the MDT programme constitutes the major part of the testing undertaken and other testing is only undertaken if resources permit. RMDT is the key to providing a measure of drug use and a performance indicator. However, the number of tests is greater than necessary to provide precise national estimates and the use of a percentage of the establishment population as the basis for sampling results in establishment estimates with widely varying degrees of precision.

It appears that the MDT programme does have some deterrent effect, but some prisoners remain impervious to the threat of punishment associated with the programme. Prison staff consider increased targeted testing would be a more efficient use of resources.

The RMDT programme is a very inefficient way of identifying drug users for referral to treatment, as the majority of people tested are not current users of drugs in prison. At present the MDT programme does not meet this objective very well.

A reconfiguration of the sampling base for RMDT might allow a smaller number of random tests while still providing sufficiently precise estimates for monitoring purposes. This could free resources to allow more testing under other parts of the programme. More reception testing on entry to the prison system might be a better way of detecting and directing users into treatment, while more targeted testing might have greater deterrent value.

#### Q8. The impact on the MDT programme of the increased emphasis on security measures and the new range of treatment and support. (see Chapter 7)

The MDT programme is only one of a wide range of initiatives aimed at preventing drug use in prisons but is very resource intensive. All these programmes are competing for a finite amount of resources and so increases in other measures may have a negative effect on the discretionary elements of the MDT programme.

Prison staff indicated that they felt security initiatives aimed at cutting the supply of drugs, such as the use of 'sniffer' dogs, were very important means of reducing drug use. The number of prisoners who reported having been caught in possession of drugs or smuggling or dealing in them was small, far fewer than are caught using drugs under the MDT programme. Inmates who had used drugs in the week before interview were less concerned about the penalties for these offences, in particular being caught in possession, than were those who had not used drugs in that period.

Overall, voluntary testing programmes and Voluntary Testing Units were regarded positively by both staff and inmates. However rates of testing in some units appeared to be rather infrequent. The level of provision of such programmes is now quite extensive, with a significant number of prisoners reporting having experienced some form of voluntary testing. The overall level of testing in prisons with both voluntary testing and MDT is now considerable. Inmates indicated that they would value more help and support linked to voluntary testing programmes.

## Conclusions

Overall, despite the discrepancies between the survey and MDT data sources, variation in the level of drug use in prisons is seen to be an important source of variation in RMDT positivity rates. However, RMDT underestimates the overall prevalence of use. The association between RMDT positivity and self-reported use is stronger for cannabis than for opiates. For cannabis, inclusion of the level of refusals resulted in a regression model which explained about three-quarters of the variation in self-reported use between prisons. For opiates, none of the process variables available accounted for more of the variance in rates of use.

The current sampling strategy for the RMDT programme, based on a fixed percentage of the population in each prison, provides very precise estimates at the national level but at establishment level all estimates have very wide confidence limits. Since the absolute size of the sample in each establishment is the most important determinant of the level of precision of an estimate, a sample design based on having the same number of tests in each establishment could provide estimates with a similar level of precision to that obtained currently from fewer overall tests.

For RMDT positivity rates to act as a tracker of change over time an exact relationship with drug use rates is not essential as long as the nature of the relationship remains constant over time. The change in positivity rates at the national level observed since the start of the programme appears to broadly reflect changes in the types and level of drug use as measured by self-reported use in surveys in 1997 and 2001. However, at the establishment level, particularly in the case of opiates, there is a considerable amount of variation in positivity that is not apparently associated with variation in drug use. This, coupled with the very wide confidence intervals around establishment estimates of positivity, means that use of rates to make comparisons between different establishments or obtain estimates for use in individual establishments is inappropriate. The conclusion, therefore, is that RMDT positivity rates can serve as a useful tracker of change in drug use in prison over time, at the national and probably the regional level. However, further work is needed to try and identify the other factors affecting positivity rates for opiates before rates at lower levels can be interpreted as anything more than broad indications of levels of use.

The MDT programme appears to be actively discouraging drug use, particularly cannabis use, although other drug reduction measures may also be contributing to this change. In most cases prisoners were stopping using drugs altogether. However, four per cent of those prisoners who appeared to have stopped using cannabis in prison (i.e. they had used cannabis in the month before coming to prison but not in the current prison) said that they were using other drugs instead. Almost all of this group said that they were using heroin or other opiates instead, although crack and cocaine powder were also mentioned, but they represent only one per cent of the whole prison population.

The falling levels of positive cannabis tests is a robust indicator of falling levels of cannabis use in prison. Levels of positive tests for opiates have remained unchanged to any significant level over the duration of the programme. This again provides a realistic picture of the intractable problem of heroin addiction and persistent heroin use. This picture needs to be considered in the light of the fact that heroin use appears to have increased among the offending population outside prison. The conclusion is that MDT in combination with other security and control strategies has had a substantial impact on cannabis supply and use within prisons, but has had less impact on heroin use. The result of this is that, while heroin use on aggregate has not increased in prisons, heroin use as a proportion of all drug use in

prison has increased substantially due to the reduction in cannabis usage. Prisoners are clear that cannabis is more easily detected than heroin through MDT. Furthermore, current use of heroin is more clearly influenced by previous and persistent use, and is less likely to be deterred through the use of detection and sanctions.

The results of this survey suggest that no distinction is made in punitive terms between those testing positive to cannabis and opiates. Given the different status of these drugs outside prison and the different levels of harm associated with their use this practice should be reviewed.

At the time of this study there was very little evidence of the use of the MDT programme for directing prisoners into treatment and support programmes. Given the high levels of dependence among a considerable proportion of the prison population and the importance of this in continuing opiate use in prison, consideration should be given to ensuring that a major emphasis is placed on referring opiate positive individuals for assessment for treatment. This must be accompanied by the provision of suitable treatment programmes with throughcare planning built in.

The RMDT element currently dominates the MDT programme as a whole and other, discretionary, parts may be neglected if resources are scarce. Reorganisation of the sample design might allow fewer RMDT tests to be done while maintaining the overall precision of the estimates. This could allow more testing under other arms of the programme. This might help the MDT programme to better meet some of its other aims. For example, more testing on suspicion might enhance the deterrent effect of the programme or more reception testing could be done to refer incoming prisoners into appropriate treatment.



# 1. Introduction

## Background

There is a substantial level of concern about drug taking in prisons. In the past there has been a high rate of drug use in prisons and the Prison Service Drug Strategy (HM Prison Service, 1998) set out a range of measures designed to combat this. One of the established measures is the Mandatory Drug Testing (MDT) programme, based on urinalysis, which has been fully operational in all prisons since March 1996. The main aim of the MDT programme is to increase the detection of those misusing drugs and to send a clear message to prisoners that if they misuse drugs they will have a greater risk of being caught and punished. However, there are also a number of other subsidiary aims including the referral of drug-dependent prisoners into treatment and the provision of accurate and objective information on the extent of drug misuse in prisons.

There are five elements to the mandatory drug testing programme.

1. Random testing where prisoners are selected on a strictly random basis. All prison establishments are required to conduct the random testing programme with a fixed proportion of the prison population being tested every month.
2. Testing because staff have reason to believe the prisoner has misused drugs.
3. The Frequent Test Programme for prisoners with a previous history of drug misuse.
4. Testing on reception to a prison.
5. Risk assessment, that is testing because a prisoner is being considered for a privilege, a job or where a high level of trust is to be granted.

A prisoner selected for MDT provides a urine sample, which is analysed in a laboratory. Concern has long been expressed that MDT causes prisoners to switch from cannabis to heroin in order to reduce the chance of detection, since cannabis and its metabolites may be detectable for ten days or more in a urine test when used in large doses, whereas heroin metabolites are only detectable for up to two to three days (Wolff *et al*, 1999). The MDT programme has also been criticised as being an expensive but poor performance indicator for the control of drug supply and drug use in prisons. In particular concern has been expressed not only about the cost of administering the programme but also about the cost of additional days added to sentences (Gore and Bird, 1995; Gore and Bird, 1996).

From the time of the programme's inception in 1996, doubt has been cast on the extent to which the RMDT figures can and do reflect the level of drug use in prison. In a study involving interviews with both prisoners and prison staff in five prisons in 1996/97 (Edgar and O'Donnell, 1998) it appeared that, among those prisoners tested at random who were known to be currently using drugs, almost a third were not detected. The study also concluded that there was some evidence that there had been a decline in drug use in prisons since the introduction of MDT but also that a small group of prisoners may have started taking heroin instead of cannabis as a result of the MDT programme. Other work commissioned by the Home Office (Farrell and Taylor, 1999) analysed data from the earlier period of the operation of the programme. This indicated that the programme was able to demonstrate a significant fall in the use of cannabis within the overall prison estate but had no impact on the rates of detected positivity for opiates. Overall it is concluded that the data available at that time did not indicate any significant shift from the use of cannabis to the use of opiates as a result of the introduction of MDT.

## Aims of the project

In the light of the continuing concerns about drug use in prisons and the possible negative consequences of the MDT programme, new initiatives have been introduced. These include the increased use of 'sniffer' dogs, voluntary testing programmes and new treatment and support programmes, such as CARAT (Counselling, Assessment, Referral, Advice and Throughcare - a programme designed to provide an integrated drug treatment service based within and across Prison Service areas). In addition, changes have been made to the MDT programme. To provide a research evidence base for MDT that could be used to inform strategic decision making regarding the future structure and operation of the MDT initiative, taking account of these changes, Social Survey Division of the Office for National Statistics (ONS) and the National Addiction Centre (NAC) were commissioned by Home Office Research, Development and Statistics Directorate, on behalf of the Prison Service Drug Strategy Unit to undertake a research project into the current operation of the MDT programme.

The study was designed to address four primary issues.

1. To what extent do RMDT data provide an accurate and statistically significant indication of the pattern of drug misuse in prison?
2. Is it possible to extrapolate from RMDT sample results to obtain a measure of drug use?
3. What levels of testing would be needed to give significant results for individual establishments, prison service regions and nationally?
4. Is there any evidence that the MDT programme influences frequency of drug use in prison, the types of drug used or route of administration of the drugs (for example, encouraging switching from cannabis to heroin or increasing injecting behaviour)?

In addition, other secondary issues covered less fully by the project but also considered within this report are:

5. the potential impact on the MDT programme of the increased emphasis on security measures and the new range of treatment and support initiatives;
6. the most appropriate balance of the different types of MDT testing in order to meet the stated objectives of the MDT programme most effectively;
7. whether the prison response to refused and failed MDT tests both appropriate and proportionate, and
8. the extent of MDT-initiated referral to treatment and support programmes.

To meet these wide ranging aims, the research project contained a number of different elements: secondary analysis of existing data; a qualitative survey of prison staff and a survey of prisoners.

This report brings together the key results from each element of the project of relevance to the issues described above. The structure of the remainder of the report is as follows:

- Chapter 2 provides an overview of the methods used;
- Chapters 3 and 4 summarise the information collected on the current patterns of drug use in prisons and on the way in which the MDT programme is implemented to provide a backdrop against which to consider the specific questions the project aimed to address;

- Chapter 5 considers the effectiveness of MDT as a measure of drug use (research questions 1 to 3 above);
- in Chapter 6 the evidence on the impact of MDT on drug use (question 4) is considered;
- the research issues 5 to 8 are covered in Chapter 7; and finally
- the conclusions from the project as a whole are presented in Chapter 8.



## 2. Overview of the research programme

To meet the wide range of objectives of the research, the project included three different components.

- i. A survey of prisoners was carried out in a sample of prisons to gather information on episodes of drug use in prisons, prisoners' experience of drug use prevention measures in prison and the impact of these on attitudes and behaviours in relation to drug use. An additional element of this survey was the collection of oral fluid and hair samples for drug-testing, to allow comparison between self-reported use and biological test results.
- ii. Qualitative in-depth interviews were conducted with different groups of prison staff to consider how the MDT programme is actually conducted in prison and whether the process can be manipulated, attitudes to the MDT programme among prison staff and their feelings towards it being used as a performance measure.
- iii. Data on drug use in all prisons in England and Wales collected in the 1997 survey of psychiatric morbidity of prisoners were combined with the results of the random MDT programme in that year. These data were analysed to investigate the relationship of random MDT results with levels of self-reported drug use across the full range of establishments.

A description of key features of each component of the project is given in this section.

### Survey of the impact of the MDT programme and other drug prevention strategies on drug use by prisoners.

The first part of the project involved a survey of prisoners. The main aim of this survey was to obtain an accurate measure of drug use in a sample of prisons for comparison with the RMDT results in those prisons and to examine the factors influencing the incidence of drug use by prisoners.

The survey of over 2,200 prisoners, male and female, remanded and sentenced, from a representative sample of prisons in England and Wales was carried out in two waves between September 2001 and January 2002. Detailed information was collected on drug use within the prison, together with a range of factors that might influence use, such as perceived risk of detection under various programmes, availability of supplies, past drug use/dependence, fear of consequences of drug detection etc.

In addition to the interview, data from the Local Inmate Database System (LIDS) at each prison and from prison medical records were collected for each respondent. Biological samples were also taken in order to validate self-report of drug use.

A pilot study was conducted in four prisons during July 2001. This tested the consent procedures, the acceptability of the questionnaire and the procedures for and acceptability of the collection of oral fluid and hair samples.

For the main survey, 11 establishments (or clusters of smaller establishments) were selected to take part in the survey from the 130 prisons in England and Wales. A stratified random sampling approach was used to ensure that all types of prisons across the entire range of RMDT opiate positivity rates were represented in the sample. The prisons were stratified by prison type to give six strata. The strata types and the numbers of prisons or prison clusters selected from each stratum are shown below:

- Stratum 1: Local/remand – 4 prisons/clusters
- Stratum 2: Category B/C – 2 prisons/clusters
- Stratum 3: Women – 2 prisons/clusters
- Stratum 4: Open – 1 prison/cluster
- Stratum 5: Dispersal – 1 prison/cluster
- Stratum 6: YOI – 1 prison/cluster

The clusters of prisons for the survey were randomly selected with a probability proportional to size. In the case of prisons in strata one to three, stratification on the basis of 1999 RMDT opiate positivity rates was used to ensure that the full range of MDT positivity levels were represented in the final sample. There was less variation in MDT positivity rates in strata four to six and only one cluster was selected from each, so stratification by MDT positivity rates was not carried out in these strata.

Within selected prisons, the sample of prisoners for interview was selected at the start of the fieldwork period in each prison. All inmates in the prison on the day of sampling were deemed eligible for the survey, including civil prisoners, fine defaulters and juveniles who were 16 and over. Sampling fractions within each prison were set with the aim of obtaining 200 interviews from each cluster. To minimise loss of prisoners from the sample due to discharge or transfer, the fieldwork was carried out by teams of interviewers of sufficient size to ensure that fieldwork in each prison could be completed, in general, within two weeks from the day of sampling. In addition, interviewers tried to identify prisoners likely to be released in the near future and interviewed them early in the fieldwork period.

A total of 2,270 interviews were achieved in the 11 clusters, which covered 31 prisons in all. The aim was to achieve 200 interviews in each cluster, giving a total of 2,200 interviews. The overall target was achieved, as was the cluster target in all but one case, that of the open prisons. The overall response rate was 75 per cent, with about two-thirds of non-responders being people who refused to take part and about one-third being non-contacts.

Response rates varied between clusters and individual establishments. For clusters, the response rates ranged from 90 per cent for the Young Offenders Institutes cluster to 56 per cent for the dispersal prisons cluster. Because of the poor response in the dispersal prisons originally sampled (half of all such prisons), it was decided to extend the sample to include all dispersal prisons to ensure a sufficient number of interviews within this group to allow comparison with other prison types. Within individual establishments, response varied from 95 per cent to 29 per cent. This last figure was exceptional and, overall, response was above 80 per cent in 15 establishments and below 70 per cent in only eight establishments.<sup>2</sup>

In the analyses reported here the data were weighted to take account of non-response. Age, sex, prison type and prisoner type (whether the prisoner was on remand or sentenced) were used to weight the data to the total prison population size. Prison population figures from October 2001 (approximately mid way through the fieldwork period) were used.

All prisoners aged 18 and over who completed an interview were asked to consent to giving oral fluid (OF) and hair samples. Some people consented to provide samples but it was not possible to take one (this was most common in the case of hair samples where the prisoner's hair was too short). The proportion of people who gave their consent and who provided a

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<sup>2</sup> The type of non-response varied by type of prison. In local prisons and open prisons, non-contacts were more frequent than refusals. In the former case this was because the high turnover of prisoners, particularly those on remand, made it difficult to interview some people before they left the prison. In open prisons, prisoners who worked long hours outside the prison were also very difficult for interviewers to contact. In dispersal prisons and closed training prisons most prisoners could be contacted so refusals were the main source of non-response. In some dispersal prisons these refusals were made to prison officers who reported that prisoners just tore up the advance letter without reading it and interviewers were not given an opportunity to explain the survey to them.

sample was 72 per cent for OF samples and 32 per cent for hair (a further 40% consented to providing a hair sample but it was not possible to obtain one, generally because their hair was shorter than one centimetre in length).

## Qualitative interviews with prison staff

Qualitative in-depth interviews were conducted with different groups of prison staff. These interviews covered: how the MDT programme is actually conducted in prison and whether the process can be manipulated; the perceptions and attitudes to the MDT programme among prison staff; and their views on its use as a performance measure.

Interviews were conducted with staff in all four of the prisons included in the pilot of the survey of prisoners and in 11 of the prisons included in the main stage of the survey, one from each of the clusters included in the survey of prisoners. The qualitative interviews took place after fieldwork on the quantitative survey finished so as not to influence the survey outcomes in any way and reduce burden on prisons.

Four interviews were carried out in each of the prisons, with the exception of two of the pilot prisons in which five were conducted, giving a total of 62 interviews. In most prisons one member of staff from each of the following groups were interviewed: governors (usually the head governor); prison officers responsible for the MDT programme; other prison officers; and healthcare staff. By interviewing staff working in different areas and at different levels of responsibility the picture of drug use prevention measures could be viewed from several standpoints.

In-depth interviews were used to gather information from respondents. This method was used because it is more appropriate than other qualitative methods, such as focus groups, when sensitive issues may be raised by the research. Respondents are more likely to discuss sensitive issues in the one-to-one setting that in-depth interviews offer. The interviews were conducted using a topic guide specific to each of the four groups within the sample. They included topics and probes to examine respondents' views about the most effective drug prevention measures and, more specifically, their views about the MDT programme and the degree to which it meets its aims. The interview followed the order of the topic guide, unless the respondent decided to talk about a later section in the topic guide earlier than scheduled. This allowed the interview to flow like a conversation. All interviews were tape-recorded to assist analysis by research staff. The results of this part of the project are given in the second report from the project. The issues identified were used to direct some of the analyses of the main survey of prisoners and are described briefly in this report where appropriate.

## Analysis of existing survey data and the 1997 MDT results at the prison level

One of the main aims of the research project was to examine the relationship between data on the prevalence of drug use in individual prisons and their random MDT test results and identify prison level factors associated with levels of drug use in a prison and with MDT results. An immediate opportunity to do this was through secondary analysis of the 1997 ONS random sample survey of prisoners in all operational prisons in England and Wales that was undertaken for a study of psychiatric morbidity. In that survey information was collected from respondents on their drug use both before and while in prison. This coverage of all types of prisoner and all prison types makes it a unique data set and the high response rate obtained in the survey (88%) ensures that the data are representative of the prison population as a whole. Aggregate information on drug use within each prison was obtained from the survey

data set and this prison level data set was merged with other data provided by the Home Office and the results from the MDT programme in 1997 to provide a data set for analysis.<sup>3</sup>

## Ethical approval

Ethical approval for the survey of prisoners was gained from the Prison Health Research Ethics Committee. It was agreed with the committee that biological samples would not be collected from inmates aged under 18. Inmates aged under 17 were also asked if they would like the researchers to gain consent for their participation in the survey from a parent or guardian.

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<sup>3</sup> However, it should be noted that there are several problems in comparing data from these different sources. Firstly, drug use in the current prison term, obtained from the survey of prisoners, could encompass time periods varying from one day to several years whereas an MDT test covers about a week for each individual. Secondly, use in the current prison term can cover use in other prisons than the one in which they were interviewed. Also 1997 was the first year in which the MDT programme was carried out throughout the prison estate and implementation may have been uneven.

### 3. Drug misuse in prisons in 2001

This chapter summarises the key findings on the extent and type of drug use in prisons at the time of the study in 2001 based on the information given by prisoners in the survey. Previous surveys, such as the 1997 ONS survey (Singleton *et al*, 1998) have provided information on the extent of drug use within prisons based on numbers of prisoners reporting any use in the current prison term or the past month. However, the variation in the amount of time served by inmates and the frequent transfer of prisoners between prisons makes the information difficult to interpret.

In this survey, information was collected from prisoners on their use prior to coming to prison, at any time within prison, and use within the current prison, on each day in the past week, in the past month and at any time. In this way a better picture of the frequency of use can be obtained. The aim was to obtain a detailed picture of recent drug use, which could then be related to rates of positivity in random mandatory drug testing. This chapter presents an overview of the findings to provide a backdrop against which to consider the main research questions.

In addition to information on self-reported use, some prisoners provided biological samples (oral fluid (OF) and/or hair) for testing for cannabis and opiates. A comparison between the levels of self-reported use and the biological testing results is given in Appendix A. This comparison is hampered by the difficulty in matching the time periods covered by the different data sources and by the thresholds of detection associated with the biological testing measures.

There was a strong correlation between self-reported use and the OF test results, with the relative risk of a positive OF result for cannabis being 48 times higher if the respondent reported using cannabis in the past two days, while the equivalent figure for heroin was 43. However, self-reported use rates were markedly higher than OF positivity rates. This could be due to prisoners generally exaggerating their use or to the OF testing failing to pick up some episodes of use. If prisoners were lying or unable to recall use accurately one might expect variability in both directions, whereas in this case almost all of the discrepancy was in the direction of greater self-reported use than OF positivity. The OF positivity rates were low in comparison to RMDT positivity rates using urinalysis, which are more in line with the self-reported usage rates. This suggests that the OF tests might not have picked up all cases of use, possibly because prisoners were using small amounts of the drugs or the supplies were adulterated resulting in samples below the threshold of detection of the OF test. Overall, this suggests that the self-reported use rates are reasonably accurate but there may be an element of over-estimation, which might result from difficulties in accurately recalling use over different time periods or deliberate exaggeration.

#### Types of drugs used in prison

Table 3.1 shows the types of drugs prisoners reported using in their current prison. The drug used by most prisoners was cannabis, which almost a third of prisoners (32%) said they had used at least once in their current prison. The next most commonly reported drugs were opiates, mainly heroin, which a fifth of the sample (21%) said they had used. Other drugs that a number of prisoners said they had used were crack (5%), tranquillisers (4%) and ecstasy (3%), while each of the remaining drugs were mentioned by one per cent or less of the prisoners.

**Table 3.1 Self-reported drug use in the current prison**

	Any time	Past month	Past week
	<i>Percentage reporting using each drug</i>		
Cannabis	32	19	9
Any opiates	21	13	10
Heroin	21	13	10
Methadone	0	0	0
Other opiates	2	1	0
Amphetamine	1	0	0
Crack	5	2	0
Cocaine	1	1	0
Tranquillisers	4	2	0
Ecstasy	3	1	0
LSD	1	0	0
Magic mushrooms	0	0	0
Amyl nitrite	0	0	0
Steroids	0	0	0
Solvents	1	0	0
Other	0	0	0
Any drug	39	25	16
<i>Base</i>	<i>2,266</i>	<i>2,266</i>	<i>2,266</i>

Cannabis was also the drug that prisoners were most likely to report using in the past month in the current prison. Almost a fifth (19%) had done so while 13 per cent reported using opiates. However, when use in the past week is considered the proportion of prisoners reporting opiate use (10%) is similar to cannabis use (9%).

**Table 3.2 Other drugs used in the current prison among those who had used cannabis, opiates, and stimulants in the current prison**

	Users in the current prison of ...		
	Cannabis	Opiates*	Stimulants**
	<i>Percentage reporting using each drug</i>		
Cannabis	100	72	84
Any opiates	48	100	86
Any stimulants	15	23	100
Any other drug	53	77	100
<i>Base</i>	<i>649</i>	<i>438</i>	<i>115</i>

\* Heroin, unprescribed methadone or other opiates

\*\* Amphetamines, crack or cocaine powder

Just over half of those who had used cannabis in their current prison (53%) also reported using another drug, in most cases opiates. About three quarters of those who had used opiates in prison (77%) had also used at least one other type of drug; most had used cannabis while almost a quarter said they had also used stimulants. All of the small group of prisoners who reported using stimulants in prison had also used other drugs – 84 per cent had used cannabis and 86 per cent had also used opiates. (Table 3.2)

**Table 3.3 Self-reported drug use in the current prison in the past month by prison type**

	Local / Remand	Training	Women's	Open	Dispersal	YOIs	All
<i>Percentage reporting using each drug</i>							
Cannabis	25	18	6	12	4	18	19
Any opiates	13	21	11	4	9	2	13
Heroin	13	21	11	4	8	2	13
Methadone	0	0	0	0	0	0	0
Other opiates	2	1	1	1	1	-	1
Amphetamine	0	0	1	-	-	0	0
Crack	3	3	3	1	0	0	2
Cocaine	1	1	1	1	-	-	1
Tranquillisers	2	2	2	1	1	0	2
Ecstasy	1	1	-	1	-	1	1
LSD	0	-	0	1	-	-	0
Magic mushrooms	-	-	0	1	-	-	0
Amyl nitrite	0	-	-	-	-	-	0
Steroids	0	0	-	1	-	-	0
Solvents	0	0	-	-	-	0	0
Other	-	-	-	-	0	-	0
Any drug	29	28	14	14	11	20	25
<i>Base</i>	<i>805</i>	<i>436</i>	<i>400</i>	<i>169</i>	<i>234</i>	<i>222</i>	<i>2,266</i>

The importance of different drugs varies by type of prison. Since the length of time that prisoners spend in different types of prison varies, it is more appropriate to compare use in the past month than any use in the current prison and these figures are shown in Table 3.3. In local prisons and remand centres, open prisons and YOIs, cannabis was the most common drug used. In YOIs there was very little use of opiates; only two per cent of inmates of YOIs said they had used opiates in the past month. In contrast, in Category B and C training prisons, cannabis and opiates were used by similar proportions of inmates with the figure for opiates being marginally higher (21% had used opiates and 18% cannabis), while in women's prisons and dispersal prisons about twice as many inmates had used opiates as had used cannabis.

### Key findings

- Cannabis and opiates (mostly heroin) were the drugs most often reported as having been used by prisoners in their current prison. About a third had used cannabis and about a fifth opiates at some time, while about one in ten prisoners reported using each of these types of drug in the past week.
- Just over half of those who said they had used cannabis in the current prison said they had used another type of drug (usually opiates) as well, as did about three-quarters of opiate users and all of the small group of stimulant users.
- In local prisons, open prisons and YOIs more people reported using cannabis than opiates in the past month. In YOIs there was very little use of opiates at all. In training prisons use of cannabis and heroin was reported about equally, while in women's prisons and dispersal prisons opiate use in the month prior to interview was reported by a larger proportion of inmates than cannabis use.

## Frequency of drug use

The level of drug use in prisons can be considered in two ways. Firstly, as the proportion of prisoners who have used drugs in prison and, secondly, as the usage rate or number of episodes of use occurring within the prison. Within the questionnaire inmates were asked about their drug use over a range of different time periods in order to help distinguish between these two aspects of the extent of use.

### The proportion of prisoners involved in drug use

From Table 3.1 it can be seen that, overall, about two out five prisoners (39%) had used some illicit drug at some time in their current prison, one in four (25%) said they had used drugs in the past month and about one in six (16%) in the past week. However, the pattern varies for different types of drug. Looking at the two main drug types used by inmates, cannabis use decreased steadily as the time period under consideration is reduced but there was little difference between the proportion of people reporting opiate use in the past month and past week. This difference suggests that inmates who use opiates are taking them more frequently, while cannabis use is more intermittent.

Table 3.4 shows the proportion of prisoners in different types of prison who reported drug use over different time periods. There was marked variation in use of drugs in the current prison over different time periods across establishment type. The proportion of inmates reporting drug use at any time (reflecting the number of people using drugs in these prisons) in training prisons, local prisons/remand centres and YOIs was significantly higher than use in women's, open and dispersal prisons. In the past month, in the current prison the prevalence of drug use remained highest in the local/remand (29%) and training prisons (28%). Inmates of dispersal prisons were now the least likely to have used (11%) and were significantly less likely to have used in the past month than prisoners in YOIs, training and local/remand prisons. When use in the past week is considered (giving an indication of the relative frequency of drug use), the highest prevalence was found in Category B and C training (21%) and local/remand prisons (16%). Significantly lower rates were found in other types of establishments: nine per cent in open prisons, eight per cent in YOIs, and seven per cent in both women's and dispersal prisons. The high rate of use in the past week in the Category B and C training prisons was largely opiate use. This category of establishments had the highest rate of opiate use in the past week (17%) whereas in local prisons/remand centres cannabis use was higher. (Table 3.4)

**Table 3.4 Prevalence of drug use (any, cannabis and opiates) in the current prison within different time periods, by prison type**

	Local/ remand	Training	Women's	Open	Dispersal	YOIs	All
<b>Any drug</b>	<i>Percentage reporting use in each time period</i>						
Any time	39	45	22	20	28	38	39
Past month	29	28	14	14	11	20	25
Past week	16	21	7	9	7	8	16
<b>Cannabis</b>							
Any time	35	34	13	18	22	35	32
Past month	25	18	6	12	4	18	19
Past week	12	9	2	8	2	8	9
<b>Opiates</b>							
Any time	21	32	17	7	16	2	21
Past month	13	21	11	4	9	2	13
Past week	8	17	6	4	6	0	10
<i>Base</i>	<i>805</i>	<i>436</i>	<i>401</i>	<i>169</i>	<i>235</i>	<i>222</i>	<i>2,268</i>



In summary, this suggests that drug use is most widespread, both in terms of the proportion of inmates involved and the frequency of use, in training prisons and local/remand prisons. In YOIs, although a high proportion of inmates report use at some time, drug use seems to be less frequent than in the training and local/remand prison.

### Key findings

- About two out five prisoners (39%) had used some illicit drug at some time in their current prison, one in four (25%) said they had used drugs in the past month and about one in six (16%) in the past week.
- The proportion of inmates reporting drug use at any time (reflecting the number of prisoners using drugs) in Category B/C training prisons, local/remand prisons and YOIs was significantly higher than use in women's, open and dispersal prisons.
- When use in the past week is considered (an indicator of the relative frequency of drug use), the highest prevalence was found in training prisons (21%) and local/remand prisons (16%), while significantly lower rates were found in other types of establishments. The high rate of use in the past week in the Category B and C training prisons was largely due to opiate use, whereas in local prisons and remand centres cannabis use was higher.

### Number of days of drug use

As mentioned above, the different pattern of variation for cannabis and opiates in rates of use when different time periods are considered suggests that opiates may be used more frequently than cannabis. While one aim of any drug use prevention strategy will be to reduce the number of inmates who use drugs in prison, another element will be to reduce the frequency of use by those who do use drugs. As part of the survey, prisoners were asked about drug use on each of the previous seven days. Therefore it is possible to calculate the number of episodes of drug use in the past seven days (in this case, an episode of use is defined as any use of a particular drug on a single day). (Table 3.5)

It can be seen from Table 3.5 that, when the mean number of episodes of use of drugs within a week per 100 inmates is considered, opiates appear to be used slightly more frequently than cannabis in the prison system as a whole, although the difference is not statistically significant. The differences between types of prison are also brought out even more strongly. There was a much higher rate of drug use episodes in training prisons (61 episodes per 100 inmates per week), with local prisons and remand centres next (44 episodes per 100 inmates per week). Women's prisons had the lowest rate of use (15 episodes per 100 inmates per week).

There was a higher rate of opiate use episodes than cannabis in training prisons, while in local prisons and YOIs it was the other way round. In YOIs there was quite a high rate of cannabis use (20 episodes per 100 inmates) but almost no episodes of opiate use. The variations in patterns of drug use in different types of prison are similar to those observed in the results from the RMDT programme.

### Key findings

- When the number of episodes of use of drugs within a week is considered, opiates are used slightly more frequently than cannabis in the prison system as a whole (25 compared with 21 episodes per 100 inmates per week) but this difference is not statistically significant.
- There was a much higher rate of self-reported drug use episodes in training prisons (61 episodes per 100 inmates per week), with local prisons and remand centres next (44

episodes per 100 inmates per week). Women's prisons had the lowest rate of self-reported use (15 episodes per 100 inmates per week).

**Table 3.5 Number of drug use episodes in last seven days in the current prison by type of prison**

No. of episodes of use in last seven days	Type of prison						
	Local / Remand	Training	Women's	Open	Dispersal	YOIs	All
<b>Cannabis</b>	%	%	%	%	%	%	%
0	88	91	98	92	98	92	91
1	6	4	1	2	1	3	4
2	2	3	0	3	0	3	2
3	2	1	0	1	-	0	1
4 or more	2	1	1	1	1	2	2
Mean episodes/100 inmates	27.5	19.5	6.8	17.9	6.1	19.6	21.4
<b>Opiates</b>							
0	92	83	94	96	94	100	90
1	4	6	4	2	3	0	4
2	1	3	1	1	2	-	2
3	1	3	0	1	1	-	1
4 or more	2	5	0	1	1	-	2
Mean episodes/100 inmates	18.9	46.2	8.0	9.5	14.0	0.3	24.5
<b>Other drugs</b>							
0	98	100	98	100	100	100	99
1	1	-	1	-	-	-	0
2	0	0	-	-	-	-	0
3	-	-	-	-	-	-	-
4 or more	0	-	1	-	-	0	0
Mean episodes/100 inmates	2.7	0.5	4.7	0	0	1.3	1.6
<b>Any drug</b>							
0	84	79	93	91	93	92	84
1	7	7	4	3	3	3	6
2	3	4	2	2	2	3	3
3	2	3	0	1	1	0	2
4 or more	5	7	1	2	2	2	5
Mean episodes/100 inmates	44.1	61.3	15.4	24.7	19.0	19.6	43.4
<i>Base</i>	<i>805</i>	<i>436</i>	<i>400</i>	<i>169</i>	<i>234</i>	<i>222</i>	<i>2,266</i>

## Injecting behaviour

An important indicator of drug-related risks and harm is the administration of drugs by injection. However, drug injecting in the current prison was rarely reported: only one per cent

of prisoners (14) said they had injected in the current prison. The 1997 ONS survey of psychiatric morbidity among prisoners (Singleton *et al*, 1998) found that between one per cent and two per cent of prisoners reported injecting at some time in their current prison term.

This low rate of injecting is in contrast to the practice outside prison. More than one in six inmates (18%) said they had injected drugs in the month before coming to prison. The issue of levels of risk-taking associated with injecting was not explored in this study. However it is important to note that although the rate of injecting may be low, the injecting risk behaviour associated with such episodes may be very high.

#### Key finding

- There is very little injecting drug use in English and Welsh prisons: only one per cent of prisoners (14) reported having injected in the current prison.

### Drug use before prison

Drug use in prison needs to be considered in the light of prisoners' experience of drug use before prison and their level of dependence on drugs when they come into prison. Many studies have indicated that a high proportion of prisoners are dependent on drugs when they enter prison and still more have used drugs in the past. A consecutive case study of remand prisoners entering Durham prison in 1995/96 (Mason *et al*, 1997) reported that 57 per cent had used illicit drugs in the year prior to coming to prison and 33 per cent met DSM-IV criteria for drug misuse or dependence. The 1997 ONS survey of prisoners in England and Wales (Singleton *et al*, 1998) found a prevalence of reported drug use in the year preceding the current term of 55 per cent of female sentenced prisoners, 66 per cent of female remand and male sentenced prisoners and 73er cent of male remand prisoners. The proportions assessed as showing signs of dependence were 41 per cent of female sentenced, 54 per cent of female remand, 43 per cent of male sentenced and 51 per cent of male remand prisoners.

In this survey in 2001, the proportion of inmates who reported using drugs in the year before coming to prison was 70 per cent, and 66 per cent reported using drugs in the month before prison. Cannabis was the most commonly used drug, mentioned by just over half the sample, while about a third used opiates, mainly heroin. Use of crack, cocaine powder, ecstasy and tranquillisers was also reported quite frequently: almost a quarter of prisoners said they had used crack in the month before coming to prison while use of each of the other three drugs was reported by just over a tenth. (Table 3.6)

**Table 3.6 Drug use before the current prison term**

	Year before	Month before
<i>Percentage reporting using each drug</i>		
Cannabis	57	51
Any opiates	33	30
Heroin	33	29
Methadone	9	4
Other opiates	10	6
Amphetamine	13	8
Crack	30	23
Cocaine	21	12
Tranquillisers	14	10
Ecstasy	24	13
LSD	5	2
Magic mushrooms	3	1
Amyl nitrate	2	1
Steroids	1	1
Solvents	1	0
Other	0	0
Any drug	70	66
<i>Base</i>	<i>2,268</i>	<i>2,268</i>

Many people reported using more than one kind of drug. Table 3.7 illustrates this point. For example, 77 per cent of those who had used cannabis in the year before prison had also used at least one other drug. Those who had used opiates and stimulants in the year prior to going to prison were even more likely to have used other drugs: about 95 per cent had done so. Approximately three-quarters of those who had used opiates in the year before coming to prison (74%) had also used cannabis, 81 per cent had used stimulants of some kind, 36 per cent tranquillisers and 29 per cent ecstasy. This tendency for opiate and stimulant users to be more likely to report poly-drug use is similar to the pattern within prisons (Table 3.2)

#### Key findings

- The proportion of inmates who reported using drugs in the year before coming to prison was 70 per cent, and 66 per cent reported using drugs in the month before prison.
- Cannabis was the most commonly reported drug, used by just over half the sample, while about a third used opiates, mainly heroin. Crack cocaine had been used by almost a quarter of prisoners in the month before coming to prison.
- Poly-drug use was very common. For example over 90 per cent of opiate users in the year before coming to prison also used at least one other type of drug.

**Table 3.7 Other drugs used in the year before prison among those who had used (a) cannabis, (b) opiates and (c) stimulants in the year before prison**

	Users in year before prison of ...		
	Cannabis	Opiates*	Stimulants**
	<i>Percentage reporting using each drug</i>		
<b>Drugs used in the year before prison</b>			
Cannabis	100	74	78
Any opiates*	43	100	60
Any stimulants**	62	81	100
Tranquillisers	20	36	26
Ecstasy	37	29	41
LSD	7	5	9
Magic mushrooms	5	4	6
Amyl nitrate	3	2	4
Steroids	1	2	2
Solvents	1	1	1
Other	0	0	0
Any other drug	77	94	96
<i>Base</i>	<i>1,205</i>	<i>715</i>	<i>982</i>

\* Heroin, unprescribed methadone or other opiates.

\*\* Amphetamines, crack or cocaine powder.

## The relationship between use in prison and use before prison

In order to look at the way in which drug use in prison relates to drug use before prison respondents were divided into four groups according to their reported use:

- Non-users: inmates who said that they had neither used drugs in the year before prison nor in the current prison;
- New users/restarters: those who said they were not using drugs in the year before prison but have used them in the current prison;
- Prior to prison only: those who had used in the 12 months prior to prison but not in the current prison; and
- Continuers: those who had used drugs both in the 12 months before prison and in the current prison.

Table 3.8 shows the distribution of respondents to the survey classified in this way in different types of prison, for any drug use and for the two main types of drug used in prison, cannabis and opiates.

**Table 3.8 Drug use status in the current prison by type of prison**

Current status	Type of prison						
	Local / Remand	Cat B/C	Women	Open	Dispersal	YOIs	All
	%	%	%	%	%	%	%
<b>Cannabis</b>							
Non-users	36	39	56	64	59	18	38
New users/restarters	5	6	3	5	4	2	5
Prior to prison only	29	26	30	17	19	47	29
Continuers	30	29	10	14	19	32	28
<b>Opiates</b>							
Non-users	57	56	61	88	77	86	62
New users/restarters	3	7	1	4	9	1	4
Prior to prison only	22	12	22	5	7	12	16
Continuers	18	25	16	4	7	1	17
<b>Any drug</b>							
Non-users	26	27	40	58	46	13	28
New users/restarters	1	3	0	3	2	-	2
Prior to prison only	35	28	37	22	25	48	33
Continuers	38	43	22	18	26	38	37
<i>Base</i>	<i>805</i>	<i>436</i>	<i>401</i>	<i>169</i>	<i>234</i>	<i>222</i>	<i>2267</i>

It is clear that entry into prison is associated with a very significant reduction in drug consumption of all types. A significant proportion of respondents, 33 per cent, had not used drugs in the current prison even though they had used drugs in the year before imprisonment. For both cannabis and opiates, about half of those who used the drug before prison continued to use in prison. While there is very little difference in the proportions reporting drug use in the month and year before coming to prison (Table 3.6), there is a greater disparity between use at any time in the current prison and use in the past month (Table 3.4). This suggests that as well as a decrease in the number of people using drugs, being in prison is also associated with a decrease in frequency of drug use among those who continue to use in prison.

