Substance Abuse Need for Treatment among Arrestees (SANTA) in Maryland

Prepared for the
Maryland Alcohol and Drug Abuse Administration

by the
Center for Substance Abuse Research (CESAR)
University of Maryland, College Park

May 1998

Center for Substance Abuse Research (CESAR)
University of Maryland
4321 Hartwick Road, Suite 501
College Park, Maryland 20740
Telephone: 301-403-8329
Fax: 301-403-8342
www.cesar.umd.edu

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Technical Report

by

Thomas A. Gray and Eric D. Wish

May 1998

This research was funded by the Maryland Alcohol and Drug Abuse Administration (ADAA) under contract 270-92-0014 from the federal Center for Substance Abuse Treatment (CSAT) within the Substance Abuse and Mental Health Services Administration (SAMHSA).

SUMMARY

Maryland is one of the many states that have been funded by the federal Center for Substance Abuse Treatment (CSAT) to conduct a family of studies designed to assess the need for alcohol and drug abuse treatment statewide. The Center for Substance Abuse Research (CESAR) is conducting these studies for Maryland's Alcohol and Drug Abuse Administration (ADAA).

The criminal justice population is one of the distinct groups targeted for assessment in the family of studies for Maryland. A study based upon the methodology of the national Drug Use Forecasting (DUF) program was designed to estimate the need for substance abuse treatment among arrestees (SANTA) by assessing their alcohol and drug abuse and dependence using criteria from the *Diagnostic and Statistical Manual of Mental Disorders, Version III Revised* (DSM-III-R).

The primary objectives of this SANTA study were to measure the extent of alcohol and drug use among the adult arrestee population in Baltimore City and to produce estimates, using standardized clinical criteria, of the need for drug and alcohol treatment services among this population. These estimates in conjunction with those from other studies and data sources were used to create statewide estimates of treatment needs in Maryland.[1]

[1] Other studies assessed the level of drug abuse and need for treatment among juvenile detainees (Gray and Wish, 1998), adult household residents (Petronis and Wish, 1996), and callers to crisis hotlines in Maryland (Wagner and Wish, 1996). A final

CESAR conducted the SANTA study with randomly selected samples of male and female adult arrestees in Baltimore City. The overall response rate to the study interview by arrestees was 91%, which resulted in a final sample size of 1,268 interviewees, 831 males and 437 females. Of arrestees completing the interview, 82% provided a urine specimen. Data were collected from January through August 1995 in district booking facilities of the Baltimore City Police Department (BCPD).

Interviews were conducted in the booking facilities on laptop computers using the computerized interview instrument, AutoSANTA, developed by staff at CESAR. The instrument incorporated (1) the core DUF interview instrument; (2) the DUF heroin addendum--a series of items that explored the availability, cost, and patterns of heroin use; (3) a module of needs assessment questions modified from the standard questionnaire developed for surveying household populations by the National Technical Center for Substance Abuse Needs Assessment at Harvard University, the coordinating center contracted by CSAT to assist the states with their needs assessment studies; and (4) a module of questions, the Maryland module, that contained expanded sociodemographic, treatment, criminal justice, and life-style questions. Urine and hair samples collected at the conclusion of the research interview were tested for the presence of drugs and HIV (urine only).

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study (Reuter et al., 1998) employed statistical modeling techniques to combine data from the preceding studies to produce estimates of the overall need for treatment in Maryland.

Urinalysis results indicate that 67% of the males and 75% of the females tested positive for at least one drug, primarily cocaine and/or opiates. Findings for opiates were the most surprising--37% of the males and 48% of the females tested positive. A subset of the urine specimens tested for HIV revealed that 10% of the males and 12% of the females were HIV positive.

Among the arrestees in Baltimore City completing the study interview, 41% of the males and 60% of the females were assessed as needing treatment (met diagnosis of dependence or abuse) for one or more of the six drugs studied--alcohol, marijuana, cocaine, opiates, hallucinogens, or stimulants (amphetamines)--during the 18 months prior to interview. Projecting from the sample to all arrestees in Baltimore City, we estimate that at least 19,013 (46%) of the 41,124 arrestees were in need of treatment for one or more of these six substances during 1994-1995. The majority of this need, 11,917 arrestees, was for opiate (heroin) dependence, followed by cocaine dependence (7,978 arrestees). Need for alcohol and marijuana treatment was found for, respectively, 5,990 and 1,233 arrestees in Baltimore City.

Findings from this study indicate an extensive level of drug use by arrestees in Baltimore City. The number of arrestees estimated as needing treatment was almost four times the 5,000 state-funded treatment slots available in Baltimore City in 1996.

ACKNOWLEDGMENTS

This project would not have been possible without the considerable effort and cooperation of many individuals and organizations. First, we would like to express our appreciation to the Alcohol and Drug Abuse Administration of the state of Maryland, which contracted with CESAR to conduct the study, and Bill Rusinko, project manager, for his support and patience.

We are indebted to the Baltimore City Police Department, which provided access, assistance, and security for our research interviewers. In particular, we thank Police Commissioners Thomas Frazier and Edward Woods, Major Leonard Hamm, Major Bernard Harper, and Lieutenant George Bewley.

Many thanks to Dennis Hoyle, field manager for the study, who brought everything together by coordinating interviewers, securing access at each collection site, and maintaining control. Dennis demonstrated that the impossible wasn’t.

We are very appreciative of the coordination and assistance provided by the Center for Substance Abuse Treatment and the National Technical Center for Substance Abuse Needs Assessment during the development of the assessment instrument that ultimately was incorporated into AutoSANTA.

The scope of this project extended far beyond the boundaries of Maryland. Development and programming of the instrument used for data collection resulted in an unforeseen detour as Maryland responded to the technical assistance and training requests of states who adopted the AutoSANTA program for their study. As a

result, the interaction with others states contributed to the design of our own study and provided direction for further developments in the program. We extend our thanks for their input and confidence in our work.

Finally, we wish to thank staff from CESAR who contributed on the front lines and behind the scenes. Publications wouldn't come together with out the editorial oversight of Jean Shirhall and the desktop production of Bernadine Douglas. Our special thanks to Mike Wagner, AutoSANTA programmer and emergency site coordinator.

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E. Wish

May 1998

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1. INTRODUCTION

The Maryland SANTA (Substance Abuse Need for Treatment among Arrestees) study is one of a family of needs assessment studies conducted by the Center for Substance Abuse Research (CESAR) at the University of Maryland, College Park, for Maryland's Alcohol and Drug Abuse Administration (ADAA).[2] Maryland was one of the initial 13 states funded by the federal Center for Substance Abuse Treatment (CSAT) in the first year of the CSAT initiative to develop a family of studies to assess treatment need. The Maryland SANTA study was designed to produce estimates of the need for alcohol and drug treatment among adult and juvenile arrestees in Maryland.[3]

The study data are similar to those obtained by the national Drug Use Forecasting (DUF) program, sponsored by the National Institute of Justice, which collects self-report data on recent drug use and urine specimens from arrestees in 23 cities on a quarterly basis. The funding solicitation from CSAT identified the DUF methodology as the model for states to use in developing studies for the criminal justice population. In conjunction with CSAT and the National Technical Center for Substance Abuse Needs Assessment at Harvard University (NTC), the coordinating center

[2] Other studies assessed the level of drug abuse and need for treatment among juvenile detainees (Gray and Wish, 1998), adult household residents (Petronis and Wish, 1996), and callers to crisis hotlines in Maryland (Wagner and Wish, 1996). A final study (Reuter et al. 1998) employed statistical modeling techniques to combine data from the preceding studies to produce estimates of the overall need for treatment in Maryland.

contracted by CSAT to assist the states with their needs assessment studies, CESAR developed a computerized interview for use in conducting SANTA studies. The instrument incorporated AutoDUF, the computerized version of the DUF interview developed by CESAR, and a module of needs assessment questions modified from the standard questionnaire developed for surveying household populations by the NTC. The resulting instrument, AutoSANTA, provides for data collection in accordance with the DUF protocol as well as needs assessment diagnoses based upon the nine criteria set out in the *Diagnostic and Statistical Manual of Mental Disorders, Version III Revised* (DSM-III-R; see American Psychiatric Association, 1987).[4]

While similar to DUF in design and method, SANTA extends the interview data collected for DUF through extensive inquiries about drug use behaviors using a modified version of the Diagnostic Interview Schedule, Version III Revised (DIS-III-R; Robins et al., 1989). The DIS-III-R is a structured interview that operationalizes the nine DSM-III-R criteria so that diagnoses of substance abuse and dependence and estimates of treatment need can be computed from the interview responses. For

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[3] The results for the juvenile SANTA study appear in a separate report (Gray and Wish, 1998).

[4] AutoSANTA was offered to all states funded by CSAT to conduct DUF or SANTA studies among the criminal justice population. As of November 1995, when CESAR conducted a survey of CSAT-funded states, 22 states had plans to use some version (adult and/or juvenile)of the AutoSANTA instrument. The instrument allowed states with existing DUF sites to “piggyback” their SANTA study on scheduled DUF data collection. Following the collection methodology established by DUF also provided a proven and consistent method for accessing and studying arrestees.

the CSAT family of studies, need for treatment for a substance was determined by estimating the number of people who are dependent on or abusive of alcohol, marijuana, cocaine, opiates, hallucinogens, and/or stimulants.

2. METHODS AND PROCEDURES

The expansion in the study instrument over that used in the standard DUF data collection (an average of 40 minutes is required for SANTA compared to 8 minutes for DUF), contributed to the decision to conduct data collection for adult arrestees at only one site, Baltimore City.[5] Baltimore is the largest city in Maryland, accounting for 15% of the total population (1990 Census). However, in 1994, 27% of all adult arrests in the state occurred in Baltimore City.[6]

SAMPLE SIZE AND PARTICIPATION RATES

The Maryland SANTA study protocol originally targeted a sample of 900 males and 300 females. The sample size prescribed by CSAT for most of the states participating in the SANTA studies was 225 adult males and 225 adult females.

The sample size was expanded for the Maryland study to include 100 adult male arrestees from each of the nine police districts in Baltimore City and an expanded female sample. Traditionally, females are often undersampled or excluded from much of the research on drug abuse among the criminal justice population. Ultimately, the sample size for females was increased once in the field due to the availability of an

[5] CESAR conducted a smaller SANTA study (Gray and Wish, 1996)in a less urban locale in Maryland (Washington County). The state was recently awarded second-round funding to conduct the SANTA study in the remaining regions of the state.

[6] This section presents an abridged version of the study methodology described in Appendix A.

experimental urinalysis test for HIV. The sample size for females was expanded to obtain a sufficient number of specimens to submit for testing for HIV.

Given the logistical requirements of the Baltimore City Police Department (BCPD) and interviewing resources available for the study, data were collected during nine waves in which interviewing of male and female respondents occurred consecutively.

To be eligible for the study, potential respondents had to have been arrested within 48 hours prior to the interview. Table 1 presents the overall response rates for the male and female sample. In both samples, over one-quarter of the sample was not available or eligible to be interviewed. These cases represent respondents who had been arrested more than 48 hours prior to the interview, were ill, asleep, or had been transferred or bonded out.

For the male sample, a total of 923 eligible arrestees were asked to participate in the study. Of these, 831 (90%) agreed to and completed the interview. At the conclusion of the interview, 697 (84%) respondents provided a urine and/or hair specimen. Eighty-three percent (689) respondents provided a urine specimen and 14% (113) provided hair.

With respect to the female sample, 470 eligible arrestees were asked to participate in the study. Of these, 437 (93%)

Table 1

Overall Response Rates for Samples

	Male Sample		Female Sample	
Target Sample	1273		651	
Not Available[a]	350	27%[b]	181	28%[b]
Eligible for Interview	923	73%	470	72%
Of Those Eligible				
Declined	92	10%	33	7%
Completed Interview	831	90%	437	93%
Of Those Interviewed				
Interview Only	134	16%	47	11%
Interview & Hair Specimen	8	1%	34	8%
Interview & Urine Specimen	584	70%	82	19%
Interview, Hair, & Urine	105	13%	274	63%

[a] Includes arrested more than 48 hours ago, ill, asleep, transferred/bonded, and not enough time to interview.
[b] Percentages rounded to whole percent; column percentages may not equal 100%.

agreed to and completed the interview. At the conclusion of the interview, 390 (90%) provided a urine and/or hair specimen. Eighty-two percent (356) of the female respondents provided a urine specimen and 71% (308) provided hair.

The participation by both samples was well within the anticipated parameters established by the DUF program, in which 90% of eligible arrestees agree to the interview and 80% of those completing the interview provide a urine specimen (National Institute of Justice, 1997). In regard to providing hair samples, the participation rate for females (71%) was much higher than for males (14%). This was due to the large number of male respondents with shaved heads or closely cropped hair styles. For the female sample, solid cell doors in several of the cell blocks created a physical barrier to the collection of hair samples.

