Substance Abuse Need for Treatment among Arrestees (SANTA) in Maryland: Youth in the Juvenile Justice System

Prepared for the
Maryland Alcohol and Drug Abuse Administration

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September 1998

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Technical Report

by

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September 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

Below are key findings from the report *Substance Abuse Need for Treatment among Arrestees (SANTA) in Maryland: Youth in the Juvenile Justice System,* a study of 649 juvenile detainees conducted in 1996 in the five residential detention facilities operated by the Maryland Department of Juvenile Justice.

The primary objectives of the SANTA study were to measure the extent of alcohol and drug use among youth in the juvenile justice population in Maryland and to produce estimates, using standardized clinical criteria, of the need for drug and alcohol treatment services in this population.

- Forty percent of the male and female respondents were diagnosed as needing treatment for a drug, primarily marijuana (37% of males and 35% of females) followed by alcohol (19% of males and 20% of females).

- Nineteen percent of males and 24% of females were diagnosed as needing treatment for multiple drugs.

- Thirty-eight percent of males and 44% of females diagnosed as needing treatment reported that they felt they were currently in need of treatment. Of all respondents, approximately 1 in 5 reported a need for treatment.

- Alcohol was the most prevalent drug self-reported for lifetime use (88% of males and 87% of females) followed by marijuana (86% of males and 84% of females).

- Median age of onset of alcohol and drug use was 13 years (for alcohol, median age for females was 12 years).

- Thirty-six percent of males and 23% of females tested positive for at least one drug by urinalysis. The most prevalent drug detected was marijuana.

- While only 4% were positive for cocaine by urinalysis, 22% of males and 9% of females were cocaine positive by hair analysis, which provides a greater window of detection.

- Based on the study findings, 2,364 of the 5,910 juvenile detainees in Maryland during 1995-1996 were in need of treatment.

ACKNOWLEDGMENTS

The success of this project was made possible through the dedication of individuals who fielded the project and the support from participating agencies. 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 to Bill Rusinko, project manager, for his support and patience.

We are indebted to former Secretary Stuart O. Simms and the Maryland Department of Juvenile Justice (DJJ) for providing access and assistance for this research endeavor. In particular, we thank Ruth Phillips, who supported this project and the pilot studies that were the predecessors to this project.

We also express our gratitude for the support and cooperation of DJJ facility staff, who made the process of identifying, selecting, and interviewing detainees much easier. Kay Schoo, Alice James, Charles Harper, Karen Hirsch, Gloria Eddy, and Merrick Thayer all contributed their effort, expertise, and time toward the success of this project. Thanks also to Lakshmi Iyengar for her data resources support.

Many thanks to Heather Pfeifer, CESAR's field manager for the study, who brought everything together by coordinating interviewers, launching the field work, and maintaining the daily operations of the project.

As with the adult SANTA study, the scope of this project extended far beyond the boundaries of Maryland. Development and programming of the instrument utilized for data collection resulted in an unforeseen detour as Maryland responded to the technical assistance and training requests of states that adopted the AutoSANTA program for their study. We are grateful to Prudence Fisher and the developers of the Diagnostic Interview Schedule for Children for their support as we incorporated the alcohol and substance abuse module into the SANTA instrument. Also, our thanks to Doug Anglin of the UCLA Drug Abuse Research Center and William Saltzman for items that were used in the paper-and-pencil addendum to Maryland's instrument.

Finally, we wish to thank staff from CESAR who contributed on the front lines and behind the scenes. Special thanks to Mike Wagner for programming the AutoSANTA instrument, Jonathan Sushinsky for data preparation and analyses, and Jean Shirhall for her editing and production expertise.

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September 1998

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INTRODUCTION

The Maryland SANTA (Substance Abuse Need for Treatment among Arrestees) study is one of a family of needs assessment studies being 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) with funding from the federal Center for Substance Abuse Treatment (CSAT).[1] Maryland was one of the initial 13 states funded in 1992, 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.[2]

The study data are similar to those obtained by the Drug Use Forecasting (DUF) program,[3] sponsored by the National Institute of Justice (NIJ), which collects self-report data on recent drug use and urine specimens from samples of adult arrestees in the 23 participating DUF cities (12 cities collect juvenile data) on a quarterly basis. The funding solicitation from CSAT identified

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[1] Other studies in Maryland assessed the level of drug abuse and need for treatment among adult arrestees in Baltimore City (Gray and Wish, 1998), adult household residents--statewide (Petronis and Wish, 1996), and callers to crisis hotlines in Maryland (Wagner and Wish, 1996). A modeling study (Reuter et al., 1998) employed statistical modeling techniques that combined data from the household and adult SANTA studies to provide estimates of the overall need for treatment in Maryland.

[2] Adult SANTA results for Baltimore City appear in a separate report (Gray and Wish, 1998).

[3] Beginning in 1998 the Drug Use Forecasting program was renamed the Arrestee Drug Abuse Monitoring (ADAM) program.

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 contracted by CSAT to assist the states with their needs assessment studies, CESAR developed a computerized interview for use in conducting SANTA studies. The adult instrument incorporated AutoDUF, the computerized version of the DUF interview developed by CESAR for DUF data collection, with a module of needs assessment questions modified from the standard questionnaire developed for the household survey 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 criteria set out in the *Diagnostic and Statistical Manual of Mental Disorders, Version III Revised* (DSM-III-R; American Psychiatric Association, 1987).[4] The juvenile version of the AutoSANTA instrument replaces the assessment questions from the household survey of adults with the alcohol and other substance use disorder module (Module F) from the

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[4] AutoSANTA was offered to all states funded by CSAT to conduct DUF or SANTA studies in 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 as part of scheduled DUF data collection. Following the collection methodology established by DUF also provided a proven and consistent method for accessing and studying arrestees.

Diagnostic Interview Schedule for Children (DISC-2.3; Shaffer and Fisher, 1992).

While similar to DUF in design and method,[5] SANTA extends the interview data collected for DUF through extensive inquiries about drug use behaviors utilizing the DISC. The DISC is a structured interview that operationalizes the nine DSM-III-R criteria so that diagnoses of substance dependence and abuse and estimates of treatment need can be computed from the subjects' interview responses. For the CSAT family of studies, need for treatment for a substance was determined by estimating the number of people who are dependent or abusive of alcohol, marijuana, cocaine, opiates, hallucinogens, uppers, downers, tranquilizers, and inhalants.

[5] Many states, including Maryland, adopted a more stringent sampling scheme than the convenience sampling utilized by DUF.

METHODS AND PROCEDURES

SITE SELECTION

The overall goal of the CSAT family of studies is to provide statewide estimates of treatment need in Maryland. For the adult SANTA study, data collection has been completed for arrestees in Baltimore City, and data collection in the remaining regions of the state will be conducted in 1998-1999. To best complement the adult study, the juvenile study would have targeted juvenile arrestees (juveniles detained and processed by the police). However, such a study was both impractical and unlikely given the number of sites, window of opportunity, and consent requirements for interviewing juvenile arrestees. The police try to minimize the amount of time youth are in their custody by releasing youth to a legal guardian or transferring custody to the Department of Juvenile Justice (DJJ) if warranted by the severity of the offense or lack of guardianship. Permission to interview juveniles not within the custody of DJJ would also be required from the guardian.

