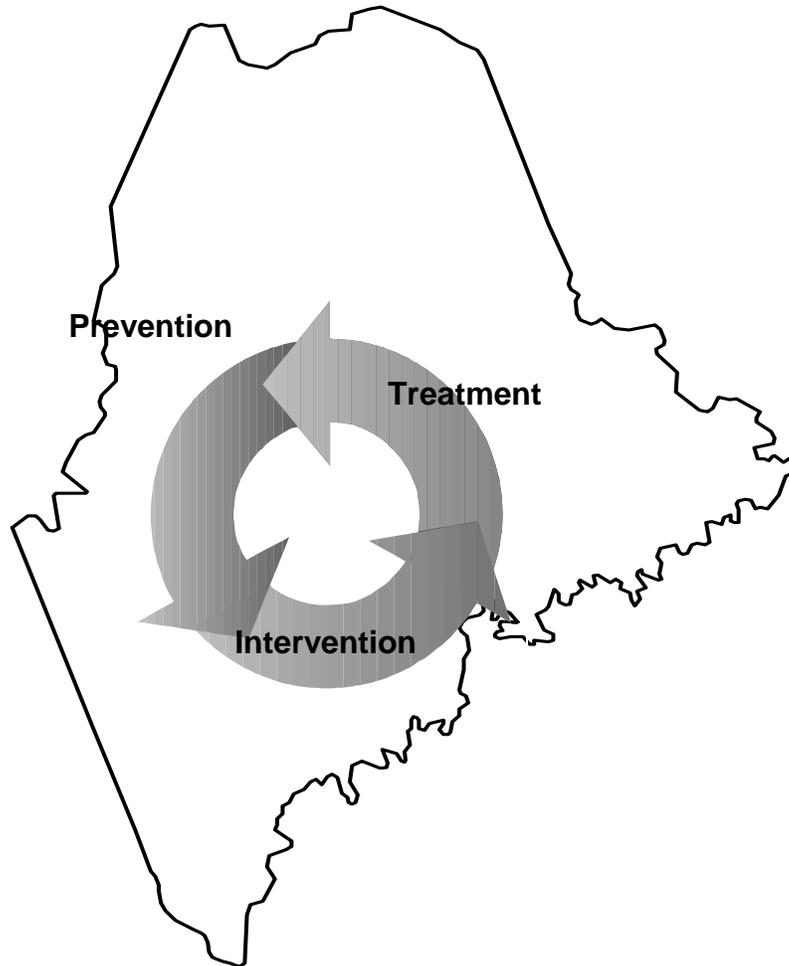


State of Maine

Substance Abuse Treatment Needs Assessment: Round II



STUDY 3: INTEGRATED POPULATION ESTIMATES OF SUBSTANCE ABUSE TREATMENT NEEDS IN MAINE, 2002

Part 1: Background and Selected Results

Maine Office of Substance Abuse
Department of Behavioral and Developmental
Services

July 2002

CSAT
Center for Substance
Abuse Treatment
SAMHSA

State of Maine

Substance Abuse Treatment Needs Assessment

Study 3: INTEGRATED POPULATION ESTIMATES OF SUBSTANCE ABUSE TREATMENT NEEDS IN MAINE, 2002

Part I: Background and Selected Results

Final Report

Prepared in Collaboration with
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1. INTRODUCTION AND BACKGROUND

This study was designed to update the Integrated Population Estimates of Substance Abuse Treatment and Intervention Needs in the State of Maine (Herman-Stahl, Kuo, Teagle, Weimer, Warner, & Rachal, 1999), conducted as part of Maine's first State Treatment Needs Assessment Program (STNAP), to incorporate information from additional assessments conducted since 1999, and to incorporate new Census information and research from other sources. The purpose of this report is twofold:

- To present the results using an automated spreadsheet model called the Maine Automated Integration Model (AIM). This model was designed to assess how changes in regional and statewide demographic profiles and various types of rates affect substance abuse treatment needs and costs.
- To provide the background information and appropriate introductory materials, including a user's manual, for the Maine AIM that will be available to the State for future updates of treatment need services.

The AIM provides an organizing framework and automated mechanism to integrate the best available (usually research or census-based) data from multiple sources for providing treatment needs assessment-related information for important geographic entities in Maine. This tool will allow personnel in the Maine Department of Behavioral and Developmental Services (BDS), Office of Substance Abuse (OSA) to estimate treatment need, as well as unmet need or surplus capacity, for treating the population statewide in need, but also for treating specific, high-risk subgroups and/or service areas across the state. The tool is also designed to allow OSA to update these estimates as new data become available or to simulate various possible scenarios based on assumed data.

This study, titled *Integrated Population Estimates of Substance Abuse Treatment Need in Maine, 2002*, consists of three components:

- **Part I: Background and Selected Results**
- **Part II: User's Manual for the Maine Automated Integration Model**
- **Part III: Maine Automated Integration Model (AIM) (on CD-ROM)**

1.1 Overview of the State of Maine's Demand and Needs Assessment Studies

Substance abuse continues to be one of the nation's most serious health problems. Poor health, disrupted social relations, an inability to maintain employment, and welfare dependency are just a couple of the negative consequences associated with substance abuse. The community often suffers repercussions as well, such as increasing levels of crime, violence, and

unemployment and the diversion of a growing level of tax funds (Horgan, Marsden, & Larson, 1993). Every sector of society spends large sums of money to combat these repercussions, and States tend to shoulder the heaviest financial burden (National Center on Addiction and Substance Abuse at Columbia University, 2001). Fortunately, substance abuse is treatable; the benefits of increased government attention and funding for the treatment needs of the population flow not only to the individual but to the community as well (Gerstein et al., 1994; Hubbard et al., 1989).

Given the high prevalence and devastating impact of substance abuse, treatment is a high priority for the federal government. For its part, the Center for Substance Abuse Treatment (CSAT) has made funding available for states to develop the data collection and analysis infrastructures for surveillance, planning, budgeting, and policy development surrounding substance abuse treatment. In 1992, CSAT awarded the first round of 3-year contracts to 13 States to conduct STNAP projects. Since then, CSAT has issued one or more contracts to each of the 50 States, the District of Columbia, Puerto Rico, and the Virgin Islands.

In response, the State of Maine, in collaboration with Research Triangle Institute (RTI) has now completed two STNAP projects consisting of complementary studies to provide reliable and valid data to facilitate planning substance abuse treatment and to aid in the implementation of effective and cost-efficient services. The specific objectives of the STNAPs have been to:

- develop statewide and regional (substate) estimates of alcohol and drug treatment needs for the total population and key population groups;
- determine the extent to which these needs are being met by the current treatment service system;
- develop low-cost, valid methodologies that can be used by the state in subsequent years to estimate treatment needs; and
- identify key gaps in the state's current data collection efforts relating to needs assessment.

In 1995, OSA received funding for the State's first STNAP (CSAT 270-95-0030), which consisted of six complementary studies that included both primary data collection and analysis and secondary analysis of existing data. The specific studies were:

Study 1: Alcohol and Other Drug Household Estimates (Kroutil, Stahl, Akin, Brucker, Rachal, Ogden, & Faust, 1998);

Study 2: Use of Alcohol and Illicit Drugs and Need for Treatment Among Maine Adult Arrestees (Bonito, Stahl, Dunn, Brucker, Rachal, Ogden, & Faust, 1998);

- Study 3: Estimating Need for Treatment or Intervention Among Youth in Maine Counties: A Synthetic Estimation Approach (DeSimone, Wendling, Greene, Farrelley, Weimer, Flewelling, Rachal, Ogden, & Faust, 1999);
- Study 4: Using Social Indicators to Estimate Substance Use and Treatment Needs in Maine (Herman-Stahl, Weisen, Weimer, Flewelling, Bray, Ogden, & Faust, 1998);
- Study 5: Assessment of Maine's Substance Abuse Treatment System: Structure, Capacity and Utilization, 1997 (Ducharme & Rachal, 1999); and
- Study 6: Integrated Population Estimates of Substance Abuse Treatment and Intervention Needs in the State of Maine (Herman-Stahl, Kuo, Teagle, Weimer, Warner, & Rachal, 1999).

The second STNAP (CSAT 270-98-7082) began in 1998 and included three additional studies, the last of which is the subject of this report:

- Study 1: Substance Abuse and Treatment Needs Among Maine's Temporary Aid to Needy Families (TANF) Population, 2000 (Weimer, Gavin, Warner, & Rachal, 2001);
- Study 2: Services, Capacity, and the Current Treatment System (Crum, Clough, & Rachal, 2002); and
- Study 3: Integrated Population Estimates of Substance Abuse Treatment Needs in Maine, 2002.

This study merges substance abuse-related information obtained from both rounds of STNAP studies to create a framework useful for service planning and resource allocation.

Prior to the STNAP studies, no comprehensive data on alcohol and other drug use and abuse existed for the State of Maine. The annual National Survey on Drug Use and Health (NSDUH) [formerly the National Household Survey on Drug Abuse or NHSDA] incorporates some respondents from Maine, but the numbers are too small to provide precise estimates of substance use for the state, regions, or counties. In addition, although the NSDUH collects information about past year symptoms of dependence and past year negative consequences associated with use, these data do not sufficiently document treatment needs, especially unmet needs, among the household population in Maine (see SAMHSA, 1997). Therefore, the studies from both of Maine's STNAPs provide an important knowledge base from which to improve efforts to meet substance abuse and treatment needs and to allocate resources.

1.2 Maine at a Glance

Geography. Maine is the largest New England State with a total area of nearly 30,862 square miles, making it almost as big as the other five New England States combined. Although

Maine is relatively large geographically, it ranks 40th in population with 1,274,923 residents (U.S. Bureau of the Census, 2001).

Maine has a varied terrain, with mountainous areas, rolling hills, and a rugged coast. Maine borders Canada to the north, New Hampshire to the west, and the Atlantic Ocean to the east. Traffic travels mostly north/south along interstate 95. Three major cities, Portland, Augusta (the state capitol), and Bangor, are located along this route. East/west travel uses secondary roads. Although substance abuse treatment services are available in most counties, transportation is still a barrier to treatment, given minimal public transportation in rural counties. Access to services is usually easier traveling north/south than east/west, even though the actual miles traveled north/south may be considerable.