A small proportion of inmates (2%) started (or re-started) using drugs while in prison. When use of cannabis and heroin are considered rather than any drugs, the proportion of new users is slightly higher: Five per cent started or restarted cannabis use and 4 per cent reported starting or restarting opiate use. This indicates that as well as a small proportion starting drug use in prison there is also some change in the types of drugs used, but this is not large.

As indicated in Chapter 3, the route of administration also sometimes changes, as there is a reduction in injecting drug use.

Any consideration of variation in the likelihood of starting or continuing drug use by type of prison is complicated by the differing lengths of time inmates spend in different types of prison and the varying inmate profiles within them. However, training and dispersal prisons had the highest proportions of new users/restarters of opiate use. In training prisons the proportion of continuers of drug use was higher than the proportion who had used prior to prison only whereas the reverse was true in women's prisons and YOIs.

A small proportion of the new users and restarters of opiates were individuals who said they had been on methadone in the community prior to imprisonment and the cessation of methadone is likely to be associated with restarting heroin. In addition other work has

indicated that duration of time in prison and in particular the number of prison sentences is highly associated with the risk of initiating heroin use. Those who had reported more than eight periods of imprisonment were 33 to 60 times more likely to report heroin initiation compared to those experiencing their first period in prison (Boys *et al* 2003). Among people who are very entrenched in the criminal justice system at a point in time where they are highly vulnerable to drug initiation, it is hard to disentangle what is a specific prison effect and what is a broader life trajectory effect on young adult drug initiation. This work indicates that there are complex environmental factors associated with heroin initiation in prison but it is of concern that those who report self-initiation are subsequently indistinguishable from others in their patterns of drug use. An even smaller proportion report initiation of injecting in prison but this is an area of serious concern because of its links to blood borne virus transmission.

### Key findings

- It is clear that entry into prison is associated with a very significant reduction in drug consumption of all types. The route of administration also changes; there is a reduction in injecting drug use.
- A small proportion of inmates (2%) started (or re-started) using drugs while in prison. There is also evidence that a small proportion of inmates change the types of drugs used, as five per cent of inmates were classed as new users/restarters of cannabis and four per cent of opiates.
- Training and dispersal prisons had the highest proportions of new users/restarters of opiate use. In training prisons the proportion of continuers of drug use was higher than the proportion who had used prior to prison only whereas the opposite was true in women's prisons and YOIs.

### Factors associated with drug use in the past seven days

A whole range of factors will influence whether or not a prisoner uses drugs in prison. As mentioned above, some will relate to their circumstances and experiences before coming to prison and others will relate to their experiences in prison. Many of these factors are themselves likely to be interrelated. In order to try and identify the key factors that appeared to be most strongly related to drug use in the past seven days, a series of step-wise multiple logistic regression analyses was undertaken. The results of these analyses are shown below. Separate analyses were undertaken looking at personal and custodial characteristics and drug use history.

Unlike simple tables, multiple logistic regression estimates the effect of each variable on the outcome of interest, in this case use of drugs in prison, while controlling for the effect of other variables in the analysis. Logistic regression produces an estimate of the probability of an event occurring when an individual is in a particular category compared to a reference category. This effect is measured in terms of odds. For example, Table 3.9 shows that if a prisoner is aged 30-39 the odds that they will report having used opiates in prison in the previous seven days are increased in comparison to someone aged 40 or more. The amount by which the odds are actually increased is shown by the Adjusted Odds Ratio (OR). In this case the OR is 2.15 indicating that if a prisoner is aged 30-39, the odds that they will have used opiates in the previous seven days are doubled, after controlling for the possible confounding effect of the other variables in the statistical model (also shown in the table). To determine whether this increase is likely to be due to chance, one must consult the associated confidence interval. If the 95 per cent confidence interval does not include the value 1.00 the difference in odds is statistically significant at the 95 per cent level and is unlikely to be due to chance variation in the sample. In the tables below, ORs which are statistically significant at the 95 per cent level are indicated by a single asterisk \* and those significant at the 99 per cent level are indicated by double asterisks\*\*.

## Personal characteristics

Table 3.9 shows the personal characteristics found to be associated with cannabis, opiate and any drug use in the week before interview in prison. Six variables representing personal characteristics of the prisoners were included in the modelling process: sex, age, ethnic group, the type of accommodation in which they were resident before prison, their score on the GHQ (General Health Questionnaire - a measure of mental disorder), and current receipt of medication (from medical records).

Only sex, age and ethnicity produced significant associations with cannabis use. Women were considerably less likely than men to report cannabis use in the past week and people aged 21 to 39 were more likely to do so, particularly those aged 21 to 29. Compared with those who classed themselves as white, those in other ethnic groups had lower odds of reporting cannabis use but the difference was not significant for those who placed themselves in a Black ethnic group. (Table 3.9)



**Table 3.9 Odds ratios for personal characteristics associated with drug use in the past seven days**

	Used cannabis in prison in last week			Used opiates in prison in last week			Used any drugs in prison in last week		
	Adjusted odds ratios	95% C.I.		Adjusted odds ratios	95% C.I.		Adjusted odds ratios	95% C.I.	
		Lower	Upper		Lower	Upper		Lower	Upper
<b>Sex</b>									
Male	1.00			1.00			1.00		
Female	0.21 **	0.06	0.66	0.40 *	0.19	0.89	0.39 **	0.20	0.77
<b>Age</b>									
40+	1.00			1.00			1.00		
30-39	1.82 *	1.09	3.03	2.15 **	1.32	3.52	2.51 ***	1.66	3.81
21-29	2.63 ***	1.63	4.24	2.47 ***	1.54	3.96	3.17 ***	2.14	4.71
16-20	1.41	0.75	2.64	0.15 **	0.04	0.56	1.09	0.63	1.91
<b>Ethnic group</b>									
White	1.00			1.00			1.00		
Black	0.87	0.56	1.35	0.47 **	0.27	0.81	0.70	0.48	1.02
Other	0.46 **	0.28	0.76	0.72	0.48	1.08	0.62 **	0.44	0.88
<b>Type of accommodation prior to prison</b>									
Owned				1.00					
Rented				2.90 **	1.47	5.74			
Lived with adult relations				2.59 *	1.24	5.41			
Other				3.00 **	1.44	6.26			
<b>GHQ Score</b>									
0-2				1.00					
3+				1.57 **	1.17	2.10			
Not known				1.47	0.74	2.93			
<b>Receiving medication</b>									
No				1.00					
Yes				1.16	0.85	1.58			
Not known				2.16 **	1.26	3.70			

\* = p<0.05; \*\* = p<0.01; \*\*\* = p<0.001

Sex, age and ethnicity were also associated with opiate use in the past seven days but the pattern of association was slightly different. Women were less likely to report using opiates than men but the difference was less marked than for cannabis. While those aged 21 to 39 were again more likely to report opiate use in comparison to those aged 40 or above, those aged 16 to 20 were considerably less likely to have used opiates. Prisoners who classified themselves as black also had lower odds of using opiates compared with white prisoners once other factors were taken into account. In addition, those who were not owner-occupiers of their accommodation before prison, those who had an elevated GHQ score and those for whom no information was obtained about receipt of medication all had increased odds of using opiates in the previous week. (Table 3.9)

### Custodial characteristics

Table 3.10 shows the custodial characteristics associated with drug use in the week before interview in prison. The variables included in the modelling process were: the number of

previous prison terms in the past year; the location<sup>4</sup> in which the prisoner was currently being held; the number of adjudications recorded on LIDS; the type of prison; the expected time to release; and the length of sentence (which included a category 'unsentenced').

**Table 3.10 Odds ratios for custodial characteristics associated with drug use in the past seven days**

	Used cannabis in prison in last week			Used opiates in prison in last week			Used any drugs in prison in last week					
	Adjusted odds ratios	95% C.I.		Adjusted odds ratios	95% C.I.		Adjusted odds ratios	95% C.I.				
		Lower	Upper		Lower	Upper		Lower	Upper			
<b>No. previous prison terms in last 5 years</b>												
0	1.00			1.00			1.00					
1	2.51	***	1.69	3.74	2.43	***	1.55	3.81	2.48	***	1.76	3.48
2+	2.20	***	1.56	3.12	4.85	***	3.37	6.97	3.42	***	2.57	4.56
<b>Location of prisoner</b>												
Other	1.00			1.00			1.00					
Normal	10.23	**	2.08	50.43	5.66	**	1.76	18.20	7.57	***	2.72	21.05
<b>No. of adjudications</b>												
0	1.00			1.00			1.00					
1	1.74	**	1.15	2.65	2.33	***	1.52	3.57	1.93	***	1.37	2.73
2+	2.80	***	1.95	4.01	3.43	***	2.40	4.92	3.01	***	2.21	4.09
Not known	0.40		0.08	2.04	0.93		0.29	3.01	1.21		0.25	5.72
<b>Type of prison</b>												
YOIs	1.00			1.00			1.00					
Local/Remand	2.04	*	1.17	3.55	25.35	**	3.06	209.71	2.44	**	1.42	4.16
Training	1.39		0.81	2.38	62.24	***	7.66	505.78	3.29	***	1.98	5.47
Women's	0.35		0.10	1.23	23.71	**	2.56	220.02	1.27		0.56	2.88
Open	1.46		0.62	3.40	22.68	**	2.26	227.90	1.92		0.85	4.33
Dispersal	0.52		0.11	2.54	26.94	**	2.74	265.10	1.35		0.50	3.69
<b>Time to release</b>												
Not sentenced	1.00			1.00			1.00					
Within a month	0.90		0.53	1.54	0.45	*	0.23	0.88	0.59		0.30	1.17
Within next year	0.92		0.58	1.47	0.53	*	0.31	0.91	0.51	*	0.29	0.89
Within next 1-2 yrs	1.04		0.60	1.78	0.86		0.48	1.54	0.76		0.46	1.26
More than 2 years	0.46	**	0.26	0.81	0.67		0.38	1.19	0.59	*	0.37	0.95
<b>Length of sentence</b>												
Long									1.00			
Short									1.09		0.63	1.89
Medium									1.57	*	1.04	2.37
Not sentenced									0.55		0.08	3.64

\* = p<0.05; \*\* = p<0.01; \*\*\* = p<0.001

The custodial characteristic most strongly associated with cannabis use in prison was being on a normal location within the prison system. Compared with prisoners in other locations, those on a normal location had much greater odds of using cannabis in prison. Prisoners who had any previous prison terms, had received adjudications, and those in local/remand prisons

<sup>4</sup> Prisoners were classified as either being held on a normal location or other location. Other locations included: hostel; mother and baby unit; vulnerable/rule 43 facility; special/supergrass unit; hospital wing; in segregation for any reason.

had increased odds of using cannabis in prison while those with two or more years to serve before release had decreased odds of reporting cannabis use.

A number of factors were associated with opiate use in prison in the week before interview. The factor that had the greatest influence was type of prison. Prisoners in YOIs were significantly less likely to have used opiates in the past seven days than those in all other types of prison. Compared to inmates of YOIs, prisoners in all other types of prisons were considerably more likely to report opiate use in the seven days before interview but this was most marked in Category B and C training prisons.. Being on a normal location, having been in prison in the previous five years and having adjudications were all associated with increased odds of using opiates in prison. Time to release was also associated with opiate use in the previous seven days. Those who were due for release within the coming year had lower odds of using opiates compared with those on remand.

## Drug use history

A similar logistic regression analysis was undertaken to identify factors relating to patterns of drug use prior to coming to prison that were strongly associated with use of drugs in prison. The variables included in the final model were: the use of any drugs in the year before coming to prison; the frequency of cannabis use in the month before coming to prison; the number of different drugs used in the month before prison; drug dependence in the year before prison<sup>5</sup>; and the frequency of injecting drug use. The results are shown in Table 3.11.

The drug use characteristics that were associated with cannabis use in prison in the week prior to interview were having used any drugs in the year before coming to prison and having been using cannabis in the month before coming to prison. The more frequently inmates had used cannabis before coming to prison the greater the odds of them using cannabis in prison. Inmates who said they had injected drugs more than 100 times in their lives had slightly increased odds of using cannabis in prison but the effect was not great.

The drug history factors most strongly associated with opiate use in prison in the week before interview were those indicating high levels of drug dependence and poly-drug use. Compared with those who had not used any drugs in the month before coming to prison, those who had used two or more different drugs had five times higher odds of using opiates in the week before interview. Compared with those who were not dependent on drugs or were dependent on cannabis only in the year before interview prisoners who were dependent on opiates had greatly increased odds of using opiates in the week prior to interview, particularly if they were also dependent on stimulants. Using any drugs in the year before coming to prison and having injected more than 100 times were also associated with using opiates in prison.

## Key findings

- Of the personal characteristics considered in this analysis, only sex, age and ethnicity produced significant associations with cannabis use. Women were considerably less likely than men to report cannabis use in the past week and people aged 21 to 39 were more likely to do so, particularly those aged 21 to 29.
- Women were less likely to report using opiates than men but the difference was less marked than for cannabis. While those aged 21 to 39 were again more likely to report opiate use in comparison to those aged 40 or above, those aged 16 to 20 were considerably less likely to have used opiates. Prisoners who classified themselves as

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<sup>5</sup> Drug dependence was assessed as in the ONS psychiatric morbidity survey (Singleton *et al* 1998) using five questions measuring frequency of use, feelings of dependence, inability to cut down, signs of tolerance and symptoms of withdrawal.

black also had lower odds of using opiates compared with white prisoners once other factors were taken into account.

- The custodial characteristic most strongly associated with cannabis use in prison was being on a normal location within the prison system.
- The custodial factor most strongly associated with self-reported opiate use in the past seven days was type of prison. Prisoners in YOIs were significantly less likely to have used opiates in the past seven days than those in all other types of prison. In particular, prisoners in Category B and C training prisons were much more likely to report opiate use in the previous seven days than prisoners in YOIs.
- The drug use characteristics that were most strongly associated with cannabis use in prison in the week prior to interview were having used any drugs in the year before coming to prison and frequency of use of cannabis in the month before coming to prison.
- As well as use of any drugs in the year before prison, the drug history factors most strongly associated with opiate use in prison in the week before interview were those indicating high levels of drug dependence and poly-drug use. These were the number of different drugs used in the month before prison, and dependence on opiates, particularly when combined with dependence on stimulants.

**Table 3.11 Odds ratios for drug use factors associated with using cannabis, opiates, or any drug in prison in last seven days**

	Used cannabis in prison in last week			Used opiates in prison in last week			Used any drugs in prison in last week		
	Adjusted odds ratios	95% C.I.		Adjusted odds ratios	95% C.I.		Adjusted odds ratios	95% C.I.	
		Lower	Upper		Lower	Upper		Lower	Upper
<b>Frequency of injecting</b>									
Never	1.00			1.00			1.00		
<=100 times	1.17	0.72	1.91	1.52	0.94	2.45	1.20	0.80	1.79
>100 times	1.61 *	1.11	2.36	1.57 *	1.04	2.36	1.50 *	1.06	2.13
<b>Frequency of cannabis use in month before prison</b>									
Never	1.00						1.00		
<=3 times per week	3.11 **	1.60	6.02				1.08	0.72	1.61
4-7 times per week	6.12 ***	3.32	11.29				1.75 **	1.21	2.53
<b>No. drugs used in month before prison</b>									
0	1.00			1.00			1.00		
1	0.40	0.14	1.17	3.23 **	1.37	7.62	0.97	0.44	2.18
2	0.73	0.25	2.10	5.33 ***	2.20	12.93	1.98	0.87	4.51
3+	0.83	0.28	2.45	5.53 ***	2.27	13.46	1.89	0.79	4.52
<b>Used any drugs in year before prison</b>									
No	1.00			1.00					
Yes	28.65 **	3.95	207.66	9.21 ***	3.00	28.24			
<b>Drug dependence</b>									
None / cannabis only				1.00			1.00		
Stimulants only				1.69	0.86	3.32	1.27	0.82	1.98
Stimulants and opiates				5.96 ***	3.24	10.95	2.68 **	1.69	4.25
Opiates only				3.40 ***	1.83	6.33	1.66 **	1.04	2.64

\* = p<0.05; \*\* = p<0.01; \*\*\* = p<0.001

## 4. The MDT programme

There are five elements to the MDT programme: random testing; reception testing; frequent testing; testing on suspicion; and testing for assessment. While the number of random tests to be carried out every month in each establishment is set centrally, the amount of testing under other parts of the programme is set by the individual prisons and may vary according to the resources available.

Details of the outcomes for all individuals selected for testing under all parts of the MDT programme are sent to the Prison Service where they are held on a database. This MDT database contains records of refusals and spoiled tests, as well as the results of all tests conducted. Therefore, information on the extent of testing under different parts of the programme can be obtained from this database. However, as the same prisoner can be tested more than once and prisoners who have been detained for long periods are likely to experience a number of tests, this does not give any indication of the proportion of prisoners who have experienced testing under the MDT programme. Therefore, in the survey, prisoners were asked whether they had been selected for testing under each element of the programme in the current prison and in any other prison. However, it needs to be borne in mind that prisoners may not always be clear under which part of the programme they have been tested, although they should have been given this information, and may also confuse testing received in different prisons. They were also asked if they had ever tested positive and, if so, what the outcome was, and about refusals to tests and attempts at cheating. The picture of the MDT programme obtained from both of these sources is described in this chapter.

### Amount of testing under different parts of the MDT programme

The vast majority of testing is done under the random testing programme. The amount of random testing would be expected to vary as prisons are required to test a fixed percentage of their population: prisons with more than 400 inmates only have to sample five per cent of the population while smaller prisons are required to sample ten per cent.

Table 4.1 is based on the test details recorded on the MDT database during the three months August to October 2016. It shows the number of MDT tests under different parts of the MDT programme that were carried out in the prisons sampled for this research project and the proportion of the population (based on the population size at the end of each month within this period) that this represents. The overall pattern of testing in sampled prisons did not vary significantly from that of all prisons in England and Wales. Random testing effectively covered seven per cent of the population each month. There was very little testing other than random testing. Testing on suspicion was the next most frequently used type of testing – involving one per cent of the population in the prisons in the sample and two per cent nationally. Reception testing was essentially only conducted in open and dispersal prisons in the sample in the quarter considered here.

The amount of testing under different parts of the MDT programme varied quite a lot between the clusters of prisons selected for this project. While the average overall testing rate was equivalent to two per cent of the prison population, the rates in the clusters included in this project ranged from four per cent to 17 per cent.

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<sup>6</sup> This time period was selected because it overlapped with the survey fieldwork period and it could be certain that the database would be complete. There is a delay in registering results on the database for a variety of reasons which meant that, at the time the analysis for this project was undertaken, later months might still have been missing some results.

**Table 4.1 Number of MDT tests recorded on the MDT database and the proportion of the population (%) tested\* under different parts of the MDT programme Aug-Oct 2001 by cluster\*\***

Cluster	MDT programme													
	Assessment		Frequent		Reception		Random		Suspicion		Voluntary		All	
	No.	% tested	No.	% tested	No.	% tested	No.	% tested	No.	% tested	No.	% tested	No.	% tested
Local/Remand	3	0%	22	1%	0	-	286	9%	39	1%	0	-	350	11%
Local/Remand	8	0%	13	0%	0	-	174	5%	86	2%	0	-	281	8%
Local/Remand	12	0%	0	-	0	-	104	3%	2	0%	0	-	118	4%
Local/Remand	56	2%	1	0%	0	-	164	7%	6	0%	0	-	227	9%
Training	13	1%	34	2%	0	-	86	5%	10	1%	0	-	143	8%
Training	0	-	5	0%	0	-	109	4%	41	2%	1	0%	156	6%
Training	20	1%	37	1%	0	-	142	4%	55	2%	3	0%	257	7%
Women	14	1%	72	3%	1	0%	268	10%	87	3%	0	-	442	17%
Women	1	0%	7	1%	0	-	71	5%	13	1%	0	-	92	7%
Open	74	2%	34	1%	48	2%	205	7%	19	1%	0	-	380	12%
Dispersal	44	1%	123	2%	118	2%	667	9%	120	2%	0	-	1072	14%
YOI	0	-	4	0%	0	-	312	10%	90	3%	0	-	406	13%
Total	245	1%	352	1%	167	0%	2588	7%	568	1%	4	0%	3924	10%
All E&W prisons	1678	1%	1682	1%	555	0%	13200	7%	3994	2%	44	0%	21153	10%

\* based on the sum of the populations at the end of each month

\*\* Highpoint male and female sections were sampled in separate clusters for the survey but cannot be distinguished in the MDT database so are shown in all tables based on MDT data as an additional Category B/C training prison cluster.

The proportion of prisoners interviewed in the survey who reported that they had been selected to provide a urine sample for the different forms of MDT in their current prison or in any prison in the past is shown in Table 4.2.

Two-thirds of prisoners (67%) had participated in some variant of the MDT programme at some time. This was most commonly RMDT (59%) followed by testing for suspicion (21%) in both other prisons and the current establishment. When MDT in the current prison only is considered over a third (36%) had been selected for RMDT and just under a tenth had been tested under each of the other elements of the programme.

**Table 4.2 Proportion of prisoners who reported experience of MDT in prison**

	Current prison	Other prison	Any prison
<i>Percentage selected for each MDT programme</i>			
<b>Type of MDT</b>			
Random	36	51	59
Suspicion	9	19	21
Assessment	8	13	18
Frequent	8	13	17
Reception	8	12	16
Any MDT test	44	56	67
<i>Base</i>	<i>2,267</i>	<i>1,892</i>	<i>2,267</i>

Prisoners in dispersal prisons were far more likely to report that they had been tested under the MDT programme than inmates of other types of establishment, 88 per cent reporting being selected for some sort of testing. This is not surprising as inmates of dispersal prisons tend to have spent longer in prison and so would have had more chance of being selected under the RMDT programme. This is illustrated by the fact that 82 per cent reported having been selected for an RMDT test. However, over a third also said they had been selected for testing on reception, much higher than in the other types of establishment (in which reception testing ranged from 2% to 11%). In dispersal prisons a higher proportion also reported being on a frequent testing programme than elsewhere – 19 per cent compared to between six per cent and nine per cent in other types of prison. (Table 4.3)

**Table 4.3 Proportion of prisoners reporting experience of MDT in their current prison by type of prison**

Type of MDT	Type of prison						All
	Local / Remand	Training	Women's	Open	Dispersal	YOIs	
	<i>Percentage reporting being selected</i>						
Random	33	35	30	33	82	41	36
Suspicion	6	11	10	7	14	13	9
Assessment	10	7	3	11	10	6	8
Frequent	7	9	7	6	19	7	8
Reception	11	2	7	7	37	3	8
Any MDT test	42	42	38	44	88	47	44
<i>Base</i>	<i>803</i>	<i>436</i>	<i>402</i>	<i>169</i>	<i>235</i>	<i>222</i>	<i>2,267</i>

Table 4.4 shows the extent of testing in the current prison related to prisoners' most recent reported drug use, whether in the current prison, a previous prison, before coming to prison or never. As would be expected, for most types of MDT there is little variation in the level of testing according to when drugs were last used. However, suspicion testing was reported more frequently by those who said they had used drugs in the current prison suggesting that users are being successfully targeted by prison staff to some extent.



**Table 4.4 Proportion of prisoners who reported experience of MDT in their current prison by place of most recent drug use**

	Most recent (any) drug use				All
	Current prison	Other prison	Never in prison	Never at all	
<b>Type of MDT</b>	<i>Percentage reporting being selected</i>				
Random	42	37	29	34	36
Suspicion	17	9	3	2	9
Assessment	9	11	8	7	8
Frequent	11	9	5	6	8
Reception	8	7	9	6	8
Any MDT	51	43	37	39	44
<i>Base</i>	<i>794</i>	<i>394</i>	<i>630</i>	<i>445</i>	<i>2,263</i>

### Key findings

- The random testing element is the dominant part of the MDT programme at present. The MDT database shows that the equivalent of seven per cent of the prison population is tested each month, while 36 per cent of prisoners said they had been selected for RMDT in their current prison. Other types of testing are much less common, testing on suspicion being slightly more common than other forms of testing.
- There is considerable variation in the amount of testing between prisons. Reception testing seems to occur largely in dispersal prisons.
- Drug users are more likely to report having an MDT test, mainly because they are more likely to be tested on suspicion.

### Refusals and cheating

Information on the rate of refusals to MDT and the level of spoiled tests are recorded on the MDT database. As well as considering this information, the interviewers also asked prisoners if they had ever refused a test and also if they had tried to cheat.

Table 4.5 shows that in the survey self-reported refusal rates were low. Only three per cent of those who had been selected for testing said they had refused an MDT in the current prison. This is in line with the data in the MDT database. In the quarter August-October 2001, the national refusal rate was two per cent and for the prisons in the sample it was three per cent. There was a higher rate of refusals associated with testing on suspicion and frequent testing than for other programmes.

**Table 4.5 Proportion of prisoners who reported refusing MDT in prison**

	Prisoners selected for MDT	All prisoners
	<i>Percentage refusing</i>	
Current prison only	2	2
Current and other prison	1	0
Other prison only	6	4
Never refused/not tested	91	94
<i>Base</i>	<i>1,500</i>	<i>2,267</i>

Table 4.6 looks at information on self-reported cheating on testing obtained in the survey, which again indicates overall low rates of attempted cheating on MDT within the current prison (3% of those tested). Some of this cheating is by attempting to adulterate the sample, so the rate of spoiled tests on the MDT database should, in part, reflect attempts to cheat. The national rate of spoiled tests obtained from the MDT database for the quarter included in this analysis was one per cent, as was the rate for the prisons in the study sample, which confirms the picture of a fairly low rate of cheating. The reported rate of cheating in previous prisons only (10%) seems quite high but may reflect a higher rate of cheating in the past when the MDT programme was initially introduced.

The ways in which people said they had attempted to cheat in their current prisons are shown in Table 4.7. The most common way was by drinking large amounts of water, mentioned by over half (53%) of those who had attempted to cheat. Almost a third (32%) said they had used someone else's urine, while 15 per cent said they had added substances to their urine and seven per cent had eaten things.

**Table 4.6 Proportion of prisoners who reported attempting to cheat on the MDT tests in prison**

	Prisoners selected for MDT	All prisoners
	%	%
Current prison only	2	2
Current and other prison	1	1
Other prison only	10	6
Never cheated/not tested	86	91
<i>Base</i>	<i>1,502</i>	<i>2,269</i>

**Table 4.7 Ways in which cheating was attempted in the current prison (among those who said they attempted to cheat)**

<b>Method of cheating</b>	<i>Percentage reporting each method</i>
Drinking lots of water	53
Using someone else's urine	32
Eating substances	7
Other substances in urine	15
Other	11
<i>Base</i>	<i>59</i>

### Key findings

- Both self-report of prisoners and the data from the MDT programme itself indicate that rates of refusals to MDT and of cheating are generally low.
- The most frequently mentioned ways of cheating were through drinking large amounts of water (mentioned by 53% of those who tried to cheat) and substituting another person's urine (32%).

### Positive tests resulting from MDT

The positivity rate on the random MDT programme obtained from the MDT database for the quarter used in this analysis was 5.6 per cent for cannabis, 4.5 per cent for opiates and 1.5 per cent for other drugs. Positivity rates for suspicion, reception and frequent testing were higher. For example, for testing on suspicion they were 14.2 per cent for cannabis, 18.9 per cent for opiates and 5.5 per cent for other drugs. (Table 4.8)

**Table 4.8 Positivity rates from the MDT database for tests under different parts of the MDT programme**

<b>MDT programme</b>	<b>Cannabis positivity</b>	<b>Opiate positivity</b>	<b>Other positivity</b>	<b>Base</b>
<i>Percentage testing positive</i>				
Assessment	5.7%	5.1%	2.1%	1,678
Frequent	6.7%	14.6%	1.8%	1,682
Reception	14.2%	10.8%	11.2%	555
Random	5.6%	4.5%	1.5%	13,200
Suspicion	14.2%	18.9%	5.5%	3,994
Voluntary	2.3%	4.5%	0%	44
All	7.5%	8.2%	2.6%	21,153

In the survey, the proportion of prisoners who said they had tested positive for drugs in an MDT test at some time is shown in Table 4.9. About a quarter of prisoners (24%) had tested positive for at least one drug – nine per cent in the current prison (a third of whom had tested positive in a previous prison as well) and 15 per cent in a previous prison only. A slightly

higher proportion had tested positive at some time for cannabis (18%) than opiates (12%) but if experience in the current prison only is considered there is no difference: five per cent reporting testing positive in both cases.

**Table 4.9 Proportion of prisoners who reported testing positive for cannabis, opiates or other drugs**

	Cannabis	Opiate	Other drug	Any
<b>Reported testing positive</b>	%	%	%	%
Current prison only	3	4	1	6
Current and other prison	2	1	0	3
Other prison only	13	7	3	15
No positive reported / not tested	82	88	95	76
<i>Base</i>	2,249	2,249	2,249	2,268

Table 4.10 shows the proportion of prisoners who had been selected for an MDT test who reported testing positive by type of prison, age group and type of prisoner. As can be seen, a relatively greater proportion of the remand or unsentenced prisoner group reported testing positive. This probably reflects the higher proportion of tests in this group that would have picked up some use outside the prison because of the comparatively shorter time they had spent in prison. It is also likely to reflect easier access to drugs, either through supplies they bring in on entering prison or through the greater number of visits they receive compared with sentenced prisoners.

The overall positivity rates for all types of drugs by type of prison show little variation by type of prison despite the variation in self-reported drug use described in Chapter 3. However the pattern of positivity for cannabis compared to opiates is consistent with the pattern described there. For example, self-reported opiate use in the past week in YOIs was very low and no-one in this type of establishment reported testing positive for opiates. Similarly, in women's prisons opiate use in the past week was more common than cannabis use and opiate positivity was also more common in these prisons than cannabis positivity (17% compared with 6%).

### Key findings

- About a quarter of prisoners (24%) said they had tested positive for at least one drug at some time. A slightly higher proportion had tested positive at some time for cannabis (18%) than opiates (12%), but if experience in the current prison only is considered there is no difference: five per cent reporting testing positive in both cases.
- The overall self-reported positivity rates for all drugs combined by type of prison show little variation by type of prison, but the pattern of positivity for cannabis compared to opiates is consistent with the pattern of self-reported drug use. For example, no-one in YOIs reported testing positive for opiates and similarly, in women's prisons, opiate positivity was more common in these prisons than cannabis positivity.

## Outcomes of MDT

The manual of policy and procedures for the MDT Programme in prisons stresses the dual role of the MDT programme in providing punishment to drug users to provide a deterrent to future use and in offering assistance to drug misusers who want help. Governors have a whole range of options for both supportive and control responses to positive MDT tests and discretion on which to use. To provide information on the extent to which these different options are used in prisons, respondents to the survey of prisoners who had tested positive on an MDT programme were asked what happened to them as a result of any positive tests. Interviewers then coded all the responses given. Separate questions were asked with respect to positive tests in the current prison and in other prisons.

**Table 4.10 Proportion of prisoners selected for MDT who reported testing positive for cannabis, opiates and other drugs in current prison by type of prison, age and type of prisoner**

	Type of prison						Age group				Type of prisoner		
	Local / Remand	Training	Women's	Open	Dispersal	YOIs	16-20	21-29	30-39	40+	Remand / unsentenced	Sentenced / civil	All
<b>Positive test for...</b>													
<b>Cannabis</b>	16	11	6	13	8	11	11	14	13	10	20	11	12
<i>Base</i>	327	173	156	70	202	102	101	408	300	221	112	918	1,030
<b>Any opiate</b>	13	10	17	6	12	-	4	12	16	4	22	9	11
<i>Base</i>	327	173	156	70	202	102	101	408	300	221	112	918	1,030
<b>Other drugs</b>	7	1	6	-	2	2	2	4	6	1	11	3	4
<i>Base</i>	327	173	156	70	202	102	101	408	300	221	112	918	1,030
<b>All drugs</b>	25	17	20	18	19	13	16	22	24	13	34	18	20
<i>Base</i>	328	173	156	73	204	102	101	408	303	224	112	924	1,036

The vast majority of outcomes mentioned were punitive. The most common penalty reported was additional days to the sentence, followed by loss of privileges, closed visits and a loss of earnings (Table 4.11). Cautions, different regimes, and loss of home leave were infrequently used by comparison. There was considerable difference in the proportion reporting receiving cellular confinement as a penalty in their current prison and in previous prisons. The use in other prisons was much higher than in the current prison, which might suggest there has been a move away from this type of punishment in recent times.

**Table 4.11 Outcomes of positive MDT tests described by prisoners who had reported testing positive in prison**

	<b>Current prison</b>	<b>Other prison</b>	<b>Any prison</b>
<b>Outcome</b>	<i>Percentage reporting each outcome</i>		
Additional days	57	72	67
Loss of privileges	30	42	40
Closed visits	28	34	34
Loss of earnings	25	36	35
Caution	10	8	9
Different regime	8	13	12
Restriction / stoppage of visits	4	8	7
Cell confinement	3	20	17
Loss of home leave	3	4	4
Re-categorisation	2	2	2
Transfer	2	6	5
Other	11	6	8
None	14	4	8
<i>Base</i>	<i>204</i>	<i>360</i>	<i>496</i>

The provision of support as an outcome of a positive MDT test appears to be very limited. Some sort of referral for treatment or support was mentioned by only eight of those who had tested positive. However, this might be an underestimate if prisoners only understood the question as referring to punishments because the MDT programme is generally regarded as punitive.

The general perception among prisoners of the possible sanctions and support outcomes that are used within the prison should largely reflect the pattern of actual use and also give an indication of whether the programme is regarded as largely punitive or if the support aspect is also widely used. The survey included two questions addressed to all prisoners in which they were given first a list of possible penalties and then a list of possible treatment and support actions and asked to say which were used in that prison for a positive MDT test.

Knowledge of the possible negative sanctions associated with MDT was high, with only 16 per cent of prisoners saying they did not know what sanctions were used for positive MDT tests in the current prison. In general, prisoners' perceptions of the types of sanctions being used paralleled those actually experienced by people who tested positive. (Table 4.12)

**Table 4.12 Prisoners' perceptions of the penalties used in the current prison for a positive test result**

<b>Penalty</b>	<i>Percentage mentioning each type of penalty</i>
Additional days	73
Loss of privileges	59
Closed visits	54
Loss of earnings	43
Loss of home leave	31
Restriction / stoppage of visits	24
Different regime	23
Cell confinement	19
Transfer	18
Re-categorisation	16
Caution	13
Other	2
None	0
Don't know	16
<i>Base</i>	<i>2,267</i>

It can be seen from Table 4.13 that knowledge of possible treatment and support outcomes was much lower than of the penalties that might arise from testing positive on MDT. Over a third (38%) of prisoners did not know which if any of these options were used in their current prison. The most frequently mentioned positive outcomes were drug awareness training (26%), drug rehabilitation programmes (23%) and counselling (20%).

**Table 4.13 Prisoners' perceptions of the treatment and support outcomes provided in the current prison for a positive test result**

<b>Support</b>	<i>Percentage mentioning each type of support</i>
Drug awareness training	26
Drug rehabilitation programme	23
Counselling	20
Information booklets	18
Detoxification programme	16
Formal assessment	13
Other	2
None of these	15
Don't know (spontaneous)	38
<i>Base</i>	<i>2,267</i>

### Key findings

- It appears from prisoners' reports of the outcome of testing positive and from general knowledge of the possible penalties and support outcomes that supportive outcomes to a positive MDT test are much rarer than punitive responses.
- The most common penalty reported was additional days to the sentence, followed by loss of privileges, closed visits and a loss of earnings.



## Attitudes to the MDT programme

Prisoner's attitudes to the MDT programme give an indication of the possible impact of the MDT programme on drug use in prisons, so a number of questions were included in the survey in an attempt to investigate these. These covered the following areas:

- the prisoners' assessment of the likelihood of being selected for a MDT test in their current prison;
- their assessment of their likelihood of testing positive in a MDT programme in the current prison given their current pattern of drug use, if they were selected;
- their level of concern about the penalties that are given for positive MDTs; and
- their assessment of the level of concern felt by drug users in the prison about the penalties given for positive tests.

These variables are likely to be interrelated and vary between individuals according to their drug use and current situation.

### Perceived likelihood of selection for MDT

There was little variation in the proportion of inmates who thought they were likely to be selected for an MDT test by age or whether they were on remand or sentenced, although those aged 40 and over were slightly less likely to expect to be selected. Inmates of dispersal prisons were more likely to say they were likely to be selected for an MDT test than those in other types of prison, which probably reflects the fact that a higher proportion of them have been selected for testing in the past and also the longer prison terms they tend to be serving. (Table 4.14)

Most testing is carried out under the random testing programme, and most other testing is done on the basis of suspicion of use or frequent testing because of past use. Hence, it might be expected that there would be either no difference in perceived likelihood of selection on the basis of drug use in prison or else drug users would think they were more likely to be tested. Table 4.15 shows that a larger proportion of those who have used drugs in prison, particularly in the current prison, consider themselves likely to be selected for an MDT test.

**Table 4.14 Proportion of prisoners reporting likelihood of being selected for MDT in current prison by type of prison, age and prisoner**

	Type of prison						Age group				Type of prisoner		All
	Local / Remand	Training	Women's	Open	Dispersal	YOIs	16-20	21-29	30-39	40+	Remand / unsentenced	Sentenced / civil	
Likely	31	35	24	32	53	39	37	35	34	27	31	34	34
Neither likely nor unlikely	37	34	39	35	27	38	38	34	35	40	38	35	36
Unlikely	32	31	38	34	21	23	25	31	31	33	31	31	31
<i>Base</i>	<i>803</i>	<i>436</i>	<i>402</i>	<i>169</i>	<i>235</i>	<i>222</i>	<i>244</i>	<i>948</i>	<i>659</i>	<i>416</i>	<i>307</i>	<i>1,960</i>	<i>2,267</i>

**Table 4.15 Likelihood of selection for MDT in future in current prison by drug use and whether reported ever testing positive**

	Recent (any) drug use					Ever tested positive before		
	Current prison	Other prison	Not in prison	Never	All	Yes	No	All
<b>Likelihood of being selected for MDT</b>	%	%	%	%	%	%	%	%
Likely	45	37	24	20	34	50	29	34
Neither likely nor unlikely	32	35	37	43	36	30	38	36
Unlikely	24	28	38	38	31	20	3	31
<i>Base</i>	<i>794</i>	<i>394</i>	<i>630</i>	<i>445</i>	<i>2,263</i>	<i>499</i>	<i>1,768</i>	<i>2,267</i>

Past experience of testing positive on MDT might also be expected to have some effect on people's attitudes to the MDT programme and their perception of their likelihood of selection and testing positive. Table 4.16 shows that a higher proportion of people who said they had tested positive in the current prison thought they were likely to be selected for MDT – 62 per cent compared with 39 per cent of those who have not tested positive in the current prison. This difference might reflect the fact that they are on a frequent test programme or may be more likely to be tested on suspicion, as a result of their previous positive MDT.

**Table 4.16 Perception of likelihood of selection for MDT in current prison by whether had a positive test result**

	Positive test result in current prison		All
	Yes	No	
	%	%	%
Likely	62	39	43
Neither likely nor unlikely	19	34	31
Unlikely	20	27	26
Base	206	830	1,036

### Perceived likelihood of testing positive on MDT if selected

Prisoners' perception of their likelihood of testing positive on MDT if they were to be selected will clearly be affected by whether or not they are using or intend to use drugs in the future.

Table 4.17 shows that prisoners' assessments of their likelihood of testing positive for different types of drugs in different establishment types followed the pattern of use of these drugs fairly well. For example, in YOIs where there is very little opiate use a markedly higher proportion of inmates said they were likely to test positive for cannabis (8%) than for heroin (1%). In contrast, in the training prisons, where there were very similar levels of cannabis and opiate use in the past month and opiate use exceeded cannabis use in the week before interview, 11 per cent of inmates thought they were likely to test positive for heroin and ten per cent for cannabis.

However, Table 4.18, which shows the perception of the likelihood of testing positive related to reported drug use in prison, indicates that just over half of the people who reported using drugs in the current prison nevertheless thought it unlikely that they would test positive for drugs in the future. Only a third considered themselves likely to do so. This might indicate that some drug users only use drugs very occasionally, so consider it unlikely that they would be caught, or they think they know how to "work the system" and only use when they think they will be safe. Alternatively, it may be that they believe the amount or quality of drugs that they are using is too low to be detected.

