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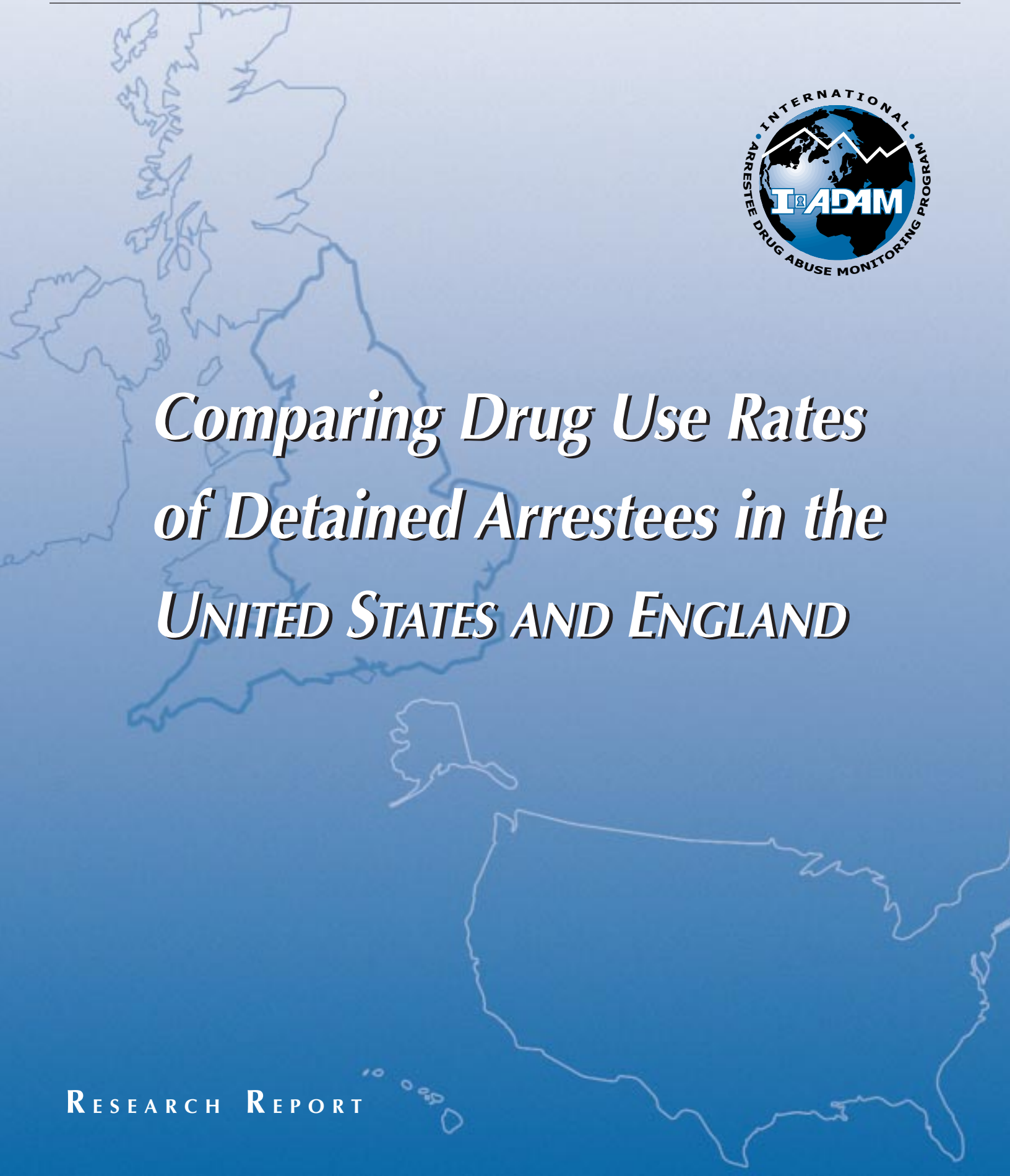

Comparing Drug Use Rates of Detained Arrestees in the United States and England

RESEARCH REPORT

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Comparing Drug Use Rates of Detained Arrestees in the United States and England

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April 1999
NCJ 175052

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Findings and conclusions are those of the authors, Dr. Bruce Taylor and Dr. Trevor Bennett, and do not necessarily reflect the official position or policies of the U.S. Department of Justice, the Home Office, or the University of Cambridge. Comments and questions should be addressed to them. Dr. Bruce Taylor, Social Science Analyst, can be reached at the National Institute of Justice, Office of Research and Evaluation, 810 Seventh St. N.W., Room 7308, Washington, DC 20531; e-mail taylorb@ojp.usdoj.gov. Dr. Trevor Bennett, Acting Head of Department, Institute of Criminology, University of Cambridge, can be reached at the University at 7 West Road, Cambridge, CB3 9DT, England; e-mail thbl@cam.ac.uk.

The National Institute of Justice is a component of the Office of Justice Programs, which also includes the Bureau of Justice Assistance, the Bureau of Justice Statistics, the Office of Juvenile Justice and Delinquency Prevention, and the Office for Victims of Crime.

Acknowledgments

The authors would like to acknowledge the contributions of individuals whose efforts made this project possible: National Institute of Justice (NIJ) Director Jeremy Travis, for encouraging us to write this report and for the direction he has provided in guiding the development of the International Arrestee Drug Abuse Monitoring (I–ADAM) program; ADAM Director K. Jack Riley, for his efforts in shaping the broad content of this report and for key technical recommendations; the support and encouragement of the Research Development and Statistics Directorate of the Home Office, in particular, Malcolm Ramsay, Principal Research Officer, Home Office Research Development and Statistics Directorate, who provided insightful comments and suggestions on earlier drafts of this report; and Richard Gill (and others) at the Forensic Science Service in Chepstow, England, who gave advice on methods of matching the English screening test cutoff levels to those used in the United States.

Numerous others within NIJ, the Office of Justice Programs, and other organizations have contributed to this report. In particular, the authors extend special thanks to Thom Feucht, James Finckenauer, Nora Fitzgerald, Sally Hillsman, Dana Hunt, Robert Kaminski, Patrick A. Langan, John MacDonald, Marvene O'Rourke, Bill Rhodes, and Christy Visher for their helpful comments or suggestions with earlier drafts. In addition, two anonymous reviewers provided valuable critiques that have enhanced the technical aspects of this report. Of course, the responsibility for errors and omissions lies solely with the authors.

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Executive Summary

This report is a product of the recent establishment of the International Arrestee Drug Abuse Monitoring (I–ADAM) program, administered by the National Institute of Justice, U.S. Department of Justice. Participating countries collaborate in implementing national programs similar to that of the Arrestee Drug Abuse Monitoring (ADAM) program (formerly the Drug Use Forecasting [DUF] program) in the United States. Under the ADAM program, detained arrestees in urban jurisdictions throughout the United States are tested periodically to determine the extent of illicit drug use in this at-risk population.

At the time I–ADAM was launched in 1998, one of the participating countries, England, had already established a pilot program of drug testing detained arrestees and had published the first set of results.[1] The generation of the dataset of drug use among detained arrestees, which was based on procedures similar to those of the ADAM program, presented an early opportunity to compare drug use by this group in the United States with that in another country.

The analysis presented in this report compares the findings from surveys of arrestees detained in five locations in England with those from similar surveys conducted in five matched locations in the United States. The data were adjusted and weighted in various ways to make the two samples for both countries as similar as possible. After excluding nonmatched cases, the final dataset consisted of 4,470 in the United States and 839 in England.

The report compares several aspects of drug use in the two countries:

- Urinalysis results for use of six types of drugs.
- Self-reported use of 10 types of drugs.
- Extent to which drugs are injected.
- Extent to which arrestees had received drug treatment.
- Extent to which arrestees wanted to receive drug treatment.
- Drug-using "careers" (age of first drug use).
- Levels of legal and illegal income.

Comparison of the two countries reveals that the use of opiates/heroin, methadone, and amphetamines tends to be higher among detained arrestees in England than in the United States. For benzodiazepines and marijuana, comparison reveals no real difference between the two countries. Only for cocaine/crack was use significantly higher in the United States. The study also revealed a number of notable correlations between drug use and various demographic and related characteristics. For several of these characteristics, the subgroups with the highest drug use rates are the same in both countries. Injection as a method of administering drugs is moderately high in both countries, with some distinct differences between the two countries in preference of administration for specific drugs. Few differences between the two were found in the extent to which arrestees received drug treatment or their reported need for it. There was also little difference in age of initiation of drug use (although there were some differences when it came to specific drug types). The findings on legal and illegal income indicate that detained arrestees in England tend to spend more on drugs and to report higher levels of illegal income than their counterparts in the United States.

Rates of Drug Use

- In both countries, a large proportion of detained arrestees tested positive for one or more drugs (England, 59 percent; United States, 68 percent).

- For opiates, methadone, and amphetamines, the percentage of detained arrestees who tested positive was higher in England.
- For cocaine, "any drug," and "multiple drugs," the percentage who tested positive was higher in the United States.
- For benzodiazepines and marijuana, there was no significant difference between the two countries.
- Female detained arrestees in both countries were more likely than males to test positive for opiates, methadone, cocaine, and amphetamines.
- Male detained arrestees in both countries were more likely than females to test positive for marijuana.
- In both countries, older detained arrestees (age 21 or over) were more likely than younger ones (age 20 or under) to test positive for opiates, cocaine, amphetamines, benzodiazepines, and methadone.
- In both countries, younger detained arrestees (age 20 or under) were more likely than older ones (age 21 or over) to test positive for marijuana.
- In both countries, nonwhite detained arrestees were more likely than white detained arrestees to test positive for marijuana.
- More than 55 percent of the detained arrestees in England and slightly less than 50 percent of those in the United States said they had used at least 1 of 10 selected drugs in the past 3 days.
- In England, the self-reported use of 8 of 10 selected drugs plus alcohol (marijuana, opiates, amphetamines, methadone, benzodiazepines, LSD, inhalants, and alcohol) was higher than in the United States.
- In the United States, the self-reported use of 3 of 10 selected drugs plus alcohol (crack cocaine, powder cocaine, and barbiturates) was higher than in England.

Urinalysis Versus Self-Reports in Measuring Drug Use

- Overall, for more than 90 percent of the detained arrestees in the United States and England, the findings of the self-report survey and the urinalysis were in agreement.
- Underreporting drug use was higher in the United States than in England.
- In the United States, 8 percent of the detained arrestees underreported drug use compared with 2 percent who overreported. Underreporting in the United States was especially evident for use of marijuana (17 percent) and cocaine (17 percent).
- In England, 4 percent of the detained arrestees underreported drug use, while 5 percent overreported. Slightly more than 10 percent of the detained arrestees in England overreported marijuana use and 7 percent underreported it.

Injecting Drugs

- Detained arrestees in England were significantly more likely than those in the United States to say they had injected amphetamines at some time in their lives (16 percent and 2 percent, respectively).
- Detained arrestees in the United States were significantly more likely than those in England to say they had injected cocaine (11 percent and 8 percent, respectively).

Extent of Treatment for Drug and Alcohol Abuse

- There was no significant difference between arrestees in the United States and England in the proportion who reported having ever received drug treatment (28 percent and 26 percent, respectively).

- There was no significant difference among detained arrestees in the United States and England in the proportion reporting having ever received treatment for alcohol problems (12 percent and 11 percent, respectively).
- Detained arrestees in the United States were more likely than those in England to say they would like to receive drug treatment (33 percent and 22 percent, respectively).
- Detained arrestees in the United States were not notably more likely than those in England to say they would like to receive treatment for alcohol problems (14 percent and 13 percent, respectively).

Drug-Using Careers

- Detained arrestees in the United States reported using 5 of 10 drug types (marijuana, powder cocaine, barbiturates, methadone, and benzodiazepines) at an earlier age than did detained arrestees in England.
- Detained arrestees in England reported using 5 of 10 drug types (crack cocaine, opiates, amphetamines, LSD, and inhalants) at an earlier age than arrestees in the United States.

Legal and Illegal Income

- Detained arrestees in England had higher illegal incomes than those in the United States.
- Detained arrestees in England spent more on drugs than those in the United States.
- Detained arrestees in the United States had higher legal incomes than those in England.
- In both the United States and England with one exception, detained arrestees who tested positive for any specific drug had higher illegal incomes and spent more money on drugs than those who tested negative for that drug. The one exception was U.S. detained arrestees who used amphetamines.

Note

1. Bennett, T.H., *Drugs and Crime: The Results of Research on Drug Testing and Interviewing Arrestees*, Home Office Research Study No. 183, London: Home Office, 1998.

Introduction

There is a widely held belief that crime rates and drug use are much higher in the United States than in England. However, recent research has revealed that rates for some of the most common crimes (such as robbery, assault, burglary, and motor vehicle theft) are in fact higher in England.[1] There has been no similar comparison of drug use in the two countries. A study conducted under the I–ADAM (International Arrestee Drug Abuse Monitoring) program was intended to fill that gap, and the findings are reported here.

The I–ADAM Program

I–ADAM is a component of the ADAM program, established by the National Institute of Justice (NIJ), the research arm of the U.S. Department of Justice, to monitor drug abuse among detained arrestees in urban jurisdictions throughout the United States. The forerunner of ADAM was the Drug Use Forecasting (DUF) program. Launched in 1987 by NIJ, DUF demonstrated the feasibility of urinalysis as an effective means of measuring drug abuse by arrestees. (See "DUF/ADAM Research.") A decade after it was established, the program was renamed ADAM to reflect a redesign intended to make it more rigorous methodologically (by using representative, probability-based sampling, for example), wider ranging geographically (covering up to 75 cities), and broader based as a "platform" on which to study policy and research questions. By focusing on arrestees, NIJ created in the ADAM program an effective method of studying hardcore drug use. Because they often do not reside in households stable enough to be included in broad community household surveys, hardcore drug users are often not counted in those surveys (for example, the U.S. Department of Health and Human Services' [HHS's] National Household Survey on Drug Abuse), and they often drop out of school and thus are not included in HHS's Monitoring the Future study, a periodical survey of drug use by high school students. Interviewing arrestees in detention facilities is also more cost-effective than interviewing hardcore drug users at the street level using ethnographic sampling strategies.

Aims of I–ADAM. I–ADAM aims to integrate the process of monitoring drug abuse by arrestees at the international level and the research related to that process. The program began in 1998 at a conference attended by representatives of nine countries: Australia, Chile, England, the Netherlands, Panama, Scotland, South Africa, the United States, and Uruguay. I–ADAM will be the first international drug prevalence program to generate standardized data on drug abuse among the high-risk population of detained arrestees. It will serve as a base for coordinating drug-related research and drug control policies within and among participating countries.

Method. At each I–ADAM data-collection site, trained interviewers will conduct one-on-one interviews with adult male and adult female detained arrestees and take voluntary urine specimens from each of them. The directors of these sites, in collaboration with NIJ, will determine which drugs the arrestees need to be tested for and how many drugs to include in the drug test panel (list of illicit drugs). All I–ADAM sites will test for at least five common drugs: marijuana, cocaine (including crack), opiates (including heroin), amphetamines, and benzodiazepines.

In consultation with the other I–ADAM sites, NIJ has developed a core survey instrument. Once the sites agree on the details of this core survey, it will be used by all of them. Later, addenda surveys will be developed to cover special topics related to drug abuse (for example, domestic violence) and will be available to all the I–ADAM sites.

The basic requirements of I–ADAM data collection include the ability to conduct interviews

DUF/ADAM RESEARCH

The DUF (Drug Use Forecasting) program, the forerunner of ADAM, came about as a result of a 1984 study whose aim was to monitor the behavior of arrestees released before trial. Based at the Manhattan Central Booking Facility, the study was to compare pretrial misconduct of arrestees found drug positive with those found drug free. A key question was whether urinalysis, relatively new to the criminal justice system, could be used in this setting to measure drug use. The project was successful in that compliance rates were high: 95 percent of arrestees approached consented to be interviewed. Moreover, urinalysis proved to be a feasible method of testing for drug abuse: Of the arrestees who agreed to the interview, 84 percent provided a urine specimen.[a]

The value of urinalysis. Two years later, the researchers replicated the study at the same site and again succeeded in achieving similarly high response rates from the arrestees. A major but unintended outcome of this initial study had been the revelation of a high level of drug use detected by urinalysis at a time when self-reports were indicating much lower levels. In the second study, there was another revelation: a substantial increase in the use of cocaine (especially crack cocaine) since the first study (42 percent in 1984 compared with 83 percent in 1986). The researchers had identified a trend in cocaine use more than a year before it was detected by any other indicator of drug abuse in the United States (for example, new treatment admissions, overdose deaths, and emergency room admissions).[b]

These two studies showed the feasibility of using urinalysis to test for drug use among arrestees at the site where they are brought into custody. On the basis of this finding, and because urinalysis was detecting higher levels of drug use than was the traditional self-report method, the National Institute of Justice established DUF in 1987 as a way to track drug-abuse trends in this at-risk population.

continued on next page

within 48 hours of arrest (because many drugs cannot be detected beyond 2 to 3 days of consumption), the availability of a pool of interviewers who are not law enforcement officials or lockup staff, and the ability to maintain confidentiality of information for the arrestees who consent to participate in the research.

NIJ's role. NIJ is providing technical assistance to initiate and operate each I–ADAM site: Visits to most I–ADAM sites to assess their state of readiness to collect I–ADAM data, assistance to local officials in building a coalition of local support, and advice on a variety of scientific issues (for example, sampling and data analysis).

In developing the I–ADAM program, NIJ will focus on four main areas—instrumentation, drug testing, clearinghouse development, and training—as follows:

- Promoting the core survey instrument and conducting comparability checks among the participating countries. The survey will be translated into different languages and a common data entry system will be developed.
- Examining the impact of using different drug-testing kits on substantive results and methods, and reconciling any differences.
- Serving as a clearinghouse for I–ADAM information. This role covers storage of common data on a secured Web page (http://www.Adam-NIJ.net/adam/iadam.htm), storage of core and specialized addenda

DUF/ADAM RESEARCH (continued)

Method and findings. On a quarterly basis, DUF/ADAM used urinalysis to test for drug use by arrestees held in booking facilities at 23 sites throughout the United States. The ADAM program collects data from 35 sites. Annual reports present findings for each site on arrestees' use of 3 of 10 main drug types (cocaine, opiates, and marijuana), along with use of "any drug" and "multiple drugs." The reports include breakdowns of the findings by age, gender, and race, as well as by type of charged offense.

The DUF/ADAM program continues to show a high level of drug use among arrestees: In a majority of sites, more than 60 percent of all adult arrestees test positive for one or more drugs. Between 40 percent and 60 percent of all adult arrestees test positive for cocaine and about 30 percent test positive for marijuana. For opiates, by contrast, the majority of sites report rates of less than 10 percent. These findings indicate not only the magnitude of drug use in various urban areas of the United States, but also trends in drug use. For example, in 1996 DUF clearly identified the decline in cocaine use in New York City (Manhattan).[c] DUF data for that year show rates of cocaine use peaked among males in the first quarter of 1995 and then fell fairly steadily in each quarter to a low of below 50 percent in the third quarter of 1996. In view of the strong link between drugs and crime, the findings of the DUF surveys have helped provide a more balanced explanation of the recent rapid decline of crime in New York City.

