ESTIMATING THE NEED FOR SUBSTANCE ABUSE TREATMENT IN MARYLAND

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Conducted by

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for

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EXECUTIVE SUMMARY

This study generates projections of the number of Maryland residents in need of substance abuse treatment using data collected from the household and arrestee populations. Under this Center for Substance Abuse Treatment needs assessment contract, individuals meeting DSM-III-R criteria for abuse/dependence of a particular substance are defined as "in need of treatment" for that substance. Data from the household and arrestee populations were collected, respectively, by the Maryland Telephone Survey of Alcohol and Other Drug Abuse and the Baltimore City Substance Abuse Need for Treatment among Arrestees (SANTA) survey, both conducted by the Center for Substance Abuse Research (CESAR). These surveys include questions that implement the DSM-III-R criteria so that abuse/dependence rates for alcohol, marijuana, cocaine, and heroin can be estimated.

Estimates of need for treatment are highly sensitive to assumptions about the overlap of the different samples. A small-sample telephone survey of the household population is an important source of data for estimating treatment needs. However, it clearly must be supplemented by other data that represent populations systematically undercounted in such surveys (e.g., arrestees). The central problem in integrating the household and arrestee survey data is estimating the overlap between the two populations. This report describes several different ways of combining the two data sets; each involves a particular set of assumptions about overlap. We focus specifically on telephone ownership and self-reported arrestee status to account for overlap of the household and arrestee populations.

The most plausible set of estimates are based on a scenario that assumes that drug dependence among the arrestee population is best represented by the SANTA data and that the household data should be used to estimate drug dependence only among the nonarrested (Scenario II). Thus, we subtract from the household population those who self-report that they have been arrested, assuming that no others were arrested in the survey year. We assume that nonphone and/or nonarrested residents have the same dependence rates as the nonarrested residents with phones. This approach was implemented in detail for Baltimore City, the only jurisdiction for which we had SANTA data. Table ES-1 provides Scenario II estimates of the number of Baltimore City residents in need of treatment, by age/race/sex group and type of substance dependence. For the rest of the state, we had to make use of a number of crude proxy measures for such important variables as need for treatment among arrestees and telephone ownership of arrestees. Using this method, we estimate that approximately 262,700 Maryland residents are in need of substance abuse treatment. Table ES-2 provides our Scenario II estimates of the number of Maryland residents in need of treatment, by region.

Table ES-1
Baltimore City Adult Residents in Need of Treatment, by Age/Race/Sex

	Black		White		Total*	
	Male	Female	Male	Female	Male	Female
Age Group: 18-24						
Alcohol Only	1,800	1,197	3,164	0	4,986	1,637
Marijuana Only	279	17	0	0	279	17
Drug Only	1,465	490	264	157	1,729	648
Alcohol and Drug	255	58	820	20	1,075	79
Age Group: 25-44						
Alcohol Only	7,126	725	6,342	1,964	13,468	2,688
Marijuana Only	1,049	601	27	13	1,076	614
Drug Only	8,705	4,827	522	462	9,226	5,289
Alcohol and Drug	966	929	913	175	1,879	1,104
Age Group: 45-64						
Alcohol Only	2,915	63	2,121	0	5,432	63
Marijuana Only	0	0	0	0	0	0
Drug Only	356	67	77	0	434	67
Alcohol and Drug	130	0	26	0	156	0
Age Group: $65						
Alcohol Only	699	886	0	0	699	886
Marijuana Only	0	0	0	0	0	0
Drug Only	0	0	0	0	0	0
Alcohol and Drug	0	0	0	0	0	0
Total:						
Alcohol Only	12,540	2,871	11,627	1,964	24,586	5,275
Marijuana Only	1,328	618	27	13	1,355	631
Drug Only	10,526	5,384	863	619	11,389	6,003
Alcohol and Drug	1,351	987	1,759	195	3,109	1,183

*The Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use and the Baltimore City SANTA Study, conducted by the Center for Substance Abuse Research (CESAR), College Park, Maryland.

Table ES-2
Maryland Adult Residents in Need of Treatment, by Region

Planning Area* (N=adult population $18 years)	CESAR Estimate: Scenario II
Region 1--Western MD (N=172,698)	11,050
Region 2--DC Metro (N=1,238,390)	70,895
Region 3--Southern MD (N=162,303)	13,493
Region 4--Baltimore City (N=554,848)	51,545
Region 5--Eastern Shore (N=260,715)	25,624
Region 6--Central MD (N=1,224,582)	90,056
State Total (N=3,613,536)	**262,663**

*Region 1-Allegany, Garrett, and Washington counties; Region 2-Frederick, Montgomery, and Prince George's counties; Region 3-Calvert, Charles, and St. Mary's counties; Region 4-Baltimore City; Region 5-Caroline, Cecil, Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico, and Worcester counties; Region 6-Anne Arundel, Baltimore, Carroll, Harford, and Howard counties.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use and the Baltimore City SANTA Study, conducted by the Center for Substance Abuse Research (CESAR), College Park, Maryland.

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I
GOALS AND LITERATURE REVIEW

INTRODUCTION

It is widely believed that there is a large, unmet need for treatment of persons suffering from drug abuse or dependence. All national estimates of need for drug and alcohol treatment (e.g., Anthony et al., 1994; Gerstein and Harwood, 1990) find that only a modest fraction of those needing treatment, perhaps less than one-quarter, are actually in treatment programs. Yet little is known about the distribution of this potential excess demand across demographic groups, regions, drug types, modalities of treatment, or potential financing sources. Estimating this distribution is critical for purposes of planning and allocating resources, particularly at the state level. For example, comparison of the characteristics of current treatment supply (location, modality, funding form) with unmet need allows determination of which kinds of treatment most require expansion. There is also a need to develop an understanding of the mechanisms that convert need into demand.

This study provides initial estimates of certain dimensions of the need for treatment in Baltimore City and the other regions of Maryland. It is part of a family of studies funded by the Center for Substance Abuse Treatment (CSAT) that aim to provide a comprehensive assessment of drug use and treatment needs in Maryland. Under subcontract to the Maryland Alcohol and Drug Abuse Administration (ADAA), CESAR conducted a survey of household residents in Maryland (Petronis and Wish, 1996), which generated estimates of the prevalence of drug use at the regional level; data were also collected on a statewide sample of juvenile detainees and of adult arrestees in Baltimore City (Gray and Wish, 1997). These studies were intended to provide drug and alcohol prevalence and treatment needs assessment data for Maryland. A second contract was awarded to CESAR in Fall 1996, which will enable the state to obtain additional treatment needs assessment data on arrestees throughout the state and DUI offenders in several selected sites.

This analytic report is intended to provide a prototype for using the expanding set of data that will become available in Maryland over the next three years. In Chapter II we use data from the surveys of the household population and the population of arrestees in Baltimore City to develop fine-grained estimates of the population in need of treatment in that city. These estimates attempt to account systematically for overlap between the household and arrestee data sets. In particular, they consider coverage limitations of the household survey, specifically phone possession among household residents and underrepresentation of arrestees in the household survey. These numbers are compared with other estimates developed either by different methodologies or with only household survey data to show how much these methods might improve existing estimates of need for treatment. Need for treatment is estimated for specific age/race/sex groups and also by drug (alcohol only, marijuana only, any drug, and alcohol and any drug).

In Chapter III we then attempt to develop estimates for the other regions of the state. Data on arrestees' drug and alcohol use and need for treatment are unavailable for the other counties, except for a pilot survey in Hagerstown. Assuming the Baltimore City arrestee data can be used to represent arrestees in other regions, we develop estimates of the need for treatment for alcohol and/or drugs for each region.

LITERATURE REVIEW

A wide variety of methods have been used to estimate the need for drug treatment. These methods can be distinguished from each other by the specific assumptions they make about the social and physical nature of the need for drug treatment. The assumptions of candidate methods must be understood and compared before their application can be deemed reasonable in a specific context. Some of the more popular methods used to estimate the need for drug treatment are Poisson models, capture-recapture models, social indicator models, and synthetic estimation models (Dewit and Rush, 1996). Our work attempts to extend the synthetic estimation approach.

Poisson Models

The Maryland Alcohol and Drug Abuse Administration has employed a truncated Poisson model to estimate the need for drug treatment because it is an inexpensive method that uses data already collected by the agency. The model applies the Poisson distribution to data on the number of visits clients have made to Maryland drug treatment clinics during a specified period; this information is used to estimate the number of individuals in need of treatment who made no visits to a clinic during the respective period.

The Poisson regression model makes three important assumptions about the treatment data it uses to project treatment need: (1) the probability of treatment admission is the same for all drug users and at all times; (2) treatment episodes are randomly distributed over time; and (3) the treatment population is homogeneous with respect to factors associated with the likelihood of entering drug treatment (Dewit and Rush, 1996). Data on the natural history of drug-using careers suggest the first assumption is probably untenable; intensity and frequency of use, symptoms of dependence, and motivation to seek treatment can wax and wane over time (Gerstein and Harwood, 1990; Vaillant, 1992). The second assumption could also be unrealistic for the same reasons. Homogeneity of treatment populations might be found within individual clinics but probably not across clinics; thus, the use of pooled treatment data might make the third assumption questionable. Further, by relying upon treatment data, Poisson model projections are based on users who seek treatment multiple times in a single year.

Estimates from the Poisson model are generally inexpensive to obtain because they rely on data typically collected from users in treatment. The Poisson model also provides a relatively simple means of estimating the size of the drug-using population that does not present for treatment. Its ability to estimate the hidden population, however, is dependent on the characteristics of persons in treatment. Not all users seek treatment and those who seek it multiple times in a year are surely an unusual minority upon which to base a projection of treatment demand. As clinic-based samples are likely to include the most severe cases of drug use, Poisson model estimates of the hidden population are not likely to account for moderate users in need of treatment. Further, their reliance upon cases who seek treatment multiple times could make Poisson model projections subject to a high degree of variability.

Interestingly, the Poisson model estimate of the total need for treatment calculated by ADAA is quite close to that resulting from CESAR's Maryland household survey (232,400 versus 203,000). Though the two estimates differed more at the substate regional level, as might be

expected given the small sample sizes involved, the differences are still modest. For example, the household survey estimate of drug treatment need in Southern Maryland was 11,200 compared to the Poisson model estimate of 15,800 (ADAA internal document). Of those needing treatment in Southern Maryland, 87% need treatment for alcohol, 18% for marijuana, and 11% for cocaine, according to the household survey. The corresponding numbers from the Poisson model are 66% for alcohol, 33% for marijuana, and 30% for cocaine.

Capture-Recapture Models

Capture-recapture models were originally developed by field biologists to estimate the size of wildlife populations. Researchers begin by capturing animals and then tagging and releasing them back into the wild. Sometime later a second sample of animals is captured; the proportion of the animals that have been recaptured, as identified by their tags, provides a means of estimating the size of the population. The model makes a number of assumptions. First, it assumes the population is closed--there are no births, deaths, in-migrations, or out-migrations. Second, it assumes that a subject's status (e.g., being a drug user) and "tag" do not change over time. Third, it assumes that all members of the population have the same chance of capture. Fourth, it assumes that being captured neither raises nor lowers a subject's probability of recapture. Finally, it assumes the two sample sizes are large enough to provide reliable estimates (Dewit and Rush, 1996; Simeone et al., 1993b).

The standard capture-recapture scenario has been revised for application to drug users. One of the most important revisions is the derivation of open-population models, which do not require the assumption of a static population and typically employ the collection of several samples over time. Adjustments for self-report bias have also been incorporated into the model (Simeone et al., 1995). However, several limitations have yet to be overcome. Because treatment clinics and criminal justice settings are often used as the context for capture and recapture, the model tends to estimate the number of users who are interested in treatment or are vulnerable to arrest (Dewit and Rush, 1996; Larson et al., 1994). A framework for accounting for the movement of users through repeated stages of dependence, abstinence, and relapse has been elucidated but not yet implemented (Simeone et al., 1995). However, when direct methods of ascertainment cannot be considered due to time, data, or financial limitations, capture-recapture models can provide easily obtainable and relatively reliable estimates (Domingo-Salvany et al., 1995).

Social Indicator Models

Social indicator modeling is the resource allocation paradigm offered for emulation by the National Technical Center (funded by CSAT) to those states to which CSAT awarded needs assessment contracts. To assess the extent of need for drug treatment, social indicator models rely on measures generally considered to be directly or indirectly related to drug and alcohol misuse. Often included in such models are indicators such as percentage of emergency room visits involving drugs; percentage of arrests involving drugs; juvenile delinquency rate; liver cirrhosis mortality rate; and percentage of households headed by a single female. The model assumes that the social indicators of drug use employed all refer to the same geographically defined social area, such as a city, county, or state. Social indicators are combined through statistical techniques to create an overall index of drug use. For example, a recent analysis of a time series of indicator data employed factor analysis to estimate an index of drug activity in Israel (Beenstock, 1995). Social

indicator models can be used to allocate resources for drug treatment by determining the relative amount of need for drug treatment across demographic or geographic subgroups of a state (Simeone et al., 1993a).