With the majority of juvenile arrestees being released to parental custody, the available sample of juvenile arrestees was limited to those whose custody was transferred to DJJ. In 1996, there were 54,965 juvenile arrests in Maryland (Maryland State Police, 1997), yet in the study period overlapping 1996, 5,910 juveniles were admitted to the five DJJ residential detention

facilities in Maryland, accounting for just over 10% of the juvenile arrests for the year.[6]

The five detention facilities included in the juvenile SANTA study were Noyes (male and female youth from Western Maryland and D.C. Metro area), Waxter (males under age 16 and females from Baltimore and Central and Southern Maryland), Hickey (males from Baltimore and Central Maryland), Cheltenham (males from D.C. Metro, Baltimore, and Southern Maryland), and Carter (males and females from the Eastern Shore of Maryland).

While none of the 12 NIJ-sponsored juvenile DUF sites is located in Maryland, several pilot studies based upon the DUF methodology have been conducted previously at Waxter (Gray and Wish, 1993; Wish et al., 1996) and Noyes (Wish et al., 1994). These pilots provided prevalence measures from self-reports and urinalysis results, but not the estimates of treatment need available with SANTA study results.

In the past, DUF results for juvenile arrestees in Washington, D.C., have been used as a proxy measure for juvenile drug use in Maryland. However, as with the findings from the adult SANTA study in Baltimore City, the results from this study of juveniles in Maryland reveal that despite the proximity of Washington, D.C., to the Maryland suburbs there may be considerable differences between drug use patterns in the two locales.

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[6] Study estimates apply only to detainee population in Maryland.

SAMPLE SIZE

The protocol for the Maryland SANTA study originally targeted a sample of 550 males and 125 females. The sample size prescribed by CSAT for most of the states participating in the SANTA studies was 100 juvenile males and 100 juvenile females, a modification of the target sample for a quarterly DUF collection of 100 juvenile males and as many juvenile females as were available.

The sample size was expanded for the Maryland study to allow a sample size of 100 juvenile male arrestees from Noyes, Waxter, and Hickey (which each accounts for 12 to 16% of yearly male admissions), 200 from Cheltenham (approximately 50% of yearly male admissions), and 50 from Carter (7% of male admissions). The male samples from each of the facilities would allow for regional analyses. The entire female sample was collected at Waxter, which accounts for 70% of all female admissions, statewide.

IMPLEMENTATION

Following approval of the study protocol by the University of Maryland's Institutional Review Board for the Safety of Human Subjects, CESAR research staff received permission from Department of Juvenile Justice officials to conduct the juvenile SANTA study in April 1996. Prior research studies based upon the DUF methodology conducted by CESAR at several of the DJJ detention facilities were instrumental in obtaining access for

the study. Often, approval to conduct the study rests on the issue of informed consent. In most other studies in which juveniles are involved, permission from the guardian of a juvenile is required. However, for youth in the custody of the juvenile court, permission to interview juveniles can be provided by the court under the precept of *in loco parentis*, whereby the court assumes guardianship of the juvenile. Upon review of the purpose, design, and protections of the study, juvenile justice officials permitted access to conduct the study so long as juveniles were informed that study participation was voluntary and the information collected would be anonymous and confidential.

Given the fewer number of new admissions to the juvenile system than in the adult system, the collection protocol was modified to interview new detainees (arrested/detained within the past 72 hours), youth held in prehearing detention, and adjudicated juveniles. Priority was given to interviewing new detainees since they had not been in custody and were eligible to provide a urine specimen. In general, the detection window for drugs and drug metabolites using urinalysis is 48 to 72 hours following use.

Also, due to the lower number of new admissions, the collection schedule for each of the sites overlapped and was often dictated by the availability of eligible subjects. Prior to setting up the field work in each facility, the field manager

obtained approval for facility access from each of the facility superintendents several weeks prior to the targeted start date. The superintendent 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 the facility.

Research interviewers for the study were recruited primarily from the University of Maryland at College Park. Most interviewers hired for the study were students in a criminal justice program. Several had field interview research or work-related experience in the criminal justice system. Prior to commencing field work, interviewers had to complete a two-day training program 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-J, the computerized juvenile interview instrument developed by CESAR, consists of (1) the core juvenile DUF interview instrument; (2) the alcohol and other substance use disorder module from the Diagnostic Interview Schedule for Children (DISC-2.3; Shaffer and Fisher, 1992); and (3) a module of questions, the Maryland module, that contained expanded

sociodemographic, treatment, criminal justice, and lifestyle questions. Additional questions covering a variety of risk and prevention domains were also added as a paper-and-pencil (PAPI) supplement to the computerized interview. The instrument, created in Paradox™, is programmed to conduct logic and consistency checks as well as defined skip patterns. The AutoSANTA program also contained a scoring algorithm for the DISC, which computed DSM-III-R diagnoses for dependence and abuse for each of the nine substances assessed.

Data from field tests and other states utilizing the instrument indicate that the average length for a juvenile SANTA interview was 15-20 minutes (25-30 minutes in Maryland with the addition of the Maryland module and PAPI questions), compared to an 8-minute juvenile 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 detainee. For detainees who agree to the interview, the first section consists of demographics questions from the DUF instrument--education, living arrangements, and economic support, followed by questions on 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, inhalants, mushrooms, heroin, "black tar" heroin, cocaine, crack, PCP, "street" methadone, methadone in treatment,

crystal methamphetamine, amphetamines, sedatives, Valium®, Quaaludes, LSD, Darvon®, dilaudid, designer drugs, and ice (smokable methamphetamine). Following the drug grid is a series of questions about injection drug use.

The second section of the instrument is the SANTA module, which contains screening and assessment questions for alcohol, marijuana, cocaine, opiates, hallucinogens, uppers, downers, tranquilizers, and inhalants. To screen into the assessment questions for alcohol abuse/dependence, respondents had to report at least one of the following: drinking once a week or more in the past six months, getting drunk twice or more times in the past six months, any binge drinking (stayed drunk for two whole days or more) in the past six months, or getting into trouble for drinking in the past six months. The screening criteria for the other substances, except marijuana, were use of the substance three or more times in the past 12 months with at least one use in the past six months. The screening criteria for marijuana were either having smoked marijuana more than once a month in the past six months or having gotten into trouble for smoking marijuana in the past six months.

The third 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. After the computerized portion of the interview, the PAPI addendum was administered. The domains

covered in the PAPI included history of guardianship, parental employment/educational history, runaway history, educational history, community involvement, parental attachment, prevention education, social networks, delinquency history, substance abuse history, sexual history, and exposure to community violence.

In keeping with the DUF protocol, the last question of the instrument is the request for a urine specimen. The Maryland SANTA study also asked for a hair specimen.

SITE PROCEDURES

While each facility had specific procedures for access, the majority of the interviewing was conducted in the facilities between 9:00 a.m. and 6:00 p.m. daily. Interviewers usually adjusted the schedule to accommodate the availability of subjects and staffing. New admissions were given priority for interviewing, since they were more likely to be released compared to subjects in prehearing detention and those already adjudicated. Interviewers kept detailed logs, maintained and secured at the facility, of subjects available and interviewed.

Each day of data collection, interviewers would arrive at the facility, review the population sheet for new admissions to be interviewed, and select youth from among the detained population. The sample was drawn according to the projected number of approachable respondents for the day. This was typically six to eight per day. The sample was drawn by using

random selection techniques. Selection priority was given to new admissions, since most likely they would be eligible to provide a urine specimen, followed by detainees in residence. As the study progressed in each facility, the number of eligible detainees to interview declined as the number of residents and admissions (who eventually became residents) already contacted for the study, increased.

Once a listing of eligible names was completed from the population sheet, background data (arrest time/date, year of birth, race, county of residence, and charge data) were collected from agency records ("face sheets"). The interviewer then initiated an interview diskette for each member of the sample. This process included assignment of a study ID number to the interview and entering the booking information collected from facility records on the diskette. A post-it note with the subject's name was attached to the diskette envelope corresponding to the booking information on the diskette. This ensured correct matches between interview diskette and subject.