Notes

a. Wish, E.D., and Gropper, B.A., "Drug Testing by the Criminal Justice System: Methods, Research, and Applications," in *Drugs and Crime*, ed. M. Tonry and J.Q. Wilson, Chicago: University of Chicago Press, 1990.

b. Ibid.

c. *1996 Drug Use Forecasting: Annual Report on Adult and Juvenile Arrestees*, Research Report, Washington, D.C.: U.S. Department of Justice, National Institute of Justice, June 1997.

surveys, and documentation of program implementation in each country.

- Providing assistance in developing an interviewer training program and developing training materials for each participating country.

The participating countries. At the time I–ADAM was established, one of the participating countries, England, had completed pilot surveys of drug use among detained arrestees at five sites in a program called NEW ADAM (New England and Wales Arrestee Drug Abuse Monitoring), had published the research findings,[2] and had expanded to a second stage of data collection in three new sites. The status of the other participating countries is as follows:

- Australia began data collection in January 1999 for a 3-year funded study in three cities under the title of the DUMA program (Drug Use Monitoring in Australia).
- Chile began data collection in January 1999 in two cities.
- South Africa has obtained funding to conduct a nine-city study in mid-1999.
- Scotland has obtained funding to conduct a two-region study in early 1999.
- The Netherlands and Panama each have made progress in planning a pilot program and are actively seeking funds.

RESEARCH IN ENGLAND ON ARRESTEE DRUG ABUSE

Although no surveys of arrestee drug use in England comparable to the current study have previously been conducted, there have been surveys based on interviews with prisoners and interview-based and observational research involving arrestees.

Admitted drug use by prisoners. One of the largest surveys of prisoners revealed information about drug use in the period before arrest. This study, conducted in 1988, was based on a representative sample of 1,751 prisoners from 17 prisons in England and Wales.[a] Drug use was only one of several issues about which the prisoners were asked. The study provided some evidence of the proportion of prisoners who admitted drug use in the 2-day period before arrest (which approximates the 2- to 3-day window covered by urinalysis). It revealed that 12 percent admitted to prearrest marijuana use, 7 percent to opiate use, 4 percent to amphetamine use, and 2 percent to cocaine use.

Arrestee alcohol-related offenses and drunkenness. Among the few studies of arrestees conducted in England, one focused on the prevalence of alcohol-related offenses and drunkenness. Researchers observed the arrival of people brought to 7 custody blocks in London in a 5-month period in 1993 and found that 22 percent of the 2,708 arrestees could be classified as drunk on arrival (which would be comparable to testing positive for alcohol).[b]

Arrestee drug involvement. A 1994 Manchester-based study aimed to find information about drug involvement of arrestees brought into custody. Officers working in the custody blocks of three police divisions completed questionnaires for each arrest that probed for information about possession of drugs, requests for medications while in custody, possession of drug-using equipment, and other indicators of drug use.[c] As measured on these criteria, the findings indicated that 19 percent of all arrestees were deemed to be involved with drugs.

Other than these exceptions, research conducted in England on arrestee drug use has been limited to indirect measurement and restricted to a small number of drug types. The information obtained from these studies suggests much lower rates of prearrest drug use than have been reported by the DUF/ADAM program in the United States. However, until the current research, the extent to which this discrepancy is the result of real differences between the two countries or of different measurement methods has not been clear.

Notes

a. Maden, A., M. Swinton, and J. Gunn, "A Survey of Pre-arrest Drug Use in Sentenced Prisoners," *British Journal of Addiction* 87 (1992): 27–33.

b. Robertson, G., R. Gibb, and R. Pearson, "Drunkenness among Police Detainees," *Addiction* 90 (1995): 793–803.

c. Chatterton, M., G. Gibson, M. Gilman, C. Godfrey, M. Sutton, and A. Wright, *Performance Indicators for Local Anti-Drugs Strategies: A Preliminary Analysis,* Police Research Group Crime Detection and Prevention Series: Paper No. 62, London: Home Office, 1995.

All the active I–ADAM participating countries have obtained funding through local or national government sources.

NEW ADAM

England was chosen as the comparison site for this study because it was the only participating country outside the United States at the time of this study to have generated data in a process similar to that used in ADAM. Before this study, there were no surveys comparable to those of the ADAM program to measure arrestee drug use in England, although some studies of drug and alcohol abuse among prisoners have been conducted there. (See "Research in England on Arrestee Drug Abuse.") In this respect, this study is a first for England. It is also the first attempt to quantitatively compare drug use of detained arrestees in two countries that use similar research methods.

The methods of interviewing and drug testing in NEW ADAM are based on the procedures used in ADAM. Information supplied by NIJ for the design of the NEW ADAM program was used to aid in the development of the English research instruments. In many respects, the data-collection methods of the two countries are very similar. Because the ADAM procedures are fairly well known, only those of NEW ADAM are presented in detail here, with an emphasis on similarities and differences between the two.

Data collection in England. The NEW ADAM research was conducted in five sites: Cambridge and London in the South, Manchester and Nottingham in the Midlands, and Sunderland in the North. Convenience sampling was used in the first three surveys (those conducted at Cambridge, London, and Manchester), and probability sampling was used in the latter two (those conducted at Nottingham and Sunderland). In the latter method, the interviews took place 7 days a week, 24 hours a day, and covered all eligible arrestees brought to the facilities.

The English samples of study subjects were drawn from male and female adult arrestees; juveniles were deemed ineligible. In most sites, 28 consecutive days were needed to reach the target number of study subjects, compared with an average of 14 consecutive days in the U.S. sites. The amount of time was longer because fewer arrestees are processed through English custody blocks[3] (on average, about 500 a month).

The questionnaire used in the self-report part of the research was based on those used in ADAM and covered:

- Self-reported drug use (ever, in the past 12 months, in the past month, and in the past 3 days).
- Injecting drugs and sharing needles.
- Dependency on drugs and alcohol.
- Links between drugs and crime.
- Legal and illegal sources of income.
- Amount of money spent on alcohol and other drugs.
- Treatment needs.

The procedure for collecting urine specimens also was based on ADAM, using a similar "chain of custody" approach. The specimens were tested for eight types of drugs (marijuana, opiates, methadone, cocaine, amphetamines, benzodiazepines, LSD, and alcohol),[4] with a screening test similar to that used in ADAM.[5]

In all, 839 arrestees were interviewed and 622 provided urine specimens. Of those asked to volunteer for the interviews, between 84 and 87 percent agreed to do so; of those who were asked to volunteer a urine specimen, between 63 and 82 percent did so. It should be noted, however, that there were minor differences between those who participated in the study and those who were eligible but did not participate and between those who agreed to provide a urine specimen and those who did not.[6]

Resolving Differences in Methods

This report consists of a quantitative comparison of drug use by arrestees in the first two I–ADAM countries. It presents similarities and differences between England and the United States in drug use, examines drug use in terms of various demographic and related characteristics of the users, and explores issues related to drugs and criminal behavior.

Although, as noted above, the procedures used by the two countries are in many respects similar, there are differences. The authors acknowledge the challenge of conducting effective retrospective comparisons between countries when the nature of both the research methods used in data collection and the survey sites are different in each. For this study, differences in research methods presented less of a problem than differences in the survey sites, because the research in England was based closely on the procedures developed in the U.S. ADAM program.

The differences in survey sites were potentially more problematic. However, an attempt was made to ensure that the sites were more comparable by matching procedures and by basing all comparisons on the best-matched sites. Thus, the effects of some differences between the two countries were addressed and, we hope, some useful comparative analyses were made.

Notes

1. Langan, P.A., and D.P. Farrington, *Crime and Justice in the United States and in England and Wales, 1981–96*, Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics, 1998, NCJ 173402.

2. Bennett, T.H., *Drugs and Crime: The Results of Research on Drug Testing and Interviewing Arrestees*, Home Office Research Study No. 183, London: Home Office, 1998.

3. Custody blocks are temporary detention facilities to which people are brought when first arrested.

4. In the ADAM program, the urine specimens are not tested for LSD or alcohol.

5. There are two main types of technology for drug testing: immunoassays, which are used primarily for drug screening, and gas chromatography (GC), which is used primarily for drug confirmation following screening. The former are less expensive but also less reliable. Both ADAM and NEW ADAM *screen* (conduct preliminary tests) to detect drugs in urine. ADAM uses the immunoassay Enzymes Multiplied Immune Testing (EMIT) for screening and does confirmation testing only for amphetamines. In other words, for all cases that screen positive for amphetamines, a confirmation test is conducted to determine if methamphetamine was used. NEW ADAM uses a similar screening test, online Kinetic Interaction of Microparticles in a Solution (KIMS), but no confirmation tests. Both the EMIT and KIMS screening processes either detect the drug itself, or the assay detects the metabolites of the drug (compounds that result from the breakdown of the drug by the body) that indicate the drug was used. The assays have a screen accuracy rate of 97 to 100 percent and, when confirmed by a scientifically accepted alternative urine testing technology (GC/MS [mass spectrometry], for example), an accuracy rate of virtually 100 percent. In some cases, the screening process is very specific to a drug, while in others, it is general to a class of drugs that includes illegal substances. For example, there are specific “markers” for marijuana that a screening test can detect, but there is no specific marker for heroin. Instead, a screening test detects byproducts that can be indicative of not only heroin use but codeine use as well. In other words, screening tests are general to opiates, not specific to heroin. For cases in which a screen indicates a class of drugs but not a specific drug, a confirmation test can be done.

6. See Bennett, *Drugs and Crime*.

Study Method—Matching the Samples

A major concern in developing the analytic methods was to devise a procedure that produced roughly comparable datasets for the United States and England. We were resigned to the fact that it would not be possible to retrospectively generate wholly comparable survey samples, but we believed we could move some way toward creating datasets similar enough to produce useful comparisons. The main goal of the analysis was to be able to make reasonable statements about the rate of drug use and the nature of drug use in the two countries among detained arrestees possessing roughly comparable characteristics. Specifically, we aimed to determine whether there were differences in drug use among detained arrestees in the two countries after we controlled for the various differences in research locations and arrestee characteristics.

The samples for the two countries were to some extent comparable at the outset. This was because although the NEW ADAM program predated the creation of the I–ADAM uniform data-collection standards, it was designed to match very closely the methods and procedures used in the U.S. ADAM program. A number of steps were then taken to enhance this comparability. Because of the various data manipulations, the results of the study are slightly different from those reported in the 1996 DUF/ADAM annual report and the 1998 Bennett report of NEW ADAM research.[1]

Ensuring Eligibility of Study Subjects

The rules for selecting study subjects—the detained arrestees—were basically the same in the two programs. To be included in the study sample, an individual had to have been arrested and detained in a specific city "catchment area" in 1996 (or early 1997) and to have been booked for an "eligible" offense (described below). Certain categories of detainees were excluded from the sample:

- Those unfit for the interview because they had consumed alcohol, drugs, and/or medication.
- Those considered mentally disordered.
- Those who were potentially violent.
- Those who were in custody more than 48 hours.
- Those deemed ineligible for other reasons, at the discretion of the jail/custody sergeant.

Drug cutoff level. The amount of a drug in the urine below which the arrestees were not considered drug positive was made comparable in both countries. This was done by adjusting the English "cutoff" levels to match those used in the United States. (See table 1.) Because of this adjustment, the levels used in this study are different from those used in the 1998 Bennett study cited earlier, and as a result the findings reported here will differ somewhat from those in that study.

Table 1. ***Cutoff Levels for Drugs Detected by Urinalysis***

Drug	Cutoff level (nanograms/ gram urine)
Marijuana	50
Opiates	300
Methadone	300
Cocaine	300
Amphetamines	1,000
Benzodiazepines	300

Selecting Matched Sites

It is reasonable to assume that the nature and pattern of drug abuse and other crime will vary with the type of location where the crime is committed: a large city, a small city, or a rural area. Hence, comparison between arrestees in London and Omaha, for example, may reveal more about differences in drug use between these two cities than between drug use in England and the United States. In other words, the greater the differences in the cities being compared, the greater the likelihood that any differences in drug use between the two countries will be a result of city-level rather than country-level factors.

Map 1. NEW ADAM Sites

Criteria for matching the cities. A variety of methods were considered for matching 5 of the 23 U.S ADAM sites to the 5 English sites, with the ultimate decision to use population density alone as the criterion. The other methods were rejected because of the number of problems they posed. One of these alternative methods (discussed in appendix A) expands the matching criteria from population density alone to an additional eight measures (five more demographic variables and three measures of crime).

Map 2. ADAM Sites

Although the eight-measure alternative produces some different pairs of matching cities, it does not substantively change the results. The main bivariate and multivariate results of urinalysis using the five cities finally selected are nearly identical with the results obtained using the alternative five matched cities. In fact, when urinalysis findings from all 23 U.S. ADAM sites were examined, they were also nearly identical to those of the 5 matched cities used in this report and to the 5 alternative cities. The basic findings from urinalysis therefore seem to be robust and not particularly sensitive to the criteria for matching cities. The matched sites (whose locations are shown on map 1, "NEW ADAM Sites," and map 2, "ADAM Sites") are listed in table 2:

Table 2. ***Matched Sites Selected for the Study***

U.S. City/Site	English City/Site
New York (Manhattan only)	London
Fort Lauderdale, Florida	Manchester
Miami, Florida	Nottingham
Washington, D.C.	Sunderland
Birmingham, Alabama	Cambridge

With the five matched U.S. cities identified, the data on the remaining cities were removed from the original U.S. data file (leaving data for five English cities and five matched U.S. cities).

Selecting Matched Study Subjects

In much the same way as the cities, the study subjects in both countries—the detained arrestees—had to be made comparable. The first task in matching the study subjects in the two datasets was to exclude certain categories of arrestees that could not be matched. The samples then were weighted to further refine the match.

Exclusions. Not surprisingly, the crimes for which suspected offenders could be held in England were slightly different from those in the United States. The list of English offenses[2] contained none for which someone could *not* be arrested and detained in a jail in the United States. However, some cases in the U.S. data file involved offenses for which a person would not be detained in an English lockup facility. These cases, numbering 1,081, were excluded from the outset as ineligible for this study. The excluded categories, all covering relatively less serious offenses, were "release on own recognizance violation," "flight from jail," "possession of liquor," "trespassing," and "violation of an Order of Protection."

Interviews conducted in a language other than English were also excluded from the data files. In England, arrestees who do not speak English and who required an interpreter were deemed ineligible and were not interviewed. The 206 interviews in another language (typically Spanish) found in the U.S. dataset were therefore omitted to more closely match the English dataset.

Weighting the sample. Retrospective statistical weighting was used to ensure that the distribution of various demographic and related factors in these two samples was similar. Gender, age, race, and offense type were the factors chosen because they were expected to be important predictors of drug use. Four proved to be about the maximum number that could be used as a basis for weighting the data.[3]

Before the samples were weighted, they differed from each other in the proportions of arrestees charged with various crimes. In the U.S. sample, for instance, 35 percent of the detained arrestees had been charged with personal crimes (that is, violent crimes such as robbery); in the English sample, that figure was only 16 percent. In the U.S. sample, 37 percent had been charged with property crimes; in the English sample, that figure was much higher at 53 percent. (The full breakdown of offenses by country is presented in table 3.)

Demographically the two samples were also different: 79 percent of the U.S. sample was nonwhite, compared with 15 percent of the English sample. Men constituted 81 percent of the U.S. sample and 86 percent of the English sample. The arrestees in England and the United States also differed in age. (See table 4.)

The U.S. data were weighted to match the percentage distribution of cases in the English dataset. For example, if 10 percent of the English sample consisted of white males under 30 years old who were arrested for personal crimes, the weighting system would create that same 10 percent distribution of white males with the same characteristics in the U.S. sample.

Table 3. ***Preweighted Offenses of Detained Arrestees, United States and England***

Type of Offense	United States %	England %
Personal crime	35.4	15.6
Property crime	37.2	52.5
Alcohol or drug offense	20.1	10.9
Public disorder offense	2.1	8.9
Other type of offense	5.1	12.2

Table 4. ***Preweighted Age of Detained Arrestees, United States and England***

Age Ranges	United States %	England %
Average age	31[a]	27[b]
20 or younger	17	29
21–25	19	26
26–30	18	19
31–35	17	13
36 or older	30	13

[a] Standard deviation 9.6
[b] Standard deviation 8.5

The final, postexclusion, postweighting count was 4,470 detained arrestees for the 5-city sample from the United States and 839 detained arrestees for the 5-city sample from England.

Does the Sampling Method Affect Comparability?

At least in part, the data in both countries were collected using a system of nonprobability-based sampling. (Three of the five surveys in England used nonprobability sampling and two used probability sampling). Strictly speaking, this type of sampling violates the assumptions of standard significance tests because it is not technically possible to calculate standard errors or confidence intervals for the estimated coefficients and consequently not possible to determine whether any difference between two samples is the result of sampling error or is due to other factors.

However, it is possible to estimate the extent to which, using the procedures described above, nonprobability sampling generates a sample of arrestees representative of the population of all arrestees in each country. If it could be shown that such a method generated a sample closely matching the population from which it was drawn, it might be reasonable to use significance tests as a rough guide to the nature of the differences observed.

Sampling methods of ADAM and NEW ADAM. There is some evidence to suggest that samples selected in the ADAM and NEW ADAM programs were fairly representative of their populations. In a study specifically designed to investigate the method used in the DUF program, the researchers concluded, "…the current DUF procedures appear to select a sample of interviewees that is highly representative of arrestees who are detained in the particular booking centers where the DUF program operates."[4] However, they noted that because the DUF selection procedures rule out minor offenses, the samples are not wholly representative of all arrestees reported in the FBI's Uniform Crime Reports.

A study of the convenience sampling used in two of the three English sites examined whether the method affected the representativeness of the data. The researcher found that the samples were very similar demographically to the populations of the sites from which both were drawn. There were, however, more substantial differences between the sample and the population it was drawn from in the time of day of arrest and (to some extent as a result) the nature of the offense.[5]

Although some forms of nonprobability sampling (such as quota sampling of passersby in a shopping center) might produce quite unrepresentative samples of the general population, other forms are more likely to produce fairly representative samples of the populations under investigation. The studies of the DUF method and the method used in the two English sites tend to show that the kind of nonprobability sampling used in the United States and English programs produces fairly representative results.

Tests of statistical significance. Reassured by these findings, we conducted the analyses on the assumption that (after excluding ineligible cases) the samples are fairly representative of the populations studied. Therefore, we felt it appropriate to use tests of statistical significance to identify which differences between the two countries might be considered meaningful. As

Table 5. ***Effects of Various Exclusions on Sample Size***

Number of Cases Removed	Type of Exclusion	Number Remaining
0	Original sample size for 23 U.S. and 5 English cities	28,206
21,289	Excluded data from the 18 nonselected U.S. cities	6,917
1,081	Excluded data relating to ineligible crime categories	5,836
206	Excluded data relating to interviews conducted in a language other than English	5,630
321	Excluded data relating to four cells in the weighting matrix that were in the U.S. dataset but not in the English dataset	5,309

an added precaution, we sought primarily to identify only the more substantial distinctions between the two as likely to represent "real" differences.

Do Sample Size and Related Factors Affect Comparability?