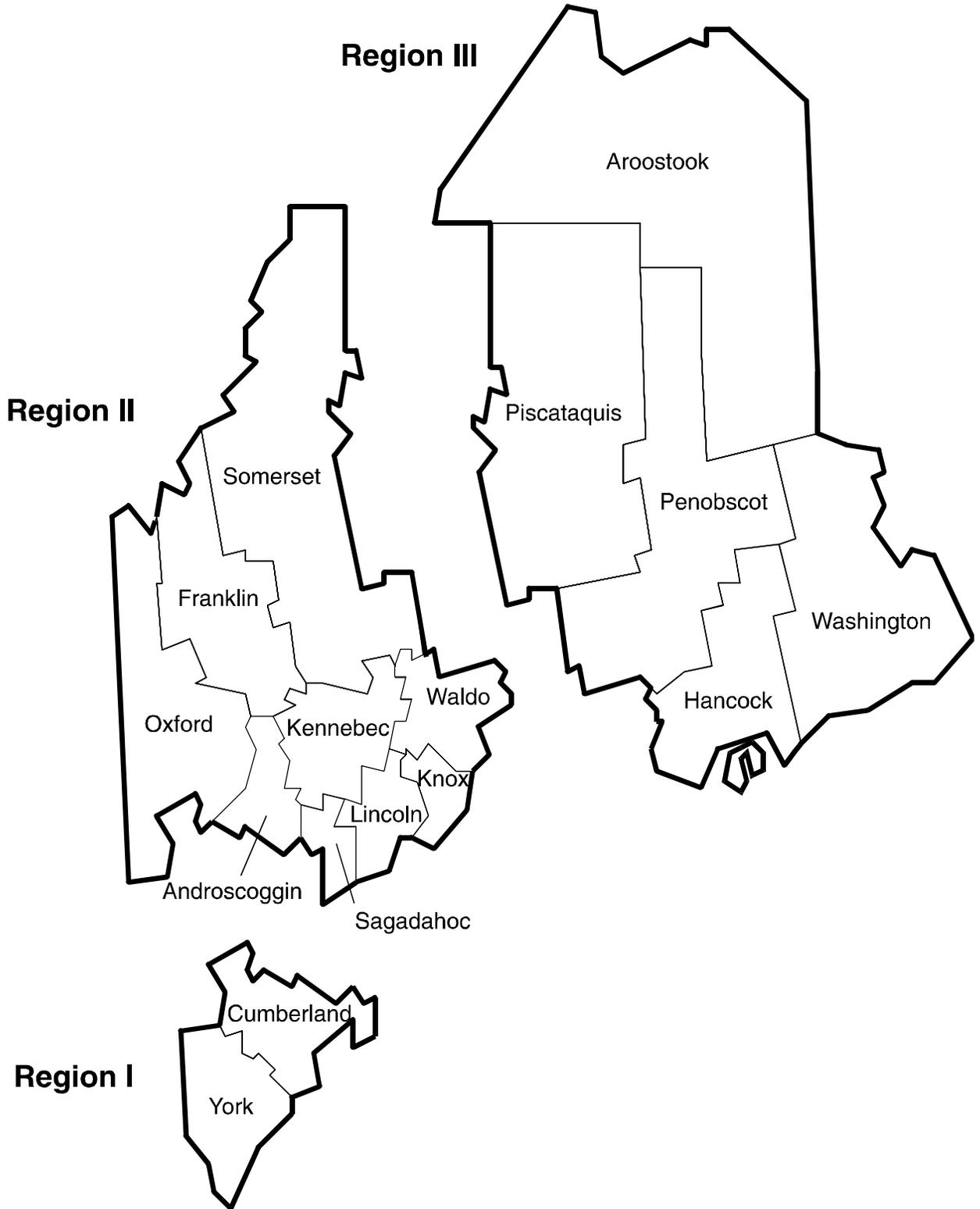
Maine's location near major urban centers to the north and south and its proximity to the Atlantic Ocean make it a convenient drug traffic route between Canada and the United States. Boston is 50 miles to the south while New York is 250 miles to the south. Because of changes to the economy in Maine during the last 20 years (i.e., the growth in tourism and the decline in farming), the state has seen an influx of transient populations. Because of this trend, coupled with easy access to Maine by a major interstate highway and international ports of entry, it is believed that illicit drug and alcohol problems may be on the rise. However, while drug trafficking in the state appears to be increasing, Maine is not considered a major drug traffic area.

Population. The State has 16 counties with an average population density of 41 residents per square mile. The 16 counties are divided into three state planning regions (*Exhibit 1*). The most populated county in Maine is Cumberland County, where the city of Portland is located, with a county population of 265,612 residents. Approximately 21% of the State's population resided in Cumberland County in 2000 (U.S. Bureau of the Census, 2001).

Racially and ethnically, Maine's population is homogeneous. According to the 2000 Census, approximately 97% of the population was white, 0.7% were Asian, 0.6% were American Indian or Alaska Native, and 0.5% were black or African American. Almost 1% reported being Hispanic or Latino. Cumberland County is the most racially and ethnically diverse, with over 40% of the State's black or African American and Asian populations and nearly a third of the Hispanic or Latino population residing there (U.S. Bureau of the Census, 2001).

Socioeconomic Deprivation. Nearly 11% of Maine residents and 15% of the State's children lived in poverty, compared to 13% of the total population and 20% of children nationally. The median household income in Maine was \$33,140 (unpublished Census data) compared to the national median household income of \$37,005.

Exhibit 1. Map of Maine Counties by Planning Region



Source: *Integrated Population Estimates of Substance Abuse Treatment Needs in Maine, 2002.*

The unemployment rate in Maine has decreased since 1997, from a rate of 5.4 to a rate of 3.5 in 2000, which was lower than the 2000 national unemployment rate of 4% (Maine Department of Labor, Division of Labor Market Information Services, 2001).

Teen Births. Teenagers accounted for approximately 10% of all live births and more than 28% of out of wedlock births in Maine in 1997 (Maine Department of Human Services, Bureau of Health, Offices of Health Data and Program Management, Data, Research and Vital Statistics, 2000). Maine's teenage birth rate for 15- to 19-year-old females was 30 per 1,000 females in 1999. This was the 5th lowest in the country with a national rate of 50 per 1,000 females (National Campaign to Prevent Teen Pregnancy, 2001).

Dropouts. The Maine statewide dropout rate for public schools has continued to increase slightly since the 1995-96 school year. The dropout rate for the 1998-99 school year was 3.3% (Maine Department of Education, 2000), much lower than the 1999 national rate of 11.2% (U.S. Department of Education, 2001). The majority (65%) of the 1999-2000 high school graduates in Maine intended to enroll in some type of postsecondary education (Maine Department of Education, 2001). Nationally in 1999, 44% of all 18- to 24-year-old high school graduates were enrolled in degree-granting programs or institutions according to unpublished data from the U.S. Department of Commerce.

Crime. According to the Maine Department of Public Safety (2001), the Maine crime rate in 2000 was 26.25 offenses per 1,000 persons, the lowest number in over 20 years. This is the 4th consecutive year that crime in Maine decreased. However, some categories of crime, such as violent crime, rape, and domestic violence, increased during 2000.

1.3 Maine's Current Substance Abuse Treatment System

Maine's publicly supported substance abuse service system is complex and community-based, providing education, prevention, early intervention, and treatment services. In State Fiscal Year 2001, there were 10,810 admissions, 8,140 discharges and 10,979 detoxification/shelter admissions and discharges. Added together these represent approximately 29,929 transactions through the system.

The overall administrative responsibility for the substance abuse service system in Maine resides with OSA, which is the designated state agency for administering Substance Abuse Prevention and Treatment Block Grant funds and has program administration responsibility for most of the substance abuse services funded with state and federal monies. Under state law, the Director has the power to administer and enforce the rules related to federal and state funds and to accept, allocate, and expend federal funds. OSA has an advisory body, the Substance Abuse Services Commission, which serves three primary functions, as follows:

1. to advise OSA in developing and implementing significant policy matters related to substance abuse;
2. to advise, consult, and assist the Governor and other government branches with activities of state government related to substance abuse prevention; and
3. to serve as an advocate on substance abuse prevention, to promote and assist in activities designed to meet problems at the state and national level, to review and evaluate policies and programs, and to inform the public.

One OSA goal is to ensure that all Maine communities have the capacity to diagnose, treat, refer, and provide follow-up care for individuals who have experienced dysfunction due to their alcohol and other drug problems. During State fiscal year 2001, OSA maintained a viable treatment continuum of services in the state, which include:

- **Shelter**. A pretreatment service offering food, lodging, and clothing to abusers of alcohol and other drugs and designed to protect and maintain life and to motivate clients to seek treatment.
- **Extended shelter**. A structured therapeutic environment for clients on a treatment waiting list.
- **Detoxification**. People with subacute problems related to alcohol or drug use or abuse with medically assisted detoxification and referral to medical treatment for other acute illness.
- **Extended care**. A long-term supportive environment for late-stage substance abusers.
- **Residential rehabilitation**. Treatment services in a full (24-hour) residential setting.
- **Halfway house**. A community-based, peer-oriented residential program offering treatment and supportive services in a chemical-free environment.
- **Intensive outpatient**. An intensive and structured program of evaluation, diagnosis, and treatment services in a setting that does not include an overnight stay.
- **Outpatient care**. Assessment, diagnosis, treatment, and aftercare services. These services also may be provided to the families of substance abusers and other concerned persons, whether or not the abuser is receiving treatment.

OSA is the designated agency for administering Substance Abuse Prevention and Treatment (SAPT) Block Grant funds and has program administration responsibility for most of the substance abuse services funded with state and federal monies. It is responsible for

monitoring and evaluating program performance and for program certification. It annually prepares and presents its appropriation request to the legislature. Maine is among a small group of states that use performance-based contracting to monitor their providers. Performance criteria are agreed to at the time of contract or grant award to providers. The Treatment Data System (TDS) provides data on providers' performance compliance.

OSA works closely with other state agencies to plan and coordinate substance abuse services. For example, the mental health component of BDS and OSA have worked together on numerous projects, including the Co-occurring Disorders Initiative and Community Action Grant. The Community Action Grant for planning the system changes necessary to “Create a System Welcoming to Patients with Co-occurring Mental Health and Addiction Disorders” is near completion. This year-long collaborative effort has involved stakeholder throughout the state through conferences and workshops focused on developing an integrative services model. When completed, it will include Medicaid and licensing changes. In addition, the Department of Human Services (DHS) collaborated with OSA on its second STNAP to conduct a study of substance use and need for treatment among TANF recipients. The Bureau of Family Independence (BFI), a bureau within DHS, and OSA staff worked together to determine the best way to conduct the study. BFI provided OSA with the necessary information to contact TANF recipients and provided input on the final report which gave a more meaningful context to the findings. In addition, in 1996, after working with BFI’s Medicaid Program, BFI made it a requirement that all agencies seeking reimbursement for substance abuse treatment of Medicaid clients report those clients to TDS.

The total number of Maine residents admitted into substance abuse treatment during state fiscal year 2001 was 10,810 (an unduplicated count). A five-year average from 1995 – 1999 revealed that 78% of those entering treatment reported alcohol as the primary drug abused.

1.4 Rationale for Integrative Approach

This integration study builds on, but also parallels the 1999 integration study completed as part of the State’s first STNAP. In essence, the integrative approach seeks to merge available substance abuse information from multiple sources, using rigorous statistical methods and up-to-date computer technology, to create a comprehensive picture of statewide and regional substance abuse treatment need to guide service planning and resource allocation. The key element in the integration process is bringing together findings from the STNAP studies along with information on populations not covered in those studies. Maine’s integrative studies do this by starting with estimates from the general household population and then integrating estimates from studies on the missed populations. This process of merging data from multiple sources provides a broad base of coverage useful for more accurately predicting the need for substance abuse treatment services in Maine.

Many tools are available for conducting needs assessments (e.g., surveys, social indicators, prevalence studies, forums, key informants, and service data). It is now generally recognized that the use of a single tool in an assessment is inadequate. To illustrate, two popular approaches to estimating need for treatment are (1) conducting large-scale household surveys to estimate the prevalence of substance abuse problems, and (2) collecting institutional records or staff reports to determine the number of clients with substance abuse disorders.

The major weakness of the household survey is that it excludes nonhousehold populations (e.g., households without telephones, or those living in unconventional housing units or institutions such as homes for elderly people, jails, welfare hotels, and residential treatment programs); thus introducing a source of systematic bias in the estimates (National Institute on Drug Abuse [NIDA], 1994; Regier et al., 1988; Weisner et al., 1995). This weakness is particularly significant because individuals living in some of these nonhousehold settings tend to have higher rates of substance abuse problems. Thus, their exclusion introduces systematic bias into prevalence estimates.