Each interviewer possessed all equipment and supplies required for data collection: laptop computer, urine collection supplies, hair collection supplies, and incentives (incentives varied with each facility--cookies, soda, and "good behavior points" provided by the facility). The facility provided an area, usually an office or classroom that afforded privacy, for the interview to take place. Arrangements were made to have the

subjects escorted to the interview area. Following an informal introduction, the research interviewer would discuss informed consent with the detainee 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 to participate.

For all subjects completing the interview, hair specimens were requested and collected from those who agreed. Similarly, urine specimens were requested and collected from only those subjects who were new admissions (been detained less than 72 hours). Subjects agreeing to provide a urine specimen were escorted to a bathroom so they could provide a specimen. In order to collect hair samples, the interviewer would cut a grouping of 60-100 hairs from the crown region of the scalp. Specimens collected were marked with the same study identifier assigned to the interview. Subjects completing the interview and providing a specimen received a pack of cookies or other incentive, which is part of standard DUF procedures.

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 data

merging. Urine specimens collected for the study were packaged and sent at regular two-week intervals to PharmChem Laboratories, Inc., previously the national contractor for urinalysis testing for the DUF program. Hair specimens were stored until the conclusion of the study and shipped to a separate contractor for testing for cocaine and opiates.

Urine specimens were tested according to the DUF protocol utilizing enzyme multiplied immunoassay testing (EMIT). Immunoassays, the most common method for initial screening in the criminal justice system, use antibodies to detect the presence or absence of illicit drugs in the urine. 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 and methamphetamines, barbiturates, benzodiazapines (Valium®), cannabinoids (marijuana),[7] cocaine metabolites, methadone, methaqualone

[7] Beginning in 1996 DUF lowered the cutoff level for marijuana positives from 100ng/ml to 50ng/ml. The cutoff level for marijuana positives in the Maryland SANTA study was 100ng/ml.

(Quaaludes®), opiates (heroin), phencyclidine (PCP), propoxyphene (Darvon®), and alcohol. 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, not included in the DUF testing protocol, was also conducted.

Hair specimens were segmented and tested for the presence of cocaine and opiate metabolites for a window of use approximating 90 days prior to the interview.

The site procedures described above were used to conduct data collection in the five Maryland DJJ residential detention facilities between June and October 1996.

PARTICIPATION RATES

Table 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 detainee booking information. In both samples, approximately 5% of the sample was not available or eligible to be interviewed. These cases represent respondents who were ill, asleep, or had been transferred out. Cases for which the supervisor initialized interview diskettes that did not get assigned during an interview

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For the other drugs, screening cutoffs were 300ng/ml, except for PCP (25ng/ml), alcohol (20mg/dl), and amphetamines (1,000ng/ml).

Table 1

Substance Abuse Need for Treatment Among Arrestees
1996 Maryland Juvenile SANTA Study

Overall Response Rates for Participation

MALE SAMPLE[1]

Target Sample	562	
Not Available[2]	21	4%[3]
Eligible for Interview	541	96%
Of Those Eligible:		
Declined	6	1%
Completed Interview	535	99%
Of those Interviewed:		
Interview Only	410	77%
Interview & Hair	54	10%
Interview & Urine	58	11%
Interview, Hair, & Urine	13	2%

FEMALE SAMPLE[1]

Target Sample	121	
Not Available[2]	7	6%[3]
Eligible for Interview	114	94%
Of Those Eligible:		
Declined	0	0%
Completed Interview	114	100%
Of those Interviewed:		
Interview Only	40	35%
Interview & Hair	39	34%
Interview & Urine	7	6%
Interview, Hair, & Urine	28	25%

[1] Data are unweighted.
[2] Includes ill, asleep, transferred, and not enough time to interview.
[3] Percentages rounded to whole percent; column percentages may not equal 100%.

shift and the respondent was not there the next day are also in this category.

For the male sample, a total of 541 eligible detainees were asked to participate in the study. Of those eligible, 535 (99%) agreed to and completed the interview. Juveniles interviewed within 72 hours of admission to the facility were asked to provide a urine. The 72-hour cutoff was used because it represents the upper threshold for drug detection by urinalysis. Of the 85 detainees meeting this criteria, 71 (84% of those meeting the criteria, 13% of entire sample) provided a urine specimen. Twelve percent of all males interviewed provided hair specimens.

With respect to the female sample, a total of 114 eligible detainees were asked to participate in the study. Of those, all 114 (100%) agreed to and completed the interview. Of the 44 detainees interviewed within 72 hours of admission, 35, (80% of those meeting the criteria, 31% of entire sample) provided a urine specimen. Fifty-nine percent of all females interviewed provided hair specimens.

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 (NIJ, 1997). In this study the overall percentage for providing urine specimens was lower because unlike DUF studies, in which subjects are only interviewed if in custody less than 48 hours since detainment/arrest, *all* detainees were eligible to be interviewed.

Only those interviewed within 72 hours of detention/arrest were asked to provide a urine. The overall percentage for providing urine specimens was higher for females than males since a larger proportion of the female sample was for new admissions (within 72-hour window). Also, the lower rate for males providing hair can be attributed to the short, closely cropped hair style of most of the male detainees.

Table 2 presents a summary of the sample sizes for completed interviews from each of the facilities. The targeted sample sizes were selected to approximate the proportion of admissions that each facility contributed to the census of detainees statewide. Females were only interviewed at Waxter, which accounts for 70% of all female admissions, statewide, a year.

Table 2

Substance Abuse Need for Treatment Among Arrestees
1996 Maryland Juvenile SANTA Study

Sample-Census Comparisons

Detention Facility	Census %	Sample[1] N	Sample[1] %
Males			
Waxter	16%	100	19%
Noyes	12%	96	18%
Hickey	13%	98	18%
Cheltenham	52%	197	37%
Carter	7%	44	8%
Females			
Waxter	70%[2]	114	100%

[1] Data are unweighted.
[2] The remaining females in the census were detained at Noyes and Carter.

Census data for detention admissions by facility, race, age, charge, and case disposition were compared with sample data for the purpose of creating sample weights (see Appendix). Other than differences in facility, where the percentage of males sampled from Cheltenham was lower than that from the census (sample higher than census in Waxter, Noyes, and Hickey), the samples, both male and female, were noticeably different from census data only by age (sample biased toward older detainees). To adjust the distribution in the sample to more accurately reflect census distributions, sample data were weighted by age and facility for male detainees and weighted by age for females (females primarily detained at one facility). Data presented in the remainder of this report are therefore weighted to more accurately reflect the distribution of detained males by age and facility.

SAMPLE CHARACTERISTICS

Table 3 presents characteristics of the male and female interviewed samples--race, age, offense seriousness, and region of residence. These characteristics were coded from the face sheet information prior to initiating contact with the respondent. The information is coded either from charging documents or existing agency records if the respondent had previously been admitted.

Table 3

Substance Abuse Need for Treatment Among Arrestees
1996 Maryland Juvenile SANTA Study

Characteristics of Study Samples[1]

	Males (N=535)	Females (N=114)
Race		
Black	70%[2]	55%[2]
White	26%	44%
Hispanic	4%	2%
Other	<1%	<1%
Age		
12 & Under	2%	2%
13	4%	8%
14	17%	21%
15	17%	22%
16	27%	28%
17	29%	16%
≥18	5%	3%
Region of Residence[3]		
Eastern Shore	8%	0%
Baltimore City	33%	23%
Central Maryland	29%	48%
Southern Maryland	6%	12%
D.C. Metro	21%	18%
Western Maryland	3%	0%
Out of State	<1%	0%

[1] Data are weighted.
[2] Percentages rounded to whole percent; column percentages may not equal 100%.
[3] Eastern Shore includes Caroline, Cecil, Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico, and Worcester counties; Central Maryland includes Anne Arundel, Baltimore, Carroll, Harford, and Howard counties; Southern Maryland includes Calvert, Charles, and St. Mary's counties; D.C. Metro includes Frederick, Montgomery, and Prince George's counties; and Western Maryland includes Allegany, Garrett, and Washington counties.