Most analyses for this report are based upon data from 437 female and 831 male respondents. Analyses of drug test results are based upon the subset of 356 females and 689 male arrestees who also provided a urine specimen.

SAMPLE CHARACTERISTICS

Table 2 presents characteristics of the male and female interviewed samples--race, age, offense seriousness, and offense category. A detailed breakdown of offenses is provided in Appendix A, Table A.5 . Some of these characteristics were coded from booking information prior to initiating contact with the respondent. The charge information comes from the arrest report filled out by the police; age and race were either self-reported at the time of booking or coded from previous arrest records. Age was approximated using respondent’s birth year.

The male and female samples were comparable in regard to race. Eighty-one percent of the males and 80% of the females were black, and 18% of the males and 20% of the females were white. In both samples, 1% or less were Hispanic or of other ethnic background.

For males, the age distribution was relatively similar across age categories, varying from 11% to 16% across the age

Table 2

Characteristics of Study Samples

Characteristic	Males (N=831)	Females (N=437)
Race		
Black	81%	80%
White	18%	20%
Hispanic	1%	<1%
Other	<1%	<1%
Age		
21 & Under	16%	8%
22 - 24	11%	12%
25 - 28	14%	20%
29 - 32	16%	20%
33 - 36	16%	19%
37 - 40	11%	13%
41 +	16%	9%
Offense Seriousness		
Misdemeanor	61%	71%
Felony	23%	17%
Common Law	16%	12%
Offense Category		
Person[a]	21%	12%
Property[b]	17%	19%
Drug[c]	28%	33%
Other[d]	26%	36%
Traffic/DWI	9%	N/A

Note: Percentages rounded to whole percent; column percentages may not equal 100%.
[a] Person offenses include assault, homicide, kidnapping, robbery, and sexual assault.
[b] Property offenses include arson, burglary, destruction of property, forgery, fraud, theft, stolen property, and auto theft.
[c] Drug offenses include sale and possession.
[d] Other offenses include public peace, failure to appear, parole/probation violations, obstruction, weapons, family offenses, liquor violations, obscenity, and prostitution.

breakdowns. The median age of the male sample was 31. The youngest arrestees were 15 years old (juveniles charged as adults) and two arrestees were over 70 years old. For females, the distribution across age categories was characterized by a

small bell curve and the median age was 30 years. The youngest female arrestees were 16 years of age and the oldest were 61 years of age.

Most participants (61% of males and 71% of females) were charged with misdemeanor offenses. Twenty-three percent of the males and 17% of the females were charged with a felony offense. Sixteen percent of the males and 12% of the females were charged with a common law offense, which can be a felony or a misdemeanor. Most often such offenses are associated with the varying degrees of assault (battery) and burglary.

The most prevalent charge for males was a drug offense (28%). Excluding the “other” category, a drug offense was also the most prevalent charge for females (33%). Males had a higher percentage of person offenses (21% vs. 12%, $p < .01$) compared to females and both groups had equivalent percentages for property offenses, 17% and 19%, respectively. Nine percent of the male sample was charged with traffic or DWI offenses. The “other” offense category, accounting for 26% of male offenses and 36% for females, includes a number of charges, the most prominent being public peace or nuisance offenses. Prostitution is included in this category, accounting for 9% of the female charges.

Table 3 presents additional demographic characteristics for the male and female samples. Data for school, marital status,

Table 3

Demographic Characteristics of Study Samples

Characteristic	Males (N=831)	Females (N=437)
Graduate High School/GED		
Neither	42%	49%
Graduate High School	45%	43%
GED	11%	8%
Currently in High School	2%	<1%
Attended College[a]	25%	23%
Marital Status		
Single, Never Married	73%	71%
Separated, Divorced	13%	17%
Married	13%	9%
Live w/ Significant Other	<1%	2%
Widowed	<1%	1%
Means of Support, Past Month		
Work Full-Time	39%	14%
Work Part-Time/Odd Jobs	23%	9%
Unemployed	18%	9%
Welfare	9%	42%
Other Legal[b]	5%	9%
In Jail/Prison	2%	4%
Prostitution	<1%	5%
Deal Drugs	5%	5%
Other Illegal[c]	2%	3%

Note: Percentages rounded to whole percent; column percentages may not equal 100%.
[a] Does not include persons currently in high school.
[b] Category includes mainly in school, housewife, and other means of legal support.
[c] Category includes criminal activity other than prostitution and drug dealing.

and employment were coded from self-reports provided by arrestees.

More than half of the males (56%) and the females (51%) had either graduated from high school or completed a GED. Approximately, a quarter of both groups had also attended college.

The majority of both groups were never married (73% of males and 71% of females). Equal percentages (13%) of males were separated/divorced or married at the time of the study, while more females were separated/divorced (17%) than married (9%).

In response to the question, In the past month, how did you mainly support yourself?, 39% of the male sample reported they were employed full-time and 23% worked part-time or did odd jobs as their main means of support. Eighteen percent reported unemployment and 9% counted welfare as their support. Less than 8% of the males reported illegal activity (prostitution, drug dealing, or other income-generating crimes) as their main means of financial support. For females, 42% reported welfare as their main means of support, while only 23% were employed (14% worked full-time and 9% worked part-time or at odd jobs). Nine percent indicated unemployment. Thirteen percent of females engaged in illegal activity--prostitution (5%), drug dealing (5%), or other income-generating crimes (3%) as their primary means of financial support. Additional self-report data (not reported in the table) indicate that females not only supported themselves, but their dependents as well. For respondents who were either never married or separated/divorced, 51% of the females reported having children under the age of 18 who lived at home with them compared to only 13% for the males.

DATA ANALYSIS STRATEGY

The statistical analyses for this report were primarily descriptive. The major variables of study were self-reports of substance use; assessments of treatment need for alcohol,

marijuana, cocaine, opiates, hallucinogens, and stimulants; perceived need for treatment; and test results from the urine specimens collected from interviewed arrestees. Demographic variables analyzed include gender (results are presented separately for each sample), race/ethnicity, age, and offense category.

To produce estimates of the need for alcohol and drug treatment among all adult arrestees in Baltimore City, the estimates of alcohol and other drug dependence and abuse among our samples, derived from the research interviews, were applied to census data for arrestees in Baltimore City. Estimates of the prevalence of drug use and HIV were produced from urinalysis results. Since the research was based upon the DUF model, the Baltimore data were compared with findings from several DUF sites for the same time period. In addition, with much of the study findings relying on the truthfulness of the respondents' self-reports, the analyses also measured the validity of the self-reports using urinalysis findings as an objective measure, and corrections for underreporting were then made.

Census Comparisons

Prior to initiating data analyses, arrestee census data were obtained from the BCPD for the period October 1994-September 1995. Sample data were compared with census data on the variables for race/ethnicity, age, and arrest charge. Also, because the male sample was stratified by the police district in which the arrestee was booked (see Appendix A, Table A.2), district of arrest was also compared for males. Findings for the sample-census comparisons are presented in Appendix A, Table A.5. Except for two charge categories (males: drug possession and sale; females: drug possession and warrant) none of category differences was greater than +/- 3%. Even in the male sample, which was stratified across nine police districts, the sample-census comparisons for each district are within 3%. Given the samples' similarity to census data for race/ethnicity, age, offense charge, and district, the sample data were not weighted for analysis.

Census data for arrests did not include traffic and DWI arrests. Thus, in the comparisons with the sample data, cases were omitted from the sample if the charge was missing or was a traffic/DWI offense. The analyses presented in this report include the total sample, except when estimates are projected to the census of arrestees. For these analyses, the female sample contains 435 cases (2 cases with missing charge data were excluded), and the male sample contains 757 cases (4 cases with missing charge data, 2 cases with DWI charge, and 68 cases with traffic offense were excluded).

Review of the census data for Baltimore arrestees provided by the BCPD indicates that a large number of the arrestees were repeat offenders. Within the period of October 1994 through September 1995, census data indicated 50,558 distinct arrest events for 33,195 males. For females, there were 10,773 distinct arrest events for 7,929 individuals. During data collection, efforts were made to exclude repeat offenders. However, it is conceivable that arrestees could be represented in the sample more than once.

Operationalization of Variables

Most demographic variables were measured categorically (gender, race, offense seriousness, and charge). Age was measured by recording the respondent's year of birth and calculating an approximate age by subtracting the year of birth from the current year. Self-reported drug use was measured either dichotomously (Have you ever tried opiates? In the past three days did you use cocaine?) or continuously, which required the respondent to indicate how many times a substance was used in a specified time period. Drug use detected by urinalysis was measured dichotomously; the respondent was either negative or positive for each of the 10 drugs screened, plus alcohol and HIV status.

DEPENDENCE AND ABUSE; ESTIMATING NEED FOR TREATMENT

In this study, need for treatment for a substance was determined by estimating the number of people who are dependent on or abusive of that substance. The guiding principle is that if someone is dependent on or abuses a drug, that person needs treatment. For each respondent, the SANTA interview questions can be used to determine if that person is diagnosable as dependent on or abusive of any of the six substances being studied.

To estimate the number of arrestees dependent on or abusive of each substance, the interview instrument included questions adapted from the alcohol and drug dependence modules of the Diagnostic Interview Schedule, Version III Revised (DIS; Robins et al., 1989). The DIS is a structured interview used to diagnose alcohol and drug dependence/abuse, as well as mental disorders. To permit diagnoses, the DIS operationalizes the nine criteria set out in the *Diagnostic and Statistical Manual of Mental Disorders, Version III Revised* (DSM-III-R), published by the American Psychiatric Association (1987:167-168). The nine DSM-III-R criteria are as follows:

1. Use of larger amounts or for a longer period than intended;
2. Persistent desire for or inability to cut down use;
3. Considerable time spent using or obtaining the substance;

4. Frequent intoxication or withdrawal symptoms when expected to fulfill major obligations at work, school, or home;
5. Reduced social, work, recreational activities due to use;
6. Continued use despite knowing a persistent social, psychological or physical problem has developed from use;
7. Tolerance--need more to achieve same effect;
8. Characteristic withdrawal symptoms; and
9. Substance often taken to relieve withdrawal symptoms.

For each of the DSM-III-R criteria, multiple questions are asked to determine if the respondent has experienced symptoms related to any of the criteria. If a respondent answers in a way that indicates he or she has experienced symptoms related to three or more of the nine criteria, with two or more of the symptoms persisting for a period of a month or longer, the respondent is considered to have had a *diagnosable dependence* on the respective substance according to the DSM-III-R criteria at some point during his or her *lifetime*.

Following the scoring algorithm guidelines issued by the NTC, respondents diagnosed as lifetime dependent who reported the occurrence of one or more of the symptoms related to the nine criteria during the prior 18 months are considered to have had a *diagnosable dependence during the past 18 months (also referred to as current or recent dependence)*. A respondent is considered to need treatment if he or she qualified for this 18-month

diagnosis of dependence. The definition of 18-month dependence used in this study is somewhat more inclusive than the usual period-specific definition of dependence (three or more symptoms of dependence active during the period), but it is more appropriate for the purpose of assessing need for treatment (Mulvaney, 1994).

To qualify for a *diagnosis of lifetime abuse*, a subject must report ever having had symptoms related to criterion 6 above or to a separate criterion--recurrent use when physically hazardous to self or others. A respondent is considered to need treatment if he or she qualifies for an *18-month diagnosis of abuse*: lifetime abuse and one of the abuse symptoms active during the past 18 months (Mulvaney, 1994).

The AutoSANTA module provided data for computing diagnoses for alcohol, marijuana, hallucinogens, cocaine, opiates, and stimulants (amphetamines). Before being asked the assessment questions used in computing diagnoses, respondents were asked screening questions that established the threshold for use. For all drugs, excluding alcohol, respondents who reported using a substance 11 or more times within the past 18 months were screened into the assessment questions for the particular drug. For alcohol, the screening criterion established by NTC was different for males and females. For males reporting alcohol use in the past 18 months, the criterion was consumption of five or more drinks on the days they drank, while the criterion for females was two or more drinks. Once screened into the assessment questions, respondents were asked questions about

their lifetime use of the substance(s) that closely followed the nine DSM-III-R diagnostic criteria.

For each substance evaluated, respondents can receive one of three possible diagnoses: no diagnosis of substance dependence or abuse (did not meet screening criteria or assessment criteria), lifetime dependence, or lifetime abuse. Respondents diagnosed for either lifetime dependence or lifetime abuse are evaluated to determine if the diagnosis is current.