**Table 4.17 Perceptions of likelihood of testing positive on MDT in current prison in the future by type of prison, age and prisoner**

	Type of prison						Age group				Type of prisoner		All
	Local / Remand	Training	Women's	Open	Dispersal	YOIs	16-20	21-29	30-39	40+	Remand / unsentenced	Sentenced / civil	
<b>Cannabis</b>													
Likely	12	10	6	3	4	8	8	13	9	6	14	9	10
Neither likely nor unlikely	7	6	1	3	3	8	7	7	6	3	10	6	6
Unlikely	81	84	92	93	93	84	84	80	85	91	77	85	84
<b>Heroin</b>													
Likely	6	11	4	1	5	1	1	8	8	5	8	6	6
Neither likely nor unlikely	3	6	3	1	3	-	0	5	3	3	3	3	3
Unlikely	92	84	93	98	91	99	99	88	89	91	89	90	90
<b>Other drugs</b>													
Likely	3	1	3	-	2	2	2	3	2	0	4	2	2
Neither likely nor unlikely	3	1	2	1	2	2	2	2	2	2	4	2	2
Unlikely	94	98	96	99	96	96	97	95	96	98	92	97	96
<b>Any drug</b>													
Likely	15	18	8	3	9	8	9	18	14	9	18	13	14
Neither likely nor unlikely	7	7	5	3	4	9	8	9	6	4	9	7	7
Unlikely	78	75	88	93	87	83	83	74	80	87	73	80	79
<i>Base</i>	<i>803</i>	<i>436</i>	<i>402</i>	<i>169</i>	<i>235</i>	<i>222</i>	<i>244</i>	<i>948</i>	<i>659</i>	<i>416</i>	<i>307</i>	<i>1,960</i>	<i>2,267</i>

**Table 4.18 Perceptions of the likelihood of testing positive on MDT in current prison in the future by most recent drug use**

	Most recent cannabis use in prison				Most recent cannabis use before prison				All
	Current prison	Other prison	Not in prison	Never	Month before	Year before	Over 1 year	Never	
	%	%	%	%	%	%	%	%	%
<b>Cannabis</b>									
Likely	27	3	1	-	17	4	4	-	10
Neither likely nor unlikely	15	3	2	1	10	6	3	1	6
Unlikely	58	94	96	99	73	90	93	99	84
Base	648	445	638	533	1,058	143	531	533	2,265
	Most recent opiate use in prison				Most recent opiate use before prison				All
	Current prison	Other prison	Not in prison	Never	Month before	Year before	Over 1 year	Never	
	%	%	%	%	%	%	%	%	%
<b>Heroin</b>									
Likely	27	2	2	0	16	8	12	0	6
Neither likely nor unlikely	12	3	1	0	9	-	5	0	3
Unlikely	60	94	97	99	75	92	83	99	90
Base	437	236	286	1,306	641	72	248	1,306	2,267
	Most recent drug use in prison				Most recent drug use before prison				All
	Current prison	Other prison	Not in prison	Never	Month before	Year before	Over 1 year	Never	
	%	%	%	%	%	%	%	%	%
<b>Any drug</b>									
Likely	34	2	2	0	21	4	1	0	14
Neither likely nor unlikely	14	5	2	1	10	4	2	1	7
Unlikely	52	94	96	99	69	92	97	99	79
Base	794	394	630	445	1,402	111	306	445	1,664

Having tested positive in the past had a marked impact on the proportions saying they thought they were likely to test positive on MDT in the future: 30% of those who had already tested positive in their current prison thought they were likely to test positive in the future compared with only 9% of those who had not tested positive. (Table 4.19)

**Table 4.19 Likelihood of testing positive in current prison in future by whether had a positive test result (people who had been selected for MDT only)**

	Had positive MDT test in current prison		
	Yes	No	All
	%	%	%
Likely	30	9	13
Neither likely nor unlikely	10	7	7
Unlikely	60	84	79
<i>Unweighted Count</i>	206	830	1,036

### Level of concern about the penalties for testing positive

People who said that they knew what penalties were imposed for positive tests in the current prison were asked how concerned they were or would be about receiving those penalties. Overall half the prisoners who said they were aware of the penalties for testing positive on MDT (56%) said they were very concerned about these penalties and a further 19 per cent were fairly concerned. Nevertheless a quarter of the prisoners said they were not concerned by them at all and in dispersal prisons this proportion rose to over a third (39%). Remand prisoners were also less concerned about the penalties than sentenced prisoners. (Table 4.20)

All prisoners were asked how concerned they thought most drug users in their prison felt about the penalties for giving a positive MDT. Overall, 42 per cent of respondents felt most drug users were not concerned about the penalties at all and 36% thought they were fairly concerned but only 15% thought they were very concerned. Prisoners in open prisons were more likely than inmates in other types of prison to say they thought drug users in their prison were concerned about the penalties. (Table 4.21)

People who had tested positive in the current prison and had usually suffered some penalty as a result were no more likely than those who had not done so to say they were concerned about the penalties for testing positive. (Table 4.22)

**Table 4.20 Level of concern about penalties given for positive test results in current prison among prisoners by type of prison, age and prisoner (prisoners who said they knew of the penalties for being positive on MDT only)**

	Type of prison						Age group				Type of prisoner		All
	Local / Remand	Training	Women's	Open	Dispersal	YOIs	16-20	21-29	30-39	40+	Remand / unsentenced	Sentenced / civil	
	%	%	%	%	%	%	%	%	%	%	%	%	%
Very concerned	50	60	60	68	47	58	56	53	61	57	44	58	56
Fairly concerned	21	17	15	11	14	20	22	21	17	13	25	18	19
Not concerned at all	28	22	25	21	39	22	22	26	23	30	31	24	25
<i>Unweighted Count</i>	634	381	320	145	187	206	226	826	541	280	231	1,642	1,873

**Table 4.21 Perception of the level of concern among most drug users about penalties given for testing positive in current prison by type of prison, age and prisoner**

	Type of prison						Age group				Type of prisoner		All
	Local / Remand	Training	Women's	Open	Dispersal	YOIs	16-20	21-29	30-39	40+	Remand / unsentenced	Sentenced / civil	
Very concerned	13	12	20	30	16	22	22	11	18	15	12	16	15
Fairly concerned	34	38	28	35	28	42	40	36	36	32	31	37	36
Not concerned at all	46	42	43	31	51	32	34	47	41	40	48	41	42
Don't know	7	8	9	5	5	4	3	5	6	13	10	6	7
<i>Base</i>	803	436	402	169	235	222	244	948	659	416	307	1,960	2,267

**Table 4.22 Concern about the penalties used in current prison by whether had a positive test result**

	Positive test result in current prison		
	Yes	No	All
	%	%	%
Very concerned	47	52	51
Fairly concerned	20	15	16
Not concerned at all	28	21	23
Don't know what penalties are	4	12	11
<i>Base</i>	<i>205</i>	<i>821</i>	<i>1,026</i>

Table 4.11 showed that 57 per cent of those who reported testing positive on MDT in the current prison were given additional days to their sentence. However, following the recent ruling by the European Court of Human Rights (15/7/02) prison governors are no longer allowed to extend prisoners' sentences and the deterrent value of penalties used in the current prison may diminish as a result.

In order to look at the way in which experience of added days related to attitudes towards the MDT programme, in particular whether receiving added days had any deterrent effect, respondents were divided into four groups according to whether they had received added days in the current prison. The groups were as follows: those who had received added days, those who had received other punishments only (not added days), those who received no punishment and those who were not tested or did not test positive.

Those who received added days as a result of testing positive on MDT in the current prison were more likely to say they were very concerned about the penalties than those who received other penalties. This suggests that the imposition of added days to the sentence might have a greater deterrent value than other penalties for some people. (Table 4.23)

**Table 4.23 Level of concern about penalties given for positive test results in current prison by whether prisoners had received added days for a positive MDT test**

	Punishments received				All
	Added days	Others (not added days)	None	Not tested/not tested positive	
	<i>Percentage reporting</i>				
Very concerned	54	35	46	47	47
Fairly concerned	19	19	29	15	16
Not concerned at all	27	36	15	20	21
Don't know what penalties are	-	10	10	17	16
<i>Base</i>	<i>108</i>	<i>68</i>	<i>27</i>	<i>2,038</i>	<i>2,241</i>

### Key findings

- Perceived likelihood of selection for MDT is quite strongly related to drug use in prison. Those who have used drugs in prison, particularly in the current prison, and also people who said they had tested positive in the current prison were more likely to consider themselves likely to be selected for MDT.



- Although, as might be expected, a far higher proportion of drug users thought they were likely to test positive at some time in the future than those who had not used drugs in prison, nevertheless over half of the people who reported using drugs in the current prison thought it unlikely that they would test positive for drugs in the future.
- Over half the prisoners who said they were aware of the penalties for testing positive on MDT (56%) said they were very concerned about these penalties and a further 19 per cent were fairly concerned. Nevertheless a quarter of the prisoners said they were not concerned by them at all. People who had tested positive in the current prison were no more likely than those who had not done so to say they were concerned about the penalties.
- Inmates who tested positive on MDT in the current prison and had received added days as a result were more likely to say they were very concerned about the penalties than those who received other penalties. This suggests that added days might have a slightly greater deterrent effect than other penalties for some people.
- Overall, 42 per cent of respondents felt most drug users were not concerned about the penalties at all and 36 per cent thought they were fairly concerned but only 15 per cent thought they were very concerned.

## 5. Random MDT positivity rates as a measure of drug misuse

One of the stated aims of the MDT programme is "...to provide more accurate and objective information on the scale, trends and patterns of drug misuse" and target random MDT positive rates to provide one of the Key Performance Indicators for the Prison Service. However, from the time of the programme's inception in 1996, doubt has been cast on the extent to which the RMDT figures can and do reflect the level of drug use in prison.

This chapter addresses the findings relating to the research questions that are associated with the use of MDT as a measure of drug use in prisons, using information from all parts of the research project. These questions are

1. To what extent do RMDT data provide an accurate and statistically significant indication of the pattern of drug misuse in prison?
2. Is it possible to extrapolate from RMDT sample results to obtain a measure of drug use?
3. What levels of testing would be needed to give significant results for individual establishments, prison service regions and nationally?

To answer the first of these questions the analysis first examined the association between data on self-reported drug use in the current prison term from the 1997 ONS survey of psychiatric morbidity among prisoners aggregated to the prison level and the RMDT positivity rates for the prisons in that year. The advantage of this data set was that it covered all prisons in England and Wales but there were also a number of limitations, which are described in more detail below. The next stage involved the extension of this work using the data from the current survey based on a sample of prisons only but with more detailed data on drug use within the prisons. This allowed the consideration of other factors that might explain some of the variation between RMDT rates and drug use.

The question of whether it is possible to extrapolate from RMDT rates to drug use is investigated by considering from a theoretical standpoint how well MDT rates might be expected to predict use of different drugs. Finally, the question about the levels of testing needed to give significant results at establishment, regional and national levels is considered through illustrations based on the rates of positivity observed in the prisons included in this project.

Throughout this chapter the main focus is on cannabis and opiate use as these are the main drugs used in prisons in England and Wales as shown by both self-reports of use and RMDT results. In contrast to the other chapters in this report, in this chapter the unit of analysis is generally prisons or prison clusters, rather than individual prisoners.

### Extent to which RMDT data provide an accurate measure of drug use

Random MDT is the part of the MDT programme that is used as a proxy measure for the drug use rate in prisons. However, previous studies (Edgar and O'Donnell, 1998; dbi consulting, 2000) have suggested that MDT rates underestimate drug use for a variety of reasons, for example because the detection threshold is set quite high to minimise false positive tests or because refusals are not included even though they might be expected to occur when a prisoner knows they will test positive.

There is also enormous variation in RMDT positivity rates between prisons (from 0.0% to 31.6% in 2001/02; HM Prison Service, 2002) and questions have been asked about the

extent to which this reflects true differences in drug use rather than differences in the way in which the RMDT programme is implemented. The qualitative interviews revealed differing views about the use of RMDT rates as a performance indicator. One view was that it was useful as a benchmark. As one governor said:

*“I understand now what I have to achieve ... and what the establishment has to achieve...”*

However there was general agreement that it should be only one of many indicators by which they were judged, and some governors suggested that the attention given to positivity rates could lead to an excessive focus on these, rather than on the real goal of decreasing drug use. This reflected another quite widely held belief that factors outside the control of the prison (e.g. the level of use outside the prison) could influence RMDT rates. Also that it was possible for RMDT rates to be manipulated or “massaged” by prisons, (e.g. by not adhering to the sample if known users were included). However, it should be noted that no evidence that this occurred in practice was provided. It was also suggested that prisoners knew how to “beat the system” either through straightforward cheating or because they knew when tests were likely to occur and adjusted their pattern of use accordingly. These issues are considered, to the extent to which the data allow, in the analysis that follows.

### Association between RMDT positivity rates in prisons and self-reported use in the 1997 survey

Part of this research project was an examination of the association between self-reported drug use in the current prison term obtained in the 1997 survey of psychiatric morbidity among prisoners, aggregated to the prison level, and RMDT positivity rates for the prisons they were in when interviewed. This survey covered all 131 prisons in England and Wales open at the time. There are several problems in comparing these two items of data, which mean that one would not expect particularly close agreement between them. Firstly, the time periods covered are very different – self-reported use in the current prison term could encompass time periods varying from one day to several years whereas an MDT test covers about a week (depending on the type of drug tested for) for each individual. Secondly, use in the current prison term can cover use in prisons other than the one in which they were interviewed. The self-reported use took no account of the quantity or quality of drugs consumed and also 1997 was the first year in which the MDT programme was carried out throughout the prison estate and implementation may have been uneven. All these issues need to be borne in mind when considering the results presented here.

**Table 5.1 Comparison of individual establishments’ level of self-reported drug use from the 1997 survey of psychiatric morbidity among prisoners and 1997 RMDT positivity rates**

	Cannabis		Opiates	
	PMP Survey <sup>1</sup>	MDT <sup>2</sup>	PMP Survey <sup>1</sup>	MDT <sup>2</sup>
	<i>Percentage using /testing positive</i>			
Lower quartile	28	10	0	1
Median	42	17	14	4
Upper quartile	56	25	25	6
<i>Base</i>	<i>131</i>	<i>131</i>	<i>131</i>	<i>131</i>

<sup>1</sup> Self-reported use during current sentence

<sup>2</sup> Drug testing by urinalysis

Comparison of the data on drug use in prisons in the current prison term obtained from the 1997 survey of psychiatric morbidity amongst prisoners showed that the percentage of prisoners reporting drug use in the current prison term was generally higher than RMDT rates. While in the PMP survey the median rate of self-reported cannabis use was 42 per cent of

inmates, the median RMDT cannabis positivity rate was 17 per cent. The equivalent rates for opiate use were 14 per cent and four per cent. This difference is not unexpected, given the different time periods covered by the assessments as discussed above. However, it should also be noted that the difference generally appears to be proportionally greater for opiates than for cannabis. For example, the median for cannabis use in the survey is approximately 2.5 times the RMDT positivity rate and the upper quartile about two times greater, whereas for opiates the median survey rate is 3.5 times the RMDT positivity and the upper quartile four times greater. (Table 5.1)

There was a reasonable correlation between rates of self-reported drug use in prisons and their RMDT rates. This is illustrated in Table 5.2, which shows the extent to which prisons appear in the same quartile for drug use and RMDT positivity rates. Of those prisons in the lowest quartile for cannabis positivity on RMDT, 58 per cent were also in the lowest quartile for cannabis use prevalence from the PMP survey, while 44 per cent of those in the highest quartile for RMDT positivity were also in the highest quartile for cannabis use prevalence. For the middle two quartiles the association was not quite as good. The pattern for opiate positivity and self-reported opiate use was very similar. (Table 5.2)

**Table 5.2 The relationship between the level of self-reported drug use in prisons and the RMDT positivity rates – cannabis and opiates.**

% using in the current prison term (PMP survey)	MDT positivity rate				Total
	1st quartile (lowest)	2nd quartile	3rd quartile	4th quartile (highest)	
	%	%	%	%	%
<b>Cannabis</b>					
1st quartile (lowest)	58	24	18	0	25
2nd quartile	30	27	21	22	25
3rd quartile	3	21	42	34	25
4th quartile (highest)	9	27	18	44	24
<b>Opiates</b>					
1st quartile (lowest)	55	30	12	9	27
2nd quartile	21	30	36	12	25
3rd quartile	18	21	21	34	24
4th quartile (highest)	6	18	30	44	24
<i>Base (=100%)</i>	33	33	33	32	131

Table 5.3 shows the strength of the correlation between the prevalence rates for self-reported drug use and the RMDT positivity rates for individual establishments, firstly based on the percentages and secondly on quartiles. Pearson's *r* is the correlation coefficient, which shows the strength and direction of the association between the variables. It can range from -1 to +1. As the correlations shown here are positive this means that as drug use rates rise so do the RMDT positivity rates in prisons. All the correlation coefficients are statistically significant ( $p < 0.001$ ). However, it can be seen that although there is a significant correlation in each case, it is not strong, even for collapsed versions of the variables. The proportion of the variation in one variable that is explained by variation in the other is shown by  $R^2$  and for quartiles, for example, the survey prevalence estimates explain less than one quarter of the variation in the MDT test results for cannabis. (Table 5.3)

**Table 5.3 Correlation between rates of self-reported drug use from the 1997 survey and positivity rates on RMDT for cannabis and opiates for (a) percentage rates and (b) quartiles**

	Pearson's r	R <sup>2</sup>
<b>Cannabis</b>		
Percentages	0.41	0.17
Quartiles	0.48	0.23
<b>Opiates</b>		
Percentages	0.45	0.20
Quartiles	0.45	0.20

#### Key finding

- While there was reasonable correlation between the self-report data on drug use in prisons from the 1997 survey of prisoners and the RMDT positivity rates for each establishment, the survey prevalence estimates explain less than one quarter of the variation in the MDT test results for cannabis and opiates.

#### Prison level factors associated with RMDT rates in the 1997 data set

Further analysis was carried out to investigate whether variation in MDT rates was chiefly associated with differences in drug use rates or whether other prison level factors were also important. The variables used in this analysis came from two sources:

(a) Administrative data obtained from the prison service

The following data on Mandatory Drug Testing were obtained for each prison:

- the number of random tests carried out in 1997;
- the number of specimens found positive for cannabis;
- the number of specimens found positive for opiates;
- the number of specimens found positive for other drugs.

In addition, the following were available:

- prison population;
- assaults on inmates (rate per 100 inmates in 1997);
- assaults on officers (rate per 100 inmates in 1997).

(b) Data from the survey of psychiatric morbidity among prisoners

The survey interviewed a systematically selected sample of prisoners in each of the 131 prisons in England and Wales. The total sample size was over 3,100 and the number of prisoners interviewed in each prison ranged from two to 125. The main survey datafiles contained information for individual prisoners, and this was aggregated where necessary to provide the following prison-level variables:

- category of prison
- whether men's or women's prison
- number of prisoners
- average age
- average length of sentence
- % on remand/unsentenced
- % who said they had used any drugs during current prison term
- % who said they had used cannabis during current prison term
- % who said they had used opiates during current prison term
- % who said they had used other drugs during current prison term

Clearly, data for some prisons are based on very few cases indeed, and in consequence sampling errors are large and the estimates unreliable. The implications of the variations between the data sources for the analysis were discussed above. The results of the analyses here must therefore be interpreted with caution.

### Cannabis

Simple cross-tabulations (for details see Appendix B) showed that prisons were more likely to be in the highest quartile for cannabis positivity on RMDT if:

- they were in the highest quartile for self-reported cannabis use in the 1997 survey
- they were a local prison or remand centre or a Category B or C training prison
- the average age of prisoners was between 25 and 34.

There was no clear association with the RMDT testing rate, the proportion of prisoners on remand, the sex of prisoners, average sentence length, size of prison, nor with the level of assaults on inmates or officers.

These additional variables are in some cases likely to be related to each other (type of prison is related to length of sentence, for example). Logistic regression was carried out to look at the relative importance of each of these characteristics in predicting the level of RMDT positivity, to see, for example, if self-reported cannabis use is the best predictor, and the extent to which this association remains once other variables are taken into account.

**Table 5.4 Results of fitted logistic regression model for RMDT cannabis positivity in the 1997 data set**

	Sample size	Adjusted odds ratio	95% confidence interval
General effect		0.2	0.1 - 0.5
<b>Self-reported cannabis use</b>			
Quartiles 1-3	99	1.0	
Quartile 4 (high)	32	3.0	1.2 - 7.4
<i>Type of prison (not significant)</i>			
Dispersal/Open/YOI	41	0.2	0.2 - 2.4
Local/Training prison	90	1.0	
<i>Average age of prisoners (not significant)</i>			
<25 or 35+	44	0.7	0.1 - 1.1

Logistic regression essentially works with a matrix of all the variables together, and works best if the number of empty cells is kept to a minimum. Therefore the information in the cross-tabulations was used to reduce each of the independent variables to a dichotomy, maintaining as much difference between the two categories as possible in relation to self-reported cannabis use. The variables used were described in general terms above: they are shown in more detail in Appendix B together with more details of the modelling process.

Table 5.4 shows the fitted model for a prison being in the top quartile for RMDT cannabis positivity and the contribution to the outcome variable made by each explanatory variable. Thus, for example, other things being equal, the relative odds of being in the top quartile for RMDT cannabis positivity were three times greater for a prison in the top quartile of self-reported cannabis use than they were for a prison not in that top quartile. The level of self-reported cannabis use was the only variable in the model significantly related to RMDT positivity rates for cannabis. Although, when considered alone, the age of the prisoner and the type of prison were associated with RMDT positivity rates, once self-reported use was taken into account the association was no longer statistically significant.

### Opiates

The whole procedure was repeated for opiate positivity rates. Simple cross-tabulations showed that prisons were more likely to be in the highest quartile for opiate RMDT positivity if:

- they were in the highest quartile for self-reported opiate use
- they were local prisons or Category B/C training prisons
- the average age of prisoners was between 25 and 34.

Logistic regression was carried out in the same way as described earlier in relation to cannabis use, with the same set of variables (details are given in Appendix B). Table 5.5 shows the fitted model and the contribution to the outcome variable made by each explanatory variable.

Only type of prison was found to have a significant association with opiate positivity rates when variation in all other characteristics was controlled for, with the relative odds of being in the top quartile for self-reported opiate use were six times for a local or training prison what they were for other prisons. This is on the face of it an unexpected finding – self-reported use might have been expected to be independently associated with positivity, as was the case for cannabis. The absence of such an association may simply reflect the small number of prisons being analysed (n=131), and the much smaller range of rates for opiate use than for cannabis, which means that prisons are less clearly differentiated in relation to opiate use than in relation to cannabis use. There may also be greater intercorrelation between age, prison type and opiate use than occurs with cannabis.

**Table 5.5 Results of fitted logistic regression model for RMDT opiate positivity in the 1997 data set**

	Sample size	Adjusted odds ratio	95% confidence interval
General effect		0.2	0.1 - 0.4
<b>Type of prison</b>			
Dispersal/Open/YOI	41	1.0	
Local/Training prison	90	5.8	1.1 - 31.4
<i>Self-reported opiate use (not significant)</i>			
Other quartiles	99	1.0	
Highest quartile	32	2.4	0.9 - 5.8
<i>Average age of prisoners (not significant)</i>			
<25 or 35 and over	44	1.0	
25-34	87	1.6	0.4 - 6.2

### Key findings

- In the 1997 data set, the only factor found to be significantly associated with the RMDT cannabis positivity rate in a logistic regression analysis was the level of self-reported cannabis use.
- However, while the level of self-reported opiate use was associated with RMDT opiate positivity rates in a simple bivariate logistic regression, once other factors were taken into account in the model the association was no longer significant and only type of prison was significantly associated.

### Association between RMDT positivity rates and self-reported use in the 2001 survey

Despite the discrepancies between the two data sources used in the analyses just described, it appears that variations in level of drug use in prisons are an important source of variation in RMDT positivity rates, particularly in the case of cannabis. This was explored further using the data obtained from the sample of prisons included in the 2001 survey conducted for this research project. The 2001 survey involved fewer prisons than the 1997 survey, but the survey data and RMDT data are more closely matched temporally. Furthermore, the 2001 survey collected information about use in the past week and month, periods which more closely match the detection windows of the tests used in the MDT programme.

Data were obtained from 31 prisons, which in the original sample design were grouped into 11 clusters. As with the 1997 survey data, aggregate data at the prison and prison cluster level were used. RMDT data relating to these prisons for the three months of August to October 2001 were extracted: this was the latest quarter for which it was likely that data would be complete when the survey analysis started. This time period does not exactly match the survey field period and, furthermore, interviewing dates varied from prison to prison. Broadly though, since interviews were carried out from September 2001 to January 2002, with the bulk of them in October and November, there is sufficiently close agreement for the purpose of making comparisons between the two data sources.

Another area of discrepancy between the data sources is in the time period covered by the assessments. The RMDT results on urine testing can be broadly considered to cover about ten days prior to testing for cannabis positivity and two to three days for heroin positivity. The



survey collected information from prisoners on their drug use on each day of the week before interview and on any use in the past month.

Data for the RMDT results were derived directly from the Prison Service database and transferred into a STATA data file for analysis. The separate drug positivity results in the database were combined for each individual into three codes: any opiates (excluding methadone); cannabis; and any other drugs.

For each establishment, the proportion of valid tests yielding a positive result for cannabis was calculated, using the usual Prison Service RMDT definition of positive, that is excluding positive screening tests for which confirmation tests were negative. Similarly, the proportion of valid tests positive for any opiate, and unmitigated for medical or other reasons, was calculated for each establishment.

From the 2001 prison survey self-report data, mean levels of drug use were calculated on a prison-by-prison basis for opiate use and cannabis use over the past week and the past month. Proportions using per prison were calculated using the weighting system within the survey that was designed to produce, for each prison, a representative sample of inmates.<sup>7</sup>

Table 5.6 shows the simple correlations between the RMDT results and the self-reports, all of which are statistically significant at the 99 per cent level. The strength of the correlation found is greater than in the analysis using 1997 survey data reported above, which probably reflects the better match of the time periods covered by the assessments. However, self-reported cannabis use is more highly correlated with RMDT positivity rates than is the case for opiates. In both cases the correlation for use in the past week is slightly greater than for use in the past month.

It should be noted that these correlations are subject to what is sometimes referred to as the 'ecological fallacy' - results on individuals are averaged over the sampling units (prison establishments) and these averages are then assessed for correlation on a per prison basis. The procedure usually inflates the correlation that would have been calculated on a per individual basis, had the variables been measured on the same individuals.

**Table 5.6 Correlation between RMDT positivity rates and self-reported use at the prison level (n=31) in the past week and past month in the 2001 data set**

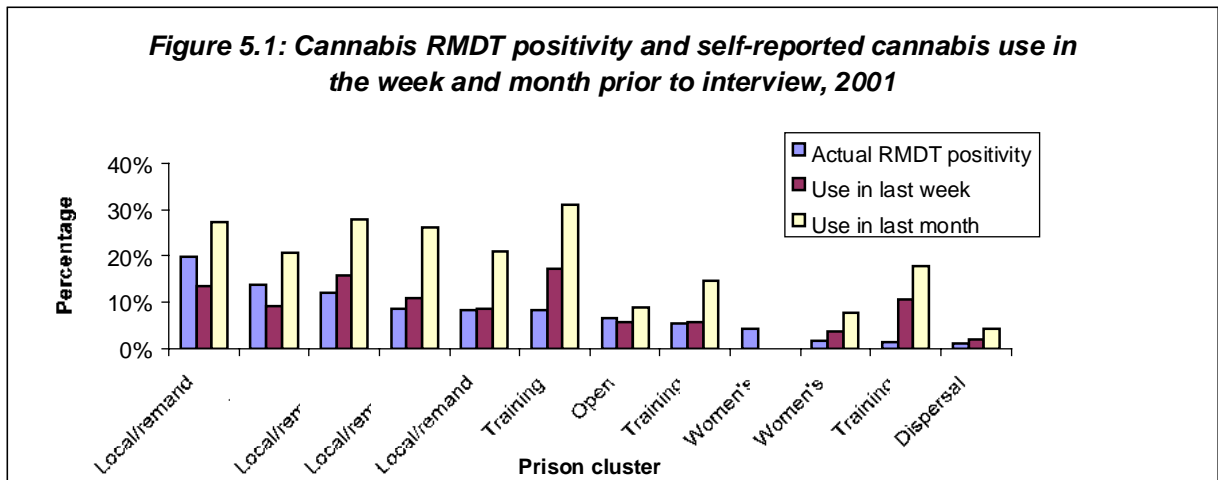
RMDT positivity	Use in past week	Use in past month
Opiates	0.52	0.49
Cannabis	0.78	0.73

The correlation between two rates provides information on the extent to which they vary in a similar manner but does not give any information about differences in absolute levels. The

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<sup>7</sup> Although in the sampling for the survey, the male and female sections of HMP Highpoint were treated as separate establishments and were selected as part of different prison type clusters, it was not possible to separately identify them on the MDT database as gender is not recorded. As a result, for the purposes of this analysis, Highpoint was treated as an additional cluster in the Category B/C training prisons group.

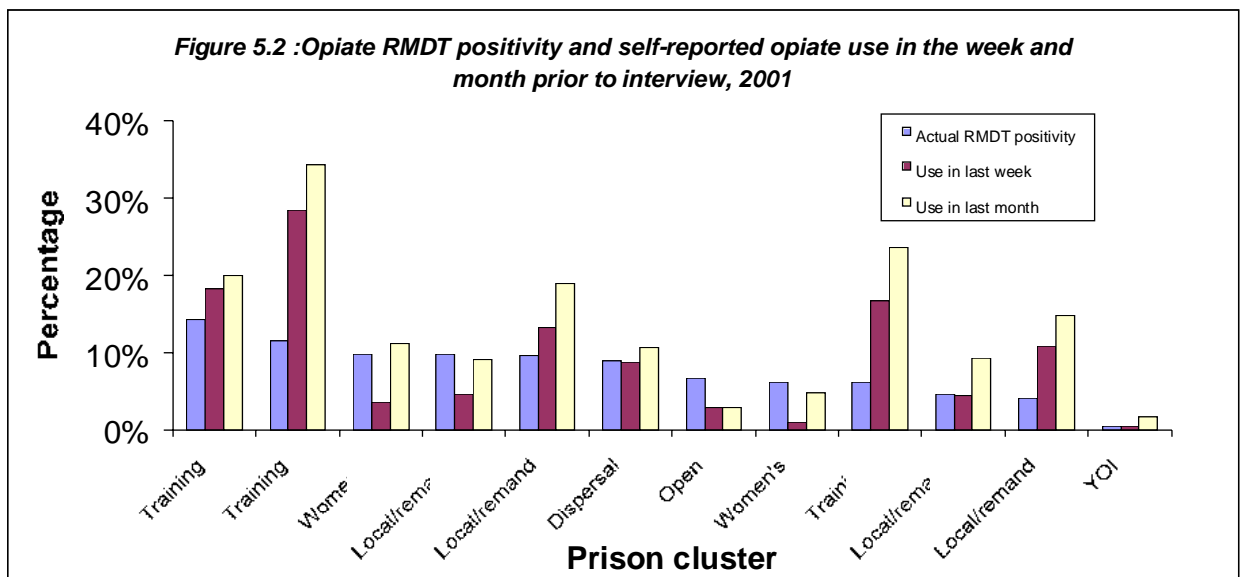
**Figure 5.1: Cannabis RMDT positivity and self-reported cannabis use in the week and month prior to interview, 2001**



difference in the levels of self-reported drug use and RMDT positivity rates are illustrated in

Figures 5.1 and 5.2. These show the correspondence between the different measures of self-reported drug use and RMDT positivity rates by prison cluster, ordered from left to right on the basis of decreasing RMDT positivity. It can be seen that, while self-reported drug use in the past month was generally higher than RMDT positivity rates, particularly in the case of cannabis, this was not the case for use in the past week. In five out of 12 clusters self-reported opiate use in the past week was lower than opiate positivity and cannabis use in the past week was lower than cannabis positivity in four clusters.

**Figure 5.2 :Opiate RMDT positivity and self-reported opiate use in the week and month prior to interview, 2001**



Detailed regression analyses were carried out to use information on levels of drug use available from the survey interviews to explain (or predict) the variation in RMDT positivity levels on a prison-to-prison basis. Thus, although for each prison establishment the study procedures provided a single RMDT cannabis positivity level, the survey interview supplied self-reports of use of cannabis over the last week and the last month. In view of the difficulties inherent in matching time windows with respect to drug use, the aim was to seek a 'best predictor' of drug positivity

levels on the RMDT from these two measures of drug use in the survey. The variables used in the modelling were, therefore, self-reported drug use in the past week and past month. In addition sex was included in the analysis as most prisons are either male or female.<sup>8</sup>

### Cannabis

An explanatory model was constructed for RMDT cannabis positivity. The variables included in the modelling procedure were rates of self-reported cannabis use in the past week and in the past month and the sex of prisoners held in the prison. Self-reported use in the past week was more strongly associated with RMDT positivity rates than use in the past month. Overall correspondence of RMDT cannabis use with survey self-report was good. No significant interaction terms contributed to the regression and the only significant relationship was with self-reported cannabis in the last week and the model explained 59 per cent of the variance in RMDT rates ( $R^2 = 0.62$ , adjusted  $R^2 = 0.59$ ). The coefficients for the model are shown in Table 5.7.

**Table 5.7 Results of the regression model for estimating RMDT cannabis positivity in the 2001 data set**

	Coefficient	95% confidence interval
Rate of cannabis use in the past week	1.04 ***	0.70 - 1.38
Sex	-0.02	-0.07 - 0.03
Constant	0.02	-0.02 - 0.06

\*\*\* =  $p < 0.001$

Table 5.8 shows the actual MDT positivity rates for each cluster, the rates of self-reported cannabis use in the past week and in the past month and the estimated MDT cannabis positivity rates obtained from the model based on self-reported use in the past week. The correspondence between actual RMDT and self-reported use in the last week is remarkably strong, given the difficulties of matching time windows for its use.

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<sup>8</sup> As previously mentioned, Highpoint Prison was the sole exception to being able to associate a single gender with the positivity levels and in the regression analyses was instead represented as both genders, 89% male and 11% female. Simple least squares regression analyses were conducted on the 30 prison establishments

Although the prisons differed in size, creating a likely degree of heteroscedasticity (differentials in variation/reliability) in the data, the analysis was made on a per prison basis without weighting for prison size. This is desirable because these regression results are not dominated by the matching obtained in the larger prisons, but account for matching across all types and sizes of prison equally.

**Table 5.8 Estimated and observed RMDT cannabis positivity rates and rates of self-reported cannabis use by cluster, 2001 data set**

Cluster	Actual RMDT	Estimated RMDT	Self-reported cannabis use	
			In last week	in last month
Local/remand	8.4%	8.7%	8.5%	21.0%
Local/remand	19.7%	14.0%	13.6%	27.4%
Local/remand	8.5%	11.2%	10.9%	26.2%
Local/remand	11.9%	16.4%	15.9%	27.9%
Training	1.4%	10.8%	10.5%	31.1%
Training	8.3%	17.9%	17.1%	1.5%
Training	5.3%	5.6%	5.5%	14.5%
Women	4.3%	2.2%	0.0%	0.0%
Women	1.6%	6.1%	3.7%	7.7%
Open	6.5%	5.9%	5.8%	8.8%
Dispersal	1.0%	1.9%	2.0%	4.2%
YOI	13.8%	9.5%	9.2%	20.6%
Total	7.0%	7.0%	6.3%	13.2%

## Opiates

When a similar regression analysis was carried out to look at the association between MDT opiate positivity and self-reported use, self-reported opiate use in the last week was again more strongly associated with RMDT opiate positivity levels than use in the past month for the prisons in the survey. However, the relationship was much less strong than for cannabis and the model explained less than a third of the variation in RMDT positivity rates among establishments ( $R^2 = 0.32$ , adjusted  $R^2 = 0.27$ ). Again, the same relationship held regardless of the sex of the inmate, which was not significantly associated. The coefficients obtained from the model are shown in Table 5.9.

**Table 5.9 Results of the regression model for estimating RMDT opiate positivity in the 2001 data set**

	Coefficient		95% confidence interval
Rate of opiate use in the past week	0.43	**	0.18 - 0.68
Sex	-0.03		-0.07 - 0.01
Constant	0.06	**	0.03 - 0.10

\*\* =  $p < 0.01$

Table 5.10 shows in detail the estimated RMDT positivity rates and actual levels of RMDT opiate positivity and opiate use in the sample clusters. Although there are some cases where estimated and actual rates differ markedly, such as the YOI cluster where the very low levels of actual test results fall far below the regression estimation, this is more a failure of the linear regression model at the extreme of the data range than a discrepancy in the reports: actual RMDT and self-reported use in the last week in this cluster are quite closely aligned. Broadly speaking the regression model estimates quite well the actual results for the sample clusters of establishments.

**Table 5.10 Estimated and observed RMDT opiate positivity rates and rates of self-reported opiate use by cluster, 2001 data set**

Cluster	Actual RMDT	Estimated RMDT	Self-reported opiate use	
			In last week	In last month
Local/remand	4.6%	5.5%	4.6%	9.4%
Local/remand	9.8%	5.6%	4.8%	9.2%
Local/remand	4.2%	8.3%	10.9%	14.9%
Local/remand	9.7%	9.3%	13.3%	19.0%
Training	6.3%	10.8%	16.8%	23.7%
Training	11.5%	16.2%	28.5%	34.4%
Training	14.4%	11.4%	18.2%	20.1%
Women	6.3%	6.9%	1.1%	4.9%
Women	9.8%	8.0%	3.7%	11.3%
Open	6.8%	4.8%	3.0%	3.0%
Dispersal	9.0%	7.3%	8.8%	10.7%
YOI	0.5%	3.8%	0.6%	1.8%
Total	7.1%	7.1%	6.6%	9.9%

### Key findings

- Self-reported cannabis use in the past week was found to be more strongly associated with RMDT cannabis positivity rates than use in the past month in a regression model. Overall correspondence between self-reported use and positivity rates was much higher for cannabis than opiates and variation in rates of use accounted for well over half of the variation in positivity rates.
- For opiates, self-reported use in the past week was also the only variable significantly associated with RMDT positivity rates. Although, broadly speaking the model estimated quite well the actual results for the sample cluster of establishments, it explained less than a third of the variation in positivity rates among establishments.

### The association between factors associated with the RMDT process and positivity rates

The above analysis showed that while rates of drug use are important predictors of MDT positivity rates, they do not explain all of the variation observed in positivity rates. There are a range of other factors which might influence the relationship between MDT positivity rates and the level of drug use in the prisons. Some of these will be consistent across prisons, for example the threshold used for detection which might miss users of small amounts of poor quality drugs, while others relate to the way in which the programme is implemented within individual prisons. This last group of factors might be responsible for much of the variation in MDT rates between prisons that is not related to differences in levels of drug use. This section considers what factors may be affecting RMDT positivity rates in this way and then seek evidence within the 2001 data set as to the extent to which this actually occurs.

A proportion of prisoners attempt to cheat on the MDT although, since the programme has now been in place for several years, staff are aware of the ways in which this may be done and the amount of cheating is quite low (as discussed in Chapter 4). In the survey, three per cent of prisoners who had been selected for MDT in their current prison said they had attempted to cheat as had seven per cent who had been selected in another prison.

In the qualitative study, prison personnel across the sample indicated the impact of RMDT on scarce resources and highlighted the fact that prisoners know when staffing levels are low, suggesting that they know this means fewer searches would be conducted and in these periods MDT may be delayed. In such circumstances, drug use might be high but not be detected, so RMDT positivity remains quite low. In the past it had been suggested that prisoners timed their drug use around weekends as there was very little weekend testing done. As a result, procedures were revised and prisons are now required to carry out a minimum proportion of testing at weekends. However, there is still considerable variation in the amount of weekend testing that is conducted across establishments and this might have an impact on positivity rates.

In the qualitative study it was also suggested that prison staff could manipulate the process to reduce positivity rates in their prison in a range of ways, such as substituting other prisoners for known drug users if they are selected for RMDT. However, no evidence was available to corroborate these assertions.

The published RMDT positivity rates do not include refusals and spoilt samples. It is reasonable to suppose that many refusals are because the prisoner expects to test positive and a high rate of refusals in a prison could then result in a prison having a reduced RMDT positivity rate. Prison staff felt this was wrong and that some prisons might 'encourage' known drug users to refuse to improve their figures.

Positive tests that are mitigated because the positive result could be due to the medication the prisoner is taking should be notified to the testing company and they will not then be counted as positive. However, a report from dbi consulting (2000) suggested that this does not always happen if the mitigation does not require a confirmation test to be carried out. This might result in higher RMDT positivity rates in prisons that do not report this – dbi consulting estimated that in some cases correct registering of mitigations on the database might reduce the positivity rate by five or six per cent.

Prisoners who may have used the drugs outside the prison are not disciplined for a positive test. However, their test will still be recorded as positive on the MDT database. Prisons with a high turnover of remand prisoners may have apparently higher positivity rates as a result of inclusion of positive tests resulting from use before coming to prison – the dbi report mentioned above estimated that their exclusion might reduce positivity rates in some prisons by around five per cent. This would be expected to have a bigger impact on cannabis than opiate positivity because of the longer detection window for cannabis. Since June 2002 there has been a change in the way in which the RMDT sampling is done in prisons: inmates are not eligible for RMDT until they have been in prison for 14 days. However, this does not apply to the period considered in this report.