The majority of both groups were black (70% of males and 55% of females, $p < .01$), and 26% of the males and 44% of the females were white. In both samples, less than 5% were Hispanic or of

any other ethnic background. Males were slightly older than females ($p < .10$). The median age of males was 16 years old and the median age for females was 15 years old. Less than 5% of both groups were more than 17 years old.

Regarding area of residence, the majority of the youths were from Baltimore City and the counties in Central Maryland surrounding Baltimore. Sixty-two percent of the males and 71% of the females were from those regions. However, the proportion of females from Central Maryland would be lower if we had sampled females from the facilities representative of the Eastern Shore, D.C. Metro area, and Western Maryland.

Criminal justice and detention status characteristics are presented in Table 4. Most participants (67% of males and 77% of females) were charged with misdemeanor offenses (e.g., petty theft, drug possession, and unspecified probation offenses). Property offense was the most prevalent offense category, an offense for which approximately a third of the juveniles were charged (32% of males and 31% of females), followed by crimes against persons, for which approximately a quarter of both groups (23% males and 24% of females) were charged. The single highest offense category for males was auto theft (15%) and for females was assault (18%). Sixteen percent of males and 9% of females were charged with a drug offense (sale or possession).

Distribution by detention status varied between the two samples ($p < .01$). For the purpose of the study, juveniles were

Table 4

Substance Abuse Need for Treatment Among Arrestees
1996 Maryland Juvenile SANTA Study

Criminal Justice Status of Study Samples[1]

	Males (N=535)	Females (N=114)
Offense Seriousness		
Misdemeanor	67%[2]	77%[2]
Felony	34%	23%
Offense Category		
Person[3]	23%	24%
Property[4]	32%	31%
Drug[5]	16%	9%
Warrant/Order Violation[6]	14%	17%
Detention Violation[7]	5%	10%
Other[8]	9%	9%
Detention Status		
New Admission/Holdover	17%	56%
Prehearing Detention	47%	38%
Adjudicated Delinquent	36%	6%
Post-Interview Disposition[9]		
Not Adjudicated	17%	19%
Closed (No Court)	3%	5%
Adjudicated Delinquent	61%	61%
None (Case Open)	20%	15%

[1] Data are weighted.
[2] Percentages rounded to whole percent; column percentages may not equal 100%.
[3] Person offenses include: assault, homicide, robbery, and sexual assault.
[4] Property offenses include: arson, burglary, destruction of property, forgery, fraud, theft, and auto theft.
[5] Drug offenses include: sale and possession.
[6] Order violations include failure to appear and probation violations.
[7] Violation of community detention.
[8] Other offenses include: weapons, family offense, public peace, sex offense, traffic, DUI, and status type offenses.
[9] Disposition approximately 6-8 months following the interview.

classified as new admission/holdover, prehearing detention, or adjudicated delinquent. Juveniles grouped into new

admission/holdover and prehearing detention were juveniles admitted to detention pending a hearing in juvenile court. The study designation of new admission/holdover indicates they were most likely admitted within the past two or three days and had been in a noncustodial setting prior to admission (although some *new admissions* had been in custody longer than 72 hours prior to being interviewed), and thus eligible to provide a urine specimen. New admissions received first priority[8] for interviewing to maximize the number of respondents in the sample eligible to provide a urine specimen. Fifty-six percent of the females were new admissions compared to only 17% of males. The status of most males (47%) and 38% of females in the study was prehearing detention, admitted longer than 72 hours prior to being contacted for the study. A third of the males (36%) and only 6% of the females interviewed were adjudicated delinquent and awaiting placement in a DJJ facility.

Approximately three to six months following completion of the interviews, researchers accessed the DJJ information database to code the case disposition of the juveniles interviewed. Sixty-one percent of both groups had been adjudicated delinquent (up from 36% of males and 6% of females at the time of interview). Less than a quarter of the cases (17% of males and 19% of females) were found not delinquent, and similar proportions of cases were still open (20% of males and 15% of

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[8] See the Appendix for information on the effect of prioritizing status.

females). Less than 5% of the cases had been closed with no further action.

Table 5 presents additional demographic characteristics for the male and female samples. Data for guardian status, head of household, and education were coded from self-reports provided by detainees.

The majority of both groups self-reported that they spent most of their childhood in a single-parent household, primarily with their mother (63% of males and 49% of females), and over half reported that their mother was the current head of the household.

Seventy percent of both groups reported that prior to detention they attended school. Three percent of males and 1% of females had graduated or received a GED. Approximately 25% of the juvenile detainees had either dropped out, been expelled, or been suspended.

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, uppers, downers, tranquilizers, and inhalants; perceived need for treatment; and test results from the urine and hair specimens collected from interviewed detainees.

Table 5

Substance Abuse Need for Treatment Among Arrestees
1996 Maryland Juvenile SANTA Study

Guardian and Education Status of Samples[1]

	Males (N=535)	Females (N=114)
Primary Childhood Family		
Both Biological Parents	15%[2]	19%[2]
Mother Only	63%	49%
Grandparent(s)	7%	7%
Father Only	6%	4%
Biological + Stepparent	5%	12%
Other Guardian[3]	3%	6%
Sibling	1%	<1%
Other Relative(s)	1%	3%
Current Head of Household		
Mother	55%	54%
Father	14%	13%
Grandparent	11%	7%
Other Relative	5%	5%
Stepparent	5%	11%
Mother/Father Share	3%	4%
Self/Lives Alone	3%	2%
Other Guardian	3%	4%
Sibling	2%	1%
Currently In School	70%	70%
Not in School		
Dropped Out	12%	11%
Expelled	9%	10%
Graduated/GED	3%	1%
Suspended	2%	2%
Other[4]	5%	7%

[1] Data are weighted.
[2] Percentages rounded to whole percent; column percentages may not equal 100%.
[3] Other guardian includes: foster parents, adoptive parents, and appointed legal guardians.
[4] Other includes: not enrolled after relocation and in detention.

In addressing the overall goal of the study to produce estimates of the need for alcohol and drug treatment among juvenile detainees in Maryland, the estimates from the alcohol and other drug diagnoses for dependence and abuse, derived from the research interviews, were applied to census data for detainees in Maryland. Estimates for the prevalence of drug use were produced from urinalysis results.

Census Comparisons

Prior to initiating data analyses, census data were obtained from DJJ for the period (November 1995 - October 1996) encompassing data collection. Sample data were compared with census data on the variables for race/ethnicity, age, offense charge, and disposition. Also, since the male sample was stratified by facility, facility of admission was also compared for males. Findings for the sample-census comparisons are presented in the Appendix. By age grouping, the samples were noticeably older than the census population. Once weighted by age (males weighted by joint distribution of age and facility), only several category differences were greater than +/- 5%.

The census data provided by DJJ selected the first admission to a facility for juveniles, who may have had multiple admissions in the period. Similarly, as part of the data cleaning process, only the first complete interview record for juveniles inadvertently included in the sample more than once was retained.

This process resulted in 15 records being omitted from the data set prior to weighting and analysis.

Within the period of November 1995 through October 1996, census data indicated 5,226 admissions to the five facilities for males and 478 for females at the Waxter facility. There were 206 females in the census from other facilities, but only females at Waxter were sampled.