As noted earlier, the size of the samples became smaller after the area-level and individual-level matching procedures excluded certain categories of arrestees. In the U.S. dataset, the remaining number of cases was generally large enough to provide sufficient statistical power. Although a large number of U.S. cases were lost through the exclusions, the English sample sizes were smaller still, and for this reason the U.S. dataset was adjusted (often by eliminating cases) to match the English dataset. (Table 5 shows the numbers of cases left after the various exclusions.)

In the final, combined dataset for the two countries, the largest proportion of cases are from the five U.S. sites. (See table 6.)[6] Because the samples in each of the U.S. and English surveys were large enough to generate sufficient statistical power to guard against Type II errors,[7] the fact that they are not the same size is not especially problematic. However, because the U.S. sample is larger, the U.S. data have more statistical power and are more likely to generate significant differences in demographic subgroups than are the English data.

Differences in the proportion of interviewees who agreed to provide a urine specimen might also differentiate the two samples and thus affect the results. The U.S. database includes *only* detained arrestees who provided a urine specimen, because detained arrestees who agreed to be interviewed but refused to provide

Table 6. ***Final Sample Size in Each of the 10 Sites***

English Sites	Number of Cases	%
London	103	12.3
Sunderland	271	32.3
Manchester	104	12.4
Cambridge	152	18.1
Nottingham	209	24.9
Total	**839**	**100.0**
U.S. Sites	**Number of Cases**	**%**
New York (Manhattan)	866	19.4
Washington, D.C.	336	7.5
Ft. Lauderdale, Florida	1,686	37.7
Birmingham, Alabama	906	20.3
Miami, Florida	676	15.1
Total	**4,470**	**100.0**

a specimen were excluded. However, the English database includes detained arrestees who agreed to be interviewed but refused to provide a specimen. Of the 839 detained arrestees who agreed to be interviewed, 74 percent also agreed to provide a urine specimen, for a total of 621 cases available for urinalysis.

To what extent were the English arrestees who gave a urine specimen different from those who did not? Comparison of those who did and did not give urine samples revealed some small differences: Females were significantly less likely than males to give a specimen and nonwhites were significantly less likely than whites to do so.[8] Age made no difference.

These small differences suggest that the inclusion of nongivers in the English sample might make it to some extent unequivalent with the U.S. sample (although these differences would have been adjusted to some extent by weighting). Clearly, it is important that information about the characteristics of respondents and nonrespondents is recorded to allow for more accurate adjustments when making comparisons of this kind. This information was collected only in Nottingham and Sunderland in England. Procedures have been adopted to collect it in the United States.

Finally, because not all the survey questions were answered by every arrestee interviewed, there are varying numbers of missing values for some of the survey items. In most cases, however, the number missing was small.

Notes

1. *1996 Drug Use Forecasting: Annual Report on Adult and Juvenile Arrestees*, Research Report, Washington, D.C.: U.S. Department of Justice, National Institute of Justice, June 1997, NCJ 165691; and Bennett, T.H., *Drugs and Crime: The Results of Research on Drug Testing and Interviewing Arrestees*, Home Office Research Study No. 183, London: Home Office, 1998.

2. In Bennett, *Drugs and Crime*: 100–101.

3. When the number of variables was expanded to five or more, the number of categories with missing values in one or both countries grew unacceptably high. Even this conservative number of variables (gender [2 values], age [2 values], race [2 values], and offense [5 values]) resulted in 40 cells. Four of these 40 cells (nonwhite females over 30 years old who were arrested for alcohol/drug crimes; for disorderly offenses; or for "other" offenses; and nonwhite females under 30 years old who were arrested for alcohol/drug crimes) contained some cases in the U.S. dataset (n=324), but no cases in the English dataset.

4. Chaiken, J.M., and M.R. Chaiken, "Understanding the Drug Use Forecasting (DUF) Sample of Adult Arrestees," unpublished report prepared for the National Institute of Justice, Washington, D.C.: 1993: 45.

5. Bennett, T.H., *Drug Testing of Arrestees in England and Wales: The Effect of Convenience Sampling on the Representativeness of the Results Obtained in Cambridge*, Cambridge, England: Institute of Criminology, 1997; and Bennett, T.H., *Drug Testing of Arrestees in England and Wales: The Effect of Convenience Sampling on the Representativeness of the Results Obtained in Hammersmith*, Cambridge, England: Institute of Criminology, 1997.

6. Table 6 shows the distribution of cases after implementation of all the various area-level and individual-level matching procedures (4,470 cases for the U.S. sites and 839 cases for the English sites). It should be noted that after all cases excluded from the study were filtered out, but before the data were weighted, the 4,470 cases from the U.S. database were distributed as follows among the five U.S. cities: New York=1,088 cases; Washington, D.C.=967 cases; Ft. Lauderdale=864 cases; Birmingham=852 cases; and Miami=699 cases. Only after weighting the data was the distribution of cases presented in table 6 achieved.

7. A Type II error occurs when a researcher fails to reject a null hypothesis if it is actually false.

8. Bennett, *Drugs and Crime*.

Findings—Similarities and Differences

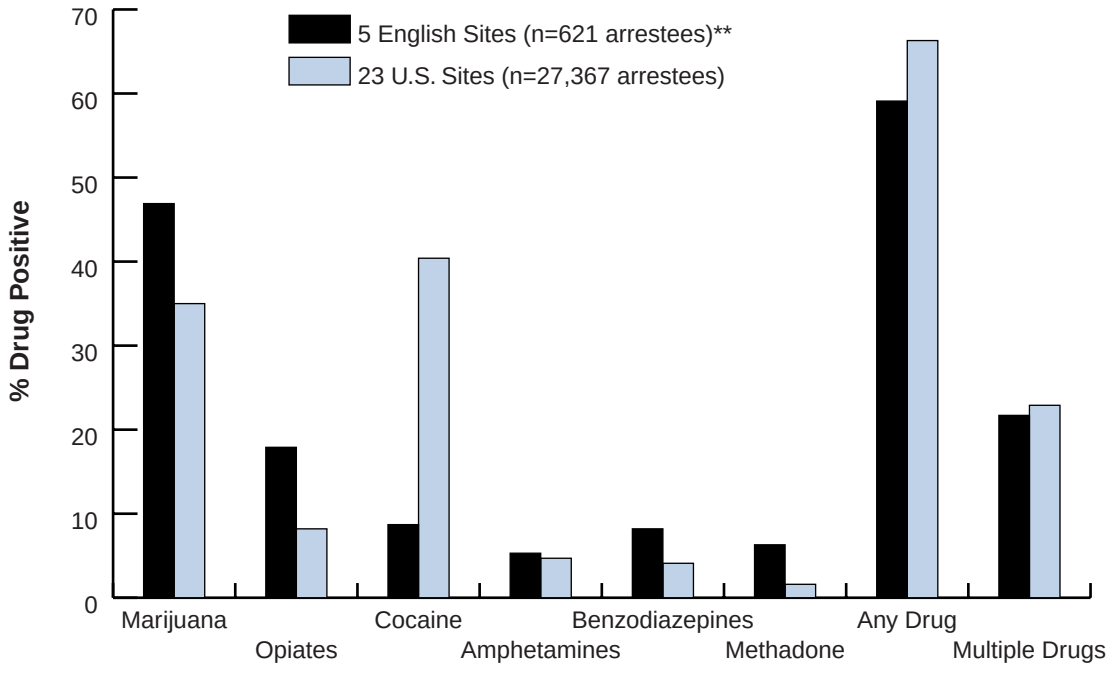
The major finding of this study has to do with the prevalence of drug use among detained arrestees in the United States and England. (The term "prevalence" is used here to refer to the proportion of the detained arrestee population that used drugs in a specified period of time.) Prevalence was examined by different measures—urinalysis and self-reports[1]—and in different time periods—3 days before the arrest, in the past month, and in the past year.

Results of Urinalysis

The starting point was an analysis of the raw, unadjusted data.[2] It revealed that a large percentage of the detained arrestees in both countries consumed drugs in the 3-day period before arrest. (See chart 1.) The data, presented for all 23 ADAM sites and the 5 NEW ADAM sites, indicate that for most of the selected drugs, larger proportions of detained arrestees in England than in the United States tested positive (marijuana: X^2=35.7, p<.001; opiates: X^2=57.9, p<.001; benzodiazepines: X^2=19.8, p<.001; and methadone: X^2=48.3, p<.001).

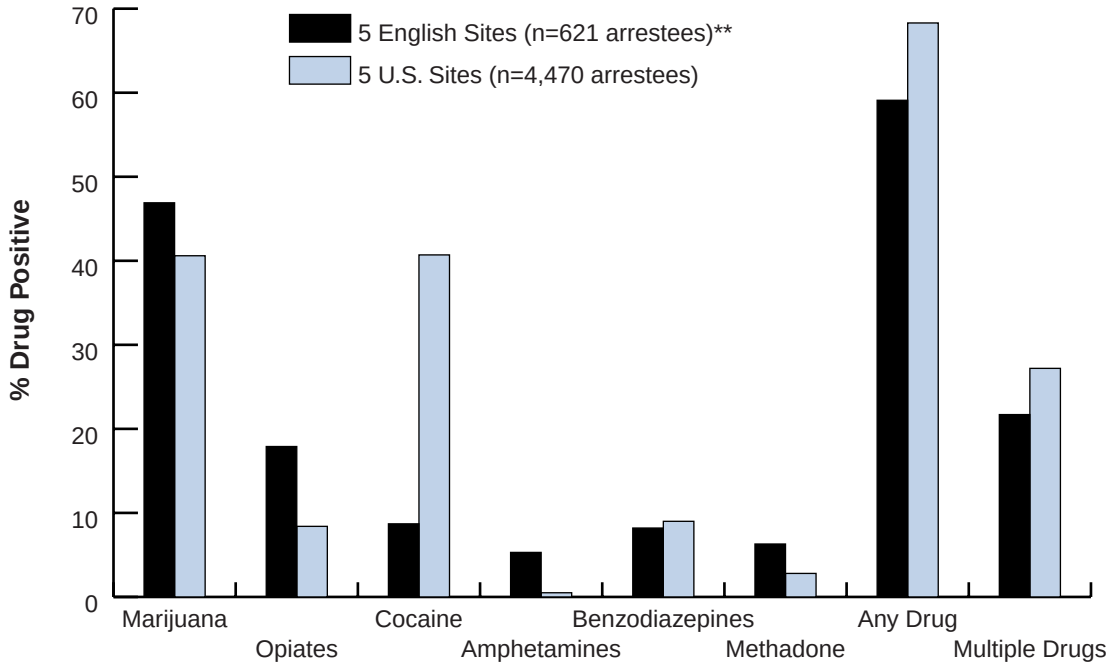
For certain drugs, that overall picture of higher use in England changes. For use of amphetamines and for multiple drugs, there were no statistically significant differences between detained arrestees in the two countries (amphetamines: X^2=0.5, multiple drugs: X^2=0.4). Cocaine was the only drug for which prevalence was higher in the United States than England (X^2=311.5, p<.001).

Chart 1. ***Drug Use Prevalence of Detained Arrestees: 23 U.S. Sites and 5 English Sites (Raw Data)*—Results of Urinalysis***



* These numbers were calculated *before* weighting and excluding ineligible cases.
** Of the 839 English study cases, 621 agreed to provide a urine specimen.

Chart 2. ***Drug Use Prevalence of Detained Arrestees: 5 Matched U.S. Sites and 5 English Sites (Weighted and Excluded Data)*—Results of Urinalysis***



* These numbers were calculated *after* weighting and excluding ineligible cases.
** Of the 839 English study cases, 621 agreed to provide a urine specimen.

At 40.4 percent, the U.S. cocaine rate was more than four times higher than England's 8.7 percent. In fact, the higher cocaine rate contributed substantially to the higher rate in the United States (66.3 percent, compared with England's 59.1 percent) for consumption of any of the six drugs tested (X^2=13.6, p<.001). Although arrestees in England have a larger "working repertoire" of drugs (for four of the six selected drugs, their use rate is higher), the overall percentage of arrestees who use "any" drug is higher in the United States.

One of the basic goals of this report is to explore whether the differences in prevalence are "real" or are artifacts of the two countries' different research methods. As discussed in the chapter "Study Method—Matching the Samples," a number of steps were taken to create roughly comparable datasets for the United States and England. Cases deemed ineligible in either the U.S. or English databases were excluded from the combined dataset. The data from the two countries then were weighted by gender, age, race, and type of crime to make them as similar as possible.

The resulting, adjusted prevalence rates (see chart 2) are fairly similar to the unadjusted rates, with some distinctions. In England, both the adjusted and unadjusted rates were higher than those of the United States for marijuana (X^2=8.7, p<.01), opiates (X^2=48.3, p<.001), and methadone (X^2=17.4, p<.001). However, amphetamine use, which was the same in both countries when the unadjusted data were used, became significantly higher in England (X^2=71.8, p<.001) when the adjusted data were used. The prevalence of benzodiazepines, higher in England with the unadjusted data, is no different in the two countries when the adjusted data are used (X^2=0.46). The unadjusted rates showed cocaine and "any drug" use to be higher in the United States than in England. With the data adjusted, the rate of cocaine use and use of "any drug" remained higher in the United States (X^2=290.8, p<.001

and X^2=20.1, p<.001, respectively), but the rate of multiple drug use (the same in both countries when unadjusted data are used) became higher in the United States (X^2=8.6, p<.01). (The adjusted rates for each drug in each of the 23 U.S. sites and each of the 5 English sites are presented in appendix B, table B–1.)

Differences in drug use by demographic characteristics and type of crime. To find out whether there were differences in drug use among various subgroups of the detained arrestees, the results of the urinalysis were broken down by gender, age, race, employment status, and type of crime for which the person was arrested. (See table 7.) As noted in the chapter "Study Method," because of the effect of sample size on statistical power, it is easier to find these subgroup differences in the United States dataset, which is larger (4,470) than the English dataset (839). The emphasis in this section is on identifying subgroups whose drug use prevalence clearly exceeded the national averages in each country.

Gender. Studies based on self-reports and official studies based on criminal justice processing tend to show that females are generally less deviant than males (with some exceptions). Some of the early analyses of DUF data showed, however, that female detained arrestees were just as likely as male detained arrestees (and sometimes more likely) to test positive for certain types of drugs.[3] Because the DUF research was conducted solely in the United States, the extent to which similar gender differences would be found among arrestees in England was unknown.

The current study reveals that in both countries (and for most types of drugs) female arrestees were just as likely as or more likely than males to test positive. The only specific drug for which the proportion of male arrestees testing positive was higher than the proportion of females testing positive was marijuana, which was true for both countries (in the United States, 43.8 percent of the men and 21.7 percent of the women; in England, 49.3 percent of the men and 26.8 percent of the women). Men were also more likely than women to use any of the six drugs for which urinalysis was conducted (in the United States, 69.0 percent of the men and 63.6 percent of the women; in England, 59.9 percent of the men and 52.1 percent of the women).

Overall, the two countries were found to be very similar with respect to drug use and gender; of the specific drugs, only benzodiazepines showed a measurable difference between the two countries. In the United States, the rate of benzodiazepine use was higher among females than males (15 percent and 8 percent, respectively; X^2=29.4, p<.001). In England, benzodiazepine use by females and males was similar (7 percent and 8.4 percent, respectively; X^2=0.16 [nonsignificant]). For multiple drugs, there was a difference between the two countries; in England, women arrestees had a slightly higher rate than did men (29.6 percent, compared with 20.8 percent; although the difference is not statistically significant), while in the United States, women had slightly lower rates than did men (24.5 percent, compared with 27.6 percent; again, the difference was not statistically significant).

Age. For age, the pattern is clear. In both countries, older arrestees (age 21 or older) were more likely than younger ones (age 20 or younger) to test positive for most drug types. Only for marijuana use were younger people more likely than older people to test positive. Thus, in the United States, 64.8 percent of younger arrestees compared with 34.8 percent of older arrestees tested positive for marijuana (X^2=256.8, p<.001); in England, 56.2 percent of younger arrestees compared with 43.4 percent of older arrestees tested positive for this drug (X^2=8.3, p<.01). In neither country was there a statistically significant difference in the proportion of younger and older arrestees on the measure of "any drug." In the United States, benzodiazepines and multiple drugs were the exceptions, with no statistically significant differences between young and old arrestees (benzodiazepines, X^2=3.3, NS; multiple drugs, X^2=2.0, NS).

Race. Only small differences by race were detected in the two countries. The only statistically significant racial difference identified in both countries was for marijuana use. In the

Table 7. ***Drug Use by Demographic Characteristics and Type of Crime—Detained Arrestees, United States and England (Results of Urinalysis)*** (continued on next page)

Drug/Country	Gender		Age					Race	
	Male %	Female %	15–20 %	21+ %	21–25 %	26–30 %	31–35 %	36+ %	Nonwhite %	White %
Marijuana										
United States	43.8	21.7	64.8	34.8	43.5	38.8	31.7	18.8	44.3	40.2
England	49.3	26.8	56.2	43.4	53.5	35.6	54.1	22.2	58.8	44.1
Opiates										
United States	8.1	10.1	1.2	10.1	3.6	14.2	16.4	11.6	5.9	8.7
England	16.6	28.2	10.1	21.4	17.0	33.7	27.1	8.6	16.2	18.1
Cocaine										
United States	40.3	43.3	23.0	45.0	34.7	49.2	64.6	45.6	39.6	41.0
England	8.0	14.1	3.4	11.0	10.1	17.3	12.9	2.5	14.7	8.3
Amphetamines										
United States	0.3	1.5	0.0	0.5	0.4	0.0	1.6	1.1	0.1	0.6
England	4.7	9.9	2.8	6.5	4.4	10.6	8.2	3.7	0.0	6.2
Benzodiazepines										
United States	8.0	15.1	10.6	8.6	4.7	9.4	17.4	9.3	2.3	10.2
England	8.4	7.0	1.7	11.2	9.4	15.4	10.6	9.9	5.9	8.7
Methadone										
United States	2.6	4.2	0.0	3.5	0.6	3.1	6.4	6.8	2.2	2.9
England	5.5	12.7	1.7	8.2	5.7	14.4	8.2	4.9	1.5	6.9
Used any of the 6 drugs										
United States	69.0	63.6	70.9	67.6	64.5	68.8	84.6	62.5	67.9	68.4
England	59.9	52.1	61.8	58.7	65.4	61.5	65.9	34.6	66.2	57.4
Multiple drug use										
United States	27.6	24.5	25.3	27.7	19.9	36.3	41.0	22.5	22.5	28.1
England	20.8	29.6	11.8	26.1	22.0	35.6	34.1	13.6	22.1	21.8

United States, 40.2 percent of white arrestees and 44.3 percent of nonwhite arrestees used this drug (X^2=3.7, p<.05); in England, 44.1 percent of white arrestees and 58.8 percent of nonwhite arrestees used it (X^2=5.2, p<.05). No other common significant racial difference in drug use was found in both countries. When the data from each country were examined separately, some significant racial differences were found, however. Thus, in England but not in the United States, white arrestees were significantly more likely than nonwhite arrestees to have used amphetamines (6.2 percent and 0 percent, respectively: X^2=8.1, p<.01). In the United States but not in England, white arrestees were significantly more likely than nonwhite arrestees to test positive for benzodiazepines and multiple drug use.