The success of social indicator models of need for drug treatment generally is dependent upon the quality of the indicators included. Models employing a group of indicators that explain only a small percentage of the variability in need for drug treatment will not be able to differentiate between groups in need and those not in need. Further, indicator models are static in that they rely on a description of the population at a point in time. One way to make these models more dynamic is to analyze time series of indicators as in the above-mentioned model of drug activity in Israel.

Synthetic Estimation Models

Like social indicator models, synthetic estimation models combine data directly and indirectly related to drug use. However, synthetic estimation models postulate a specific functional relationship between drug use and indicators of drug use (Rhodes, 1993). The type of functional relationship employed is exemplified by two broad approaches to synthetic estimation. The first approach, referred to as the *principal components approach*, combines indicators of drug use from multiple geographic areas to create a composite indicator of drug use (Hser et al., 1991). Because this approach is often used to develop synthetic estimates for small geographic areas within the areas to which the indicators pertain, it is often referred to as *small area estimation* in the statistical literature (Platek et al., 1987). A recent example of this approach employed random effects logistic regression models to 1991-1993 data from the National Household Survey on Drug Abuse (NHSDA) to develop estimates of substance abuse for 25 metropolitan statistical areas (MSAs) and 26 states (SAMHSA, 1996b). The second approach, known as the *population projection approach*, was originally developed by the National Center for Health Statistics to provide estimated prevalence rates in MSAs. It applies the known rate of drug use in one population subgroup to another subgroup in which the rate is unknown (Hser et al., 1992), and it assumes the relationship between demographic characteristics and the rate of drug use is constant across population subgroups.

Using a combination approach, the Institute of Medicine (IOM) developed a synthetic estimate of the need for drug treatment in the United States by combining data from the 1988 NHSDA with data from studies of drug use among criminal justice populations, the homeless, and pregnant women (Gerstein and Harwood, 1990). The estimated number of drug dependent individuals was assumed to estimate the need for drug treatment in each of these populations during 1987-88. The sum of individuals in need in these populations was 5.925 million: 4.6 million household residents, 170,000 homeless persons, 320,000 inmates, 730,000 probationers and parolees, and 105,000 pregnant women. The final estimate of drug treatment need was adjusted for overlap between the populations. The IOM estimated that 30% of drug dependent parolees (45,000), 50% of drug dependent probationers (270,000), 30% of the drug dependent homeless persons (50,000), and 100% of drug dependent pregnant women (105,000) were also represented in the NHSDA sample. Hence, 470,000 was subtracted from the sum of 5.925 million, yielding a final estimate of 5.455 million persons in need of drug treatment during 1987-88. The National Drug and Alcohol Treatment Utilization Survey (NDATUS) did not conduct a census in 1988, but it reported that 613,703 individuals received treatment (from clinics that received at least some public funds) in 1987 and 734,955 in 1989 (SAMHSA, 1995). The IOM estimate, therefore, implies there was a

substantial gap between treatment need and delivery. Little detail, however, was published about the characteristics of that need. Further, the IOM estimate took no account of underreporting by the household population.[1]

The synthetic model employed by the IOM relies heavily on the NHSDA data because the household population is the largest of the populations considered. However, more detailed analyses of the NHSDA estimates of the need for treatment have cast doubt on their utility in developing policy-relevant estimates. For example, over half of those classified as dependent on illicit drugs self-report use of marijuana and of no other illicit drug (Burnam et al., 1997); yet treatment for marijuana as a primary drug of abuse accounts for 15% of all drug (i.e., non-alcohol) treatment admissions (SAMHSA, 1997). Opiate dependence is second only to cocaine dependence in its contribution to actual treatment demand; in 1995, primary use of opiates accounted for less than 21% of all drug admissions compared to 24% for cocaine (SAMHSA, 1997). Yet the NHSDA estimates that a very small fraction of the treatment need comes from opiate dependence.

Synthetic estimation models are relatively inexpensive to implement because they rely on data collected for other purposes (often at great expense). The data typically used are often sufficiently detailed to provide estimates for population subgroups. That, combined with the fact that they are relatively simple to implement, explains why they are commonly employed in drug use research (Hser et al., 1992). Their shortcomings, however, cannot be dismissed lightly. They typically do not yield a statistic to measure the variability in the estimates they provide because confidence intervals often cannot be calculated around synthetic estimates. Synthetic estimates are limited by the census data they employ to project to the population of interest; the use of decennial census data between censuses can result in failure to account for important demographic shifts.

[1] Fiorentine (1993) reviews other studies of treatment adequacy. Schlesinger et al. (1991) estimated that in the late 1980s only about 1 million of 4 million persons with drug problems were in treatment but that half of those not in treatment were either unmotivated to stop or could desist without formal treatment programs. Schlesinger and Dorwart (1992) also suggest that official estimates substantially underestimate treatment capacity by not including a variety of providers, such as private physicians and community mental health centers. At the local level, using Los Angeles arrestee data, Hser and Anglin (1992) estimated a much lower rate of treatment utilization for those with serious cocaine problems, only about 10%.

II
BALTIMORE CITY ESTIMATES

DATA SOURCES

No single method among those reviewed in Chapter I is clearly superior to the others. The choice of method is driven by the appropriateness of its assumptions for the application at hand. The previously discussed IOM projections set a precedent for the use of synthetic estimation models to estimate the need for drug treatment. Here, we follow the example of IOM by combining newly available data sets on drug dependence among household residents and arrestees in Baltimore City. We attempt to explore how to improve upon the synthetic estimation approach by paying close attention to the overlap between the household and arrestee populations. Estimates of total treatment need are presented by age/race/sex groups as specified by the CSAT Substance Abuse Prevention and Treament (SAPT) Block Grant form.

The two principal data sources for this study are (1) the 1993-94 Maryland Telephone Survey of Alcohol and Other Drug Abuse (Petronis and Wish, 1996) and (2) the Substance Abuse Need for Treatment among Arrestees (SANTA) Survey (Gray and Wish, 1997). The two surveys are described below.

The Maryland Telephone Survey of Alcohol and Other Drug Abuse (telephone household survey) was administered to 5,095 persons between June 1993 and December 1994. The overall response rate for the telephone survey was 80%. The sample was drawn to allow estimates of drug use in each of six regions of the state as defined by ADAA. The interview included questions to assess drug abuse and dependence as defined by the third revised version of the Diagnostic and Statistical Manual (DSM-III-R). The Baltimore City sample, the basis for this study, consisted of 793 completed interviews.

The state-level sample matches well the population characteristics for Maryland in the 1990 Census with respect to age, race, and sex and has been appropriately weighted to reflect any discrepancies. The sample does, however, substantially underrepresent those who have not completed high school (10% in the survey versus 21% in the 1990 Census) and correspondingly overrepresents those with more than a college degree (15% versus 9% in the 1990 Census). This may reflect the concentration of nonphone households among low-income groups, as well as education-related differences in response rates.

The same educational discrepancy shows up in the Baltimore City data, presented in Table 1. Eighteen percent had less than a high school education in the household sample compared to 38% in the 1990 Census population, while those with more than a college education accounted for 10% of the household sample and only 6% of the 1990 Census population. Note that the patterns for intermediate educational levels in the two data sets were inconsistent.

Table 1
Comparison of Educational Attainment Among Baltimore City Population and Baltimore City Household Survey Respondents

Educational Attainment	Baltimore City Adults ($18 Years Old)	
	1990 Census Population (N=555,971)	Household Survey Sample* (N=793)
Less Than High School Graduate	38%	18%
High School Graduate	28%	38%
Some College	16%	23%
College Graduate	13%	11%
More Than College	6%	10%
Total	100%	100%

* Weighted data. Percentages may not add to 100% because of rounding.

SOURCE: 1990 Census data from World Wide Web: URL http://venus.census.gov/cdrom/lookup/867434092; Household survey data from Maryland Telephone Survey of Alcohol and Other Drug Abuse (Petronis and Wish, 1996).

The SANTA data for Baltimore City were collected in 1995. A sample of 1,190 (435 female, 755 male) arrestees were interviewed with an instrument that included the questions to assess DSM-III-R drug abuse and dependence, which were again used to determine whether an individual was in need of treatment. Urine and hair specimens were also collected. These data were projected to the total population of Baltimore City arrestees who were resident in the city. The Baltimore City Police Department (BCPD) made available data on the residences and charges of all 41,000 arrestees for 1995. There were substantial missing data and erroneous addresses (e.g., the arrestees identified zip codes that were not in the county as their residence). Appendix A describes how we produced estimates of the total number of Baltimore City residents arrested in that year. We estimated that 31,726 individual residents were arrested in the course of 1995; this represents about 6% of the total adult population. Of those arrested, most were male, young, and African-American; 25,273 were male and 6,453 were female; 26,276 were African-American and 5,241 were white. The population of Baltimore City is 56% black. We estimate that 30% of black males aged 18-24 were arrested in Baltimore in 1995. Table 2 compares the demographic composition of the resident and arrestee populations in Baltimore City.

ANALYTIC APPROACH

Our basic analytic strategy is to start with estimates of total treatment need based on the telephone household survey, which asked a number of questions to assess DSM-III-R drug abuse and dependence.

Table 2
Characteristics of Baltimore City Resident and Arrestee Populations

	1990 Census Baltimore City Resident Population		1995 Arrestee Census Baltimore City Arrestee Population	
	N	%	N	%
Males 18-24	40,239	16.0	8,300	32.8
Black, Non-Hispanic	23,872	9.5	7,149	28.3
White, Non-Hispanic	14,744	5.9	1,086	4.3
Males 25-44	116,044	46.1	15,257	60.4
Black, Non-Hispanic	65,001	25.8	12,661	50.1
White, Non-Hispanic	47,732	19.0	2,504	9.9
Males 45-64	58,437	23.2	1,606	6.4
Black, Non-Hispanic	31,667	12.6	1,233	4.9
White, Non-Hispanic	25,456	10.1	356	1.4
Males $65	37,066	14.7	110	0.4
Black, Non-Hispanic	15,697	6.2	70	0.3
White, Non-Hispanic	20,848	8.3	39	0.2
Black Males $18	136,237	54.1	21,113	83.5
White Males $18	108,780	43.2	3,985	15.8
Total Male Population $18	**251,786**	**100%**	**25,273**	**100%**
Females 18-24	43,720	14.4	1,606	24.9
Black, Non-Hispanic	26,620	8.8	1,290	20.0
White, Non-Hispanic	15,652	5.2	307	4.8
Females 25-44	126,253	41.7	4,570	70.8
Black, Non-Hispanic	78,131	25.8	3,667	56.8
White, Non-Hispanic	44,995	14.8	881	13.7
Females 45-64	70,268	23.2	264	4.1
Black, Non-Hispanic	41,459	13.7	197	3.1
White, Non-Hispanic	27,465	9.1	65	1.0
Females $65	62,821	20.7	13	0.2
Black, Non-Hispanic	25,526	8.4	9	0.1
White, Non-Hispanic	36,562	12.1	3	0.0
Black Females $18	171,736	56.7	5,163	80.0
White Females $18	124,674	41.1	1,256	19.5
Total Female Population $18	**303,062**	**100%**	**6,453**	**100%**

NOTES: Totals include Hispanics, Asian/Pacific Islanders, and American Indian, Eskimo, or Aleut. Percentages do not add to 100% because these race/ethnicity groups are omitted.

SOURCE: 1990 Census data from Maryland Office of Planning, Planning Data Services.
Arrestee census data from Baltimore City Police Department.

Telephone household surveys are known to be subject to four important sources of error for purposes of estimating either drug use or treatment need: (1) omission of certain institutional populations (e.g., residents of homeless shelters, prisons, and jails); (2) selective underreporting by respondents; (3) omission of some households because they lack phones; and (4) high rates of nonresponse by those whose drug use makes them particularly difficult to locate for a telephone interview. We focus here particularly on remedying the problems related to phone coverage and potential omissions related to criminal justice system involvement.

Limits of Telephone Surveys

Telephone surveys appear to produce underreporting compared to in-person surveys for two reasons: (1) respondents are less willing to disclose drug use over the telephone and (2) nonphone households have more drug users than phone households. On the first point, Gfroerer and Hughes (1991) report that a 1988 telephone survey produced an estimate of past year marijuana prevalence of 5.2% (1.4% for cocaine); the NHSDA, using in-person interviews for persons in households with phones, generated an estimate of 8.0% (3.1% for cocaine). The comparison is not perfect because the telephone survey used a shortened instrument, which might have increased the salience of the sensitive drug use questions.

Gfroerer and Hughes also examined differences in drug use among NHSDA respondents in households with and without telephones in 1985 and 1988. Nonphone households had consistently higher rates of drug use; for example, in 1985 past year cocaine use was 9.2% for nonphone households compared to 6.3% for those in households with phones.

Given that the principal concern is underreporting rather than exaggeration of drug use in surveys, it seems reasonable to assume that telephone surveys produce underestimates of drug use even in households with telephones, which makes the integration with arrestee data even more urgent. We might account for the underreporting in phone surveys by an upward adjustment of a relative 50% (roughly the difference between the two marijuana estimates above) in the estimate for phone households. However, there are no data on the relative estimates for more frequent use levels (e.g., past week), which are more relevant to the estimation of need-for-treatment populations. Thus, it would be difficult to justify any particular percentage for the upward adjustment.