The impact of using only household surveys in a needs assessment is documented by three well-known studies. In DC*MADS, inclusion of institutionalized individuals and homeless and transient people led to the identification of a significant number of drug users who would otherwise have been missed. However, the aggregated household and nonhousehold data resulted in only a very slight increase in the overall prevalence rate for illicit drug use. Specifically, the prevalence of illicit drug use based solely on the DC*MADS household sample was 11.7% (NIDA, 1994). After adjusting for rates found among the institutionalized and homeless/transient populations, the rate increased to 12.0%. Despite the fact that these institutionalized groups had relatively high rates of drug use, their small number (less than 1% of the total population) constrained their impact on overall prevalence rates. However, increases in the prevalence rate *did* translate into a higher number of potential service users. In DC*MADS, the aggregate population data yielded estimates of approximately 14,000 more illicit drug users. When considering hard drugs, such as crack/cocaine, these data suggest that household estimates alone would fail to capture about 20% of the past month crack/cocaine users (NIDA, 1994).

Many tools are available for conducting needs assessments. However, a review of the literature revealed that none of these methods offered a well-developed set of guide- lines on how to use needs assessment data to plan or guide service delivery.

Research collected through the Epidemiologic Catchment Area (ECA) studies also confirmed the utility of addressing the substance abuse needs of nonhousehold populations (Regier et al., 1990). It found that although institutionalized adults comprised only 1.3% of the population, they had much higher rates of substance abuse and mental health problems. The lifetime prevalence of any alcohol, drug, or mental health problem was 71.9% among

institutionalized adults, compared to 32.7% among noninstitutionalized adults. When comparing different types of institutions or substance abuse or mental health problems, psychiatric hospitals had the highest lifetime rate (82.%), followed closely by prisons (82%) and nursing homes (65.5%). When looking specifically at addictive disorders, the prison population had the highest lifetime rate (72%), compared to psychiatric hospitals (39.6%) and nursing home residents (14.3%).

Third, the Institute of Medicine (IOM), in its landmark study of treatment for drug abuse problems, undertook an integrated needs assessment approach to estimate the number of individuals nationwide needing treatment for illicit drug use (Gerstein & Harwood, 1990). It began by assessing the general household population using a nationally representative data set compiled by RTI (i.e., the NHSDA). The IOM researchers discovered, however, that a significant portion of those in need were not reachable through traditional survey methods. Their research concluded that three additional high-risk populations – criminal justice populations, homeless/transient people, and childbearing women – should be addressed to broaden the usefulness and scope of needs assessment activities.

With regard to developing estimates based solely on data collected from institutional records or staff reports, a key limitation is that this estimation strategy does not capture individuals in need who are not receiving services. Research indicates that many people who have substance abuse or dependence problems, or who perceive some level of need for substance abuse services do not receive them. For example, the adult household telephone survey conducted as part of the State's first STNAP, found that of those who were estimated to need treatment during the past year, only 43% received some type of assistance and only 20% received formal treatment. That is, of the 75,600 adults estimated to need treatment, only 14,200 received such services (Kroutil et al., 1998). In addition, the TANF study conducted as part of the second round STNAP found that of the 16% of recipients estimated to need treatment or intervention for alcohol or illicit drug use, only 2% received some kind of assistance or formal treatment (Weimer, et al., 2001).

Even in needs assessment efforts that focus on service users only, the strategy of obtaining services information by compiling records from health and human service settings is limited. Such a strategy introduces bias for two key reasons: (1) the lack of comparability among measures obtained across service settings, and (2) the difficulties in obtaining an unduplicated account of service users, given that the same individuals often present at many agencies, often simultaneously.

Finally, despite the increasing use of multiple tools in needs assessments, reviews of the literature on these efforts revealed few guidelines on how to systematically integrate data from multiple sources and no guidelines on how to do so interactively (“Prevalence Estimation Techniques,” 1993; Soriano, 1995).

1.5 Study Overview and Report Organization

This study updates information from the 1999 Maine integrative treatment needs assessment study. The process was facilitated by developing an automated system for updating data and outputting reports. The need for substance abuse treatment was estimated for various population groups including the adults in households, homeless adults, institutionalized adults, incarcerated adults (i.e., jail and prison inmates), and adolescents. Hence, treatment needs estimates in this study encompass high-risk groups missed by traditional needs assessment approaches.

This chapter provides background information on Maine’s STNAP studies, population, geography, and treatment system, as well as a summary of the rationale for the integration efforts. This is followed by an overview of Maine’s STNAP data integration methods in Chapter 2. Chapter 3 provides an overview of the Maine AIM and Chapter 4 presents major findings from the STNAP studies in which data were used in creating the Maine AIM. Lastly, Chapter 5 contains a summary of selected key findings produced by the Maine AIM. Much of the background materials provided throughout the report are taken directly from the STNAP studies used in the integration process. The repetition was deemed necessary so that this report would serve as a stand-alone document. The reader is directed to these prior studies for detailed information.

The need for substance abuse treatment was estimated for various population groups including the adults in households, homeless adults, institutionalized adults, incarcerated adults, and adolescents. Hence, treatment needs estimates in this study encompass high-risk groups missed by traditional needs assessment approaches.

2. OVERVIEW OF STNAP DATA INTEGRATION METHODS

Data from the household telephone survey, the adult arrestee survey, and the youth synthetic estimation study cover well over 90% of Maine’s population. The populations covered by STNAP studies are listed in *Exhibit 2*, along with a presentation of the populations missed (i.e., not covered) by STNAP research. Although the missed groups make up a very small proportion of the total state population, it is likely that they have greater substance abuse-related needs; thus, it is important that they be considered and appropriately emphasized when assessing treatment needs.

Exhibit 2. Populations Covered and Not Covered in Maine's STNAPs

Population	Adult Household Population	Homeless Adults	Institutionalized Adults	Youths	Special Populations
Covered¹	Households with phones		Jail inmates	Household adolescents (includes school dropouts)	TANF
Missed	Households without phones ²	Emergency shelter users Soup kitchen users Individuals living on the street	Prison inmates Nursing home residents Psychiatric hospital patients Inpatient program clients	Homeless youths Institutionalized youths Juvenile arrestees	Adults charged with operating under the influence of alcohol (OUI) Child bearing women Injection drug users ²

¹ This term refers to those populations for which prevalence data were obtained directly from the Maine demand and needs assessment studies.

² For these populations, some comparative prevalence data were available from the Maine demand and needs assessment studies, but the final prevalence rates reported here came from alternative sources.

Source: *Integrated Population Estimates of Substance Abuse Treatment and Intervention Needs in the State of Maine, 1999.*

The heart of the integrative study approach rests in the construction of a series of treatment needs matrices representing each of the covered and non-covered population groups. Each matrix combines information on substance abuse prevalence rates, population sizes, and numbers in need (prevalence rate multiplied by population size) from multiple sources. Separate matrices are developed for statewide, regional and county estimates of treatment needs for each population of interest to the State of Maine. The state and regional matrices for some of the population groups (i.e., the mutually exclusive adult populations described in detail below) are further broken down by gender, age (18 to 24, 25 to 44, 45 to 64, and 65 or older), and ethnicity (non-Hispanic, white, and other).

2.1 Summary of Data Integration Steps

The analytic steps used in the 1999 integrative study are summarized in *Exhibit 3*. With the exception of the data updating procedures, the same process was used for this study. A full description of the integration methods are provided in Chapter 3 of the 1999 integration study (Herman-Stahl et al., 1999). The key steps are summarized below.

Exhibit 3. Summary of Data Integration Steps

Step	Explanation
1	Designate definition of treatment need for each study.
2	Determine level at which data will be broken down (e.g., planning region by gender by age).
3	Determine population bases for all mutually exclusive and special populations.
4	Extract prevalence rates from STNAP studies and, based on population estimates determined in Step 3, calculate the number in need of treatment.
5	Address issues of generalizability of the prevalence rates obtained to the three planning regions.
6	Identify prevalence rates from other available studies and from reviews of the literature for populations not covered in the STNAP as well as for special populations.
7	Address issues of multiplicity in sampling frames across studies.
8	Integrate data from across all studies using weighted prevalence estimates for substance abuse treatment needs statewide, by planning region, and by county for each of the mutually exclusive and special populations.

Source: *Integrated Population Estimates of Substance Abuse Treatment and Intervention Needs in the State of Maine, 1999*.

2.2 Definitions of Population Groups

Mutually Exclusive Population Groups. In an effort to generate integrated rates of substance abuse treatment needs across Maine, the statewide population was divided into mutually exclusive groups based on where individuals reside at any given moment in time (see Section 1.2.1 above). The mutually exclusive population groups are composed of household and nonhousehold populations of adults and of household youths. This framework was developed to facilitate the integration of nonoverlapping prevalence estimates and to highlight adult populations with high substance abuse-related service needs.

The adult household population was further broken down into households with and without telephones, based on an extensive review of the literature indicating that nontelephone household populations have different rates of treatment needs from the telephone household population and, thus, need to be treated separately. Household youths covered in the integration study included all adolescents (aged 12 to 17 years). Within the group of household adolescents,

we looked at the subgroup of adolescents who dropped out of school, based on reviews of the literature indicating higher substance abuse rates than youths in school. It is important to note that the adolescent school dropout population overlaps with the household population.

The nonhousehold, mutually exclusive populations in this study include homeless adults, institutionalized adults, adults in state prisons, and adults in other group quarters. Despite the number and diversity of studies conducted as part of the Maine STNAPs, the homeless and institutionalized populations were missed. Homeless adult populations include people using emergency and domestic violence shelters and individuals living on the street. Institutionalized adult populations include people in nursing homes and psychiatric hospitals. Two adult groups—people living in federal prisons and those living in other group quarters—were excluded from the analysis. People in these groups are served by different substance abuse service systems. Further, there are no federal prisons in Maine. The other group quarters segment includes people living in college dormitories and military barracks. The nonhousehold youth populations of homeless and incarcerated adolescents also were excluded from this analysis.

Special Population Groups. The State of Maine identified several populations as important priority groups for substance abuse treatment and intervention planning efforts. The special populations include childbearing adults, people who are injection drug users, adults charged with OUI, and TANF recipients. These populations are referred to throughout this report as special populations. The special population groups overlap with the mutually exclusive groups; they may also overlap with each other. As with some of the mutually exclusive populations, substance abuse among these special populations may pose public health threats, hence their treatment needs are often prioritized by state planners.

2.3 Determining Population Bases for the 1999 Study

Mutually Exclusive Population Groups. For the 1999 study, the 1990 U.S. Census was the primary data source for determining the 1997 population bases statewide and for the three service agency regions in Maine by age, gender, and ethnicity for the mutually exclusive population groups. The Census data contain counts of individuals in various residential arrangements of interest to this study, including households with telephones, households without telephones, the institutionalized, and the incarcerated. Institutionalized people include people found in nursing homes, psychiatric hospitals, hospitals for the chronically ill, hospitals for the mentally retarded or physically handicapped, and hospitals or wards for alcohol/drug abusers. Incarcerated individuals included those located in correctional institutions (e.g., prisons, federal detention centers, jails) or confinement facilities (e.g., police lockups, halfway houses) when the 1990 Census was conducted (U.S. Bureau of the Census, 1990). Several U.S. Census data sets were identified for use in this project. Multiple data files were accessed because no single data source offered the level of detail necessary for this study.

The population bases above were generated through a complex iterative fitting process. In brief, the process required condensing data from multiple (and often conflicting) sources and apportioning people to categories based on assumptions about population distribution and change over time. The figures represent our best estimates. They may vary slightly from estimates provided by other government agencies.