Employment status. There is a strong association between employment status and use of various types of drugs. In both countries, unemployed arrestees were significantly more likely than employed arrestees to test positive for a range of drugs. The only exceptions were marijuana and amphetamine use in the United States, for which no significant difference between unemployed and employed arrestees was found, and amphetamine use in England, for which there was also no difference by employment status.

Table 7. ***Drug Use by Demographic Characteristics and Type of Crime—Detained Arrestees, United States and England Results of Urinalysis*** (continued)

Drug/Country	Employment		Type of Crime				
	Unemployed %	Employed %	Personal %	Property %	Alcohol/ Drugs %	Public Disorder %	Other %
Marijuana							
United States	38.1	41.8	38.9	39.8	47.9	27.8	49.8
England	51.4	34.1	48.2	51.3	44.4	34.0	38.7
Opiates							
United States	11.3	6.5	3.5	9.6	12.9	7.7	5.4
England	22.6	4.9	16.5	21.9	11.1	9.4	22.6
Cocaine							
United States	50.9	35.0	26.0	43.5	60.6	32.2	35.5
England	10.8	3.0	3.5	11.8	5.6	3.8	11.3
Amphetamines							
United States	0.4	0.4	0.2	0.6	1.2	0.0	0.0
England	5.5	4.9	4.7	3.9	14.8	1.9	6.5
Benzodiazepines							
United States	11.6	7.5	6.8	8.8	14.2	4.9	10.8
England	10.8	0.6	7.1	10.5	5.6	5.7	6.5
Methadone							
United States	5.8	1.1	1.7	3.5	4.1	0.6	1.7
England	8.4	0.0	2.4	8.8	0.0	5.7	8.1
Used any of the 6 drugs							
United States	73.8	64.9	55.0	71.1	84.0	51.5	71.1
England	66.4	39.0	58.8	64.4	61.1	43.4	53.2
Multiple drug use							
United States	34.2	23.1	17.9	27.8	40.9	20.9	28.4
England	26.6	7.9	16.5	27.5	18.5	9.4	19.4

The size of the effects of unemployment are especially large in England. For example, more than four times as many unemployed arrestees as employed arrestees (22.6 percent, in contrast to 4.9 percent) tested positive for opiates, and more than three times as many unemployed arrestees as employed arrestees tested positive for cocaine (10.8 percent, in contrast to 3.0 percent). In the use of benzodiazepines, the difference between unemployed and employed arrestees in England was particularly striking: 18 times as many unemployed arrestees as employed arrestees tested positive for this drug (10.8 percent, in contrast to 0.6 percent). Three times more unemployed than employed arrestees tested positive for multiple drugs.

Type of crime. The offenses for which arrestees were charged were categorized as personal crimes, property crimes, alcohol/drug offenses, public disorder offenses, and other offenses. The relationship between drug use and type of crime was different in the two countries. In England, with two exceptions, those charged with property crimes tended fairly consistently to be the group among whom the proportions of drug-positive tests were highest, but in the

United States, with one exception, the highest proportions of positive tests were among those charged with alcohol/drug offenses. That single exception in the United States was marijuana: Among those who tested positive for marijuana, arrestees charged with an "other" offense had the highest use rate (49.8 percent). Arrestees charged with an alcohol/drug offense were the second highest marijuana-using group (47.9 percent tested positive).

Differences in the use of each drug. Whereas the previous section examined differences in drug use among various demographic groups and by types of crime, this section "profiles" various categories of arrestees. It focuses particularly on groups showing the highest prevalence in each country for each drug. Thus, in the previous section, drug use rates of men and women in both countries were examined; in this section, these two groups are further broken out by age, race, employment status, and type of crime. (The data are drawn from the following tables: four breakdowns of these trivariate results [appendix B, tables B–2 through B–5] and a summary of the national averages for both countries [table 8, based on chart 2], which presents the highest prevalence rate for each drug from each bivariate category indicated [from table 7], and a summary of the group with the highest prevalence rates for each drug from each of the trivariate subcategories in appendix B, tables B–2 through B–5.)

The picture that emerges is of few subgroups in either country that clearly eclipse their respective country averages. For example, in England, methadone use is about 6 percent overall, but among female arrestees ages 31–35, the rate is more than 30 percent. In the United States, cocaine use is 40.7 percent overall, but for arrestees ages 31–35 who are unemployed, the vast majority are using cocaine (80.9 percent).

In the United States, for six of the eight drug categories (from table 8's "Highest Use Category"), arrestees ages 31–35 were found to be the highest drug-consuming group. In fact, nearly all detained arrestees in the United States in this age group were using at least one of the six specific drugs (84.6 percent). Arrestees in the United States who are in this age group and are unemployed are in the highest risk group for consuming cocaine (more than 80 percent), opiates (almost 30 percent), any of the six selected drugs (almost 90 percent), and multiple drugs (slightly less than 55 percent).

In England, for five of the eight drug categories (from table 8's "Highest Use Category"), the highest drug-consuming group is slightly younger (ages 26–30) than that in the United States. However, for four of the eight drug categories (from table 8's "Highest Use Subcategory"), English arrestees ages 31–35 are the highest drug-consuming group when this group includes females or nonwhites. English female detained arrestees ages 31–35 were the subcategory with the highest use of opiates (slightly less than 45 percent), methadone (33 percent), and multiple drugs (nearly 45 percent). English nonwhite detained arrestees ages 31–35 were the subcategory with the highest use of consuming any of the six tested drugs (more than 90 percent).

The groups showing the highest use of each drug are profiled in the sections that follow.[4]

Marijuana. In the United States, overall marijuana use among detained arrestees was 40.6 percent. However, as noted earlier, almost 65 percent of arrestees ages 15–20 in the United States tested positive for marijuana. The rate of marijuana use for this age group is even higher among arrestees charged with certain offenses. Of those ages 15–20 charged with public disorder offenses, 89.7 percent used marijuana, and of those charged with "other" offenses, 84.5 percent used this drug. In England, the overall rate of marijuana use was 46.9 percent. As in the United States, younger arrestees ages 15–20 were among the groups with the highest use (56.2 percent—the subgroup with the second highest prevalence rate in England). The category with the highest overall rate of marijuana use in England was nonwhite detained arrestees (58.8 percent). Within this group, the highest rates were among older detained arrestees—nonwhites ages 31–35 (81.8 percent). This high number could be due to the small number of

Table 8. ***Summary Profiling Subgroups of Detained Arrestees With Highest Drug Use Prevalence—England and the United States***

Drug Type	Country	Overall Average[a] %	Highest Use Category[b] %		Highest Use Subcategory[c] %	
Marijuana	England	46.9	58.8	Nonwhites	75.0	Nonwhites charged with public disorder offenses
	United States	40.6	64.8	Ages 15–20	89.7	Ages 15–20 charged with public disorder offenses
Opiates	England	17.9	33.7	Ages 26–30	44.4	Females ages 31–35 (females ages 26–30 [40.0%] a close second)
	United States	8.4	16.4	Ages 31–35	28.4	Ages 31–35 and unemployed
Cocaine	England	8.7	17.3	Ages 26–30	33.3	Females charged with other offenses
	United States	40.7	64.6	Ages 31–35	80.9	Ages 31–35 who are unemployed
Amphetamines	England	5.3	14.8	Alcohol/drug offense	50.0	Females charged with alcohol/drug offenses
	United States	0.5	1.6	Ages 31–35	13.6	Females ages 31–35
Benzodiazepines	England	8.2	15.4	Ages 26–30	20.5	Ages 26–30 who are unemployed
	United States	9.0	17.4	Ages 31–35	32.8	Ages 15–20 charged with other offenses
Methadone	England	6.3	14.4	Ages 26–30	33.3	Females ages 31–35
	United States	2.8	6.8	Ages 36+	13.5	Ages 36+ who are unemployed
Any of the 6 drugs	England	59.1	65.9	Ages 31–35	90.9	Nonwhites ages 31–35
	United States	68.3	84.6	Ages 31–35	88.0	Ages 31–35 and unemployed
Multiple drugs	England	21.7	35.6	Ages 26–30	44.4	Females ages 31–35
	United States	27.2	41.0	Ages 31–35	54.6	Ages 31–35 and unemployed

[a] From chart 2
[b] From table 7
[c] From appendix B, tables 2–5

cases in this category (9 of the 11 people in this category tested positive for marijuana). Nonwhite arrestees charged with public disorder offenses were the subcategory having the second highest rate of marijuana use in England (75.0 percent).

Opiates. In the United States, overall opiate use among detained arrestees was 8.4 percent. The category with the highest rate of opiate use was older arrestees ages 31–35 (16.4 percent). Within this age group, those who were unemployed had even higher rates (at 28.4 percent, this was more than three times the U.S. average). In England, the overall rate of opiate use among detained arrestees was 17.9 percent. As in the United States, the category with the highest opiate use was older arrestees. However, in England this older age group was 26–30 (33.7 percent of whom tested positive for opiates), not those 31–35 years of age. Among the subcategories examined, the highest rate of opiate use was among women ages 31–35 (44.4 percent), with women ages 26–30 (40.0 percent) a close second.

Cocaine. In the United States, 40.7 percent of the detained arrestees overall tested positive for cocaine (including "crack"). The highest rates were among the category of older arrestees ages 31–35 (64.6 percent). In this age group, the subcategory of those who were unemployed had even higher rates (80.9 percent). In England, a much lower percentage—8.7—of the detained arrestees overall tested positive for cocaine. The highest rate of cocaine use in England was among arrestees ages 26–30 (17.3 percent). Of all subcategories, women charged with one of the least serious offenses (the "other offense" category) had the highest cocaine use rate (33.3 percent).

Amphetamines. The overall rate of amphetamine use among detained arrestees in the United States was 0.5 and was not much higher for any subcategory. For arrestees ages 31–35, the rate was highest, at 1.6 percent. However, examining the subcategories reveals that the overall highest prevalence was among women in this age group, 13.6 percent of whom tested positive for amphetamines. In England, 5.3 percent of detained arrestees overall tested positive for amphetamines, with higher rates among the subcategory of arrestees charged with an alcohol or drug offense (14.8 percent). The subcategory with the highest rate of amphetamine use in England was female arrestees charged with an alcohol or drug offense (50.0 percent).

Benzodiazepines. In the United States, 9.0 percent of detained arrestees overall tested positive for benzodiazepines. The highest rate of benzodiazepine use in the United States was, again, the category of older arrestees ages 31–35 (17.4 percent). Notably, examination of the subcategories reveals that the overall highest rate of benzodiazepine use was among younger arrestees ages 15–20 who were charged with one of the least serious offenses (the "other offense" category; 32.8 percent of them tested positive). In England, 8.2 percent of detained arrestees overall tested positive for use of benzodiazepines. However, of those ages 26–30, 15.4 percent tested positive for these substances. Within this age group, the rate was even higher among those who were unemployed (20.5 percent).

Methadone. In the United States, 2.8 percent of detained arrestees overall tested positive for methadone, with the highest prevalence, 6.8 percent, among the oldest group (36 years of age or older). Within this age group, those who were unemployed had even higher use rates (13.5 percent). In England, 6.3 percent of detained arrestees overall tested positive for methadone. Among English arrestees ages 26–30 the rate was 14.4 percent. The highest methadone prevalence was among female arrestees ages 31–35 (33.3 percent).

Used any of the six drugs at least once. Among detained arrestees in the United States, 68.3 percent overall tested positive for one of the six drugs, with the highest rates among older arrestees ages 31–35 (84.6 percent). In this age group, the rates were not much higher among any particular combination of subcategories (although at 88 percent, the rate among arrestees ages 31–35 who were unemployed was slightly

higher). In England, 59.1 percent of detained arrestees overall tested positive for use of any of the six drugs. The category of English arrestees ages 31–35 had the highest positive rate at 65.9 percent. The subcategory of English detained arrestees with the highest prevalence on this measure was nonwhites ages 31–35 (90.9 percent).

Multiple drugs. The overall rate of multiple drug use (measured by two or more positive tests) in the United States was 27.2 percent. The category with the highest rate (41.0 percent) was older arrestees ages 31–35. In this age group, those who were unemployed had even higher rates of multiple drug use (54.6 percent). In England, 21.7 percent of all detained arrestees tested positive twice, with the highest rate (35.6 percent) among those ages 26–30. The subcategory with the highest prevalence was female arrestees, 44.4 percent of whom, ages 31–35, tested positive at least two times.

Does the Country Make a Difference?

The analyses revealed that the level of drug use varies substantially among demographic groups and depending on the type of offense. It is difficult to discern from these analyses whether, independent of gender, age, and the like, there would be differences between the two countries. In other words, it would be illuminating to find out what additional influence the variable "country" has on drug use rates, after controlling for demographic characteristics and type of offense.

To find out if "country" makes a difference, separate logistic regression models were developed for each of the eight drug measures. (See table 9.) They revealed statistically significant differences between England and the United States in arrestee use of opiates, cocaine, amphetamines, methadone, any drug, and multiple drugs. Thus, the finding, discussed above (see chart 2), that use of opiates, amphetamines, and methadone was significantly lower in the United States than in England was confirmed by the findings of the logistic regression analysis. The finding that cocaine use, use of any drug, and multiple drug use were significantly higher in the United States also was supported by the logistic regression analysis.

The bivariate finding of no difference between the two countries in benzodiazepine use also was confirmed at the multivariate level. When the logistic regression was run for benzodiazepines, the finding of no difference between the two countries was confirmed (in the bivariate analysis, 9.0 percent of arrestees in the United States tested positive, as did 8.2 percent in England, X^2=0.46, NS; in the multivariate analysis, Beta=0.14, NS).

Marijuana was the sole exception, as the bivariate and multivariate analyses yielded different results. For this drug, the multivariate analysis had indicated that "country" was not statistically significant (Beta=-0.14, NS), while the bivariate analysis had shown marijuana rates to be significantly lower in the United States than England (40.6 percent and 46.9 percent, respectively) (X^2=8.7, p<.01). The logistic regression did not sustain the bivariate finding. The bivariate finding of lower rates of arrestee marijuana use in the United States was probably the product of a measured or unmeasured demographic characteristic or type of crime that independently explained the relationship.

Other than for marijuana, the analysis supports all the differences between the two countries revealed at the bivariate level. Specifically, for the use of cocaine, any drug, and multiple drugs, rates were higher in the United States, while for the use of opiates, amphetamines, and methadone, rates were higher in England. The multivariate test confirmed the bivariate finding of no difference between the two countries in benzodiazepine use by detained arrestees.

Comparing Urinalysis and Self-Reports

Previous research has shown there is often a discrepancy between self-reporting and urinalysis

Table 9. ***Drug Use of Detained Arrestees in 5 U.S. Sites and 5 English Sites—Logistic Regression (Results of Urinalysis)***

Model Parameters (n=4,883)	Marijuana Model	Opiates Model	Cocaine Model	Amphetamines Model
Country	-0.14	-0.84***	2.17***	-2.89***
Female	-1.10***	0.09	-0.09	1.34***
Age	-0.08***	0.04***	0.04***	0.05***
White	-0.09	0.24	0.001	2.07
Employed	-0.003	-0.67***	-0.68***	0.03
Crime type	Overall variable***	Overall variable***	Overall variable***	Overall variable***
Property	-0.01	0.29***	0.17***	0.32
Alcohol/drugs	0.31***	0.43***	0.84***	1.07**
Public disorder	-0.69***	0.11	0.17	-1.19
Other	0.47***	-0.26	-0.22***	-0.30
Constant	2.1***	-2.8***	-3.2***	-6.9***
-2 log likelihood	6019.30	2851.50	5874.90	406.97
Chi-square	619***	213***	605***	112***

Model Parameters	Benzodiazepine Model	Methadone Model	Any Drug Model	Multiple Drugs Model
Country	0.14	-0.56**	0.59***	0.48***
Female	0.41***	0.06	-0.46***	-0.35***
Age	0.01**	0.06***	-0.01***	-0.01
White	1.50***	0.35	-0.01	0.33***
Employed	-0.48***	-1.75***	-0.52***	-0.65***
Crime type	Overall variable**	Overall variable***	Overall variable***	Overall variable***
Property	-0.01	0.39**	0.17***	0.06
Alcohol/drugs	0.41***	0.39	0.79***	0.55***
Public disorder	-0.43**	-0.39	-0.59**	-0.23**
Other	0.18	-0.13	-0.11	0.06
Constant	-4.04***	-4.6***	0.89***	-1.5***
-2 log likelihood	2846.02	1205.37	4926.70	5513.78
Chi-square	119***	191***	261***	177***

Coding: country, United States=1; female=1; actual age; white=1; employed=1; and reference=personal crime
Note: *=p<.05, **=p<.01, ***=p<.001

as measures of recent drug use. To investigate whether or to what extent there is such a discrepancy for detained arrestees in the United States and England, the results of both types of measures were compared. Specifically, the results of the urinalysis were compared with the arrestees' report of drug use in the 3 days before the interview. (See table 10.)

Overall, for more than 90 percent of the detained arrestees in the United States and England (90.3 percent and 91.3 percent, respectively) the findings of the self-report survey and the urinalysis were in agreement. The rest either underreported or overreported drug use (as measured by urinalysis).

In the United States, the rate at which drug use was underreported (that is, failure to report drug use when the urinalysis was positive) was higher than in England. Overall, 7.8 percent of detained arrestees in the United States underreported drug use compared with 1.9 percent who overreported (that is, they reported using drugs, but the urinalysis was negative).[5] Underreporting in the United States was especially evident for marijuana (16.6 percent) and cocaine use (16.6 percent). In England, 3.7 percent of arrestees underreported drug use, while 5.0 percent overreported. In England as in the United States, the greatest disparity between self-reports and urinalysis was for marijuana. Slightly more than 10 percent of the detained arrestees in England overreported marijuana use, and 7.1 percent underreported marijuana use.

The problem of relying solely on self-reports is highlighted in the findings on benzodiazepine use. In the United States, underreporting of benzodiazepine use was substantial (the urinalysis indicated a rate of 9.0 percent; the self-reports 4.4 percent). There was some overreporting of benzodiazepine use in England (the self-reports indicated a rate of 10.3 percent; the urinalysis 8.2 percent). The net result of the two discrepancies is that there is no difference in benzodiazepine use by arrestees in the two countries as measured by urinalysis; but as measured by self-reports, arrestees in England had significantly higher benzodiazepine use than their counterparts in the United States.

For the other five drugs, the "direction" of the results did not change as it did for benzodiazepine, and the results of the urinalysis and self-reports were compatible. For example, as measured by both urinalysis and self-report data, England had higher rates than the United States for marijuana (bivariate results only), opiates, amphetamines, and methadone but lower rates than the United States for cocaine.

The main difference between the two sets of results lies in the magnitude of the difference between the countries. For example, as noted, cocaine use was higher in the United States whether measured by urinalysis or self-reports. However, urinalysis indicated that 40.7 percent of U.S. arrestees and 8.7 percent of English arrestees tested positive for cocaine, while the self-reports indicated that 25.2 percent of U.S. arrestees and 7.9 percent of English arrestees tested positive for cocaine.