For our study, the 1990 Census data show that 7.8% of Baltimore households did not have a phone on the premises (Bureau of the Census, 1993). Published census tables for Baltimore City show that the percentage is much higher for blacks than for whites, 10.5% versus 4.6%. In addition, we know that the fraction of aged households (with a householder aged 65 or over) without a telephone in Baltimore City is much lower than for the population generally; only 3.3% of the aged households in Baltimore City are without a phone. No other Baltimore City data were available in published form. For example, we do not know average household size by phone status or the age and sex compositions of the nonphone household population. Nationally, we know that persons in households without phones are *inter alia* more likely to be under age 25, have low incomes and low educational attainment, and be unemployed (Gfroerer and Hughes, 1991:384). These factors are also associated with higher rates of drug use.

We generally adjusted for nonphone status simply by assuming that, within each racial category, the population characteristics (in particular, age and sex) of the phone and nonphone populations were identical, unless we were using data specific to arrest status. Since we know that

elderly households (which have very low treatment need rates) are much less likely to be without a telephone than other age groups, our assumption is likely to produce conservative estimates of the need for treatment.

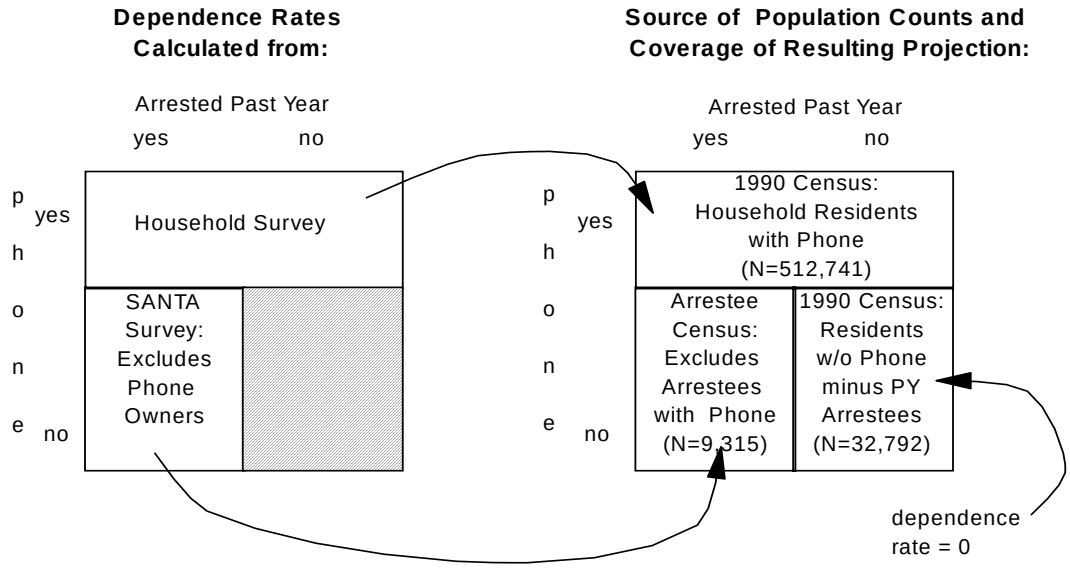
The SANTA interview included a question about whether the respondent lived in a household without a telephone. It took account of the instability of arrestees' life-styles by including a question about the variety of places that the respondent might consider his or her residence and then asked if the respondent could be reached by telephone at that location. If the answer to the second question was negative, we classified the respondent as living in a nonphone household. There may have been incentives for respondents to conceal that they were in a household with a telephone, because such a report would facilitate contact by the authorities. On the other hand, there may be some who reported a phone in one of their potential household addresses but were in fact there so infrequently to effectively not be covered by the household telephone survey sample. The fraction of arrestees self-reporting that they had no phone was dramatically higher than for the population generally, 30% versus 7.8%. The high poverty rates for arrestee households makes this plausible. Again, there were substantial differences between blacks and whites in the arrestee population; 29% of black male arrestees reported no phone compared to 19% of white male arrestees.

Integrating Criminal Justice and Household Data

The central problem in using our two data sets is estimating the overlap. Here we develop three different ways of integrating the two data sets; each involves a particular assumption about overlap. Figures 1 through 4 describe schematically the scenarios we used to obtain the different estimates.

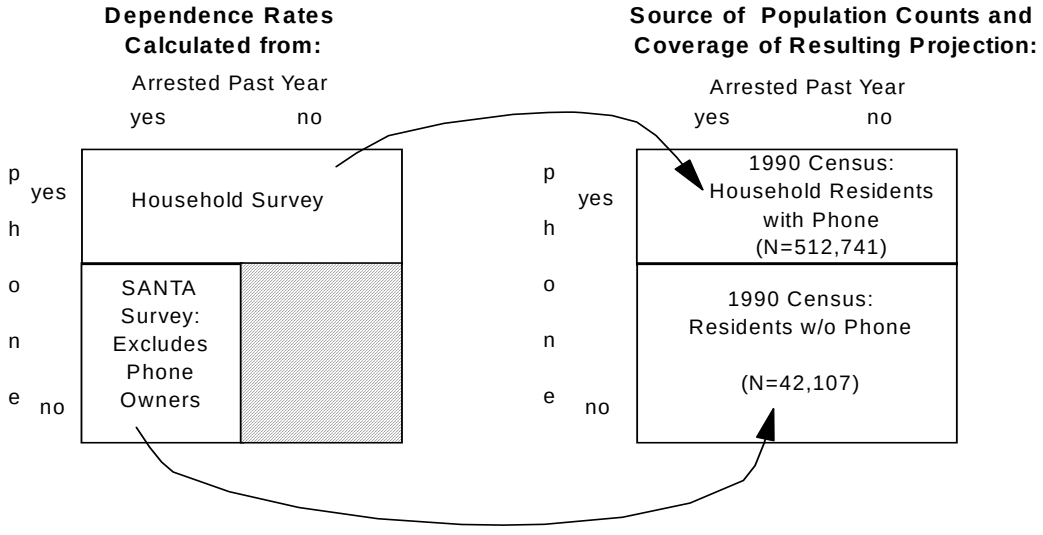
The two extreme assumptions are easily described. The first assumes that the household survey covers the complete household population except for those who do not have a telephone. For that population, we use data on arrestees who self-report that they live in a household without a telephone. Arrestees with phones are assumed to be represented in the household survey. We assume either that no other nonphone resident is drug dependent (Scenario IA--Figure 1), or that the drug dependence rate of nonphone residents is identical to that for all nonphone arrestees (Scenario IB--Figure 2). Both scenarios take account of the high arrest rate and relatively unstable life-style of people in nonphone households. Under Scenario IA that instability is assumed to mean that any person needing treatment is likely to be arrested. Scenario IB assumes that though nonphone householders with substance abuse problems are more likely to be arrested, even the nonarrested population has a high rate of treatment need.

Figure 1
Scenario IA



Projection = Dependence Rate * Population Count (as shown)

Figure 2
Scenario IB



Projection = Dependence Rate * Population Count (as shown)

The other extreme assumption is that drug dependence among the arrestee population is best represented by the SANTA data and that the household data should be used to estimate drug dependence only among the nonarrested. Thus, we subtract from the household population those who self-report that they have been arrested, assuming that no others were arrested in the survey year. We assume that nonphone, nonarrested residents have the same dependence rates as the nonarrested residents with phones. This provides Scenario II--Figure 3.

The intermediate estimate takes into account the fact that we have some information on the accuracy of self-report of arrest by specific demographic groups and that there is enormous variation in that respect. The household survey instrument included a question about the experience of arrest in the past year. Table 3 compares the self-reported prevalence of arrest for specific age/race/sex groups with actual data from the Baltimore City Police Department (BCPD). Most striking is the underreporting for those aged 18-24. In the household survey not a single female respondent or black male respondent in that age range reported an arrest in the previous 12 months. In fact, however, nearly one-third of black males in that age range were arrested. The rate for females, both white and black, is less dramatic; only 4% were arrested, and if 3 respondents, out of a sample of 63, had self-reported an arrest, that would have generated roughly the correct number. This points to a general problem in analysis of a survey of this size focused on moderately rare behaviors.

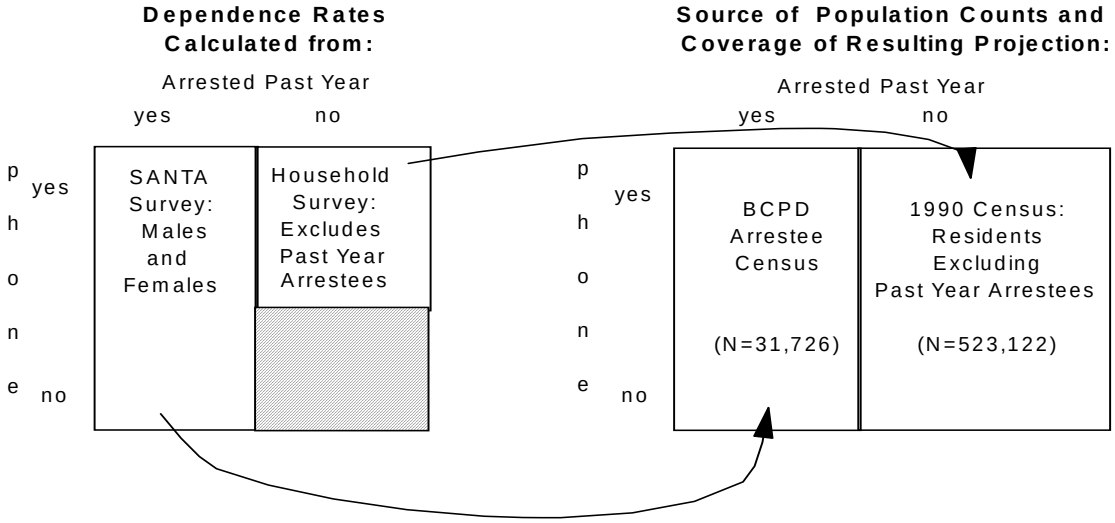
It is also useful to look at the composition of the arrested population. Young males, who account for the bulk of the arrested population, dramatically underreport their arrests. That is, if one used the household survey to estimate the number of arrestees aged 18-24, it would generate a number that is less than one-tenth the actual number, as estimated from BCPD arrest data. On the other hand, older males and females self-report arrests at a rate consistent with the BCPD data.

The apparent overreporting of arrests for three of the four groups over age 44 (Table 3) is not problematic. It may be a sampling artifact since the results are very sensitive because of the small sample size and low actual prevalence. For example, the sole white female respondent over age 44 reporting an arrest was enough to produce an estimate more than 10 times the actual number of arrests for that age/race/sex group. But note also that the question in the household survey did not restrict reported arrests to Baltimore City; some arrests of Baltimore residents could have occurred in other jurisdictions.

In light of the above, the intermediate estimate uses the arrestee data to estimate treatment need except for certain groups for whom we have apparently reliable self-report of arrests; these are represented by the household survey. Thus, for those over 44 and for white males aged 18-24, we add household estimates for the nonarrested in those groups. This produces Scenario III--Figure 4.