Several types of Census information were used to obtain the desired population cross-classification estimates for the two types of households (i.e., telephone and nontelephone households) and for the five categories of group quarters (i.e., homeless, institutionalized, jail inmates, state penitentiary residents, federal penitentiary residents, and those living in other group quarters). In this study, the most detailed Census data available were used to estimate the population in 1990 for each cell of the cross-classification matrix. Next, the data were aged to account for population changes from 1990 to 1997 based on Census resident population estimates at the county level.

Further breakdown of the data, particularly for the nonhousehold population, was obtained using block-level statistics. The block statistics provided detailed cross-classification information at a more localized level (i.e., smaller than the county). Using block statistics made it possible to determine marginal counts of the total population in group quarters by gender, age, and ethnicity. Information was less precise, though still useful, for estimating population bases for those living in specific group quarters or in households. All blocks containing any group quarters populations were examined. The group quarters cross-classification cells were inferred or estimated from block statistics data and other information and then summed to the county level. Corrections data from the Inter-University Consortium for Political and Social Research (ICPSR) web site (listed earlier) were used to corroborate populations located in state penitentiaries and jails. This information also was used to infer block-level cross-classifications for incarcerated individuals.

Once the 1990 population values were estimated for each cell in each county, these values were aggregated to obtain cross-classification data for each of the three BDS regions. Finally, all the 1990 cross-classification estimates were aged to 1997, based primarily on the change in total population from 1990 to 1997 in Census county-level population estimates. When evidence indicated that a major change had occurred in the population distribution for a county during this period (such as a newly constructed prison or an expanded nursing home), this information was

The integrative study methodology involved dividing the State population into mutually exclusive groups, assembling population bases for each group, using estimates from the STNAP studies and from state and national sources, and multiplying the population size by the rate of treatment need to determine the number of persons needing treatment by mutually exclusive group.

used in estimating the change in population components for the county. For counties whose total populations changed very little from 1990 to 1997, all the components were changed in proportion to the change in the total population.

Three assumptions were inherent in producing the population estimates:

- (1) Decisions made in allocating the group quarters block populations to gender, age, and ethnicity cross-classifications were reasonably accurate.
- (2) Data from the Census Public Use Microdata Samples (PUMS) 5% sample of 1990 Census household and person records, used to divide the household population by phone/no phone status, were sufficiently accurate at the county level.
- (3) The process used to age the detailed cross-classification population values for each county from 1990 to 1997 was sufficiently accurate.

For this study, the approach using Census population size estimates did not require the use of any multiplicity adjustments. The Census population estimates were made for a set of nonoverlapping population groups that fully cover the state. That is, every person in Maine would conceptually belong to one, and only one, of the population groups (i.e., mutually exclusive adult populations) chosen for use in this study. Survey estimates of the percentage of people needing treatment should be representative of the population group that the survey actually sampled. The telephone survey of households covered only households with telephones; thus, the estimated percentage of people needing treatment from the household survey is appropriate for this population group and needs no multiplicity adjustment. Estimates from the survey of adult arrestees also were computed and used to estimate cross-classification percentage of incarcerated individuals in need of treatment.

Estimating the number of homeless presented special issues. In addition to using the Census data for mutually exclusive population groups, data were obtained from the Maine Office of Substance Abuse Data System (OSADS) on the number of homeless (unduplicated count) who received treatment during 1997. These data were available by county/region, gender, and age. Based on these counts, further extrapolation was conducted to estimate the total number of homeless. Basically, the population of homeless by region and county were estimated by assuming that 23% of the homeless accessed treatment during 1997 (Bray and Marsden, 1998).

Population estimates for household adolescents were also obtained from the 1997 Census data. These data were obtained in the same manner as for the mutually exclusive population groups described above. Adolescents were defined as people between the ages of 12 and 17 years.

The number of adolescent school dropouts was obtained from the Maine Department of Education's Educational Facts 1997 (available at http://www.state.me.us/education/ed_facts7.htm). A dropout was any person under the age of 17 who had withdrawn or been expelled from school before graduation or completion of a program of studies and who had not enrolled in another institution or program. Estimates included students in both public and private secondary schools. A few secondary schools had grades lower than ninth grade (i.e., were middle/high schools, junior/senior high schools); therefore, dropouts from grades other than 9 through 12 may be included. Because the students' residences could not be ascertained, regional breakdowns are based on the geographic location of the school.

Special Population Groups. Population bases for special populations were determined based on data from the U.S. Bureau of the Census, Maine's Department of Public Safety, and Maine's Department of Human Services. By definition, IDUs and adults charged with OUI are in need of substance abuse intervention or treatment. Thus, methods for determining the size of these populations are discussed under treatment needs in a subsequent section of this report.

Population bases for childbearing women were obtained from the Maine Department of Human Services. A proxy estimate of the population of childbearing adults was used (namely, the number of live births to mothers who were 18 years or older in 1996). Obtaining precise figures of adult pregnancies that resulted in miscarriage, abortion, or stillbirth so that the number of live births could be adjusted to represent all pregnancies was beyond the scope of this study. Consequently, the figures used in this study underestimate the number of childbearing women. The rates of live births to women were applied to the 1997 population bases obtained from the Census to estimate the number of childbearing women in 1997. Again, both statewide and regional estimates were calculated based on county-level data.

2.4 Updating Mutually Exclusive and Special Population Groups for the 2002 Integrative Study

Mutually Exclusive Population Groups. To update the population bases for this study, first, population bases for the demographic subgroups in the framework were determined. The framework has region and statewide level data broken down by gender (male and female), race/ethnicity (non-Hispanic white and other races/ethnicities), and age (18 to 24 years, 25 to 44 years, 45 to 64 years, and 65 years and over).

County-level population data from the 2000 Census were used to update the population bases for the mutually exclusive population groups.

At the time these data were updated, county-level population data from the 2000 Census were available by age, ethnicity, and gender in Profiles of General Demographic Characteristics, 2000 (Profiles). County-level data

can be rolled up to the region and statewide levels. However, the demographic categories provided in the Profiles are not exactly the same as those included in the model. The number of adult (i.e., 18 or older) males and adult females are available for each county. However, the population data is broken down into different age groups including under 5 years, 5 to 9 years, 10 to 14 years, 15 to 19 years, 20 to 24 years, 25 to 34 years, 35 to 44 years, 45 to 54 years, 55 to 64 years, 65 years and over, and 18 years and over. Hence, Profile data for age require some straightforward manipulation to fit them into the desired categories. Determining population estimates for the ethnic groups required allocating persons to categories based on assumptions about population distribution. First, the number of people in each ethnic group were estimated. Then, the number of those who were adults were estimated.

As noted above, the population groupings in the model are (1) non-Hispanic white and (2) other races/ethnicities. Because Maine's population is so homogenous, the numbers of people falling into the categories other than white are very small and only represent a small percentage of the population. The non-Hispanic white category includes individuals who are not of Hispanic origin and classify themselves as white only. The other races/ethnicities category includes individuals who are Hispanic, black, American Indian and Alaska Native, Asian, Native Hawaiian or other Pacific Islander, some other race, and of two or more races. The numbers of people who were white, non-Hispanic white, Hispanic, and of other races (black, American Indian and Alaska Native, Asian, Native Hawaiian or other Pacific Islander, some other race, and two or more races) are available from the Profiles at the county level. Because the number of non-Hispanic whites were available directly from the Profiles, no proportioning or allocating was necessary for this category. However, certain assumptions and allocations had to be made to estimate the number of people who were of other races/ethnicities. First the number of Hispanics who were not white (i.e., of other races) was determined as the number of Hispanics less the number of whites who were Hispanic (number of white people minus number of non-Hispanic white people). Then, this number was divided into the number of Hispanic people who were of other races based on their relative proportions. These numbers were used to estimate the number of people who were Hispanic and non-Hispanic of other races/ethnicities (e.g., number of people of other races/ethnicities minus number of Hispanic people or non-Hispanic people). Lastly, the proportion of the total population that was 18 years and older was applied across the two race/ethnic groups to estimate the number of adults in each race/ethnic group.

Using the demographic subgroup population estimates previously described, the population counts for each cell of the cross-classification (i.e., demographic characteristics by mutually exclusive population group) were updated. First, the population estimates for each demographic subgroups within each region and for each region as a whole were apportioned across the mutually exclusive groups based on the proportions from the previous study. Then, the region total for each mutually exclusive group was reallocated across the demographic

subgroups based on the proportions of the updated numbers. Although population estimates for household adolescents aged 12 to 17 years were also obtained from the 1997 Census data, these were not updated in the model. Instead, the total population of adolescents aged 10 to 17 was used as a basis for estimating adolescents aged 12 to 17 because it was readily available from the Census website.

Special Population Groups. The updated population bases for childbearing mothers was obtained from the Maine DHS, Bureau of Health, Office of Data, Research and Vital Statistics. Again, a proxy estimate of the population of childbearing adults was used (i.e., the number of live births to mothers who were 20 years or older in 2000). The number of live births by mother's county of residence by age was extracted from the Office of Data, Research and Vital Statistics data tables entitled All Live Births and Out-of-Wedlock Births by Mother's Age, Sex of Child and Birth Order: Maine Counties and State Totals, 1999. The table can be accessed at <http://www.state.me.us/dhs/bohodr/datapage.htm>.

TANF data was not available for the 1999 integrative study. However, the TANF study conducted as part of Maine's second STNAP provided the necessary rates of treatment need. To update the population of TANF recipients, the number of adult TANF recipients in December 2000 for each county was extracted from Report AAFO7OB entitled Geographic Distribution of TANF and FS Money Payment Caseload Giving Unduplicated County of Total Recipients by County for December 2000. This report is available from the Maine DHS, Bureau of Family Independence.

The updated number of adults arrested for OUI for each county was extracted from the Maine Department of Public Safety Crime in Maine 2000 report and can be accessed at http://www.state.me.us/dps/cim/crime_in_maine/2000contents.htm.

Statewide and regional estimates for childbearing women, TANF recipients, and adults arrested for OUI were calculated based on county-level data. However, updated numbers of IDUs were not available. For this study, the Maine AIM uses the regional data prepared for the 1999 report.

2.5 Determining Prevalence Estimates for the 2002 Study

Despite the diversity of Maine's demand and needs assessment family of studies, some mutually exclusive population groups and special populations were missed. Because several populations were not captured by the STNAP studies and because STNAP data may have only captured a small percentage of certain populations, information from literature reviews was used to supplement and develop substance abuse prevalence rates. *Exhibits 4* and *5* outline the sources of prevalence data for all populations.

Exhibit 4. Sources of Substance Abuse Prevalence Data for Mutually Exclusive Population Groups

Data Source	Household Adults		Nonhousehold Adults				Youths	
	Phone	No Phone	Homeless	Institutionalized	Jail Inmates	State Prison Inmates	Household Youths	School Dropouts
Household Study	X							
Arrestee Study					X	X		
Youth Synthetic Estimation Study							X	X
Maine Office of Substance Abuse Data System			X					
Literature Review		X	X	X		X		X

Source: *Integrated Population Estimates of Substance Abuse Treatment and Intervention Needs in the State of Maine, 1999.*

Exhibit 5. Sources of Substance Abuse Prevalence Data for Special Populations

Data Source	Childbearing Women	Adult IDUs	Adults Charged with OUIs	Adult TANF Recipients
Household Study		X	X	
Arrestee Study		X		
TANF Study				X
Literature Review	X	X	X	

Source: *Integrated Population Estimates of Substance Abuse Treatment and Intervention Needs in the State of Maine, 1999.*

Note: To conduct the reviews, a database created by the National Technical Center (NTC) for Substance Abuse Needs Assessment was searched. The NTC was established to provide technical support to states conducting studies to meet the requirements of the Substance Abuse Prevention and Treatment (SAPT) Block Grant applications and other planning activities. The NTC is a division of the Harvard Medical School's Department of Psychiatry at Cambridge Hospital in Cambridge, Massachusetts.