Why the discrepancy? There are a number of reasons for a discrepancy between urinalysis and self-reports. One is based on the argument that urinalysis is more accurate. It includes the assumption that interviewees might be unwilling or unable to disclose precisely the amount of drugs consumed at various times. A second reason is based on the argument that urinalysis and self-reports measure different things and that neither is more accurate. Urinalysis can measure only drugs that have been consumed within a specific period and have reached a certain point in the body's cycle of metabolism. This argument is highlighted most clearly in the case of marijuana use, which might be detected by urinalysis as long as a month after consumption. A third reason is based on the argument that urinalysis is less accurate than self-reports. According to this argument, technical matters related to the cross-reactivity and specificity of the tests affect the outcome.

Table 10. *Comparison of Urinalysis Results and Self-Reported Drug Use by Detained Arrestees—England and the United States*

Drug	Concordance %	Urine Positive but Self-Report Negative %	Urine Negative but Self-Report Positive %	Urinalysis Results of Drug Use (Past 3 Days) %	Self-Reported Drug Use (Past 3 Days) %	Difference %	Ratio Difference
Marijuana							
England	82.3	7.1	10.6	46.9	47.0	-0.1	1.0
United States	77.4	16.6	5.9	40.6	30.1	10.5	1.3
Cocaine							
England	93.4	3.9	2.7	8.7	7.9	0.8	1.1
United States	82.3	16.6	1.2	40.7	25.2	15.5	1.6
Opiates							
England	91.5	5.8	2.7	17.9	13.7	4.2	1.3
United States	95.5	3.2	1.3	8.4	6.6	1.8	1.3
Amphetamines							
England	91.3	1.8	6.9	5.3	10.0	-4.7	0.5
United States	98.6	0.5	0.9	0.5	0.9	-0.4	0.6
Methadone							
England	95.8	1.8	2.4	6.3	6.8	-0.5	0.9
United States	97.1	2.8	0.1	2.8	0.1	2.7	28.0
Benzodiazepines							
England	93.3	1.9	4.8	8.2	10.3	-2.1	0.8
United States	91.0	6.8	2.2	9.0	4.4	4.6	2.0
Average for all 6 drugs							
England	91.3	3.7	5.0				
United States	90.3	7.8	1.9				

Results of Self-Reported Drug Use

Self-report surveys of arrestees' drug use can be important checks on the results of urinalysis. However, they can be much more. They can supply information about the history of drug use and can measure the use of types of drugs not tested with urinalysis (for example, barbiturates, LSD, and inhalants). Self-reports also can help distinguish between, and provide additional information about, the use of crack cocaine and powder cocaine.

Arrestees were asked whether they used any of the drugs tested by urinalysis and also were asked about their use of barbiturates, LSD, inhalants, and alcohol (for a total of 10 drugs). These self-reports revealed much the same as urinalysis: A majority of detained arrestees in both England and the United States used drugs. In each country, more than 80 percent of the detained arrestees had used 1 of the 10 selected drugs at least once in their lifetime. (See table 11.) More than 65 percent of arrestees in each country said they used at least one of the selected drugs in the past year and more than 60 percent had used a drug in the past month. In England, more than 55 percent of detained arrestees said they had used at least one drug in the 3 days before the interview, and slightly less than 50 percent of arrestees in the United States said they had used at least one drug in the same period.

In England, three of the drugs had been used by more than half the arrestees at some point in their life (81.6 percent had used marijuana, 64.6 percent had used amphetamines, and 54.6 percent had used LSD). In the United States, marijuana was the only drug that more than half the arrestees admitted having used at some point in their life (79.2 percent), although powder cocaine, used by 47.3 percent of arrestees at some point in their life, was a close second.

The self-reports were fairly consistent overall throughout the various time periods—lifetime, annual use, monthly use, and use in the past 3 days. In the main, if arrestees in one country reported significantly higher rates of use for a particular drug category than those in the other country, they were higher for all four time periods. The only drugs for which these findings were not statistically significant were marijuana (lifetime use), powder cocaine (use in past year), inhalants (use in past month and past 3 days), and alcohol (use in past 3 days).

In general, rates of use as measured by self-reports were higher in England than the United States for 7 of the 10 types of drugs (marijuana, opiates, amphetamines, methadone, benzodiazepines, LSD, and inhalants) as well as for alcohol. Note, however, that the much higher rate of self-reported marijuana use in the past 3 days in England (47.0 percent, compared with 30.1 percent in the United States) might be partially explained by the fact that arrestees in the United States underreported marijuana use by 9.5 percentage points more than English arrestees. For crack cocaine, powder cocaine, and barbiturates, rates were higher in the United States.[6] For three measures of powder cocaine use—lifetime use, use in the past month, and use in the past 3 days—the differences between the two countries were statistically significant beyond the .001 level.

For drugs measured by both self-reports and urinalysis and whose findings could therefore be compared, the self-reports revealed much the same as did urinalysis. That is, larger percentages of detained arrestees in England than in the United States used marijuana (according to the bivariate analysis only), opiates, and methadone, while larger percentages of detained arrestees in the United States than in England used cocaine.

Extent of injection drug use. The biggest difference between the two countries in self-reported injecting of drugs was in amphetamines. Among detained arrestees in England, 16.3 percent said they had injected amphetamines at some time in their life, compared with only 1.7 percent of those in the United States. (See table 12.) When the data were recalculated to examine only arrestees who reported use of the drug, they revealed that 25 percent of the amphetamine users in England had injected it at some

Table 11. ***Self-Reported Drug Use of Detained Arrestees—5 Matched U.S. Sites and 5 English Sites (Weighted and Excluded Data)***

	Lifetime Use %	Past Year %	Past Month %	Past 3 Days %
Marijuana	X^2=2.6, NS	X^2=85.6***	X^2=56.4***	X^2=87.2***
England	81.6	69.7	58.6	47.0
United States	79.2	52.7	44.5	30.1
Crack cocaine	X^2=52.6***	X^2=39.5***	X^2=87.4***	X^2=96.2***
England	24.7	16.9	9.4	6.1
United States	37.4	26.8	22.6	18.5
Powder cocaine	X^2=55.5***	X^2=2.8, NS	X^2=38.4***	X^2=31.9***
England	33.5	20.3	8.8	4.2
United States	47.3	22.9	16.8	9.7
Opiates	X^2=77.1***	X^2=99.7***	X^2=54.9***	X^2=43.9***
England	35.3	25.5	18.6	13.7
United States	20.8	11.6	9.3	6.6
Amphetamines	X^2=549.4***	X^2=779.4***	X^2=457.3***	X^2=171.9***
England	64.6	44.3	24.8	10.0
United States	22.6	5.3	2.2	0.9
Barbiturates	X^2=57.3***	X^2=8.9***	X^2=33.4***	X^2=17.3***
England	10.7	4.9	1.5	1.0
United States	20.8	7.7	5.7	3.3
Methadone	X^2=190.2***	X^2=286.1***	X^2=246.7***	X^2=184.2***
England	21.1	16.0	10.4	6.8
United States	5.3	1.4	0.3	0.1
Benzodiazepines	X^2=92.2***	X^2=138.5***	X^2=60.3***	X^2=40.8***
England	45.2	29.7	17.3	10.3
United States	28.1	12.5	8.0	4.4
LSD	X^2=154.3***	X^2=103.9***	X^2=5.1*	X^2=3.6*
England	54.6	19.7	5.7	1.4
United States	31.8	7.4	3.9	0.7
Inhalants	X^2=239.9***	X^2=20.2***	X^2=3.3, NS	X^2=0.01, NS
England	30.8	3.9	1.4	0.6
United States	9.2	1.4	0.8	0.6
Any of the 10 drugs	X^2=11.3***	X^2=27.9***	X^2=6.2*	X^2=15.3***
England	86.6	76.1	66.3	56.3
United States	82.0	67.1	61.8	49.0
Alcohol	X^2=25.4***	X^2=35.3***	X^2=5.2*	X^2=2.1, NS
England	97.7	90.6	82.8	66.5
United States	93.8	82.8	85.9	69.1

Note: *=p<.05, **=p<.01, ***=p<.001, NS=nonsignificant

Table 12. ***Injection Drug Use by Detained Arrestees—5 English Sites and 5 Matched U.S. Sites***

	Cocaine %	Opiates %	Amphetamines %	Other Drug (Including Methadone) %	Ever Injected Any Illegal Drug %
5 English sites	8.0	13.1	16.3	3.7	18.8
5 U.S. sites	11.3	11.9	1.7	1.7	17.3
	(X^2=8.4**)	(X^2=0.9, NS)	(X^2=272.8***)	(X^2=12.3***)	(X^2=1.1, NS)

Note: *=p<.05, **=p<.01, ***=p<.001, NS=nonsignificant

point in their life compared with 7 percent in the United States.

When it came to drugs other than cocaine, opiates, and amphetamines, detained arrestees in England were also significantly more likely than those in the United States to say they had injected drugs (3.7 percent, compared with 1.7 percent). Cocaine, however, was much more likely to have been injected by arrestees in the United States than in England (11.3 percent and 8.0 percent, respectively). When the cocaine data were recalculated to include only self-reported cocaine users, the difference between the two countries disappeared: 21 percent of the cocaine users in the United States and the same percentage in England had injected cocaine in their lifetime.

For heroin injection, in the sample as a whole, there was no significant difference between the two countries. But again, the data were recalculated to include only self-reported heroin users. This time they showed that a higher percentage of heroin users in the United States than in England injected the drug (57 percent, compared with 37 percent) (X^2=97.8***).

Drug treatment—extent and need. The detained arrestees in both countries were asked whether they had ever been treated for drug abuse and for alcohol abuse and whether they wished to be treated.[7] The questions were asked of those who had reported using drugs and those who had reported using alcohol at least once in their lifetime. Overall, the analysis revealed that in both countries a substantial proportion of detained arrestees were treated for drug abuse in the past and a slightly higher proportion said they currently needed treatment. Of particular importance is the fact that one-third of arrestees in the United States and one-fifth of those in England felt they currently need treatment.

It is worth noting that there was no difference between England and the United States in the percentage of detained arrestees who said they had been treated for drug abuse. More than one-fourth of those in both countries (28.2 percent in the United States and 26.0 percent in England) reported having been treated for drug abuse at some point in their life (X^2=1.6, NS). (Again, these findings were based on the number of arrestees who reported using drugs at least once in their lifetime). For alcohol the findings were similar; that is, there was no difference between the two countries in the percentage of detained arrestees who said they had been treated for alcohol abuse some time in their life. In the United States, 12.4 percent of detained arrestees who reported using alcohol also reported having been treated for alcohol abuse, and in England, 11.0 percent said they had received treatment (X^2=1.5, NS).

When it came to detained arrestees' reported need for treatment, the two countries were significantly different. In the United States, 33.3 percent of the detained arrestees who said they had used drugs also reported that they currently

needed drug treatment, in contrast to 22.2 percent of those in England (X^2=38.2, p<.001). In the need for alcohol treatment, no statistically significant difference was found between the two countries (X^2=1.3, NS). Among the detained arrestees who said they used alcohol, 14 percent of those in the United States and 13 percent in England felt they currently needed to be treated for alcohol abuse.

Drug-using "careers." The detained arrestees were asked how old they were when they used drugs for the first time and how many years they had been using drugs. For five of the ten categories of drugs the arrestees were asked about (marijuana, powder cocaine, barbiturates, methadone, and benzodiazepines), those in the United States began their careers at a younger age than those in England. (See table 13.) For the most part, however, these differences in age of initiation between the two countries were only modest (the difference was only 1 or 2 years for each drug category).

As expected, in both countries alcohol was, on average, the first controlled substance that arrestees tried in their lifetime (age of first use was 14.0 in England and 14.7 in the United States). Among the illicit drugs, marijuana was, on average, the first that arrestees in the United States tried in their lifetime (age 15.1), while inhalants were the illicit drug that English arrestees tried first (age 14.1). The drug that arrestees in the United States began to use latest in their lives was crack cocaine: The average age of crack initiation was 23.6. Among English arrestees, crack was the drug they used second to last: The average age of first use was 21.5. (Methadone, with an initiation age of 22.7, was the drug that English arrestees began to use latest in life.) Because the age of initiation of crack was late, its "career" was shorter than that of any other drug among arrestees in the United States (6.7 years) and that of any other drug except methadone in England (4.8 years for both drugs).

Income sources and expenditures on drugs. Detained arrestees in both England and the United States were asked to estimate their total annual income from all legal sources, their total annual income from all illegal sources, and the amount of money they spent annually on illicit drugs. Other than converting British to U.S. currency,[8] this analysis posed a number of methodological challenges.[9] One was the non-normal distribution of each of the three measures (legal income, illegal income, and amount of money spent on illicit drugs). Since parametric tests of statistical significance all are based on the assumption of normal distribution, to approximate normality the analysis was based on the log value of each of these measures.[10]

The findings revealed differences between detained arrestees in England and the United States on all three measures. English arrestees had higher illegal incomes (log mean 2.8; unlogged mean $9,760) than U.S. arrestees (log mean 1.7, unlogged mean $8,888) (F=351.9, p<.001). English arrestees also spent more on illicit drugs (log mean 2.6, unlogged mean $6,346) than U.S. arrestees spent (log mean 2.0, unlogged mean $4,629) (F=82.7, p<.001). U.S. arrestees had higher legal incomes (log mean 3.6; unlogged mean $13,469) than English arrestees (log mean 3.3, unlogged mean $4,889) (F=44.5, p<.001). Notably, English arrestees had higher illegal incomes than legal incomes, while the reverse was the case for U.S. arrestees.

Arrestees who tested positive for drugs (by urinalysis) were compared with those who tested negative to find out if there were any differences between the two countries in their legal and illegal incomes and the amount they spent on drugs. This analysis revealed few within-country differences in total legal income among arrestees who tested positive for drugs and arrestees who tested negative for drugs in both countries. (See table 14.)

Legal income. In England, marijuana use was the only statistically significant predictor of arrestees' legal income, and in the United States, the only statistically significant predictor of arrestees' legal income was cocaine use. Arrestees who did not use marijuana had the highest legal income (log value 3.47) of all those in the English sample, and arrestees who used marijuana had

Table 13. ***Drug-Using Careers of Detained Arrestees in England and the United States***

Drug/Country	Age First Used Drugs	Mean Number of Years Using Drug
Marijuana	F=6.1**	F=74.9***
England	15.6	9.7
United States	15.1	12.6
Crack cocaine	F=14.1***	F=35.6***
England	21.5	4.8
United States	23.6	6.7
Powder cocaine	F=5.2*	F=77.5***
England	20.0	6.3
United States	19.0	10.2
Opiates	F=46.7***	F=23.3***
England	19.7	6.8
United States	22.3	9.4
Amphetamines	F=11.9***	F=143.8***
England	17.2	8
United States	18.1	12.7
Barbiturates	F=4.2*	F=8.8**
England	19.0	9.2
United States	17.8	11.7
Methadone	F=0.09, NS	F=67.1***
England	22.7	4.8
United States	22.5	10.3
Benzodiazepines	F=21.8***	F=93.4***
England	19.9	6.4
United States	18.5	10.4
LSD	F=5.2*	F=42.3***
England	16.6	7.9
United States	17.1	10.5
Inhalants	F=35.1***	F=23.6***
England	14.1	9.8
United States	16.3	12.7
Used any of the 10 drugs	F=5.3*	F=66.9***
England	15.5	10.2
United States	15.0	12.8
Alcohol	F=11.9***	F=7.6**
England	14.0	12.5
United States	14.7	13.4

Note: *=p<.05, **=p<.01, ***=p<.001, NS=nonsignificant

Table 14. ***Legal and Illegal Income and Amount Spent on Drugs (Logged Values)—Detained Arrestees in England and the United States, Analysis of Variance (ANOVA) Between Drug Users and Nonusers (Results of Urinalysis)***

Drug Type	Income/Spending	Country	Nonusers	Users	Statistical Difference Between Users and Nonusers
Marijuana	Legal income	England	3.47	3.15	F=23.8***
		United States	3.59	3.53	F=3.5, NS
	Illegal income	England	2.49	3.11	F=26.1***
		United States	1.63	1.87	F=34.5***
	Amount spent on drugs	England	1.98	3.15	F=136.4***
		United States	1.94	2.25	F=61.7***
Opiates	Legal income	England	3.32	3.20	F=2.6, NS
		United States	3.57	3.52	F=0.66, NS
	Illegal income	England	2.59	3.59	F=44.2***
		United States	1.69	2.14	F=38.5***
	Amount spent on drugs	England	2.30	3.59	F=93.7***
		United States	1.96	3.21	F=343.3***
Cocaine	Legal income	England	3.30	3.20	F=1.1, NS
		United States	3.76	3.40	F=98.7***
	Illegal income	England	2.69	3.72	F=24.8***
		United States	1.43	2.24	F=333.9***
	Amount spent on drugs	England	2.41	3.88	F=62.5***
		United States	1.57	2.80	F=1234.5***
Amphetamines	Legal income	England	3.29	3.28	F=0.02, NS
		United States	3.56	3.87	F=1.65, NS
	Illegal income	England	2.78	3.03	F=0.74, NS
		United States	1.73	1.47	F=0.77, NS
	Amount spent on drugs	England	2.52	2.99	F=3.94*
		United States	2.06	1.99	F=0.75, NS
Benzodiazepines	Legal income	England	3.31	3.17	F=1.75, NS
		United States	3.56	3.63	F=1.32, NS
	Illegal income	England	2.75	3.21	F=4.48*
		United States	1.70	2.00	F=17.2***
	Amount spent on drugs	England	2.47	3.35	F=20.1***
		United States	2.01	2.69	F=105.3***
Methadone	Legal income	England	3.29	3.24	F=0.21, NS
		United States	3.57	3.49	F=0.7, NS
	Illegal income	England	2.72	3.75	F=17.9***
		United States	1.72	2.01	F=5.46**
	Amount spent on drugs	England	2.44	3.92	F=45.1***
		United States	2.06	2.44	F=10.8***
Used any of 6 drugs	Legal income	England	3.46	3.18	F=24.4***
		United States	3.76	3.48	F=62.1***
	Illegal income	England	2.22	3.16	F=61.7***
		United States	1.28	1.93	F=233.3***
	Amount spent on drugs	England	1.55	3.18	F=312***
		United States	1.25	2.45	F=1020.9***
Multiple drug use	Legal income	England	3.33	3.16	F=6.96***
		United States	3.61	3.46	F=16.9**
	Illegal income	England	2.57	3.54	F=46.8***
		United States	1.54	2.23	F=238.2***
	Amount spent on drugs	England	2.25	3.56	F=116.1***
		United States	1.77	2.85	F=718.4***

Note: *=p<.05, **=p<.01, ***=p<.001, NS=nonsignificant

the lowest legal income (log value 3.15). In the United States, cocaine use was a good marker for an arrestee's legal income level. Arrestees who tested negative for cocaine had the highest legal income (log value 3.76) of those in the U.S. sample, and arrestees who tested positive for cocaine had the lowest legal income (log value 3.4).

Arrestees in both countries who tested positive for at least one of the six drugs for which urinalysis was conducted had lower legal incomes and higher illegal incomes than arrestees who tested negative for all six drugs. Arrestees in both countries who tested positive for two or more of the six tested drugs had lower legal incomes than arrestees who tested negative for multiple drug use.