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, 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.

DEPENDENCE AND ABUSE; ESTIMATING NEED FOR TREATMENT

As noted earlier, the original funding plan for the CSAT-sponsored family of studies was to have states conduct studies in the criminal justice populations using the DUF protocol and

modified methodology. While the DUF instrument and methodology have procedures for obtaining data of self-reported drug use and an objective testing through urinalysis, these provide only prevalence measures of drug use. The SANTA studies expanded the measures available to DUF by incorporating a module of clinically based needs assessment questions (SANTA module) to assess the need for treatment for alcohol and other drugs in the arrestee (or other criminal justice) population.

In this study, need for treatment for a substance was determined by estimating the number of people who were dependent on or abusive of that substance. The guiding principle is that if someone is dependent or abusive, 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 nine substances assessed.

To estimate the number of detainees dependent on or abusive of each substance, the interview instrument included questions from the alcohol and other substance use disorder module of the Diagnostic Interview Schedule for Children (DISC-2.3; Shaffer and Fisher, 1992). The DISC is a structured interview used to diagnose alcohol and drug dependence/abuse, as well as mental disorders. To permit diagnoses, the DISC 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 criterion, multiple questions, relevant to a time frame of the past six months, 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 (seven for marijuana, excluding the two withdrawal criteria), and any of the symptoms

persisted for a period of a month or longer or occurred repeatedly over a longer period of time, the respondent is considered to have had a *diagnosable dependence* on the respective substance according to the DSM-III-R criteria.

Subjects not qualifying for a diagnosis of dependence may meet the criteria for abuse. To qualify for a *diagnosis of 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. As with dependence, a corresponding duration component--any of the symptoms persisted for a period of a month or longer or occurred repeatedly over a longer period of time, must also be present. A respondent is considered to need treatment if he or she qualifies for a diagnosis of dependence or abuse (Mulvaney, 1994).

DIAGNOSES

The AutoSANTA module provided data for computing diagnoses for alcohol, marijuana, cocaine, opiates, hallucinogens, uppers, downers, tranquilizers, and inhalants. In order to be asked the assessment questions used in computing diagnoses, respondents were asked screening questions (see "Instrumentation" section above) that established the threshold for use. Once screened into the assessment, respondents were asked questions about their use of the substance(s) in the past six months that closely followed the nine DSM-III-R diagnostic criteria.

For each substance evaluated, respondents could receive one of three possible diagnoses: no diagnosis of substance dependence or abuse (did not meet screening criteria or assessment criteria), dependence, or abuse. Those respondents who were asked the assessment questions but did not meet the diagnosis of dependence were evaluated for abuse (a subset of the symptom and duration components for dependence).

STUDY LIMITATIONS

The study was designed to estimate the need for treatment among a specific population for whom relevant information is not generally available. Need for treatment is based upon diagnoses calculated from self-reports of drug use patterns and behaviors. The specific population consists of juvenile detainees admitted to detention facilities in the state of Maryland. 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 (Gray, 1996; Gray and Wish, 1998; Wish et al., 1997). Given that these estimates are based upon self-reported use and that 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.

FINDINGS

SELF-REPORTED DRUG USE

Data from the study include self-reported drug use by respondents from both the DUF interview and SANTA module for a variety of time periods--lifetime use (age first use), use past year, past six months, past month, and past three days. While the DUF interview was originally designed for interviewing recent arrestees, less than a fifth of the male sample and just over half of the female sample met the criterion of being new admissions. The remainder had been in detention for a longer period of time and the more recent periods of self-reporting were not applicable.

Table 6 presents self-reported drug use data for lifetime use and median age of first use for the nine drugs assessed, plus tobacco, ordered by median age of onset. Most detainees reported use of alcohol, tobacco, and marijuana at some point in their lifetime. Alcohol was the most prevalent drug indicated for lifetime use; 88% of males and 87% of females indicated having tried some form of alcohol (beer, wine, or hard liquor). Just as many or more of the respondents indicated having tried marijuana (86% of males and 84% of females) as having tried tobacco/cigarettes (83% and 85%, respectively). Following alcohol, marijuana, and tobacco, the drug with the next highest

Table 6

Substance Abuse Need for Treatment Among Arrestees
1996 Maryland Juvenile SANTA Study

Self-Reported Lifetime Drug Use*

Drug	Males (N=535)		Females (N=114)	
	Ever Used Lifetime	Median Age First Use	Ever Used Lifetime	Median Age First Use
Alcohol	88%	13.0	87%	12.0
Tobacco	83%	13.0	85%	12.0
Inhalants	7%	13.0	17%	12.1
Marijuana	86%	13.0	84%	13.0
Uppers	5%	14.0	9%	13.8
Downers	3%	14.0	8%	14.0
Tranquilizers	3%	15.0	7%	15.0
Opiates	4%	15.0	10%	13.4
Cocaine	12%	15.0	19%	14.0
Hallucinogens	22%	15.0	31%	14.0

* Data are weighted.

proportion of respondents reporting lifetime use was hallucinogens (22% of males and 31% of females, $p < .10$). Lifetime use of drugs declined further for cocaine (12% of males and 19% of females, $p < .10$) and with the exception of inhalants (17% of females reported lifetime use) to below 10% for the remaining drugs. While similar percentages of males and females reported lifetime use of alcohol, tobacco, and marijuana, a larger percentage of females than males reported lifetime use for all other drugs.

In general, age of onset for drug use was earlier for females than males. The median age of first use for alcohol,

tobacco, and inhalants by females was 12 years, while median first use for males was at 13 years old.

Table 7 presents self-reported results of drug use for past year use and use in the past six months. Levels of use in the past six months are an indication of the percentage of respondents who would screen into the assessment questions for a particular drug.

Past year use of alcohol (82% for males and 84% for females) and marijuana (83% and 81%, respectively) is lower than the reports of lifetime use by only a few percentage points. Use in the past six months dropped to 67% (males) and 74% (females) for alcohol and 72% and 76% for marijuana, respectively. More detainees reported using marijuana than alcohol in the past six months. Fifteen percent of males and 19% of females reported use of hallucinogens in the past six months. After hallucinogens, cocaine use in the past six months was reported by 7% of the males and 13% of females. Use of the remaining drugs in the past six months was less than 5% for both groups (exceptions were 7% for inhalants and 6% for opiates, both by females).

As with the adult SANTA study in Baltimore City, which found more drug use among females than males, these self-report findings for juveniles provide preliminary support for the developing substance abuse problems of females in the juvenile justice system. The data from this study show females reporting

an earlier age of onset for drug use and greater levels of use of gateway and harder drugs than their male counterparts.

DRUG TEST RESULTS

As indicated earlier, only a portion of the entire sample (17% of males and 56% of females) was comprised of subjects who were new admissions and met the initial eligibility criterion for providing a urine specimen. Urine specimens were provided by over 80% of the new admissions (65 males and 30 females; weighted *N*s).

Table 8 presents urinalysis and hair analysis results for the males and females who provided urine and/or hair specimens at the conclusion of the SANTA interview. Urine specimens were tested for 10 drugs and alcohol. Results indicate that marijuana (cannabinoids) and cocaine were the only drugs detected by urinalysis.

Thirty-six percent of the males and 23% of the females tested positive for at least one drug. Consistent with research from other juvenile DUF and SANTA studies, marijuana was the most prevalent drug detected--35% of the males and 22% of the females tested positive. In both groups, 4% tested positive for cocaine and 3% were positive for both cocaine and marijuana.