The sample size for the RMDT programme is based on prison size. In small prisons (under 400 prisoners) a ten per cent sample should be tested every month while in larger prisons a five per cent sample is taken. In very small prisons the actual number of tests will be small and in some prisons the target number of tests may not be reached due to shortage of resources. Where few tests are conducted each month there is likely to be great variability in positivity rates.

To examine whether there was any evidence that such variations in the process of conducting the MDT programme were responsible for the variation in MDT rates seen, further logistic regression analyses were undertaken including those process variables that were available.

The variables available for this analysis were

- average population in the prison over the study period
- number of random tests within the study period
- number of non-random tests (excluding reception testing)
- proportion of random tests at weekends

- proportion of random tests refused or spoiled
- proportion of random tests refused only
- level of random testing (per inmate) in each prison
- level of non-random tests (per inmate) in each prison (excluding reception testing)
- level of reception tests (per inmate) in each prison.

**Table 5.11 Proportion of tests done at the weekend under different parts of the MDT programme (all prisons in England and Wales, August-October 2001)**

<b>MDT Programme</b>	<b>Weekend rate of testing</b>	<b>Week day rate of testing</b>	<b>Total no. of tests</b>
	<i>Percentage tested</i>		
Reception	24.5%	75.5%	555
Random	14.8%	85.2%	13,200
Suspicion	14.7%	85.3%	3,994
Frequent	13.5%	86.5%	1,682
Assessment	12.6%	87.4%	1,678
Voluntary	11.4%	88.6%	44
All	14.7%	85.3%	21,153

Apart from testing 'on reception', 24.5 per cent of which occurred at the weekend in the quarter included in the study, all test programmes ran weekend (Saturday, Sunday) tests at between 11 per cent and 15 per cent of the total, with weekend testing contributing 14.7 per cent of all random tests. This is rather less than half the number that would be expected over the weekend if urine collection were distributed evenly throughout the week (29%). (Table 5.11)

**Table 5.12 Level of RMDT positivity for weekday and weekend tests (August-October 2001, prisons in the survey only)**

<b>RMDT positivity</b>	<b>Weekend rate of positivity</b>	<b>Week day rate of positivity</b>
	<i>Percentage testing positive</i>	
Cannabis positivity	3.7%	5.6%
Opiate positivity	3.7%	4.6%
Opiate mitigating	0.3%	0.5%
<i>Base</i>	295	2,293

There is considerable variation across the prison type clusters as to the proportion of random tests done at weekends (0 to 20%). There is no significant variation in opiate or cannabis positivity rates over different days of the week, nevertheless it is possible that this variation in general may give scope for timing the use of drugs during a week to avoid detection. (Table 5.12 and 5.13)

**Table 5.13 Percentage of RMDT tests done at the weekend, refusals and spoiled tests (August - October 2001) by prison cluster**

Cluster	No. of RMDT tests	Weekend testing rate	Rate of refusals	Rate of spoiled tests	Refused & spoiled rate
Local/remand	286	3.8%	0.3%	1.4%	1.7%
Local/remand	174	19.0%	0.6%	0.0%	0.6%
Local/remand	104	8.7%	0.0%	3.8%	3.8%
Local/remand	164	2.4%	3.0%	1.2%	4.3%
Cat B/C	86	0.0%	0.0%	3.5%	3.5%
Cat B/C	142	0.0%	3.5%	0.0%	3.5%
Cat B/C	109	15.1%	7.3%	0.9%	8.3%
Women	268	11.9%	1.1%	3.0%	4.1%
Women	71	19.7%	1.4%	0.0%	1.4%
Open	205	3.4%	0.5%	0.5%	1.0%
Dispersal	667	18.9%	2.2%	1.2%	3.4%
YOI	312	14.7%	0.3%	0.3%	0.6%
Total	2588	11.4%	1.6%	1.2%	2.8%

Overall rates of refusal are fairly low: in the group of prisons in the sample only two per cent of those selected for random testing refused, and only one per cent of random tests were spoiled and could not be analysed. (Table 5.13) The level of spoiled tests is likely to reflect the level of 'cheating' and suggests that the levels of cheating are quite low, which fits with the findings from the survey of prisoners reported in Chapter 4. However, within the overall low rates of refusals and spoiled tests, there is quite a lot of variation between prison clusters.

In order to see whether this pattern of weekend testing and of refusals and spoilings of RMDT urine sample collections might be related to discrepancies between test results and self-reported use of drugs, these 'process' variables were added to the regression models for estimating RMDT opiate positivity and cannabis positivity. When *cannabis* positivity was considered, the rate of refusals and the size of the prison showed a significant association with positivity rates and the amount of the variance in rates accounted for by the regression model increased by 22 per cent to almost three-quarters ( $R^2 = 0.75$ , adjusted  $R^2 = 0.72$ ). The coefficients for the resulting model are shown in Table 5.14. However, none of the process variables available for analysis were significantly associated with *opiate* positivity.

In the qualitative interviews with prison staff, concern was expressed about the exclusion of refusals from the positivity rates, as it was felt that the main reason for refusal was that prisoners knew that they would test positive. It was suggested that it was in the interest of prisons for prisoners who would test positive to refuse a test, as they would not be counted in the performance indicators. This was therefore a way in which the process could be manipulated. The above results indicate that the inclusion of refusals would improve the correlation between MDT results and self-reported use for cannabis but not opiates. This suggests that refusals at RMDT are due to prisoners who would test positive for cannabis use, not opiates, which fits with the widely held view that cannabis use is more likely to be detected than opiate use.



**Table 5.14 Results of the regression model for estimating RMDT cannabis positivity in the 2001 data set, including variables relating to the RMDT process**

	Coefficient	Level of significance	95% confidence interval
Rate of cannabis use in the past week	1.16	***	0.87 - 1.45
RMDT refusal rate	-0.97	*	-1.85 - 0.09
Prison size	-0.0001	*	-0.0002 - -0.0000
Constant	0.05	**	-0.01 - 0.08

\* = p<0.05; \*\* = p<0.01; \*\*\* = p<0.001

### Key findings

- When variables associated with the way in which the RMDT process is conducted were included in the model relating self-reported drug use to RMDT positivity rates, significant associations were only found in the analysis relating to cannabis. The rate of refusals and the size of the prison were both found to be inversely associated with the RMDT cannabis positivity rates. Their inclusion resulted in a model that accounted for almost three-quarters of the variation in RMDT positivity rates.
- None of the process variables available were associated with RMDT opiate positivity rates. This suggests that refusals at RMDT are due to prisoners who would test positive for cannabis use, not opiates.

## Predicting drug use from RMDT positivity rates

One of the research questions this project was designed to consider was the extent to which it is possible to extrapolate from RMDT sample results to obtain a measure of drug use. In the previous section, it was shown that there was a marked association between RMDT positivity rates and self-reported drug use in the past week and that the inclusion of some other factors can improve the level of agreement for cannabis use. It showed that the relationship between self-reported use and RMDT positivity rates was much stronger for cannabis use than for opiates.

This section considers in more detail the relationship between RMDT positivity rates and drug use and the extent to which positivity rates can be used to predict drug use in prisons, in particular looking at the difference between cannabis and opiates. In the first part of this section, the way in which RMDT test results and drug use would be expected to be related is considered from a theoretical standpoint, taking account of what is known about the testing process and using assumptions about possible patterns of use and likely rates of metabolism of drugs in the body. Following this, the extent to which actual MDT positivity rates predict self-reported drug use rates in first the 1997 and then the 2001 survey data sets is examined.

It is important to emphasise that the well-established role of changing RMDT positivity rates as a tracker over time is not dependent on the nature of the connection between RMDT detection and drug use. So long as the connection - whatever it may be - stays constant over time then the tracker role is a valid descriptive tool. Here, the nature of this connection and the impact of this on the absolute levels of drug use that may be estimated from an observed RMDT positivity rate is discussed.

In considering the way in which the RMDT positivity rate reflects drug use it is first necessary to define the measure of drug use of interest. There are at least three specific approaches that may be taken to describing the level of drug use in prisons that are relevant here.

1. The most easily and unambiguously defined measure is the quantity of the drug consumed in the prison over a given period. However this is virtually unmeasurable.

2. The most direct measure that avoids difficult and perhaps arbitrary definitions is a count of the number of days (person-days) of drug use in the prison over a given period. In terms of RMDT detection, this total count of days of use is directly associated with the RMDT positivity rate, in that the count generates and RMDT measures the exposure to risk of detection. The precise nature of the link between the two depends upon the 'detection window' resulting from using the drug on a particular day.

3. A more indirect but equally important measure is the number of current drug users in the prison that give rise to the count of person-days of use over the period. The link between the count of the person-days of use and the number of current drug users depends upon:

(i) the total frequency with which each user takes the drug over the period; and also

(ii) the pattern of use over the period (sporadic, regular, binge) in which the drug is taken.

Furthermore, the link between the number of current drug users and the number detected depends on the link from person-days of use to probability of detection. There is considerable evidence to suggest that not all drug use is detected by the testing currently employed. The small study by Edgar and O'Donnell (1998) suggested that about a third of those who had used drugs went undetected on RMDT, 17 out of 54 current users were not detected. This appeared possibly to be more of a problem for opiates – they report that RMDT failed to detect 17 out of 49 cannabis users and 12 out of 25 opiate users. Prison staff interviewed in the qualitative study also indicated that they thought this was a problem and were sometimes surprised by the results of RMDT tests. In one prison, staff reported that they knew of cases where prisoners themselves had told staff that they had taken drugs but the MDT result was negative. This made the staff question the cut-off level used. It suggests that the purity and quantity of the drugs available in prisons may mean that doses taken are quite small and so may fall below the threshold or be cleared from the system quicker than expected giving some support to the assumptions made here. The findings on the association of self-reported use and positivity on oral fluid (OF) tests also showed that, while there were very few cases when a prisoner reported not using drugs but they tested positive on the OF test, there was a significant proportion of inmates who said they had used drugs in the previous two days but who were negative on OF testing (Appendix A).

On the other hand, an interim report on analyses of drug seizures within prisons between April and September 2002 suggests that the average purity of heroin found in prison is no different from that seized by police, although the purity was lower in 2002 than in the previous financial year. However, the variation in purity was very great, ranging from 0.3 per cent to 56 per cent, so in some cases low purity may be responsible for discrepancies between self-report and test results.

### Theoretical estimation of the relationship between MDT rates and drug use

The following exploratory analyses are intended to demonstrate the feasibility - the potential and the limitations - of using RMDT positivity to determine the overall level of drug taking, and are based on a number of assumptions. The calculations are made for a variety of possible scenarios, to demonstrate the variability of the conclusions depending on the assumptions used.

These scenarios consider different levels of detectability based on an assumed typical dose and clearance rate, which defines the detection window for each drug and which are summarised in Table 5.15. The half-life of a drug is the time it takes for a given drug level in the body to fall to one half of that level. Many drugs are cleared from the system at rates that approximately halve the level in a fixed length of time regardless of that level, although some do not. Time to total clearance is measured by adopting by convention a small threshold level

that is considered to represent 'completely cleared' - usually somewhere under one per cent of an average dose. The probability of detecting a drug depends on the sensitivity of the detection test as well as bodily levels of the drug. Hence the probability of detection at any point in time is unlikely to be directly proportional to bodily levels, but rather to be high initially after the drug is taken then to drop sharply to undetectability. This rather simplistic description, however, is complicated by several factors. The quantity of the drug consumed needs to be considered but, as the study had no data on this point and anyway it is likely to vary, a hypothetical 'average detection probability' at different points in time must be used. This would need to reflect not only the variation in quantity taken but also the individual variation in clearance rates that is known to exist. Furthermore, the time dimension itself is subject to equally unknowable variation - a drug consumed 'on day one' has a detectability 'on day two' that may reflect a time lag of anything between 12 and 36 hours, depending on the precise time of taking the drug and of taking the test. A further confounding factor occurs when the drug is taken again before a first dose has become undetectable.

**Table 5.15 Assumptions made in examining the theoretical relationship between RMDT positivity and drug use**

Detectability:	Opiates		Cannabis	
	Low	High	Low	High
Half-life (in hours)	4	6	40	50
Clearance time (in half-lives)	4	5	4	5
Hours to clearance	16	30	160	250
Detection probability				
Initially	1	1	1	1
end of 1 <sup>st</sup> half-life	1	1	1	1
end of 2 <sup>nd</sup> half-life	0.70	1	0.70	1
end of 3 <sup>rd</sup> half-life	0.30	0.90	0.30	0.90
end of 4 <sup>th</sup> half-life	0.15	0.10	0.15	0.10
end of 5 <sup>th</sup> half-life	0	0.05	0	0.05
end of 6 <sup>th</sup> half-life	0	0	0	0

As a consequence of these considerations, any theoretical model of detectability involves a number of detailed parameters that, in effect, cannot be estimated. In place of this, a broad range of specifications for low and high detectability is explored. The tables presented below show results for two such specifications, which typify the overall results. The low and high detectability specifications presented for opiates assumed that opiates would be present in the system for times ranging from up to 16 hours to a high of up to 30 hours. For cannabis the low detection specification assumed that the drug would be present up to 160 hours after use while the high detection threshold assumed detectability up to 250 hours. The change in probability of detection over time assumed in the following calculations is shown in Table 5.16. The accuracy of these specifications is unknown but they are put forward as plausible alternatives to explore the robustness and sensitivity of calculations in this regard. The broad drift of the results in fact showed little sensitivity to the different specifications that were explored.

Since detectability for these drugs in an RMDT is no more than a month - but might be longer than a week - the unit of time used for these calculations is one month. The focus is on the number of times the drug is taken by an inmate over the month and two patterns of timing of consumption throughout the month are considered. The simplest pattern to consider is one of

taking the drug at regular intervals spread over the month, and this broadly approximates taking the drug at random points throughout the month. An alternative timing pattern of bunching the days on which the drug is taken, effectively 'bingeing' on the drug, is also considered. Such a consumption pattern might occur if supplies of drugs were irregular and limited and it represents a strategy that, in the absence of knowing when testing will or will not occur, minimises the chance of detection by RMDT. This is because, for a given number of instances of use, the detection windows for each instance of taking will overlap as much as possible and so reduce the overall risk of detection. It can be considered therefore as the scenario reflecting the minimum position with respect to detection.

Table 5.16 gives the probability of an individual being detected, if selected for RMDT, when taking the drug the specified number of times in a month under these four theoretical situations. It can be seen that, under the low detectability assumptions, the probability of detection for opiates is directly proportional to the number of instances of use: if the detection window following use is one day, then RMDT has a one in 30 chance of identifying each instance of use, regardless of the number of times the drug is used. Under these circumstances, whether drug use is spread or bunched makes no difference to this direct relationship. Under the higher detectability assumptions the relationship is not exact but very closely parallels the same rule.

Since these probabilities of detection can be interpreted as the proportion of instances of use (that is person-days of use) that are detected, the conclusion here is that a test conducted on one day per month will detect one in 30 instances of use of opiates. If this model reflects the true situation then a direct multiplier (of 30) would therefore be applicable to the number of RMDT opiate positives in order to estimate the number of instances of opiate use. However, these calculations are based on a scenario of a detection window of one day for opiates. If a longer detection window is assumed, say three days, the relationship between detection and frequency of use becomes more complex and depends on the pattern of use over the month, specifically whether instances of use are bunched or spread. In general, the chance of detection will increase and an instance of detection will represent a smaller number of uses (hence the multiplier would decrease) but the difference will be less if the days of use are bunched than if they are spread out throughout the month.

To obtain a rough estimate of the number of users from the estimated number of person-days of use during the month, it is necessary to know how many days on average a single-user might use during a month. Data collected in this study (Table 3.5) indicate that there were, on average, 25 days of opiate use in a week per 100 prisoners and ten per cent of prisoners reported use in the previous week. This suggests approximately ten days of use per month per user ( $4 \times 25 / 10$ ), and a direct multiplier of three ( $= 30 / 10$ ) for estimating the number of users in any month, although clearly this will be only a very rough approximation.

For cannabis use the relationship between instances of use and probability of detection is not as direct, due to the longer window of exposure to detection following a single instance of use. For the high detectability assumptions, using in a spread fashion over the month, four or more instances of use over the month are all virtually certain to cause detection on RMDT, and these differing levels of use are therefore indistinguishable on RMDT results. However, in contrast to instances of use, virtually 100 per cent of people using at this level would be detected by RMDT. Although the low detection assumptions for spread use of cannabis do not give as clear a picture as this, it is reasonable to suggest that the RMDT positivity results on cannabis lean more towards identifying users rather than instances of use.

**Table 5.16 Theoretical estimates of the probability of being detected on a random day in the month, if tested, by number of times used (under low and high detection assumptions and for bunched and spread patterns of use)**

Times used	Low detectability		High detectability	
	Bunched	Spread	Bunched	Spread
<b>Opiates</b>				
1	0.033	0.033	0.037	0.037
2	0.067	0.067	0.070	0.073
3	0.100	0.100	0.103	0.110
4	0.133	0.133	0.137	0.147
5	0.167	0.167	0.170	0.183
6	0.200	0.200	0.203	0.220
8	0.267	0.267	0.270	0.293
10	0.333	0.333	0.337	0.367
15	0.500	0.500	0.503	0.550
30	1.000	1.000	1.000	1.000
<b>Cannabis</b>				
1	0.138	0.138	0.263	0.263
2	0.192	0.277	0.308	0.527
3	0.231	0.415	0.346	0.780
4	0.266	0.553	0.381	0.957
5	0.299	0.667	0.415	0.994
6	0.333	0.740	0.448	1.000
8	0.399	0.872	0.515	1.000
10	0.466	0.930	0.581	1.000
15	0.633	1.000	0.748	1.000
30	1.000	1.000	1.000	1.000

It is important to stress that these figures are intended to illustrate the feasibility of these calculations, but are at the moment based on a set of assumptions founded in plausibility rather than knowledge. Nonetheless they suggest that RMDT positivity rates can probably be considered to indicate levels of drug use, but in different ways for cannabis and opiates. Thus opiate positivity rates would appear to be more likely to measure the number of episodes of use while cannabis positivity would tend to be more a reflection of the number of users. The survey suggests that cannabis users use the drug less frequently than opiate users, but these calculations suggest that the cannabis positivity rate might be expected to be slightly higher than the opiate positivity rate even though there are slightly more episodes of opiate use.

### Key findings

- Theoretical calculations based on a plausible set of assumptions about patterns of drug use and detectability windows suggest that RMDT positivity rates can probably be considered to indicate levels of use but in different ways for cannabis and opiates.
- These calculations suggest that RMDT opiate positivity rates would more nearly reflect the number of episodes of opiate use while cannabis positivity rates would tend to be more a reflection of the number of users.

## Predicting drug use from MDT rates in the 2001 survey data set

The analyses in Chapter 5 (section headed: *Extent to which RMDT data provide an accurate measure of drug use*) and the theoretical considerations outlined above suggest that it might be possible to extrapolate from MDT positivity rates to obtain an indication of the level of drug use in prisons. However, the variation in the way in which the MDT process is operated in different prisons might have an impact on the effectiveness of any such model in practice. The likely impact of this is examined further in the remainder of this section by looking at the ability of MDT positivity rates to predict self-reported drug use in the 2001 prison level data set combining survey data and RMDT positivity rates.

Formulae can be constructed based on the 2001 survey data to give a direct estimate of the prevalence of use of drugs in the prisons from the RMDT positivity rates. Since the RMDT programme operates on a monthly basis, rates of use in the past month appear to be the appropriate figures to be predicted, even though the analyses in Chapter 5 (section headed: *Extent to which RMDT data provide an accurate measure of drug use*) showed that MDT positivity rates were more strongly associated with self-reported use in the past week than in the last month. The earlier analyses also indicate that prevalence of use of cannabis is more likely to be successfully estimated than is the prevalence of opiate use in the last month. They also suggest that the use of cannabis will be predicted better if the refusal rate in RMDT testing is included with positivity as an indicator of cannabis use.

To construct a specific formula that translates the RMDT positivity rate into a prevalence rate on a per prison basis requires a regression analysis using both the measured RMDT positivity rate and the self-reported prevalence of use in the past month. The construction of such an equation relating the two is therefore evidently based on the behaviours recorded in the period of study in the prisons included in the study. If such formulae are used to construct an indicator of use in the future over an extended period of time, the limitations of these data must be borne in mind. These limitations will impact upon variations arising both from natural drift over time of the situation within the prisons and also, more pertinently, those arising from alterations to prison practices that may affect the functioning of RMDT.

Regression formulae were constructed for two classes of models.<sup>9</sup>

- (i) Simple linear regression models of the prevalence rate estimated from the positivity rate. These models give the simplest and most direct formulae, but can be criticised to an extent for not focussing specifically on the fact that a rate is being predicted, which must lie between nought and 100 per cent.
- (ii) Regression models using standard transformations of the data that are designed to allow the better application of simple linear regression to rate data. The transformation used in the present analyses is the arcsin transformation of the prevalence rate and of the positivity rate.

The prevalence and positivity data, on a per prison basis, were analysed using unweighted regressions in order to prevent the resultant formulae from being focused heavily on the larger prisons, and to be applicable to the full range of prevalence values. Each model is presented in Table 5.17 as an estimation based on the standard RMDT positivity rate for opiates and for cannabis, and also on a more inclusive definition of 'positivity rate' calculated by including test refusals with positive test results. Thus the simple linear regression model based on the standard RMDT positivity rate is described in the table as the 'linear' model, while that based on the RMDT positivity plus refusals is called 'linear inclusive'. Similarly the

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<sup>9</sup> In fact a regression model was also constructed for a Poisson-type model. Such models can be used to analyse the rate data directly (paralleling their usual use in analysing 'counts' data), which provide a non-linear link between estimated prevalence and the positivity, contrasting with the linear link provided under (i) above. However, the Poisson-type models failed to fit the data to such an extent that the results are not presented.

equivalent models based on transformed data are described as 'transformed' and 'transformed inclusive', respectively.

The predictions for all models were highly statistically significant ( $p < 0.001$ ). The Squared Multiple Correlation (SMC) coefficients indicated that there was little difference in the ability of the linear and the transformed models to predict cannabis use rates. For opiates, predictivity is noticeably lower than for cannabis prevalence, as was expected, with SMCs of about 30 per cent compared with 50 per cent for cannabis. However, it was also the case that the transformed model for opiate use performed better than the linear model using standard positivity rates but there was little difference when positivity including refusals was used. It would seem in general that using the linear model is adequate, and using the (refusal-)inclusive model is preferable for estimating both cannabis and opiate prevalence.

The finding that including refusals in the model improved the prediction for opiate use is surprising. The analysis in Chapter 5 (section headed: *Extent to which RMDT data provide an accurate measure of drug use*) had suggested that including refusals would improve the predictive ability of the model for cannabis, as was the case, but that this would not be the case for opiates. The reason for this relates to the very strong influence of prison type on opiate positivity rates. In the 1997 data set, type of prison was more strongly associated with RMDT opiate positivity than self-reported use in the current prison term (Table 5.5 on page 66). In the 2001 data, the level of refusals is strongly related to prison cluster type (SMC 53%). Therefore using a definition of positivity which includes refusals is having the same effect as including prison cluster type in the model and therefore improves its predictivity.

**Table 5.17 Regression models for estimating monthly prevalence of drug use from RMDT positivity rates using the 2001 data set (for explanation of 'linear', 'transformed', and 'inclusive' models see text)**

	Squared multiple correlation coefficient	Constant	Coefficient	95% Confidence interval	
				Lower limit	Upper limit
<b>Cannabis use models</b>					
Linear	53%	0.0551	1.0983	0.7003	1.4963
Transformed	47%	0.1612	1.0033	0.5891	1.4174
Linear inclusive	56%	0.0364	1.1495	0.7529	1.5460
Transformed inclusive	45%	0.0184	1.1246	0.6410	1.6083
<b>Opiate use models</b>					
Linear	24%	0.0444	0.7651	0.2322	1.2979
Transformed	32%	0.2040	0.7381	0.3169	1.1593
Linear inclusive	35%	0.0316	0.7991	0.3743	1.2239
Transformed inclusive	33%	0.1752	0.7227	0.3250	1.1203

Table 5.18 demonstrates the use of the two different types of models to obtain predicted levels of drug use from some example RMDT positivity rates. For cannabis the linear inclusive model is used and example positivity rates of five per cent and 15 per cent. For opiates the transformed model is used and example positivity rates of three per cent and five per cent.

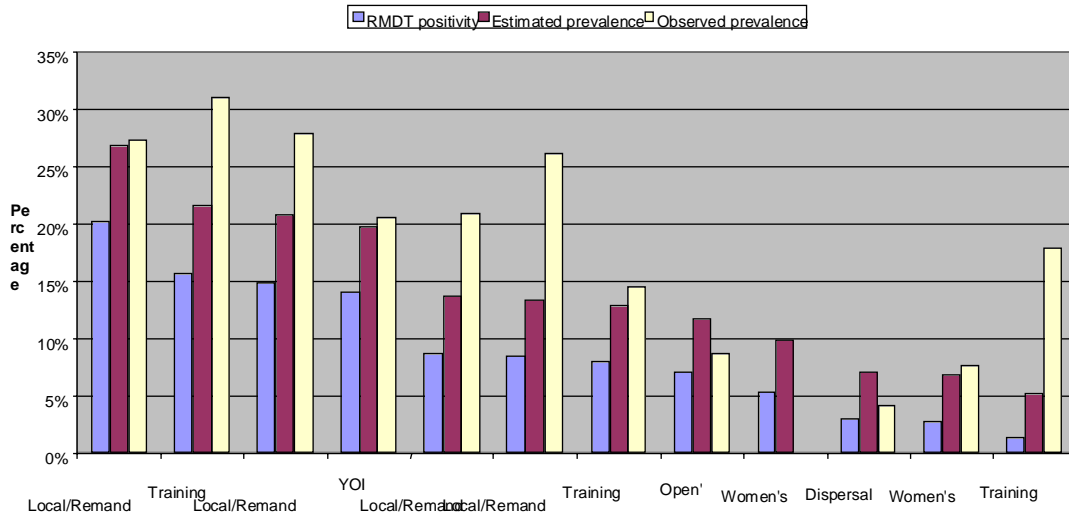
**Table 5.18 A theoretical example of the use of the estimation models to predict rates of use of cannabis and opiates**

Model	RMDT positivity (a)	[transformed positivity] [a]	Model constant (b)	Model coefficient (c)	[transformed prevalence] $b+(a)*c$	Estimated prevalence $b+(a*c)$
<b>Cannabis</b>						
Linear inclusive	5%	--	0.0364	1.1495	--	9%
Linear inclusive	15%	--	0.0364	1.1495	--	21%
<b>Opiates</b>						
Transformed	3%	0.3482	0.2040	0.7381	0.4610	5%
Transformed	5%	0.4510	0.2040	0.7381	0.5369	7%

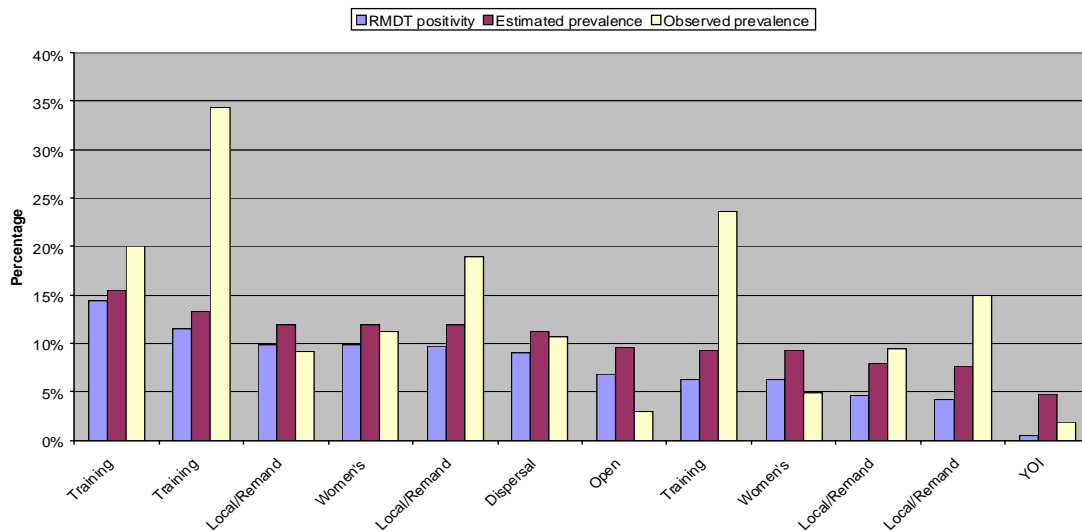
As can be seen from Table 5.17, the model for predicting cannabis use is a better fit and explains more of the variance, as expected. What this means in terms of how close estimates obtained using these models will be to actual rates of use is demonstrated by using the models to predict rates of use in the survey prison clusters and comparing them with the actual rates obtained in the survey. Figures 5.3 and 5.4 compare observed and predicted rates for cannabis and opiate use. For cannabis use this is based on the linear inclusive model. For opiate use the simple linear model is used, as it is likely that variation in RMDT refusal rates and other aspects of the MDT process by type of prison might be factors that the Prison Service would be seeking to reduce. If that were the case, it would be inappropriate to include these in a model that might be used in the future. However, it can be seen that there are quite large discrepancies between the observed and predicted values in a number of clusters even for cannabis, suggesting that such models may not be particularly useful in practice.



**Figure 5.3 Comparison of predicted and observed self-reported drug use rates for cannabis for the prison clusters in the 2001 survey (linear prediction of cannabis use in the past month from RMDT positivity inclusive of refusals)**



**Figure 5.4 Comparison of predicted and observed self-reported drug use rates for opiates for the prison clusters in the 2001 survey (linear prediction of opiate use in the past month from RMDT positivity)**



### Key findings

- Models were constructed for predicting cannabis and opiate use rates from RMDT positivity. For cannabis the best fitting model was a simple linear regression using positivity plus refusals as the predictor. For opiates a model using transformed data fitted slightly better than the simple linear model.
- The model for cannabis was a better fit than that for opiates but there was still considerable discrepancy between observed and estimated rates when the model was applied to the figures obtained for the prison clusters in the 2001 survey. This suggests that such models are unlikely to be particularly useful in practice.

## Levels of testing necessary to provide results at establishment, regional and national levels

The third research question which related to the relationship between RMDT positivity rates and drug use was “*What level of testing would be needed to give significant results for individual establishments, prison service regions and nationally?*”. This question is considered in this section with illustrations based on data relating to the sample of prisons included in this study.

The accuracy of an estimate, shown by the standard error of the estimate, obtained from any sample depends upon a number of factors<sup>10</sup>. The key factor is the sample size, in this case the number of tests on which the estimate is based, and this is a factor which the RMDT programme design can determine; at the levels of testing in the MDT programme a finite population correction to take account of the proportion of the population being tested would be appropriate but the effect is comparatively small. A subsidiary factor is the size of the estimate (which will be related to the true level of positivity), which cannot be determined by programme design. The combined effect of these factors is displayed in Table 5.19 below, and the relative importance of the different factors can be seen.

Taking the first factor, the number of tests achieved, it should be noted that the target level of RMDT testing is usually expressed in percentage terms - five per cent or ten per cent of the prison population. However, as stated above, the accuracy of any estimate is far more a function of the *number* of tests achieved than it is a function of the *percentage* coverage, at least at these levels of testing. When the number of achieved tests is fixed, then comparing situations in which this number gives ten per cent coverage to five per cent or to one per cent coverage of the respective prison populations reveals reductions in accuracy of approximately three per cent or five per cent, respectively. By contrast, where the percentage level of coverage is fixed but because of varying sizes of prison this results in one half or one tenth the number of tests, accuracy will be decreased by about 30 per cent and 70 per cent, respectively, of its initial level. The accuracy of the estimates of positivity is therefore extremely sensitive to the number of tests achieved in the RMDT programme, and with the present design there is a very wide range in the number of tests per establishment.

An additional point to be considered must also be whether a particular level of accuracy is required for each quarter's estimate or whether it is primarily the yearly estimates that are important. With approximately only a quarter of the yearly number of tests available, the quarterly estimates will be, broadly speaking, only half as accurate as the yearly estimates; monthly estimates would have only 30 per cent of the year-based accuracy.

The other factor mentioned above, the true level of positivity, is somewhat the simpler of the two factors to consider. It is possible to calculate the broad relative effect on the accuracy of any given estimate caused by the true positivity levels varying. Broadly speaking, up to a threefold variation in accuracy can be anticipated as arising from this factor. For example, compared with a level of ten per cent positivity, a level of one per cent will decrease the absolute level of likely error of estimation (technically speaking, the standard error of the estimate) by a factor of just over three. That is, the width of the interval in which the estimate

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<sup>10</sup> In general, in samples drawn from large populations, the standard error for an estimate obtained from a simple random sample is given by:

$$se(p)_{ss} = \sqrt{\frac{p(1-p)}{N}} \text{ where } p \text{ is the estimate and } N \text{ is the sample size.}$$

Where the population from which the population is being drawn is comparatively small, so that a high proportion of the population is being sampled, a finite population correction, which takes account of the proportion of the population being sampled, is applied to the above formula.

might lie (the confidence interval) will be reduced to a third of the size, broadly speaking. Confidence intervals for levels of positivity of this order of magnitude are displayed in the table below, where they are calculated more accurately. When interpreting the table it is useful to compare alternatives in terms of the relative accuracy - that is, the absolute accuracy (standard error) expressed as a percentage of the actual level estimated, to yield what is usually referred to as a 'percentage error'. So in Table 5.19, the example of a quarterly estimate for a small establishment with low positivity for opiates shows a rate of 0.016 (or 1.6%) with a standard error of 0.0152 which gives a percentage error of 95 per cent based on a sample of 61 tests. In comparison the quarterly estimate for a large establishment with a high positivity rate based on a slightly larger sample size (84) is 0.112 or 11.2 per cent with a standard error of 0.0336, which gives a percentage error of only 30 per cent. Thus when the degree of accuracy is considered relative to the level of positivity itself (technically speaking, the coefficient of variation) the lower positivity level has a relative error three times that of the higher level.

These illustrations and the figures in the table are based on the assumption of simple random sampling of the entire prison population, and apply on a per prison basis. When dealing with the accuracy of the positivity estimate for the entire population, they should be treated as a conservative approximation to the precise accuracy - the sampling is in fact not a simple random sample but a random sample stratified by prison and this will usually result in somewhat better accuracy. To estimate the precise figure, however, would necessitate knowing for each prison the numbers of tests carried out and the results of these tests, which can only be done easily on a *post hoc* basis.

**Table 5.19 Precision of estimates of RMDT positivity at different levels based on RMDT sample sizes and positivity rates for Aug-Oct 2001.**

	Cumulative population*	Sample fraction	No. of tests	Positivity level	95% Confidence interval		Standard error	Percentage error
<b>a) At national level:</b>								
<b>Cannabis</b>								
Quarter	202,574	6.5%	13,200	5.6%	5.3%	6.0%	0.0019	3.4%
6 months	405,148	6.5%	26,400	5.6%	5.4%	5.9%	0.0014	2.5%
Annual	810,296	6.5%	52,800	5.6%	5.4%	5.8%	0.0010	1.8%
<b>Opiates</b>								
Quarter	202,574	6.5%	13,200	4.5%	4.2%	4.9%	0.0017	3.8%
6 months	405,148	6.5%	26,400	4.5%	4.3%	4.8%	0.0012	2.7%
Annual	810,296	6.5%	52,800	4.5%	4.4%	4.7%	0.0009	2.0%
<b>b) At regional level:</b>								
<b>Cannabis</b>								
Quarter	15,572	7.4%	1,146	6.5%	5.2%	7.9%	0.0070	10.8%
6 months	31,144	7.4%	2,292	6.5%	5.5%	7.5%	0.0049	7.5%
Annual	62,288	7.4%	4,584	6.5%	5.8%	7.2%	0.0035	5.4%
<b>Opiates</b>								
Quarter	15,572	7.4%	1,146	3.2%	2.3%	4.2%	0.0050	15.6%
6 months	31,144	7.4%	2,292	3.2%	2.5%	3.9%	0.0035	10.9%
Annual	62,288	7.4%	4,584	3.2%	2.7%	3.7%	0.0025	7.8%
<b>c) At establishment level:</b>								
<b>Small establishment, low positivity – opiates</b>								
Quarter	604	10.1%	61	1.6%	0.0%	5.9%	0.0152	95.0%
6 months	1,208	10.1%	122	1.6%	0.2%	4.2%	0.0107	66.9%
Annual	2,416	10.1%	244	1.6%	0.4%	3.4%	0.0076	47.5%
<b>Large establishment, high positivity – opiates</b>								
Quarter	1,741	4.8%	84	11.2%	5.5%	18.6%	0.0336	30.0%
6 months	3,482	4.8%	168	11.2%	7.0%	16.3%	0.0237	21.2%
Annual	6,964	4.8%	336	11.2%	8.1%	14.7%	0.0168	15.0%
<b>Small establishment, low positivity – cannabis</b>								
Quarter	289	10.4%	30	3.3%	0.0%	12.0%	0.0310	93.9%
6 months	578	10.4%	60	3.3%	0.4%	8.9%	0.0219	66.4%
Annual	1,156	10.4%	120	3.3%	1.0%	7.0%	0.0155	47.0%
<b>Large establishment, high positivity – cannabis</b>								
Quarter	2,503	3.5%	88	12.2%	6.3%	19.7%	0.0343	28.1%
6 months	5,006	3.5%	176	12.2%	7.9%	17.3%	0.0242	19.8%
Annual	10,012	3.5%	352	12.2%	9.0%	15.8%	0.0171	14.0%

\* Sum of the populations at the end of the month

**Table 5.20 Examples of the likely precision of estimates of RMDT positivity based on a level of testing of 25 inmates per prison per month**

	Cumulative population*	Sampling fraction	Number of tests	Positivity level	95% Confidence interval		Standard error	Percentage error
<b>a) At national level:</b>								
Cannabis								
Quarter	202,574	5.2%	10,500	5.6%	5.2%	6.1%	0.0022	3.9%
6 months	405,148	5.2%	21,000	5.6%	5.3%	5.9%	0.0015	2.7%
Annual	810,296	5.2%	42,000	5.6%	5.4%	5.8%	0.0011	2.0%
Opiates								
Quarter	202,574	5.2%	10,500	4.5%	4.1%	4.9%	0.0020	4.4%
6 months	405,148	5.2%	21,000	4.5%	4.2%	4.8%	0.0014	3.1%
Annual	810,296	5.2%	42,000	4.5%	4.3%	4.7%	0.0010	2.2%
<b>b) At regional level:</b>								
Cannabis								
Quarter	15,572	5.8%	900	6.5%	5.0%	8.1%	0.0080	12.3%
6 months	31,144	5.8%	1,800	6.5%	5.4%	7.6%	0.0056	8.6%
Annual	62,288	5.8%	3,600	6.5%	5.7%	7.3%	0.0040	6.2%
Opiates								
Quarter	15,572	5.8%	900	3.2%	2.2%	4.4%	0.0057	17.8%
6 months	31,144	5.8%	1,800	3.2%	2.4%	4.0%	0.0040	12.5%
Annual	62,288	5.8%	3,600	3.2%	2.6%	3.8%	0.0028	8.8%
<b>c) At establishment level:</b>								
<b>Small establishment, low positivity – opiates</b>								
Quarter	604	12.4%	75	1.6%	0.0%	5.3%	0.0135	84.4%
6 months	1,208	12.4%	150	1.6%	0.3%	4.0%	0.0096	60.0%
Annual	2,416	12.4%	300	1.6%	0.5%	3.2%	0.0068	42.5%
<b>Large establishment, high positivity – opiates</b>								
Quarter	1,741	4.3%	75	11.2%	5.2%	19.1%	0.0356	31.8%
6 months	3,482	4.3%	150	11.2%	6.8%	16.6%	0.0252	22.5%
Annual	6,964	4.3%	300	11.2%	8.0%	14.9%	0.0178	15.9%
<b>Small establishment, low positivity – cannabis</b>								
Quarter	289	26.0%	75	3.3%	0.7%	7.7%	0.0178	53.9%
6 months	578	26.0%	150	3.3%	1.3%	6.2%	0.0126	38.2%
Annual	1,156	26.0%	300	3.3%	1.8%	5.3%	0.0089	27.0%
<b>Large establishment, high positivity – cannabis</b>								
Quarter	2,503	3.0%	75	12.2%	5.9%	20.4%	0.0372	30.5%
6 months	5,006	3.0%	150	12.2%	7.5%	17.8%	0.0263	21.6%
Annual	10,012	3.0%	300	12.2%	8.8%	16.1%	0.0186	15.2%

Recently the RMDT sampling has changed so that larger establishments (over 400 inmates) take a lower sampling fraction (5% of inmates per month) than smaller establishments which are required to sample ten per cent of inmates. Resource constraints also affect the amount

of testing that is done in establishments on a monthly basis so targets are not always reached. In the quarter August to October 2001 for which the RMDT results are drawn for this report, the sampling fraction achieved by the establishments in the survey ranged from 3.2 per cent to 10.7 per cent and the actual number of tests carried out from 30 to 180. Opiate positivity rates ranged from 0 to 18.9 per cent and cannabis positivity from 0 to 23.9 per cent.