Illegal income. In general, arrestees in both countries who tested positive for drugs had higher illegal incomes and spent more money on illicit drugs than arrestees who tested negative. The only exception was amphetamines. In both countries, there was no difference in the amount of illegal income they said they earned between arrestees who tested positive for amphetamines and those who tested negative. There were also no differences in expenditure on drugs between arrestees in the United States who tested positive for amphetamines and arrestees who tested negative. However, arrestees in England who tested positive for amphetamines spent significantly more money on drugs than those who tested negative.

Methadone users among arrestees in England had the highest illegal incomes in the English sample and spent the most money on illicit drugs. The highest illegal income among arrestees in the United States was earned by those who tested positive for cocaine (log value 2.24), and the highest drug spending among arrestees in the United States was by those who tested positive for opiates (log value 3.21). Arrestees in both England and the United States who tested positive for amphetamines had the *lowest* illegal incomes of all drug-using groups (log values 1.47 and 3.03, respectively) and spent the *least* amount of money on illicit drugs (England log value 2.99; U.S. log value 1.99).

Notes

1. See "Urinalysis Versus Self-Reports" for a summary discussion of the advantages and disadvantages of each method of determining the level of drug use.

URINALYSIS VERSUS SELF-REPORTS

Both methods of measuring drug use have advantages and disadvantages. In combination, the two can provide a fuller picture of drug use than either would separately.

Urinalysis

The advantage of urinalysis is that it is an objective measure and does not rely on respondent recall or honesty. However, it typically measures drug use only in a period of 48 to 72 hours after consumption (with the exception of marijuana, which may be detected in heavy users as late as a month after consumption). It is unable to detect drugs used for longer periods, and it cannot detect how often a drug was used.

Self-Reports

This measure, obtained from interviews, has the advantage of being able to measure drug use in different periods—whatever period of time the interviewer asks about. The disadvantage is that self-reports depend on respondents' ability to accurately and truthfully recall their use of drugs.

2. The raw, unadjusted data are reported because this was the approach used in the 1998 Bennett report of NEW ADAM research. Bennett, T.H., *Drugs and Crime: The Results of Research on Drug Testing and Interviewing Arrestees*, Home Office Research Study No. 183, London: Home Office, 1998.

3. Wish, E.D., and Gropper, B.A., "Drug Testing by the Criminal Justice System: Methods, Research, and Applications," in *Drugs and Crime*, ed. M. Tonry and J.Q. Wilson, Chicago: University of Chicago Press, 1990.

4. The data are in the following tables and charts: overall rates of drug use (chart 2); use of each drug by gender, age group, race, employment status, and type of crime (table 7); male and female arrestee use of each drug, by age, race, employment status, and type of crime (appendix B, table B–2); use of each drug by younger and older offenders, broken down by race, employment status, type of crime, and gender (appendix B, table B–3); use of each drug by whites and nonwhites, broken down by gender, age, employment status, and crime type (appendix B, table B–4); and use of each drug by employment status, broken down by gender, age, race, and crime type (appendix B, table B–5). Each presents the data for both countries.

5. Overreporting could occur because arrestees exaggerate their drug use or "telescope" their use over a long period into use over a shorter period, or, alternatively, urinalysis fails to detect low levels of recent marijuana use.

6. Note, however, that the difference between the two countries in past-year use of powder cocaine (22.9 percent in the United States compared with 20.3 percent in England) was not statistically significant.

7. We would like to have examined issues related to the nature of drug treatment, including length and type of treatment. With the new I–ADAM survey instrument, these issues can be explored.

8. The conversion rate was 1.653.

9. One problem noted was the lack of reliability/validity of the DUF/ADAM data on the question of income. In the U.S. sample, 14.2 percent of the arrestees reported no legal income (compared with the English rate of 3.8 percent). When illegal income was factored in, the U.S. figure for no income was 6.0 percent (compared with the English rate of 1.0 percent).

10. Normal distributions will have values for skewness and kurtosis that are close to zero. See Norusis, M., *SPSS for Windows-Base System User's Guide, Release 5.0*, Chicago: SPSS, Inc., 1992: 167. The legal income source variable (for both countries combined) had a skewness value of 21.1 and kurtosis of 669, the illegal income source variable (for both countries combined) had a skewness value of 10.3 and kurtosis of 337, and the money spent on drugs variable (for both countries combined) had a skewness value of 7.7 and kurtosis of 74.3. Because the statistical technique used to analyze these variables is based on normal distributions, the log value of each of these measures was taken to create normality. After the logarithmic transformations, the legal income source variable had a skewness value of -1.5 and kurtosis of 1.2, the illegal income source variable had a skewness value of 1.1 and kurtosis of -0.4, and the money spent on drugs variable had a skewness value of -0.5 and kurtosis of -1.3. The apparent normality of the data following the logarithmic transformations permitted conducting analysis of variance tests.

Discussion—Toward Understanding the Worldwide Drug Problem

The aim of this study was to compare drug use prevalence and patterns of drug abuse by detained arrestees interviewed and subjected to urinalysis as part of the ADAM program in the United States and the NEW ADAM program in England and Wales. The study report began by noting the widely held belief that crime rates and drug abuse are substantially higher in the United States than in England and also that while for certain types of crimes recent research has called this supposition into question, very little is known about whether for drug abuse the belief is well founded. The current research has shown that for detained arrestees, the belief is in most cases unfounded.

Differences Depend on Type of Drug

For opiates/heroin, methadone, and amphetamines, drug use prevalence among detained arrestees tends to be higher in England than the United States. There is no significant difference between the two countries in arrestees' use of benzodiazepines and marijuana (the latter at the multivariate level, as revealed by the logistic regression [table 9]). Only for cocaine/crack were prevalence rates found to be significantly higher in the United States. The percentage of detained arrestees in the United States who tested positive for cocaine was more than four-and-one-half times that of their counterparts in England, and this in turn drives the overall arrestee drug use rate of the United States to a higher level than in England—68.3 percent for consumption of any of the six selected drugs, compared with 59.1 percent.

Several notable correlations were found between rates of drug use and various characteristics of the arrestees and the type of offense with which they were charged. In a number of instances, the subgroups exhibiting the highest rate of drug use were the same in both countries. Thus, in both countries, older arrestees tended in general to be the group with the highest rates of drug abuse, marijuana was more likely to be used by younger arrestees, female arrestees were as likely as or more likely than males to use certain types of drugs, and unemployed arrestees were more likely than those who were employed to test positive for a range of drugs.

Various other aspects of drug abuse and the "lifestyles" of drug-abusing arrestees were examined. One aspect was injection drug use. The analysis revealed that in both countries, moderately high proportions of arrestees used injection as a method of administering drugs, although there were some distinct differences between the two countries depending on the type of drug. There was also little difference between the two countries in the age of initiation of drug use, although again, there were some differences depending on the type of drug. The analysis of income sources and amount spent on drugs revealed that English arrestees tended to spend more money on drugs and to report higher levels of illegal income than their counterparts in the United States. There was no difference between the two countries in the proportion of arrestees who said they had ever been treated for drug abuse, although more arrestees in the United States said they currently needed treatment.

Possible Explanations

That detained arrestees in England are significantly more likely than those in the United States to have recently used opiates, methadone, or amphetamines while those in the United States are more likely to have recently used cocaine is a significant finding of the study. Assuming that these differences are real, how can they be explained? Future research could focus on supply-based and demand-based explanations.

The preference of arrestees in the United States for cocaine is possibly a product of the proximity of that country to the major source of supply (South America). It is also possible that the preference of arrestees in England for heroin is a product of that country's geographic position on the traditional trade routes of the main source countries of heroin and other opium-based products (Burma, Pakistan, Laos, Cambodia, and Iran).

It is more difficult to identify supply-based reasons for the higher rates of methadone use in England. In both countries, the main source of methadone is treatment programs. To explain the higher rates in England would require demonstrating either that legal methadone (prescribed to the user) is more readily available than the illegal variety (purchased on the black market) or that the most desirable form of methadone (linctus or injectable ampoules) is more readily available. Although methadone treatment programs are common in both countries, there is no readily available information on their number. It may be that during the 1960s and 1970s, injectable methadone was more likely to be prescribed in England than in the United States. This form of treatment has since declined, however, and most methadone programs in England now prescribe methadone linctus. Another unknown is whether it is more difficult to smuggle the substance out of United States methadone clinics than out of English clinics.

Supply-based reasons for higher rates of amphetamine use among detained arrestees in England also are difficult to explain. Illegal use of amphetamines increased rapidly in England in the 1950s and 1960s partly because of the irresponsible prescribing practices of some physicians. Amphetamines continue to be one of the classes of drugs most frequently seized by the police and by Customs and Excise officers. They may have been more widely available in this period in England than in the United States, although since then the laws in England governing prescribing, and the drug laws in general, have become more prohibitive.

On the demand side, cultural differences between the two countries may possibly explain the preference of English arrestees for certain drugs and of arrestees in the United States for others. This, too, would constitute a topic for future research.

This attempt to explain the differences between the two countries is admittedly speculative. It is intended simply to illustrate the *types* of explanations that future research can explore. As difficult as it is to assemble comparable international datasets, the task of explaining observed differences may be even more complex.

Next Steps in Crossnational Research

In summarizing the main findings of the first attempt at crossnational comparison of drug abuse by detained arrestees, this report demonstrated that there is considerable potential in developing an international database on drug abuse that can generate research-based information relevant to both public policy and future fundamental research on the nature of drug use by criminal populations. Hopefully this study will be followed by further comparative analyses of drug abuse by these populations in the United States and England and additional analyses from some of the other countries that are collecting I–ADAM data.

Revealing differences between and among countries in drug abuse patterns suggests the

many uses to which the I–ADAM program can be applied. This comparison of two countries is only one example. Fundamentally, I–ADAM was designed to serve as a knowledge "platform" on which to build greater understanding of the nature of the drug problem worldwide. Identifying invariant factors that predict drug use in various countries may bring us closer to understanding the nature of the drug epidemic. This type of research might show, for example, that certain market conditions must exist for the drug epidemic to thrive. The findings could then be used by countries not experiencing the epidemic to plan for prevention to avert the problem altogether.

For such research to proceed requires that I–ADAM expand to new sites. With five countries (England, Australia, Chile, Scotland, and South Africa) having secured internal funding to participate in I–ADAM and some having begun data collection, the program has a base from which to build. The planning time necessary to launch a new I–ADAM site often takes more than 6 months. Aside from securing funding, the political will to embark on this type of research project has to be mustered. Given the lead time required for all this, mobilization and outreach have begun. The hope is that sites can be developed worldwide; to achieve that end, I–ADAM will be reaching out to a variety of international organizations for support.

Appendix A

Testing Alternate Criteria for Selecting Matched U.S. and English Sites

As explained in the chapter "Study Method—Matching the Samples," conducting the study required finding 5 cities from among the 23 ADAM sites in the United States that best matched the 5 English cities. Population density was selected as the criterion for finding matches, and the five U.S. sites most closely aligned with the five English sites on that criterion then were chosen. However, a set of eight variables also was considered as alternate criteria and subjected to analysis. The set consisted of five demographic factors (plus population density) related to population characteristics and three related to crime. (See table A–1.) The demographic factors were as follows:

- Population density (number of people per square mile).
- Percentage male.
- Percentage living in owner-occupied dwellings.
- Percentage white.
- Percentage ages 16–29.
- Percentage of adult males who were unemployed.

These demographic data were gathered for 1990 in the United States and for 1991 in England—in both countries the year of the most recent national census.

The types of crime considered as part of the set of eight alternate criteria were number of burglaries, robberies, and vehicle thefts per 100 residents in the population. These three types were selected because they were the main types of crime that were defined in a similar way by the two countries. These data were collected for the year 1996 (the period in which the arrestee surveys were conducted in both countries) from FBI data in the United States and from local police records in England.

Assessing the Alternate Criteria

A number of issues raised by the eight alternate measures led to the decision to rely solely on population density as the criterion for matching the sites. First, for the criteria percentage male and percentage ages 16–29, there was very little variation among the sites, and when the analysis of the alternate criteria was conducted, these two variables had no effect. In most of the sites, about 48 percent of the population was male (with a standard deviation of only 1 percent). In most of the sites, about 23 percent of the population was between 16 and 29 years of age (with a standard deviation of only 3 percent).

Definitional differences. For some of the measures, there were differences in definitions between the two countries. How crime is defined was one. The U.S. measure of crime rates is based on the number of offenses reported to the police. In at least one of the English cities (Nottingham), however, the three crime rate figures were based on a combination of police reports and the findings of local victimization surveys. This means a city such as Nottingham has artificially higher rates of crime than it would if the rates were measured exclusively by police reports (such as the FBI's Uniform Crime Reports). At the time this report was prepared, it was not possible to obtain

Table A-1. *Available Census Demographic Characteristics and Crime Rate Data—5 English Sites and 23 U.S. Sites*

City	Population Per Square Mile	Male %	Owner-Occupied %	White %	Ages 16–29 %	Male Unemployed %	Burglary Rate	Robbery Rate	Vehicle Theft Rate
England									
Cambridge	648	49.3	63.3	96.7	21.9	5.2	1.0	0.1	0.7
London	21,434	47.4	38.7	79.0	28.5	17.4	1.4	0.6	0.6
Manchester	4,884	48.2	72.9	94.5	19.1	10.1	1.5	0.3	1.7
Nottingham	10,152	52.0	33.1	74.3	36.1	18.3	5.7	1.8	5.2
Sunderland	9,110	48.5	54.9	98.2	21.3	21.5	1.9	0.1	2.5
United States									
Atlanta	2,990	47.6	43.1	31.1	25.3	9.0	2.9	1.3	2.1
Birmingham	1,790	45.4	53.4	35.7	22.2	10.0	2.4	0.8	1.4
Chicago	12,251	47.9	41.5	45.5	24.1	12.0	1.5	1.1	1.3
Cleveland	6,564	46.9	47.9	49.6	22.1	15.0	1.6	0.9	1.8
Dallas	2,941	49.2	44.1	55.4	25.9	8.0	1.6	0.6	1.6
Denver	3,051	48.7	49.2	72.2	21.5	8.0	1.5	0.3	1.0
Detroit	7,410	46.3	52.9	21.6	22.5	21.0	2.2	1.0	2.9
Ft. Lauderdale	4,765	50.2	54.4	69.6	18.9	7.0	2.9	0.7	1.8
Houston	3,020	49.6	44.6	52.8	25.1	8.0	1.4	0.5	1.3
Indianapolis	2,022	47.5	56.7	75.9	23.4	6.0	1.0	0.3	0.8
Los Angeles	7,426	50.2	39.4	52.9	26.1	8.0	1.2	0.8	1.3
Miami	10,083	48.1	33.1	65.8	19.8	10.0	2.6	1.5	2.3
New Orleans	2,751	46.4	43.7	34.9	22.5	13.0	2.1	1.1	2.0
New York	23,701	46.8	28.7	52.3	22.2	9.0	1.0	0.8	1.0
Omaha	3,336	47.7	59.2	83.9	23.1	5.0	1.1	0.2	1.1
Philadelphia	11,733	46.5	62.0	53.5	22.8	11.0	1.1	0.9	1.6
Phoenix	2,342	49.5	59.2	81.7	23.1	7.0	1.9	0.3	2.1
Portland	3,508	48.4	53.0	84.8	20.9	7.0	1.7	0.5	2.0
San Antonio	2,810	48.2	54.0	72.3	24.2	10.0	1.4	0.2	0.8
San Diego	3,427	51.0	48.3	67.2	27.9	7.0	0.9	0.3	1.1
San Jose	4,567	50.7	61.3	63.0	24.7	6.0	0.7	0.1	0.5
St. Louis	6,405	45.5	45.1	51.0	22.0	12.0	2.9	1.4	2.2
Washington, D.C.	9,880	46.6	38.9	29.6	26.0	8.0	1.8	1.2	1.8

solely police-based crime rates for the smaller, research catchment area of the English sites (the area from which the data were collected).

The definitions of an owner-occupied dwelling also were incompatible. The measure considered for use in this study was calculated by dividing the number of households occupied by owners by the total number of occupied households. The problem arose because the denominators are slightly different in the two countries. In the United States, the definition of occupied household excludes several types of living quarters, some of which would be included in England: dormitories, bunkhouses, barracks, and quarters in predominantly transient hotels and motels. In England, it appears as though some types of transient hotels and motels could count as owner occupied, while in the United States, they would not. This variation could artificially inflate the English owner-occupancy rates.

In assembling unemployment data, a major problem was that they were available at the catchment area of the five English cities for males only. That made it possible to calculate only the male unemployment rate—obviously a problem because the sample consists of women as well as men. Moreover, of particular concern was the large differences between male and female detained arrestees in drug use in the two samples—differences that might obscure the result if a male-only unemployment rate were used.

The measure of the percentage of the population that was white was defined as 1 minus nonwhite. The problem posed by this measure was that in England and the United States, being nonwhite means different things. In many U.S. cities, the nonwhite population includes sizeable proportions of Hispanics and blacks. In the five English cities, the nonwhite population is made up of many people of Indian and Pakistani backgrounds. Moreover, belonging to one of these minority groups has different implications for crime in the two countries. For one thing, in the United States, blacks are disproportionately represented in arrest statistics, but in England, members of racial minorities are not. Therefore, using percentage nonwhite as a criterion for selected matched cities could produce dubious results.

Census limitations. Aside from the definitional problems, one of the main barriers to conducting this matching exercise was the lack of readily available census data at the relevant level for the English cities. The English surveys were conducted in each case not for the entire city but only for small subsections of it. Thus, census data were needed not for all London, but only for the smaller subsection Hammersmith within London; for Manchester, the subsection Trafford; for Nottingham, the subsection Nottingham City Centre Division; for Sunderland, the subsection Northumbria; and for Cambridge, the Southern Division of the Cambridgeshire Police Force area.

The six demographic variables were the only ones available to the research team at the smaller, city subsection level. That became a limitation and prevented the use of other demographic variables related to, for example, social disorganization (expressed, among other ways, as neighborhood mobility or transiency), that might aid in locating better city matches. The use of census data, which are often poor proxies for the true underlying concepts being explored, also would be a limitation.

The value of population density as a matching measure. The best measure, and the one selected, was population density (number of people per square mile). In view of the problems the other measures raised, this was thought to be the more conservative approach. It presented no crossnational definitional problems, and data were available for both women and men. Population density also could serve as a useful proxy for many unmeasurable concepts. Thus, matching densely populated cities with other densely populated cities and less densely populated cities with other less densely populated cities could facilitate comparisons of other measures related to the availability of and demand for drugs.

Testing the Alternate Criteria

Despite the limitations of the demographic and crime rate variables, these criteria were tested to determine how much (or if) the study findings would be different using them rather than using population density alone to select matched cities. At the very least, if the findings could be shown to be robust using both sets of criteria for matching the sites, then the alternative criteria for selecting the city pairs could be ruled out. The analyses were conducted with the full knowledge that they do not completely resolve the question of the "correct" matching criteria.