In addition to urine specimens, hair samples from 67 males and 67 females were collected and tested for cocaine and opiates. The weighted sample (58 hair specimens for males and 66 for

Table 8

Substance Abuse Need for Treatment Among Arrestees
1996 Maryland Juvenile SANTA Study

Urinalysis and Hair Results*

Drug Positive by Urinalysis	Males (N=65)	Females (N=30)
Cannabinoids	35%	22%
Cocaine Metabolite	4%	4%
Multiple Positive	3%	3%
Any Positive	36%	23%

Drug Positive by Hair Analysis	Males (N=58)	Females (N=66)
Cocaine Metabolite	22%	9%
Opiate Metabolite	2%	0%

* Data are weighted.

females) indicate that 22% of the male and 9% of the female hair samples were positive for cocaine, a two-to fourfold increase over the urine test results given an increase in the period of detection from three days to three months. Only one opiate-positive (male) was indicated by the test results.

The testing for drugs by hair provides a longer period of detection than testing by urinalysis. Drugs and drug metabolites, usually undetectable by urinalysis 48 to 72 hours following use, are permanently deposited in hair and provide a chronological record of drug use or drug abstinence as the hair grows. In addition to determining use, hair analysis can also indicate the level of use (sporadic versus chronic) and the concentration of drugs detected in segmented analysis. While the

technology is still developing, hair analysis can be a useful tool in long-term monitoring of treatment and criminal justice populations as well as a tool for detecting underreporting of drug use.

SUBSTANCE DEPENDENCE AND ABUSE

Substance dependence and abuse were determined in order to estimate the need for treatment among the juvenile detainee population in Maryland. According to DSM-III-R, the classification of dependence and abuse differs principally in the extent of dysfunction resulting from substance use, with dependence being the more serious disorder. For the purpose of this study, a diagnosis of dependence or abuse is indicative of a need for treatment.

Table 9 presents diagnoses of substance dependence, abuse, and need for treatment (dependence and abuse combined) for the nine substances evaluated: alcohol, marijuana, cocaine, opiates, hallucinogens, uppers, downers, tranquilizers, and inhalants.

In total, 40% of both males and females were diagnosed as needing treatment for at least one substance. Overwhelmingly, most diagnoses were for dependence; diagnoses of abuse contributed only several percentage points to need for treatment. Marijuana abuse was diagnosed in 3% of the males, alcohol in less than 2% of the males, and hallucinogen abuse in less than 1% of males and less than 3% of females. The disparity in diagnoses

Table 9

Substance Abuse Need for Treatment Among Arrestees
1996 Maryland Juvenile SANTA Study

Diagnoses of Dependence and Need for Treatment, by Drug[1]

Diagnosis by Drug	Males (N=535)	Females (N=114)
Dependence:		
Marijuana	33.6%	35.2%
Alcohol	17.3%	20.3%
Hallucinogens	5.8%	5.0%
Cocaine	2.4%	5.5%
Uppers	1.1%	1.0%
Inhalants	0.4%	1.6%
Opiates	0.2%	3.9%
Downers	0.0%	1.8%
Tranquilizers	0.0%	1.0%
Multiple Drugs	18.5%	23.5%
Abuse:		
Marijuana	3.0%	0.0%
Alcohol	1.3%	0.0%
Hallucinogens	0.4%	2.4%
Need for Treatment:[2]		
Marijuana	36.6%	35.2%
Alcohol	18.6%	20.3%
Hallucinogens	6.2%	7.5%
Cocaine	2.4%	5.5%
Uppers	1.1%	1.0%
Inhalants	0.4%	1.6%
Opiates	0.2%	3.9%
Downers	0.0%	1.8%
Tranquilizers	0.0%	1.0%
Total Need for Treatment:	40.0%	40.0%

[1] Data are weighted.
[2] Combines dependence and abuse.

between abuse and dependence may be a reflection of the chronic drug involvement characteristic of criminal justice populations in general. Those who use drugs to the extent that it creates

problems have problems more severe than those associated with abuse.

By drug, the most prevalent treatment diagnosis was for marijuana--over a third of both groups (37% of males and 35% of females) were diagnosed as needing marijuana treatment. Approximately a fifth of the detainees (19% of males and 20% of females) were diagnosed as needing treatment for alcohol.

Diagnoses for the remaining drugs dropped below 10%. Approximately 7% from both groups needed treatment for hallucinogen dependence/abuse. Diagnoses for cocaine treatment were 2% and 6% and for opiates less than 1% and 4%, respectively. Need for treatment for poly dependence was diagnosed in 19% of the males and 24% of females, primarily for the combination of alcohol and marijuana.

In comparing the diagnoses for treatment need with the drug test results from the urine and hair specimens, the objective measures did not provide much predictive value for treatment need. However, the comparisons are based upon a small sample size. For males providing a urine specimen, 39% of the marijuana positives were assessed as marijuana dependent compared to 28% of the marijuana negatives (p = n.s.). For females 57% of the marijuana positives were assessed as marijuana dependent compared to 22% of the marijuana negatives ($p < .05$). For hair test results, one male and one female who were cocaine positive were assessed as cocaine dependent.

PREVALENCE OF SYMPTOMS

A diagnosis of dependence requires that detainees meet at least three of the nine symptoms (three of seven for marijuana) operationalized from the DSM-III-R criteria. For detainees assessed as dependent on marijuana or alcohol, the most prevalent drugs assessed, over half met *six* or more of the symptoms. Table 10 presents the percentage of symptoms acknowledged by detainees assessed as dependent for marijuana and alcohol.

Table 10

Substance Abuse Need for Treatment Among Arrestees
1996 Maryland Juvenile SANTA Study

Prevalence of Symptoms for Detainees Assessed Dependent for Marijuana and Alcohol*

No.	DSM-III-R Symptom	Marijuana (N=220)	Alcohol (N=115)
4	Frequent intoxication/withdrawal when expected to fulfill major obligations (work, school, or home)	92%	84%
7	Tolerance--need more to achieve same effect	89%	84%
1	Use larger amounts or for a longer period than intended	81%	82%
2	Persistent desire for or unable to cut down use	79%	79%
5	Reduced social, work, and recreational activities due to use	73%	63%
3	Considerable time spent using or obtaining the substance	63%	84%
6	Continued use despite knowing a persistent social, physical, or psychological problem developed from use	60%	89%
9	Substance taken to relieve withdrawal symptoms	N/A	27%
8	Withdrawal symptoms	N/A	20%

*Data are weighted.

For both alcohol and marijuana, intoxication or withdrawal when expected to fulfill major obligations, ranked as one of the most prevalent symptoms for those assessed dependent (92% of those marijuana dependent and 84% of those alcohol dependent).

Related to this symptom, 83% of those marijuana dependent reported going to school or work while high (63% of those alcohol dependent) and 51% reported driving while high (55% of those alcohol dependent reported driving while intoxicated). Tolerance of the drug was a factor in both alcohol and marijuana dependence among detainees.

Symptom 5, reduced activities due to use, was largely attributable to a reported drop in grades due to use (57% of marijuana dependent and 41% of alcohol dependent). However, only 12% of detainees in both groups reported losing friends due to their substance use. The difference between alcohol and marijuana dependence for symptom 6 was largely attributable to alcohol dependents indicating they were not able to remember what they said or did after being drunk, a question that was not incorporated into evaluating marijuana dependence.

Detainees did not acknowledge withdrawal symptoms from alcohol (27% and 20%) to the degree they acknowledged the other symptoms of alcohol dependence. Withdrawal symptoms were not applicable in the calculation of marijuana dependence.