For the literature reviews on special populations, the citation database (NEEDWIN.dat) was used. Approximately 5,400 abstracts are contained in this database. Articles were accessed from 1980 onward. Relevant abstracts were examined and articles with direct relevance to this study were reviewed. This included studies employing diagnostic instruments, clinical criteria, or accepted screening instruments and providing 6-month or past year prevalence rates of alcohol and/or drug abuse. A matrix was created to catalogue information on each relevant article, including sample characteristics, data collection methodology, instrumentation, prevalence rates, results/conclusions, generalizability, and limitations.

For the purposes of generating prevalence rates, substance use referred to alcohol and other drug use, and excluded tobacco. Substance abuse also referred to alcohol or drug abuse

only. Abuse of either drug was defined differently across the surveys conducted in the family of studies as well as across prevalence studies in the published literature. Substance abuse, in the case of the household survey, the arrestee survey, and TANF survey included people who met the criteria specified in the third, revised edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R) (American Psychiatric Association [APA], 1987) as well as those who met the criteria for heavy use. Substance abuse in the published literature, on the other hand, is based on studies employing DSM-III-R (1987) criteria. Further, because we were not able to distinguish between alcohol and other drug abuse, substance abuse service need refers to the need for alcohol or other drug services. The term treatment/intervention need was used among youths, given that it was considerably more difficult to distinguish between use and abuse for this population. A summary of prevalence rate findings from previous STNAP studies and literature reviews are summarized in *Exhibit 6*.

Substance abuse for all specified populations was determined based upon DSM-III-R criteria. Need for treatment refers to individuals meeting DSM-III-R criteria for alcohol or illicit drugs.

Exhibit 6. Population Groups, Sources of Data, and Estimated Prevalence of Need for Substance Abuse Services

Population	Source	Estimated Prevalence of Treatment or Intervention Need (Range)
Household adults with phones	STNAP Household Telephone Survey	8.0
Households adults without phones	Geller, 1995	13.3
Homeless adults	Fischer, Shapiro, Breakey, Anthony, & Kramer, 1986; Kogel, Burnam, & Farr, 1988; Robertson, Zlotnick, & Westerfelt, 1997	36.0 (31.2 – 52.4)
Institutionalized adults	Alexander, Craig, MacDonald, & Haugland, 1994; Reiger, 1990	37.1 (14.3 – 49.0)
Incarcerated adults	STNAP Arrestee Survey	67.3
Household youths	STNAP Youth Synthetic Estimation Study	7.4
School dropouts		25.1
Childbearing women	Ebrahim et al., 1998; NHSDA, 1998; National Institute on Drug Abuse (NIDA), 1996	17.6 (14.1 – 22.2)
Adult IDUs	Bray & Marsden, 1999	100%
Adults charged with OUI	Maine Department of Public Safety; Uniform Crime Reporting, 1997;	100%
Adult TANF recipients	STNAP TANF Study	28.7

Sources: *Integrated Population Estimates of Substance Abuse Treatment and Intervention Needs in the State of Maine, 1999* and *Integrated population Estimates of Substance Abuse Treatment Needs in Maine, 2002*.

3. OVERVIEW OF MAINE AUTOMATED INTEGRATION MODEL (AIM)

The Maine AIM was designed to facilitate the use of integrated data by planners and to extend their usefulness into the future. In this way, the AIM fulfills the third and fourth CSAT mandates to develop low-cost, valid methodologies that can be used by the state in subsequent years to estimate treatment needs and to identify key gaps in the state's current data collection efforts relating to needs assessment.

3.1 Use of the Maine AIM as a Service Planning Tool

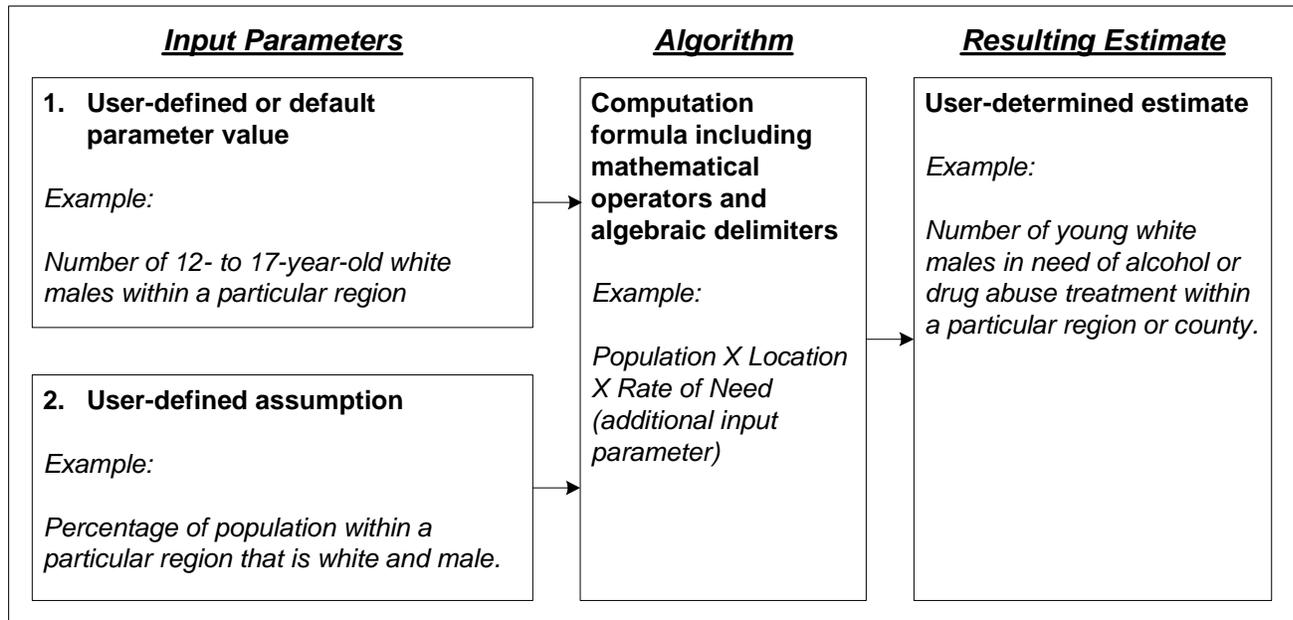
The AIM will facilitate planning tasks in a number of ways. The tool will enable OSA planners to analyze, in a very dynamic and efficient way, how best to distribute both services and resources. For instance, the tool will not only allow planners to estimate treatment need, service capacity, utilization, and costs, but also to observe changes in these estimates over time, to assess the patterns change in these estimates over time, and to examine treatment system configuration. Further, the spreadsheet will be capable of producing estimates of need, demand, and costs for specific subpopulations and counties and planning areas, as well as statewide. Third, the updated estimates can be produced routinely given the tool's capability of inputting new data. Finally, the AIM will be capable of producing reports in a number of formats including one which incorporates all of the specifications for federal Block Grant reporting.

The state can use this spreadsheet model to view summary reports based on existing (default) data, enter updated input data, view reports based on new data, and/or complete selected state block grant application forms.

3.2 Summary of the AIM Design

The Maine AIM was developed using Microsoft Excel and Visual Basic for Applications. The spreadsheet was developed to present the parameters, their relationships, and the calculated estimates. Although the tool is recognizable as an Excel spreadsheet, it is presented as a usable interface with clear indications of what parameters can be changed by users and how these changes will alter the resulting estimates. To this extent, a variety of features are built into the tool to relate a logical flow of information. *Exhibit 7* provides a general illustration and brief example of how information flows to produce the estimates of interest.

Exhibit 7. Maine AIM Design



Source: *Integrated Population Estimates of Substance Abuse Treatment Needs in Maine, 2002.*

3.3 Input Parameters

Within the model, users will be able to identify all data sources. Possible input parameters for which data may be supplied include the following:

- location (state, region, county);
- population counts by population subgroups (households with phones; households without phones; incarcerated; homeless, etc.);
- population counts for special population subgroups: TANF, childbearing women, OUI arrestees, injection drug users (IDUs);
- population counts by demographic group (age, gender, or race/ethnicity);
- substance abuse treatment need rates by modality, location, or demographic group;
- substance abuse treatment demand rates;
- treatment capacity by modality and location;
- treatment utilization by modality and location; and
- treatment cost by level of care/modality.

Although users of the AIM will be able to change many of the input parameters noted above, also included is a set of unalterable, default input values. The defined data used are those input data that produce the “best estimates” of treatment need and other estimates, based on the “best” data available at the time the model was developed. This will allow users to avoid unwanted alteration of the original data.

3.4 Producing Estimates

In producing estimates for a given set of input parameter values, the model relies on straightforward algebraic formulas driven by state-, region-, or county-level data. Statistical estimations that require person-level data, such as regressions, weighted sums, were not used. This approach allows the use of fewer data sources and thus computes results rapidly when model parameters are changed. All formulas used are visible to the analyst. Most formulas are password-protected. While providing some security, this feature may provide users more flexibility in changing assumptions related to policy or research questions that cannot be changed by adjusting input parameter values.

A number of estimates can be produced from the data inputted into the model, for example, treatment utilization ratios (capacity/utilization) and excess treatment capacity (actual capacity utilization) both at the state, sub-population, region and/or county levels. Estimates may also serve as intermediate input parameters. For example, in order to obtain an estimate for the number of people in need of treatment who are eligible for publicly subsidized services, the user will first need to compute the total number of individuals who are in need of treatment.

In summary, the approach has the advantages of being intuitive, simply constructed, and easy to use. Despite the model’s simplicity, our approach does allow sufficient flexibility such that increased complexity can be built into future versions. For example, future versions may include more extensive sets of input parameters, the addition of more features to increase the model’s user-friendliness, the ability to estimate additional variables of interest, and the ability to perform statistical estimations. Also, whereas we expect to estimate needs for special populations of interest as special analysis outside the set of mutually exclusive populations, we hope to be able to derive specific estimates of their size and treatment needs rates directly as part of one or more mutually exclusive populations in future iterations of the model.

A user’s manual was developed which describes the various uses of the AIM and provides operational instructions and provides summary output for the default data. A copy of the user’s manual for the AIM (Candrilli, Weimer, and Rachal, 2002) is available from OSA.

4. OVERVIEW OF MAJOR FINDINGS FROM PRIOR STNAP STUDIES

The Maine AIM primarily uses data from five of Maine's family of demand and needs assessment studies: three targeted adult population surveys (i.e., adult telephone-surveyed household members, adult arrestees, and adult TANF recipients), one youth synthetic estimation study and one service system study. The STNAP studies for which data were collected covered a large majority of the population, applied rigorous sampling techniques, and used nationally accepted criteria for defining substance abuse treatment needs. Although these studies may contain some bias due to the difficulties inherent in large-scale field studies, their limitations should not discourage their use for treatment planning purposes. The following sections summarize the methodology and principal findings of each study.

4.1 Alcohol and Other Drug Household Estimates (Study 1, Round 1)

This section presents findings from a study designed to examine the demand and need for alcohol and other drug treatment among Maine's adult household population aged 18 or older. In the winter and spring of 1997, a random sample of 4,042 adults in Maine completed a telephone survey that used a computer-assisted telephone interviewing (CATI) system. Households were selected by random digit dialing. Adults aged 18 to 44 years were oversampled because Maine addiction treatment system data indicated that adults younger than 45 account for the vast majority of the state's treatment admissions. About 65% of the respondents were aged 18 to 44. Data were weighted to reflect current population counts in the state; weighting ensured that groups that were overrepresented in the sample relative to their representation in the population (e.g., adults aged 18 to 44) did not have a disproportionate effect upon prevalence estimates. Estimates reported here are believed to be reliable, although some may be conservative. Key findings from the Maine telephone survey analyses are noted below.