STUDY LIMITATIONS

The study was designed to estimate the need for treatment among a specific population for whom relevant information is not generally available. This specific population consists of adult arrestees in Baltimore City who were booked and held by the BCPD. Estimates of dependence/abuse and need for treatment are based upon self-reports of drug use. Evidence from validity studies of self-reports indicates that people under the supervision of the criminal justice system greatly underreport their recent use of drugs even when they are interviewed by researchers under conditions of anonymity and confidentiality (Wish et al., 1997). Given that these estimates are based upon self-reported use and there appears to be a greater incentive to underreport than exaggerate use, these estimates should be viewed as a conservative measure of the minimum amount of treatment needed within this population. Our comparisons of self-report and urine results will enable us to estimate underreporting and make some corrections.

3. FINDINGS

SELF-REPORTED DRUG USE

Data from the study include self-reported drug use by respondents from both the DUF interview (ever tried, age first tried, use past month, use past 3 days, and dependence) and the SANTA module (use in past 18 months and problems associated with use). The DUF interview is quite specific about the drugs used, 22 in all: alcohol, tobacco, marijuana, inhalants, mushrooms, black tar heroin, heroin, crack, cocaine, PCP, street methadone, methadone in treatment, crystal methamphetamine, amphetamines, downers, Valium®, Quaaludes®, LSD, Darvon®, dilaudid, designer drugs, and ice. The SANTA assessment uses six broader drug classifications: alcohol, marijuana, cocaine (including crack), opiates (including heroin, methadone, dilaudid, Darvon®), hallucinogens (including mushrooms, LSD, and PCP), and uppers (stimulants; including speed, crystal methamphetamine, and ice) for the purpose of assessment.

Self-reported drug use from the SANTA assessment section of the interview is key to computing diagnoses for abuse and dependence, while the self-reported drug use data from the DUF section of the interview provide for appropriate comparisons with urinalysis results to assess the validity or truthfulness of arrestee self-reports of drug use for the three days prior to the interview.

Table 4 presents self-report drug use data from the SANTA section of the interview for alcohol, marijuana, cocaine,

opiates, hallucinogens, and uppers (stimulants) for the male and female arrestee samples. For male and female respondents, after alcohol (88% and 82%, respectively), the most prevalent drug self-reported was marijuana (70% and 81%, respectively). Females were more likely to have used cocaine (68%) and opiates (63%) compared to males (48% for cocaine and 45% for opiates, $p < .01$). Lifetime use of hallucinogens and stimulants was lower than for the preceding drugs, but slightly higher for females (17% and 13%, respectively) than for males (11% and 6%, respectively).

With respect to use in the past 18 months, the greatest drop from lifetime use (ever tried) occurred with marijuana--47% of males and 50% of females used it in that time period. Use of hallucinogens and stimulants in the past 18 months dropped below 5% for each group. The decline in marijuana, hallucinogens, and stimulants from ever used in lifetime to use in the past 18 months may reflect experimental use of these drugs at an earlier age.

While more males indicated use of alcohol in the past 18 months than females, only a third (33%) met the screening criteria for the alcohol assessment questions compared to 43% of the females. This is likely due to the differential in screening criteria (when drinking, five drinks/day for males, two drinks/day for females). For both groups, approximately

Table 4

Self-Report of Alcohol and Drug Use; SANTA Screening

MALE RESPONDENTS (N=831)
Percent

	Alcohol	Marijuana	Cocaine	Opiates	Hallucinogens	Stimulants
Ever Used	88%	70%	48%	45%	11%	6%
Used Past 18 Months	78%	47%	40%	39%	2%	1%
Met Screening Criteria*	33%	20%	30%	32%	<1%	<1%

FEMALE RESPONDENTS (N=437)
Percent

	Alcohol	Marijuana	Cocaine	Opiates	Hallucinogens	Stimulants
Ever Used	82%	81%	68%	63%	17%	13%
Used Past 18 Months	66%	50%	60%	57%	3%	2%
Met Screening Criteria*	43%	18%	49%	48%	<1%	<1%

Note: Percentages may not be based on total sample due to missing data.
* Screening criteria for alcohol = on days in past 18 months when respondent drank, consumed 5 drinks or more per day (2 drinks or more per day for females). Screening criteria for all drugs = in past 18 months, respondent used drug 11 or more times.

one-fifth of the respondents met the screening criteria for the marijuana assessment. Almost half of the females met the screening criteria for cocaine (49%) and opiates (48%), while only a third of the males met the screening criteria for these drugs (30% for cocaine and 32% for opiates). Less than 1% of both groups screened into the assessment questions for hallucinogens or stimulants.

Comparatively, 84% of the females interviewed met the screening criteria and were assessed for at least one drug, including alcohol, compared to 66% of the males. This is consistent with prior research, which has repeatedly found more drug use and associated problems among female arrestees than male arrestees (Richardson, 1979; Wish et al., 1981, 1992; Toborg et al., 1986). Extreme drug use by females may be related to the development of a coping mechanism (e.g., for stress, abuse, depression), drug use and prostitution, and the proposition that due to the lower likelihood of females being arrested, heightened deviant behavior is needed to bring them into the criminal justice system (Graham and Wish, 1994).

Table 5 presents data on self-reported drug use from the DUF section of the interview for alcohol, marijuana, cocaine, and opiates for the male and female arrestee samples. In most analyses of criminal justice populations, including DUF, these are the most common substances reported. Unlike the SANTA screening questions, the DUF interview provides responses for

Table 5

Self-Report of Alcohol and Drug Use; DUF Interview

MALE RESPONDENTS (N=831)
Percent

	Alcohol	Marijuana	Cocaine/Crack[a]	Opiates[b]
Used Past Month	65%	31%	33%	35%
Used Past 3 Days	47%	17%	25%	28%

FEMALE RESPONDENTS (N=437)
Percent

	Alcohol	Marijuana	Cocaine/Crack[a]	Opiates[b]
Used Past Month	47%	31%	49%	48%
Used Past 3 Days	29%	13%	36%	41%

Note: Percentages may not be based on total sample due to missing data.
[a] Combined self-report of crack cocaine and cocaine powder.
[b] Combined self-report of black tar heroin and heroin.

recent use (use in past three days and use in the past month). Males were more likely to report alcohol use in the past three days (47%) compared to females (29%). Recent marijuana use for both groups, past month and past three days, was similar. Cocaine and heroin use, for both time periods of use, was higher for females than males. Approximately half of all females compared to a third of all males reported cocaine and opiate use in the past month.

As mentioned earlier, given the sensitivity of the behavior reported, the population studied, and the context of the environment in which the study took place, the validity of the self-report data is suspect, and respondents most likely had a greater incentive to underreport than exaggerate use. In addition to the utility of urinalysis as a measure of recent drug use, the results of specimens provided by respondents were used as a measure of the validity of self-reported drug use.

URINALYSIS RESULTS: DRUG USE AND HIV STATUS

As reported above, 1,045 respondents (689 males and 356 females) provided urine specimens at the conclusion of the SANTA interview. Urinalysis results are provided in Table 6. Sixty-seven percent of the males (689) and 75% of the females (356) tested positive for at least one drug (excluding alcohol). Consistent with research from DUF (National Institute of Justice, 1997--see Appendix B for comparisons with other DUF sites) and

Table 6

Urinalysis Results: Drug Positives and HIV Status

Drug Class	Male Arrestees (N=689 Specimens Tested)	Female Arrestees (N=356 Specimens Tested)
Cocaine Metabolite	51%	64%
Opiates	37%	48%
Cannabinoids	21%	10%
Benzodiazapines	2%	6%
Methadone	2%	2%
Phencyclidine	<1%	1%
Barbiturates	<1%	<1%
Amphetamines	0%	0%
Methamphetamines	<1%	0%
Methaqualone	0%	0%
Propoxyphene	0%	0%
Alcohol	11%	4%
Any Positive (excluding alcohol)	67%	75%
Multiple Positive (excluding alcohol)	38%	48%

HIV Status	Male Arrestees (N=587)	Female Arrestees (N=97)
Screened & Confirmed Positive	10%	12%

anecdotal reports from SANTA study personnel in other states (based upon data collection in urban areas), cocaine was the most prevalent drug detected. Half of the males (51%) and 64% of the females tested positive for cocaine. The findings also support previous DUF findings that a greater proportion of females test positive for cocaine than males ($p < .01$), and that males are more likely to test positive for marijuana (21%) than females (10%, $p < .01$). However, the percentage of opiate positives in our Baltimore City sample far surpasses that in such DUF cities as Manhattan, Portland, and Chicago, which have traditionally

posted the highest percentages for opiate positives, ranging from a yearly average of 22% positive for males in Chicago to 19% for females in Manhattan in 1996 (National Institute of Justice, 1997). For the Baltimore City SANTA sample, 37% of the males and 48% of the females tested positive for opiates.

Polydrug use was quite common; 38% of the males and 48% of the females tested positive for more than one drug. Cocaine and opiates was the most frequent combination of drugs (data not presented in table). In both gender groups, over 60% of the arrestees positive for cocaine were also positive for opiates. Similarly, over 80% of the opiate positives were also positive for cocaine.

Beyond cocaine, opiates, and marijuana, drug use as measured by urinalysis dropped off in both groups. Two percent of the males and 6% of the females were positive for benzodiazapines (Valium®), and 2% in both groups were positive for methadone. One percent or less in both groups were positive for phencyclidine (PCP) and barbiturates. None of the males or females tested positive for amphetamines, methaqualone (Quaaludes®), or propoxyphene (Darvon®). One male tested positive for methamphetamines.

Urinalysis may not be as reliable to measure alcohol use as it is for other drugs because the body eliminates alcohol much more rapidly, thus limiting the detection window compared to that for the other substances tested. In the study samples, 11% of the males and 4% of the females tested positive for alcohol. These figures are much lower than self-reported use by arrestees

completing the interview--47% of the males and 29% of the females reported use in the past three days. Given that alcohol is not an illegal substance (for those 21 years and older), which reduces the need to conceal use, the difference in test and self-report measures is most likely due to the limitations of detection by urinalysis.

Several weeks into the study period, PharmChem began study trials for an experimental procedure for detecting HIV in urine. Arrangements were made (informed consent and interviewer training) to incorporate HIV testing into the study's urinalysis protocol. From the urine specimens provided for HIV testing, 10% of the males and 12% of the females screened positive for HIV.[7]

Findings from the urinalysis data indicate that drug use by arrestees is not dependent upon charge or offense seriousness. Table 7 presents drug-positive results by offense category and seriousness of offense for arrestees testing positive for cocaine or opiates, the most prevalent drugs as indicated by urinalysis. In the offense category for drug charges (includes possession and sales), for both males and females, the greatest proportions of positives were for cocaine (61% and 70%, respectively) and

[7] *All* study data were confidential and anonymous. No links exist between urinalysis/HIV results and arrestees in the study sample.

Table 7

Cocaine and Opiate Drug Positives, by Offense Category and Seriousness

	Male Arrestees		Female Arrestees	
Cocaine	(N)	%	(N)	%
Person	(145)	41%	(41)	51%
Property	(121)	55%	(66)	63%
Drug	(196)	61%	(115)	70%
Other	(176)	48%	(132)	62%
Traffic/DWI	(47)	34%	N/A	N/A
Misdemeanor	(410)	54%	(248)	68%
Felony	(171)	52%	(62)	58%
Common Law	(104)	34%	(44)	48%
Opiates	(N)	%	(N)	%
Person	(145)	23%	(41)	24%
Property	(121)	41%	(66)	53%
Drug	(196)	52%	(115)	60%
Other	(176)	35%	(132)	42%
Traffic/DWI	(47)	21%	N/A	N/A
Misdemeanor	(410)	42%	(248)	52%
Felony	(171)	39%	(62)	49%
Common Law	(104)	20%	(44)	23%

opiates (52% and 60%, respectively). While it would not be surprising for persons arrested for drug offenses to test positive for drug use, in several nondrug offense categories over half of the arrestees tested positive for cocaine, including females charged with a person or "other" offense and both males and females arrested for property offenses. Over half of the females charged with a property offense also tested positive for opiates. Over a third of the male arrestees charged with a traffic or DWI offense tested positive for cocaine, and 20% tested positive for opiates. For both gender groups, subjects arrested for misdemeanors were more likely to be drug positive

than subjects arrested for felony offenses ($p > .05$, n.s.) or common law offenses ($p < .01$).

VALIDITY OF SELF-REPORTS

As indicated above, the self-report of deviant behavior, such as drug use, by arrestees is suspect given the context in which the interview is conducted and the possible consequences perceived by the respondents. The DUF interview questions regarding the type of drugs used and frequency of use provide an opportunity to compare arrestees' self-reported use with drug test results for the urine specimens collected. Given the approximate detection window of 24 to 72 hours provided by urinalysis, most comparisons of drug test results are made with self-reported use in the past three days. However, given the variability in retention times for drugs and the arrestee's possible willingness to admit to use beyond the past three days, comparisons over longer periods are also useful.