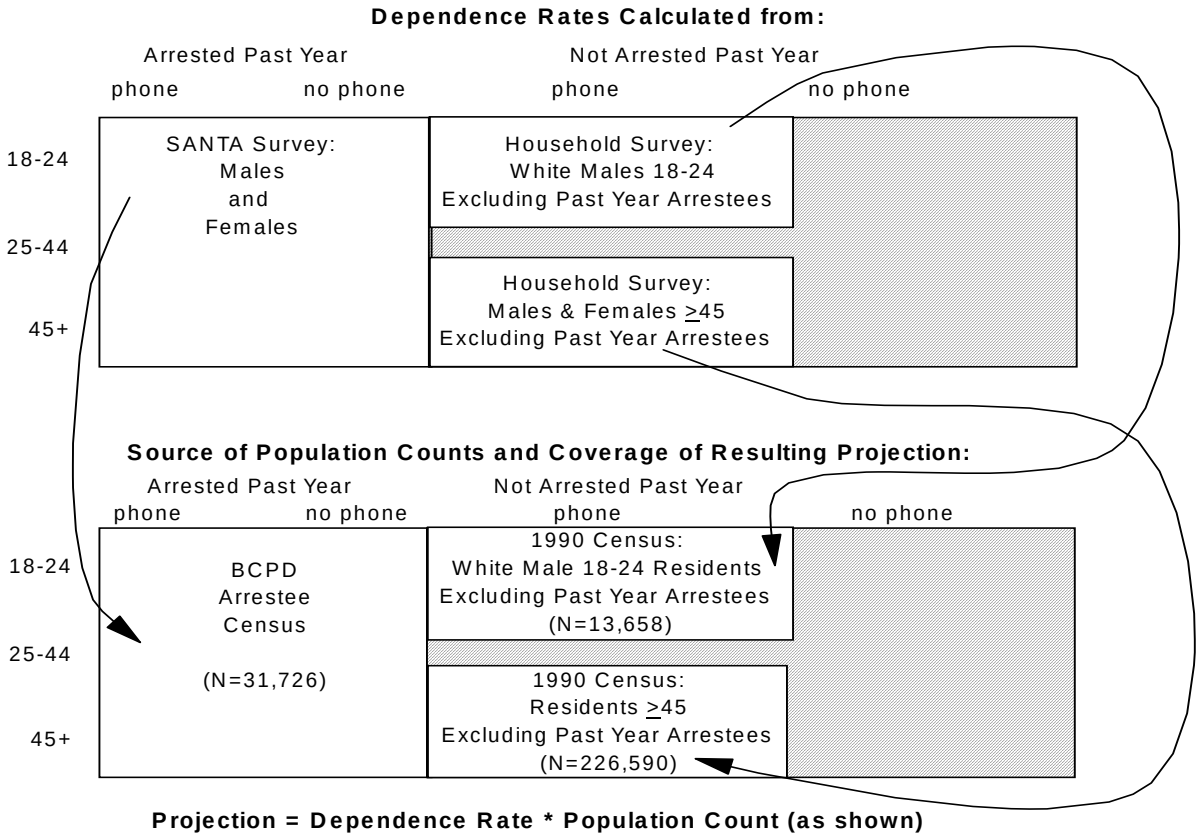
Note that the various estimates are only for the adult population, defined as aged 18 and over. They involve data from two slightly different periods; the arrestee data are for 1995, while

Figure 3
Scenario II



Projection = Dependence Rate * Population Count (as shown)

Figure 4
Scenario III



Projection = Dependence Rate * Population Count (as shown)

Table 3
Comparison of Actual Baltimore City Arrests and Household Survey Projected Estimates of Past Year (PY) Arrests

	HH Survey Sample Size (N)	HH Survey Self-Rpt PY Arrests (N)	HH Survey Self-Rpt PY Arrests (%)	1990 Census Population Counts (N)	HH Survey Estimated PY Arrests (N)*	BCPD Census Actual BCITY Arrests (N)**	HH Estimates As % of Actual Arrests (%)
Males 18-24	57	1	1.8%	40,239	706	8,300	8.5%
Black	33	0	0.0%	23,872	0	7,149	0.0%
White	19	1	5.3%	14,744	776	1,086	71.5%
Males 25-44	166	7	4.2%	116,044	4,893	15,257	32.1%
Black	89	7	7.9%	65,001	5,107	12,661	40.3%
White	65	0	0.0%	47,732	0	2,504	0.0%
Males $45	137	4	2.9%	95,503	2,788	1,716	162.4%
Black	68	3	4.4%	47,364	2,090	1,303	160.4%
White	64	1	1.6%	46,304	724	395	183.2%
Females 18-24	63	0	0.0%	43,720	0	1,606	0.0%
Black	37	0	0.0%	26,620	0	1,290	0.0%
White	19	0	0.0%	15,652	0	307	0.0%
Females 25-44	178	2	1.1%	126,253	1,419	4,570	31.1%
Black	106	1	0.9%	78,131	737	3,667	20.1%
White	62	1	1.6%	44,995	726	881	82.4%
Females $45	186	1	0.5%	133,089	716	277	258.4%
Black	93	0	0.0%	66,985	0	206	0.0%
White	87	1	1.1%	64,027	736	68	1,082.4%

*The household survey projected estimates of the number of past year arrests are based on the 1990 Bureau of Census count of Baltimore City residents for the listed race/age categories.

**The Baltimore City Police Department data include data on all Baltimore City residents (individuals) arrested in Baltimore City between October 1994 and September 1995. The numbers represent individuals arrested.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City Police Department Arrest Census.

the household survey is for 1993-94. There is no indication of major changes in adult drug use or arrests during this two-year period that would make problematic treating all the data as though they referred to 1994. For example, the total number of adult arrests in 1994 was 57,000 compared to 62,000 in 1995.

Estimates of treatment need were made for four related need groups: alcohol only, marijuana only, some illicit drug but not alcohol, and alcohol and some illicit drug. These seemed the most policy-relevant categories, given the data available.

RESULTS

Sample Characteristics

The samples of the household and arrestee populations differ very substantially in many respects consistent with prior studies. They are demographically distinct; the criminal justice population has a much higher percentage of males and minorities than the household population. Most pertinent, the criminal justice population in Baltimore City is much more involved with illicit drugs other than marijuana (i.e., heroin and cocaine) than is the household population (Table 4). The difference is more than 20-fold.

Table 4
Percentage of Baltimore City Household and Arrestee Populations Reporting Drug Use in Past 30 Days, by Drug

Drug	HH Population	Male Arrestees	Female Arrestees
Cocaine	1.7%	36%	50%
Heroin	1.1%	37%	48%
Marijuana	3.7%	29%	29%

The two populations also differ sharply in their overall estimated rates of DSM-III-R dependence, particularly for drugs other than alcohol. Table 5 provides the percentage dependent by age/race/sex groups for the two surveys. For some demographic groups the differences are striking. For example, in the household population no black males in the age range 18-24 were found to be dependent on illicit drugs (marijuana only, any illicit drug but not alcohol, illicit drug and alcohol). In contrast, the arrestee population was estimated to be 20% dependent on illicit drugs without alcohol. For black females the difference was even more dramatic: 37% of arrestees were estimated to be dependent on illicit drugs without alcohol, while none showed up in the household survey.

The differences were much less substantial for alcohol alone and inconsistent in direction. For those aged 18-24 the rates for alcohol were substantially higher for the household population than for arrestees. That reversed for those aged 45 and over; generally the household rates were less than the arrestee rates. This is consistent with other findings that alcoholism is less concentrated among the criminal justice population, though alcoholism is certainly very prevalent among the latter.

Table 5

Comparison of Household and SANTA Estimates of Dependence, by Age, Race, Sex, and Substance

	Black				White				Total*			
	Male		Female		Male		Female		Male		Female	
	HH	SANTA	HH	SANTA	HH	SANTA	HH	SANTA	HH	SANTA	HH	SANTA
Age Group: 18-24												
Alcohol Only	9.1%	4.0%	4.5%	2.9%	22.2%	4.0%	0.0%	0.0%	13.5%	4.5%	3.8%	2.3%
Marijuana Only	0.0%	4.6%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	0.0%	1.2%
Any Illicit Drug	0.0%	20.2%	0.0%	37.1%	0.0%	24.0%	0.0%	50.0%	0.0%	20.5%	0.0%	39.5%
Alcohol and Drug	0.0%	3.5%	0.0%	4.3%	11.1%	8.0%	0.0%	6.3%	4.1%	4.0%	0.0%	4.7%
Age Group: 25-44												
Alcohol Only	13.8%	8.1%	0.8%	3.8%	12.8%	9.2%	5.4%	4.3%	13.0%	8.2%	2.4%	3.9%
Marijuana Only	1.7%	0.0%	0.8%	0.0%	0.0%	1.1%	0.0%	1.4%	1.0%	0.2%	0.5%	0.3%
Any Illicit Drug	6.9%	35.4%	3.9%	48.9%	0.0%	20.7%	0.0%	51.4%	3.8%	32.5%	2.4%	49.1%
Alcohol and Drug	0.0%	7.3%	0.8%	8.3%	1.3%	11.5%	1.1%	18.6%	0.5%	8.0%	0.9%	10.4%
Age Group: 45-64												
Alcohol Only	8.3%	14.3%	0.0%	25.0%	7.7%	14.3%	0.0%	0.0%	8.5%	15.6%	0.0%	25.0%
Marijuana Only	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Any Illicit Drug	0.0%	28.6%	0.0%	25.0%	0.0%	21.4%	0.0%	0.0%	0.0%	26.6%	0.0%	25.0%
Alcohol and Drug	0.0%	10.2%	0.0%	0.0%	0.0%	7.1%	0.0%	0.0%	0.0%	9.4%	0.0%	0.0%
Age Group: $65												
Alcohol Only	0.0%	33.3%	3.4%	0.0%	3.0%	0.0%	0.0%	0.0%	1.7%	33.3%	1.4%	0.0%
Marijuana Only	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Any Illicit Drug	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Alcohol and Drug	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total												
Alcohol Only									10.4%	8.1%	1.8%	4.1%
Marijuana Only									0.4%	1.2%	0.2%	0.5%
Any Illicit Drug									1.8%	28.5%	1.0%	46.5%
Alcohol and Drug									0.9%	7.0%	0.4%	9.0%

*Total columns include all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, other race).

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

Population Estimates

The range of estimates for the total Baltimore City population, as reported in Table 6, is very substantial. For example, for alcohol and any drug the range is from 3,077 (Scenario III) to 7,393 (Scenario IB). The most conservative estimate in every case is in Scenario III, which gives the slightest weight to the household survey. That has particularly dramatic effects on the numbers estimated for alcohol only and marijuana only; the estimates drop by about 60% for alcohol and by 80% for marijuana. This accords with the much greater share of alcohol and marijuana treatment need accounted for by the household survey. The estimates for the other illicit drugs are dominated by the arrestee population and hence show less variation.

Table 6
Baltimore City Residents in Need of Treatment Under Various Scenarios, by Substance

Diagnosed as Dependent and/or Abusive of:	Scenario							
	IA		IB		II		III	
	N	%	N	%	N	%	N	%
Alcohol Only	29,649	67.2	32,231	50.8	29,860	57.9	12,132	47.7
Marijuana Only	1,652	N/A	1,900	N/A	1,986	N/A	335	N/A
Any Illicit Drug	10,559	23.9	23,884	37.6	17,393	33.7	10,205	40.2
Alcohol & Any Illicit Drug	3,940	8.9	7,393	11.6	4,292	8.3	3,077	12.1
Total (excludes MJ Only)	44,148	100%	63,508	100%	51,545	100%	25,414	100%

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

How nonphone households are treated in the scenarios is critical. Remember that Scenarios IA and IB differ only in their assumptions concerning the approximately 42,000 persons living in nonphone households. If these households are assumed to have no drug users except for those who are arrested, the estimated number of people in need of treatment, excluding alcohol only, is 14,500. If, however, drug use among nonphone arrestees is assumed to represent the prevalence of dependence in the entire nonphone household population, the total is almost double, approximately 31,300 people. These are extreme assumptions but there is no obvious basis for choosing between them. Simply adding to the household estimate the nonphone arrestees (assuming they correctly self-report lack of telephone), who are in no way represented in the household survey, increases the total substantially.

Differences in these estimates are also important at the level of some specific demographic groups, as illustrated by Appendix B, Tables B1-B4. For example, Scenario 1A (dominated by the household survey) yields an estimated 600 blacks (male and female) aged 18-24 in need of treatment for illicit drugs (alone or with alcohol). The other scenarios yield between 2,300 and 2,500 blacks. On the other hand, the estimates for females aged 65 or over vary moderately for alcohol and are zero for every other drug under all scenarios.

COMPARISONS

We now briefly consider how these estimates compare to other relevant estimates produced with related data sets.

Synthetic Estimates

By way of comparison, we have estimates for the Baltimore *metropolitan* area, produced from the 1991-1993 NHSDA using small area estimation techniques (SAMHSA, 1996b). Approximately 18,000 persons were estimated to be in need of treatment for illicit drug use and another 43,000 were estimated to be in need for treatment for alcohol but not illicit drugs. The survey also estimated that 26,000 persons had been arrested within the past 12 months. These estimates are for a much larger catchment area than just Baltimore City (2.0 million versus 736,000 in the 1990 Census), cover ages 12 and above, and are for a slightly earlier period.

The number of arrests is clearly too low (perhaps only half the total for the entire Baltimore metropolitan population), which suggests either underrepresentation of the arrestee population or underreporting of undesirable behaviors. That may explain the low numbers for treatment need compared to our own estimates. For Baltimore City our lowest estimate of need for treatment for illicit drugs is about 13,300 (Scenario III) and our other estimates range from about 14,500 to 31,300. Even the low-end number suggests that the Baltimore metro estimate would be substantially larger than 18,000, since the NHSDA estimates are dominated by marijuana dependence, which is broadly distributed in the household population across education and urbanicity categories.

Need for Treatment and Treatment Utilization Patterns

Some insight can be gained into the limits of reliance on household data by examining the composition of the population actually in treatment, though the relationship between need for treatment and actual participation is complex. Data are available on the primary drug of abuse of Baltimore City residents admitted to treatment programs in 1994; these are presented in Table 7. Heroin is by far the most frequently mentioned drug; it accounts for half of all 19,704 clients admitted to treatment. This pattern is not found in the state generally and exemplifies the distinctively important role of heroin in Baltimore.

It is interesting that marijuana accounts for only 5% of Baltimore City's drug treatment admissions compared to 11% of admissions nationally (SAMHSA, 1997).[2] Consistent with that are the findings in all our scenarios that only a small share of those in need of treatment in Baltimore City are diagnosed as dependent on marijuana only. For no scenario is the rate more than 11% of those whose dependence involves illicit drugs. That again is very different from the

[2] Based on 1995 data from the Treatment Episode Data Set (TEDS), which only reports characteristics of *admissions* to drug treatment programs that receive federal funds. Data on the percentage of *clients* admitted for marijuana abuse are not available because the National Drug and Alcohol Treatment Utilization Survey does not report the percentage of clients by specific drug.