Prevalence and Correlates of Alcohol and Illicit Drug Use

- Overall, a significant proportion of adults in Maine households used alcohol or illicit drugs. The majority (69%) used at least some alcohol in the 12 months before the survey, and slightly more than half (52%) used alcohol in the month preceding the survey. About 88,000 adult residents of Maine households (about 10%) used alcohol heavily in the previous 12 months. About 7% (64,000 adults) drank heavily in the month prior to the survey.
- Approximately 10% of adults, or about 96,000 people, used one or more illicit drugs in the 12 months before the survey, with another 5.7% (53,000 adults) reporting past month illicit drug use.

- Some of the highest rates of heavy alcohol use and illicit drug use in the past 12 months were observed for men (15% and 13%, respectively), adults between the ages of 18 and 24 (20% heavy alcohol, 33% illicit drugs), and single (i.e., never married) adults (20% heavy alcohol, 27% illicit drugs). Marijuana accounted for most illicit drug use.
- Compared with regional and national data from the 1996 National Household Survey on Drug Abuse (NHSDA), Maine adults in 1997 had similar rates of any alcohol use, hallucinogen use, and cocaine use in the past year. However, rates of marijuana use and nonmedical use of stimulants among young Maine adults aged 18 to 25 were notably higher than the corresponding national rates. Rates of marijuana use were almost 30% higher, and rates of stimulant use were over twice as high.

Need for Treatment or Intervention for Alcohol or Illicit Drug Use

- Rates of specific problems associated with alcohol use in the past 12 months were greater than rates of problems associated with use of other drugs. However, this finding is not surprising, given the much higher prevalence of alcohol use among this population.
- The most commonly occurring alcohol-related problems in the 12 months prior to the telephone survey were use of alcohol in larger amounts or for longer periods than intended; exhibition of symptoms suggesting a development of tolerance to the effects of alcohol; unsuccessful attempts to quit, cut down on, or control drinking; and frequent intoxication in potentially hazardous situations.
- Young adults aged 18 to 24 (both males and females) had particularly high rates of alcohol-related problems in the past 12 months.
- About 8% of adults in the Maine household population in 1997, or an estimated 75,600 adults, were in need of substance abuse treatment, based on receipt of treatment services in the past 12 months; a lifetime history of dependence or abuse, substance use in the past 12 months, or symptoms in the past 12 months; or a lifetime history of dependence or abuse and a “problem” pattern of use in the absence of reports of current symptoms. Alcohol accounted for much of the need for treatment.
- Of the estimated 75,600 adults in need of treatment, 65,900 specifically needed alcohol treatment.
- Men were more likely than women to need treatment, and young adults aged 18 to 24 were more likely than adults in other age groups to need treatment. In particular, more than one fourth of young men aged 18 to 24 and nearly 14% of young women in this age group needed some kind of treatment service for their substance use.

- Compared with the estimated 8% of adults in the Maine household population in need of treatment, more than one in five adults in this population were in need of some form of intervention for their use of alcohol or other drugs, which could include treatment. This estimate translated to nearly 195,000 adults. As was the case with need for treatment, men and young adults had the highest prevalences of need for some form of intervention for their substance use.
- Adults who needed substance abuse treatment did not differ in their perceptions of physical health compared with the Maine adult household population as a whole. However, adults needing substance abuse treatment did have higher rates of respiratory problems and digestive disorders. More than 40% of Maine adults in the household population who needed substance abuse treatment perceived their mental health as fair or poor. Nearly one in five adults who needed substance abuse treatment had been given a prescription for a psychotherapeutic medication in the past year.
- There was a clear relationship between substance use among adults and arrests in the past year. About 6% of adults in the household population who drank heavily or used illicit drugs in the past year had been arrested for offenses other than minor traffic violations, compared with less than 1% of adults who had not used alcohol or illicit drugs during that period.
- About 19% of the adults in need of treatment had received detoxification or treatment services in a residential program, halfway house, or outpatient program in their lifetimes. Although this percentage was greater than that for the entire Maine adult household population, this finding suggests little lifetime experience with treatment services among those adults currently in need of treatment.
- Compared with data on the number of adults in the Maine household population who received detoxification or formal substance abuse treatment in the year prior to the survey, about 1.8 times as many adults wanted more help than they received or felt the need for treatment but did not seek any assistance. Although most Maine adults who were identified as needing treatment did not appear to see the need for assistance, the data on demand for services suggest a considerable unmet demand for treatment services in this population.

4.2 Use of Alcohol and Illicit Drugs and Need for Treatment Among Maine Adult Arrestees (Study 2, Round 1)

The Maine adult arrestee survey was conducted in 1997 to assess the prevalence of substance abuse problems among adults involved in the criminal justice system. Adults detained in two jails located in Cumberland and Penobscot counties were surveyed about their use of alcohol and illicit drugs and about symptoms associated with substance use. Jails from these two counties were sampled because they book and process the largest number of arrestees in the state. This sample is not fully representative of all arrestees in the State of Maine, but it still provides

important planning information regarding arrestees and their substance use patterns.

Face-to-face interviews were conducted with 438 male and 67 female adults aged 18 or older who were newly arrested for crimes other than misdemeanor traffic offenses and warrants or commitments. These 505 adults represented 53.8% of the available, eligible arrestees. Respondents were asked questions about basic demographic characteristics and household composition, current arrest information plus lifetime arrest history and family arrest history, lifetime and recent drug use (with detailed questions about heroin use), problems related to use of alcohol or other illicit drugs, treatment needs related to drug and alcohol use, and treatment received for problems related to drug and alcohol use. Survey respondents also provided a urine sample (207 provided usable specimens) for drug testing through urinalysis.

Overall Rates of Substance Use Among Adult Arrestees

- Overall rates of substance use, for both lifetime and recent use, were very high among Maine adult arrestees. Almost 100% of arrestees reported lifetime alcohol use, with approximately 80% of male and female arrestees reporting alcohol use in the past month. Heavy alcohol use was reported by smaller, but still substantial, percentages of arrestees. About 40% of males and almost 20% of females reported heavy alcohol use in the past year.
- Nine out of 10 male and female arrestees interviewed reported use of at least one of the following four drugs at least once in their lifetime: marijuana/hashish, hallucinogens, cocaine (including crack), and heroin/other opiates. The percentage of arrestees who reported illicit drug use remained high even when use in the past month was considered. Nearly one half of the males (46.1%) and almost one fourth of the females (23.9%) reported use of at least one of the core illicit drugs in the month prior to the 1997 survey. Marijuana/hashish and cocaine were the two drugs most commonly reported. More than two in five males and about one in four females reported using marijuana/hashish in the past month. Use of cocaine in the past month was reported by approximately 1 in 10 males and 1 in 40 females.
- Results from urine tests indicated that the estimates based on self-reported drug use were conservative, especially in the case of heroin/opiate use among males. Adjusting the prevalence estimates for use, so that either a positive urine test or self-reported consumption indicates ingestion, the estimated rates of heroin/opiate use in the past month increased from 6.6% to 10.6% among males and from 1.6% to 3.2% among females.
- It also should be noted that a large proportion of respondents who reported either heavy alcohol use or use of at least one illicit drug in fact reported use of multiple substances. For example, almost one third of male arrestees who reported heavy alcohol use in the past year also reported use of at least one illicit drug (i.e., marijuana, hallucinogens, cocaine, heroin/opiates). The corresponding percentage

for female arrestees was only 12%. In addition, nearly one third of the males and more than one tenth of the females who reported illicit drug use reported using two or more illicit drugs (i.e., marijuana, hallucinogens, cocaine, heroin/opiates) in the past year.

- The substance use rates reported by arrestees, especially for marijuana and cocaine, are substantially higher than those found among the adult household residents in the 1997 Maine adult household telephone survey. It is also interesting to note that the difference in rates between arrestees and household residents increased with increased age. For example, rates of cocaine use in the past year were nearly 11 times higher for arrestees compared to household residents between 18 and 25 years old (31.2% vs. 2.9%), but they were more than 14 times higher among 26- to 34-year-olds (23.0% vs. 1.6%) and more than 50 times higher in the 35 or older age group (15.1% vs. 0.3%).

Need for Treatment and Intervention Among Adult Arrestees

- Nearly 60% of adult arrestees in Maine were determined to be in need of drug or alcohol treatment in the past year. When the definition of need was expanded to include need for some sort of intervention or treatment, the percentage of arrestees determined to be in need rose to more than 70%. These findings show that not only were the rates of use of alcohol and illicit drugs particularly high among the arrestee population in Maine but also that the proportion of arrestees engaging in patterns of substance use that indicated a need for substance abuse services also was substantial. In addition, both substance use (particularly illicit drug use and heavy alcohol use) and the need for drug or alcohol treatment were found to be related to increased involvement with the criminal justice system (i.e., greater numbers of arrests in the past year) and with risky sexual practices (i.e., high numbers of sexual partners).
- A key finding is that although there is a substantial need for drug or alcohol treatment or intervention among arrestees, most of that need is not being met. Overall, about 48% of arrestees had received some treatment or assistance for problems with alcohol or drug use during their lifetime and slightly less than 35% had received services in the past year.
- When the history of treatment was examined specifically for those in need of alcohol or drug treatment, only 26.7% of arrestees determined to be in need of drug or alcohol treatment in the past year actually had received treatment in the past year. The counterpoint to this estimate suggests that almost three fourths of those in need of drug and alcohol treatment services in the past year had not received any assistance, indicating a substantial majority of arrestees with unmet needs. It is not clear, however, what percentage of those experiencing unmet treatment needs would have actually sought or accepted treatment if treatment services had been available and accessible.

4.3 Estimating Need for Treatment or Intervention Among Youth in Maine Counties: A Synthetic Estimation Approach (Study 3, Round 1)

The Maine youth synthetic estimation study focused on problematic use of substances among household adolescents aged 12 to 17. This study used county-level social indicator data and individual-level data from the NHSDA to estimate the prevalence of both alcohol and drug problems among in-school youths as well as dropouts. The synthetic estimates of alcohol and drug use were created using a two-step process. First, the relationship between demographic and behavioral data and measures of heavy alcohol and illicit drug use was estimated using individual-level data from the NHSDA. This step produced a number of significant predictors of alcohol and drug use. Using these estimated relationships, along with variations in the predictors from these models, rates of alcohol and drug use and intervention needs for youths aged 12 to 17 in Maine counties were estimated (DeSimone et al., 1999). Key findings included the following.

- Results from this study showed that an estimated 7.08% of Maine adolescents need alcohol intervention. Approximately 3.61% of Maine youths had been drunk five or more times in the past year, and 2.68% had consumed five or more drinks on at least one occasion in the past 30 days.
- Statistically significant predictors in the three models of heavy alcohol use included being white, living in an urban area, having moved, having already received alcohol or drug treatment, having a prior alcohol-related violation, having been arrested, and being a high school dropout.
- Approximately 4.23% of adolescents in Maine experienced negative consequences as a result of heavy drinking. Those who had been arrested and/or were high school dropouts were more likely to have experienced negative consequences as a result of heavy drinking, as were those with prior substance abuse treatment experiences or violations (DeSimone et al., 1999).
- An estimated 1.6% of Maine's adolescents need drug treatment. Approximately 7.91% of Maine youths had used any core illicit drug in the past year, and 0.96% reported drug use in the past month.
- Being an urban resident, having moved, being a high school dropout, having received substance abuse treatment, having an alcohol-related violation, and having been arrested were significant predictors of any core illicit drug use in the past year.
- Approximately 1.65% of adolescents in Maine experienced negative consequences as a result of drug use. Those who had been arrested or had dropped out and/or who were urban residents were more likely to have experienced negative consequences as a result of drug use. Those with prior alcohol-related violations or substance abuse treatment histories also were more likely to have reported negative consequences associated with drug use.