PRIOR TREATMENT AND PERCEIVED NEED

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 the self-report of 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

Substance Abuse Need for Treatment Among Arrestees
1996 Maryland Juvenile SANTA Study

Self-Reported Treatment Experience and Need for Treatment[1]

	Males		Females	
	(N)	%	(N)	%
Self-Reported Prior Treatment				
Total Sample	(535)	24%	(114)	28%
Of Those Diagnosed as Needing Treatment	(214)	36%	(46)	56%
Of Those with no Diagnosis for Treatment	(321)	16%	(68)	9%
Diagnosed in Need of Treatment: Sought Treatment in Past 6 Months[2]				
Any Drug	(214)	16%	(46)	40%
Marijuana	(196)	16%	(40)	43%
Alcohol	(100)	18%	(23)	30%
Hallucinogens	(32)	22%	(9)	33%
Self-Reported Need for Treatment Now				
Total Sample	(535)	20%	(114)	22%
Of Those Diagnosed as Needing Treatment	(214)	38%	(46)	44%
Of Those with no Diagnosis for Treatment	(321)	8%	(68)	7%

[1] Data are weighted.
[2] Specific breakdowns for opiates, cocaine, uppers, downers, inhalants, and tranquilizers excluded due to small numbers.

Prior treatment experience was self-reported by approximately a quarter of the juvenile detainees, 24% of all males and 28% of all females. However, more of those who were diagnosed with a substance use disorder had received treatment than those not diagnosed. Of respondents diagnosed as needing

treatment for a drug, females were more likely to have reported prior treatment experience (56% of females and 36% of males, $p < .01$). Only 16% of males and 9% of females with no diagnosis of needing treatment reported having ever been in treatment.

Of those with a diagnosis of needing treatment, females were more likely to have sought treatment in the past six months than males. Forty percent of females diagnosed as needing treatment self-reported seeking treatment in the past six months compared to only 16% of the males diagnosed as needing treatment ($p < .01$).

Current need for treatment was indicated by only two out of every five diagnosed as needing treatment. Thirty-eight percent of males and 44% of females diagnosed with a substance use disorder acknowledged the need for treatment.

The findings presented in this section indicate that for detainees diagnosed with a substance use disorder a higher percentage of females compared to males have previously been in treatment, acknowledged a current need for treatment (n.s.), and have sought treatment in the past six months.

ESTIMATES OF TREATMENT NEED IN THE TOTAL DETAINEE POPULATION

As stated previously, the overall goal of the study was to provide estimates of treatment need for the juvenile detainee population in Maryland. Utilizing the findings of current abuse and dependence from the study sample, weighted to be

representative of all admissions to the DJJ detention facilities, the number of juvenile detainees in Maryland in need of treatment for 1996 can be projected.

Table 12 presents the estimates for the number of juvenile detainees in Maryland in 1996 who were in need of alcohol and drug treatment, *by individual drug*. Due to the number of detainees in need of treatment for multiple drugs (see Table 9), the sum of the population estimates for individual drugs exceeds the estimate for treatment need for any drug. For the period of November 1995 through October 1996, a total of 2,364 juveniles admitted to the five DJJ residential detention facilities in Maryland, statewide, were estimated to need treatment for alcohol or drug use. This represents 40% of the 5,910 persons detained during that period. By gender, 2,090 males and 274 females were in need of treatment. By drug, treatment need for marijuana abuse/dependence was estimated for 2,154 juvenile detainees. Treatment need for alcohol was estimated for 1,111 detainees.

Treatment for hallucinogens was estimated for 375 detainees, and 163 were estimated as needing treatment for cocaine. Estimates for treatment need for the remaining drugs dropped to under 100 persons for each drug--64 for uppers, 37 for opiates, 32 for inhalants, 12 for downers, and 7 for tranquilizers.

Less than half of the treatment need estimated was indicated for detainees dependent or abusive of one substance only. Most

Table 12

Substance Abuse Need for Treatment Among Arrestees
1996 Maryland Juvenile SANTA Study

Census Estimates[1] for Current Treatment Need

Current Need for Treatment	Males[2]		Females[3]		Total
	% Sample	Estimated N	% Sample	Estimated N	
Any Drug	40.0%	2,090	40.0%	274	2,364
Marijuana	36.6%	1,193	35.2%	241	2,154
Alcohol	18.6%	972	20.3%	139	1,111
Hallucinogens	6.2%	324	7.5%	51	375
Cocaine	2.4%	125	5.5%	38	163
Uppers	1.1%	57	1.0%	7	64
Inhalants	0.4%	21	1.6%	11	32
Opiates	0.2%	10	3.9%	27	37
Downers	0.0%	0	1.8%	12	12
Tranquilizers	0.0%	0	1.0%	7	7

[1] Due to need for treatment for multiple drugs, the sum of population estimates for individual drugs exceeds total for any drug.

[2] Male sample contained 535 weighted cases and census count of 5,226.

[3] Female sample contained 114 weighted cases and census count of 684. Waxter sample applied to entire census for females.

of the treatment need was for those dependent/abusive of multiple substances. Table 13 presents the estimates for treatment need by the drug combinations for which detainees were assessed.

The most prevalent drug/drug combination for which detainees were estimated to need treatment was for marijuana only (not in combination with any other substance), 17% of males and 13% of females were estimated as needing treatment. This accounted for 983 (41%) of the 2,364 detainees estimated as needing treatment. After marijuana only, the combination of marijuana and alcohol accounted for 724 (31%) of the total assessments estimated. The

Table 13

Substance Abuse Need for Treatment Among Arrestees
1996 Maryland Juvenile SANTA Study

Census Estimates for Current Treatment Need, by Drug Combination

Current Need for Treatment	Males[1]		Females[2]		Total
	% Sample	Estimated N	% Sample	Estimated N	
MJ Only	17.1%	893	13.1%	90	983
AL Only	2.1%	109	2.7%	19	128
HL Only	0.2%	10	0.8%	5	15
CO Only	0.3%	16	0.0%	0	16
Other Drug(s) OD	0.2%	10	0.0%	0	10
MJ + AL	12.5%	653	10.4%	71	724
MJ + HL	2.5%	130	1.8%	12	142
MJ + CO	0.1%	5	0.8%	5	10
MJ + OD	0.4%	20	1.6%	10	30
AL + HL	0.3%	16	0.0%	0	16
AL + CO	0.1%	10	0.8%	5	15
HL + CO	0.3%	16	0.0%	0	16
CO + OT	0.0%	0	0.5%	5	5
MJ + AL + HL	1.6%	83	2.6%	18	101
Other-3 Combinations	2.3%	119	4.9%	34	153
Any Drug(s)	40.0%	2,090	40.0%	274	2,364

[1] Male sample contained 535 weighted cases and census count of 5,226.
[2] Female sample contained 114 weighted cases and census count of 684. Waxter sample applied to entire census for females.
Key: MJ=Marijuana, AL=Alcohol, HL=Hallucinogen, CO=Cocaine, OD=Other Drug, which includes opiates, uppers, downers, tranquilizers, and inhalants.

remaining combinations accounted for less than 6% each of the total number of detainees estimated to be in need of treatment. Eleven percent of the total estimate was for the combination of three or more drugs, of which marijuana, alcohol, and hallucinogens were the most frequent combination.

SUMMARY OF ADDITIONAL FINDINGS

Table 14 provides a summary of findings from other domains investigated in the study--community involvement, guardian involvement, social networks, delinquency, runaway history, prevention education, and sexual history.

Over half the youth in both groups reported some lifetime experience with extracurricular/community involvement. Current level of involvement was not measured. Involvement by males was highest for church and sports; 77% reported some lifetime involvement. Eighty-two percent of the females reported involvement with a church.

Less than half of the respondents reported a lack of adult supervision of their activities after school (44% of males and 38% of females). A larger percentage indicated that their parent/guardian knew exactly where they where after school and that a parent/adult was home when they arrived home after school.