Using the information from self-report only (Table 5), opiates were the most prevalent drug used by arrestees in the past three days (41% of the females and 28% of the males), followed by cocaine/crack. However, urinalysis results (Table 6), which are comparable to the time period of self-report, indicate that cocaine was the most prevalent drug used, followed by opiates.

Table 8 presents the self-reported use of cocaine, opiates, and marijuana, the most prevalent drugs as indicated by urinalysis, for respondents who tested positive for the

respective drugs (number of cases vary for each drug). The time periods presented are lifetime (ever used), used in the past 18 months, used in the past month, and used in the past 3 days.

Table 8

Self-Reported Use for Positive Drug Test Results

	Male Arrestees		Female Arrestees	
Self-Reported Use of Drug	Percent Reporting[a]	Conditional Kappa[b]	Percent Reporting[a]	Conditional Kappa[b]
Cocaine	(N=350)		(N=227)	
Ever Used	73%	.4439	85%	.5145
Used Past 18 Months	67%	.4065	81%	.5218
Used Past Month	61%	.3934	73%	.4598
Used Past 3 Days	50%	.3149	59%	.3342
Opiates	(N=258)		(N=170)	
Ever Used	87%	.7466	92%	.7823
Used Past 18 Months	83%	.7093	91%	.7659
Used Past Month	81%	.7003	89%	.7738
Used Past 3 Days	73%	.6147	80%	.6527
Marijuana	(N=141)		(N=36)	
Ever Used	88%	.6564	100%	1.0000
Used Past 18 Months	82%	.6188	100%	1.0000
Used Past Month	75%	.6196	92%	.8769
Used Past 3 Days	53%	.4280	56%	.4791

[a] Percent reporting calculated by dividing number self-reporting use by number testing positive by urinalysis.
[b] Conditional Kappa: percentage of positives self-reporting use, controlling for agreement due to chance.

In Table 8 the *percent reporting* provides the percentage of all positives who self-reported use of the drug for the time period indicated. *Conditional kappa* is interpreted as the percentage reporting corrected for purely chance agreement between the two measures (self-report and urinalysis). For all drugs and both gender groups, the percentage of arrestees who self-reported use increased as the time period of use increased.

While cocaine was the most prevalent drug as indicated by urinalysis (Table 6), it was also the drug least likely to be self-reported by males and females who tested positive for cocaine. Only 50% of the males and 59% of the females positive for cocaine by urinalysis self-reported use in the past three days. Corrected for agreement due to chance, only a third of males and females positive for cocaine reported use in the past three days.

Findings for self-reported marijuana use in the past three days were similar to those for cocaine, 53% of the males and 56% of females positive by urinalysis self-reported marijuana use. However, use in the past three days may not be an appropriate comparison given the complex metabolism of marijuana and possible extended retention period of the drug (Coombs and West, 1991; Fay, 1991). Findings for use in the past month indicate that three-fourths of the males and over 90% of the females who tested positive self-reported use. The validity of self-reports of opiate use was much greater than that for cocaine and comparable to that for marijuana use in the past month. Seventy-three percent of the males and 80% of the females positive for opiates self-reported use in the past three days.

While the variation in self-reports for the different drugs could be attributed to biological factors and chemical properties of the drugs, variation is also possible due to the stigma that may be attached to each drug (Gray, 1996). Respondents may have been more willing to report marijuana use given its social acceptability and distinction from being a hard or addictive

drug. Similarly, heroin use and addiction is often underwritten in the context of a medical model, addiction is a disease or an illness that can be controlled using methadone. This, combined with the actual treatment experience for addicts currently using heroin, may make them more open to self-reporting. Cocaine use, however, carries a much greater stigma. Much of the antidrug sentiment and violence associated with drug use has been linked with cocaine specifically.

In addition to the differences in validity for the three drugs and different time periods, validity differed by gender. For all drugs and time periods, the validity of self-reported drug use was greater for females than males.

This analysis of the validity of self-reported drug use demonstrates the need for caution in interpreting data based solely upon self-report. Validity measures fluctuated by drug, period of time covered, and gender. Given the varying degree of underreporting by arrestees, diagnoses of treatment need that are based upon self-reports of drug use in the past 18 months should be viewed as minimum estimates of treatment need. Accordingly, in estimating treatment need among the population of arrestees in Baltimore City, we correct for underreporting of opiates and cocaine use among our sample of arrestees. Based upon estimates of treatment need for arrestees who accurately reported recent drug use, we apply correction factors to treatment estimates to adjust for underreporting.

SUBSTANCE DEPENDENCE AND ABUSE

According to the DSM-III-R, the classification of dependence and abuse differs principally in the extent of dysfunction resulting from substance use. Dependence is the more serious disorder. For the purpose of this study, a diagnosis of either dependence or abuse is indicative of a need for treatment.

Table 9 presents lifetime diagnoses of substance dependence and abuse among our sample for the six substances evaluated: alcohol, marijuana, cocaine, opiates, hallucinogens, and stimulants (amphetamines). Overall, 42% of the males and 60% of the females met the criteria for a lifetime diagnosis for either dependence or abuse for at least one drug. Overwhelmingly, most diagnoses were for dependence. Only 1% of either sample met the criteria for a diagnosis of abuse. The disparity in diagnoses between abuse and dependence may be a reflection of the chronic drug involvement that is characteristic of the criminal justice population in general.

Table 9

Lifetime[a] Diagnoses of Dependence and Abuse, by Drug

Diagnosis by Drug	Male Arrestees (N=831)	Female Arrestees (N=437)
Lifetime Dependence on		
Opiates	25.6%	42.1%
Cocaine	15.4%	32.5%
Alcohol	14.1%	14.0%
Marijuana	3.1%	2.3%
Hallucinogens	0.6%	0.5%
Stimulants	0.0%	0.2%
Multiple Drugs	13.6%	26.1%
Lifetime Abuse on		
Alcohol	0.7%	0.7%
Cocaine	0.4%	0.7%
Marijuana	0.2%	0.0%
Opiates	0.0%	0.0%
Hallucinogens	0.0%	0.0%
Stimulants	0.0%	0.0%
Lifetime Need for Treatment[b]	42.1%	60.4%

[a] Pattern of use indicative of dependence or abuse at some point after onset of use and present. Percentages carried out one decimal place for use in estimates.

[b] Diagnosis of dependence or abuse for any of the drugs evaluated.

By drug, the most prevalent diagnosis was for opiate dependence: 26% of the males and 42% of the females were classified as lifetime dependent. A third (33%) of the females and 15% of the males met the criteria for cocaine dependence. Alcohol dependence was similar in both groups--approximately 14% were lifetime dependent. After opiates, cocaine, and alcohol, diagnoses for dependence dropped off. Only 3% of the males and 2% of the females met the lifetime dependence criteria for marijuana. Lifetime dependence for hallucinogens or stimulants was less than 1% in either group. Lifetime dependence for multiple drugs was higher for females (26%) than for males (14%).

Respondents meeting the criteria for lifetime dependence or abuse were evaluated to determine if the symptoms were present in the prior 18 months. Those respondents meeting the criteria of active symptoms within the prior 18 months were classified as currently dependent or abusive and, hence, were in need of treatment services at the time of the diagnosis.

Table 10 presents the findings for those respondents classified as *currently* needing treatment. These respondents are a subset of those diagnosed with lifetime dependence or abuse of a substance (Table 9). Only a few respondents classified as lifetime dependent/abusive did not also meet the criteria for current dependence or abuse. As a matter of economy, the few respondents meeting the criteria for current *abuse* of a substance were combined with those assessed for current *dependence* into the category “current need for treatment.” Forty-one percent of the males and almost 60% of the females were diagnosed as currently needing treatment for at least one drug. By drug, 41% of females and 25% of males were in need of treatment for opiate dependence/abuse; 33% of females and 15% of males needed cocaine treatment. Approximately 14% of both groups currently needed alcohol treatment, and treatment for marijuana was needed by 3% or less of both groups.

Table 10

Current[a] Diagnoses of Dependence and Need for Treatment, by Drug

Diagnosis by Drug	Male Arrestees (N=831)	Female Arrestees (N=437)
Current Dependence		
Alcohol	13.7%	12.6%
Marijuana	2.8%	2.3%
Cocaine	14.8%	32.3%
Opiates	25.0%	41.4%
Hallucinogens	0.5%	0.2%
Stimulants	0.0%	0.2%
Current Need for Treatment[b]		
Alcohol	14.4%	13.3%
Marijuana	3.0%	2.3%
Cocaine	15.2%	33.0%
Opiates	25.0%	41.4%
Hallucinogens	0.5%	0.2%
Stimulants	0.0%	0.2%
Total Current Need for Treatment[c]	41.4%	59.7%

[a] Pattern of use indicative of dependence or abuse active in prior 18 months. Percentages carried out one decimal place due for use in estimates.

[b] Combines current dependence and current abuse.

[c] Current diagnosis of dependence or abuse for any of the drugs evaluated.

Overall, most respondents who met the criteria for a lifetime diagnosis of dependence or abuse were in need of treatment at the time of the interview. Less than 1% of either group was in remission at the time of assessment.

PRIOR TREATMENT

Following the demographic section of the DUF interview and prior to questions about specific drug use, respondents were asked whether they had ever received treatment or detoxification for alcohol or drug use (both lifetime and current). Table 11 presents data on the self-reported prior treatment experience for males and females. Findings are separated for respondents

diagnosed as needing treatment for any drug and those with no diagnosis of needing treatment.

Table 11

Self-Reported Prior Treatment Experience

	Male Arrestees (N)	%	Female Arrestees (N)	%
Self-Reported Prior Treatment				
Total Sample	(831)	29%	(437)	42%
Of Those Diagnosed as Needing Treatment	(344)	43%	(261)	60%
Of Those with no Diagnosis for Treatment	(487)	19%	(176)	16%
Received Treatment in Past Year, by Drug Diagnosis*				
Any Drug	(344)	20%	(261)	33%
Alcohol	(120)	23%	(58)	33%
Marijuana	(25)	24%	(10)	40%
Cocaine	(126)	25%	(144)	34%
Opiates	(208)	19%	(181)	34%

* Specific breakdowns for hallucinogens and stimulants excluded due to small numbers.

A prior treatment experience was self-reported by 29% of all males and 42% of all females. For those respondents assessed as needing treatment for a drug (diagnosed as currently dependent/abusive), 43% of males and 60% of females reported prior treatment experience. In both groups, less than 20% of those with no diagnosis of needing treatment, reported having ever been in treatment.

Respondents who were asked the SANTA assessment questions and subsequently diagnosed as needing treatment were asked whether they had received alcohol or drug treatment in the past 12 months. Approximately one-fifth of the males and one-third of the females diagnosed as needing treatment self-reported

receiving treatment in the past year. Findings were similar for each specific drug assessed.

The findings presented in this section indicate that a higher percentage of females compared to males have been in treatment. The analysis also demonstrates the extent of previous (and current use) of treatment services by the arrestee population--a third or more of all respondents had received substance abuse treatment in the past. However, almost 70% of females and 80% of males with a current diagnosis of dependence or abuse were not in treatment.

PERCEIVED NEED FOR TREATMENT

As a follow up to their self-reports of prior treatment experience, respondents were asked if they currently could use treatment for alcohol or drug abuse. As seen in Table 12, current need for treatment was self-reported by 38% of the males and 54% of the females. For those assessed as currently abusive or dependent on a substance, 74% of males and 81% of females reported needing treatment. For those respondents with no diagnosis for abuse or dependence, 13% of males and 14% of females reported needing treatment.

The self-reported need for treatment varied by substance for those respondents diagnosed as needing treatment. By drug,

Table 12

Self-Reported Need for Treatment

	Male Arrestees (N)	Male Arrestees %	Female Arrestees (N)	Female Arrestees %
Need Treatment Now				
Total Sample	(831)	38%	(437)	54%
Of Those Diagnosed as Needing Treatment	(344)	74%	(261)	81%
Of Those with no Diagnosis for Treatment	(487)	13%	(176)	14%
Need Treatment Now, by Drug Diagnosis*				
Alcohol	(120)	43%	(58)	48%
Marijuana	(25)	20%	(10)	30%
Cocaine	(126)	79%	(144)	68%
Opiates	(208)	81%	(181)	86%

* Specific breakdowns for hallucinogens and stimulants excluded due to small numbers.

respondents assessed as needing treatment for opiates were most likely to report treatment need. Treatment for opiates was reported as needed by 81% of the males and 86% of the females assessed with opiate dependence or abuse. A need for treatment for cocaine was indicated by 79% of males and 68% of females assessed with cocaine dependence or abuse. Less than half of the respondents assessed with an alcohol problem reported needing treatment for alcohol.