The alternate city pairs. The nine alternate matching criteria were tested by conducting a cluster analysis, which consists of a multivariate-level analysis that identifies the best match from a weighted average of all covariates. The cluster analysis produces a distance measure (known as Euclidian distance) that is the sum of the squared differences between the values for the variables. The smaller the Euclidian distance, the closer the cities match one another. Using the standardized z-score option within the cluster analysis routine enabled all nine variables to play some nontrivial role in determining the overall Euclidian distance between the city matches.[1]

The city pairs selected using population density as the matching criterion were:

London—New York, New York

Sunderland—Washington, D.C.

Manchester—Fort Lauderdale, Florida

Cambridge—Birmingham, Alabama

Nottingham—Miami, Florida

Running the cluster analysis with the nine alternate variables retained two of the population-density matches (New York and London; Fort Lauderdale and Manchester) and generated three new ones. The three new matches were:

Sunderland—San Antonio, Texas

Nottingham—Dallas, Texas

Cambridge—Omaha, Nebraska

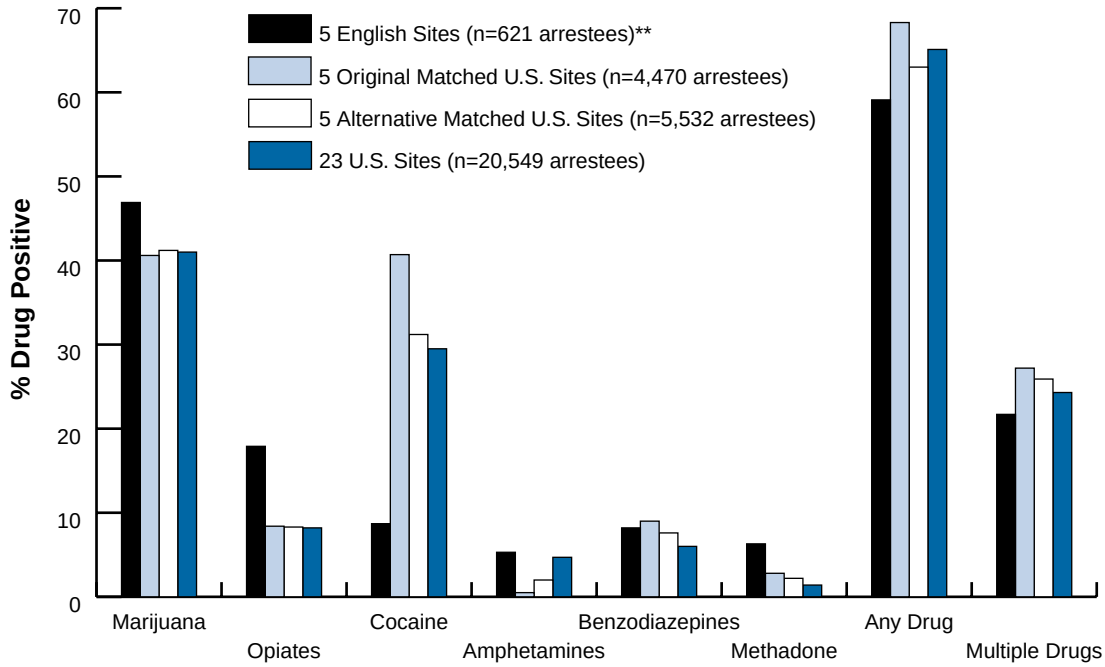
The 18 U.S. cities remaining in the ADAM dataset were then removed and all the individual-level matching techniques described in the "Study Method" chapter of this report (excluding the ineligible offense types and ineligible categories of arrestees, then weighting the alternative sample to make it further match the English data) were applied.

Finally, the five pairs of cities matched using the population-density criterion and the five pairs of cities matched using the alternative criteria were compared with the 23 U.S. ADAM sites. The same individual-level matching techniques used for this study were applied to the 23-city sample.[2]

Findings by type of drug. The results obtained from the new matches (see chart A–1) were very close to those that were based on population density and that were presented in this report (and summarized in chart 2). For marijuana, the rate among English detained arrestees, at 46.9 percent, was higher than the rates obtained using all three U.S. samples of detained arrestees. For the 5 original cities, the U.S. rate was 40.6 percent (X^2=8.7, p<.01); for the 5 alternative cities, the rate was 41.2 percent (X^2=7.2, p<.01); and for all 23 U.S. cities, the rate was 41.0 percent (X^2=8.6, p<.01). For opiate use, in all three U.S. samples, the rates were much lower than in the five-city English composite. The latter rate was 17.9 percent; the rate for the 5 original cities was 8.4 percent (X^2=48.3, p<.001), the rate for the 5 alternative cities was 8.3 percent (X^2=49.2, p<.001), and the rate for the 23 U.S. city composite was 8.2 percent (X^2=56.9, p<.001).

In cocaine use by detained arrestees, there was a fair amount of variation among the three U.S. samples. For the 5 original cities, the rate was 40.7 percent (X^2=290.8, p<.001); for the 5 alternative cities, the rate was 31.2 percent (X^2=166.7, p<.001); and for all 23 U.S. cities, the rate was 29.5 percent (X^2=158.1, p<.001).

Chart A–1. Drug Use Prevalence of Detained Arrestees: 5 Original Matched Sites, 5 Alternative Matched Sites, and 23 U.S. Sites (Weighted and Excluded Data)*—Results of Urinalysis



* These numbers were calculated *after* weighting and excluding ineligible cases.
** Of the 839 English study cases, 621 agreed to provide a urine specimen.

In all three U.S. samples, the rate of cocaine use was much higher than the 8.7-percent rate of the five-city English composite. Thus, the substantive finding that higher proportions of U.S. detained arrestees use cocaine than English detained arrestees remains intact. Only the precise magnitude of the effect is somewhat in doubt. Therefore, instead of being 4.7 times greater in the United States (40.7 percent, compared with 8.7 percent), the difference in cocaine use is perhaps slightly less (3.6 times greater, calculated by dividing 31.2 percent by 8.7 percent). In any event, the question of the precise magnitude of the difference between the countries in cocaine use will never be resolved, no matter how good the matching system.

The English detained arrestees' rate of amphetamine use, at 5.3 percent, was significantly higher than the 0.5 percent for the five original cities (X^2=71.8, p<.001) and the 2.0 percent for the five alternative cities (X^2=20.9, p<.001).

Although at 4.7 percent, the 23 U.S. cities' rate of amphetamine use was lower than that of the English city composite, the result was not statistically significant (X^2=0.4, NS [nonsignificant]). For benzodiazepines, the situation was similar, with the two U.S. five-city matches corresponding. Thus, there was no difference between England's 8.2 percent and the 9.0 percent in the United States as measured in the five original cities (X^2=0.46, NS) or the 7.6 percent in the United States as measured in the five alternative cities (X^2=3.4, NS). However, data from the 23-city sample indicate that the United States had a lower rate of benzodiazepine use than England (6.0 percent, X^2=4.9, p<.05). For multiple drug use, there was a similar finding of noncorrespondence with the 23-city composite sample. On the two U.S. five-city matches, the findings corresponded. That is, detained arrestees in the United States had significantly higher multiple drug use rates than England. The rate in England, at 21.7 percent, was significantly

lower than in the United States, according to both the original 5-city measure (27.2 percent; X^2=8.6, p<.01) and the alternative 5-city measure (25.9 percent; X^2=5.6, p<.05), but the 23-city sample, at 24.3 percent, indicated no difference between the two countries (X^2=2.1, NS). However, as will be seen from the logistic regression, on the multivariate level, the results do correspond for all three measures for amphetamines, benzodiazepines, and multiple drug use.

For methadone, all three U.S. compiled samples revealed lower rates than England's 6.3 percent. For the 5 original cities, the rate was 2.8 percent (X^2=17.4, p<.001); for the 5 alternative cities, the rate was 2.2 percent (X^2=27.8, p<.001); and for all 23 U.S. cities, the rate was 1.4 percent (X^2=56.4, p<.001). The rates for "any drug" use were significantly higher in all three U.S. samples than in the five-city English composite. The English rate was 59.1 percent; the rate for the 5 original cities was 68.3 percent (X^2=20.1, p<.001), the rate for the 5 alternative cities was 63.0 percent (X^2=4.4, p<.05), and the rate for the 23 U.S. city composite was 65.1 percent (X^2=9.4, p<.01).

The effects of "country." Another main component of the analysis conducted for this report were the logistic regression models (presented in table 9). They examined the question of what remaining effects the variable "country" has on drug use, independent of the effects of gender, age, race, employment, and crime type. To find out whether the results of the study were confirmed using the alternative 5 matched cities and the 23 U.S. city sample, separate logistic regression models were estimated for all eight drug measures.

The results of this analysis (presented in table A–2) were very close to those presented in the report. That is, every result is in the same direction as the results in the report and is either statistically significant or nonsignificant in the same way as the results from the report.[3] For example, for marijuana use, all three beta coefficients from the three comparison samples are negative and nonsignificant. That is, in all three cases, after controlling for the effects of gender, age, race, employment status, and crime type, there are no differences between detained arrestees in the United States and England in

Table A–2. ***Rates of Drug Use by Detained Arrestees: Original 5 Matched U.S. Cities, Alternative 5 Matched U.S. Cities, and All 23 U.S. ADAM Cities—Main Effects, Using Logistic Regression—Results of Urinalysis***

Type of Drug	Original 5 Matched U.S. Cities	Alternative 5 Matched U.S. Cities	All 23 U.S. Cities
Marijuana	-0.14	-0.11	-0.16
Opiates	-0.84***	-0.68***	-0.80***
Cocaine	2.17***	1.79***	1.51***
Amphetamines	-2.89***	-0.44*	-0.62*
Benzodiazepines	0.14	-0.17	-0.31
Methadone	-0.56**	-0.66**	-1.46***
Any drug	0.59***	0.47***	0.40***
Multiple drugs	0.48***	0.30**	0.25*

Note: Analysis was conducted controlling for country, gender, age, race, employment status, and type of crime.
Note: *=p<.05, **=p<.01, ***=p<.001.

marijuana prevalence rates. There was similar correspondence for all seven other drug types.

Usefulness of the Original Criterion Confirmed

Overall, even though use of the alternative matching criteria generates some different city pairs, the substantive results do not change. That is, the main bivariate and multivariate results of the urinalysis based on the five cities selected for the study are close to or identical with the results arrived at using the alternative five matched cities. Also, both matched samples correspond fairly well with the 23 U.S. city sample. Some differences emerged between the results of the bivariate analysis conducted with this 23-city sample and the results obtained from the two 5-city samples. (The differences were for amphetamines, benzodiazepines, and multiple drug use.) However, there was correspondence on the multivariate level in the logistic regression models.

Nonetheless, the analyses conducted with the alternative matches do not definitively answer the question of whether the "best" city pairs were selected. There is still the possibility that some other criteria not tested could produce different results. However, the analyses demonstrated that the results obtained from using at least one known alternative matching system are robust.

Notes

1. We are grateful to one of the reviewers for noting the importance of using a weighted Euclidian distance measure to ensure that all variables in the cluster analysis play some non-trivial role in determining the city matches.

2. Note that the estimates of drug use arrived at by using this 23-city sample are different from those calculated by using the raw data (presented in chart 1), because of the individual-level matching methods used.

3. To simplify the presentation, the results (see table A–2) are shown only for the covariate "country" (the main variable of interest), although the model was estimated using the additional covariates of gender, age, race, employment, and type of crime.

Appendix B

Table B–1. ***Drug Use Prevalence of Detained Arrestees: 5 English Sites and 23 U.S. Sites, by Site and Drug Type (Weighted and Excluded Data)—Results of Urinalysis***

	Marijuana %	Opiates %	Cocaine %	Amphet-amines %	Benzodi-azepines %	Methadone %	Any Drug %	Multiple Drugs %
United States								
New York	33.5	23.0	50.4	0.9	6.5	12.7	70.4	40.0
Washington, D.C.	39.9	8.4	27.5	0.0	1.7	0.2	59.4	16.3
Portland	40.5	12.5	18.0	25.6	2.8	2.0	70.6	23.7
San Diego	47.1	9.4	12.5	44.3	5.0	1.3	75.9	37.1
Indianapolis	55.0	2.3	26.5	1.8	7.3	0.5	68.5	22.1
Houston	30.6	10.2	40.1	1.4	13.5	4.6	60.6	30.9
Ft. Lauderdale	42.0	4.5	43.7	0.0	11.7	0.0	70.0	28.4
Detroit	37.5	7.5	25.9	0.0	2.8	1.5	58.0	15.2
New Orleans	33.5	8.5	36.0	1.0	6.9	1.2	61.2	20.2
Phoenix	31.8	10.7	28.8	17.1	2.2	0.3	62.2	24.4
Chicago	54.9	16.9	50.3	0.3	4.7	0.3	78.2	36.9
Los Angeles	30.0	8.2	39.4	26.0	5.5	2.1	74.1	25.8
Dallas	44.2	8.0	24.9	3.4	4.0	0.2	61.4	18.8
Birmingham	40.2	6.7	30.2	1.5	12.5	1.5	65.3	20.3
Omaha	49.5	1.6	12.6	11.1	2.0	0.0	58.0	15.3
Philadelphia	33.7	16.1	30.8	2.6	14.0	0.9	59.4	29.5
Miami	47.2	1.5	41.7	0.0	4.7	0.0	69.7	22.5
Cleveland	31.7	4.4	30.3	0.0	7.2	0.6	53.9	16.5
San Antonio	36.9	9.4	30.4	3.2	4.4	1.7	56.3	22.5
St. Louis	51.3	7.8	35.2	0.8	4.1	1.3	72.1	22.3
San Jose	32.9	10.0	12.3	20.2	5.4	0.8	56.3	21.0
Denver	43.2	5.8	32.9	10.7	5.7	1.0	69.4	25.9
Atlanta	36.6	4.0	51.8	0.2	5.1	0.2	69.9	24.1
England								
Cambridge	56.5	18.5	2.4	0.0	8.1	5.6	63.7	18.5
London	54.4	20.3	22.8	1.3	12.7	8.9	73.4	29.1
Manchester	61.0	31.2	24.7	5.2	16.9	20.8	76.6	39.0
Nottingham	42.4	15.9	8.3	9.1	4.5	4.5	55.3	19.7
Sunderland	35.9	12.9	1.4	7.7	5.7	1.4	46.9	15.8

Table B–2. ***Drug Use Prevalence of Male and Female Detained Arrestees, England and the United States, by Drug Type and Demographic Characteristics—Results of Urinalysis***

			Marijuana %	Opiates %	Cocaine %	Amphet-amines %	Benzodi-azepines %	Methadone %	Any Drug %	Multiple Drugs %
Males										
England	Age	15–20	57.8	8.1	3.1	3.1	1.9	1.9	62.7	10.6
		21–25	57.6	15.8	9.4	2.9	10.8	5.8	67.6	20.9
		26–30	38.2	32.6	15.7	10.1	14.6	12.4	60.7	34.8
		31–35	56.6	25.0	11.8	7.9	11.8	5.3	67.1	32.9
		36+	22.5	9.9	2.8	2.8	8.5	4.2	33.8	14.1
	Race	Nonwhite	60.0	15.4	15.4	0.0	6.2	1.5	67.7	21.5
		White	46.7	16.6	7.3	5.5	9.1	6.2	58.0	20.8
	Employment status	Unemployed	54.4	20.9	9.8	5.3	11.3	7.6	67.5	25.7
		Employed	36.0	5.3	3.3	3.3	0.7	0.0	40.0	8.0
	Crime type	Personal crime	48.7	16.7	3.8	3.8	6.4	2.6	59.0	15.4
		Property crime	55.1	20.4	10.9	3.4	10.6	7.5	66.4	26.4
		Alcohol/drug offense	46.8	8.5	4.3	10.6	6.4	0.0	57.4	17.0
		Public disorder offense	36.7	10.2	4.1	2.0	6.1	6.1	46.9	10.2
		Other offense	40.0	21.8	9.1	7.3	7.3	7.3	52.7	18.2
Females										
England	Age	15–20	41.2	29.4	5.9	0.0	0.0	0.0	52.9	23.5
		21–25	21.1	26.3	15.8	15.8	0.0	5.3	47.4	31.6
		26–30	20.0	40.0	26.7	13.3	20.0	26.7	66.7	40.0
		31–35	33.3	44.4	22.2	11.1	0.0	33.3	55.6	44.4
		36+	20.0	0.0	0.0	10.0	20.0	10.0	40.0	10.0
	Race	Nonwhite	33.3	33.3	0.0	0.0	0.0	0.0	33.3	33.3
		White	25.8	28.8	15.2	10.6	6.1	12.1	53.0	28.8

Table B–2. ***Drug Use Prevalence of Male and Female Detained Arrestees, England and the United States, by Drug Type and Demographic Characteristics—Results of Urinalysis*** (continued)

			Marijuana %	Opiates %	Cocaine %	Amphet-amines %	Benzodi-azepines %	Methadone %	Any Drug %	Multiple Drugs %
Females										
England	Employment status	Unemployed	28.6	35.7	17.9	7.1	7.1	14.3	57.1	33.9
		Employed	14.3	0.0	0.0	21.4	0.0	0.0	28.6	7.1
	Crime type	Personal crime	42.9	14.3	0.0	14.3	14.3	0.0	57.1	28.6
		Property crime	26.8	31.7	17.1	7.3	9.8	17.1	51.2	34.1
		Alcohol/drug offense	16.7	33.3	16.7	50.0	0.0	0.0	83.3	33.3
		Public disorder offense	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Other offense	16.7	33.3	33.3	0.0	0.0	16.7	50.0	33.3
Males										
United States	Age	15–20	68.7	0.4	21.8	0.0	10.1	0.0	72.3	24.9
		21–25	48.0	3.8	34.7	0.4	2.8	0.1	66.4	20.9
		26–30	40.9	13.7	48.1	0.0	8.7	3.0	68.3	37.2
		31–35	33.7	15.3	65.5	0.0	17.1	6.1	84.5	39.2
		36+	20.1	11.7	45.6	1.1	7.9	6.5	62.5	22.7
	Race	Nonwhite	46.1	5.9	40.4	0.1	2.3	2.1	69.6	23.2
		White	43.5	8.4	40.3	0.4	9.1	2.6	69.0	28.5
	Employment status	Unemployed	44.1	11.4	50.0	0.3	10.6	6.2	74.8	36.9
		Employed	43.4	6.4	36.0	0.2	6.7	0.9	66.2	23.3
	Crime type	Personal crime	41.1	3.7	26.3	0.0	6.5	1.7	56.1	18.7
		Property crime	43.7	9.2	43.7	0.4	7.1	3.1	72.9	28.1
		Alcohol/drug offense	50.9	12.1	60.1	1.0	14.1	4.1	84.0	41.4
		Public disorder offense	27.5	8.0	31.6	0.0	3.9	0.6	50.1	20.6
		Other offense	54.5	4.7	32.3	0.0	11.8	1.8	70.6	30.3

Table B–2. ***Drug Use Prevalence of Male and Female Detained Arrestees, England and the United States, by Drug Type and Demographic Characteristics—Results of Urinalysis*** (continued)