To illustrate the effects of this on the precision of the positivity rates obtained, Table 5.19 uses the RMDT data from the quarter considered in this survey to show the confidence intervals around the estimates obtained. These estimates of sampling errors and confidence intervals assume simple random sampling. As mentioned above, at regional and national levels the requirement for samples to be drawn from all prisons amounts to implicit stratification, so this will overestimate the sampling error slightly for these levels.

It can be seen that, with the current sampling fractions and positivity levels, the number of tests at the national level is very large and positivity rates are estimated with a high degree of precision for all periods illustrated. For cannabis the quarterly positivity rate was 5.6 per cent with a 95 per cent confidence interval of 5.3 to 6.0 per cent, which can be extrapolated to give approximate confidence intervals for an annual rate of 5.4 to 5.8 per cent. An estimate with this level of precision would be able to detect a decrease between years of less than half a percentage point in the positivity rate. The opiate rates at the national level have a very similar level of precision.

At regional level (one region was selected at random for illustrative purposes) the precision is lower, with a quarterly estimate for cannabis positivity ranging from 5.2 to 7.9 per cent and an opiate positivity rate from 2.3 to 4.2 per cent. At establishment level, four establishments from within the survey sample were selected to represent the extremes of size and positivity rates and it can be seen that the confidence intervals even in large establishments are wide. At this level only annual figures provide confidence intervals with sufficient precision to reliably distinguish establishments even at the extremes of positivity and very large fluctuations in estimates could be expected to occur by chance. In order to detect smaller differences between the annual positivity rates in establishments, an increase in sample size would be required. For example, for an annual difference between five per cent and seven per cent to be statistically significant the sample size in each establishment would need to be about 900, or 75 per month. This is more than twice the number of tests currently being carried out nationally.

What is considered an adequate level of precision will depend on the purpose for which the information will be used and practical considerations may also mean that a less than perfect sampling procedure is adopted. As the MDT programme is currently configured, a fixed proportion of the inmate population in each prison is tested each month. This results in tests being spread fairly evenly over the entire prison estate, although larger prisons test a smaller proportion of their population than smaller prisons. However, for comparing rates between individual prisons, the most efficient design would have the same absolute number of people being tested in each prison (although in very small establishments this could be reduced if it resulted in testing a very large proportion of the establishment population).

The effect of this alternative approach on the precision of the rates is illustrated in table 5.20 for a level of testing of 25 tests per prison per month which gives an overall level of testing lower than that currently undertaken. At the national level, with about 10,000 fewer tests undertaken each year, the precision of the estimates is almost unchanged. There is little difference at regional level either. At the establishment level there is a gain in precision in smaller establishments and a loss in larger establishments where there is a very large decrease in the number of tests being undertaken.

### Key findings

- At current levels of testing, RMDT positivity rates at the national level are estimated with a high degree of precision that would be able to detect a change between years of less than half a percentage point in the positivity rate.
- At regional level the precision is lower, with a quarterly estimate for cannabis positivity in an example region ranging from 5.2 to 7.9 per cent and an opiate positivity rate from 2.3 to 4.2 per cent. However, changes of one percentage point or more in annual positivity rates would be able to be detected.
- At the establishment level, the size of samples varies widely and only annual figures provide confidence intervals with sufficient precision to reliably distinguish establishments at the extremes of positivity and very large fluctuations in estimates could be expected to occur by chance. For estimates at the establishment level a design with similar numbers of tests in all establishments would provide slightly more reliable estimates.

## 6. Changes in the pattern of drug use on entry to prison and the impact of the MDT programme

This chapter looks at the findings from the different parts of the research project as a whole which provide information to address the research question:

*Is there any evidence that the MDT programme influences frequency of drug use in prison, the types of drug used or route of administration of the drugs (for example, encouraging switching from cannabis to heroin or increasing injecting behaviour)?*

The MDT programme was set up as part of the Prison Service strategy to reduce drug misuse in English and Welsh prisons and a key aim is to deter prisoners from using drugs. At the time of its inception it was suggested that a MDT programme based around urinalysis would tend to encourage the use of drugs, such as heroin, and routes of administration, such as injection, that have a narrower window of detection in urine. In the absence of any study set up to look at drug use before and after the introduction of the programme, a number of cross-sectional studies have attempted to assess the impact of the programme on frequency and type of drug use in a variety of ways (Edgar and O'Donnell, 1998; dbi Consulting, 2000; Farrell and Taylor, 1999). These generally suggested that there had been a reduction in the use of cannabis since the introduction of the MDT programme but that heroin use had not been affected. However, no conclusive evidence was obtained to show that the MDT programme caused prisoners to switch from less harmful cannabis use to heroin use. Since cannabis and heroin are the drugs most often used in prison and the shift from cannabis to heroin is the most frequently cited problem arising from the MDT programme, the study is focused mainly on the use of these two drugs.

Any assessment of the impact of the MDT programme is complicated by changes in the drug-using environment outside the prison from which many of the prisoners come. An apparently greater use of heroin relative to cannabis in prison, in the period during which the MDT programme has been in operation, may simply reflect a change in the pattern of drug consumption outside prison.

As well as the MDT programme, the Prison Service has introduced an array of other measures aimed at reducing drug use in prison, for example use of dogs to identify visitors smuggling drugs and for searches, voluntary testing programmes and greater availability of treatment and support services. It is therefore very difficult to ascribe changes in patterns of use to any one programme in particular.

To address these questions, evidence of changes in the pattern of drug use outside prison and in prison over the period since the inception of the MDT programme is looked for. Then, consideration is given to the evidence on change in drug use on entry to prison from the current study by looking at the proportions of prisoners reporting use before and in prison and consider the reasons inmates gave for using or not using drugs. Prisoners' perceptions of their likelihood of using drugs in the future, both in prison and after release, and factors associated with these are considered. The evidence for an impact of the MDT programme, as distinct from other aspects of the prison regime, on the amount of drug use in prisons is then reviewed.

The second part of the chapter considers evidence for changes in the types of drug used, in particular looking at evidence for a potentially harmful change to increased use of opiates rather than cannabis (so-called "switching") and the extent to which this appears to be due to the effect of the MDT programme. Finally, the chapter considers whether there is any evidence of a change in the manner in which drugs are taken in prisons.

In the survey of prisoners, a number of different groups of people who appeared to have altered their pattern of drug use were identified and were asked questions about the reasons



for this change. The MDT programme was not mentioned specifically as it was felt that this prompting might influence people to ascribe their motivation to this rather than other factors. Instead, open questions were asked which interviewers recoded into categories, which were developed from the verbatim responses to these questions obtained in the pilot survey, or if not covered by these categories, the verbatim response was recorded.

## Change in the frequency of drug use

### Change in drug use patterns over time

#### Use outside prison

Data on drug use in the general population have been collected as part of the British Crime Survey every two years since 1994. The proportion of people aged 16 to 59 who had used any drugs in the last year has been increasing on each sweep but the increase is very small: from 9.9 per cent in 1994 to 10.7 per cent in 2000 (Ramsay *et al*, 2001). The difference between 1994 and 2000 is not statistically significant. However, when different types of drugs are considered there are some statistically significant changes; amphetamine and LSD usage fell while use of cocaine and crack increased.

However, drug use is concentrated in population groups that are likely to be under-represented or missed altogether in household surveys, for example, young, single, men and homeless people sleeping rough. These are also groups who are over-represented in the prison population. Hence, even if reported drug use in household surveys remains fairly constant, it may be increasing amongst offenders. Data on drug use among arrestees in Nottingham and Sunderland, collected as part of the NEW-ADAM programme, suggest that there may have been an increase in the use of 'hard' drugs among this group. Heroin and crack cocaine use had increased in Nottingham between 1997 and 1999; rates of self-reported crack use in the past year increased from 20 per cent to 31 per cent, while heroin use rates increased from 24 per cent to 37 per cent (Bennett, 2000). However, although the equivalent rates also increased in Sunderland, the differences were not statistically significant.

Changes in policing and sentencing policies may result in changes to the composition of the prison population which might lead to changes in the proportion of drug users within the prison population irrespective of the level of drug use in the general population. To investigate whether such changes have occurred, data on drug use in the year before coming to prison in the 1997 survey of psychiatric morbidity were compared with data from the 2001 survey to see if there had been any changes over time. In the 1997 survey the question was only asked about the six main types of drugs used so the analysis of the 2001 survey was restricted in a similar way. As can be seen from Table 6.1, a similar picture emerges to that seen in the NEW-ADAM data mentioned above. There was no difference in rates of overall use or of cannabis use but crack and heroin rates were higher in 2001 than in 1997. In contrast, amphetamine use had declined.

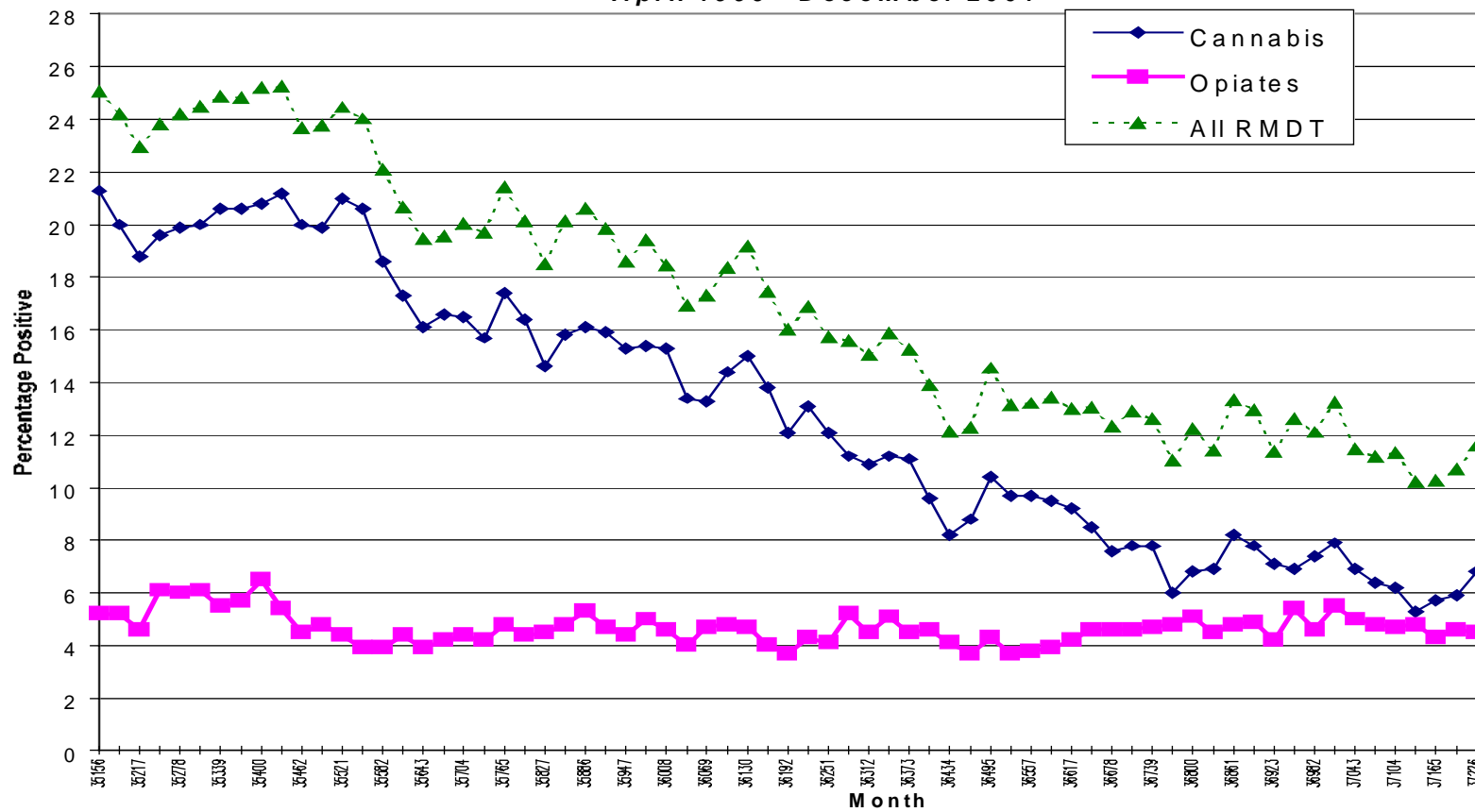
**Table 6.1 Comparison of the rates of drug use in the year before prison in the MDT survey and the Psychiatric Morbidity Survey 1997**

	<b>PMP 1997</b>	<b>MDT 2001</b>
<i>Percentage reporting using each drug</i>		
Cannabis	57	57
Heroin	23	33
Methadone	11	9
Amphetamine	25	13
Crack	19	30
Cocaine	20	21
<b>Any of these drugs</b>	<b>67</b>	<b>69</b>
<i>Base</i>	<i>3,134</i>	<i>2,268</i>

### Use in prison

Trends in the rates of RMDT positivity since the start of the RMDT programme show a steady decline in cannabis use (Figure 6.1). While other factors could influence MDT positivity rates besides drug use, as discussed in Chapter 5 (section headed: *Predicting drug use from RMDT positivity rates*), the decrease is so marked that it must almost certainly reflect a decrease in use of cannabis by prisoners. However, in contrast, heroin positivity rates have remained fairly steady over the entire period. Nevertheless, if use of heroin has remained constant in prisons while use among prisoners before coming to prison has increased, as appears to be the case from the data above, then the drug prevention measures in prison might still be considered to be having an impact on heroin use.

**Figure 6.1: RMDT Percentage Testing Positive - Monthly Figures  
April 1996 - December 2001**



Trends in data on self-reported use in prisons might give an indication of the extent to which this apparent change in the level of drug use in prisons is actually occurring. While a number of surveys have collected this information, differences in time periods covered and different sampling procedures make comparisons difficult. In the 1997 survey prisoners were asked about their drug use in their current prison term and the length of time covered is therefore very variable. In the 2001 survey prisoners were asked about any use in their current prison (as well as more clearly defined periods). For prisoners who have spent most of their time in one prison these reference time periods will very nearly match but for others the time period covered in the 2001 survey is likely to be shorter. Thus in the 1997 survey, 29 per cent of prisoners had been in prison for less than three months in their current prison term, whereas in the 2001 survey 43 per cent had been in their current prison for that short a time. Similarly, while 34 per cent of the 1997 survey sample had been in prison for a year or more only 18 per cent of the 2001 sample had been in their current prison for that long. If prisoners who use drugs do so fairly often this difference will have little impact on rates, but if they only use occasionally then the shorter reference time period might lead to lower rates of use. The extent to which this occurs may vary for different types of drugs, reflecting different patterns of use. This needs to be borne in mind when considering the data in Table 6.2. Having said that, the data do suggest that, while there may have been a decrease in overall drug use, and cannabis use in particular, between 1997 and 2001, there has been no decline in heroin use, indeed it appears to have increased.

**Table 6.2 Comparison of the rates of drug use at some time in the current prison in the MDT survey and in the current prison term in the Psychiatric Morbidity Survey 1997**

	<b>PMP 1997</b>	<b>MDT 2001</b>
	<b>In current prison term</b>	<b>In current prison</b>
<i>Percentage reporting using each drug</i>		
Cannabis	44	32
Heroin	17	21
Methadone	2	0
Amphetamine	4	1
Crack	4	5
Cocaine	3	1
<b>Any of these drugs</b>	<b>45</b>	<b>38</b>
<i>Base</i>	<i>3,134</i>	<i>2,266</i>

Many prisoners are heavy users of drugs before they come into prison and it is clear that their drug use is much lower when in prison. This may be in part due to the deterrent effect of the MDT programme but there will also be restrictions in supply and imprisonment is likely to reduce the amount of cash available for the purchase of drugs. As shown above, since 1997 there appears to have been a decline in cannabis use within prison, despite an apparently stable rate of use among offenders before coming to prison. Rates of heroin use within the prison system appear to have remained more stable over the same period, while use among prisoners before coming to prison has increased markedly (Table 6.1). This suggests that the drug prevention measures in the prisons probably have had an impact on drug use. However, the extent to which this is due to the MDT programme rather than other aspects of the prison regime, such as increased security and control within the prisons, is not clear.

### Key Findings

- There appears to have been an increase in heroin use amongst prisoners before coming to prison in the period since the start of MDT programme, while cannabis use has remained fairly constant.
- It appears that cannabis use in prison has declined but the rate of heroin use has stayed more constant or may have increased somewhat, since the start of the MDT programme.

### Changes in rates of drug use among individuals

Edgar and O'Donnell (1998) interviewed a small group of 148 prisoners who had recently been tested under the MDT programme and asked them directly about the impact of the MDT programme on their drug use. Almost half of those who had used drugs at some time while in custody said that they had not changed the amount or pattern of use in response to MDT. However, 27 per cent said they had stopped using drugs entirely, 15 per cent said they had reduced their consumption and six per cent said they had reduced cannabis use but not heroin.

In the qualitative interviews with prison staff carried out as part of this study, at governor level there was general confidence expressed in the deterrent value of the MDT programme. However, one governor added that "... an addict cannot marshal his/her thoughts enough to think about the consequences so a deterrent does not work for addicts". Other staff pointed out that RMDT would only work as a deterrent if the punishments were salient to the prisoner, for example, added days would be of little concern to lifers.

In chapter 3 the considerable difference between the proportion of prisoners who had been using drugs in the month before coming to prison and in prison in the month before interview was shown. While 66 per cent of prisoners had used drugs in the month before prison only 25 per cent reported using drugs in prison in the month prior to interview. The reduction in use was slightly more marked for cannabis than for heroin: 51 per cent had used cannabis in the month before prison while 19 per cent had used it in prison in the month before interview while for opiates the equivalent figures were 30 per cent and 13 per cent. In addition to this overall reduction in the numbers of people using, there was a difference between the apparent frequency of use in prison between cannabis and heroin. As was described in Chapter 3, more people said they had used cannabis in the month before interview than said they had used opiates (19% compared with 13%), but when use in the past week is considered there was no difference: nine per cent said they had used cannabis and ten per cent that they had used heroin. This suggests that, although a smaller number of people use heroin in prison than use cannabis, they use heroin more frequently, a fact which is confirmed when the number of episodes of use in the past seven days is considered (see Table 3.4). This implies that any impact of MDT or the prison regime on the frequency of drug use is greater on cannabis than on heroin.

### Key findings

- There is a big reduction in the proportions of people using drugs in prison compared with the period immediately before coming to prison. For cannabis there is a reduction in the proportions reporting use from 51 per cent to 19 per cent and for opiates from 30 per cent to 13 per cent.
- Although a smaller number of people use heroin in prison than use cannabis, they use heroin more frequently. This suggests that any impact of MDT or other aspects of the prison regime on the frequency of drug use is greater on cannabis than on heroin.

## Reasons given for using or not using drugs

Although a high proportion of those who use drugs in prison are likely to have been using drugs before they came into prison there may be some who start using them for the first time or who restart using them after a period of abstinence. The proportions starting or ceasing drug use on entry to prison can be seen as an indicator of the impact of being in prison on drug use. Table 3.8 on page 31 showed the proportion of prisoners in the survey classified according to their use in the current prison and their use before prison. Those classed as 'non-users' reported that they had not used drugs in the year before coming to prison or in their current prison; 'new user/restarters' are those who said they had not been using in the year before coming to prison but had used in their current prison; 'prior only' covers those who were using before coming to prison but have not used in the current prison; and 'continuers' are those who used both before coming to prison and in the current prison. Overall, 33 per cent of prisoners said they had used illicit drugs prior to prison but not in prison and only two per cent said they had started or restarted using drugs. However, 37 per cent of inmates had continued using drugs in prison while 28 per cent had remained non-users.

Whether or not an inmate uses drugs in prison will be the result of the interplay of a wide range of factors, some of which will motivate a prisoner to use drugs while others will inhibit use. Key motivators for use are likely to be habit or addiction, a desire to alleviate feelings such as boredom or anxiety, and peer pressure or ease of availability that makes drug use seem to be the norm. Inhibitory factors would include the fear of detection and punishment, lack of availability, negative attitudes to drug use including fear of the risk to health from use, lack of money to buy drugs and a desire to give up drug use. The fear of detection and punishment will be influenced by an individual's assessment of the likelihood of detection and the salience of the likely punishment (which will in turn depend on personal circumstances such as time to release, length of sentence etc.).

The MDT programme is the main way that people who are using drugs (rather than smuggling or dealing in them) are likely to be caught, although other security measures may result in them being caught in possession of drugs. Therefore the proportion of people who have stopped using drugs in prison who say they are not using drugs because they are afraid of being caught rather than for other reasons, gives some indication of the impact of MDT on drug use.

All people who had used illicit drugs at some time but said they had not used drugs in prison were asked why they had not done so. The most common reason mentioned was that they did not need them, given by 36 per cent of those asked. However, the next most frequently given reason was concern about getting caught (30%), while 26 per cent said they had wanted to stop using drugs. This suggests that drug use prevention activities, of which the MDT programme is an important part, do have a deterrent effect for some prisoners but that other aspects of an inmate's experience of being in prison may be as important or more important. (Table 6.3)

**Table 6.3 Reasons given for not using drugs in prison among those who had used drugs in the past**

Reason	Percentage mentioning each reason
Do not need them	36
Worried about being caught	30
Want to stop	26
Not a regular user	17
Worried about effects on health	16
Difficult to obtain	14
Worried about effect on family	10
Do not approve	6
Too expensive	5
Worried about becoming addicted	5
Other	2
<i>Base</i>	1,025

All individuals who said they had used drugs in the past month in the current prison were asked about their drug use on each of the previous seven days. Those who had used drugs were asked about their reasons for using, while those who did not were asked about their reason for not doing so.

A total of 401 inmates had used drugs in the past month in prison but had not used drugs at some time in the past week. The reasons given for not using drugs are shown in Table 6.4. The most common reason given for not taking a drug that day was that they were too expensive or that they did not need them, reasons mentioned by 29 per cent of those asked this question. A fifth (19%) said that the drugs were not available. Concerns about getting caught were only mentioned by 13 per cent of those asked.

**Table 6.4 Reasons given for not using drugs in the past seven days among prisoners who had used drugs in the past month in prison**

	Percentage mentioning each reason
Too expensive/cant afford	29
Don't need them	29
Not available or difficult to obtain	19
Worried about being caught/penalties	13
Wanted to stop	12
Too early/will use later in day	9
Worried about mental/physical effects	5
Worried about effect on family	5
Worried about addiction	3
Other	2
Don't approve of drugs/drug users	2
Never regular user/gave up long time ago	1
<i>Base*</i>	401

\* inmates who had used drugs in the current prison in the past month but not on one of past seven days

Of the 311 prisoners who had used drugs in the last week almost two-thirds (65%) gave the reason for doing so was that they needed them or wanted the effect and 57 per cent that they

were easily available. People could give more than one reason and just over a quarter (28%) of those who had used drugs in the past week gave both reasons. Only seven per cent said they felt under pressure to use them. This suggests that among drug users habit, addiction and availability are key factors influencing use and that the deterrent effect of programmes such as MDT is limited. (Table 6.5)

**Table 6.5 Reasons given for using drugs in the last week among prisoners who reported using drugs in the last week**

Reasons given for using drugs in last week	Percentage reporting
Needed them / wanted the effect	65
Easily available	57
Cheap	10
Felt under pressure	7
Less chance of detection than other drugs	3
Wanted to try them	3
Other	11
<i>Base</i>	<i>311</i>

### Key findings

- Among those who had used illicit drugs at some time but had not used drugs in prison, the most common reason given was that they did not need them, given by 36 per cent of those asked. The next most frequently given reason was concern about getting caught (30%), while 26 per cent said they wanted to stop using drugs. This suggests that drug use prevention activities, of which the MDT programme is an important part, may have a deterrent effect for some prisoners but that other aspects of an inmate's experience of being in prison may be as important or more important.
- Among inmates who had used drugs in the past month in prison, the most common reasons for not taking a drug on a particular day were that they were too expensive or they did not need them (29%), or that drugs were not available (19%), while concerns about getting caught were only mentioned by 13 per cent. Inmates who had used drugs in the past week said they used them because they needed them or wanted the effect (65%) and that they were easily available (57%). This suggests that, among this group of drug users, habit, addiction and availability are key factors influencing use and that the deterrent effect of programmes such as MDT is limited.

### Perceptions of the risks associated with drug use

All participants in the survey were asked to say what they thought was the main risk of using cannabis and heroin in prison. Further evidence of the likely differential impact of drug prevention measures on use of cannabis and opiates is shown in the responses to these two questions. For cannabis, the main risk identified was being caught, while for heroin health reasons and addiction featured almost as prominently. However, this also reflects the greater risks to health of heroin use. (Table 6.6)



**Table 6.6 Main risk of using cannabis and heroin in the current prison**

	<b>Cannabis</b>	<b>Heroin</b>
	<i>Percentage reporting</i>	
Detection / punishment	70	36
Health issues	8	26
Getting into debt	6	7
Addiction	3	17
None	3	1
Other	3	4
Don't know	7	8
<i>Base</i>	<i>2,268</i>	<i>2,267</i>

### Perceived likelihood of drug use in the future in prison and after release

Another way of considering the impact of the prison regime on drug use is to look at how likely people are to use drugs in prison compared with how likely they would be to use them after release. Therefore, as well as asking inmates about whether or not they had used drugs in prison the interviewers asked them to say how likely they considered they were to use drugs in the future within the current prison. All prisoners were asked to rate their likelihood of using cannabis or heroin in the future within their current prison on a scale of one to seven ranging from extremely likely to extremely unlikely. This was then recoded into five categories. A similar question was asked about their likelihood of using each of these drugs in the three months after release from prison. Table 6.7 shows the distribution of responses to these questions.

The majority of inmates said they were extremely unlikely to use cannabis or opiates in prison. Respondents were slightly more likely to think they would use cannabis than heroin in the future in prison. Overall, 77 per cent said they were extremely unlikely to use heroin and 61 per cent said they were extremely unlikely to use cannabis in their current prison in the future. Conversely, while 13 per cent said they were likely or extremely likely to use heroin, the equivalent figure for cannabis was 22 per cent.

While actual behaviour may be very different from these assessments of likelihood of use, the pattern of difference between the two time periods for the different drugs is quite striking. The proportion assessing themselves as extremely likely to use cannabis in this prison is half that for the three months after release (15% compared with 34%). In contrast, for heroin the proportion considering themselves extremely likely to use in the current prison is higher than that for the three months after release (9% compared with 6%). This provides further evidence suggesting a greater impact of drug prevention measures in prisons, including measures aimed at reducing supply of drugs as well as MDT, on cannabis use than on heroin use.

**Table 6.7 Likelihood of using heroin or cannabis in the next three months in prison or in the three months after leaving prison**

	Cannabis		Heroin	
	In next 3 months in current prison	In the 3 months after release	In next 3 months in current prison	In the 3 months after release
<b>Likelihood of using</b>	%	%	%	%
Extremely likely	15	34	9	6
Likely	7	7	4	3
Midpoint	7	7	4	4
Unlikely	10	8	6	7
Extremely unlikely	61	43	77	80
<i>Base</i>	2,264	2,265	2,265	2,263

### Key findings

- The majority of inmates said they were extremely unlikely to use cannabis or opiates in prison. Overall, 77 per cent said they were extremely unlikely to use heroin and 61 per cent said they were extremely unlikely to use cannabis in their current prison in the future. Conversely, while 13 per cent said they were likely or extremely likely to use heroin, the equivalent figure for cannabis was 22 per cent.
- There was little difference in perceived likelihood of using heroin on leaving prison compared with in the current prison. In contrast, a much larger proportion of inmates thought they were extremely likely to use cannabis after leaving prison than was the case for use in prison. This suggests a greater impact of drug prevention measures in prisons, including supply reduction measures and MDT, on cannabis use than on heroin use.

### Factors associated with likelihood of using drugs in the future

Consideration of the factors associated with a perceived likelihood of using drugs in the future may give an indication of the impact of being in prison on drug use and help to identify groups that may be affected by this more than others.

Table 6.8 and 6.9 show inmates' assessment of their likelihood of using cannabis or heroin in the future in their current prison and in the three months after release from prison by type of prison, age and whether on remand or sentenced. The pattern of likelihood of use in the current prison for the different drugs in the different types of prison was very similar to the pattern of reported drug use. For example, inmates of YOIs considered themselves quite likely to use cannabis but almost none considered there to be any likelihood of using heroin, while in dispersal, training and women's prisons the proportions considering themselves likely to use the drugs were very similar.

In all types of prison, the proportion of inmates who considered themselves likely to use cannabis in the three months after leaving prison were markedly higher than the proportion considering themselves likely to use it in prison. The differences were not quite as large for inmates of open and dispersal prisons. In contrast, for heroin use after leaving prison, there was generally a decrease in the proportion considering themselves likely to use the drug compared with expected use in prison. The exception was in women's prisons, which probably reflects the higher rates of opiate dependence prior to coming to prison among women prisoners (Singleton et al, 1998). A very marked differences in perceived likelihood of cannabis use in prison and after prison among younger prisoners suggests that being in prison has a very big effect on their use of drugs but also reflects the pattern of drug use by age within the general population.

**Table 6.8 Likelihood of using cannabis and heroin in the future in the current prison by type of prison, age group and type of prisoner**

	Type of prison						Age group				Type of prisoner		
	Local / Remand B/C	Cat	Women	Open	Dispersal	YOIs	16-20	21-29	30-39	40+	Remand/ not sentenced	Sentenced / civil	All
<b>Likelihood of using cannabis in this prison</b>													
Extremely likely	17	17	6	4	7	12	13	21	12	6	19	14	15
Likely	6	7	3	5	6	10	9	6	7	4	9	6	7
Midpoint	7	7	4	3	1	8	8	9	5	3	8	6	7
Unlikely	11	8	8	4	6	21	21	11	8	6	12	10	10
Extremely unlikely	58	61	78	84	80	49	49	52	67	80	52	63	61
Base	803	435	402	169	235	222	244	948	659	415	306	1960	2,266
<b>Likelihood of using heroin in this prison</b>													
Extremely likely	7	15	9	2	8	0	1	11	11	6	8	9	9
Likely	4	5	4	1	2	1	2	6	4	1	4	4	4
Midpoint	5	6	4	1	3	1	2	6	5	2	5	4	4
Unlikely	7	8	5	0	4	2	3	8	7	2	7	6	6
Extremely unlikely	77	67	78	96	84	96	93	70	74	88	77	77	77
Base	804	435	402	169	235	222	244	949	658	416	307	1960	2267

**Table 6.9 Likelihood of using cannabis and heroin in the three months after release from prison by type of prison, age group and type of prisoner**

	Type of prison						Age group				Type of prisoner		All
	Local / Remand	Cat B/C	Women	Open	Dispersal	YOIs	16-20	21-29	30-39	40+	Remand/ not sentenced	Sentenced / civil	
<b>Likelihood of using cannabis in the three months after release</b>													
Extremely likely	39	34	20	13	16	39	42	41	30	17	41	32	34
Likely	7	7	5	3	6	14	13	9	6	3	5	8	7
Midpoint	7	6	7	4	6	11	10	7	7	5	8	7	7
Unlikely	8	8	8	4	6	14	13	11	8	2	7	9	8
Extremely unlikely	39	45	59	76	67	22	22	32	49	73	38	44	43
Base	804	436	402	169	234	222	244	948	659	416	307	1,960	2,267
<b>Likelihood of using heroin in the three months after release</b>													
Extremely likely	7	7	12	1	5	1	2	7	8	4	9	6	6
Likely	4	3	4	-	1	2	2	4	3	2	4	3	3
Midpoint	4	6	4	1	1	0	1	5	6	2	4	4	4
Unlikely	10	7	7	2	2	2	3	11	6	3	9	7	7
Extremely unlikely	76	76	73	96	91	95	92	73	77	89	75	80	79
Base	803	435	401	169	235	222	244	947	658	416	306	1,959	2,265

The likelihood of drug use in the future both in prison and after leaving, according to inmates' drug use in the current prison and their use before prison, is shown in Tables 6.10 to 6.13. It is apparent that people who have already used a drug in prison are far more likely to think that they will use drugs in prison in the future. The highest proportion thinking themselves extremely likely to use drugs again are found in the group of inmates who were using before prison and continued in prison, for both cannabis and heroin. However, people classed as new users/restarters of both types of drugs are also more likely than those who have never used or who used prior to prison only to say they will use in the future in the current prison. However, where use after prison is concerned, while continuers remain the group with the highest proportion thinking they are likely to use each drug, those who used prior to prison consider themselves more likely to use after prison than new users or restarters.

This suggests that some of the new use in prison is circumstantial and may not be lasting, although people's intentions may be very different from their behaviour once they are released. However, the pattern is different for cannabis and heroin as hardly any new users/restarters of heroin use consider themselves likely to use heroin after leaving prison, but a quarter of new users/restarters of cannabis think they are extremely likely to use in the three months after leaving prison. This is, perhaps, not surprising as cannabis use is much more widespread and acceptable than heroin use in the population as a whole. However, it does suggest that changes to using drugs in prison may be more likely to be temporary for heroin than for cannabis. However, it may be that prisoners are more accurate or honest in their answers with respect to cannabis than heroin use and the work of Boyes et al (2003) suggests that some at least of those who initiate heroin use in prison will continue to do so afterwards.

**Table 6.10 Likelihood of using cannabis in the next three months in the current prison by current cannabis use status**

	Cannabis use current status grouping				All
	Non-users	New users/restarters	Prior only	Continuers	
<b>Likelihood of using cannabis in prison</b>					
Extremely likely	1	26	4	44	15
Likely	1	13	6	13	7
Midpoint	2	14	8	11	7
Unlikely	5	17	15	12	10
Extremely unlikely	91	31	67	19	61
<i>Base</i>	969	93	647	555	2,264

**Table 6.11 Likelihood of using heroin in the next three months in the current prison by current opiate use status**

	Opiate use current status grouping				All
	Non-users	New users / restarters	Prior only	Continuers	
<b>Likelihood of using heroin in prison</b>					
Extremely likely	0	31	3	42	9
Likely	1	6	4	15	4
Midpoint	0	11	5	15	4
Unlikely	2	16	14	12	6
Extremely unlikely	97	36	74	17	77
<i>Base</i>	1,456	97	372	340	2,265

**Table 6.12 Likelihood of using cannabis in the three months after release by current cannabis use status**

	Cannabis use current status grouping				All
	Non-users	New users / restarters	Prior only	Continuers	
<b>Likelihood of using cannabis in the 3 months after release</b>					
Extremely likely	2	24	45	68	34
Likely	1	9	12	11	7
Midpoint	3	9	11	8	7
Unlikely	5	10	14	7	8
Extremely unlikely	88	49	18	7	43
<i>Base</i>	970	93	646	556	2,265

**Table 6.13 Likelihood of using heroin in the three months after release by current opiate use status**

	Opiate use current status grouping				All
	Non-users	New users / restarters	Prior only	Continuers	
<b>Likelihood of using heroin in the 3 months after release</b>					
Extremely likely	1	2	8	26	6
Likely	-	-	6	12	3
Midpoint	0	4	9	14	4
Unlikely	1	14	19	18	7
Extremely unlikely	98	80	58	30	80
<i>Base</i>	1,457	97	370	339	2,263

**Table 6.14 Likelihood of using cannabis in the next three months in the current prison by whether prisoners had received added days for a positive MDT test**

	Punishments received					All
	Added days	Others (not added days)	None	Not tested positive	Never tested	
<i>Percentage reporting</i>						
Extremely likely	37	24	8	13	14	15
Likely	12	16	9	5	7	7
Midpoint	14	10	19	5	6	7
Unlikely	9	9	26	10	10	10
Extremely unlikely	28	40	39	67	62	61
<i>Unweighted Count</i>	109	68	27	828	2,060	2,254

**Table 6.15 Likelihood of using heroin in the next three months in the current prison by whether prisoners had received added days for a positive MDT test**

	Punishments received					All
	Added days	Others (not added days)	None	Not tested positive	Never tested	
<i>Percentage reporting</i>						
Extremely likely	23	16	2	8	8	9
Likely	7	2	5	2	4	4
Midpoint	6	10	10	5	4	4
Unlikely	14	6	25	5	5	6
Extremely unlikely	50	66	58	80	79	77
<i>Unweighted Count</i>	109	68	27	830	1,221	2,255

In Chapter 4 it was noted that inmates who had used drugs in prison were more likely to have been selected for an MDT test, mainly because they were more likely to be tested on suspicion of using drugs. Presumably as a result of this they also perceived a greater likelihood of being selected for an MDT test and of testing positive if selected. Past drug use was also shown to be a major predictor of drug use in prison. Therefore, any association between most MDT-related factors and perceived likelihood of use in the future is likely to be confounded by the effect of past drug use. This is illustrated in Tables 6.14 and 6.15 where people who have tested positive on an MDT test and received some punishment as a result, consider themselves more likely to use drugs in the future than people who have not tested positive or have not been tested.

### Key findings

- Inmates who had used drugs in prison, both 'continuers' and 'new users/restarters' were far more likely than those who had not to think that they would use drugs again in prison.
- For use after leaving prison, 'continuers' were the most likely to think they would use drugs but those who used drugs prior to prison but not in prison were more likely than 'new users/restarters' to think they would use drugs after release.
- New users/restarters of both heroin and cannabis use in prison are more likely than those who have not used in prison to say they will use in the future in the current prison. However, new users/restarters of heroin use consider themselves unlikely to use heroin after prison, but a quarter of new users/restarters of cannabis think they are extremely likely to do so.

### Analysis to identify the main factors associated with likelihood of future drug use

Many of the factors identified above as associated with perceived likelihood of using drugs in the future are themselves interrelated (for example age, drug use and type of prison) and a range of other factors might also be associated with likelihood of using drugs in the future. To identify which of these factors are independently related to drug use and their relative importance, logistic regression analysis was carried out. A range of variables, including some relating to prisoners' experience of the MDT programme, was included and tests of significance undertaken while controlling for other significant effects in the regression model. Variables considered in the analysis were: opiate or cannabis current use status; age group; type of prison; sentence length groupings; experience of RMDT selection; experience of RMDT positivity; number of proven adjudications - grouped (this includes adjudications for causes other than drugs offences); time already served in the current prison; expected time to release if known. Separate analyses were conducted for opiate and cannabis use. Because, in the sample as a whole, non-users of drugs both before and in prison were extremely unlikely to think they would use drugs in the future at all, the analyses were conducted for those who had used drugs either in prison or in the year before coming to prison. In this way factors associated with future use among this group who could be considered potential users would be identified, rather than factors that distinguish non-users from people who have used drugs.

#### *Cannabis use in the future in the current prison*

For likelihood of using cannabis in the future in the current prison the final regression model had an  $R^2$  of 0.14, indicating that the variables included in the model explained only 14 per cent of the variation in likelihood of future use of cannabis in prison. The variables included and the regression coefficients are shown in Table 6.16. There are highly significant differences between the different current user status groups. Those who have used cannabis only prior to prison perceive a very much lower likelihood of cannabis use in the current prison and those who continued prior use into prison perceive a higher likelihood of use again than new users/restarters. Within these use status groups there is a highly significant effect of age,

with the younger prisoners being more likely to think they will use cannabis in prison in the future. However, there is no evidence of age differentials between these groupings.

Significant differences were also evident between prison cluster type: prisoners in YOIs express a low likelihood of use and those in open prisons lower still; those in local, training, and dispersal prisons perceive a higher likelihood of using cannabis. There is also a significant effect of time served so far in this prison: a longer time served is associated with a lower intention to use. Sentence length was also associated with likelihood of using cannabis. The variable incorporates a division between remand and sentenced prisoners as it includes a category for people for whom no sentence length was available. This group report a particularly high likelihood of using cannabis in prison.

The effect of having been tested under the RMDT programme is also a significant factor in perceived likelihood of using cannabis in prison: the group whose most recent RMDT experience was in another prison than the current one was highest on likelihood of future use in prison. Those who experienced RMDT in their current prison reported the lowest likelihood of future use, but not significantly so.