The analysis presented in this section demonstrates the self-perceived need for treatment services as reported by arrestees. Over 70% of males and 80% of females diagnosed with a substance problem reported needing treatment. The findings are comparable to those for prior treatment experience, in which similar percentages of respondents diagnosed with substance problems were not currently in treatment. By drug, the

recognition of need for treatment is more prevalent for persons abusive or dependent on cocaine or opiates than for alcohol.

BALTIMORE CITY ESTIMATES

As stated previously, the overall goal of the study was to provide estimates of treatment need for the arrestee population in Baltimore City. Utilizing the findings of current abuse and dependence among the study sample, the number of arrestees in Baltimore City in need of treatment in 1995 can be estimated.

Table 13 presents the estimates of the number of adult arrestees in Baltimore City who were in need of alcohol/drug

Table 13

Census Estimates of Current Need for Drug and Alcohol Treatment, Uncorrected, and HIV among Baltimore City Arrestees

Current Need for Treatment	Males[a]		Females[b]		Total
	% Sample	Population	% Sample	Population	
Any Drug	43.06%	14,293	59.54%	4,720	19,013
Alcohol	14.92%	4,952	13.10%	1,038	5,990
Cocaine	16.24%	5,390	32.64%	2,588	7,978
Opiates	26.02%	8,637	41.37%	3,280	11,917
Marijuana	3.17%	1,052	2.29%	181	1,233
Hallucinogens	0.52%	172	0.22%	17	189
Stimulants	0.00%	0	0.22%	17	17
HIV	10.52%	3,492	12.37%	981	4,473

Note: Estimates based upon samples excluding cases with missing charge data and traffic/DWI charges.
[a] Male sample contained 757 cases and census count of 33,195.
[b] Female sample contained 435 cases and census count of 7,929.

treatment and estimates of the number of arrestees HIV positive in 1995. Since our census data for arrests in Baltimore City did not include traffic and DWI arrests, those cases were omitted from the sample data prior to calculating the Baltimore City

estimates. Thus, the percentage of arrestees in the sample who were assessed as currently needing treatment may vary slightly from that presented in Table 10.

For the period of October 1994 through September 1995, we estimate that a total of 19,013 persons arrested in Baltimore City were in need of treatment for alcohol or drug use. This represents over 46% of the 41,124 persons arrested during that period. By gender, 14,293 males and 4,720 females were in need of treatment. Almost 12,000 arrestees needed treatment for opiate abuse/dependence. Treatment for cocaine abuse/dependence was needed by approximately 8,000 arrestees, most of whom were also opiate dependent.

Alcohol treatment was needed by approximately 6,000 arrestees and just over 1,200 needed treatment for marijuana. The need for treatment for hallucinogens and stimulants was minimal--189 and 17 arrestees, respectively, were estimated as needing treatment.

Estimates of the number of arrestees in Baltimore City who were HIV positive were also generated from the sample data. For adult arrestees in Baltimore City, we estimate that 4,473 were HIV sero-positive. In addition to transmission through sexual contact, one of the most common factors associated with the transmission of HIV is needle sharing among injecting drug users. Injecting drugs (data not presented in table) was prevalent in the sample. Almost a quarter of the males and approximately a third of the females reported ever injecting drugs, and 19% and 24%, respectively, reported injecting drugs in the past six

months. For arrestees who self-reported injecting drugs, approximately a third of both males and females indicated sharing needles.

BALTIMORE CITY ESTIMATES CORRECTED FOR UNDERREPORTING

Analyses presented earlier indicated the degree of underreporting by arrestees when comparing self-reports to urinalysis results. Calculations from data presented in Table 8 show that almost 40% of males and 30% of females who tested positive for cocaine did not report use of cocaine in the month prior to the interview. Given the degree of underreporting when compared to an objective measure such as urinalysis, the estimates for treatment need should be viewed as minimum estimates since they are subject to the same bias from underreporting.

In an attempt to correct the Baltimore City estimates for underreporting, we calculated correction factors from self-report and urinalysis comparisons (see Appendix C for correction factor logic) and incorporated them into the estimates of need for treatment for cocaine and opiate abuse/dependence. Table 14 compares the need for opiate and cocaine treatment based on the uncorrected estimates (as presented in Table 13) and those corrected for underreporting.

Calculations presented in Table 14 show that for both males and females the corrected percentages for current need for treatment were approximately seven percentage points higher for cocaine and four percentage points higher for opiates than the

uncorrected percentages. Whereas the uncorrected estimate was that 7,948 adult arrestees in Baltimore City needed cocaine treatment, the corrected estimate increases treatment need to 10,933. For opiates, treatment need was increased from the uncorrected estimate of 11,917 to the corrected estimate of 13,657.

Table 14

Estimates of Current Need for Cocaine and Opiate Treatment, Corrected for Underreporting

	Males[a]		Females[b]	
Current Need for Treatment:	Uncorrected	Corrected	Uncorrected	Corrected
Cocaine				
% Sample	16.24%	23.38%	32.64%	40.00%
Census Estimate	5,390	7,761	2,558	3,172
Opiates				
% Sample	26.02%	30.38%	41.37%	45.05%
Census Estimate	8,637	10,085	3,280	3,572

Note: Estimates based upon samples excluding cases with missing charge data and traffic/DWI charges.
[a] Male sample contained 757 cases and census count of 33,195.
[b] Female sample contained 435 cases and census count of 7,929.

4. SUMMARY AND CONCLUSIONS

The Maryland SANTA study was undertaken to produce estimates of the need for treatment among arrestees in Baltimore City and to develop a methodology for study replication in other regions of the state. The study was unique in that it represented the first time the DUF methodology was used on such a large scale with a sample of adult arrestees in Maryland. Some of our findings mirror those of cities that have participated in the DUF program. They also have substantiated long-held assumptions about the extent of drug use, particularly heroin, among arrestees in Baltimore City.

Study measures of arrestee self-reports, clinical assessment, and urinalysis attest to the considerable drug use among arrestees. By all three measures, drug use was higher for females than males in the Baltimore sample. Of illicit drugs, heroin was the most prevalent drug self-reported-- 28% of males and 41% of females self-reported use in the past three days. Self-report of cocaine use was second to that for opiates-- 25% of males and 36% of females reported use in the past three days. However, urinalysis results indicated that cocaine use was the most prevalent drug (recent use)--51% of males and 64% of females tested positive. With regard to opiate use, 37% of males and 48% of females tested positive. Marijuana was third in both the self-report (17% males and 13% females) and urinalysis results (21% males and 10% females). Overall, 67% of males and 75% of females tested positive for any drug, excluding alcohol. Thirty-

eight percent of males and 48% of females were positive for two or more drugs, primarily opiates and cocaine.

The transposition of prevalence between self-report (heroin, cocaine, marijuana) and urinalysis results (cocaine, heroin, marijuana) is also an indication of the underreporting of drug use that has always been of concern in studies of drug use or any other deviant behavior. Analysis of underreporting, which compared self-reports with urinalysis results, indicated that arrestees were more likely to underreport recent cocaine use than recent heroin or marijuana use. Approximately 50% of the males and 40% of the females positive for cocaine did not report recent cocaine use compared with 27% of males and 20% of females positive for opiates who did not report recent heroin use. Underreporting for marijuana (using a 30-day self-report window to account for extended detection of marijuana) was similar to that for opiates.

The availability of new testing technology enabled us to have a subsample of urine specimens screened for HIV status. Approximately 10% of male and 12% of female arrestees were sero-positive for HIV. Projecting these results to the over 41,000 arrestees in Baltimore City in 1995 indicates that approximately 4,500 arrestees were HIV positive. Comparatively, there were 2,869 diagnosed AIDS cases in Baltimore City as of September 1995 (Department of Health and Mental Hygiene, 1995).

The study employed DSM-III-R diagnostic criteria to determine current abuse or dependency, and thus need for treatment, for alcohol, marijuana, cocaine, opiates,

hallucinogens, and stimulants. The assessments, which are based on arrestee responses to questions that operationalize the clinical criteria, are subject to underreporting and at best provide minimum estimates of treatment need. Overall, 41% of males and 60% of females in the sample were diagnosed as being in need of treatment for at least one drug, including alcohol. As in the self-reports for recent use, opiates were the most prevalent drug for which treatment was needed. Twenty-five percent of males and 41% of females were assessed as needing treatment for opiates, followed by cocaine (15% of males and 33% of females in need of treatment). Approximately 14% of males and 13% of females were diagnosed as needing treatment for alcohol and 3% or less of both groups needed treatment for marijuana. Findings were negligible for the need for treatment for hallucinogens or stimulants (less than 1%).

Based on the percentages needing treatment in our sample, we estimate that approximately 19,000 adult arrestees in Baltimore City in 1995 were in need of treatment.[8] By drug, approximately 12,000 arrestees needed treatment for opiate abuse/dependence, 8,000 for cocaine, 6,000 for alcohol, 1,200 for marijuana, and 200 for hallucinogens and stimulants combined. With urinalysis results supporting the underreporting of drug use by arrestees, a correction factor was applied to compensate for arrestee underreporting of recent use of cocaine and opiates. This

[8] Excluding cases with DWI, traffic, and missing charges, for which census data were not available.

increased the estimates of treatment need to 13,600 for opiates and 11,000 for cocaine.

Regarding the need for treatment, approximately 40% of males and 60% of females diagnosed as being in need of treatment self-reported prior treatment experience. However, for the same groups, almost 75% of males and 81% of females reported currently needing treatment.

Compared to the findings of our earlier survey of household residents in Baltimore City, presented in Table 15, the need for treatment for illicit drug use is more prevalent in the arrestee population. While alcohol was the most prevalent diagnosis for household residents, it ranked third in the arrestee study,

Table 15

Census Estimates for Current Treatment Need among Arrestees and Household Residents in Baltimore City

Diagnosis by Drug	Arrestees	Household Residents
Alcohol	5,990	33,369
Marijuana	1,233	6,674
Cocaine	7,978	6,118
Opiates	11,917	------
Any Drug[a]	19,013	42,267

[a] Includes alcohol, marijuana, cocaine, opiates, hallucinogens, and stimulants.

behind opiates and cocaine. Despite oversampling in Baltimore City, only a few respondents in the household sample self-reported use of opiates. These findings demonstrate the value of SANTA studies in estimating treatment need. Without the inclusion of the arrestee population, the treatment need

indicated by studies of the general population vastly underestimate overall need for treatment in the state.

The findings from this study that almost half of the arrestees in Baltimore City are currently dependent on or abusing alcohol and other drugs demonstrate the extensive need for treatment among this population. Given this concentration of substance abuse and related public health problems, the criminal justice system is in a unique position to identify persons in need of treatment and direct them to services or mandate their treatment as wards of the criminal justice system.

Findings from this study are generalizable to arrestees from Baltimore City but may not be generalizable to arrestees in other parts of the state. Maryland is currently developing a second SANTA study, which will be implemented in other counties of the state to assist in developing statewide estimates of treatment need among arrestees. Results from a small pilot study conducted in Washington County (Hagerstown),a nonurban region of the state, indicate that while arrestee substance use patterns may differ by region, the overall need for treatment may be similar. Comparisons with Baltimore are presented in Appendix D.

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APPENDIX A

Methodology

The overall goal of the Maryland family of needs assessment studies is to provide statewide estimates of treatment need. The logistics for attaining this goal are more straightforward in the household study component, in which the survey instrument is administered over the telephone (Petronis and Wish, 1996). The logistics for conducting studies of the arrestee population are more complicated and often require a compromise in sample size and catchment area. Additionally, the expansion in the study instrument over that used in the standard Drug Use Forecasting (DUF) data collection (an average of 40 minutes for SANTA compared to 8 minutes for DUF), contributed to our decision to conduct data collection for adults at only one site, Baltimore City.[9] Baltimore is the largest city in Maryland, accounting for 15% of the total population (1990 Census). However, 27% of all adult arrests in the state occur in Baltimore City (1994 Uniform Crime Report for Maryland).

None of the 23 NIJ-sponsored DUF sites is located in Maryland, which makes establishing a DUF-like study in Baltimore

[9] CESAR conducted a smaller SANTA Study (Gray and Wish, 1996)in a less urban locale in Maryland (Washington County) and the state was recently awarded second-round funding to conduct the SANTA study in the five remaining regions of the state.

an obvious choice, despite the proximity of Washington, D.C., located 30 miles to the southwest, which has been a participating DUF site since 1987. The proximity of the two cities is deceiving when comparing the cultures that define each of the cities. In the absence of DUF statistics for Baltimore, findings for Washington, D.C., and Philadelphia are often used as a proxy. The findings from this study of arrestees in Baltimore confirmed what many researchers in the drug abuse field have suspected regarding the considerable differences between drug use patterns in cities that are geographically proximate.

SAMPLE SIZE

The Maryland SANTA study protocol originally targeted a sample of 900 males and 300 females. The sample size prescribed by CSAT for most of the states participating in the SANTA studies was 225 adult males and 225 adult females. This figure was a modification of the target sample for a quarterly DUF collection of 225 adult males and 100 adult females.