- When considering need for either alcohol or drug treatment, approximately 7.17% of youths aged 12 to 17 in Maine were considered in need of intervention to address risky or problematic alcohol or drug use.

4.4 Substance Abuse and Treatment Needs Among Maine's Temporary Assistance to Needy Families (TANF) Population (Study 1, Round 2)

This study provided estimates of prevalence rates of substance use and treatment need for adult female Temporary Aid to Needy Families (TANF) recipients residing in three areas in Maine: (1) Cumberland County, (2) Penobscot County (excluding Bangor and Brewer), and (3) Knox, Waldo, and Lincoln Counties (Greater Rockland). The sampling frame utilized for this study was provided by the Maine Department of Human Services (DHS). A simple random sample of adult females aged 18 to 64 enrolled in TANF just prior to the start of data collection and who resided in the three areas was selected. The questionnaire for the 2000 Survey of Maine TANF Recipients was adapted from the instrument developed for the 1997 Maine Household Telephone Survey and tailored for the TANF population. Supplemental questions were developed based on discussions with the Office of Substance Abuse (OSA) and DHS, as well as other surveys of the welfare population. A total of 448 interviews and 160 hair samples were obtained. The overall response rate for eligible sample members was 41%.

Overall, adult female TANF recipients were found to be very different from adult females from the 1997 Maine Household Telephone Survey in that they tended to be younger (93% were 18 to 44 years old), single (64%), unemployed (58%), and high school educated (47%). Females from the household telephone survey tended to be older (85% were 25 to 64 years old), married (60%), employed (74%), and college educated (55%).

Prevalence of Substance Abuse

- Although more females in the general household population used alcohol in the past year and month, TANF recipients were estimated to have substantially higher rates of heavy alcohol use than females from the statewide household telephone survey. Specifically, TANF recipients had estimated rates of heavy alcohol use in the past year more than twice the rate for adult household females.
- TANF recipients also had substantially higher rates of any core illicit drug use than adult household females. TANF recipients used core illicit drugs in the past month and previous year at nearly twice the rate of adult females in the general household population. Estimates for marijuana or hashish use were nearly the same as the estimates for any core illicit drug use. Estimates for past year and past month use of other drugs, such as cocaine, hallucinogens, and heroin/opiates, were less than 2%.

Need for Treatment or Intervention

- Overall, need for treatment or intervention among adult female TANF recipients was about 2 to 3 times greater than among adult females from the household population.
- Approximately 5% of TANF recipients were in need of treatment for alcohol or illicit drugs in the past year. However, 16% were in need of treatment or intervention for alcohol or illicit drugs in the past year.
- Only 2% of TANF recipients indicated they had received treatment or other assistance for substance use in the past year.
- Even though a very small percentage of those in need of treatment or intervention actually received some type of treatment or assistance, an overwhelming percentage indicated they would be willing to get either an evaluation (90%) or treatment (92%) if they or a doctor or professional determined they needed it. However, the high percentage of TANF recipients willing to get treatment for substance use coupled with the small percentage who actually received treatment suggests that significant barriers to treatment for this population.
- The most common reasons for not seeking treatment were: fear of losing their children (54%); not being able to pay household bills while in treatment (33%); not having anyone to care for their children (31%); and fear of losing their job (26%). Further, if TANF recipients indicated they could not afford treatment, they were also asked to report the reasons they could not afford treatment. The most common reasons were that it was too expensive, they have too many bills to pay, and their insurance did not pay for treatment.

4.5 Services, Capacity, and the Current Treatment System Study (Study 2, Round 2)

This study is the second treatment system study and was conducted as part of Maine's second STNAP project. This study utilized three key existing data sources to provide the state of Maine with valuable tools to facilitate planning and resource allocation: the 1997 Maine Household Telephone Survey, the Office of Substance Abuse Data System (OSADS), and current US Census Data. Using these sources of data, applications were developed to access, manipulate, analyze and present data on treatment need, accessibility, capacity, and utilization in innovative ways. The study is composed of three parts: the ASAM Criteria application, the OSADS data analysis, and the GIS application. Key findings are presented below.

The ASAM Criteria Application to Household Survey Data

First, the levels of treatment need among Maine residents in need of substance abuse treatment were assessed by applying the American Society of Addiction Medicine (ASAM)

patient placement criteria to the responses to the Maine Telephone Survey. This allowed an estimation of not only general need for treatment, but need for specific types (levels) of treatment, such as outpatient treatment, intensive outpatient/partial hospitalization, medically monitored inpatient treatment, and medically managed inpatient treatment. This information was derived at the state level, regional and county levels. In addition, this information, along with the capacity and utilization information described below was used as source data for the Integration Study Protocol to detect existing or potential treatment gaps in Maine's treatment system.

- There was a general inverse relationship between estimated numbers in need and severity of need; that is, the estimated numbers of residents needing treatment generally decrease as ASAM levels increase.
- There was a substantial need across all ASAM levels (82,918 statewide), with about 27,500 residents of the state in need of the most intensive levels of treatment (Level 3 and/or 4).
- Cumberland and York counties, which together make up Region I, have by far the largest estimated total need (20,799 and 11,462, respectively), which accounts for nearly 40% of the state's total need.
- Lincoln county located in Region II and Piscataquis county located in Region III have the least overall estimated need in the state (909 and 1154 residents, respectively).
- While Region III, which includes some of the most rural areas of the state, has the least estimated need among the regions across all ASAM categories (19,549 residents), it accounts for nearly as much Level 4 need as the more populous Region 1 (3,872 and 4,003 residents, respectively).
- Region II has the largest estimated need for Level 4 services (6010 residents), which is nearly 45% of the Level 4 need for the entire state.

Analysis of OSADS Data

The second component of this study addressed the state's treatment system service capacity and utilization. The OSADS served as the primary data source for this section of the study report. Additional data needed in some computations were collected by Maine's OSA staff from standard report forms completed by the service providers.

Several basic measures of the state system, such as static (daily) capacity, dynamic (annual) capacity, average length of stay (ALOS), average daily census (ADC), and modality were computed and presented in a series of tables by county, planning region, and state. This information, along with the ASAM information described above was used as source data for the

Integration Study Protocol to detect existing or potential treatment gaps in Maine's treatment system. Findings regarding the availability of services are presented below.

- The counties that have the widest range of treatment modalities available are located in Region I (Cumberland and York counties), and facilities offering treatment in all 14 modalities are located in this region.
- Region II has facilities representing 9 modalities within its borders; missing are free standing inpatient facilities, methadone detoxification, adolescent residential rehabilitation, adolescent intensive outpatient facilities, and shelters.
- Region III also has facilities representing 9 modalities, but this region lacks inpatient hospital, free standing inpatient, methadone detoxification, adolescent residential rehabilitation, and methadone.
- Only non-intensive outpatient facilities are available in all 16 counties throughout the state. Free standing inpatient, methadone detoxification, and adolescent residential rehabilitation facilities are available only in Cumberland or York county and, thus, only in Region I.

Findings regarding static capacity include the following.

- Static patient capacity is a measure of the number of persons that could be treated or provided services on any given day.
- In all, about 2,650 clients could be served on a given day in Maine.
- Most of the capacity is concentrated in ambulatory facilities, with over half of the total capacity located in Non-Intensive Outpatient facilities.
- There are about 6 times as many Non-Intensive outpatient treatment slots as Intensive Outpatient slots.
- Region I contains the most populous counties and, thus, most of the ambulatory treatment capacity. The exception is the capacity for Non-Intensive Outpatient treatment, which is 623 for Region II compared to 423 in Region I and 409 in Region III.
- There is no capacity for Adolescent Intensive Outpatient treatment or for treatment in shelters in Region II, and there is no capacity for methadone treatment in Region III.
- There is a wider diversity of inpatient and outpatient treatment options available in Region I than in the rest of the State. In fact, the capacity to treat clients in Free-Standing Inpatient, Methadone Detoxification, or Adolescent Residential Rehabilitation facilities exists only in Region I.

- Compared to Regions I and III, Region II offers the highest capacity for treatment in Hospital Inpatient facilities, Residential Rehabilitation facilities, and Extended Shelters, but lacks any capacity for treatment in Free-Standing Inpatient, Methadone Detoxification, or Adolescent Rehabilitation facilities.

Findings regarding annual (dynamic) capacity are as follows.

- The overall annual capacity for Maine is estimated to be about 14,194.
- Region I contains most of the ambulatory treatment capacity (about 5,800 clients annually), while Regions II and III can treat about 4,469 and 3,889 clients per year, respectively.
- As with static capacity, most of the dynamic capacity is concentrated in ambulatory facilities, with nearly a third of the total capacity located in Non-Intensive Outpatient facilities (4,822) and over a quarter of the total located in shelters (3,053).
- There are about 4 times as many Non-Intensive Outpatient treatment slots as Intensive Outpatient slots.
- In each Region, there is at least some capacity to treat clients in each treatment modality, except for Adolescent Intensive Outpatient facilities and Shelters in Region II and Methadone treatment in Region III.
- There is a wider diversity of inpatient modalities and generally greater annual capacity for inpatient treatment available in Region I (especially Cumberland County) than in the rest of the State.
- The capacity to treat clients in Free-Standing Inpatient, Methadone Detoxification, or Adolescent Residential Rehabilitation facilities exists only in Region I.
- Compared to Regions I and III, Region II offers the highest capacity for treatment in Hospital Inpatient facilities, Residential Rehabilitation facilities, and Extended Shelters, but lacks any capacity for treatment in Free-Standing Inpatient, Methadone Detoxification, or Adolescent Rehabilitation facilities.

GIS Application

The third component of this study utilized RTI's GIS Program to provide a range of geographic information systems (GIS) services to Maine's OSA. This involved the generation of several maps.

The first map generated shows point locations of providers making up the state's treatment system. Each provider is represented on this state map, which also shows counties and

planning regions. In addition, the map incorporates insets that enlarge areas where providers tend to cluster (population centers) to better represent the number and location of each provider.

A second map also contains point location information about the state's treatment providers. This map, however, displays the location symbols as color-coded points to provide information about the level of care offered by each provider based on the ASAM level of care criteria.

Other maps were generated to show service provider (based on ASAM level of care) locations in the context of county population, population density (at the census level to show density variation within counties), and total number of residents in need of each level of care corresponding to the ASAM criteria.

These maps are available from OSA and contained in the following report: Crum, L., Clough, J., & Rachal, V. (2002 July). *Services, Capacity, and the Current Treatment System*.

5. HIGHLIGHTS OF RESULTS

This chapter presents selected output data generated by the Maine AIM. The selected tables illustrate the plethora of data on population bases, demographic characteristics, treatment needs and demand, and eligibility that is available on the input and output tables in the model. A list of all output tables including those presented in this chapter, are listed in *Exhibit 8* and a complete printed set of tables are provided in *Appendix A*.

5.1 Adult and Adolescent State and Regional Population Estimates

Exhibit 9 (Table 1A from the AIM) provides population estimates of the Maine adult and adolescent population at the state and region level. The adult population is further broken down into mutually exclusive groups based on residence. While obtaining data for adolescent school dropouts was beyond the scope of this study, the model includes a place for data on this important population as a subset of the household adolescents. Findings from *Exhibit 9* are highlighted below.