			Marijuana %	Opiates %	Cocaine %	Amphet-amines %	Benzodi-azepines %	Methadone %	Any Drug %	Multiple Drugs %
Females										
United States	Age	15–20	35.4	7.1	31.5	0.0	14.8	0.0	60.9	27.9
		21–25	19.1	2.5	35.0	0.5	14.7	2.9	54.4	14.2
		26–30	26.8	16.7	55.3	0.0	13.2	3.2	71.3	30.4
		31–35	16.5	24.5	57.3	13.6	19.6	9.3	85.5	48.7
		36+	11.6	10.9	45.3	1.4	16.4	8.5	62.2	21.3
	Race	Nonwhite	22.9	6.5	29.8	0.5	2.6	2.7	47.7	14.9
		White	21.8	10.4	44.5	1.6	16.2	4.4	65.0	25.4
	Employment status	Unemployed	21.0	11.1	53.2	0.5	14.2	4.6	71.0	26.5
		Employed	23.1	8.3	23.9	3.5	16.9	3.4	49.2	20.5
	Crime type	Personal crime	24.2	1.8	23.8	1.3	8.7	1.7	47.3	12.6
		Property crime	18.7	11.4	42.4	1.7	18.3	5.9	61.2	26.3
		Alcohol/drug offense	27.1	18.6	64.4	3.1	14.9	4.4	84.1	37.5
		Public disorder offense	31.5	5.0	39.6	0.0	18.0	0.0	69.3	24.8
		Other offense	24.7	9.2	52.7	0.0	5.9	1.0	73.7	18.2

Table B–3. ***Drug Use Prevalence of Younger and Older Detained Arrestees, England and the United States, by Drug Type and Demographic Characteristics—Results of Urinalysis***

			Marijuana %	Opiates %	Cocaine %	Amphet-amines %	Benzodi-azepines %	Methadone %	Any Drug %	Multiple Drugs %
England										
Ages 15–20	Race	Nonwhite	65.4	11.5	11.5	0.0	0.0	0.0	69.2	19.2
		White	54.2	9.7	2.1	3.5	2.1	2.1	60.4	10.4
	Employment status	Unemployed	61.4	11.4	4.5	3.8	2.3	2.3	68.2	14.4
		Employed	41.3	6.5	0.0	0.0	0.0	0.0	43.5	4.3
	Crime type	Personal crime	46.7	13.3	0.0	3.3	0.0	0.0	56.7	6.7
		Property crime	60.4	9.9	3.0	3.0	1.0	2.0	66.3	11.9
		Alcohol/drug offense	33.3	8.3	8.3	0.0	0.0	0.0	33.3	16.7
		Public disorder offense	56.3	6.3	0.0	0.0	0.0	0.0	56.3	6.3
		Other offense	75.0	25.0	12.5	0.0	12.5	12.5	75.0	25.0
	Gender	Male	57.8	8.1	3.1	3.1	1.9	1.9	62.7	10.6
		Female	41.2	29.4	5.9	0.0	0.0	0.0	52.9	23.5
England										
Age 21+	Race	Nonwhite	55.0	20.0	15.0	0.0	10.0	2.5	65.0	22.5
		White	40.5	21.8	11.0	7.4	11.6	8.8	57.0	26.7
	Employment status	Unemployed	47.6	27.8	13.4	6.4	14.7	10.9	66.5	31.9
		Employed	31.6	4.4	4.4	7.0	0.9	0.0	37.7	9.6
	Crime Type	Personal crime	50.0	19.2	5.8	5.8	11.5	3.8	61.5	23.1
		Property crime	47.3	27.9	16.4	4.5	15.4	11.9	64.2	35.3
		Alcohol/drug offense	46.3	12.2	4.9	19.5	7.3	0.0	68.3	19.5
		Public disorder offense	24.3	10.8	5.4	2.7	8.1	8.1	37.8	10.8
		Other offense	34.0	22.6	11.3	7.5	5.7	7.5	50.9	18.9
	Gender	Male	46.1	20.5	10.1	5.6	11.5	6.9	59.5	25.3
		Female	22.6	28.3	17.0	13.2	9.4	17.0	52.8	32.1

Table B–3. ***Drug Use Prevalence of Younger and Older Detained Arrestees, England and the United States, by Drug Type and Demographic Characteristics—Results of Urinalysis*** (continued)

			Marijuana %	Opiates %	Cocaine %	Amphet-amines %	Benzodi-azepines %	Methadone %	Any Drug %	Multiple Drugs %
United States										
Ages 15–20	Race	Nonwhite	64.1	2.0	17.4	0.0	1.5	0.1	67.2	16.0
		White	65.1	1.0	24.3	0.0	12.6	0.0	71.9	27.4
	Employment status	Unemployed	62.9	2.3	28.3	0.0	15.2	0.0	71.5	31.3
		Employed	66.3	0.1	18.1	0.0	6.4	0.0	70.2	19.7
	Crime type	Personal crime	50.6	0.3	11.9	0.0	5.1	0.0	51.3	16.2
		Property crime	63.5	1.3	27.9	0.0	9.6	0.0	69.8	27.7
		Alcohol/drug offense	59.0	2.5	43.3	0.0	7.2	0.2	81.6	25.3
		Public disorder offense	89.7	2.5	4.4	0.0	4.3	0.0	90.6	7.7
		Other offense	84.5	0.0	9.5	0.0	32.8	0.0	87.1	39.7
	Gender	Male	68.7	0.4	21.8	0.0	10.1	0.0	72.3	24.9
		Female	35.4	7.1	31.5	0.0	14.8	0.0	60.9	27.9
United States										
Age 21+	Race	Nonwhite	38.0	7.2	46.7	0.1	2.6	2.9	68.1	24.6
		White	34.5	10.5	44.8	0.7	9.6	3.6	67.6	28.2
	Employment status	Unemployed	29.6	14.4	58.6	0.5	10.3	7.8	74.6	35.2
		Employed	37.2	7.8	38.2	0.5	7.7	1.3	63.9	23.7
	Crime Type	Personal crime	35.4	4.4	30.2	0.3	7.3	2.2	56.1	18.5
		Property crime	33.8	11.7	47.4	0.8	8.7	4.4	71.4	27.8
		Alcohol/drug offense	45.5	15.2	64.3	1.5	15.7	5.0	84.5	44.3
		Public disorder offense	17.5	8.6	36.8	0.0	5.0	0.7	45.0	23.1
		Other offense	42.4	6.6	41.1	0.0	6.1	2.0	67.7	26.0
	Gender	Male	37.6	10.0	44.9	0.4	7.5	3.2	68.2	28.3
		Female	19.1	10.7	45.5	1.8	15.2	5.0	64.1	23.8

Table B–4. ***Drug Use Prevalence of White and Nonwhite Detained Arrestees, England and the United States, by Drug Type and Demographic Characteristics—Results of Urinalysis***

			Marijuana %	Opiates %	Cocaine %	Amphet-amines %	Benzodi-azepines %	Methadone %	Any Drug %	Multiple Drugs %
England										
Whites	Gender	Male	46.7	16.6	7.3	5.5	9.1	6.2	58.0	20.8
		Female	25.8	28.8	15.2	10.6	6.1	12.1	53.0	28.8
	Age	15–20	54.2	9.7	2.1	3.5	2.1	2.1	60.4	10.4
		21–25	51.9	18.5	11.1	5.2	11.1	6.7	65.2	24.4
		26–30	36.8	32.2	19.5	12.6	17.2	14.9	63.2	37.9
		31–35	46.4	29.0	10.1	8.7	10.1	10.1	59.4	34.8
		36+	18.1	8.3	1.4	4.2	6.9	4.2	31.9	9.7
	Employment status	Unemployed	49.7	22.9	10.8	6.3	11.6	9.5	65.8	27.1
		Employed	29.0	5.1	1.4	5.8	0.7	0.0	34.8	7.2
	Crime type	Personal crime	46.0	17.5	4.8	6.3	9.5	3.2	57.1	20.6
		Property crime	49.4	22.6	11.5	4.6	10.7	9.6	63.6	27.6
		Alcohol/drug offense	37.8	8.9	4.4	17.8	2.2	0.0	57.8	13.3
		Public disorder offense	26.7	8.9	2.2	2.2	6.7	4.4	37.8	8.9
		Other offense	35.4	22.9	12.5	6.3	8.3	10.4	50.0	20.8
England										
Nonwhites	Gender	Male	60.0	15.4	15.4	0.0	6.2	1.5	67.7	21.5
		Female	33.3	33.3	0.0	0.0	0.0	0.0	33.3	33.3
	Age	15–20	65.4	11.5	11.5	0.0	0.0	0.0	69.2	19.2
		21–25	61.5	7.7	7.7	0.0	0.0	0.0	69.2	7.7
		26–30	20.0	40.0	10.0	0.0	10.0	10.0	40.0	30.0
		31–35	81.8	18.2	27.3	0.0	18.2	0.0	90.9	27.3
		36+	50.0	16.7	16.7	0.0	16.7	0.0	50.0	33.3
	Employment status	Unemployed	55.3	21.3	14.9	0.0	8.5	2.1	66.0	25.5
		Employed	66.7	4.8	14.3	0.0	0.0	0.0	66.7	14.3

Table B–4. ***Drug Use Prevalence of White and Nonwhite Detained Arrestees, England and the United States, by Drug Type and Demographic Characteristics—Results of Urinalysis*** (continued)

			Marijuana %	Opiates %	Cocaine %	Amphet-amines %	Benzodi-azepines %	Methadone %	Any Drug %	Multiple Drugs %
England										
Nonwhites	Crime type	Personal crime	57.1	14.3	0.0	0.0	0.0	0.0	64.3	7.1
		Property crime	57.7	23.1	19.2	0.0	11.5	0.0	69.2	30.8
		Alcohol/drug offense	71.4	14.3	14.3	0.0	14.3	0.0	71.4	28.6
		Public disorder offense	75.0	12.5	12.5	0.0	0.0	12.5	75.0	12.5
		Other offense	44.4	11.1	11.1	0.0	0.0	0.0	55.6	11.1
United States										
Whites	Gender	Male	43.5	8.4	40.3	0.4	9.1	2.6	69.0	28.5
		Female	21.8	10.4	44.5	1.6	16.2	4.4	65.0	25.4
	Age	15–20	65.1	1.0	24.3	0.0	12.6	0.0	71.9	27.4
		21–25	41.8	3.2	35.3	0.5	5.1	0.5	64.2	19.2
		26–30	39.4	15.4	49.6	0.0	10.4	3.0	69.5	38.1
		31–35	32.3	17.8	65.8	1.9	20.3	7.0	87.1	43.2
		36+	18.0	11.8	42.8	1.3	10.4	7.2	60.9	22.0
	Employment status	Unemployed	36.6	11.6	52.8	0.4	13.5	6.1	74.3	36.0
		Employed	41.9	7.0	34.7	0.5	8.3	1.2	65.2	23.7
	Crime type	Personal crime	38.0	3.1	24.4	0.2	8.1	1.7	53.1	18.1
		Property crime	40.0	10.0	43.6	0.7	9.8	3.6	71.6	28.7
		Alcohol/drug offense	46.4	14.0	61.9	1.4	15.8	4.3	84.0	42.1
		Public disorder offense	23.1	8.0	31.5	0.0	5.4	0.0	48.0	20.0
		Other offense	51.1	4.8	34.9	0.0	12.7	1.7	72.5	29.4

Table B–4. ***Drug Use Prevalence of White and Nonwhite Detained Arrestees, England and the United States, by Drug Type and Demographic Characteristics—Results of Urinalysis*** (continued)

			Marijuana %	Opiates %	Cocaine %	Amphet-amines %	Benzodi-azepines %	Methadone %	Any Drug %	Multiple Drugs %
United States										
Nonwhites	Gender	Male	46.1	5.9	40.4	0.1	2.3	2.1	69.6	23.2
		Female	22.9	6.5	29.8	0.5	2.6	2.7	47.7	14.9
	Age	15–20	64.1	2.0	17.4	0.0	1.5	0.1	67.2	16.0
		21–25	55.5	6.0	31.1	0.2	2.0	1.0	66.7	24.6
		26–30	34.0	4.2	45.5	0.0	2.0	2.6	63.2	22.1
		31–35	31.1	10.2	60.0	0.3	1.7	3.8	75.1	26.2
		36+	23.4	10.2	61.2	0.1	4.1	4.9	71.6	26.4
	Employment status	Unemployed	46.0	9.3	42.4	0.1	2.9	4.2	72.0	26.4
		Employed	42.4	3.1	37.4	0.1	1.8	0.6	64.3	19.1
	Crime type	Personal crime	43.9	3.8	31.7	0.3	3.1	1.6	62.9	18.1
		Property crime	38.7	6.7	43.4	0.1	1.5	2.6	67.7	21.8
		Alcohol/drug offense	57.3	5.5	51.4	0.0	4.7	1.5	83.1	32.5
		Public disorder offense	54.1	6.2	35.8	0.0	2.3	3.9	71.1	25.8
		Other offense	43.9	7.8	36.9	0.0	1.5	1.5	63.3	22.8

Table B–5. ***Drug Use Prevalence of Unemployed and Employed Detained Arrestees, England and the United States, by Drug Type and Demographic Characteristics—Results of Urinalysis***

			Marijuana %	Opiates %	Cocaine %	Amphet-amines %	Benzodi-azepines %	Methadone %	Any Drug %	Multiple Drugs %
Unemployed										
England	Gender	Male	54.4	20.9	9.8	5.3	11.3	7.6	67.5	25.7
		Female	28.6	35.7	17.9	7.1	7.1	14.3	57.1	33.9
	Age	15–20	61.4	11.4	4.5	3.8	2.3	2.3	68.2	14.4
		21–25	54.5	21.1	11.4	4.9	12.2	7.3	69.9	25.2
		26–30	39.7	43.6	21.8	9.0	20.5	19.2	70.5	43.6
		31–35	61.7	35.0	16.7	8.3	13.3	11.7	75.0	43.3
		36+	26.9	11.5	1.9	3.8	13.5	5.8	42.3	17.3
	Race	Nonwhite	55.3	21.3	14.9	0.0	8.5	2.1	66.0	25.5
		White	49.7	22.9	10.8	6.3	11.6	9.5	65.8	27.1
	Crime type	Personal crime	55.0	21.7	5.0	6.7	10.0	3.3	68.3	23.3
		Property crime	55.2	26.3	14.2	4.7	12.9	11.2	72.0	31.9
		Alcohol/drug offense	54.3	14.3	5.7	8.6	8.6	0.0	65.7	22.9
		Public disorder offense	40.6	15.6	6.3	3.1	9.4	9.4	56.3	15.6
		Other offense	42.2	31.1	13.3	8.9	8.9	11.1	62.2	24.4
Employed										
England	Gender	Male	36.0	5.3	3.3	3.3	0.7	0.0	40.0	8.0
		Female	14.3	0.0	0.0	21.4	0.0	0.0	28.6	7.1
	Age	15–20	41.3	6.5	0.0	0.0	0.0	0.0	43.5	4.3
		21–25	50.0	2.8	5.6	2.8	0.0	0.0	50.0	11.1
		26–30	24.0	4.0	4.0	16.0	0.0	0.0	36.0	12.0
		31–35	36.0	8.0	4.0	8.0	4.0	0.0	44.0	12.0
		36+	10.7	3.6	3.6	3.6	0.0	0.0	17.9	3.6
	Race	Nonwhite	66.7	4.8	14.3	0.0	0.0	0.0	66.7	14.3
		White	29.0	5.1	1.4	5.8	0.7	0.0	34.8	7.2

Table B–5. ***Drug Use Prevalence of Unemployed and Employed Detained Arrestees, England and the United States, by Drug Type and Demographic Characteristics—Results of Urinalysis*** (continued)

			Marijuana %	Opiates %	Cocaine %	Amphet-amines %	Benzodi-azepines %	Methadone %	Any Drug %	Multiple Drugs %
Employed										
England	Crime type	Personal crime	32.0	4.0	0.0	0.0	0.0	0.0	36.0	0.0
		Property crime	38.9	8.3	4.2	1.4	1.4	0.0	40.3	12.5
		Alcohol/drug offense	26.3	5.3	5.3	26.3	0.0	0.0	52.6	10.5
		Public disorder offense	23.8	0.0	0.0	0.0	0.0	0.0	23.8	0.0
		Other offense	29.4	0.0	5.9	0.0	0.0	0.0	29.4	5.9
Unemployed										
United States	Gender	Male	44.1	11.4	50.0	0.3	10.6	6.2	74.8	36.9
		Female	21.0	11.1	53.2	0.5	14.2	4.6	71.0	26.5
	Age	15–20	62.9	2.3	28.3	0.0	15.2	0.0	71.5	31.3
		21–25	40.8	4.0	45.5	0.0	6.5	0.4	66.9	26.0
		26–30	32.8	19.3	64.9	0.0	6.0	7.2	78.3	41.1
		31–35	28.2	28.4	80.9	0.0	15.1	13.6	88.0	54.6
		36+	15.7	14.2	56.5	1.7	16.6	13.5	73.1	30.7
	Race	Nonwhite	46.0	9.3	42.4	0.1	2.9	4.2	72.0	26.4
		White	36.6	11.6	52.8	0.4	13.5	6.1	74.3	36.0
	Crime type	Personal crime	39.0	3.6	30.3	0.5	7.7	4.1	62.0	16.9
		Property crime	37.4	12.6	55.1	0.4	10.0	6.7	76.4	35.4
		Alcohol/drug offense	43.8	16.2	65.4	0.4	15.5	5.7	84.0	47.7
		Public disorder offense	37.7	9.8	35.9	0.0	4.5	4.3	66.3	22.4
		Other offense	35.7	9.3	43.1	0.0	20.1	4.1	66.5	36.9

Table B–5. ***Drug Use Prevalence of Unemployed and Employed Detained Arrestees, England and the United States, by Drug Type and Demographic Characteristics—Results of Urinalysis*** (continued)

			Marijuana %	Opiates %	Cocaine %	Amphet-amines %	Benzodi-azepines %	Methadone %	Any Drug %	Multiple Drugs %
Employed										
United States	Gender	Male	43.4	6.4	36.0	0.2	6.7	0.9	66.2	23.3
		Female	23.1	8.3	23.9	3.5	16.9	3.4	49.2	20.5
	Age	15–20	66.3	0.1	18.1	0.0	6.4	0.0	70.2	19.7
		21–25	44.3	3.0	30.7	0.1	3.6	0.6	63.4	17.1
		26–30	41.8	11.5	40.9	0.0	11.2	0.9	63.4	33.9
		31–35	33.3	10.5	56.7	2.4	18.5	3.0	83.0	33.3
		36+	20.7	9.8	37.9	0.8	4.2	2.2	55.0	16.7
	Race	Nonwhite	42.4	3.1	37.4	0.1	1.8	0.6	64.3	19.1
		White	41.9	7.0	34.7	0.5	8.3	1.2	65.2	23.7
	Crime type	Personal crime	38.3	3.4	23.9	0.1	6.5	0.6	51.3	18.4
		Property crime	41.4	7.5	35.5	0.8	8.0	1.3	67.4	22.5
		Alcohol/drug offense	49.6	9.8	58.6	0.4	12.4	3.2	83.7	36.0
		Public disorder offense	26.2	7.4	31.6	0.0	5.0	0.0	49.2	20.6
		Other offense	59.5	2.8	30.3	0.0	4.4	0.0	74.3	22.6

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