The sample size was expanded for the Maryland study to allow a sample size of 100 adult male arrestees from each of the nine police districts in Baltimore City and an expanded female sample. Traditionally, females are often undersampled or excluded from much of the drug abuse research in the criminal justice population. Due to the availability of an experimental urinalysis test for HIV, the sample size for females was expanded

once in the field to get a sufficient number of specimens to submit for testing for HIV.

IMPLEMENTATION

Initial meetings to secure permission from the Baltimore City Police Department (BCPD) to access district booking facilities to interview arrestees began in the spring of 1993. While an initial agreement was reached to allow access, a significant length of time elapsed while development and programming of the interview instrument was completed. By the time the instrument was field tested (Maryland provided training and technical assistance in launching the SANTA studies for several states prior to launching the Maryland SANTA study), administrative changes in the BCPD required reapproval of permission and access agreements. Concessions in the intended study protocol, however, were required as part of the BCPD agreement to allow access for the study.

The most significant change to the study protocol imposed by the BCPD was the structure of the interview environment. In most DUF sites, arrestees selected for interviewing are escorted from lockup by a facility officer to an interview area, usually a small room with a table and two chairs. During the interview, the facility staff remain at a discreet distance that affords privacy, yet control of the arrestee. For security reasons, the BCPD would not allow arrestees to be moved from the cell block to

an unsecured area for the study interview. If arrestees could not be removed from lockup, the remaining option was to allow interviewers access to the cell block and interview arrestees through the bars of the cells. While this posed a challenge to privacy and creating a suitable environment for interviewing, this modification to the standard collection protocol for DUF was necessary to undertake the study.

An additional requirement imposed upon the study by the BCPD pertained to the gender matchup of interviewer and arrestee. Male interviewers could only interview male arrestees and female interviewers could only interview female arrestees.

Based upon the logistics of the BCPD and interviewing resources available for the study, the data collection phase of the study would require nine distinct collections in which field operations would occur consecutively.

Baltimore is divided into nine police districts--Central, Southern, Southwest, Northern, Western, Eastern, Southeastern, and Northeastern (see Figure A.1). A station house is located in each district and a detention facility exists in each station house. With the exception of Northern District, all male arrestees are booked and processed at the station corresponding to the district of arrest. At the time the study was to be put in the field, the Northern District facility was being used to house juvenile detainees. Adult arrestees from the Northern District were processed and detained at the Northeastern

Figure A.1

Baltimore City Police District Map

District. Due to limited space and facilities in each of the district stations, all females arrested in Baltimore City are booked and held at the Central District.

In order to achieve the target sample, data collection was separated into male and female field operations; male and female field coordinators were assigned to serve as a liaison with the collection facility and supervise interviewers. The goal was to start the field work with the female field operation in the Central District Women's Holding Facility. Once the female data collection was under way, male data collection would commence in the Central District (located on a separate floor from female detention). Once the target sample of 100 was achieved, male data collection would then move to the next district.

Two exceptions to the above procedure arose during data collection. The Southwestern District was closed for renovations during a portion of the study period, so the arrestees from the Southwestern District were processed at Central District. Interviewers returned to Central District during this time period to interview male arrestees from the Southwestern District. The second exception to the procedures occurred in the Southern District. Due to the high level of arrestee traffic and the logistics of the cell layout (narrow corridor between cell rows presented a concern for interviewer safety), off-duty officers were recruited and hired as escorts/security. Like the standard DUF protocol, which the BCPD would not consent to, arrestees were

escorted from lockup to an interview room and returned to lockup upon completion of the interview.

Prior to setting up the field work in each district, the field manager (site coordinator) obtained approval for facility access from each of the district commanders several weeks prior to the targeted start date in each district. The district commanders usually assigned a facility liaison to coordinate access to the facility, provide a small setup area for the interviewers, and communicate any special restrictions or considerations put forth by facility managers.

Research interviewers for the study were recruited from college campuses in Baltimore and College Park. Most interviewers hired for the study were students in a criminal justice program. Several had field-research or work-related experience in the criminal justice system. Prior to commencing field work, interviewers had to complete a two-day training that included instruction for computer usage, understanding the interview, personal interviewing techniques, and specimen collection. Interviewers were also required to complete role playing exercises, which included conducting mock interviews.

INSTRUMENTATION

AutoSANTA, a computerized interview instrument developed by CESAR, consists of (1) the core DUF interview instrument; (2) the DUF heroin addendum; (3) a module of needs assessment questions

modified from the standard questionnaire developed for the household survey by the National Technical Center (NTC) for Substance Abuse Needs Assessment, the coordinating center contracted by CSAT to assist the states with their needs assessment studies; and (4) a module of questions, the Maryland module, that contained expanded sociodemographic, treatment, criminal justice, and life-style questions. The instrument, created in Paradox™, is programmed to conduct logic and consistency checks as well as question skip patterns. Based upon the DUF methodology, the program design utilized diskettes that were initialized using a program utility to record interview responses (responses stored in Paradox data tables). One diskette was utilized for each interview, which allowed for interviews to be suspended and resumed using any laptop computer containing the AutoSANTA software. Another program utility was designed to combine interview diskettes for each day of interviewing into a daily file. At the conclusion of data collection, a similar utility combined the daily diskettes into a set of diskettes with both Paradox™ and dBase™ files, which could be converted to SPSS™ for analysis.

The AutoSANTA program also contained a scoring algorithm from NTC that computed DSM-III-R diagnoses for lifetime dependence. Subsequent to the release of AutoSANTA, additional diagnosis algorithms--severity of dependence, current dependence, lifetime abuse, and current abuse--were developed and made

available as SPSS™ syntax programs that could be applied to data collected with the AutoSANTA program.

Data from field tests and other states utilizing the instrument indicate that the average length for a SANTA interview was 20-30 minutes (30-40 in Maryland with the addition of the Maryland module), compared to an 8-minute DUF interview. Like DUF, the SANTA interview is prepped with booking information (general demographics and arrest data) from agency records prior to initiating contact with the arrestee. Following informed consent procedures, for arrestees who agree to the interview, the first section of questions correspond to the DUF instrument--expanded demographics (education, marital status, employment, and income), treatment experience, and a drug grid that contains questions about use (age first tried, use in past three days, use past month, and dependence) for 22 substances: alcohol, tobacco, marijuana, mushrooms, inhalants, heroin, “black tar” heroin, cocaine, crack, PCP, LSD, “street” methadone, methadone in treatment, crystal methamphetamine, amphetamines, sedatives, Valium®, Quaaludes, Darvon®, dilaudid, designer drugs, and ice (smokable methamphetamine). Following the drug grid is a series of questions about IV drug use. The second section of the instrument consists of the DUF heroin addendum, which focuses on heroin use and route of administration (smoking, snorting, and injecting). The addendum is administered regardless of whether an individual admits to heroin use because the second half of the

addendum inquires about acquaintances who may use heroin and opinions about use and availability. The third section of the instrument is the SANTA module, which contains screening and assessment questions for alcohol, marijuana, cocaine, opiates, hallucinogens, and sedatives. To screen into the assessment questions for alcohol, male respondents must average 5 drinks per day on the days they drink, 2 drinks per day for females. The screening criteria for the other substances for all respondents was use of the drug 11 or more times in the prior 18 months. For individuals who screen into an assessment, the SANTA module contains follow-up questions on treatment. The fourth section of the instrument, designed for the Maryland study, is a module of questions on issues of previous criminal history, firearm use/availability, family history, and access to treatment. In keeping with the DUF protocol, the last question of the instrument is the informed consent for requesting a urine specimen. The Maryland SANTA study modified the consent to add a request for a hair specimen.

SITE PROCEDURES

At the direction of the BCPD, access for interviewing was generally limited in each facility to the period of 10:00 a.m. to 4:00 p.m. daily. From the facility perspective, processing activity in the cell block was minimal and arrestees were more likely to be awake and responsive. A review of arrestee flow

data from each of the districts indicated that arrestees were usually in the facility for 12 to 24 hours and 80-90% of all arrestees booked into the facility during the study period would be available for interview during this time period.

Each day of data collection, the field supervisor would arrive at the facility at 9:00 a.m., an hour prior to the scheduled arrival of interviewers. The supervisor arrived early to replenish data collection supplies, charge the batteries for the laptop computers used in interviewing (electrical outlets were not accessible on the cell block floor), and conduct the sampling to select arrestees for interviewing. It was determined that an equal probability sample would be drawn from the daily sampling frame. The sample was drawn according to the projected number of approachable respondents for the day. This was typically 20 on a normally staffed interviewing day, given that a maximum of three interviewers were allowed into the cell block at one time. The sample was drawn by using a table of random numbers; arrestees were selected in the order that the number in the sampling frame appeared in the table of numbers.

The sampling frame was generated by the supervisor by reviewing the cellblock roster--a listing of who occupied each cell and their current disposition in the booking process. Originally, the master booking log was used to create the sampling frame but it was determined that it was updated in periodic batches. This resulted in preparing interviews for

arrestees who already had been released or transferred yet the master booking log still showed them in the system. By using the cell roster and quickly walking the cell block floor to verify that the arrestees were physically in the cells, preparation of the sampling frame became more efficient.

Once a listing of eligible names was completed from the cellblock roster, background data (arrest time/date, year of birth, race, precinct of arrest, and charge data) were collected from agency records (prisoner activity report, arrestee data form, and fingerprint cards), which varied from district to district. Only arrestees booked within the previous 48 hours were eligible to remain in the sampling frame. The eligibility criteria corresponded with the detection window of drugs for urinalysis.

Once the preliminary data were collected for eligible arrestees, the supervisor initiated an interview diskette for each member of the sample. This process included assigning a study ID number to the interview and entering the booking information collected from facility records. A post-it note with the arrestee’s name and cell number was attached to the diskette envelope corresponding to the booking information on the diskette. This ensured correct matches between interview diskette and arrestee.

When the research interviewers arrived for data collection at 10:00 a.m., the supervisor would coordinate assignment of the

interview diskettes to the interviewers. Each interviewer possessed all equipment and supplies required for data collection: laptop computer, urine collection supplies, hair collection supplies, and candy bars as incentives. Once assigned an interview diskette by the supervisor, the interviewer would take a chair into the cellblock and locate the appropriate cell indicated on the post-it note on the diskette. Following an informal introduction, the research interviewer would discuss informed consent with the arrestee to secure study participation. A prepared script was used to provide a uniform introduction and address the protections of anonymity, confidentiality, and voluntary participation. Once the study had been explained, and questions addressed, the research interviewer either began the interview or terminated it if the respondent declined. For respondents who declined, the supervisor or another research interviewer would approach the arrestee in an attempt to convert the arrestee to participating.

For arrestees completing the interview, hair and urine specimens were requested and taken from those who agreed. Each cell contained a toilet. For arrestees agreeing to provide a specimen, the interviewer passed the collection supplies through the cell bars for the arrestee to provide a specimen. In order to collect hair samples, the arrestee needed to turn with his/her back facing the interviewer and lean up against the bars. The interviewer would cut a grouping of 60-100 hairs from the scalp

of the crown region. Specimens collected were marked with the same study identifier assigned to the interview. Arrestees completing the interview and providing a urine specimen received a candy bar (standard DUF incentive). Those providing a hair sample received an additional candy bar.

Prior to the conclusion of interviewing each day, log sheets that tracked interviews and specimens collected were physically matched to ensure all data components indicated were available. Interview diskettes were forwarded to CESAR for review and merging. Urine specimens collected for the study were packaged and sent at regular two-week intervals to PharmChem Laboratories, Inc., who at the time of the study was the national contractor to test the urine specimens collected in the DUF program.

Urine specimens were tested according to the DUF protocol utilizing enzyme multiplied immunoassay testing (EMIT). Immunoassays, which use antibodies to detect the presence or absence of illicit drugs in the urine, are the most common method for initial screening in the criminal justice system. For most drugs, the detection period in urine is 24 to 72 hours following ingestion; however the duration of detectability varies with "drug metabolism, half-life, subject's physical condition, fluid balance and state of hydration, route and frequency of ingestion" (American Medical Association, 1987:3112). Also, since marijuana and PCP are stored in fat tissues, they are excreted more slowly, and as a result may be detectable in urine for extended periods

depending on level of use.

The drug testing conducted by PharmChem tested for the following drugs by EMIT: amphetamines, methamphetamines, barbiturates, benzodiazapines (Valium®), cannabinoids (marijuana), cocaine metabolites, methadone, methaqualone (Quaaludes®), opiates (heroin), phencyclidine (PCP), and propoxyphene (Darvon®). For amphetamine specimens that screened positive by EMIT, a confirmation test by gas chromatography was conducted to distinguish between amphetamine compounds available in over-the-counter medications and illicit amphetamine and methamphetamine compounds. Alcohol testing was also conducted.