Table 7
Primary Substance of Abuse Among Treatment Clients, 1994

Substance	Primary Substance of Abuse	
	Baltimore City (N=19,704)	Rest of Maryland (N=45,217)
Alcohol	25%	63%
Cocaine/Crack	19%	15%
Heroin	50%	8%
Marijuana/Hashish	5%	10%

SOURCE: Maryland Alcohol and Drug Abuse Administration (ADAA), Substance Abuse Management System.

rate generated by the National Household Survey on Drug Abuse; approximately half of those dependent on illicit drugs are dependent on marijuana only.

Compared to our estimates of need for treatment, the actual admissions reflect a much lower share of alcohol clients. In none of our scenarios does alcohol alone account for less than 48% of those in need of treatment.[3]

For illicit drugs other than marijuana, our estimates suggest that a substantial fraction may actually already be in treatment. The total number currently in treatment is about 13,600; our estimates of the total in need of treatment range from about 13,300 (Scenario III) to about 31,300. Even with the high-end number, about 40% are in treatment.

Poisson Model

The Poisson model and the models presented here use quite different events to gauge the need for treatment. Persons seeking and receiving treatment are the basis of the Poisson model, while household residents and arrestees diagnosed as drug dependent are the basis of the models presented here. Not all users who seek and receive treatment are necessarily clinically dependent. Conversely, not all users diagnosed as drug dependent will seek and receive treatment. The difference between the projections presented here and Poisson model projections is likely related to the difference between the events upon which they are based.

The estimates generated by ADAA for Baltimore City using the Poisson model are within our range for the total, but the composition differs from that of our estimates. See Table 8 for 1995 estimates. Note that the drug-specific numbers in Table 8 are not exclusive; the heroin category includes persons who may also be dependent on other drugs. The “any drug” category includes persons who may also be dependent on drugs other than heroin, cocaine, or marijuana (e.g., amphetamines, hallucinogens, inhalants).

Table 8

[3] We assume that a person admitted with a diagnosis of dependence on alcohol and another drug would be classified as primarily dependent on that other drug.

Poisson Estimates of Baltimore City Residents in Need of Treatment, by Substance, 1995

Substance	Estimated Number
Alcohol	25,452
Any Illicit Drug	51,925
Heroin	34,276
Cocaine	30,933
Marijuana	14,792
Total	**60,816**

SOURCE: Maryland Alcohol and Drug Abuse Administration.

Using the ADAA model, over 50,000 residents of Baltimore City are estimated to be dependent on some illicit drug; our highest total for that is 31,300. Some of the discrepancy may be explained by coverage of drugs. The ADAA model generates dependence estimates for a variety of drugs (18 drug categories). Our estimates were based on data that included dependence for only heroin, cocaine, and marijuana in the household population; data on hallucinogens and uppers were available for the arrestee population but were not used. Heroin accounts for the largest number among the illicit drugs in the ADAA estimate; 34,000 are estimated to need treatment for heroin dependence (and perhaps other drugs as well). Our estimates are not drug specific but clearly generate much lower numbers than that. Even if everyone who reported heroin use in the past 30 days in both the household survey and SANTA survey was drug dependent and we simply added them, the result would be much lower--approximately 16,700. Similarly, it is likely that the ADAA marijuana dependence rates are much higher than those generated by the two surveys.

CONCLUSIONS AND NEXT STEPS

Our principal finding is simply that estimates of need for treatment are highly sensitive to assumptions about the integrity of the different samples. A small-sample telephone survey of the household population is an important source of data for estimating treatment needs. However, it clearly needs to be supplemented by other data that represent much better the populations that are systematically undercounted in such surveys. Monitoring arrestees, which can be done as a routine element of pretrial release decision making, provides important additional data.

We do see differences in the plausibility of the various scenarios. The very low alcoholism estimate for Scenario III makes it implausible in the aggregate. We also find the distinguishing assumption of Scenario IB, namely, that nonarrested nonphone residents have the same prevalence of substance abuse as nonphone arrestees, to have less face plausibility. That leaves Scenarios IA and II as the most plausible alternatives. Since they differ by only 17%

(44,148 versus 51,545) that would be comforting if convincing, but there is not a lot to persuade a skeptic to reject the others.

We choose Scenario II as the most plausible. This judgment is based on three observations. First, we still have not included all populations. For example, we do not have adequate data to estimate treatment need among the Maryland adolescent population. Also, we do not have estimates for those who were incarcerated in Maryland state prisons at the time of the surveys. Of the total 13,400 in state prison in 1995, 9,100 were incarcerated as a result of a Baltimore City arrest. If those incarcerated have the same treatment need rates as the arrestee population, that would add approximately 4,100 to the total; that is surely a conservative assumption since the prison population includes more serious offenders, on average. Second, our assessment of DSM-III-R diagnoses depends on self-reports of problem behaviors. It is reasonable to assume that it produces an underestimate of dependence. For example, of males who tested positive for cocaine use in the SANTA sample, only 61% reported use of the drug in the previous 30 days. Third, the logic of Scenario II seems to us a little more compelling.

One purpose for developing these estimates is to enable the state to respond to the federal mandate for estimating substate treatment needs by specific demographic categories. These estimates for the various scenarios are provided in Appendix B. The race-specific estimates have been provided for only two groups, blacks and whites. With very small fractions of the Maryland population being of either Hispanic, Asian, or Native American origin, the household survey provided no basis for estimating treatment needs for these groups, separately, in the household population. The Baltimore City arrestee population also included such small numbers for these groups that separate estimates could not be produced. The estimates of the total in need of treatment, by age and sex, do reflect the total resident and arrestee populations; hence, the numbers for blacks and whites in need of treatment do not sum to the total.

The estimates in the body of this report of the number of individuals in need of treatment are based on population counts from the 1990 Census. Changes in the population since 1990 will affect our estimates, and hence, we provide adjusted estimates based on 1994 Bureau of the Census population projections in Appendix D. Although the Bureau of the Census does produce 1994 population projections, data are not available for the age/race/sex groups used in this report. We make crude adjustments, for each region, by calculating the change in total population between 1990 and 1994 and applying that rate to the estimates.

III
REGIONAL AND STATEWIDE ESTIMATES

INTRODUCTION

As noted above, this project is intended to assist the state of Maryland, using available data collected under the CSAT needs assessment contract, to estimate total treatment needs by age/race/sex groups for CSAT's distribution of its SAPT Block Grant monies. This chapter provides estimates of the need for treatment in the six ADAA-defined planning regions in the state. We use the same analytic approach as used to create the estimates for Baltimore City. That is, we combine projections of the need for drug (including alcohol) treatment among the Maryland household population with projections for the Maryland arrestee population.

The first needs assessment contract awarded to CESAR did not include a SANTA project to assess the need for treatment among a statewide sample of arrestees; thus, the Baltimore City SANTA estimates are applied to arrestees in the rest of the state. The overall dependence rates estimated from the Baltimore City sample are consistent with dependence rates found in a nonurban arrestee sample in Western Maryland. A pilot study of 119 arrestees (93 male arrestees and 26 female arrestees) was conducted between June 1995 and June 1996 in Hagerstown, Maryland (Gray and Wish, 1996). The results indicate that approximately 60% of males and 54% of females were diagnosed as abusive/dependent on alcohol or another drug. In fact, the dependence rate among male arrestees was lower in Baltimore City than in Hagerstown (43% compared to 60%).[4]

While overall rates of drug (including alcohol) dependence are similar among the two arrestee populations, the rates do vary by drug. Approximately 60% of the male arrestee sample in Hagerstown was diagnosed as alcohol dependent compared to 8% of the Baltimore City sample; no males in Hagerstown were diagnosed as dependent on heroin compared to 26% in Baltimore City. Rates of cocaine dependence were more similar; 12% of Hagerstown males were diagnosed as dependent compared to 16% of Baltimore City males. The CSAT SAPT Block Grant form does not require that estimates of the need for treatment be broken down by drug; thus, the Baltimore City SANTA estimates should provide a defensible approximation (they may even result in an underestimate) of the need for treatment among arrestees in the five remaining regions of the state. A study based on a statewide sample of arrestees has been funded by CSAT and is currently under way; it will therefore be possible to compare the initial estimates produced in this study with estimates based on a complete data collection effort.

[4] The dependence rate among the Baltimore City female arrestee sample was higher than among the Hagerstown sample (60% compared to 54%).

DATA SOURCES

The projections of the number of adult Maryland residents in need of alcohol and other drug treatment presented in this chapter are based on the CESAR surveys of household residents in Maryland and Baltimore City arrestees. As described in Chapter II, both surveys include questions that assess drug abuse and dependence as specified in the third revised version of the Diagnostic and Statistical Manual.

The 1993-94 Maryland Telephone Survey of Alcohol and Other Drug Abuse consisted of a sample of 5,095 persons interviewed by phone between June 1993 and December 1994. The overall response rate for the survey was 80%. The sample was drawn to allow estimates of drug use in each of the six ADAA-defined planning regions across the state. Region 1, Western Maryland, includes Allegany, Garrett, and Washington counties; Region 2, DC Metro area, includes Frederick, Montgomery, and Prince George's counties; Region 3, Southern Maryland, includes Calvert, Charles, and St. Mary's counties; Region 4 is Baltimore City; Region 5, Eastern Shore, includes Caroline, Cecil, Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico, and Washington counties; and Region 6, Central Maryland, includes Anne Arundel, Baltimore, Carroll, Harford, and Howard counties. The sample size for each region is provided below.

Region	Sample Size
Western	979
DC Metro	1,098
Southern	752
Baltimore City	793
Eastern Shore	696
Central	777
Total	5,095

ANALYTIC APPROACH

Among the alternative scenarios, we use the two we deemed most plausible in our Baltimore City analysis--IA and II. The Scenario IA estimate assumes that the household survey covers the complete household population except for those who do not have a telephone; for the latter we use data on arrestees who self-report that they live in a household without a telephone. We assume that no other nonphone resident is drug dependent (i.e., any treatment-needing person without a phone is likely to be arrested). The Scenario II estimate assumes that drug dependence among the arrestee population is best represented by the SANTA data and that the household data should be used to estimate drug dependence only among the nonarrested. Thus, we subtract from the general population those who self-report that they have been arrested, assuming that no others were arrested in the survey year. We adjust for nonphone, nonarrested, and nonhousehold residents by assuming that they have the same dependence rates as the nonarrested residents with phones. (See Appendix A for a description of how the population projections were produced.)

As mentioned above, rates of dependence are not available for the arrestee population outside of Baltimore City. We make the simplifying assumption that Baltimore City arrestees have the same rates of drug dependence and phone ownership as arrestees in the rest of the state and apply the Baltimore City SANTA rates of dependence and phone ownership to arrestees in the rest of the state to produce the regional Scenario IA and Scenario II estimates.

RESULTS

For each of the six planning regions, estimates generated under Scenario II assumptions produce a consistently higher number of Maryland residents in need of alcohol or other drug treatment than estimates generated under Scenario IA assumptions (see Table 9). The relative ranking of each region remains the same under both scenarios; Central Maryland has the largest number of Marylanders in need of treatment followed by the DC Metro area, Baltimore City, Eastern Shore, Southern Maryland, and Western Maryland. As discussed in Chapter II, we recommend using Scenario II estimates.

Based on the Scenario II assumptions, an estimated 262,700 Maryland adults are in need of alcohol or other drug treatment. The region with the greatest number of adults in need of treatment is Central Maryland (90,056) followed by the DC Metro area (70,895) and Baltimore City (51,545). These are the three largest regions in the state; they account for 84% of the state's adult population and 81% of the adults in need of treatment.

As stated above, the goal of the project is to assist the state in completing the SAPT Block Grant application. Scenario II estimates of the need for treatment among Maryland residents are provided for each region, by age/race/sex groups, in Appendix C. Adjusted estimates based on 1994 population projections are provided in Appendix D.

The estimates generated by ADAA using the Poisson model differ from our estimates; see Table 9 for 1995 estimates. Note that Frederick County is categorized in Region 1 in the Poisson estimate and Region 2 in our estimate. Frederick County is a relatively small county with an adult population of 110,000; the county may account for some of the differences in estimates for Region 1 and Region 2. Still, our estimate for the DC Metro (Region 2) area is significantly higher than the estimate generated by the Poisson model, and it seems unlikely that Frederick County would explain the entire difference. Also note that the Poisson model estimates include juveniles whereas our estimates are for adults only.

The total statewide estimate produced by the Poisson model is not too different from our estimate. We estimate that approximately 262,700 Maryland adults are in need of treatment; the ADAA Poisson model estimates the total population in need of treatment (including juveniles) to be about 232,400 individuals. Note that there is no consistent pattern to the differences between the regional estimates produced under Scenario II and those produced by the Poisson model.