The percentage of both groups who reported having friends who drank alcohol and smoked marijuana (over 80%) was similar to the percentage who self-reported use of alcohol and marijuana (see Tables 6 and 7). Approximately a quarter of both groups reported having friends in a gang (24% of males and 27% of females) and having been in a gang at some time. Thirteen percent of males and 9% of females reported current gang membership. In both cases, behavior was reflective of peer affiliations.

Table 14

Substance Abuse Need for Treatment Among Arrestees
1996 Maryland Juvenile SANTA Study

Summary of Additional Findings*

Domain	Males (N=535)	Females (N=114)
Community Involvement/Activities		
Ever involved at church/other religious organization	77%	82%
Ever done volunteer work	61%	58%
Ever been in a sports league	77%	54%
Ever gone weekly or more to local youth center	51%	44%
Parental (Guardian) Involvement/Management		
"There usually aren't any adults around where I go after school"	44%	38%
"... My parents know exactly where I am when school is out"	58%	49%
"...When I go home after school, parent(s)/adult is usually home"	73%	64%
Social Network		
Friends get in trouble with the law because of alcohol or drugs	41%	47%
Friends drink alcoholic beverages	82%	84%
Friends smoke marijuana	85%	85%
Friends are in a gang	24%	27%
Delinquency		
Ever in a gang	24%	29%
Currently in a gang	13%	9%
Ever sold drugs to make money	67%	44%
Runaway/Homelessness		
Ever runaway for at least one overnight	40%	82%
Ever been kicked out of your home	23%	40%
Been homeless at some time in past year	11%	23%
Prevention Education		
Ever been given presentation/classes about effects of alcohol/drugs	59%	70%
Ever been given presentation/classes about AIDS/HIV	69%	71%
Sexual History		
Ever had sexual intercourse	92%	92%
Median age, first time intercourse	12	13
Median number of partners (lifetime)	8	5
Ever pregnant	N/A	28%
Have children	10%	5%

*Data are weighted.

More females than males reported having run away (82% vs. 40%, $p < .01$), been kicked out of the house (40% vs. 23%, $p < .01$), and being homeless in the past year (23% vs. 11%, $p < .01$).

The majority of both groups had received alcohol and drug education (59% of males and 70% of females, $p < .10$) and AIDS education (69% of males and 71% of females). In both groups, 92% self-reported sexual activity; the median age of initiation for males (12 years old) was lower and the median number of partners (8) was higher compared to females (13 years old/5 partners). Twenty-eight percent of the females reported having been pregnant and 5% of the females reported currently having children. Ten percent of the males reported having children.

SUMMARY AND CONCLUSIONS

The Maryland SANTA study was undertaken to produce estimates of treatment need among juvenile detainees in the state. As with the adult SANTA study conducted in Baltimore City, the opportunity was unique in that it was the first time the SANTA methodology was used on such a large scale with a sample of juvenile detainees in Maryland.

Study measures of subjects' self-reports of drug use, diagnostic assessments, and urinalyses results attest to the considerable drug use among juvenile detainees. The results, in conjunction with those from adult arrestees in Baltimore City, indicate that the need for treatment at the juvenile justice level is almost comparable to that at the adult level; the need progresses from alcohol and marijuana treatment among juveniles to cocaine and opiate treatment among adults.

Our findings are based upon subjects' self-reports, which previous research has shown to underestimate deviant behavior such as drug use. As such, the estimates produced from this study should be viewed as minimum estimates of the problems in this population.

By most measures, juvenile detainees exhibit extensive involvement with marijuana and alcohol, followed by use of hallucinogens. More youth reported using marijuana than alcohol in the past six months. Overall, 40% of the youth in the sample

were diagnosed as in need of treatment. Like the self-reports for recent use, marijuana was the most prevalent drug for which treatment was needed. Thirty-seven percent of males and 35% of females were found to be in need of treatment for marijuana abuse/dependence, followed by alcohol, for which 19% of males and 20% of females needed treatment. Approximately 6% of males and 8% of females were diagnosed in need of treatment for hallucinogens.

Findings from the study are generalizable to juvenile *detainees* in DJJ detention facilities in Maryland but may not be representative of all juvenile *arrestees* or juveniles at intake. Detainees represent approximately 10% of all DJJ intakes.

Utilizing the sample percentages for current treatment need, we calculated that approximately 2,364 juvenile detainees in Maryland during 1996 were in need of treatment. By drug, treatment need was projected for approximately 2,100 detainees for marijuana, 1,100 detainees for alcohol, 375 detainees for hallucinogens, 160 detainees for cocaine, and under 100 detainees for the remaining drugs. On average, DJJ has the capacity to treat 300 detainees a year. From this study, we estimate that the need for treatment is more than eight times the current capacity.

Regarding the need for treatment, 36% of males and 56% of females diagnosed in need of treatment self-reported prior treatment experience. However, for the same groups diagnosed,

less than half acknowledged a current need for treatment--38% of males and 44% of females reported they currently need treatment.

These findings demonstrate the value of SANTA studies in estimating treatment need by providing a separate and quantifiable measure of alcohol and drug disorders among a group that may be excluded from studies of the general population. With the inclusion of arrestees, the estimate of treatment need in Maryland surpasses that obtained from studies of the general population (Reuter et al., 1998).

As with the adult Maryland SANTA study, our findings that two of every five juvenile detainees in Maryland are currently dependent on or abusing alcohol and other drugs demonstrate the extensive need for treatment among this population. Given this concentration of alcohol, substance abuse, and other public health problems, the juvenile justice system is in a unique position to identify persons in need of treatment and direct them to support services capable of addressing their treatment need or mandating treatment for them as wards of the juvenile justice system.

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Appendix

Substance Abuse Need for Treatment Among Arrestees
1996 Maryland Juvenile SANTA Study

Weighted* Sample - Census Comparisons

	Males			Females		
	Census (N=5,226)	Sample (N=535)	Weighted (N=535)	Census (N=478)	Sample (N=114)	Weighted (N=114)
Race						
Nonwhite	73.1%	72.3%	74.3%	60.0%	54.9%	56.0%
White	26.9%	27.7%	25.7%	40.0%	45.1%	44.0%
Age						
< 12	0.8%	0.6%	0.7%	0.8%	0.0%	0.0%
12-14	22.4%	17.4%	22.4%	30.5%	16.7%	30.8%
15-17	72.1%	66.4%	72.2%	65.7%	72.8%	66.2%
≥18	4.8%	15.7%	4.8%	2.9%	10.5%	3.0%
Charge						
Person	20.0%	23.3%	23.3%	11.9%	21.1%	24.1%
Drug	20.3%	16.5%	16.4%	6.3%	8.8%	8.5%
Property	27.8%	34.6%	32.4%	30.7%	30.7%	31.2%
Other	31.8%	25.6%	27.9%	51.1%	39.5%	36.2%
Disposition						
Open/None	16.6%	18.6%	19.5%	23.6%	15.0%	15.1%
Delinquent	62.3%	62.2%	60.6%	54.2%	59.3%	61.4%
Not Delinquent	21.0%	19.2%	19.9%	22.2%	25.7%	23.6%
Site						
Waxter	16.1%	18.7%	16.2%			
Noyes	11.6%	17.9%	11.6%			
Hickey	13.3%	18.3%	13.3%			
Cheltenham	51.8%	36.8%	51.9%			
Carter	7.2%	8.2%	7.1%			

*Male data weighted by age and site, female data by age only.

Sample selection was prioritized for interviewing new admissions. Need for treatment diagnoses by case disposition (determined three to six months following interview) showed no difference in need for treatment by status. Therefore, disposition status was not utilized in weighting sample data.