The site procedures described above were used to conduct data collection in eight district facilities of the BCPD between January 1995 and August 1995.

PARTICIPATION RATES

Table A.1 presents the overall response rates for the male and female samples. The target sample corresponds to the total number of interview diskettes that were initialized with arrestee booking information. In both samples, over one-quarter of the sample was not available or eligible to be interviewed. These cases represent respondents who had been arrested more than 48 hours prior to the interview, were ill or asleep, or had been transferred or bonded out. Cases for which the supervisor initialized interview diskettes that did not get assigned during

Table A.1

Overall Response Rates for Samples

	Male Sample		Female Sample	
Target Sample	1273		651	
Not Available[a]	350	27%[b]	181	28%[b]
Eligible for Interview	923	73%	470	72%
Of Those Eligible				
Declined	92	10%	33	7%
Completed Interview	831	90%	437	93%
Of Those Interviewed				
Interview Only	134	16%	47	11%
Interview & Hair Specimen	8	1%	34	8%
Interview & Urine Specimen	584	70%	82	19%
Interview, Hair, & Urine	105	13%	274	63%

[a] Includes arrested more than 48 hours ago, ill, asleep, transferred/bonded, and not enough time to interview.
[b] Percentages rounded to whole percent; column percentages may not equal 100%.

an interview shift also are represented in this category.

For the male sample, 923 eligible arrestees were asked to participate in the study. Of these 923 arrestees, 831 (90%) agreed to and completed the interview. At the conclusion of the interview, 697 (84%) respondents provided a urine and/or hair specimen. Eighty-three percent (689) respondents provided a urine specimen and 14% (113) provided hair.

With respect to the female sample, 470 eligible arrestees were asked to participate in the study. Of these 470 arrestees, 437 (93%) agreed to and completed the interview. At the conclusion of the interview, 390 (89%) respondents provided a urine and/or hair specimen. Eighty-two percent (356) respondents provided a urine specimen and 71% (308) provided hair.

The participation by both samples was well within the anticipated parameters established by the DUF program, in which 90% of eligible arrestees agree to the interview and 80% of those completing the interview provide a urine specimen (National Institute of Justice, 1997). The Maryland study broke new ground with the incorporation of hair specimens as part of the collection protocol. While other studies have collected hair samples from respondents, Maryland was unique in having to collect the specimens with cell bars as a barrier separating the collector and subject. The participation by females (71%) was much higher than for males (14%). The lower provision rate for male hair specimens was due to the large number of respondents in the sample with shaved heads or hair styles that were closely cropped. In some cases, solid cell doors in several of the female cell blocks created a physical barrier to the collection of hair samples.

Table A.2 presents a summary of the sample sizes for completed interviews and the collection period in each of the districts. As indicated earlier, arrestees from the Northern District were booked at the Northeastern District, thus the collection period for the two districts was the same. Most analyses for this report are based upon data from 437 female and 831 male respondents. Analyses for drug test results are based upon the subset of 356 females and 689 male arrestees who also provided a urine specimen.

Table A.2

Sample Size for Collection Sites

District	Collection Dates	Target	Interview	Urine
Central-Females	01/23 - 04/09	500	437	356
Central-Males	02/14 - 03/05	100	118	102
Eastern	03/06 - 04/09	100	138	112
Southeastern	04/11 - 04/29	100	100	82
Western	05/01 - 05/15	100	92	74
Northwestern	05/16 - 06/04	100	93	75
Northern[a]	06/11 - 07/10	100	54	39
Northeastern	06/11 - 07/10	100	91	82
Southwestern	07/11 - 07/29	100	52	43
Southern	08/08 - 08/24	100	93	80
Total Males	02/14 - 08/24	900	831	689

[a] Data collection occurred at Northeastern District.

SAMPLE CHARACTERISTICS

Table A.3 presents characteristics of the male and female interviewed samples--for race, age, offense seriousness, and offense category. (Table A.5 includes a detailed breakdown of offenses.) These characteristics were coded from the booking information prior to initiating contact with the respondent. The charge information comes from the arrest report filled out by the police, while age and race were either self-reported at time of booking or coded from previous arrest records, if applicable. Age was approximated using respondent's birth year.

The male and female samples were comparable for race. Eighty-one percent of the males and 80% of the females were black, and 18% of the males and 20% of the females were white. In both samples, 1% or less were Hispanic or of any other ethnic

Table A.3

Characteristics of Study Samples

Characteristic	Males (N=831)	Females (N=437)
Race		
Black	81%	80%
White	18%	20%
Hispanic	1%	<1%
Other	<1%	<1%
Age		
21 & Under	16%	8%
22 - 24	11%	12%
25 - 28	14%	20%
29 - 32	16%	20%
33 - 36	16%	19%
37 - 40	11%	13%
41 +	16%	9%
Offense Seriousness		
Misdemeanor	61%	71%
Felony	23%	17%
Common Law	16%	12%
Offense Category		
Person[a]	21%	12%
Property[b]	17%	19%
Drug[c]	28%	33%
Other[d]	26%	36%
Traffic/DWI	9%	N/A

Note: Percentages rounded to whole percent; column percentages may not equal 100%.
[a] Person offenses include assault, homicide, kidnapping, robbery, and sexual assault.
[b] Property offenses include arson, burglary, destruction of property, forgery, fraud, theft, stolen property, and auto theft.
[c] Drug offenses include sale and possession.
[d] Other offenses include public peace, failure to appear, parole/probation violations, obstruction, weapons, family offenses, liquor violations, obscenity, and prostitution.

background.

For males, age distribution was relatively similar across age categories, varying from 11% to 16% across the age breakdowns

of four-year intervals. The median age of the male sample was 31 years. The upper and lower categories each accounted for 16% of the sample; the arrestees were as young as 15 years old (juveniles charged as adults) and two arrestees were over 70 years old. For females, distribution across age categories was characterized by a small bell curve and the median age was 30 years. The three middle categories each accounted for approximately 20% of the sample and were bordered by categories with 12% (22-24 years) and 13% (37-40 years old). The upper and lower age categories each accounted for 8% and 9%, respectively, of the sample; female arrestees were as young as 16 years of age and as old as 61 years of age. Across the two samples males were younger (16% vs. 8%, p <. 01, were 21 years old or younger) and older (16% vs. 9% were 41 years old or older) than females. More females were in the middle categories (25-28, 29-32, and 33-36) than males.

Most participants (61% of males and 71% of females) were charged with misdemeanor offenses. Less than a quarter (23%) of the males and 17% of the females were specifically charged with a felony offense. Sixteen percent of the males and 12% of the females were charged with a common law offense. Common law offenses, which can be a felony or a misdemeanor, existed prior to codification of the modern penal code. They originated and developed in England and are based on court decisions, the doctrines implicit in those decisions, and on custom. Most often

they are associated with the varying degrees of assault (battery) and burglaries.

The most prevalent charge for males was a drug offense (28%). Excluding the “other” category (combinations of offenses not necessarily related), drug offenses were the most prevalent charge for females as well (33% of the charges). Males had a higher percentage of person offenses (21% vs. 12%, $p < .01$) compared to females and both groups had equivalent percentages for property offenses, 17% and 19% respectively. “Other” offenses, which accounted for 26% of male offenses and 36% of female offenses, contain a combination of charges, the most prominent being public peace or nuisance offenses. Prostitution is included in this category and accounted for 9% of the female charges.

Nine percent of the male sample was charged with traffic or DWI offenses. These charges are separated into a distinct category for the purpose of calculating treatment need estimates for the arrestee population.

Table A.4 presents additional demographic characteristics for the male and female samples. Data for school, marital status, and current means of support (employment) were coded from self-reports provided by arrestees.

More than half of the males (56%) and the females (51%) had either graduated from high school or completed a GED; slightly more of the females completed neither (49% compared to 42%,

Table A.4

Demographic Characteristics of Study Samples

Characteristic	Males (N=831)	Females (N=437)
Graduate High School/GED		
Neither	42%	49%
Graduate High School	45%	43%
GED	11%	8%
Currently in High School	2%	<1%
Attended College[a]	25%	23%
Marital Status		
Single, Never Married	73%	71%
Separated, Divorced	13%	17%
Married	13%	9%
Live w/ Significant Other	<1%	2%
Widowed	<1%	1%
Means of Support, Past Month		
Work Full-Time	39%	14%
Work Part-Time/Odd Jobs	23%	9%
Unemployed	18%	9%
Welfare	9%	42%
Other Legal[b]	5%	9%
In Jail/Prison	2%	4%
Prostitution	<1%	5%
Deal Drugs	5%	5%
Other Illegal[c]	2%	3%

Note: Percentages rounded to whole percent; column percentages may not equal 100%.
[a] Does not include persons currently in high school.
[b] Category includes mainly in school, housewife, and other means of legal support.
[c] Category includes criminal activity other than prostitution and drug dealing.

%, $p < .05$). Approximately, a quarter of both groups had also attended college.

The majority of both groups had never married (73% of males and 71% of females). Equal percentages (13%) of males were separated/divorced or married at the time of the study, while more females were separated/divorced (17%) than married (9%).

In response to the question, “In the past month, how did you mainly support yourself?”, 39% of the male sample reported they were employed full-time and 23% worked part-time or at odd jobs as their main means of support. Eighteen percent reported unemployment and 9% counted welfare as their support. Less than 8% of the males reported illegal activity (prostitution, drug dealing, or other income-generating crimes) as their main means of financial support. For females, 42% reported welfare as their main means of support, while only 23% were employed (14% worked full-time and 9% worked part-time or at odd jobs). Nine percent indicated unemployment. Thirteen percent of females engaged in illegal activity--prostitution (5%), drug dealing (5%), or other income-generating crimes (3%) as their primary means of financial support.

While males and females had similar education and marital status, considerable differences exist between the two groups regarding employment. Over 60% of the male sample reported working full-time, part-time, or at odd jobs as the primary means of support compared to only 23% of the female sample. Unemployment was double in the male sample--18% compared with 9% in the female sample. With similar proportions of both samples being single (70%), and less than 2% of the female sample reporting they were housewives, most respondents in the female sample reported welfare as the primary means of support--42% compared with 9% in the male sample. Additional self-report data

(not reported in the table) indicate that females not only supported themselves, but their dependents as well. For respondents whose marital status was either single, never married, or separated/divorced, 51% of the females reported having children under the age of 18 who lived at home with them compared to only 13% for the males.

DATA ANALYSIS STRATEGY

The statistical analyses for this report were primarily descriptive. The major variables of study were self-reports of substance use; assessments of treatment need for alcohol, marijuana, cocaine, opiates, hallucinogens, and stimulants; perceived need for treatment; and test results from the urine specimens collected from interviewed arrestees. Demographic variables analyzed include gender (results are presented separately for each sample), race/ethnicity, age, and offense category.

In addressing the overall goal of the study--to produce estimates of the need for alcohol and drug treatment among adult arrestees in Baltimore City--the estimates for our sample of dependence and abuse of alcohol and other drugs, derived from the research interviews, were applied to the census of all arrestees in Baltimore City. Estimates of the prevalence of drug use and HIV were produced from urinalysis results. Since the research was based upon the DUF model, comparisons between the Baltimore

sample and several DUF sites were also made for the same time period. With much of the study findings relying on the truthfulness of respondent self-report, the analyses also measured the validity of respondent self-reports using urinalysis findings as an objective measure, and corrections for underreporting were applied.

Census Comparisons

Prior to initiating data analyses, arrestee census data were obtained from BCPD for the period encompassing our data collection (October 1994-September 1995). Sample data were compared with census data on the variables for race/ethnicity, age, and arrest charge. Also, since the male sample was stratified by district, district of arrest was also compared for males. Findings for the sample-census comparisons are presented in Table A.5. Except for two charge categories (males: drug possession and sale; females: drug possession and warrant) no category differences were greater than +/- 3%. Even in the male sample, which was stratified across nine districts, the sample-census comparisons for district are within 3%. Given the similarity between the samples and census data on race/ethnicity, age, offense charge, and district, the sample data were not weighted for analysis.