Table 9
Comparison of CESAR Estimates and ADAA Poisson Estimates of Maryland Adult Residents in Need of Treatment for Alcohol and/or Drug Dependence, 1995, by Region

Planning Area* (N= adult population $18)	CESAR Estimates		ADAA Estimate
	IA	II	Poisson
Region 1--Western MD (N=172,698)	9,141	11,050	18,305**
Region 2--DC Metro (N=1,238,390)	60,595	70,895	34,473**
Region 3--Southern MD (N=162,303)	12,168	13,493	15,807
Region 4--Baltimore City (N=554,848)	44,148	51,545	60,816
Region 5--Eastern Shore (N=260,715)	20,329	25,624	25,328
Region 6--Central MD (N=1,224,582)	83,439	90,056	77,712
State Total (N=3,613,536)	229,820	262,663	232,441

* Region 1--Allegany, Garrett, and Washington counties.
Region 2--Frederick, Montgomery, and Prince George's counties.
Region 3--Calvert, Charles, and St. Mary's counties.
Region 4--Baltimore City
Region 5--Caroline, Cecil, Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico, and Worcester counties.
Region 6--Anne Arundel, Baltimore, Carroll, Harford, and Howard Counties.
**For the Poisson estimate Region 1 includes Frederick County and Region 2 excludes Frederick County.

SOURCE: CESAR estimates based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997). Poisson estimates are based on data from the Maryland Alcohol and Drug Abuse Administration.

Our results are crude estimates of the number of Maryland residents in need of treatment because region-specific estimates were not available for the arrestee population. As noted, Maryland has received federal funds to conduct SANTA studies in each of the six ADAA-defined planning regions. Thus, it will be possible to replicate this study using more accurate regional estimates of treatment need among the arrestee population in Maryland. It will be interesting to compare these initial estimates with estimates based on a complete data collection effort.

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APPENDIXES

APPENDIX A

Generating Population Projections of the Need for Alcohol and Other Drug Treatment in Maryland

APPENDIX A
Generating Population Projections of the Need for Alcohol and Other Drug Treatment in Maryland

The goal of this study is to generate projections of the number of Maryland residents in need of treatment using data collected from the household and arrestee populations. Under this CSAT needs assessment contract, individuals meeting DSM-III-R criteria for abuse/dependence of a particular substance are defined as "in need of treatment" for that substance. Data from the household and arrestee populations were collected, respectively, by the Maryland Telephone Survey of Alcohol and Other Drug Abuse (Petronis and Wish, 1996) and the Substance Abuse Need for Treatment among Arrestees (SANTA) Survey (Gray and Wish, 1997). These surveys include questions that implement the DSM-III-R criteria so that abuse/dependence rates for alcohol, marijuana, cocaine, and heroin can be estimated.

The results of this study are intended to assist the state of Maryland in completing Form 9 of the CSAT Substance Abuse Prevention and Treatment (SAPT) Block Grant application. Therefore, we provide estimates broken down by the age/race/sex categories requested by CSAT. The adult age categories are 18-24, 25-44, 45-64, and 65 and older. The racial categories are white, not of Hispanic origin; black, not of Hispanic origin; Hispanic; and other, which includes Asian/Pacific Islander, not of Hispanic origin and American Indian, Eskimo, or Aleut, not of Hispanic origin.

In general, the household survey rates of alcohol and other drug abuse/dependence are applied to the 1990 Census population counts to produce projections of the number of residents in need of treatment. The SANTA survey rates of dependence are applied to the arrestee population counts to produce projections of the number of Maryland arrestees in need of treatment. To generate the range of estimates described in the report, we combine household and arrestee projections of the number of Maryland residents in need of treatment under various sets of assumptions about overlap between the two populations. We focus specifically on phone ownership and arrestee status to account for overlap of the household and arrestee populations.

We concentrate on one subgroup within the arrestee population, arrestees living in a residence without a telephone and four subgroups within the census: (1) persons living in households with a telephone; (2) persons not living in a household or persons living in a household without a telephone; (3) persons arrested within the past year; and (4) persons not arrested within the past year. The subpopulation counts should be considered as rough estimates because direct counts are not available. The counts of the census subgroups were estimated using additional data from (1) the 1990 Census of Housing, (2) Baltimore City Police Department (BCPD), and (3) the Maryland Uniform Crime Report (UCR).

The methods used to create estimates under the various sets of assumptions are described below. Data sources for Baltimore City were different from those available for the remaining five regions. Therefore, descriptions for Baltimore City are presented separately, where needed. As discussed in Chapter II, we found Scenarios IA and III to be the most plausible; therefore, we did not produce estimates for Scenario IB and II for the five remaining regions.

I. ESTIMATE IA

Scenario IA assumes that the household survey covers the complete resident population except for those who do not have a telephone and those not living in a household; for the two latter populations we use data on arrestees who self-report that they live in a household without a telephone. Arrestees with telephones are assumed to be represented in the household survey. We assume that no other nonhousehold resident or nonphone resident is drug dependent and that any treatment-needing person is likely to be arrested. Scenario IA combines projections of the need for treatment among (1) the resident population living in a household with a telephone and (2) the arrestee population living in a residence without a telephone. Below we describe how the household and arrestee segments of the estimate were derived.

A. Treatment Need Among Persons Living in a Household with a Telephone

Baltimore City and Rest of Maryland. The Maryland Telephone Survey of Alcohol and Other Drug Abuse, a telephone survey of adult residents aged 18 and over, provides, for each age/race/sex group, region-level rates of alcohol and other drug abuse/dependence. The 1990 Census provides, for each age/race/sex group, the number of persons in households with a telephone by subtracting from the total population of Maryland residents (1) the estimated number of persons not living in a household and (2) the estimated number of persons living in a household without a telephone. The household survey rates of abuse/dependence are applied to the count of adults in households with a telephone to estimate, for each region, the number of Maryland residents living in a household with a telephone, by age/race/sex group, in need of treatment.

B. Treatment Need Among Arrestees Living in a Residence Without a Telephone

Baltimore City. The 1990 Census does not provide counts of the number of persons arrested in a given year. We produce estimates of the number of Baltimore City residents arrested, by age/race/sex groups, using arrest data from the BCPD. The BCPD arrest census includes all arrests between October 1994 and September 1995, regardless of arrestee residence. However, we were only interested in Baltimore City residents and therefore needed to determine an arrestee's residence. Two variables, city of residence and zip code, were used to categorize arrestee residence. Approximately 79% of all persons arrested in Baltimore City during the reporting period could be coded as a Baltimore City resident; 20% were not Baltimore City residents; and 1.5% had no defined residence because of an invalid zip code or a discrepancy between their city of residence and their zip code.

The BCPD arrest census does not provide counts of arrestees living in a residence without a telephone. We produce estimates of the number of Baltimore City arrestees without a telephone, by age/race/sex groups, using SANTA survey data on telephone accessibility. The SANTA survey is based on a sample of city arrestees and includes a question to determine if the respondent was residing in a location where he or she could be reached by a telephone. We apply these SANTA rates of phone accessibility, broken down by age/race/sex groups, to all Baltimore City arrestees to determine the number of Baltimore City arrestees without a phone. We are also able to generate rates of substance abuse/dependence among the nonphone arrestee sample. We apply these dependence rates to the population count of arrestees without a telephone, by age/race/sex group, to generate projections of the number of nonphone arrestees in

need of treatment.

Rest of Maryland. We were unable to acquire arrest censuses from the remaining 23 counties in Maryland; many counties do not collect such information. However, the Maryland State Police does collect arrest data for all counties through its Uniform Crime Reporting (UCR) Section. The UCR provides counts of the number of arrests in each county, by age and sex, but arrest data are not broken down by the specific age/race/sex categories needed for the SAPT Block Grant form. Thus, we are forced to assume that within age/sex groups arrests do not vary by race and to distribute the arrests to reflect the racial composition for each age/sex group. The county totals are summed to obtain region totals.

In addition the UCR only provides counts of the number of arrests and not the actual number of individuals arrested (arrestees). However, we do have BCPD data on rearrest rates in Baltimore City. We make another simplifying assumption that rearrest rates are similar across all counties and apply the Baltimore City rearrest rates to arrests in the rest of the state. We are thus able to estimate the number of individual arrestees (as opposed to arrests), by race/age/sex group, for all the ADAA planning regions (excluding Baltimore City).

The UCR also does not provide counts of arrestees living in a residence without a telephone. We assume that phone ownership among arrestees in Baltimore City is identical to phone ownership rates among arrestees in the rest of the state. We produce estimates of the number of statewide arrestees living in a residence without a telephone by using Baltimore City SANTA data on telephone accessibility. We apply these SANTA rates of phone accessibility, broken down by age/race/sex groups, to arrestees in the five remaining ADAA planning regions to generate counts of arrestees without a phone.

As mentioned in the body of the report, estimates of alcohol and other drug abuse/dependence are only available for arrestees in Baltimore City. We assume that arrestees in Baltimore City exhibit rates of dependence that are similar to those for arrestees in the rest of Maryland. We estimate, by region, the number of nonphone-owning arrestees in need of treatment by applying the rates of substance abuse/dependence among those without access to a telephone to the nonphone-owning arrestee population. This number combined with the number in Section I-A above produces Estimate IA.

II. ESTIMATE IB

Scenarios IA and IB are similar in that they both assume that the household survey covers the complete resident population except those who do not have a telephone and those not living in a household. Rates of dependence for nonphone-owning residents are based on nonphone arrestees. Whereas Scenario IA assumes that all nonphone dependent residents have been arrested, Scenario IB assumes that (1) there are nonphone dependent residents who have not been arrested and (2) the nonarrested, nonphone population has the same rate of dependence as the arrested population. Scenario IB will therefore produce much larger estimates because it applies dependence rates of nonphone arrestees to the entire nonphone and nonhousehold resident population. Estimate IB combines projections of the need for treatment among the household population with phones and the population without phones. Section II-A describes

how the phone population segment of the estimate was produced and Section II-B describes how the nonphone segment of the estimate was produced. Note that Estimate IB was only produced for Baltimore City.

A. Treatment Need Among the Household Population with a Telephone

Baltimore City. The Maryland Telephone Survey of Alcohol and Other Drug Abuse provides, for each age/race/sex group, the rate of alcohol and other drug abuse/dependence among Baltimore City household residents. The 1990 Census provides, for each age/race/sex group, the number of persons in households with a telephone by subtracting from the total population of Baltimore City residents (1) the estimated number of persons not living in a household and (2) the estimated number of persons living in a household without a telephone. We apply the household survey rates of abuse/dependence to the count of adults in households with a telephone to estimate the number of Baltimore City residents living in a household with a telephone, by age/race/sex group, in need of treatment.

B. Treatment Need Among the Nonphone Population

Baltimore City. Data on telephone ownership among residents were not available. We estimate the number of persons living in a household without a telephone by using 1990 Census of Housing data. Citywide, approximately 7.8% of Baltimore City households did not have a phone on the premises. The percentage is higher for black households than for white, 10.5% versus 4.6%. Therefore, we estimate the number of residents without a telephone for each racial group. We do this by multiplying, for each racial group, the number of persons living in a household by the percentage of households without a telephone.

While we were able to estimate the number of persons living in a household without a telephone, by race, we were unable to obtain telephone ownership data by the specific age/race/sex categories needed for the SAPT Block Grant form. We therefore assume that within racial groups, phone ownership does not vary by age/sex group. The number of residents without a telephone is distributed to reflect the age/sex composition for each racial group. Note that the racial categories available from the Census of Housing do not correspond directly to the racial categories needed to complete the SAPT Block Grant form. The Census of Housing racial categories are white, not of Hispanic origin; black; Hispanic; and other (includes Asian/Pacific Islander and American Indian, Eskimo, or Aleut). These categories differ in that those categorized as black or other may include Hispanics, whereas the racial categories used in the rest of the study are based on mutually exclusive categories.

The SANTA survey is based on a sample of city arrestees and includes a question to determine if the respondent was residing in a location where he or she could be reached by a telephone. We are able to generate rates of substance abuse/dependence among the nonphone arrestee sample. We apply these arrestee dependence rates to the total city count of nonphone and nonhousehold residents, by age/race/sex group, to generate a projection of the number of

nonhousehold or nonphone residents in need of treatment This number combined with the number in Section II-A produces Estimate IB.

III. ESTIMATE II

Scenario II assumes that drug dependence among the arrestee population is best represented by the SANTA survey and the household survey should be used to estimate drug dependence only among the nonarrested population. We assume that nonphone, nonarrested residents have the same dependence rates as the nonarrested residents with a phone. Section III-A describes how the household segment of the estimate was derived and Section III-B describes how the arrestee segment of the estimate was derived.

A. Treatment Need Among Nonarrested Persons

Baltimore City and Rest of Maryland. We calculate, for each age/race/sex group, the number of nonarrested persons by subtracting from the 1990 Census population counts the number of arrestees (as estimated from the BCPD and UCR; see above). The Maryland Telephone Survey of Alcohol and Other Drug Abuse includes a question on whether the respondent was arrested in the past year. Therefore, we are able to estimate dependence rates among those in the household sample who reported no past year arrest. We apply this dependence rate to the population count of nonarrested persons to estimate the total number of nonarrested Maryland residents, by age/race/sex, in need of treatment.