**Table 6.16 Regression analysis of future use of cannabis in this prison (amongst users of cannabis before and in prison)**

	Coefficient	95% Confidence interval	
		lower limit	upper limit
<b>Current drug use status</b>			
(v. New users/restarters)			
Prior user only	-1.69 ***	-2.15	-1.22
Continuer	0.86 ***	0.42	1.31
<b>Age</b>	-0.36 ***	-0.54	-0.19
<b>Sentence length</b>			
(v Short)			
Medium	-0.21	-0.58	0.17
Long	0.07	-0.32	0.45
Unsentenced	0.58 **	0.17	0.99
Not known	..	..	..
<b>Time in prison</b>	-0.00 **	-0.00	-0.00
<b>Type of prison</b>			
(v Local/remand)			
Training prison	0.08	-0.24	0.41
Women	-0.31	-0.97	0.35
Open	-0.82 *	-1.57	-0.06
Dispersal	-0.10	-1.01	0.82
YOI	-0.48 *	-0.92	-0.04
<b>Most recent RMDT experience</b>			
(v None)			
Other prison only	0.44 **	0.14	0.75
This+other prison	0.10	-0.24	0.44
This prison only	-0.21	-0.57	0.16
<b>No. of adjudications</b>	0.23 **	0.07	0.38

\* = p<0.05; \*\* = p<0.01; \*\*\* = p<0.001

.. sample size too small for odds to be calculated



The number of adjudications<sup>11</sup> proven is significantly related to increased likelihood of future use, presumably reflecting entrenched drug use that is not being deterred by adjudications. But there were no additional discernible effects of having been found positive for either cannabis or opiates in a MDT.

#### Heroin use in the future in the current prison

Table 6.17 shows the coefficients and confidence intervals associated with the model identified for predicting perceived likelihood of using heroin in the future in the current prison. The model has an R<sup>2</sup> of only 0.17 so a considerable amount of the variance is unexplained by the variables used here.

**Table 6.17 Regression analysis of future use of opiates in this prison (amongst users of opiates before and in prison)**

	Coefficient	95% confidence interval	
		lower limit	upper limit
<b>Current drug use status</b>			
(v. new user/restarters)			
Prior user only	-2.41 *	-4.27	-0.56
Continuer	-0.72	-2.53	1.09
<b>Age</b>	-0.55	-1.20	0.10
<b>Age-current user status interaction</b>			
(v age.new user/restarter)			
Age.prior user	0.21	-0.54	0.95
Age.continuer	0.68	-0.03	1.39
<b>Sentence length</b>			
(v. Short)			
Medium	-0.35	-0.85	0.15
Long	-0.39	-0.92	0.14
Unsentenced	0.08	-0.44	0.60
Not known	1.25	-0.05	2.55
<b>Time in prison</b>	-0.00	-0.00	0.00
<b>Type of prison</b>			
(v. Local/remand)			
Training prison	0.67 **	0.28	1.06
Women	0.45	-0.21	1.12
Open	-0.88	-2.28	0.52
Dispersal	1.09	-0.03	2.22
YOI	-0.99	-1.99	0.02
<b>Most recent RMDT experience</b>			
(v. None)			
Other prison only	0.36	-0.02	0.75
This+other prison	0.28	-0.14	0.70
This prison only	-0.29	-0.81	0.22

\* = p<0.05; \*\* = p<0.01

<sup>11</sup> Information on all adjudications was collected, although if a prisoner had more than six adjudications preference was given to those relating to drug use/possession.

Previous opiate use in prison had a very strong effect on perceived likelihood of using heroin in the future in the current prison. Those drug users who had only used prior to coming to prison were significantly less likely to think they would use in prison than new users while there was no significant difference between those who continued using in prison and new users. There were also significant differences between prison cluster types. Inmates of open prisons and YOIs typically considered themselves unlikely to use heroin in prison, while those in training and dispersal prisons are more likely to intend to use again in prison.

However once the other factors are taken into account the effect of age and age by drug use status is only marginally significant. The effect of sentence length is also only marginally significant (those with shorter sentences report a lower likelihood of use - something that might be expected solely on grounds of length of possible exposure to the risk of using again in prison).

The effect of RMDT experience on perceived likelihood of future heroin use in this prison is also only marginally significant. Those experiencing RMDT in this prison are slightly less likely to think they will use again than those not having had a RMDT in this prison nor in any previous prison in the previous five years. It also suggests that those having experienced RMDT in a previous prison sentence (again in the preceding five years) are more likely than the no-RMDT group to think they will use again in this prison. This is quite possibly related to the fact that this group must have had previous prison experience - by definition - and are therefore likely to be amongst the more entrenched prison drug users.

There are however no significant effects from having received a positive MDT test result or associated with the number of proven adjudications with likelihood of use in the current prison. There were also no significant effects on intended heroin use in the current prison directly from the number of previous prison terms served in the five years prior to this one. This suggests that it is not the number of prison terms that is related to the intention, but rather the length of time previously in prison - for which experiencing a prior RMDT will be a surrogate indicator - that holds the effect. However, the amount of time already served in the current prison alone is not significantly related to perceived likelihood of use nor is the time to release (for those with a known or likely future release date).

This fact that RMDT experience is more strongly related to likelihood of cannabis use in prison than heroin use in this analysis provides more evidence to suggest that MDT is having an impact on prisoners likelihood to use cannabis but not heroin.

#### Likelihood of cannabis use after release

Similar regression analyses were conducted looking at factors associated with the perceived likelihood of drug use in the three months after release from prison. As before the analyses related to drug users only and separate analyses were conducted for heroin and cannabis. Table 6.18 shows the outcome of the regression model for likelihood of cannabis use in the three months after release from prison, which had an R2 of 0.07.

**Table 6.18 Regression analysis of future use of cannabis in the three months after release (amongst users of cannabis before and in prison)**

	Coefficient	95% confidence interval	
		lower limit	upper limit
<b>Current drug use status</b> (v. new users/restarters)			
Prior user only	1.04 ***	0.59	1.50
Continuer	2.15 ***	1.68	2.62
<b>Age</b>	-0.15	-0.33	0.02
<b>Sentence length</b> (v. Short)			
Medium	-0.31	-0.69	0.06
Long	-0.70 ***	-1.07	-0.33
Unsentenced	-0.13	-0.54	0.28
Not known	-0.30	-1.21	0.60
<b>Time in prison</b>	-0.00 **	-0.00	-0.00
<b>Type of prison</b> (v. Local/Remand centre)			
Training prison	0.14	-0.18	0.46
Women	-0.36	-0.94	0.22
Open	-1.14 **	-1.82	-0.47
Dispersal	-0.11	-0.91	0.70
YOI	-0.27	-0.69	0.15
<b>Most recent RMDT experience</b> (v. None)			
Other prison only	0.09	-0.22	0.39
This+other prison	-0.09	-0.43	0.25
This prison only	-0.16	-0.50	0.19

\*\* = p<0.01; \*\*\* = p<0.001

The current use status grouping was significantly related to likelihood of use after leaving prison: with the lowest proportion suggesting they were likely to use afterwards among those who were new users/restarters in prison and the highest proportion among those who continued use in prison. There were no significant age interactions with current users status and the effect of age itself within these groupings was not significant, although there appeared to be a trend downwards in likelihood of use after prison with increasing age.

The prison type was also significantly related to likelihood of use after leaving prison with prisoners in open prisons reporting a very low expectation of using cannabis after prison. Time so far served in current prison was significantly related, longer time served being associated with less likelihood of use after prison, as was the sentence length grouping, the longer the sentence the less likely to expect to use after prison. However, time to release was not related to likelihood of use after prison.

RMDT experience was not related significantly to expectation of use after prison and neither was experience of other forms of MDT.

## Likelihood of heroin use after release

Table 6.19 shows the output from the regression model for likelihood of use of heroin after release, which had an  $R^2$  of 0.10. Use of opiates in the year before prison is much more influential than using in prison on the likelihood of using heroin after prison and there are significant age differentials across this basic current use status grouping. The highest levels of likelihood to use after prison are found amongst those who have continued use into prison, followed by those who used prior to prison and stopped, with new users/restarters lowest. The gradient in likely use after prison is upwards with increasing age amongst those continuing use into prison; and downwards with increasing age amongst those new to use in prison.

**Table 6.19 Regression analysis of future use of opiates in the three months after release (amongst users of opiates before and in prison)**

	Coefficient	95% confidence Interval	
		lower limit	upper limit
<b>Current drug use status</b>			
(v. new user/restarters)			
Prior user only	0.09	-1.02	1.20
Continuer	0.26	-2.41	2.92
<b>Age-current user status interaction</b>			
Age.new user/restarter	-0.57	-1.64	0.49
Age.prior user	-0.06	-0.40	0.27
Age.continuer	0.59 ***	0.28	0.91
<b>Sentence length</b>			
(v. Short)			
Medium	-0.43	-0.89	0.04
Long	-0.33	-0.83	0.16
Unsentenced	-0.09	-0.56	0.38
Not known	0.08	-1.26	1.43
<b>Time in prison</b>	-0.00 **	-0.00	-0.00
<b>Type of prison</b>			
(v. Local/remand)			
Training prison	-0.07	-0.45	0.32
Women	0.82 **	0.21	1.43
Open	-1.36	-2.82	0.11
Dispersal	0.35	-1.00	1.67
YOI	-0.60	-1.51	0.32
<b>Most recent RMDT experience</b>			
(v. None)			
Other prison only	0.07	-0.29	0.44
This+other prison	-0.33	-0.76	1.00
This prison only	-0.60 *	-1.09	-0.10

\* =  $p < 0.05$ ; \*\* =  $p < 0.01$ ; \*\*\* =  $p < 0.001$

The prison cluster type is also significant: people in open prisons report a low likelihood of use after prison, and women a high likelihood. Those having spent longer time in the current prison consider themselves less likely to use afterwards, while the sentence length grouping is not significantly associated (although those with shorter sentences tend to be higher on

likelihood) and time to release (for those with a known or likely future release date) is also not significantly related.

RMDT experience relates only marginally to perceived likely later use, which is lower if the inmate has been tested in this prison, but experience of other forms of MDT is not significantly related.

### Key findings

- For future cannabis use in prison the main factors associated with a higher likelihood of use were: previous use in prison, younger age, prison type, shorter time served, being on remand or unsentenced, having no previous experience of RMDT and the number of adjudications.
- The main factors associated with likelihood of heroin use in the future in the current prison were previous use in the current prison, age and type of prison, while sentence length and experience of RMDT testing were only marginally significant.
- The greater impact of previous RMDT experience on likelihood of using cannabis compared with heroin provides more evidence to suggest that MDT is having more impact on the use of cannabis than on heroin.
- For both cannabis and heroin, the factor most strongly associated with a perceived likelihood of using the drug after release from prison was use prior to coming to prison; new users/restarters were the least likely to think they would use after release while continuers were most likely to think they would do so.

### Identification of the impact specifically of the MDT programme on the likelihood of using drugs in prison in the future

The analyses described in the earlier sections of this chapter suggest that being in prison decreases drug use. It seems to have a bigger impact on cannabis than heroin use and heroin users seem to use the drug more frequently than do cannabis users. It appears that drug prevention measures which involve the detection of drug users, mainly RMDT, have an impact on drug use among some prisoners, since fear of detection is mentioned as a reason for not using drugs. However, what is not clear from this is the contribution of the MDT programme to this effect. The logistic regression analyses in section 6.1.7 included a measure of inmates' previous experience of the MDT programme. It showed that previous experience of the RMDT programme was significantly associated with perceived likelihood of use of cannabis in the future in prison and to a lesser extent also for heroin. This suggests that the MDT programme may be having some effect on drug use, which is greater for cannabis users than for heroin. However, these models were dominated by the variable relating to current drug use status and may have failed to represent the effect of the MDT programme on those users who had used prior to prison but not in prison.

The survey contained a number of questions on attitudes to the MDT programme, apart from those already mentioned relating to previous experience of the MDT programme. These included inmates' assessment of their likelihood of being selected for MDT and of testing positive if selected; and their concern about the penalties for doing so. From the information collected in the survey on patterns of drug use before and in prison, the reasons given for using or not using drugs and the data on MDT related variables, a simple model of the factors influencing the decision to use drugs suggested itself. The need for the drug would be a key influence on whether a drug was used, which might be measured by the level and type of drug use or dependence before prison. Other factors such as boredom or anxiety might also relate to need but for most prisoners who have not been in prison for a particularly long time it is likely that habit and dependence would be stronger components. This need for the drug or desire for its positive effects would be counterbalanced by inhibiting factors, which would include cost and lack of availability, which in turn would be affected by security measures that

interfered with supply. Another inhibiting factor mentioned in the survey was fear of detection and, since the MDT programme is a key way in which drug use is detected, this is the main way in which it would influence drug use. One measure of the influence of the MDT programme on fear of detection, which would not be confounded by an association with previous use of drugs in prison, would be an individual's level of concern about receiving the penalties that would be imposed as a result of any positive test.

A logistic regression analysis was carried out to see the extent to which some of the factors identified above were associated with and predicted perceived likelihood of future use in prison. Measures of drug use and dependence before prison were available from the survey, for use as indicators of need for a drug. The survey also included a question about whether inmates knew what the penalties were for testing positive on MDT and, if so, how concerned they would be about receiving these penalties. Separate analyses were undertaken for perceived likelihood of using heroin and cannabis among those who had used drugs in the year before prison only.

Variables that were used in the models were: any opiate use in the year before prison, any cannabis use in the year before prison, stimulant dependence and opiate dependence scores in the year before prison, whether inmates knew what the penalties were for testing positive on MDT and their level of concern about the penalties, and type of prison.

#### Likelihood of future cannabis use in the current prison among people who had used cannabis in the year before prison

Table 6.20 shows the coefficients obtained for the regression model predicting likelihood of future cannabis use in the current prison among those who had used cannabis in the year before coming to prison. Knowledge of the penalties associated with MDT and lack of concern about the penalties among those who know what they are were both strongly associated with likelihood of future use of cannabis. Dependence on stimulants and the use of opiates in the year before coming to prison were also significantly associated with the perceived likelihood of use. Inmates of women's prisons were the least likely to think they would use cannabis in prison in the future.

**Table 6.20 Regression model for future use of cannabis in prison (cannabis users in the year before prison only)**

	Coefficient	95% Confidence interval	
		lower limit	upper limit
Penalties for positive MDT not known	-1.89 ***	-2.40	-1.38
Level of concern about penalties for +ve test	-0.55 ***	-0.69	-0.42
Stimulant dependence score	0.14 ***	0.07	0.20
Used opiates in the year before prison	0.79 ***	0.55	1.03
Type of prison (v. Local/Remand centre)			
Training prison	-0.00	-0.26	0.25
Women's	-0.97 **	-1.57	-0.37
Open	-0.30	-1.01	0.40
Dispersal	-0.60	-1.34	0.15
YOI	0.13	-0.19	0.45

\*\* = p<0.01; \*\*\* = p<0.001

#### Likelihood of future heroin use in the current prison among people who had used opiates in the year before prison

The variables that entered the model for likelihood of heroin use in prison and their coefficients are shown in Table 6.21. The level of concern about the penalties associated with testing positive on MDT was directly associated with perceived likelihood of future use of

heroin in the current prison, although the effect was smaller than that for cannabis. This suggests that the MDT programme may have a small deterrent effect on heroin use.

Stimulant dependence before coming to prison was significantly associated with likelihood of use of heroin in the future in the current prison but dependence on opiates was only marginally significant. However, many of those dependent on stimulants prior to prison are also dependent on opiates and it may be that these poly-drug dependent prisoners are more likely to be drug users in prison. There were also significant differences relating to type of prison which reflect the different pattern of drug use within different prison types.

**Table 6.21 Regression model for future use of heroin in prison (opiate users in the year before prison only)**

	Coefficient	95% Confidence interval	
		lower limit	upper limit
Penalties for positive MDT not known	-1.41 ***	-2.13	-0.68
Level of concern about penalties for +ve test	-0.39 ***	-0.57	-0.21
Stimulant dependence score	0.17 ***	0.09	0.25
Opiate dependence score	0.12 *	0.02	0.22
Type of prison (v. Local/Remand centre)			
Training prison	0.84 ***	0.53	1.15
Women's	0.20	-0.39	0.78
Open	-1.06	-2.70	0.57
Dispersal	0.06	-1.09	1.22
YOI	-1.28 **	-2.21	-0.36

\* = p<0.05; \*\* = p<0.01; \*\*\* = p<0.001

### Key findings

- The results of logistic regression modelling including drug use before prison and attitudes and expectations in relation to MDT tests indicate that drug use before prison, particularly poly-drug use and dependence, is an important factor affecting the likelihood of future drug use in prison.
- Concerns about the penalties associated with testing positive on the MDT appears to have some deterrent effect as it is associated with a lower perceived likelihood of future use in prison among people who have used drugs before coming to prison.

## Change in the types of drug used within prison

The above analyses indicate that being in prison has the effect of reducing levels of drug use and there is evidence that the MDT programme plays a part in this, but that the impact on cannabis use is greater than for heroin. The qualitative interviews with prison staff indicated that there is a widespread belief among prison staff that RMDT has caused some prisoners to move from using cannabis to heroin because of the shorter period of detectability of the latter drug. They described anecdotal evidence of being told by prisoners that this is the case.

### Extent of change in the types of drug used

Outside prison far more people use cannabis than use heroin (Ramsay *et al*, 2001) and this is also true among prisoners before they come to prison (see Table 3.6). Within prison the difference is less marked and, as shown in Chapter 3, there are now more episodes of use of heroin than of cannabis in prisons. However, this difference may simply reflect a bigger

impact of the prison regime on cannabis use than on heroin use. This could be partly accounted for by the more addictive nature or persistent pattern of heroin use, rather than being a result of people actually changing to heroin use from cannabis use. That this is true to some extent is shown by the higher continuation rates within prison for heroin use compared with cannabis use. The continuation rates for users of cannabis and heroin between the month before coming to prison to sometime in the current prison (49% for cannabis and 48% for heroin) and then between this last group and the past month in prison (39% and 37%) were almost identical. However, while only 48 per cent of cannabis users who said they had used in the last month in prison reported use in the past week, the rate for heroin users was 72 per cent.

However, as shown in Table 3.8 in Chapter 3, there is a group of people who were not using heroin in the year before coming to prison who said that they had used heroin in prison and who may have been encouraged to shift to this more harmful type of drug usage by prison circumstances. Whereas a third of all prisoners had used drugs prior to prison but had not used any while in their current prison, only a small proportion of inmates were classed as new users/restarters of drug use; four per cent were new users/restarters of opiate use. While any such "new" use must be viewed with concern, this does not appear to support the suggestion that the MDT programme is causing a *major* shift in drug use towards heroin. However, given the size of the prison population, even a small percentage starting to use heroin represents a considerable number of people.

### Evidence for the role of MDT in the change in type of drug use

The cause of the changes in the types of drug used need not necessarily be the MDT programme. For example, if measures to reduce the smuggling of drugs are more likely to pick up cannabis than heroin, perhaps because it smells more strongly or is bulkier so easier to detect, then heroin may be more available than cannabis and this might encourage its use. To see if there was any evidence to suggest that it was the MDT programme that was causing some people to take up heroin, people who appeared to have changed their pattern of drug use were identified during the interview and asked some specific questions about the reasons for this.

In the interview, prisoners who said that they had not used heroin in the month before coming to prison but who said they had used it in their current prison were asked questions about why they had used heroin, whether they had cut down on any other drugs as a result of using heroin and, if so, which drugs they had cut down on. A further group of prisoners who had used cannabis in the month before coming to prison but who had not used cannabis in their current prison were asked a similar set of questions about that change to their drug use patterns.

Overall 122 people, five per cent of all prisoners, had used heroin in the current prison but not in the month before coming to prison. The reasons given for their change to heroin use in prison are shown in Table 6.22. The majority of these people (90%) had been using some drugs in the year prior to coming to prison but only ten per cent said they had used heroin within that time period. Most frequently mentioned was cannabis, but about half had been using stimulants, such as crack or cocaine powder. The new users/restarters of opiates, who had not used any drugs in the past year represent 0.7 per cent of the prison population as a whole.

Ease of availability was the most common reason given (by 50% of those asked) and this may be affected by many other aspects of the prison regime other than the MDT programme (although if people are reluctant to use cannabis because of a fear of detection on MDT this may increase demand for heroin and hence also its supply). The high proportion of people who said they wanted or needed the effect (45%) suggests that factors such as past addiction, current anxiety and boredom play a significant part in causing the observed change to heroin. However, some people (16%) did state that they chose to use heroin because of a lower chance of detection, which could be ascribed to the MDT programme.



**Table 6.22 Reasons given for using heroin in the current prison but not in the month before the current prison term**

	<i>Percentage giving each reason</i>
Easily available	50
Needed it/wanted it	45
Wanted to try it	16
Less chance of detection	16
Under pressure to use it	11
Cheap	4
Other reason	2
<i>Base</i>	<i>122</i>

Only 35 per cent of this group (about 2% of the sample as a whole) said that they had cut down on other drugs because they were using heroin, so the majority were either new users or people who had restarted using drugs or people who were using a variety of drugs including heroin. Those who said they had cut down other drugs were most likely to say they had cut down on cannabis (89%) or stimulants (crack, cocaine or amphetamines) (51%).

A larger group of prisoners 540 (25% of all prisoners) had used cannabis in the month before prison but had not used it in this prison. The reasons they gave for this change are shown in Table 6.23.

The main reason people gave for stopping cannabis use was worry about getting caught or the penalties (45%), but only 6% specifically mentioned that it was easily detected in the MDT programme. This suggests that the MDT programme may be discouraging cannabis use, although other drug prevention measures may also be contributing to this change. In most cases prisoners were stopping using drugs altogether: only four per cent of this group who appeared to have stopped using cannabis (1% of the population as a whole) said that they were using other drugs instead. However, almost all of these said that they were using heroin or other opiates, although crack and cocaine powder were also mentioned.

**Table 6.23 Reasons given for not using cannabis in the current prison when had used it in the month before the current prison term**

	<i>Percentage giving each reason</i>
Worried about being caught/penalties	45
Don't need it	30
Not available/difficult to obtain	25
Wanted to stop	23
Worried about physical or mental health	11
Too expensive	7
Worried about effect on family	7
Easily detected in MDT	6
Not regular user/gave up a long time ago	5
Worried about addiction	2
Use other drugs instead	1
Don't approve of drugs and drug users	1
Other reason	0
<i>Base</i>	<i>540</i>

This does suggest that there is a very small group of prisoners who are changing from cannabis to heroin use in prison and that fear of detection by the MDT programme may be a factor in this in some cases.

#### Key findings

- A small group of prisoners (6% of the prison population) had started or restarted using heroin in prison when they had not been using it before coming to prison. Most were users of other drugs before incarceration. The main reason given for this change to heroin was ease of availability but some people did say it was because it was less easily detected.
- A larger group of prisoners (25%) had stopped using cannabis since they had been in prison most commonly because of fear of getting caught. In most cases (96%) they were not using any other drugs instead but those who were generally said they were using heroin.
- It appears that there is a small proportion of prisoners (1% of the whole population) who are changing from cannabis to heroin use, probably because of fear of detection on MDT. However, a much larger proportion are simply giving up using cannabis.

#### Impact on the route of administration

In qualitative interviews with prison staff the view was expressed that one of the negative effects of the MDT programme was that it made people change from cannabis to heroin but no mention was made of concern about an increase in injecting drug use. In the survey of prisoners, comparatively little injecting of drugs was reported (only 1% reported injecting at all in the current prison and none had injected in the week before interview) despite the fact that 18 per cent reported having injected drugs in the month before coming to prison. Therefore there is no evidence that the MDT programme is encouraging injecting drug use.

#### Key finding

- There is no evidence that the MDT programme is encouraging injecting drug use. There was much less injecting drug use reported in prison than in the period immediately before prison.

## 7. Other issues

The research project was designed primarily to consider the two broad issues covered in the previous two chapters, i.e. the use of RMDT as a measure of drug use in prison and the impact of MDT on the level and type of drug use. However, a wide range of information was collected relating to other areas of interest. These issues are considered to the extent possible here.

The issues covered are:

1. the extent to which the prison response to refused and failed MDT tests is appropriate and proportionate;
2. the extent of MDT-initiated referral to treatment and support programmes;
3. the most appropriate balance of the different types of testing in order to most appropriately meet the stated objectives of the MDT programme; and
4. the impact on the MDT programme of the increased emphasis on security measures and the new range of treatment and support.

These issues are considered in turn and any information relating to them collected as part of the research project are presented.

### The prison response to refused and failed MDT tests

An issue of concern is the extent to which the prison response to refused and failed MDT tests is appropriate and proportionate. Answering such a question properly would require a great deal of information about the circumstances surrounding individual cases which are not available in a study of this kind. In the in-depth interviews with prison staff there was a suggestion that it was possible for prisons to manipulate their MDT rates by encouraging refusals by treating refusals more leniently than positive tests. Since refusals are not counted in the calculation of positivity rates a high rate of refusals among drug users could lower a prison's MDT positivity rate. The overall rate of refusals, however, is quite low (about 6%) and not nearly as high as some prison staff clearly believe.

In the survey of prisoners, the interviewers asked prisoners if they had ever tested positive on MDT in the current prison and, if so, what the outcome of this was. They also asked if prisoners had refused an MDT test and what had happened as a result.

**Table 7.1 Outcomes reported by prisoners who had tested positive or refused MDT in the current prison**

	<b>Tested positive</b>	<b>Refused MDT</b>
<b>Penalty</b>	<i>Percentage reporting each penalty</i>	
Additional days	57	81
Loss of privileges	30	41
Closed visits	28	34
Loss of earnings	25	22
Caution	10	2
Different regime	8	15
Restriction / stoppage of visits	4	-
Cell confinement	3	19
Loss of home leave	3	-
Re-categorisation	2	-
Transfer	2	-
Other	11	8
None	14	-
<i>Base</i>	<i>204</i>	<i>50</i>

Table 7.1 compares the outcomes reported arising from these two events. The number of people who reported refusing a test in their current prison was small, so care needs to be taken in interpreting the findings. However, it appears that prisoners who refuse a test are more likely to be given added days and cellular confinement as a punishment and none of them went unpunished, unlike 14 per cent of those who tested positive (because for positive tests there can be mitigating circumstances).

**Table 7.2 Penalties received by prisoners who had reported testing positive by type of drug**

<b>Penalty</b>	<b>Drug tested positive for</b>			<b>All</b>
	<b>Cannabis only</b>	<b>Opiates only</b>	<b>Others</b>	
	<i>Percentage reporting each penalty</i>			
Additional days	62	64	46	57
Loss of privileges	34	28	28	30
Closed visits	26	22	35	28
Loss of earnings	24	21	30	25
Caution	13	5	10	10
Different regime	8	9	8	8
Restriction / stoppage of visits	1	6	6	4
Cell confinement	-	5	6	3
Loss of home leave	5	1	3	3
Re-categorisation	-	5	1	2
Transfer	-	-	4	2
Other	8	9	15	11
None	6	16	20	14
<i>Unweighted count</i>	<i>67</i>	<i>68</i>	<i>69</i>	<i>204</i>

People were asked which types of drug they had tested positive for and also how many times they tested positive. Table 7.2 compares the outcomes of positive tests for those who had tested positive for cannabis only with those who had tested positive for opiates only and an

'other' category covering those who had tested positive for other drugs or for more than one drug. The main difference in the types of penalties received is the higher proportion of people in the 'opiates only' or 'other' categories who had no sanctions applied, which will reflect the people whose tests were mitigated because of opiate-based medication. This suggests that there generally is little distinction made in terms of severity of punishment between testing positive for cannabis and opiates. This is in contrast to the situation outside prison where opiate use is treated far more harshly than cannabis use.

People who said they had received added days as a result of testing positive were asked how many added days they had been given. When the number of added days received by those who had tested positive once only is examined, there is also no statistically significant difference between those testing positive for cannabis and opiates. The median number of days received for cannabis was 14 days and for opiates, 15 days. However, it should be noted that this was based on a small group of only 66 inmates.

Table 7.3 shows the difference in penalties reported by those who had tested positive on MDT once and those who had been positive more than once. It can be seen that those testing positive more than once report a higher rate of all penalties except a caution and 'other' penalties (mainly loss of canteen) suggesting there may be more leniency towards those who test positive only once.

**Table 7.3 Penalties received by prisoners who had reported testing positive by number of positive tests**

Penalty	No. positive tests in current prison		
	One	Two or more	All
	<i>Percentage reporting each penalty</i>		
Additional days	52	67	57
Loss of privileges	25	41	30
Closed visits	19	45	28
Loss of earnings	16	45	25
Caution	10	8	10
Different regime	8	8	8
Restriction / stoppage of visits	2	8	4
Cell confinement	1	8	3
Loss of home leave	3	2	3
Re-categorisation	1	4	2
Transfer	1	3	2
Other	13	5	11
None	17	6	14
<i>Unweighted count</i>	133	71	204

The recent ruling by the European Court of Human Rights mentioned earlier means governors can no longer award added days for failing an MDT test. The whole area of sanctions for failed tests is therefore likely to be reviewed.

#### Key findings

- It appears that prisoners who refuse a test appear to be treated more harshly than those who test positive on MDT: they were more likely to be given added days and cellular confinement as a punishment and none of them went unpunished, unlike 14 per cent of those who tested positive (because for positive tests there can be mitigating circumstances).

- There generally seems to be little distinction made in terms of severity of punishment between testing positive for cannabis and opiates.
- Those testing positive on MDT more than once, report a higher rate of all penalties except a caution and 'other' penalties (mainly loss of canteen), suggesting there may be more leniency towards those testing positive for the first time.

## The extent of MDT-initiated referral to treatment and support programmes

In the qualitative study among prison staff, it was clear that the extent to which treatment was used as an outcome of the MDT programme varied widely. In some cases staff indicated that prisoners who tested positive were automatically referred to the CARAT team but in some prisons this was considered to be a waste of resources as it would only be useful for prisoners who wanted to give up. The CARAT programme was universally commented on positively by prison staff. It was welcomed because other prison staff did not feel they had the training to provide the necessary counselling and support. In contrast, in some prisons counselling was provided by outside organisations but staff's views on the effectiveness of this were generally negative. Many CARAT workers are specially trained Prison Officers which may explain the greater acceptance of their role as counsellors.

The problem of a lack of detoxification units in prisons where these were not available was keenly felt by staff as these were felt to be a necessary first step for inmates wanting to come off heroin. Staff talked of feeling helpless when approached by inmates asking for help to stop drug use and needing detoxification that could not be provided. Although prisons generally provide training courses, such as drug awareness courses, these were generally seen to have a very minor role in drug use prevention.

In the survey of prisoners there was no direct question asking about MDT-initiated referral to treatment but prisoners who tested positive were asked the outcome of this. Only eight people mentioned any sort of treatment as a result, suggesting that the extent of MDT-initiated referral is quite limited. There was also a whole range of other questions on treatment for drug problems generally in the survey, the results of which are summarised here.

From Table 7.4 it can be seen that just under two in five inmates who had used drugs in the month before prison (39%) said they had been referred to any type of treatment programmes in their current prison. The most common programme reported was CARAT which was mentioned by a third of those asked. Far fewer inmates mentioned any other types of treatment: seven per cent detoxification programmes, five per cent drug rehabilitation programmes or the prescription of drug-related medication. Only a small proportion (10%) of those who said they had used drugs at some time but not in the month before coming to prison reporting being referred to any treatment programme.

Among those who had had an MDT test in the current prison, those who had tested positive were slightly more likely to say they had been referred for treatment. This suggests that there may be some referrals resulting from the MDT programme, although it may just reflect the fact that drug users are more likely to be tested under some arms of the MDT programme and they are also more likely to receive treatment. (Table 7.4)

**Table 7.4 Proportion of prisoners who had ever used drugs who had been referred to treatment programmes in the current prison by (a) whether they had used drugs in the month before prison and (b) whether they had tested positive on MDT (those who had been tested only)**

Treatment programme	Used drugs in month before prison		Tested positive on MDT	
	Yes	No	Yes	No
	<i>Percentage reporting each type of treatment</i>			
CARAT worker	32	8	36	30
Detox programme	7	0	12	6
Drug rehabilitation programme	5	0	5	4
Prescribed drug related medication	5	0	8	3
Other	2	1	2	2
None of these	61	90	50	66
<i>Base</i>	<i>1,400</i>	<i>416</i>	<i>200</i>	<i>639</i>

Different types of prison receive different types of prisoners at varying stages of their prison terms. As these prisoners will have differing treatment needs the profile of treatment provision would be expected to vary. For example, local prisons that cater for remand and newly-sentenced prisoners, who may stay for very short periods and present with immediate problems of withdrawal from heavy drug use, will need to provide different services to those in a training prison, where prisoners will be staying for longer periods and are likely to have already experienced a period of enforced abstinence from drugs, in which longer term programmes will be appropriate.

**Table 7.5 Proportion of prisoners who have ever used drugs who have been referred to treatment programmes in current prison by type of prison, age, and type of prisoner**

	Type of prison						Age group				Type of prisoner		All
	Local / Remand	Cat B/C	Women	Open	Dispersal	YOIs	16-20	21-29	30-39	40+	Remand / unsentenced	Sentenced / civil	
CARAT worker	24	29	34	14	20	35	35	28	27	15	20	28	27
Detoxification programme	11	2	4	-	1	0	4	8	5	1	12	4	6
Drug rehabilitation programme	4	4	4	2	6	6	5	4	5	2	2	5	4
Prescribed drug related medication	7	1	6	-	2	2	2	5	4	2	8	3	4
Other	2	2	1	1	6	1	2	2	2	1	0	2	2
None of these	66	69	60	85	71	63	59	66	67	82	67	67	67
<i>Base</i>	<i>671</i>	<i>379</i>	<i>282</i>	<i>107</i>	<i>176</i>	<i>204</i>	<i>225</i>	<i>849</i>	<i>524</i>	<i>221</i>	<i>259</i>	<i>1,560</i>	<i>1,819</i>



Overall, provision of treatment programmes was highest in YOIs and women's prisons and lowest in open and dispersal prisons. This was largely due to higher proportions seeing a CARAT worker. Prisoners in local prisons and remand centres were more likely to report being on a detoxification programme (11% compared with 4% in women's prisons and 2% or less in other types of prison). A slightly higher proportion of inmates in local and women's prisons reported receiving drug-related medication than elsewhere. This probably reflects the fact that these prisons take more people at the start of their prison stay, who may have been heavy users before coming into custody. (Table 7.5)

Those inmates who reported receiving treatment in their current prison were asked to rate its usefulness. The small number of people who had participated in a drug rehabilitation programme rated these most highly, with over half (57%) saying it was very beneficial. Detoxification programmes and drug-related medication were also rated quite highly with almost a third saying it was very beneficial and approximately a quarter saying they were fairly beneficial. The CARAT programme was viewed less favourably with almost two-thirds saying it was not very or not at all beneficial. This is in marked contrast to the views of prison staff who were very positive about the CARAT scheme. While prison staff felt having ex-prison officers as CARAT workers was beneficial, some prisoners stated that they felt this jeopardised confidentiality and they thought outside agencies should be used. (Table 7.6)

**Table 7.6 Usefulness of treatment programmes in current prison among prisoners who have completed that treatment**

Usefulness	CARAT worker	Detox programme	Drug rehabilitation programme	Prescribed drug-related medication	Other
	%	%	%	%	%
Very beneficial	14	30	57	32	28
Fairly beneficial	23	23	14	30	32
Not very beneficial	25	19	27	16	28
Not at all beneficial	38	29	1	22	12
<i>Base</i>	<i>216</i>	<i>81</i>	<i>30</i>	<i>59</i>	<i>13</i>

Inmates who had used drugs in the current prison but had not received any treatment there, were asked if they would like to have received treatment and 39 per cent said they would. These people were then asked what treatment they would have liked to receive. Their responses are shown in Table 7.7.

Counselling was the type of treatment most commonly mentioned (49%) with drug rehabilitation programmes mentioned by 25 per cent and CARAT workers by 23 per cent. Detoxification programmes and drug-related medication were mentioned by a little under a fifth of respondents.

**Table 7.7 Treatment programmes that prisoners who have used drugs and not received any treatment in current prison would like to have received**

Treatment programme	Percentage who would have liked this help
Counselling	49
Drug rehabilitation programme	25
CARAT worker	23
Detoxification programme	19
Drug-related medication	17
Voluntary testing unit / drug-free wing	11
Incentives for staying off drugs	8
Group work	5
Other	13
<i>Base = those who would have liked help</i>	169

In a further series of questions, those people who had used cannabis and heroin in the current prison but had not received any treatment, were asked if they required help in relation to their use of these particular drugs. Only five per cent of cannabis users felt they needed help for their cannabis use, whereas 46 per cent of heroin users said they did. (Table 7.8)

**Table 7.8 Proportion of prisoners who have used drugs and not received any treatment in current prison who said they needed help for cannabis or heroin use**

Drug use	Needed help	Base
Cannabis	5%	361
Heroin	46%	189

If inmates have very short prison stays, it is difficult to assess and refer them to effective drug rehabilitation programmes before their release. However, among the group of heroin users who were not receiving any treatment but said they needed help more than two-thirds (70%) were serving medium to long sentences. (Table 7.9)

**Table 7.9 Sentence length of prisoners who said they needed help for heroin use and had not received any treatment in current prison**

Sentence Length	%
Remand/unsentenced	21
Short	9
Medium	41
Long	29
<i>Base</i>	82

Overall it appears that at present MDT-initiated referral to treatment is very limited and there is scope for increased provision of treatment generally.

## Key findings

- In the qualitative study considerable variation in practice with respect to MDT-initiated referral to treatment was indicated. The CARAT programme was generally regarded very positively by prison staff but the lack of detoxification provision was also often commented on.
- The results of the survey of prisoners suggest that MDT-initiated referral to treatment is limited.
- Provision of treatment programmes for drug users appears from the survey to be highest in YOIs and women's prisons and lowest in open and dispersal prisons.
- Inmates who had experienced the programmes rated drug rehabilitation programmes as the most useful and referral to CARAT workers the least useful form of treatment.
- Almost half of the inmates who had used heroin in prison but had not had any treatment (46%) said they wanted help for their drug use. Over two-thirds of this group were serving medium to long sentences.

## The most appropriate balance of the different types of testing to meet the stated objectives of the MDT programme

The MDT programme has five different objectives.

1. To increase the detection of those misusing drugs and to send a clear message to prisoners that if they misuse drugs they will have a greater risk of being caught and punished.
2. The increased possibility of detection should help prisoners resist the peer pressure often placed on them to become involved in drug taking.
3. To identify inmates who may need assistance to combat their drug problems with assistance offered to those who want it.
4. To provide more accurate and objective information on the scale, trends and patterns of drug misuse allowing prisons to manage and target more effectively their resources for tackling drug problems.
5. The proportion of prisoners testing positive for different drug types on the random testing programme is used as one performance indicator of drug misuse.

To meet these objectives there are five different elements to the MDT programme: random testing; frequent testing; reasonable suspicion; risk assessment; and testing on reception. The minimum amount of random testing that a prison has to achieve is laid down centrally but governors have discretion over the amount of testing under other elements of the MDT programme. As a result there is considerable variation in the amount of other testing conducted between prisons but the amount is generally low. Table 4.1 in Chapter 4 showed that in the country as a whole on average in the quarter August – October 2001, seven per cent of the prison population was tested on RMDT, two per cent on suspicion, and one per cent under each of frequent testing and assessment testing programmes. Less than 0.5 per cent of the prison population was covered by reception testing and in the prisons sampled in the study this was only used in open and dispersal prisons. Thus random testing dominates the MDT programme as it is currently applied.

The dominance of random over other types of testing is confirmed in the self-reports of prisoners in the survey (see Table 4.2). Overall, 36 per cent of prisoners said they had been

selected for RMDT at some time in their current prison, nine per cent reported being tested on suspicion, and eight per cent the other types of testing. The proportion reporting reception testing was far higher in the dispersal prisons than in other types of prison, while other forms of testing were more evenly spread between different types of prison.

### Measuring drug use and providing a performance indicator

The RMDT programme is clearly key to meeting the fourth and fifth objectives of the overall programme: to provide a measure of drug use for use as a performance indicator. However, its dominance of the overall MDT programme may reduce the programme's ability to meet the other objectives. As shown in Chapter 5, Table 5.20, the RMDT programme as currently configured yields samples of sufficient size to provide reasonably precise annual estimates of RMDT positivity for most establishments, while at regional and national level quite precise estimates can be obtained quarterly. However, the level of precision required for the estimates depends on the size of the differences that one wishes to detect. To obtain samples of sufficient size to produce quarterly estimates of positivity at establishment level would require a major increase in the number of random tests done and the testing of an extremely large proportion of the population in small establishments each month.

The precision of the estimates of positivity is key to the use of these rates as a performance indicator but this is only one aspect of their use as a measure of drug use. In Chapter 5 it was also shown that, although RMDT positivity is strongly associated with self-reported use, there is considerable variation in RMDT positivity between prisons that does not appear to be associated with levels of use. Altering the number of tests done will have no impact on this source of error.

While the current balance of testing under the MDT programme may yield sufficiently precise regional and national positivity rates for monitoring purposes, the extent to which the MDT programme is currently meeting the other objectives is less clear. This may be because the random element of the programme is not particularly well suited to meeting these objectives.