Census data for arrests did not include traffic and DWI arrests. Thus, comparisons with the sample data omitted cases

Table A.5

Comparison of Arrestee Sample and All Arrestees in Baltimore City, 1995

	Male Arrestees		Female Arrestees	
	SANTA (n=755)	Census (N=33,195)	SANTA (n=435)	Census (N=7,929)
Race				
Black	82.5%	80.6%	79.8%	78.6%
White	16.7%	18.6%	19.8%	20.9%
Hispanic	0.7%	0.4%	0.2%	0.2%
Other	0.1%	0.4%	0.2%	0.4%
Age				
< 18	1.5%	2.0%	0.2%	0.4%
18-24	26.5%	27.8%	19.8%	22.1%
25-34	38.4%	37.8%	48.5%	47.0%
35-44	24.4%	23.8%	28.7%	25.3%
45-54	7.7%	6.6%	2.1%	4.1%
55-64	0.8%	1.5%	0.7%	0.9%
≥ 65	0.8%	0.5%	0.0%	0.2%
Charge				
Assault	17.2%	17.4%	10.8%	15.8%
Burglary	3.7%	5.4%	1.8%	3.0%
Commercial Sex/Prostitution	1.5%	1.3%	9.4%	8.2%
Destruction of Property	<1%	<1%	1.4%	1.0%
Drug Possession	18.8%	13.8%	22.1%	14.9%
Drug Sale	11.5%	15.2%	10.6%	13.1%
Weapons	3.4%	3.6%	1.4%	1.1%
Warrant/Failure to Appear	5.4%	5.0%	12.0%	7.7%
Fraud	<1%	<1%	1.8%	1.2%
Homicide	1.5%	2.0%	0.5%	1.2%
Theft	10.9%	11.2%	13.1%	16.0%
Obstruction/Resisting Arrest	2.9%	3.5%	3.9%	3.5%
Probation/Parole/ROR Violation	3.2%	3.3%	1.8%	1.8%
Public Peace	9.3%	8.5%	4.8%	5.8%
Robbery	3.7%	3.3%	0.7%	1.5%
Stolen Vehicle	1.9%	2.5%	0.5%	1.6%
Other*	5.2%	4.1%	3.4%	2.5%

* Recoded "other" offenses combines all offenses that scored less than 1% in census.

from in which the charge was missing or was a traffic/DWI offense. Many of the analyses presented in this report include

the total sample, except when estimates are projected to the census of arrestees. For these analyses, the female sample contains 435 cases (2 cases with missing charge data were excluded) and the male sample contains 757 cases (4 cases with missing charge data, 2 cases with DWI charge, and 68 cases with traffic offense were excluded).

Review of the census data for Baltimore arrestees provided by BCPD indicated that a large number of arrestees in the sample were repeat offenders. For the period October 1994 through September 1995, census data indicated 50,558 distinct arrest events for 33,195 males. For females, there were 10,773 distinct arrest events for 7,929 individuals. In conducting the data collection for the study, efforts were made to include arrestees in the sample only once. However, over the course of the four-month collection period for females, and eight months for males, it is conceivable that arrestees were included in the sample more than once.

Operationalization of Variables

Most demographic variables were measured categorically (gender, race, offense seriousness, and charge). Age was measured by recording the respondent's year of birth and calculating an approximate age by subtracting the year of birth from the current year. Self-reported drug use was measured either dichotomously (Have you ever tried drug? In the past

three days did you use drug?) or continuously. The latter required the respondent to indicate how many times a substance was used in a specified time period. Drug use detected by urinalysis was measured dichotomously; the respondent was either negative or positive for each of the 10 drugs screened, plus alcohol and HIV status.

DEPENDENCE AND ABUSE; ESTIMATING NEED FOR TREATMENT

As noted above, the original plan for the CSAT-sponsored family of studies was to have states conduct studies in the criminal justice populations using the DUF protocol and methodology. While the DUF instrument and methodology include procedures for obtaining data on self-reported drug use and an objective test through urinalysis, these provide only prevalence measures of drug use. The SANTA studies expanded the measures available through DUF by incorporating a module of clinically based needs assessment questions (SANTA module) for administration by a nonclinician to assess the need for treatment for alcohol and other drugs among the arrestee (and other criminal justice) population.

In this study, need for treatment for a substance was determined by estimating the number of people who are dependent on or abusive of that substance. The guiding principle is that if someone is dependent or abusive of a substance that person needs treatment for that substance. For each respondent, the

SANTA interview questions can be used to determine if that person is diagnosable as dependent on or abusive of any of the six substances being studied.

To estimate the number of arrestees dependent on or abusive of each substance, the interview instrument included questions adapted from the alcohol and drug dependence modules of the Diagnostic Interview Schedule (DIS; Robins et al., 1989). The DIS is a structured interview used to diagnose alcohol and drug dependence/abuse, as well as mental disorders. To permit diagnoses, the DIS operationalizes the nine criteria set out in the *Diagnostic and Statistical Manual of Mental Disorders, Version III Revised* (DSM-III-R), published by the American Psychiatric Association (1987:167-168). The nine DSM-III-R criteria are as follows:

1. Use larger amounts or for a longer period than intended;
2. Persistent desire for or unable to cut down use;
3. Considerable time spent using or obtaining the substance;
4. Frequent intoxication or withdrawal symptoms when expected to fulfill major obligations at work, school, or home;
5. Reduced social, work, recreational activities due to use;

6. Continued use despite knowing a persistent social, psychological or physical problem has developed from use;

7. Tolerance--need more to achieve same effect;

8. Characteristic withdrawal symptoms; and

9. Substance often taken to relieve withdrawal symptoms.

For each of the DSM-III-R criteria, multiple questions are asked in order to determine if the respondent has experienced symptoms related to any of the criteria. If a respondent answers in a way that indicates he or she has experienced symptoms related to three or more of the nine criteria, with two or more of the symptoms persisting for a period of a month or longer, the respondent is considered to have had a *diagnosable dependence* on the respective substance according to the DSM-III-R criteria at some point during his or her *lifetime*.

Following the scoring algorithm guidelines issued by the NTC, respondents diagnosed as lifetime dependent who reported the occurrence of one or more of the symptoms related to the nine criteria during the past 18 months are considered to have had a *diagnosable dependence during the past 18 months (also referred to as current or recent dependence)*. A respondent is considered to need treatment if he or she qualified for this 18-month diagnosis of dependence. The definition of 18-month dependence used in this study is somewhat more inclusive than the usual period-specific definition of dependence (three or more symptoms

of dependence active during the period), but it is more appropriate for the purpose of treatment needs assessment (Mulvaney, 1994).

To qualify for a *diagnosis of lifetime abuse*, a subject must report having had symptoms related to criterion 6 above or to a separate criterion--recurrent use when physically hazardous to self or others. A respondent is considered to need treatment if he or she qualifies for an *18-month diagnosis of abuse*: lifetime abuse and one of the abuse symptoms active during the past 18 months (Mulvaney, 1994).

DIAGNOSES

The AutoSANTA module provided data for computing diagnoses for alcohol, marijuana, hallucinogens, cocaine, opiates, and stimulants (amphetamines). Before being asked the assessment questions used in computing diagnoses, respondents were asked screening questions that established the threshold for use. For all drugs, excluding alcohol, respondents who reported use 11 or more times within the past 18 months were screened into the assessment questions for the particular drug. For alcohol, the screening criteria established by NTC were different for males and females. Males reporting alcohol use in the past 18 months required the consumption of five or more drinks on the days they drank, while the criterion for females was two or more drinks.

Once screened into the assessment questions, respondents were asked questions about their lifetime use of the substance(s) that closely followed the nine DSM-III-R diagnostic criteria. At least three of the nine symptom criteria and two or more duration components were required to receive a lifetime dependency diagnosis (respondent was dependent on substance at some point between onset of use and current time). For respondents diagnosed as dependent, diagnoses can either be classified as lifetime or current (symptoms active within past 18 months). Those respondents asked the assessment questions who do not meet the diagnosis of dependence are evaluated for abuse (a subset of the symptom and duration components for dependence). Like dependence, abuse can be classified as either lifetime or current.

For each substance evaluated, respondents can receive one of three possible diagnoses: no diagnosis of substance dependence or abuse (did not meet screening criteria or assessment criteria), lifetime dependence, and lifetime abuse. Respondents diagnosed for either lifetime dependence or lifetime abuse are evaluated to determine if the diagnosis is current.

STUDY LIMITATIONS

The study was designed to estimate the need for treatment among a specific population for whom relevant information is not generally available. This specific population consists of adult

arrestees in Baltimore City who were booked and held by the BCPD. Estimates of dependence/abuse and need for treatment are based upon self-reports of drug use. Evidence from validity studies on self-reports indicates that people under the supervision of the criminal justice system greatly underreport their recent use of drugs even when they are interviewed by researchers under conditions of anonymity and confidentiality (Wish et al., 1997). Given that our estimates are based upon self-reported use and there appears to be a greater incentive to underreport than exaggerate use, our estimates should be viewed as a conservative measure of the minimum amount of treatment needed within this population. Our comparisons of self-report and urine/hair results enabled us to estimate underreporting and make some corrections (see Appendix C).

APPENDIX B

Baltimore City Urinalysis Comparisons with Regional DUF Sites, 1st Quarter 1995

The methodology of the Maryland SANTA study duplicated the data collection design of the Drug Use Forecasting (DUF) program. Target population, sampling, interviewers, informed consent procedures, interview instrument, and collection logistics for Baltimore were comparable to those utilized in most DUF sites.

The following graphs provide a comparison of urinalysis results for the Baltimore sample and surrounding DUF sites. Washington, D.C., Philadelphia, Manhattan, and Chicago were selected as comparison sites for their proximity to Baltimore. First quarter 1995 results were selected because the time frame overlapped with that for the Baltimore sample. The sample for most DUF sites in a quarter consists of 225 males and between 100 and 125 females. Chicago does not sample females.

By rank, the percentage of drug positives in Baltimore City was higher than in Washington, D.C., but fell below the 80% positive threshold in Philadelphia, Manhattan, and Chicago. The rate of cocaine positives in Baltimore City was comparable to that in Philadelphia and Chicago for males and in Philadelphia and Manhattan for females. The rate of opiate positives was almost double that in Manhattan for males and over twice that for females in Philadelphia, sites with the highest opiate positive rates in the DUF program for the first quarter. The rate of

marijuana positives was the lowest in Baltimore, yet close to that in Washington, D.C.

APPENDIX C

Correction Factor Developed for Baltimore City Estimates of Need for Cocaine and Opiate Treatment

Uncorrected Sample Percentage

The uncorrected sample percentage for treatment need was calculated by dividing the number of arrestees diagnosed as needing treatment by the entire sample assessed:

$$\frac{\text{Number assessed as needing treatment}}{\text{Number of arrestees interviewed}} = \% \text{ Needing Treatment}$$

Corrected Sample Percentage

For the purpose of "correcting" the sample percentage of those needing treatment, the uncorrected sample percentage was examined in several components: those not providing a urine specimen, those who tested negative for the drug assessed, and those who tested positive for the drug assessed.

The key to the correction factor is the use of the positive urinalysis results to indicate the validity of self-reports. Arrestees positive for a drug who reported use of the drug in the past month (not as restrictive as a comparison in the past three days) were labeled as *truthful*. Arrestees positive for the drug who did not report use in the past month were labeled as *untruthful*. To calculate the correction factor, the percentage of the truthful arrestees diagnosed as needing treatment for the drug was applied to the number of untruthful arrestees, which

resulted in a corrected number of untruthful, drug positive arrestees in need of treatment. The corrected ratio was added to the ratios for all other groups to produce the corrected ratio:

Interview only :	assessed/only provided interview
Urine (-):	assessed/urine (-) for drug
Truthful urine (+):	assessed/urine (+) for drug and reported use in past month
Untruthful urine (+):	(% Truthful urine (+) multiplied by number of arrestees drug (+) who did not report use in past month)/ urine (+) for drug and did not report use in past month.

The sum of the four ratios above equals:

$$\frac{\textit{Corrected}\text{ number assessed in need of treatment}}{\text{Number of arrestees interviewed}} = \text{Corrected \% Needing Treatment}$$

APPENDIX D

Baltimore City Comparisons with Washington County (Hagerstown) Pilot Study

Beginning in the summer of 1995, a small pilot study was implemented at the Washington County Detention Center located in Hagerstown, Maryland, approximately 100 miles northwest of Baltimore City. The pilot study utilized the same collection methodology and instruments as the Maryland SANTA study.

Comparisons of urinalysis results and treatment need for males (only 26 females were included in the Hagerstown study) indicate some similarities between the two samples. Urinalysis results show marijuana use to be similar among Hagerstown and Baltimore arrestees. In contrast, cocaine use in Hagerstown was only slightly more than half that in Baltimore, and Hagerstown had no opiate positives while 37% of the arrestees in Baltimore were opiate positive. Overall, almost half of the Hagerstown males were positive for a drug compared to 67% in Baltimore.

Comparisons of treatment need provide interesting findings. Sixty percent of the male arrestees in Hagerstown were assessed as needing treatment compared to 41% in Baltimore. Most of the treatment need in Hagerstown was for alcohol dependence; 50% of the males were assessed as needing alcohol treatment compared to only 14% in Baltimore. Treatment need for cocaine was similar in both groups, 12% in Hagerstown and 15% in Baltimore. Treatment need for marijuana was greater in Hagerstown. In Baltimore the

greatest treatment need was for opiate dependence.