B. Treatment Need Among Arrested Persons

Baltimore City. As described in Section I-B, the number of arrestees residing in Baltimore City, by age/race/sex, was calculated from the BCPD arrest census. The Baltimore City SANTA survey provides rates of alcohol and other drug abuse/dependence, by age/race/sex. These rates are applied to the population of arrestees to generate estimates of the number of Baltimore City arrestees, by age/race/sex, in need of treatment.

Rest of Maryland. As described in Section I-B, the number of Maryland arrestees in each of the ADAA-defined planning regions other than Baltimore City was calculated using data from the Maryland UCR. Because estimates of alcohol and other drug abuse/dependence are only available for arrestees in Baltimore City, we assume that arrestees in Baltimore City exhibit similar rates of dependence as arrestees in the rest of Maryland. The Baltimore City SANTA rates of dependence, by age/race/sex, are applied to each region's arrestee population to produce estimates of the number of arrestees, in each region by age/race/sex, in need of treatment. This number combined with the number in Section III-A produces Estimate II.

IV. ESTIMATE III

Estimate III takes account of the fact that self-report arrest information is not always accurate and in fact varies widely by specific demographic group. (See Chapter II for a detailed discussion.) The household survey is used to estimate treatment need for the nonarrested population except for those for whom we have apparently unreliable self-reports of arrest information (i.e., all females 18-

24 and nonwhite males 18-24). The SANTA data are used to estimate treatment need for the arrestee population. Below we describe how the household and the arrestee segments of the estimate were produced. Note that Estimate III was only produced for Baltimore City.

A. Treatment Need Among Nonarrested Persons

Baltimore City. As described in Chapter II most young people in the household sample did not provide accurate self-report information on their past year arrest history. We therefore exclude those groups (e.g., all females 18-24 and nonwhite males 18-24) from the household estimates because we cannot accurately differentiate between nonarrested and arrested individuals. The estimates of nonarrested residents include only residents for whom we have apparently reliable self-report arrest information (i.e., 18-24/white/males and all persons 45 and over).

We calculate the number of nonarrested persons (18-24/white/male and all persons 45 and over) by subtracting the number of arrestees (as estimated from the BCPD and UCR; see above) from the 1990 Census population counts. We apply the dependence rates for the above- mentioned groups to the population count for the respective groups to estimate the number of nonarrested residents in need of treatment.

B. Treatment Need Among Arrested Persons

Baltimore City. As described in Section I-B, the number of arrestees residing in Baltimore City, by age/race/sex, was calculated from the BCPD arrest census. The Baltimore City SANTA survey provides rates of alcohol and other drug abuse/dependence by age/race/sex. These rates are applied to the population of arrestees to generate estimates of the number of Baltimore City arrestees, by age/race/sex, in need of treatment. This number combined with the number in Section IV-A produces Estimate III.

APPENDIX B

Estimates of Treatment Need in Baltimore City, by Age/Race/Sex Group

TABLE B-1
Baltimore City Treatment Needs,
by Age, Sex, and Race
ESTIMATE IA

	Black		White		Total*	
	Male	Female	Male	Female	Male	Female
Age Group: 18-24						
Alcohol Only	1,962	1,087	3,044	0	5,040	1,498
Marijuana Only	34	15	0	0	34	15
Any Illicit Drug	306	163	0	15	306	178
Alcohol and Drug	102	15	1,490	15	1,592	30
Age Group: 25-44						
Alcohol Only	8,430	565	5,790	2,192	14,219	2,756
Marijuana Only	1,020	549	34	0	1,054	549
Any Illicit Drug	5,763	3,689	204	252	5,967	3,942
Alcohol and Drug	306	696	659	521	965	1,217
Age Group: 45-64						
Alcohol Only	2,461	30	1,871	0	4,712	30
Marijuana Only	0	0	0	0	0	0
Any Illicit Drug	102	30	34	0	136	30
Alcohol and Drug	102	0	34	0	136	0
Age Group: $65						
Alcohol Only	34	782	577	0	611	782
Marijuana Only	0	0	0	0	0	0
Any Illicit Drug	0	0	0	0	0	0
Alcohol and Drug	0	0	0	0	0	0
TOTAL:						
Alcohol Only	12,887	2,464	11,282	2,192	24,583	5,066
Marijuana Only	1,054	564	34	0	1,088	564
Any Illicit Drug	6,171	3,882	238	267	6,410	4,149
Alcohol and Drug	510	711	2,183	536	2,693	1,247

* The Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE B-2
Baltimore City Treatment Needs,
by Age, Sex, and Race
ESTIMATE IB

	Black		White		Total*	
	Male	Female	Male	Female	Male	Female
Age Group: 18-24						
Alcohol Only	1,974	1,173	3,044	0	5,056	1,584
Marijuana Only	94	144	0	0	94	144
Any Illicit Drug	715	1,450	0	325	715	1,775
Alcohol and Drug	182	105	1,490	259	1,672	364
Age Group: 25-44						
Alcohol Only	8,465	661	5,836	2,214	14,300	2,875
Marijuana Only	1,020	549	94	0	1,114	549
Any Illicit Drug	7,056	8,509	897	1,616	7,953	10,126
Alcohol and Drug	419	2,166	864	1,037	1,283	3,203
Age Group: 45-64						
Alcohol Only	2,949	856	2,028	0	5,353	856
Marijuana Only	0	0	0	0	0	0
Any Illicit Drug	811	2,174	331	0	1,141	2,174
Alcohol and Drug	619	0	253	0	872	0
Age Group: $65						
Alcohol Only	848	782	577	0	1,425	782
Marijuana Only	0	0	0	0	0	0
Any Illicit Drug	0	0	0	0	0	0
Alcohol and Drug	0	0	0	0	0	0
TOTAL:						
Alcohol Only	14,236	3,472	11,485	2,214	26,133	6,097
Marijuana Only	1,114	693	94	0	1,207	693
Any Illicit Drug	8,582	12,133	1,228	1,941	9,809	14,075
Alcohol and Drug	1,220	2,271	2,607	1,296	3,826	3,567

* The Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE B-3
Baltimore City Treatment Needs,
by Age, Sex, and Race
ESTIMATE II

	Black		White		Total*	
	Male	Female	Male	Female	Male	Female
Age Group: 18-24						
Alcohol Only	1,800	1,197	3,164	0	4,986	1,637
Marijuana Only	279	17	0	0	279	17
Any Illicit Drug	1,465	490	264	157	1,729	648
Alcohol and Drug	255	58	820	20	1,075	79
Age Group: 25-44						
Alcohol Only	7,126	725	6,342	1,964	13,468	2,688
Marijuana Only	1,049	601	27	13	1,076	614
Any Illicit Drug	8,705	4,827	522	462	9,226	5,289
Alcohol and Drug	966	929	913	175	1,879	1,104
Age Group: 45-64						
Alcohol Only	2,915	63	2,121	0	5,432	63
Marijuana Only	0	0	0	0	0	0
Any Illicit Drug	356	67	77	0	434	67
Alcohol and Drug	130	0	26	0	156	0
Age Group: $65						
Alcohol Only	699	886	0	0	699	886
Marijuana Only	0	0	0	0	0	0
Any Illicit Drug	0	0	0	0	0	0
Alcohol and Drug	0	0	0	0	0	0
TOTAL:						
Alcohol Only	12,540	2,871	11,627	1,964	24,586	5,275
Marijuana Only	1,328	618	27	13	1,355	631
Any Illicit Drug	10,526	5,384	863	619	11,389	6,003
Alcohol and Drug	1,351	987	1,759	195	3,109	1,183

* The Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE B-4
Baltimore City Treatment Needs,
by Age, Sex, and Race
ESTIMATE III

	Black		White		Total*	
	Male	Female	Male	Female	Male	Female
Age Group: 18-24						
Alcohol Only	326	36	3164	0	3,512	36
Marijuana Only	279	17	0	0	279	17
Any Illicit Drug	1,465	490	264	157	1,729	648
Alcohol and Drug	255	58	820	20	1,075	79
Age Group: 25-44						
Alcohol Only	1,090	133	245	36	1,335	169
Marijuana Only	0	0	27	13	27	13
Any Illicit Drug	4,517	1,827	522	462	5,038	2,289
Alcohol and Drug	966	326	301	175	1,267	501
Age Group: 45-64						
Alcohol Only	2,915	63	2,121	0	5,432	63
Marijuana Only	0	0	0	0	0	0
Any Illicit Drug	356	67	77	0	434	67
Alcohol and Drug	130	0	26	0	156	0
Age Group: $65						
Alcohol Only	699	886	0	0	699	886
Marijuana Only	0	0	0	0	0	0
Any Illicit Drug	0	0	0	0	0	0
Alcohol and Drug	0	0	0	0	0	0
TOTAL:						
Alcohol Only	5,030	1,118	5,530	36	10,978	1,154
Marijuana Only	279	17	27	13	306	30
Any Illicit Drug	6,338	2,384	863	619	7,201	3,003
Alcohol and Drug	1,351	384	1,147	195	2,497	580

* The Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

APPENDIX C

Scenario II Estimates of Treatment Need, by Age/Race/Sex Group and Region

TABLE C-1
Treatment Need, by Age, Sex, and Race
Scenario II: Maryland Total

Age	White		Black		Total*	
	Male	Female	Male	Female	Male	Female
18-24	31,161	9,721	8,740	4,986	40,217	15,989
25-44	86,605	33,044	35,401	10,815	122,100	43,858
45-64	16,020	6,101	9,084	1,782	26,772	7,936
$65	4,031	0	875	886	4,907	886
Total	137,817	48,866	54,100	18,469	193,996	68,669

* The Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE C-2
Treatment Need, by Age, Sex, and Race
Scenario II: Western Maryland
(Includes Allegany, Garrett, and Washington Counties)

Age	White		Black		Total*	
	Male	Female	Male	Female	Male	Female
18-24	2,755	837	45	21	2,803	858
25-44	4,183	1,808	184	54	4,368	1,862
45-64	562	296	35	77	598	373
$65	170	0	18	0	188	0
Total	7,671	2,940	283	153	7,957	3,093

* The Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE C-3
Treatment Need, by Age, Sex, and Race
Scenario II: DC Metro Area
(Includes Frederick, Montgomery and Prince George's Counties)

Age	White		Black		Total*	
	Male	Female	Male	Female	Male	Female
18-24	6,346	5,033	3,052	1,407	9,477	7,280
25-44	25,656	7,142	10,687	1,291	36,343	8,433
45-64	1,526	1,019	2,982	801	5,752	1,820
$65	1,747	0	44	0	1,792	0
Total	35,275	13,194	16,766	3,499	53,362	17,533

* The Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE C-4
Treatment Need, by Age, Sex, and Race
Scenario II: Southern Maryland
(Includes Calvert, Charles, and St. Mary's Counties)

Age	White		Black		Total*	
	Male	Female	Male	Female	Male	Female
18-24	2,632	1,234	944	77	3,580	1,311
25-44	3,461	2,488	794	236	4,348	2,724
45-64	1,188	0	275	51	1,465	51
$65	0	0	13	0	13	0
Total	7,282	3,723	2,026	364	9,406	4,087

* The Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE C-5
Treatment Need, by Age, Sex, and Race
Scenario II: Baltimore City

Age	White		Black		Total*	
	Male	Female	Male	Female	Male	Female
18-24	4,248	177	3,520	1,745	7,790	2,364
25-44	7,777	2,601	16,797	6,481	24,573	9,081
45-64	2,224	0	3,401	130	6,022	130
$65	0	0	699	886	699	886
Total	14,249	2,778	24,417	9,242	39,084	12,461

* The Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE C-6
Treatment Need, by Age, Sex, and Race
Scenario II: Eastern Shore
(Includes Caroline, Cecil, Dorchester, Kent, Queen Anne's Somerset, Talbot, Wicomico, and Worcester Counties)

Age	White		Black		Total*	
	Male	Female	Male	Female	Male	Female
18-24	3,052	1,749	349	152	3,582	1,901
25-44	8,311	3,376	2,947	414	11,259	3,790
45-64	3,110	885	238	435	3,352	1,373
$65	336	0	31	0	367	0
Total	14,809	6,010	3,565	1,002	18,560	7,064

* The Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE C-7
Treatment Need, by Age, Sex, and Race
Scenario II: Central Maryland
(Includes Anne Arundel, Baltimore, Carroll, Harford, and Howard Counties)

Age	White		Black		Total*	
	Male	Female	Male	Female	Male	Female
18-24	12,128	691	830	1,584	12,985	2,275
25-44	37,217	15,629	3,992	2,339	41,209	17,968
45-64	7,410	3,901	2,153	288	9,583	4,189
$65	1,778	0	70	0	1,848	0
Total	58,533	20,221	7,045	4,210	65,625	24,431

* The Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

APPENDIX D

Estimates of Treatment Need, Baltimore City and Maryland Regions, Adjusted to Reflect 1994 Population Projections

TABLE D-1
BALTIMORE CITY RESIDENTS IN NEED OF TREATMENT, MARIJUANA ONLY, ANY DRUG EXCLUDING ALCOHOL, ALCOHOL AND ANY DRUG, UNDER VARIOUS SCENARIOS BASED ON 1994 POPULATION PROJECTIONS