### Deterrence

As discussed in Chapter 6, it is clear that drug use in prison has declined in the period since the MDT programme was introduced and it is probable that the MDT programme has played a part in this. However, the fact that other measures have also been introduced makes it hard to quantify the MDT programme's specific contribution. Table 4.15 above showed that although a slightly higher proportion of inmates who had used drugs in the current prison thought they were likely to be selected for MDT than non-users, about a quarter still thought they were unlikely to be selected, and about a third thought they were neither likely nor unlikely to be selected. Even fewer thought they were likely to test positive on MDT; over half of those who had used in the current prison thought they were unlikely to do so. In the in-depth interviews with prison staff, concern was expressed that random testing means that many prisoners are tested who have not used drugs and that inevitably the chances of an individual prisoner being selected (particularly in larger prisons with a 5% sample) were fairly small. It was felt that targeted testing was a more efficient use of resources.

MDT data for the quarter August – October 2001 showed higher positivity rates for testing on suspicion and at reception than for other types of MDT. For example the cannabis positivity rate was 14 per cent for tests on suspicion and reception but six per cent on RMDT (see Table 4.8). This suggests that in general users are being successfully targeted for testing on suspicion, which is also supported by the findings from the survey of prisoners; 17 per cent of people who had used drugs in the current prison said they had been tested on suspicion compared with three per cent of prisoners who had not used drugs in prison and two per cent of those who had never used drugs (see Table 4.4). In the MDT data analysed for this survey, frequent testing had a similar rate of opiate positivity to suspicion testing, suggesting that it is being targeted at opiate users.

The deterrent effect is dependent on the salience of the penalties imposed for testing positive as well as an inmate's assessment of the likelihood of being selected and testing positive. The survey of prisoners showed that there is fairly widespread knowledge of the penalties resulting from a positive MDT test (16% of inmates said they did not know what they were, Table 4.12). Of those who knew what the penalties were, over half (56%) said they were very concerned about them and 19 per cent said they were fairly concerned. However, among those who had been tested in the current prison there was no difference in the level of concern among those who had tested positive and those who had not, suggesting that there are some prisoners for whom testing positive will not act as a deterrent. This point was also made by prison staff in the in-depth interviews, giving as one example that added days made little difference to people serving life sentences.

Table 4.23 indicated that, among those who had tested positive on MDT, people who had received added days were more likely than those who had received other penalties only to say they were very concerned about the penalties for testing positive. This suggests that the removal of the option of giving added days to those who fail MDT tests may reduce the deterrent effect of the MDT programme.

### Directing prisoners into treatment

The limited extent to which positive MDT results are used to trigger referral to treatment and the variation between prisons has been discussed in Chapter 7. Not everyone who tests positive on MDT will be receptive to treatment. Only 39 per cent of those who had used drugs in the current prison and had not received treatment in the current prison said they would have liked to, although a slightly higher proportion of heroin users said they would (46%). Random MDT is possibly not the most appropriate arm of the MDT programme for directing people into treatment, as the process is generally seen as punitive and many of the prisoners will already have established patterns of use in prison. Reception testing would seem an appropriate mechanism for identifying drug users shortly after their arrival in the prison system at a juncture when treatment might be particularly beneficial. At present, little reception testing appears to be done in local prisons and remand centres and most is in dispersal and open prisons, which in the main take people who have already been in prison for some time. However, in local prisons and remand centres there is a very rapid turnover in the prison population which hampers treatment provision and would also pose problems for applying a reception testing programme. Nevertheless, the use of more testing as a part of a screening programme to identify drug users on entry to the prison system, in order to ensure appropriate provision for dependent individuals, is an option that should be explored. Testing of all prisoners on entry to prison would probably be the simplest way of implementing such a screening programme, but a more targeted approach, for example based on age, could be adopted to reduce the number of tests required. Different responses would be needed for users of opiates or other hard drugs, for whom detoxification or maintenance programmes would be appropriate, and cannabis users for whom alternatives, such as counselling might be more suitable.

### The balance of different types of testing

The best balance between different types of testing to meet the objectives of the MDT programme will depend very much on the level of priority given to these different objectives, unless additional resources are to be given to the programme so that the overall level of testing increases. At present the MDT programme is dominated by the random testing element, which is designed to provide a measure of drug use and is used as a performance indicator. At the moment the sample size is probably larger than necessary to provide national figures for monitoring purposes. Also, the sample design, with a fixed percentage of tests within prisons, means that the sample size and hence the level of precision of estimates for different establishments varies widely, and in large prisons the sample size may be larger than strictly necessary for monitoring purposes. In prisons stretched for resources, random testing tends to take precedence over other the forms of MDT that would better meet the other objectives of the MDT programme.

More testing on suspicion and frequent testing might provide a more efficient deterrent of drug use than RMDT, which targets non-users and users equally. In larger prisons it should be possible to decrease the proportion of prisoners on the random testing programme and increase the extent of testing on suspicion and frequent testing, to keep the level of testing the same while still providing a reasonably precise measure of drug use within these prisons.

Improving the level of MDT-initiated referral to treatment will depend on appropriate treatment being available. The information about help wanted suggests that heroin users rather than cannabis users should be targeted for treatment, as they are more likely to feel it is needed and more likely to experience severe dependence on heroin or other types of opiates. They are also more frequent users of drugs in prison than cannabis users. Reception testing to identify heroin users among people newly entering the prison system as part of a complete assessment procedure might be more effective in directing those in need into treatment. It is likely that the most effective way of addressing opiate positivity is through the active management of those who are identified as opiate dependent. This current research project indicates that, in this group, deterrence and punishment for positive MDT results will have little effect on subsequent heroin using episodes.

### Key findings

- The random element of the MDT programme constitutes the major part of the testing undertaken and other testing is only undertaken if resources permit.
- RMDT is the key to providing a measure of drug use and a performance indicator. However, the number of tests is greater than necessary to provide precise national estimates of positivity and the use of a percentage of the establishment population as the basis for sampling within establishments gives rise to establishment estimates with widely varying degrees of precision.
- It appears that the MDT programme does have some deterrent effect but some prisoners are impervious to the threat of punishment associated with the programme. Prison staff consider increased targeted testing would be a more efficient use of resources.
- The RMDT programme is a very inefficient way of identifying drug users for referral to treatment, as the majority of people tested are not drug users. At present the MDT programme does not meet this objective very well.
- A reconfiguration of the sampling base for RMDT might allow a smaller number of random tests while still providing sufficiently precise estimates for monitoring purposes. This could free resources to allow more testing under other parts of the programme. More reception testing on entry to the prison system might be a better way of directing users into treatment while more targeted testing might have greater deterrent value.

### The impact on the MDT programme of the increased emphasis on security measures and the new range of treatment and support initiatives

The MDT programme is only one strand of the Prison Service's approach to tackling drug use in prison but is very resource intensive, as prisoners selected for MDT must be accompanied at all times after they have been told they have been selected for testing until they provide a sample, which can take up to five hours. A range of other security initiatives have been introduced recently, for example increasing numbers of drug dogs and the installation of CCTV in visits areas, and there has also been an expansion in treatment and support initiatives. All these programmes are competing for a finite amount of resources and so increases in other measures may have a negative impact on the discretionary elements of the MDT programme.

This point came out very strongly in the in-depth interviews with prison staff. When talking about other ways of decreasing drug use besides RMDT, it was widely reported that the alternatives were employed only when resources were available. As a result, the amount of testing under different arms of the MDT programme, and the extent to which resources were directed towards higher security and detection of drug use or treatment and support of users, was seen to be very dependent on the attitude of the governor. This could lead to wide variation in the extent to which different programmes were carried out in different prisons.

The number of inmates who are caught and disciplined for being in possession of or smuggling drugs will be associated with the amount of drug use in prisons and the amount and effectiveness of the security measures in place to detect this. In this survey prisoners were asked whether they had ever supplied drugs, whether they had been caught supplying, whether they had been caught in possession of drugs, or smuggling them and the outcomes of being caught for these offences. They were also asked about the outcomes of this and their level of concern about receiving these penalties.

**Table 7.10 Proportion of prisoners reporting they had dealt in drugs, been caught dealing, or in possession of or smuggling drugs in their current prison and in any prison**

	Current prison	Any prison
<i>Percentage reporting each offence</i>		
Caught for...		
Possession	3	11
Smuggling	1	5
Has supplied drugs	6	13
Caught for supplying	-	1
<i>Base</i>	<i>2,270</i>	<i>2,270</i>

Of the 2270 prisoners in the study, just three per cent reported that they had been caught for possession of drugs in the current prison and one per cent for smuggling in the current prison (Table 7.10). The corresponding rates for these offences in any prison were 11 per cent and five per cent respectively. While six per cent of prisoners reported that they had supplied drugs within the current prison none had been caught doing so. The corresponding rates of these offences in any prison were 11 per cent, five per cent and 13 per cent respectively.

**Table 7.11 Penalties received for being in possession of drugs and smuggling drugs in the current prison and in any prison**

	Possession		Smuggling	
	Current prison	Any prison	Current prison	Any prison
<i>Percentage reporting each penalty</i>				
Additional days	71	69	63	65
Closed visits	32	38	71	66
Loss of privileges	27	34	33	35
Loss of earnings	23	32	31	35
Cell confinement	19	24	29	27
Caution	6	6	4	5
Transfer	6	6	7	14
Different regime	5	11	5	13
Loss of home leave	5	1	7	4
Re-categorisation	5	2	-	3
Restriction / stoppage of visits	2	6	13	12
Other	8	9	15	15
Nothing	5	3	1	1
<i>Unweighted count</i>	59	220	31	98

Among those caught for possession in the current prison, the most commonly reported penalties were additional days (71%), closed visits (32%), loss of privileges (27%) and loss of earnings (23%). Among those caught for smuggling in the current prison, the most commonly reported penalties were closed visits (71%), additional days (63%), loss of privileges (33%) and loss of earnings (31%). (Table 7.11)

All prisoners were asked if they were aware of the penalties that were imposed on people caught in possession of or smuggling or dealing in drugs. Between a fifth and a quarter said they did not know about the penalties for these offences (21% for possession, 23% for smuggling and 24% for dealing). Those who said they did know what penalties were in use were asked how concerned they would be about receiving such penalties. The perceived level of concern expressed about receiving penalties for these drug offences are summarised in Table 7.12. As can be seen, only a small proportion (just under one in four) voiced no concern at all about detection for drugs offences. However, it is also notable that those who had used drugs in the past seven days expressed lower levels of concern despite, presumably, being more at risk.



**Table 7.12 Concern among prisoners about receiving penalties for possession, smuggling, or supplying drugs in current prison by whether they had used any drugs in last seven days**

	Used any drugs in last seven days		
	Yes	No	All
<b>Level of concern</b>	%	%	%
<b>Possession</b>			
Very concerned	39	64	59
Fairly concerned	34	14	18
Not concerned at all	27	22	23
<i>Base</i>	277	1,483	1,763
<b>Smuggling</b>			
Very concerned	48	64	61
Fairly concerned	24	13	15
Not concerned at all	28	23	24
<i>Base</i>	275	1,441	1,718
<b>Supplying</b>			
Very concerned	47	66	62
Fairly concerned	25	12	14
Not concerned at all	28	22	23
<i>Base</i>	265	1,401	1,666

Clearly the number of prisoners being caught smuggling drugs or in possession of them is quite low compared with the numbers reporting use. Prison staff in the in-depth interviews were very clear that visits were a key focus for smuggling drugs and were in favour of tighter controls, but felt that these would probably not be acceptable. The greater use of dogs to detect drugs was also considered very positively.

If security measures are successful, so that availability of drugs is more limited, then the value of the MDT programme as a general deterrent would become less and the other aims of the programme would become more important.

### Voluntary testing programmes

All prisons have been required to run a voluntary testing programme since April 2001 with the aim of reducing the demand for drugs and creating more drug-free areas in prisons. These voluntary testing programmes involve inmates on the scheme signing a compact, which includes an undertaking not to use drugs and agreement to voluntary testing. Some prisons have had such programmes in place for longer and in some cases these include Voluntary Testing Units (VTUs) or drug-free wings where prisoners who have agreed to remain drug-free are held in separate areas of the prison. Prisoners on these voluntary testing programmes may be granted privileges as long as they remain drug free.

The procedures for testing under the voluntary testing programme are different from the MDT testing. Tests are carried out on site using dip and read testing kits and the consequences of testing positive vary and may be just a warning on first offence, but do not go beyond removal from the programme and loss of any privileges that may be associated with it.

Prison staff were generally positive about voluntary testing programmes and VTUs, finding it useful to be able to obtain results immediately and also suggesting that drug-free areas of the prison were generally quieter and less violent. (However, the use of dip tests to “screen” people before RMDT tests was suggested as one way in which prisons might manipulate their RMDT rates – although there is no evidence that this ever occurs.)

In the survey of prisoners just over a quarter (26%) said they were or had been on a VTU or drug-free wing in their current prison, while just over a tenth (12%) were on a voluntary testing programme. Only a small proportion said they had been on a VTU or voluntary testing programme in the past but not now (2% in each case). (Table 7.13)

**Table 7.13 Experience of VTU or voluntary testing programme in prison**

<b>Experience of voluntary testing</b>	<b>%</b>
On VTU/drug-free wing currently	26
On VTU/drug-free wing in the past but not now	2
On Voluntary drug testing programme currently	12
On Voluntary drug testing programme in past not now	2
None of these	59
<i>Base</i>	2,253

Everyone who was currently on a VTU or voluntary testing programmes was asked a series of questions about these. The frequency of voluntary testing within these programmes seemed to vary considerably. Testing once every two weeks and once a month were reported most often, by about a quarter of respondents in both cases. (Table 7.14)

**Table 7.14 Frequency of testing, sanctions applied for a positive test, impact on drug use, and usefulness of voluntary testing by experience of voluntary testing in current prison**

	VTU / drug-free wing	Voluntary drug testing programme	All
<b>Frequency of testing</b>	%	%	%
More than once a week	4	3	4
Once a week	12	9	11
Once every two weeks	27	25	26
Once every three weeks	9	5	8
Once a month	25	20	24
Less than once a month	15	25	18
Don't know	8	13	9
<i>Base</i>	536	319	855
<b>Sanctions for positive test</b>	<i>Percentage reporting each sanction</i>		
Taken off Voluntary Testing Unit/Programme	54	28	46
Loss of privileges	27	30	28
Warning	26	30	27
Different regime	18	16	18
Additional days	18	24	20
Caution	16	14	16
Loss of earnings	13	21	16
Closed visits	13	13	13
Referral for treatment	11	17	13
Transfer	9	9	9
Loss of home leave	9	18	12
Re-categorisation	8	9	8
Restriction of/ stoppage of visits	6	9	7
Cell confinement	5	7	6
Other	4	5	5
None of these	1	9	4
Don't know	7	13	9
<i>Base</i>	536	318	854
<b>Self-assessed impact on drug use</b>	%	%	%
Taking more than before	2	1	1
Stayed the same	32	34	33
Taking less than before	17	18	17
Given up completely	37	31	35
Always been on the VTU programme	13	16	14
<i>Base</i>	529	312	841

It can be seen from Table 7.14 that there was some variation in the sanctions inmates reported would be applied for a positive test. Those on VTUs were twice as likely to say that they would be taken off the programme if they tested positive than those on other voluntary testing programmes (54% mentioned this sanction compared with 28%). Otherwise loss of privileges and warnings were most often mentioned, by over a quarter of respondents. There was obviously some confusion about the sanctions available as quite a lot of people suggested they would be given penalties, such as added days, for a positive voluntary test although these cannot be applied. This suggests that some people were failing to make the distinction between voluntary and mandatory tests.

Those on voluntary testing programmes were asked to assess the impact of these programmes on their level of drug use. Over a third (35%) said they had given up completely and 17 per cent said they were taking less than before. A further third, who were almost entirely people who had not used drugs in the prison at all, said their drug use had stayed the same and 14 per cent said they had always been on the voluntary testing programme or unit so the question did not apply. (Table 7.14)

**Table 7.15 Usefulness of voluntary testing programmes by experience of voluntary testing in current prison**

	Currently on VTU/drug-free wing	Currently on voluntary drug testing programme	On VTU/drug- free wing in the past	On voluntary drug testing programme in the past	All
	%	%	%	%	%
Very beneficial	47	41	33	21	43
Fairly beneficial	28	18	30	34	26
Not very beneficial	9	14	11	19	11
Not at all beneficial	16	27	26	26	20
<i>Base</i>	531	309	42	47	929

Most people who had experience of these programmes considered them useful: 43 per cent said they were very beneficial and 26 per cent fairly beneficial. People currently on VTUs or drug-free wings were slightly more positive about them than those on other voluntary testing programmes – 75 per cent rating them as very or fairly beneficial compared with 59 per cent. Also those currently on one of the programmes were generally more positive about them than those with experience of them in the past only, especially in the case of voluntary testing programmes. (Table 7.15).

Over half of the people who had experience of a voluntary testing programme or VTU felt the programme could be improved (Table 7.16). Most of the improvements suggested related to the administration of the tests, with 46 per cent of those currently on a voluntary testing programme suggesting more frequent testing and 25 per cent better or stricter administration of tests. Other suggestions mentioned by appreciable numbers of respondents currently on a voluntary testing programme were more help and support (25%) and incentives for testing negative (18%) and reducing the supply of drugs (10%).

**Table 7.16 Possibility of improvements to voluntary testing unit/programme in the current prison by experience of these programmes**

	Experience of VTU / drug-free wing / voluntary drug testing programme			
	Currently	In the past only	Never	All
<b>Can voluntary testing system be improved?</b>				
Yes	59	55	43	52
No	33	24	18	25
Don't know	8	21	39	24
<i>Base = all prisoners</i>	855	418	980	2,253
<b>Suggested improvements</b>				
More frequent tests	46	31	34	38
More help/support	25	21	23	24
Better/stricter administration of tests	25	25	21	23
Incentives for testing negative	18	20	13	17
Reducing the supply of drugs	10	16	15	13
Penalties for testing positive	5	3	3	4
Other	12	12	17	14
Don't know	2	4	7	4
<i>Base = prisoners suggesting improvements</i>	482	219	434	1,135

### Key findings

- Prison staff indicated that they felt security initiatives aimed at cutting supply of drugs, such as the use of sniffer dogs, were very important means of reducing drug use.
- The number of prisoners who reported having been caught in possession of drugs or smuggling or dealing in them was small, about half as many as were caught using drugs under the MDT programme. Inmates who had used drugs in the week before interview were less concerned about the penalties for these offences, in particular being caught in possession, than those who had not used drugs in that period.
- Overall voluntary testing programmes and Voluntary Testing Units were regarded positively by both staff and inmates. However rates of testing in some units appeared to be rather infrequent.
- The level of provision of such programmes is now quite extensive, with a significant number of prisoners reporting having experienced some form of voluntary testing. The overall level of drug testing in prisons, with both voluntary testing and MDT in place, is now considerable.
- Inmates indicated that they would value more help and support linked to voluntary testing programmes.

## 8. Conclusions

### Drug use in prison in 2001

Chapter 3 summarises data about drug use from a survey of 2,270 prisoners conducted in 2001 as part of the present study. Results from this survey indicated that two in five prisoners (39%) had used some illicit drug at some time in their current prison, one in four (25%) said they had used drugs in the past month and about one in six (16%) in the past week. However, only one per cent of prisoners surveyed reported having injected in the current prison. Usage rates for cannabis in the present prison were 32 per cent anytime, 19 per cent in the past month, and nine per cent in the past week. Rates of opiate use were 21 per cent, 13 per cent and ten per cent, respectively, for these periods. The smaller difference between rates of use at any time in the current prison and in the past week for opiates suggests that inmates who use opiates are taking them more frequently, while cannabis use is more intermittent. This is confirmed when the number of episodes or days of drug use per 100 inmates is considered: there were 24 episodes of reported opiate use per 100 inmates compared with 21 for cannabis.

There was marked variation in use of drugs across prisons. In terms of use in the past week, the highest prevalence was found in Category B and C training prisons (21%) and local prisons/remand centres (16%) while significantly lower rates were found in other types of establishments: nine per cent in open prisons, eight per cent in YOIs, and seven per cent in both women's and dispersal prisons. The types of drugs used also varied between prison types. In local, open prisons and YOIs, more people reported using cannabis than opiates in the past month. In YOIs there was very little use of opiates at all. In training prisons cannabis and heroin use were reported about equally, while in women's and dispersal prisons opiate use was more frequently reported than cannabis use.

The level of drug use in prisons needs to be considered in the context of prisoners' drug use before coming to prison. In this study, two-thirds of prisoners reported using drugs in the month before prison. Cannabis was the most commonly used drug, used by just over half the sample, while about a third used opiates, mainly heroin. Use of crack, cocaine powder, ecstasy and tranquillisers were also reported quite frequently: almost a quarter of prisoners said they had used crack in the month before coming to prison, while use of each of the other three drugs was reported by just over a tenth. Poly-drug use was very common. For example, over 90 per cent of opiate users in the year before prison also used at least one other type of drug.

Overall, 28 per cent of inmates could be classed as non-drug users (they had neither used in the year before prison nor in their current prison), over a third of inmates (37%) had used drugs in the year before prison and continued to do so in their current prison, while 33 per cent had used prior to prison only. Only two per cent were new users or had restarted use in prison. The picture was slightly different for opiates and cannabis. Only 38 per cent of inmates were classed as non-users of cannabis while 62 per cent were non-users of heroin. Among cannabis users in the year before prison, 29 per cent had used cannabis prior to prison only and 28 per cent continued using in prison. The equivalent figures for heroin use were 16 per cent and 17 per cent respectively. In all, five per cent of inmates were classed as new users/restarters of cannabis and four per cent for heroin. Therefore it is clear that entry into prison is associated with a very significant reduction in drug consumption of all types, with approximately half of those who used drugs in the year prior to prison ceasing to use drugs when in prison. This is therefore a key point at which to assess prisoners and direct them to appropriate treatment.

Women were less likely than men to report having used drugs, particularly cannabis, in the past week in prison. Prisoners aged 21 to 39 were more likely than those aged 40 and above to use both opiates and cannabis and also more likely than younger prisoners to use opiates.

Cannabis use in the past week in prison was strongly associated with the frequency of cannabis use in the month before prison, while opiate use in the past week in prison was associated with factors indicating high levels of drug-dependence and poly-drug use prior to prison.

## The MDT programme

Chapter 4 offers a description of the operation of the MDT programme. Two-thirds of prisoners (67%) had participated in some variant of the MDT programme in the past. This was most commonly RMDT (59%) followed by testing for suspicion (21%) in both other prisons and the current establishment. When MDT in the current prison only is considered over a third (36%) had been selected for RMDT and just under a tenth had been tested under each of the other elements of the programme. A higher proportion of inmates of dispersal prisons (88%) had been tested under the MDT programme than in other types of prisons, but this is likely to reflect, at least in part, the longer prison stays in this type of prison.

Self-reported refusals rates were low. Only three per cent of those with experience of being selected for testing in the current prison said they had refused an MDT and a similar proportion said they had attempted to cheat. Just under one in four prisoners (24%) had tested positive for at least one drug – nine per cent in the current prison and 15 per cent in a previous prison only. A slightly higher proportion had tested positive at some time for cannabis (18%) than opiates (12%) but there was no difference for tests in the current prison (5%).

Knowledge of the negative sanctions associated with MDT was high, with only 16 per cent of prisoners saying they did not know what sanctions were used for positive MDT tests in the current prison. Overall more than half the prisoners who said they were aware of what the penalties for testing positive on MDT were said they were very concerned about these penalties, and a further 19 per cent were fairly concerned. Nevertheless, a quarter of the prisoners said they were not concerned by them at all and in dispersal prisons this proportion rose to over a third (39%). Remand prisoners were also less concerned about the penalties than sentenced prisoners. Inmates who had tested positive on MDT in the current prison and had received added days as a result were more likely to say they were very concerned about the penalties than those who received other penalties. This suggests that added days might have a slightly greater deterrent effect than other penalties. The recent ruling by the European Court of Human Rights that the imposition of added days is illegal, if upheld, will remove this form of punishment and hence may reduce the deterrent effect of the MDT programme.

## RMDT as a measure of drug use

In Chapter 5, the question of whether and to what extent RMDT can be used as a measure of drug use was addressed. It was examined first by comparing prisoner self-reports use from the 1997 survey of psychiatric morbidity and RMDT positivity rates for the prisons they were in when interviewed. This comparison showed that the percentage of prisoners reporting drug use in the current prison term was higher than RMDT rates (42% versus 17% for cannabis and 14% versus 4% for opiates). The relative interpretation of these rates is hampered by the different time periods covered by the assessments and other issues as discussed in Chapter 5. There was a reasonable correlation between rates of self-reported drug use in prisons and their MDT rates. Correlations between cannabis and opiate self-reports and RMDT positivity rates were positive, statistically significant but were not particularly strong in magnitude.

Further simple cross-tabulations and logistic regression analyses were performed to identify prison level factors associated with RMDT positivity rates. For cannabis, prisons appeared more likely to be in the highest quartile for RMDT positivity if they were also in the highest quartile for self-reported use; if they were a local prison/remand centre or a Category B or C training prison; if they were a men's prison; the average age of prisoners was 25 to 34; they had a high proportion of remand prisoners; and they had a low RMDT testing rate. Logistic

regression analysis showed that the only factor significantly associated with RMDT cannabis positivity was self-reported cannabis use in the current prison term.

For opiates, cross-tabulations showed that prisons appeared more likely to be in the highest quartile for opiate RMDT positivity if they were in the highest quartile for self-reported opiate use; if they were a local prison/remand centre or a Category B or C training prison; the average age of prisoners was 25 to 34; the average sentence being served was three years or more; they had a low RMDT testing rate; and they had low rates of assault on officers. Logistic regression analysis indicated that just the type of prison had an independent association with RMDT opiate positivity.

Therefore, it appears that, despite the discrepancies between the survey and MDT data sources, in the 1997 data set variation in level of drug use in prisons is an important source of variation in RMDT positivity, but the association for opiates is much weaker than for cannabis.

Building on these results, use was made of data obtained from the sample of 31 prisons in 11 clusters included in the survey in 2001 conducted for the project. The correlations between RMDT positivity and self report for past week and past month use of opiates were 0.52 and 0.49, respectively. The comparable correlations for cannabis were 0.78 and 0.73. In general, self-reported rates of use were higher than the RMDT positivity rates. However, in about half the clusters reported cannabis use in the past week was lower than cannabis positivity while opiate use in the past week was lower than opiate positivity in only four cases. Least squares multiple regression analysis was used to model RMDT positivity rates by prison establishment using the survey data set. For opiates, this showed that self-reported use in the past week was more strongly associated with RMDT positivity levels than use in the past month (adjusted R<sup>2</sup> = 0.32). For cannabis, a relatively stronger model was obtained, and self-reported use in the past week was a better predictor of RMDT positivity levels (adjusted R<sup>2</sup> = 0.59).

Further analyses were performed to search for evidence that variations in the process of conducting MDT (in terms of when testing is conducted, the proportion of tests refused or spoiled, and so forth) accounted for variation in MDT rates. There was no discernible variation in opiate nor cannabis test results over different days of the week. Logistic regression analysis showed that prison size and the rate of refusals were associated with cannabis positivity and their inclusion in the regression analysis resulted in a model which accounted for almost three-quarters of the variance in cannabis positivity rates. However, none of the available process variables were associated with opiate positivity. This suggests that refusals at RMDT are from prisoners who would test positive for cannabis use, not opiates.

**Overall, the conclusion is that RMDT cannabis positivity is quite strongly associated with self-reported drug use but that the association is not as strong for opiates. Also that including refusals as positives for cannabis would improve the strength of the association.**

Theoretical estimation of the likely relationship of RMDT positivity and drug use, across a range of possible levels of detectability, indicated that there was a very high probability of RMDT detecting any episode of cannabis use in the past month in a selected individual, but it would not be very sensitive to the frequency of use. In general, a person who used cannabis several times in the month would have a similar chance of detection to someone who used only once. However, for heroin use the chance of detection of a single episode of use was much lower and likely to be approximately one in 30. However, more frequent use would increase the likelihood of testing positive. As a result, cannabis positivity would tend to reflect the proportion of people using the drug in a prison, rather than the number of episodes of use. For opiates it appears likely that MDT positivity will reflect episodes of use, but at a level considerably below the level of use. The analysis was purely theoretical and was based on a large number of assumptions, but the broad drift of the results showed little sensitivity to the different specifications that were explored. *It leads to the conclusion that RMDT positivity rates for cannabis and opiates need to be interpreted differently.*

The extent to which it is possible to extrapolate from actual RMDT positivity rates to provide a



useful measure of drug use was examined by producing predictive models for self-reported cannabis and opiate use from the 2001 survey data using RMDT positivity data from the same period. Different classes of models were considered and the effect of including refusals with positive tests also investigated. Linear models including refusals as positive tests produced the best models for both cannabis and opiates. It was expected that this would be the case for cannabis but not for opiates. Further investigation showed that the improvement in the opiate model reflected the fact that opiate positivity rates are more strongly associated with type of prison than with self-reported opiate use rates and, since refusal rates were also associated with type of prison, their inclusion improved the model. Even with the inclusion of refusals the model was still quite poor, with only about a third of the variation in opiate use rates accounted for, whereas the best model for cannabis accounted for over half the variation in cannabis use between prisons. It seems likely that the smaller window of detectability for opiates makes the positivity rate more subject to variation due to the pattern of testing (for example doing a large proportion of tests at one time), and it is perhaps easier for prisoners to alter their pattern of drug-taking to make it less likely that they will be detected using heroin.

However, when the models were applied to the RMDT rates for the clusters in the survey and the predicted use rates compared with the observed rates it was clear that even the cannabis model resulted in some considerable over- and under-estimates of use. This suggests that the use of such models is unlikely to be particularly useful in practice. The problem of drug use in prisons is very complex. The very high rates of use prior to imprisonment and the complex patterns of poly-drug use make the interpretation of change in RMDT rates difficult. Since type of prison was more strongly associated with RMDT opiate positivity than self-reported drug use, further work is required to gather information on the way in which the RMDT programme is conducted in different prisons and the impact this may have on RMDT positivity rates and drug use.

*Overall, the study concludes that RMDT positivity rates have successfully tracked change in drug use over time since the inception of the programme at the national level. However, at the establishment level, particularly in the case of opiates, there is a considerable amount of variation in positivity that is not apparently associated with variation in drug use. This, coupled with the very wide confidence intervals around establishment estimates of positivity, means that use of rates to make comparisons between different establishments or obtain estimates for use in individual establishments is inappropriate. Therefore, it is concluded that RMDT positivity rates can serve as a useful tracker of change in drug use in prison over time, at the national and probably the regional level. However, further work is needed to try and identify the other factors affecting positivity rates for opiates before rates at establishment level can be interpreted as anything more than broad indications of levels of use.*

## Impact of MDT on patterns of drug use

Chapter 6 assessed whether the MDT programme influences the frequency with which prisoners use drugs, and if so, how the programme exerts such an effect. This chapter specifically tackled the issue of whether MDT has influenced prisoners' choices and preferences about whether to use drugs and which drugs to use.

The RMDT positivity rates have declined since 1997, which indicates that drug use in prison has decreased. In contrast, overall drug use in the offending population outside prison appears to have remained more or less constant but with an increase in use of 'hard' drugs, such as heroin and crack cocaine. A third of prisoners said they had been using drugs in the year before coming to prison but had not used them while in their current prison. This also indicates a strong effect of being in prison on drug use. However, it is difficult to isolate the impact of MDT in this trend from other drug control measures in the prison regime. All prisoners who had used drugs at some time in their lives but not in the current prison were asked their reasons for not using drugs. While over a third said it was because they did not need drugs, a similar proportion said the reason was that they were concerned about getting caught. As the MDT programme is the main way in which drug users are identified in prison this suggests that, among this group of prisoners, the MDT programme may well be contributing to their avoidance of drug use while in prison,

In the survey of prisoners, all individuals who had used drugs at sometime in their current prison were also asked about their drug use on each day of the previous week. Among this group, the most frequently given reasons for not using drugs on any particular day were that they could not afford them or they did not need them (each mentioned by 29% of this group) or that they were not available or were difficult to obtain (19%). Concerns about getting caught or the penalties were only mentioned by 13 per cent of this group. This suggests that among this group supply factors are more important than the MDT programme in preventing use.

All prisoners were asked to say what they thought the main risks of using cannabis and of using heroin were. For cannabis, the majority (70%) gave answers indicating that they considered detection or punishment was the main risk. In contrast, only 36 per cent gave detection or punishment as the main risk of heroin use, while 26 per cent mentioned health issues and 17 per cent addiction. This suggests that the impact of the MDT programme is likely to be different for cannabis and opiates.

In the prisoner interviews, participants were asked to rate their likelihood of using cannabis or heroin in the future within their current prison and in the three months after release from prison. While 15 per cent of prisoners thought they were extremely likely to use cannabis in prison in the three months after the interview, more than twice this number, 34 per cent, thought they were likely to use cannabis in the 3 months after release. In contrast, there was little difference in the proportions indicating they were extremely likely to use heroin within prison and after prison: nine per cent indicated they were extremely likely to use heroin in prison compared with six per cent for after prison. This leads to the conclusion that being in prison has a much greater impact on use of cannabis than heroin.

To confirm these findings and to obtain information on the relative importance of MDT compared to other factors on use of cannabis and opiates, the study also examined the extent to which knowledge of the MDT programme and perception of the likelihood of being caught exert an effect on the intention of prisoners to use these drugs in prison. The perceived likelihood of detection together with concerns about penalties arising may mean that some prisoners will decide not to use. Logistic regression analysis was used to assess the influence of a range of factors on the likelihood of using drugs again among prior users and those who have used within prison. The factors considered were: opiate or cannabis current use status; age group; type of prison; sentence length groupings; experience of RMDT selection; experience of RMDT positivity; number of adjudications recorded on LIDS; time already served in the current prison; and expected time to release if known.

For the likelihood of using cannabis in the future in the current prison there are highly significant differences between the different current user status groups. Those who have used cannabis only prior to prison are very much lower on intention to use again in the current prison and those who continued prior use into prison are higher on intent to use again. Age also has a highly significant effect, with younger prisoners being more likely to express an intention to use again. Time in the current prison was also significantly associated with intention to use drugs in prison but the size of the effect was small. There was also a significant effect of sentence length: in particular, unsentenced inmates had a greater intention to use again in prison.

The effect of previous MDT experience was significant: those who experienced MDT in a previous prison only had a greater intention to use again in prison. Those who had experienced MDT in the current prison were the lowest on intent to use cannabis again in prison, but this was not statistically significant.

For heroin use, inmates of training prisons were significantly more likely than those in local prisons to intend to use the drug. Those in women's prisons and dispersal prisons also tended to be more likely to use heroin, but not significantly so. Those in open prisons and YOIs typically indicated a low intention to use in the current prison but again the difference was not statistically significant. The effect of RMDT experience on intention to use again in this prison was only marginally significant and there were no significant effects from having received a positive MDT test result for either opiates or cannabis. Overall, the analysis

therefore suggests that MDT is having an impact on prisoners' likelihood to use cannabis but the impact on heroin use is less.

A similar set of analyses was carried out for perceived likelihood of use in the three months immediately after release. For cannabis use, the current use status grouping was highly significantly related to perceived likelihood of use after prison, with the lowest proportion suggesting they were likely to use afterwards among those who were new users/restarters in prison and the highest proportion among those who continued use in prison. The prison type was also significantly related, with those in open prisons being very low on expectation of future use after prison. Time so far served in current prison also showed a significant but small effect, with longer sentences linked to a lower perceived likelihood of use scores after prison. Those with longer sentences were also more likely than those with short sentences to think they would use cannabis after leaving prison.

For heroin use after release, use in the year before prison is much more influential than using in prison on the perceived likelihood of using after prison and there are significant age differentials across the basic current status groupings. The analyses showed that the highest levels of likelihood of use after prison are found amongst those who have continued use into prison, followed by those who used prior to prison and stopped, with those who were new users lowest. However, among continuers the gradient in likelihood of use with increasing age is upwards; the reverse is true amongst new users/restarters. Those having spent longer time in the current prison consider themselves less likely to use heroin afterwards, while inmates of women's prisons are most likely to think they will do so. RMDT experience relates only marginally to reported likely use after prison.

**The overall conclusion from all these analyses is that the experience of being in prison reduces overall drug use. The effect is greater on cannabis use than heroin use and there is also more evidence for an effect of the MDT programme specifically on cannabis use. However, there appears to be a group of prisoners who continue to use drugs in prison and are impervious to the sanctions associated with the MDT programme. They are characterised by a high level of drug dependence and poly-drug use before coming to prison, which may override concerns about detection. This group should therefore be identified and given a high priority for assessment, referral and treatment, including methadone maintenance if appropriate**

The survey of staff gathered qualitative evidence of the commonly held view among prison staff that RMDT has caused some prisoners to move from using cannabis to heroin because of the shorter period of detectability of the latter drug. In the interviews, 122 prisoners who said that they had *not* used heroin in the month before coming to prison but who said they *had* used it in their current prison were asked questions about why they had used heroin, whether they had cut down on any other drugs as a result of using heroin and, if so, which drugs they had cut down on. Ease of availability was the most common reason given for using heroin in prison but not in the month prior to intake. A high proportion of people said they wanted or needed the effect of heroin, which suggests that factors such as addiction and boredom play a significant part in causing the observed change to heroin.

In addition, the study looked at the drug use history of those people classified as new users/restarters of opiate use (i.e. they had used opiates in prison but not in the year before coming to prison). The majority of this group, 90 per cent, had used some drugs in the year before coming to prison. Most frequently mentioned was cannabis, but almost half had been using stimulants, such as crack or cocaine. The effect of stimulants may be unwelcome in the confines of a prison and people dependent on drugs such as crack might switch to cannabis or opiates instead for this reason. The new users/restarters of opiates who had not used any drugs in the past year and whose use therefore appears to be solely related to being in prison represent 0.7 per cent of the prison population as a whole. However, although this is a very small proportion of the prison population, the size of that population means that it still represents a considerable number of people.

A further group of 540 prisoners who *had* used cannabis in the month before coming to prison but who had *not* used cannabis in their current prison were asked a similar set of questions

about that change to their drug use patterns. The main reason people gave for stopping cannabis use was worry about getting caught or the penalties (45%), although only six per cent specifically mentioned that it was easily detected in the MDT programme. *This suggests that the MDT programme may be discouraging cannabis use, although other drug prevention measures may also be contributing to this change. In most cases prisoners were stopping using drugs altogether: only four per cent of this group who appeared to have stopped using cannabis (1% of the prison population as a whole) said that they were using other drugs instead.* However, almost all of these said that they were using heroin or other opiates, although crack and cocaine powder were also mentioned.

The study concluded that the falling level of cannabis positive tests is a robust indicator of falling levels of cannabis use in prison. Levels of positive tests for opiates have remained unchanged to any significant level over the duration of the programme. Although RMDT positivity rates appear to be a poorer guide to levels of opiate use it is likely that this again provides a realistic picture of the intractable problem of heroin addiction and persistent heroin use. *The overall conclusion is that MDT in combination with other security and control strategies has had a substantial impact on cannabis use within prisons. However it has had less impact on opiate use in prison. The result of this is that opiate use on aggregate has not increased in prisons but opiate use as a proportion of all drug use in the prison has increased substantially due to the reduction in cannabis usage.* Prisoners know that cannabis is more easily detected than heroin through MDT and this probably plays a part in the differential impact of being in prison on the two drugs. However it appears that use of heroin is more clearly influenced by previous and persistent use of heroin and is less likely to be deterred through the use of detection and sanctions. *A small proportion of prisoners (about 3%) appear to have changed from using other drugs to opiates while in prison and a further one per cent are non-drug users who have started using opiates in prison.*

The importance of this change to opiate use in the longer term is unclear, since new users generally perceive a low likelihood of heroin use in the three months after release. However, the extent to which perceived likelihood of future use matches actual behaviour after release is not known.

There is no evidence of an increase in injecting drug use in an attempt to reduce the length of time drugs are detectable through the RMDT programme. Self-report indicates that imprisonment very significantly reduces injecting drug use.

## The response to refused and failed MDT tests

The first of the subsidiary questions the study addressed was the extent to which the prison response to refused and failed MDT tests is appropriate and proportionate. Overall the refusal rates are low and there do not appear to be any significant incentives built into the system to encourage refusals. It appears that adjudications on refusals are more likely to result in greater loss of privilege than do positive tests. The overall conclusion is that currently refusals do not in any way distort the overall picture of MDT.

In general there seems to be little distinction made between cannabis and opiates in either the type or the level of punishment imposed for positive tests. There does, however, seem to be more leniency shown towards those testing positive for the first time. *There is clearly a need to differentiate the response to cannabis from that to use of opiates. There is a lack of distinction between the types of punishments for testing positive for different substances. There should be a clear difference between these two that would indicate the difference in the status of the two drugs.* The downgrading of the classification of cannabis in the community reinforces the need for this distinction to be made.