Diagnosed as Dependent and/or Abusive of:	SCENARIO							
	IA		IB		II		III	
	No.	%	No.	%	No.	%	No.	%
Alcohol Only	28,318	67%	30,784	51%	28,520	58%	11,588	48%
Marijuana Only	1,577	N/A	1,814	N/A	1,897	N/A	320	N/A
Any Illicit Drug	10,085	24%	22,812	38%	16,612	34%	9,747	40%
Alcohol and Any Drug	3,763	9%	7,061	12%	4,099	8%	2,939	12%
TOTAL * (excludes MJ Only)	42,166	100%	60,658	100%	49,231	100%	24,274	100%

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE D-2
MARYLAND ADULT RESIDENTS IN NEED OF TREATMENT, BY REGION UNDER SCENARIOS IA AND II BASED ON 1994 POPULATION PROJECTIONS

Planning Area*	CESAR Scenario	
	IA	II
Region 1--Western MD	9,360	11,314
Region 2--DC Metro	64,195	75,108
Region 3--Southern MD	13,409	14,869
Region 4--Baltimore City	42,166	49,231
Region 5--Eastern Shore	21,535	27,144
Region 6--Central MD	88,986	96,042
STATE TOTAL	239,651	273,708

*Region 1-Allegany, Garrett, and Washington counties.
Region 2-Frederick, Montgomery, and Prince George's counties.
Region 3-Calvert, Charles, and St. Mary's counties.
Region 4-Baltimore City.
Region 5-Caroline, Cecil, Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico, and Worcester counties.
Region 6-Anne Arundel, Baltimore, Carroll, Harford, and Howard counties.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE D-3
BALTIMORE CITY TREATMENT NEEDS, BY AGE, SEX, AND RACE/ETHNICITY BASED ON 1994 POPULATION PROJECTIONS SCENARIO IA

	Black		White		Total*	
Age/Treatment Need	Male	Female	Male	Female	Male	Female
Age Group: 18-24						
Alcohol Only	1,874	1,038	2,907	0	4,814	1,430
Marijuana Only	33	14	0	0	33	14
Any Illicit Drug	293	156	0	14	293	170
Alcohol and Drug	98	14	1,423	14	1,521	28
Age Group: 25-44						
Alcohol Only	8,052	539	5,530	2,094	13,582	2,633
Marijuana Only	974	524	33	0	1,006	524
Any Illicit Drug	5,504	3,524	195	241	5,699	3,765
Alcohol and Drug	293	665	629	497	922	1,163
Age Group: 45-64						
Alcohol Only	2,350	28	1,787	0	4,501	28
Marijuana Only	0	0	0	0	0	0
Any Illicit Drug	98	28	33	0	131	28
Alcohol and Drug	98	0	33	0	131	0
Age Group: $65						
Alcohol Only	33	747	551	0	584	747
Marijuana Only	0	0	0	0	0	0
Any Illicit Drug	0	0	0	0	0	0
Alcohol and Drug	0	0	0	0	0	0
TOTAL:						
Alcohol Only	12,309	2,352	10,775	2,094	23,480	4,838
Marijuana Only	1,007	538	33	0	1,040	538
Any Illicit Drug	5,895	3,708	228	255	6,122	3,963
Alcohol and Drug	489	679	2,085	511	2,572	1,191

* Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE D-4
BALTIMORE CITY TREATMENT NEEDS, BY AGE, SEX, AND RACE/ETHNICITY BASED ON 1994 POPULATION PROJECTIONS SCENARIO IB

	Black		White		Total*	
Age/Treatment Need	Male	Female	Male	Female	Male	Female
Age Group: 18-24						
Alcohol Only	1,884	1,121	2,907	0	4,828	1,513
Marijuana Only	90	137	0	0	90	137
Any Illicit Drug	683	1,385	0	311	683	1,696
Alcohol and Drug	174	100	1,423	247	1,597	348
Age Group: 25-44						
Alcohol Only	8,085	631	5,573	2,115	13,658	2,746
Marijuana Only	974	524	89	0	1,063	524
Any Illicit Drug	6,739	8,127	857	1,544	7,596	9,671
Alcohol and Drug	400	2,069	825	990	1,225	3,060
Age Group: 45-64						
Alcohol Only	2,816	817	1,936	0	5,113	817
Marijuana Only	0	0	0	0	0	0
Any Illicit Drug	774	2,077	316	0	1,090	2,077
Alcohol and Drug	592	0	241	0	833	0
Age Group: $65						
Alcohol Only	810	747	551	0	1,361	747
Marijuana Only	0	0	0	0	0	0
Any Illlicit Drug	0	0	0	0	0	0
Alcohol and Drug	0	0	0	0	0	0
TOTAL:						
Alcohol Only	13,595	3,316	10,967	2,115	24,960	5,823
Marijuana Only	1,064	661	89	0	1,153	661
Any Illicit Drug	8,196	11,589	1,173	1,855	9,369	13,443
Alcohol and Drug	1,166	2,169	2,489	1,237	3,655	3,407

* Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE D-5
BALTIMORE CITY TREATMENT NEEDS, BY AGE, SEX, AND RACE/ETHNICITY BASED ON 1994 POPULATION PROJECTIONS SCENARIO II

	Black		White		Total*	
Age/Treatment Need	Male	Female	Male	Female	Male	Female
Age Group: 18-24						
Alcohol Only	1,719	1,143	3,022	0	4,763	1,564
Marijuana Only	266	16	0	0	266	16
Any Illicit Drug	1,400	468	252	150	1,652	618
Alcohol and Drug	243	56	783	19	1,026	75
Age Group: 25-44						
Alcohol Only	6,806	692	6,058	1,876	12,864	2,567
Marijuana Only	1,002	574	26	12	1,028	586
Any Illicit Drug	8,313	4,610	498	441	8,812	5,052
Alcohol and Drug	922	888	872	167	1,794	1,054
Age Group: 45-64						
Alcohol Only	2,784	60	2,025	0	5,188	60
Marijuana Only	0	0	0	0	0	0
Any Illicit Drug	340	64	74	0	414	64
Alcohol and Drug	124	0	25	0	149	0
Age Group: $65						
Alcohol Only	668	846	0	0	668	846
Marijuana Only	0	0	0	0	0	0
Any Illicit Drug	0	0	0	0	0	0
Alcohol and Drug	0	0	0	0	0	0
TOTAL:						
Alcohol Only	11,977	2,741	11,105	1,876	23,482	5,038
Marijuana Only	1,268	590	26	12	1,294	603
Any Illicit Drug	10,053	5,142	824	591	10,878	5,734
Alcohol and Drug	1,289	944	1,680	186	2,970	1,130

* Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE D-6
BALTIMORE CITY TREATMENT NEEDS, BY AGE, SEX, AND RACE/ETHNICITY BASED ON 1994 POPULATION PROJECTIONS SCENARIO III

	Black		White		Total*	
Age/Treatment Need	Male	Female	Male	Female	Male	Female
Age Group: 18-24						
Alcohol Only	312	34	3,022	0	3,355	34
Marijuana Only	266	16	0	0	266	16
Any Illicit Drug	1,400	468	252	150	1,652	618
Alcohol and Drug	243	56	783	19	1,026	75
Age Group: 25-44						
Alcohol Only	1,041	127	234	34	1,275	161
Marijuana Only	0	0	26	12	26	12
Any Illicit Drug	4,314	1,745	498	441	4,812	2,186
Alcohol and Drug	922	312	288	167	1,210	479
Age Group: 45-64						
Alcohol Only	2,784	60	2,025	0	5,188	60
Marijuana Only	0	0	0	0	0	0
Any Illicit Drug	340	64	74	0	414	64
Alcohol and Drug	124	0	25	0	149	0
Age Group: $65						
Alcohol Only	668	846	0	0	668	846
Marijuana Only	0	0	0	0	0	0
Any Illicit Drug	0	0	0	0	0	0
Alcohol and Drug	0	0	0	0	0	0
TOTAL:						
Alcohol Only	4,805	1,067	5,281	34	10,468	1,102
Marijuana Only	266	16	26	12	292	28
Any Illicit Drug	6,054	2,277	824	591	6,878	2,869
Alcohol and Drug	1,289	368	1,096	186	2,385	554

* Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE D-7
TREATMENT NEEDS BY AGE, SEX, AND RACE/ETHNICITY
BASED ON 1994 POPULATION PROJECTIONS
SCENARIO II: Maryland Total

Age	White		Black		Total*	
	Male	Female	Male	Female	Male	Female
18-24	32,669	10,306	8,937	5,114	41,939	16,732
25-44	91,201	34,888	35,808	10,806	127,110	45,693
45-64	16,823	6,480	9,297	1,877	27,841	8,413
$65	4,277	0	855	846	5,132	846
TOTAL	144,971	51,675	54,896	18,644	202,024	71,685

* Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE D-8
TREATMENT NEEDS BY AGE, SEX, AND RACE/ETHNICITY
BASED ON 1994 POPULATION PROJECTIONS
SCENARIO II: Western Maryland
(Includes Allegany, Garrett, and Washington Counties)

Age	White		Black		Total*	
	Male	Female	Male	Female	Male	Female
18-24	2,821	857	46	22	2,870	879
25-44	4,283	1,851	189	56	4,472	1,907
45-64	575	303	36	79	612	382
$65	174	0	19	0	193	0
TOTAL	7,854	3,011	289	157	8,147	3,167

* Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE D-9
TREATMENT NEEDS BY AGE, SEX, AND RACE/ETHNICITY
BASED ON 1994 POPULATION PROJECTIONS
SCENARIO II: DC Metro Area
(Includes Frederick, Montgomery and Prince George's Counties)

	White		Black		Total*	
Age	Male	Female	Male	Female	Male	Female
18-24	6,723	5,332	3,234	1,491	10,040	7,713
25-44	27,180	7,567	11,322	1,367	38,502	8,934
45-64	1,617	1,079	3,159	849	6,093	1,928
$65	1,851	0	47	0	1,898	0
TOTAL	37,371	13,978	17,762	3,707	56,533	18,575

* Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE D-10
TREATMENT NEEDS BY AGE, SEX, AND RACE/ETHNICITY
BASED ON 1994 POPULATION PROJECTIONS
SCENARIO II: Southern Maryland
(Includes Calvert, Charles, and St. Mary's Counties)

	White		Black		Total*	
Age	Male	Female	Male	Female	Male	Female
18-24	2,900	1,360	1,040	84	3,945	1,444
25-44	3,814	2,742	875	260	4,791	3,002
45-64	1,310	0	304	56	1,614	57
$65	0	0	14	0	14	0
TOTAL	8,024	4,102	2,233	401	10,365	4,503

* Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE D-11
TREATMENT NEEDS BY AGE, SEX, AND RACE/ETHNICITY
BASED ON 1994 POPULATION PROJECTIONS
SCENARIO II: Baltimore City

	White		Black		Total*	
Age	Male	Female	Male	Female	Male	Female
18-24	4,058	169	3,362	1,667	7,441	2,257
25-44	7,428	2,484	16,042	6,190	23,470	8,673
45-64	2,124	0	3,249	125	5,751	125
$65	0	0	668	846	668	846
TOTAL	13,610	2,653	23,321	8,828	37,330	11,902

* Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE D-12
TREATMENT NEEDS BY AGE, SEX, AND RACE/ETHNICITY
BASED ON 1994 POPULATION PROJECTIONS
SCENARIO II: Eastern Shore

(Includes Caroline, Cecil, Dorchester, Kent, Queen Anne's Somerset, Talbot, Wicomico, and Worcester Counties)

	White		Black		Total*	
Age	Male	Female	Male	Female	Male	Female
18-24	3,233	1,852	370	161	3,795	2,013
25-44	8,805	3,576	3,122	439	11,927	4,015
45-64	3,295	938	252	461	3,551	1,454
$65	356	0	33	0	389	0
TOTAL	15,688	6,366	3,777	1,061	19,661	7,483

* Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).

TABLE D-13
TREATMENT NEEDS BY AGE, SEX, AND RACE/ETHNICITY
BASED ON 1994 POPULATION PROJECTIONS
SCENARIO II: Central Maryland

(Includes Anne Arundel, Baltimore, Carroll, Harford, and Howard Counties)

	White		Black		Total*	
Age	Male	Female	Male	Female	Male	Female
18-24	12,934	736	885	1,689	13,848	2,426
25-44	39,691	16,668	4,258	2,494	43,948	19,162
45-64	7,902	4,160	2,297	307	10,220	4,467
$65	1,896	0	74	0	1,970	0
TOTAL	62,424	21,565	7,514	4,490	69,988	26,055

* Total columns include projections for all races (i.e., white-not Hispanic, black-not Hispanic, Hispanic, Asian/Pacific Islander (API), and American Indian, Eskimo, or Aleut (AEA)). Age/sex-specific projections for Hispanics and API and AEA are not provided because the household and arrestee samples from which the estimates were derived were too small to provide precise estimates of drug (including alcohol) dependence.

SOURCE: Based on data from the Maryland Telephone Survey of Alcohol and Other Drug Use (Petronis and Wish, 1996) and the Baltimore City SANTA Study (Gray and Wish, 1997).