## The extent of MDT-initiated referral to treatment and support programmes

The data gathered indicate that the major response to positive MDT results is adjudication with some form of loss of privilege, while referral to treatment or support services is very

limited. There also appears to be considerable variation between prisons in the extent of referral and treatment provision. Given the importance of habit and addiction in the continuation of heroin use in prison consideration should be given to ensuring that a major emphasis is placed on referring opiate positive individuals for assessment for treatment and if appropriate for ongoing treatment with throughcare planning built into the follow-up.

## The most appropriate balance of the different types of MDT testing

The vast majority of testing is random mandatory testing. The resource demands on prisons and the requirement to conduct a minimum amount of random testing make it difficult for prisons to substantially expand on other forms of testing. Reorganisation of the sampling design of the RMDT programme might allow fewer tests to be done while still providing estimates of use which are sufficiently precise for monitoring purposes. This could release resources to allow an increase in testing under other parts of the MDT programme, such as screening during reception or other forms of testing that could identify entrenched drug users early on and refer them into appropriate assessment and treatment channels.

While the RMDT programme does appear to have some deterrent effect at present, particularly for cannabis use, a high proportion of those tested are inevitably non-users. A lower rate of RMDT testing combined with more use of targeted testing, on suspicion or under the frequent testing programme, might have a greater deterrent effect overall.

## Impact of other initiatives on the MDT programme

It is clear that MDT cannot be seen in isolation from other major security initiatives that have taken place over the past seven years. All these security initiatives have had a significant impact on life in prisons. In particular, the level of use of cannabis has reduced very significantly and, as far as could be ascertained, this is not associated with any marked increase in other forms of drug use within prisons. Overall it is concluded that other major security initiatives may have had a major impact on drug availability in prisons and may significantly account for the falling rates of cannabis use.

Voluntary testing programmes and the provision of drug-free areas within prisons is another area in which there has been a big increase in provision. These programmes were generally considered positively by both staff and inmates. However, rates of testing in some units appear to be rather infrequent and inmates indicated that they would value more help and support linked to the voluntary testing programmes.

## Overall conclusions

The prison service has invested heavily in MDT and the staff have shown high commitment to the proper implementation of this drug control strategy within the prisons. If the key aim has been to reduce all types of illegal drug use within establishments, then it is possible to say that through the reduction in cannabis use it has been a relative success. The prison population is one in which reducing drug use will be difficult, with very high rates of self-reported poly-drug use prior to prison entry. Approximately half of self-reported cannabis users reported using a range of other drugs in the month prior to imprisonment. Reduction in drug use was reported to be significantly influenced by cost and availability of drugs within prisons.

Overall the MDT programme has had a significant impact on cannabis but little impact on heroin use. There is a small but significant self-report of heroin initiation while in prison. However, there is no data to explore what the levels of heroin initiation were prior to the introduction of MDT and it is reasonable to assume that this heroin initiation is partly the result

of the exposure of young and relatively naïve individuals to a broader drug culture in prisons that facilitates drug initiation of whatever drug is available for consumption.

It could be argued that tighter control is required to reduce heroin availability but also that more treatment availability for those with an established heroin habit could go some significant way towards reducing episodes of heroin use in prison. There is a need to see treatment interventions as working to complement other control strategies but there is also a need not to avoid having unrealistic expectations of the possible impacts of MDT. Overall it seems unreasonable to think that minor sanctions will deter use in prison when greater adversities in the open community also have limited impact on patterns of heroin use.

RMDT provides a picture of reducing cannabis use and stable heroin use over the recent past. A future push on the provision of treatments for heroin dependence in prisons is the intervention that seems most likely to produce a fall in opiate use in prisons over the next few years.

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# Appendix A: Comparison of self-reported drug use in the survey and the results of oral fluid and hair tests

## Oral fluid testing compared with drug use in last two to three days

### Introduction

All respondents to the survey were asked about their use of illicit drugs in the past week within the prison in which they were currently being held. They were asked about each day in turn starting with the day of interview and working back from there. If they had been in the prison for less than a week they were only asked about those days in which they were in that prison.

All respondents were also asked if they would be willing to give an oral fluid sample for testing for drugs. The information about the survey that was given to prisoners before the interview mentioned that survey participants would be asked to give samples. However, it was also made clear that it was not necessary for them to do so even if they had taken part in an interview. Young people aged under 18 years were not asked to give samples because of concerns over obtaining consent from their parents.

### The oral fluid testing procedures

The oral fluid test used in this survey was provided by Altrix Healthcare plc. The testing system they provide uses the Intercept™ (Orasure) device to collect a sample of oral fluid (oral mucosal transudate). This device has a specially designed cotton pad impregnated with salts and buffers to collect the sample, which fits into a transport vial which contains a viricidal and bactericidal fluid which preserves the sample for up to three weeks without any special storage conditions. The high salt concentration in the collection pad draws serous fluid through the mucous membrane of the cheek against which it is placed for two minutes during the collection procedure.

### Response to OF sampling

Overall, 75 per cent of those selected for the survey agreed to take part in an interview. There was variation in response between prisons and, in particular between different types of prison. Response was highest in YOIs (90%) and lowest in dispersal prisons (56%). Information on the status of all those selected (i.e. whether they were on remand or sentenced), the type of prison they were held in and their age was obtained for everyone in the sample. This, together with sampling fraction used for different prisons in the sample was used to weight the data set to make it representative of the prison population as a whole. For more details see the report of the survey.

At the end of the interview, everyone aged 18 and over who agreed to an interview was asked if they would be prepared to give an oral fluid sample. Table A1.1 shows the outcome at this stage. Overall, 1,599 of the 2,207 people who agreed to interview (72%) also agreed to give an oral fluid sample. In five cases it was not possible to take the sample even though the respondent agreed. In total 1,594 oral fluid samples were taken and sent for testing. Of these, 1581 were successfully tested and matched to the interview data, while in the remaining 13 cases a result could not be obtained, for example, because the sample was inadequate or the bar code was missing from the container.



**Table A1.1 Response to the oral fluid testing**

	No.	%
<b>Interviewed</b>	<b>2,207</b>	<b>100</b>
Refused sample	608	28
Agreed but sample not taken	5	0
<b>OF sample taken</b>	<b>1,594</b>	<b>72</b>
OF samples taken	1,594	100
OF sample failed/not matched	13	1
<b>OF result obtained</b>	<b>1,581</b>	<b>99</b>

The ONS interviewers stressed the fact that the testing results would be kept completely confidential and would not be identified with individual prisoners but it is possible that people who had recently used drugs would have been more reluctant to provide a sample than other prisoners. This would not interfere with the comparison between test results and self-reported drug use, but might result in lower than expected positivity rates in the tests. To investigate the likely extent of any possible bias, the characteristics of responders and non-responders were compared. Those who agreed to a test that could not be carried out were grouped with the responders to the sampling. Those who were not asked to give a sample because they did not complete the interview were grouped with the non-responders.

**Table A1.2 Comparison of responders and non-responders to the oral fluid sampling: personal and custodial characteristics**

	Refused	Agreed
	%	%
<b>Age</b>		
16-20	6	10
21-24	20	23
25-29	21	20
30-34	19	17
35-39	12	13
40-44	13	7
45+	11	11
<b>Sex</b>		
Male	92	95
Female	8	5
<b>Type of prison</b>		
Local/remand centre	33	45
Training	38	33
Women's	8	5
Open	8	4
Dispersal	7	3
YOI	6	9
<b>Type of prisoner</b>		
Remand/unsentenced	13	18
Sentenced/civil	87	82
<b>Location in prison</b>		
Normal	94	94
Other	6	6
<b>No. of previous prison terms</b>		
0	53	54
1	19	15
2+	28	31
<b>In prison &lt;1 week</b>		
Yes	1	1
No	99	99

There were some differences in the personal and custodial characteristics between those who agreed to give an oral fluid sample and those who did not. Those giving a sample tended to be slightly younger. A third (33%) of those giving a sample were aged under 25 compared with about a quarter (26%) of those who refused. Overall, eight per cent of those who refused to give a sample were women compared with five of those who agreed. Inmates of women's prisons, dispersal and open prisons were over-represented in the group who declined to give a sample, making up eight per cent, seven per cent and eight per cent of this group respectively. By comparison, they constituted five per cent, three per cent and four per cent of those who consented to give a sample. Sentenced or civil prisoners were slightly less likely to agree to give an oral fluid sample than those who were on remand or were convicted but unsentenced; sentenced and civil prisoners made up 87 per cent of those who refused but 82

per cent of those who agreed to give a sample. There was no difference between responders and non-responders to the oral fluid sampling with respect to number of previous prison terms, the location within the prison in which they were being held, or whether they had been in prison less than one week. (Table A1.2)

When comparison is made between those who agreed to give a sample and those who did not on the basis of self-reported drug use, those who agreed to give a sample indicated higher levels of drug use before coming to prison but there was no difference between the groups on levels of recent drug use in prison. For example, 48 per cent of those who agreed to give an oral fluid sample were assessed as not drug dependent before coming to prison compared with 56 per cent of those who refused. Similarly 30 per cent of those who consented to giving a sample said they had injected drugs at some time compared with only 24 per cent of those who did not agree. This is not unexpected given the younger age profile of those who agreed to give a sample. However, about a quarter of both groups said they had used drugs in the last month in prison; 25 per cent of those who refused to give a sample and 26 per cent of those who agreed. Similarly there was no difference in the proportions reporting having used drugs in the past week – 17 per cent of refusers and 16 per cent of those who agreed did so. (Table A1.3)

**Table A1.3 Comparison of responders and non-responders to the oral fluid sampling: drug use characteristics**

	Refused	Agreed
	%	%
<b>Ever used drugs</b>		
Yes	81	83
No	19	17
<b>Ever injected drugs</b>		
Yes	24	30
No	76	70
<b>Drug dependence before prison</b>		
None	56	48
Cannabis only	5	8
Stimulants only	10	12
Opiates and stimulants	16	19
Opiates only	13	13
<b>Used drugs in the last month in prison</b>		
Yes	25	26
No	75	75
<b>Used drugs in the last week in prison</b>		
Yes	17	16
No	83	84

Multiple logistic regression analysis was undertaken to identify which factors were independently associated with agreeing to give an oral fluid test. The results are shown in Table A1.4.

**Table A1.4 Odds ratios for factors associated with agreeing to oral fluid testing**

	<i>Adjusted odds ratios</i>	<i>95% CI</i>
<b>Age</b>		
16-20	5.13 ***	(2.07-12.70)
21-24	2.00 **	(1.34-2.97)
25-29	1.66 *	(1.12-2.44)
30-34	1.60 *	(1.08-2.37)
35-39	2.05 **	(1.34-3.13)
40-44	1.00	-----
45+	2.15 **	(1.39-3.33)
<b>Type of prison</b>		
Local/remand centre	3.05 ***	(1.89-4.91)
Training	2.12 **	(1.33-3.40)
Women's	1.43	(0.80-2.55)
Open	1.32	(0.74-2.35)
Dispersal	1.00	-----
YOI	1.29	(0.50-3.36)
<b>No. of previous prison terms</b>		
0	1.00	-----
1	0.70 *	(0.53-0.93)
2+	0.82	(0.63-1.07)
<b>Ever injected drugs</b>		
Yes	1.53 **	(1.12-2.09)
No	1.00	-----
<b>Drug dependence before prison</b>		
None	1.00	-----
Cannabis only	1.92 **	(1.19-3.07)
Stimulants only	1.21	(0.85-1.72)
Opiates and stimulants	1.05	(0.73-1.51)
Opiates only	0.84	(0.58-1.22)

\* = p<0.05; \*\* = p<0.01; \*\*\* = p < 0.001

Five factors were found to be independently associated with agreeing to providing an oral fluid sample for testing: age, type of prison, the number of previous prison terms served, a history of injecting drug use and drug dependence before coming to prison. Respondents aged 40 to 44 were less likely than all other groups to agree to give a sample and the difference was most marked from those aged 16 to 20. Inmates of dispersal prisons were least likely to agree to give a sample, significantly less likely than those in local prisons or remand centres or category B and C training prisons. Prisoners who had not been in prison before were more likely than those who had had a previous prison term to give a sample. Inmates with a history of injecting drug use were more likely than those without to give a sample as were those who were assessed as being dependent on cannabis only compared with those without drug dependence. From these results it can be seen that there was no

tendency for drug users to refuse to give a sample more often than non-users and that if anything the reverse was true. (Table A1.4)

### Comparison of OF results and self-report – level of concordance

The level of drug metabolites in oral fluid is reported to approximately mirror the profile in the blood. Drugs can be detected in oral fluids very soon after use and then for a fairly short period afterwards. A positive oral fluid test therefore shows recent use of drugs. The detection times for different drugs in oral fluid given by Altrix for the drugs considered in this study are as follows:

Drug class	Detection time in oral fluid	
	How soon detectable	For how long
Cannabinoids (THC)	A few minutes	1-2 days
Opiates Morphine Codeine	A few minutes	2-3 days 1-2 days 1-2 days
Methadone	A few minutes	1-2 days

For this study, the oral fluid samples were initially tested for cannabinoids and opiates by immunoassay. The opiate test detects all opiate compounds including codeine, dihydrocodeine, morphine, diacetyl morphine (heroin), 6-monoacetylmorphine (6-MAM, derived only from heroin), hydromorphone and hydrocodone. As several of these compounds could have been derived from prescribed medication, an additional morphine-specific test was carried out on all opiate positive samples. While morphine is produced from codeine, only very small amounts are produced which are continually metabolised, and even at high therapeutic doses of codeine, levels of morphine will remain below the detection limits set on the “morphine specific” assay. The opiate and morphine immunoassays can detect morphine levels as low as 5ng/ml.

The results of the oral fluid tests are shown in Table A1.5. The cannabis positivity rate was 0.7 per cent and the morphine (heroin) positivity rate was 0.6 per cent. Overall, 2.8 per cent were opiate positive.

**Table A1.5 Results of the oral fluid testing**

Number of tests done	1,580
Cannabis positive	0.7%
Morphine (heroin) positive	0.6%
Opiate positive	2.8%

The rate of positivity seems quite low. The RMDT positivity rates in the prisons in this survey were 7.0 per cent for cannabis and 7.1 per cent for opiates. MDT uses urinalysis which picks up use over a longer time period than cannabis. If one assumes that urinalysis will pick up cannabis use in the previous ten days while OF tests pick up use in the past two days then a rate about one fifth of that obtained by RMDT testing might be expected, i.e. about 1-2 per cent for cannabis. For opiates, the window of detection for OF testing and urinalysis are more similar (about three days for urinalysis and one or two days for heroin) so one might expect more similar positivity rates than is found here.

The results from the OF tests are compared with the self-reported drug use of the respondents in Table A1.6. There was a strong correlation between self-reported use and the OF results with the relative risk of a positive OF result for cannabis being 48 times higher if the respondent reported using cannabis in the past two days. For heroin the correlation coefficient (RR) was 42.92. It can be seen that self-reported rates of use are much higher than detected in the oral fluid samples. Self-reported use in the past two days gives a false positive rate of 3.5 per cent for cannabis and 4.5 per cent for heroin. However, the false negative rates are much lower: 0.3 per cent for cannabis and 0.2 per cent for heroin.

Prisoners were aware that testing was part of the research project from the beginning of their participation but they were not asked to give consent for a test until after they had completed the interview. There was a high degree of compliance with testing and no evidence that drug users were more likely to refuse than non-users. The proportion of people reporting drug use in the past week were almost identical for responders and non-responders (16 and 17%). If prisoners were going to lie about drug use one would suppose they were at least as likely to deny using drugs as to falsely claim to be using them, which would result in similar rates of false negatives and false positives. It seems more reasonable to suppose that the higher rate of apparent drug use obtained from self-report compared with OF testing is due to some of this drug use being of very small amounts of impure substances, which may result in samples below the threshold of detection of the OF test.

**Table A1.6 Comparison of oral fluid test results and self-reported drug use.**

	Self-reported use		
	In past 2 days	In past 3 days	In past week
<b>(a) Cannabis</b>			
OF & SR positive	0.4%	0.4%	0.4%
OF & SR negative	95.8%	94.5%	90.6%
Agreement	96.1%	94.8%	90.9%
OF +ve SR -ve	0.3%	0.3%	0.3%
OF -ve SR +ve	3.5%	4.8%	8.7%
Disagreement	3.9%	5.2%	9.1%
RR of positive OF	47.86	34.51	18.16
95% CI lower limit	13.62	9.89	5.25
upper limit	168.16	120.36	62.80
<b>(b) Morphine (heroin)</b>			
OF & SR positive	0.4%	0.4%	0.4%
OF & SR negative	95.0%	93.3%	90.0%
Agreement	95.2%	93.5%	90.1%
OF +ve SR -ve	0.2%	0.2%	0.1%
OF -ve SR +ve	4.5%	6.2%	9.5%
Disagreement	4.8%	6.5%	9.9%
RR of positive OF	42.92	30.36	33.27
95% CI lower limit	10.52	7.48	6.85
upper limit	175.07	123.19	161.57

## Hair tests

### Introduction

At the end of the interview prisoners aged 18 and over were also asked if they would be prepared to give a hair sample for testing for drugs. They were assured of confidentiality and that the samples would not be used for any other purpose and would not be retained in any way that would allow them to be identified.

## Information about hair sampling procedures

Training of interviewers in the taking of hair samples was conducted under the guidance of Trichotech plc. Where the hair was of a reasonable length (around 3 cm) a lock of hair on the crown of the head was separated from the rest of the hair and cut off as close to the scalp as possible using a pair of plastic scissors. The lock of hair was then placed on a piece of foil with the cut end sticking out, wrapped up and placed in envelopes which were sealed with a sticky label with a barcode on it. The barcode was then entered into the questionnaire containing the interview relating to that person so that the results of the test could be matched to the interview at a later date. If the prisoner's hair was too short for this procedure but not completely shaved off, it was possible to take clippings of hair from several places on the scalp and to send these.

At the laboratory, the first three centimetres of hair that had been nearest the scalp were separated and analysed individually. Hair grows on average one centimetre a month, so each section represented about one month's drug use.

## Response to hair testing

All those aged 18 and over who agreed to an interview were asked if they would provide a sample of their hair to be tested and samples were taken if consent was granted and the respondent had sufficient hair to provide a sample. However, because of the high cost of hair testing and uncertainty over how the data could be used, it was decided to initially only test the samples from the first wave of interviews. Hence, the analysis here is limited to data relating to that wave only.

**Table A2.1 Response to the hair testing in wave 1**

	No.	%
Interviewed	847	100
Refused sample	238	28
Agreed but sample not taken	339	40
Hair sample taken	270	32
Hair sample received	270	100
Hair sample not matched	4	1
Hair result matched	266	99

Table A2.1 shows the response to this stage. Overall, 609 of the 847 people who were interviewed (72%) agreed to give a hair sample. However, it was not possible to collect a hair sample from 339 of the 609 (56%) who agreed to provide one. In nearly all cases (99%) this was because the hair was too short to be analysed. In total 270 hair samples were taken and sent for testing. Of these, 266 were successfully tested and matched to the interview data. The barcodes from the remaining four cases could not be matched to interviews.

As for the oral fluid testing, it is possible that those who had recently used drugs were less likely to agree to provide a hair sample than other prisoners, leading to a lower rate of positive results. Three types of comparisons were made to assess the level of potential bias. The personal and custodial characteristics of all those who agreed to provide a sample were compared with those who refused, those who were tested were compared with all those who were not tested and those who provided a sample were compared with those from whom it was not possible to collect a sample.



Table A2.2 shows the results of these comparisons. Those who consented to provide a sample, compared with those who did not, were more likely to be:

- aged 16-24 years (40% of those consented compared with 29% of those who refused);
- detained in a YOI (25% compared with 15%),

and less likely to be:

- female (6% compared with 11%);
- held in women's prisons, open prisons and dispersal prisons (6%, 12% and 5% respectively, the equivalent figures for the group that refused were 11%, 19% and 12%).

There was no difference in the other custodial characteristics between those who consented and those who refused to provide a sample of hair.

There were also differences in the personal and custodial characteristics between those who provided a sample of hair, and those who agreed to but could not provide a sample. In general these reflect the prevailing fashion among young men for a shaven hairstyle. Those who provided a sample compared with those who could not were more likely to be:

- aged 45 years or over (22% compared with 7%);
- held in local/remand prisons and women's prisons (35% of those in local/remand prisons gave their consent compared with 22% who refused and 14% of those in women's prisons agreed to give a sample compared with 1% who refused);
- on remand (21% compared with 6%);
- have had no previous term in prison in the last five years (68% compared with 59%),

and less likely to be:

- aged 16-20 years (10% compared with 32%);
- male (86% compared with 99%);
- held in YOI (9% compared with 35%).

The differences between those who were tested and all those who were not tested generally mirrored the differences between those who were able and those who were unable to provide a sample.

**Table A2.2 Comparison of responders and non-responders to the hair test sampling: personal and custodial characteristics**

	Refused	Agreed	Agreed - sample obtained	Agreed sample not obtained	Tested	All not tested
	%	%	%	%	%	%
<b>Age</b>						
16-20	15	24	10	32	10	26
21-24	14	16	17	16	17	15
25-29	18	15	16	14	16	16
30-34	19	13	13	13	13	15
35-39	10	13	13	14	13	12
40-44	10	6	9	4	9	6
45+	15	13	22	7	22	10
<b>Sex</b>						
Male	89	95	86	99	86	96
Female	11	6	14	1	14	4
<b>Type of prison</b>						
Local/remand	23	26	35	22	35	22
Training	21	26	21	28	21	26
Women's	11	6	14	1	14	4
Open	19	12	14	11	14	13
Dispersal	12	5	7	4	7	7
YOI	15	25	9	35	9	28
<b>Type of prisoner</b>						
Remand / unsentenced	7	11	21	6	21	6
Sentenced / civil	93	89	79	94	79	94
<b>Location in prison</b>						
Normal	93	93	93	93	93	93
Other	7	7	7	7	7	7
<b>No. previous prison terms in last 5 years</b>						
0	60	62	68	59	68	59
1	21	16	12	19	12	19
2+	19	22	20	23	20	22
<b>In prison &lt;1 week</b>						
Yes	0	2	3	1	3	1
No	100	98	97	99	97	99
<b>Base</b>	<b>238</b>	<b>605</b>	<b>266</b>	<b>339</b>	<b>266</b>	<b>577</b>

The level of self-reported drug use was also compared between the groups. There were no differences on any drug use characteristic between those who consented to provide a sample and those who did not consent. When those who provided a sample were compared with those who agreed but a sample could not be taken, those who gave a sample were less likely to report having:

- ever used drugs (75% compared with 86%);
- drug dependence (36% compared with 50%).

When the drug use characteristics of those who were tested were compared with all those who were not tested, there was only one difference: those who were not tested were more likely to report having used drugs before entering prison (83% compared with 75%).

There were no differences in recent drug use in prison between the groups. One in five of those who provided a sample reported that they had used drugs in prison in the last month, and 13 per cent of those who provided a sample reported that they had used drugs in prison in the last week. (Table A2.3)

**Table A2.3 Comparison of responders and non-responders to the hair test sampling: drug use characteristics**

	Refused	Agreed	Agreed - sample obtained	Agreed sample not obtained	Tested	All not tested
		%	%	%	%	%
<b>Ever used drugs</b>						
Yes	77	82	75	86	75	83
No	23	18	25	14	25	17
<b>Ever injected drugs</b>						
Yes	18	21	17	22	17	21
No	82	79	83	78	83	79
<b>Drug dependence before prison</b>						
None	58	56	64	50	64	53
Cannabis only	4	9	6	11	6	9
Stimulants only	15	10	9	10	9	12
Opiates and stimulants	15	15	12	17	12	17
Opiates only	8	10	9	11	9	10
<b>Used drugs in the last month in prison</b>						
Yes	23	23	20	24	20	24
No	77	78	80	76	80	76
<b>Used drugs in the last week in prison</b>						
Yes	15	13	13	13	13	14
No	85	87	87	87	87	86
<i>Base</i>	238	605	266	339	266	577

Multiple logistic regression analysis was performed to identify factors associated with agreeing to provide a hair sample. The results are shown in Table A2.4.

There was no association between personal or drug use characteristics and agreeing to provide a hair sample. The only factors to show an association with agreeing to provide a sample were type of prison and type of prisoner. The results show that the odds of agreeing to provide a sample were four times lower among those held in dispersal prisons and in Women's prisons than those held in YOI. Those for people held in open prisons were around a third of those in YOIs and for those in local/remand prisons were around half. The odds of agreeing to provide a sample for prisoners on remand were more than 2 times as great as for sentenced prisoners.

**Table A2.4 Odds ratios for factors associated with agreeing to hair test sampling**

	Adjusted odds ratios	95% CI
<b>Type of prison</b>		
Local/remand	0.55 *	(0.31-0.95)
Training	0.73	(0.43-1.25)
Women's	0.24 ***	(0.12-0.50)
Open	0.37 **	(0.21-0.65)
Dispersal	0.26 ***	(0.13-0.51)
YOI	1.00	-----
<b>Type of prisoner</b>		
Remand / unsentenced	2.13 *	(1.08-4.22)
Sentenced / civil	1.00	-----

\* = p<0.05; \*\* = p<0.01; \*\*\* = p<0.001

Multiple linear regression was also used to identify factors associated with being tested. Table A2.5 shows that age, type of prison, type of prisoner and whether the prisoner has been in prison for less than a week or a week or more, were all associated with being tested.

Compared with those aged 45 years and over, those aged 25 to 39 had the lowest odds of providing a sample followed by those aged 21-24 years. The odds of giving a sample were 13 times greater for those held in women's prisons than those held in YOI. Those held in local/remand prisons had around five times greater odds of giving a hair sample than those held in YOI. The direction of the association between type of prison and being tested has changed due to the effect of age in the model. Those held in local/remand and women's prisons were less likely to agree to be tested but more likely to be tested than those held in YOI. Conversely, those held in YOI were more likely to agree to be tested but less likely to be able to provide a hair sample.

The odds of giving a sample for prisoners on remand were two and a half times as great as for sentenced prisoners and the odds of giving a sample for people who had been in prison for less than one week were nearly five times as great as for those who had been in prison for a week or longer.

The proportional under-representation of young prisoners will have resulted in a sample of hair tests that is likely to under-represent drug users generally. The higher response from women and lower response from inmates of YOIs means that the sample will over-represent opiate users. The higher response from remand compared with sentenced prisoners means that there will be a higher proportion of people who have been in prison for a short period for whom the hair sample should represent time outside prison when drug use should be much higher.

**Table A2.5 Odds ratios for factors associated with providing hair for testing**

	Adjusted odds ratios	95% CI
<b>Age</b>		
16-20	0.79	(0.17-3.56)
21-24	0.47 *	(0.26-0.84)
25-29	0.42 **	(0.24-0.74)
30-34	0.36 **	(0.20-0.66)
35-39	0.43 **	(0.24-0.79)
40-44	0.62	(0.31-1.25)
45+	1.00	-----
<b>Type of prison</b>		
Local/remand	5.41 *	(1.22-24.05)
Training	3.84	(0.87-16.94)
Women's	13.17 ***	(3.11-55.72)
Open	4.41	(0.97-20.02)
Dispersal	4.16	(0.86-20.24)
YOI	1.00	-----
<b>Type of prisoner</b>		
Remand / unsentenced	2.48 **	(1.42-4.35)
Sentenced / civil	1.00	-----
<b>In prison &lt;1 week</b>		
Yes	4.85 *	(1.24-18.97)
No	1.00	-----

\* = p<0.05; \*\* = p<0.01; \*\*\* = p<0.001

## Comparison of the hair test results and self-reported drug use

Where possible the first, second and third centimetres of each hair sample were tested. It takes about two weeks for new hair to emerge from the scalp and then it grows at about one centimetre a month from then on. The centimetre of hair nearest the scalp will thus reflect a time period of approximately two to six weeks prior to sampling, the second centimetre about six weeks to ten weeks and the third centimetre about ten to fourteen weeks prior to sampling. However, there is individual variation in the rate of growth so the time period represented by each hair sample cannot be accurately gauged.

Table A2.6 shows the number of samples obtained covering each section/time period and the proportion of these that were positive. All the cases that were cannabis positive were only positive in one section. For heroin positivity there was more overlap with ten cases where all three sections were positive for heroin, six cases where two sections were positive while in seven cases only one section was positive. The cannabis positivity rates are very low. Since each section of hair is supposed to reflect drug use in the past month one would expect positivity rates similar to or higher than those found on urinalysis in the MDT programme (7.0% for the prisons in this sample). Heroin positivity is higher and more in line with the rates obtained in MDT (7.1%). However, the detection window for heroin on hair tests is much greater than on urinalysis so the rate might have been expected to be higher.

**Table A2.6 Results of the hair test**

	Section of hair		
	1	2	3
No. of tests	266	244	221
Cannabis positive	1.8%	1.6%	0.5%
Heroin positive	3.1%	3.9%	5.4%

Matching the period covered by the hair samples with the self-reported drug use is difficult but two groups for which a reasonable match can be made can be identified. People were asked about use in the past month in the current prison or any use in the current prison. For people who had been in the current prison for six weeks or more, the period of time covered by testing the first centimetre of hair (two to six weeks before testing) would all have been spent in the current prison and would overlap with the period covered by the question on drug use in the past month. Secondly, for people who had been in prison for two weeks or less the first centimetre of hair would reflect a time period which was all spent outside prison. Much of this would overlap with the period covered by the question on drug use in the month before coming to prison. These two groups were identified and comparison made with the results of the tests on the first centimetre of hair. The results are shown in Table A2.7 and A2.8 although comparisons are hampered by the small numbers involved.

Agreement between self-reported drug use in the past month in the current prison and hair test results for the 189 prisoners who had been in prison for six weeks or more was poor. But this may be due to the mismatch of the time periods covered by the two assessments. Only 15 inmates had been in prison less than two weeks allowing comparison with the self-reported drug use in the month before prison. Concordance appeared to be a little better but the numbers are too small for serious analysis.

**Table A2.7 Comparison of hair test results and self-reported drug use in prison in the last month among those who had been in current prison for six weeks or more.**

	Self reported drug use in last month in prison	
	Cannabis	Heroin
Hair and SR positive	0	0.7
Hair and SR negative	86.2	88.7
Agreement	86.7	89.8
Hair +ve SR -ve	0.5	1.1
Hair -ve SR +ve	13.3	9.5
Disagreement	13.3	10.2
RR of positive hair	0.9	0.2
95% CI lower limit	0.82	0.02
upper limit	0.92	2.54
<i>Unweighted count</i>	<i>189</i>	<i>189</i>

**Table A2.8 Agreement between self-reported use in the year before coming to prison and hair test results for inmates who had been in prison less than six weeks**

	Cannabis positivity		Heroin positivity	
	No	Yes	No	Yes
<b>Self-reported drug use in the month before prison</b>	<i>Numbers reporting</i>			
Used cannabis	4	-		
Not used cannabis	11	-		
<i>Total</i>	15	0		
Used heroin			1	4
Not used heroin			9	1
<i>Total</i>			10	5

## Appendix B: Additional results from the analysis of the 1997 data set

The tables below are based on data collected in the 1997 survey of psychiatric morbidity among prisoners and 1997 RMDT positivity rates. The cross-tabulations compare the proportion of establishments that were in each quartile for cannabis and opiate use and the RMDT positivity rates for these drugs by:

- category of prison;
- whether men's or women's prison;
- number of prisoners;
- average age;
- average length of sentence;
- proportion of prisoners on remand or unsentenced;
- the RMDT rate; and
- level of assaults on inmates or officers.

Those factors which appeared to be associated with levels of cannabis and opiate use were then entered into the logistic regression model along with levels of RMDT positivity to identify which factors were most strongly associated with levels of drug use.



**Table B.1 Cannabis use and opiate use by category of prison**

	Category of prison				Total
	Local, dispersal	Training	Open	YOI	
<b>Cannabis</b>					
MDT positivity rate for cannabis	%	%	%	%	%
1st quartile (lowest)	22	26	43	19	25
2nd quartile	20	17	29	52	25
3rd quartile	24	28	29	19	25
4th quartile (highest)	31	30	0	10	25
% using cannabis in current prison term	%	%	%	%	%
1st quartile (lowest)	27	13	64	24	25
2nd quartile	31	23	21	19	25
3rd quartile	29	21	14	33	25
4th quartile (highest)	14	43	0	24	25
<b>Opiates</b>					
MDT positivity rate for opiates	%	%	%	%	%
1st quartile (lowest)	8	11	36	90	25
2nd quartile	22	30	50	5	25
3rd quartile	35	28	14	5	25
4th quartile (highest)	35	32	0	0	24
% using opiates in current prison term	%	%	%	%	%
1st quartile (lowest)	8	23	50	62	27
2nd quartile	37	13	36	19	25
3rd quartile	35	19	14	14	24
4th quartile (highest)	20	45	0	5	24
<i>Base (=100%)</i>	49	47	14	21	131

**Table B.2 Cannabis use and opiate use by whether men's or women's prison**

	Whether men's or women's prison		Total
	Men's	Women's/ both sexes	
<b>Cannabis</b>			
MDT positivity rate for cannabis	%	%	%
1st quartile (lowest)	23	44	25
2nd quartile	28	6	25
3rd quartile	23	38	25
4th quartile (highest)	26	12	25
% using cannabis in current prison term	%	%	%
1st quartile (lowest)	22	50	25
2nd quartile	25	25	25
3rd quartile	26	19	25
4th quartile (highest)	27	6	25
<b>Opiates</b>			
MDT positivity rate for opiates	%	%	%
1st quartile (lowest)	27	12	25
2nd quartile	26	19	25
3rd quartile	24	38	25
4th quartile (highest)	24	31	24
% using opiates in current prison term	%	%	%
1st quartile (lowest)	30	0	27
2nd quartile	23	38	25
3rd quartile	22	38	24
4th quartile (highest)	24	25	24
<i>Base (=100%)</i>	115	16	131

**Table B.3 Cannabis use and opiate use by size of prison**

	Number of prisoners			Total
	up to 299	300-499	500 or more	
<b>Cannabis</b>				
MDT positivity rate for cannabis	%	%	%	%
1st quartile (lowest)	38	17	22	25
2nd quartile	22	28	26	25
3rd quartile	22	22	29	25
4th quartile (highest)	19	33	22	24
% using cannabis in current prison term	%	%	%	%
1st quartile (lowest)	43	25	14	25
2nd quartile	16	17	36	25
3rd quartile	27	25	24	25
4th quartile (highest)	14	33	26	24
<b>Opiates</b>				
MDT positivity rate for opiates	%	%	%	%
1st quartile (lowest)	38	28	16	25
2nd quartile	27	25	24	25
3rd quartile	14	19	36	25
4th quartile (highest)	22	28	24	24
% using opiates in current prison term	%	%	%	%
1st quartile (lowest)	46	38	14	27
2nd quartile	16	31	28	25
3rd quartile	24	17	28	24
4th quartile (highest)	14	25	31	24
<i>Base (=100%)</i>	37	36	58	131

**Table B.4 Cannabis use and opiate use by average age of prisoner**

	Average age of prisoner				Total
	16-24	25-29	30-34	35+	
<b>Cannabis</b>					
MDT positivity rate for cannabis	%	%	%	%	%
1st quartile (lowest)	19	8	30	56	25
2nd quartile	42	27	16	22	25
3rd quartile	23	41	18	17	25
4th quartile (highest)	15	24	36	6	25
% using cannabis in current prison term	%	%	%	%	%
1st quartile (lowest)	19	19	22	56	25
2nd quartile	19	16	32	33	25
3rd quartile	35	32	22	6	25
4th quartile (highest)	27	32	24	6	25
<b>Opiates</b>					
MDT positivity rate for opiates	%	%	%	%	%
1st quartile (lowest)	77	8	12	22	25
2nd quartile	4	27	26	50	25
3rd quartile	12	32	30	17	25
4th quartile (highest)	8	32	32	11	24
% using opiates in current prison term	%	%	%	%	
1st quartile (lowest)	54	14	14	50	27
2nd quartile	19	22	26	39	25
3rd quartile	15	27	32	6	24
4th quartile (highest)	12	38	28	6	24
<i>Base (=100%)</i>	26	37	50	18	131

**Table B.5 Cannabis use and opiate use by average length of sentence**

	Average length of sentence*				Total
	0 < 3 years	3 < 5 years	5 < 10 years	10+ years	
<b>Cannabis</b>					
MDT positivity rate for cannabis	%	%	%	%	%
1st quartile (lowest)	16	34	20	43	25
2nd quartile	33	18	27	14	25
3rd quartile	29	21	27	21	25
4th quartile (highest)	22	26	27	21	25
% using cannabis in current prison term	%	%	%	%	%
1st quartile (lowest)	20	37	27	7	25
2nd quartile	33	13	30	21	25
3rd quartile	37	13	20	29	25
4th quartile (highest)	10	37	23	43	25
<b>Opiates</b>					
MDT positivity rate for opiates	%	%	%	%	%
1st quartile (lowest)	37	24	7	29	25
2nd quartile	24	16	33	36	25
3rd quartile	22	32	27	14	25
4th quartile (highest)	16	29	33	21	24
% using opiates in current prison term	%	%	%	%	
1st quartile (lowest)	41	16	13	36	27
2nd quartile	29	24	20	29	25
3rd quartile	20	24	33	14	24
4th quartile (highest)	10	37	33	21	24
Base (=100%)	49	38	30	14	131

\*Based on sentenced prisoners, 'life' counted as 25 years

**Table B.6 Cannabis use and opiate use by percentage of prisoners on remand**

	Percentage on remand			Total
	None	Up to half	More than half	
<b>Cannabis</b>				
MDT positivity rate for cannabis	%	%	%	%
1st quartile (lowest)	29	21	20	25
2nd quartile	29	15	30	25
3rd quartile	22	38	15	25
4th quartile (highest)	21	26	35	25
% using cannabis in current prison term	%	%	%	%
1st quartile (lowest)	22	24	40	25
2nd quartile	21	38	20	25
3rd quartile	23	26	30	25
4th quartile (highest)	34	12	10	25
<b>Opiates</b>				
MDT positivity rate for opiates	%	%	%	%
1st quartile (lowest)	31	18	15	25
2nd quartile	29	15	30	25
3rd quartile	17	41	30	25
4th quartile (highest)	23	26	25	24
% using opiates in current prison term	%	%	%	%
1st quartile (lowest)	36	3	30	27
2nd quartile	17	38	35	25
3rd quartile	17	41	20	24
4th quartile (highest)	30	18	15	24
<i>Base (=100%)</i>	<i>77</i>	<i>34</i>	<i>20</i>	<i>131</i>

**Table B.7 Cannabis use and opiate use by MDT rate**

	MDT rate			Total
	0%<100%	100%<150	150%+	
<b>Cannabis</b>				
MDT positivity rate for cannabis	%	%	%	%
1st quartile (lowest)	8	26	52	25
2nd quartile	18	30	22	25
3rd quartile	37	24	9	25
4th quartile (highest)	37	20	17	25
% using cannabis in current prison term	%	%	%	%
1st quartile (lowest)	13	26	43	25
2nd quartile	24	26	26	25
3rd quartile	29	26	17	25
4th quartile (highest)	32	23	13	25
<b>Opiates</b>				
MDT positivity rate for opiates	%	%	%	%
1st quartile (lowest)	18	30	22	25
2nd quartile	26	21	35	25
3rd quartile	26	24	26	25
4th quartile (highest)	29	24	17	24
% using opiates in current prison term	%	%	%	%
1st quartile (lowest)	21	29	30	27
2nd quartile	24	24	30	25
3rd quartile	21	26	22	24
4th quartile (highest)	34	21	17	24
<i>Base (=100%)</i>	38	70	23	131

**Table B.8 Cannabis use and opiate use by assault rates**

	Assaults on inmates		Assaults on officers	
	0<3 per 100	3+ per 100	0<3 per 100	3+ per 100
<b>Cannabis</b>				
MDT positivity rate for cannabis	%	%	%	%
1st quartile (lowest)	28	22	26	24
2nd quartile	21	30	28	23
3rd quartile	26	24	22	29
4th quartile (highest)	25	24	25	24
% using cannabis in current prison term	%	%	%	%
1st quartile (lowest)	26	24	30	19
2nd quartile	28	22	22	29
3rd quartile	19	32	22	29
4th quartile (highest)	26	22	26	23
<b>Opiates</b>				
MDT positivity rate for opiates	%	%	%	%
1st quartile (lowest)	12	41	23	27
2nd quartile	33	15	28	23
3rd quartile	28	22	29	21
4th quartile (highest)	26	22	20	29
% using opiates in current prison term	%	%	%	%
1st quartile (lowest)	25	29	36	16
2nd quartile	25	25	16	36
3rd quartile	19	28	19	29
4th quartile (highest)	31	17	29	19
<i>Base (=100%)</i>	<i>72</i>	<i>59</i>	<i>69</i>	<i>62</i>



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