- The vast majority (96%) of Maine’s adult population lives in households. Of those, 96% are in households with telephones, and 4% are in household with no telephones.
- Of the estimated 4% of Maine’s adult population who do not live in households, nearly one third is institutionalized, 6% live in State prisons or are jail inmates, and 12% is homeless. An estimated 53% of nonhousehold adults live in other group quarters.
- The distribution of adults is fairly evenly distributed across the three regions with about 39% living in Region II, 34% in Region I, and 27% in Region III.
- With respect to the nonhousehold adult populations across regions, by far the largest adult homeless population (64%) is in Region I, and the largest population of jail inmates and state prison inmates is in Region II (45%). Only Region II has federal prison inmates.
- Household youth make up about 13% of the total population in Maine. Youths are fairly evenly distributed across the three regions. Within the group of household youths there are an estimated 1,980 adolescent dropouts; they too are fairly evenly distributed by region.

Exhibit 8. Tables Included in the Maine Automated Integration Model (MeAIM)

Model Table	Description
Demographics	
*1A	Populations for Mutually Exclusive Population Groups by Region/County
1B	Adult Populations by Gender
1C	Regional Adult Populations by Ethnicity
1D	Regional Adult Populations by Age
*1E	Statewide Adult Populations by Age, Gender, and Ethnicity
1F	Region 1 Adult Populations by Age, Gender, and Ethnicity
1G	Region 2 Adult Populations by Age, Gender, and Ethnicity
1H	Region 3 Adult Populations by Age, Gender, and Ethnicity
Need, Demand, & Eligibility	
*2A	Statewide Treatment Need, Demand, and Eligibility by Population Groups
2B	Statewide Adult Treatment Need, Demand, and Eligibility by Gender
2C	Statewide Adult Treatment Need, Demand, and Eligibility by Ethnicity
2D	Statewide Adult Treatment Need, Demand, and Eligibility by Age
*2E	Statewide Treatment Need and Demand Among Special Population Groups
*3A	Regional Adult Treatment Need, Demand, and Eligibility by Mutually Exclusive Population Groups
3B	Regional Adult Treatment Need, Demand, and Eligibility by Gender and Population Groups
3C	Estimates of Regional Adult Treatment Need, Demand, and Eligibility by Ethnicity and Population Groups
3D	Estimates of Regional Adult Treatment Need, Demand, and Eligibility by Age and Population Groups
*3E	Assessment of State Treatment System
4	Annual State. Regional and County Treatment Cost Estimates by Treatment Setting

* Indicates findings presented in this chapter.

Source: *Integrated Population Estimates of Substance Abuse Treatment Needs in Maine, 2002.*

Estimates of the statewide adult population by age, gender, and ethnicity are shown in **Exhibit 10** (Table 1E from the model). The data are presented in three matrices (white, non-Hispanic, “other” ethnicity, and all ethnicities). Within each of these matrices are cross-tabulations by age and gender. **Exhibit 10** reveals the following important findings.

- Overall, adults aged 25 to 44 years comprise the largest age group of adults (38%). An estimated 32% of adults are aged 45 to 64 years; 19% are aged 65 years and older; and 11% are between the ages of 18 and 24.

Exhibit 9. Maine Populations for Mutually Exclusive Population Groups by Region / County												
	Household Adults		Nonhousehold Adults						Total Adult Population	Youths		Total Population (Adults & Youths)
Region / County	Phone	No Phone	Homeless	Institutionalized	Jail Inmates	State Prison Inmates	Federal Prison Inmates	Other Group Quarters		Household Youths	<i>subset:</i> Adolescent Dropouts	
Region I	319,213	11,658	3,341	3,554	265	531	0	5,557	344,119	51,158	681	395,277
Cumberland	188,915	6,899	1,973	2,106	156	314	0	3,287	203,650	29,012	386	232,662
York	130,298	4,759	1,368	1,448	109	217	0	2,270	140,469	22,146	295	162,615
Region II	355,279	12,953	653	5,125	348	635	4	5,924	380,921	59,488	759	440,409
Androscoggin	73,642	2,685	135	1,064	72	131	0	1,227	78,956	11,816	151	90,772
Franklin	21,021	766	38	305	20	37	4	351	22,542	3,559	45	26,101
Kennebec	83,183	3,033	152	1,202	81	148	0	1,387	89,186	13,942	178	103,128
Knox	28,689	1,046	53	413	29	52	0	479	30,761	4,394	56	35,155
Lincoln	24,240	884	45	350	23	43	0	404	25,989	3,923	50	29,912
Oxford	38,726	1,412	72	557	38	70	0	646	41,521	6,805	87	48,326
Sagadahoc	24,380	889	45	351	24	44	0	406	26,139	4,398	56	30,537
Somerset	35,746	1,303	66	515	35	64	0	596	38,325	6,342	81	44,667
Waldo	25,652	935	47	368	26	46	0	428	27,502	4,309	55	31,811
Region III	226,490	8,274	1,213	2,798	230	197	0	9,445	248,647	36,844	540	285,491
Aroostook	52,120	1,904	279	644	53	45	0	2,173	57,218	8,531	125	65,749
Hancock	36,663	1,339	196	454	37	32	0	1,528	40,249	5,958	87	46,207
Penobscot	101,858	3,721	545	1,260	103	88	0	4,244	111,819	16,298	239	128,117
Piscataquis	12,022	439	65	147	13	11	0	504	13,201	2,179	32	15,380
Washington	23,827	871	128	293	24	21	0	996	26,160	3,878	57	30,038
Statewide Total	900,982	32,885	5,207	11,477	843	1,363	4	20,926	973,687	147,490	1,980	1,121,177

Source: *Integrated Population Estimates of Substance Abuse Treatment Needs in Maine, 2002.*

Exhibit 10. Maine Statewide Adult Populations by Age, Gender, and Ethnicity			
WHITE, NON-HISPANIC			Total
Age	Male	Female	White
18-24	48,326	52,704	101,029
25-44	171,072	186,570	357,642
45-64	145,630	158,823	304,453
65+	84,453	92,104	176,556
Total	449,480	490,201	939,680
"OTHER" ETHNICITY¹			Total
Age	Male	Female	"Other"
18-24	1,748	1,906	3,655
25-44	6,188	6,749	12,937
45-64	5,268	5,745	11,013
65+	3,055	3,332	6,387
Total	16,259	17,732	33,992
Age	Total Males (all ethnicities)	Total Females (all ethnicities)	TOTAL ADULTS (all ethnicities)
18-24	50,074	54,610	104,684
25-44	177,260	193,319	370,580
45-64	150,897	164,568	315,466
65+	87,507	95,435	182,943
Total	465,739	507,933	973,672

¹"Other" refers to Black, American Indian and Alaska Native, Asian, Native Hawaiian or other Pacific Islander, some other race, two or more races, and Hispanic.

Source: *Integrated Population Estimates of Substance Abuse Treatment Needs in Maine, 2002.*

- Overall, females slightly outnumber males (52%).
- Nearly all of Maine's population is white, non-Hispanic (97%). Age distributions within the two ethnicity categories resemble the statewide distribution.

5.2 Statewide Estimates of Need, Demand, and Eligibility for Treatment

Exhibit 11 (model Table 2A) provides estimates of statewide treatment need, demand, and eligibility. As anticipated, non-household adults have considerably higher rates of treatment need compared with household adults. However, because of their greater representation in the population, household adults comprise the majority of adults in need of treatment. Specifically:

Approximately 11% of adults and 13% of household youths are estimated to be in need of treatment.

Exhibit 11. Maine Estimates of Statewide Treatment Need, Demand, and Eligibility by Mutually Exclusive Population Groups			
Population Group	Prevalence Rate (% in Need)	% of those in Need who Would Seek Treatment ¹	% of Treatment Seekers who are Eligible for Subsidized Treatment ¹
<i>Household Adults</i>			
Phone	8.1%	50.0%	100.0%
No Phone	13.3%	50.0%	100.0%
<i>Nonhousehold Adults</i>			
Homeless	36.0%	50.0%	100.0%
Institutionalized	37.1%	50.0%	100.0%
Jail Inmates	67.3%	50.0%	100.0%
State Prison Inmates	67.3%	50.0%	100.0%
<i>Youths</i>			
Household Youth¹	7.4%	50.0%	100.0%
Homeless Youth	25.1%	50.0%	100.0%
Population Group	Estimated Number in Need	Estimated Number in Need who Would Seek Treatment¹	Estimated Number of Treatment Seekers who are Eligible for Subsidized Treatment¹
<i>Household Adults</i>			
Phone	72,980	36,490	36,490
No Phone	4,374	2,187	2,187
<i>Nonhousehold Adults</i>			
Homeless	1,875	937	937
Institutionalized	4,258	2,129	2,129
Jail Inmates	567	284	284
State Prison Inmates	917	459	459
Total Adults	84,970	42,485	42,485
<i>Youths</i>			
Household Youth	10,914	5,457	5,457
Homeless Youth	497	248	248
Total Youth	11,411	5,706	5,706
Statewide Total	96,382	48,191	48,191

¹Percentages are only hypothetical and not based on valid data.

Source: *Integrated Population Estimates of Substance Abuse Treatment Needs in Maine, 2002.*

- With a prevalence rate of 8.1%, an estimated 72,980 adults in households with telephones need treatment. They comprise about 86% of the adult population in need.
- Among the nonhousehold adult populations, State prison inmates and jail inmates have the highest treatment need rates (approximately 67%). Collectively, they comprise about 2% of the adult population in need, or about 19% of the nonhousehold adult population in need.

Among household youth, the treatment need rate was 7.4%, or 10,914 individuals. Youths in need represented about 12% of the total population in need of treatment. While homeless youth represented a very small proportion of the total number of youth in need (about 4%), their prevalence rate was much higher than household youth (25%).

For this study, it is estimated that 50% of adults and youth in need of treatment would seek services and that 100% of those in need who would seek treatment are eligible for subsidized treatment. This translates into 48,191 individuals who would seek treatment and be eligible for subsidized services.

5.3 Regional Estimates of Treatment Need for Mutually Exclusive Populations

Exhibit 12 (model Table 3A) presents the number of adults and adolescents in each region estimated to need treatment. Regions I and II have comparable numbers of adults in need (25,856 and 28,778, respectively). The distribution of each type of non-household adult population group in need of treatment is fairly even across the three regions with the exception of homeless adults. Treatment need among homeless adults is considerably higher in Region I which is in keeping with its higher population of homeless. Among household youth in need, an estimated 40% live in Region II; 34% in Region I; and 26% in Region III.

5.4 Statewide and Regional Estimates of Treatment Need for Special Populations

Exhibit 13 (model Table 2E) provides estimates of treatment need for Maine's adult special population groups (i.e., pregnant women, injection drug users, individuals operating under the influence (OUI), and TANF recipients). Estimates of need are provided in terms of need for treatment for alcohol or illicit drugs and in terms of need for treatment *or* intervention for alcohol or illicit drugs. In addition to those in need of formal treatment, the latter group contains individuals who did not meet all the criteria for need for treatment, but exhibit problematic use and are in need of some type of assistance or intervention.

Statewide, an estimated 12% of pregnant women are in need of treatment and 17.6% in need of treatment or intervention. Based on these estimates and the populations of pregnant

Exhibit 12. Maine Estimates of Regional Adult Treatment Need by Mutually Exclusive Population Groups											
Region/County	Household Adults		Nonhousehold Adults				TOTAL ADULTS	Youths		TOTAL YOUTH	TOTAL (ADULTS & YOUTH)
	<i>Phone</i>	<i>No Phone</i>	<i>Homeless</i>	<i>Institutionalized</i>	<i>Jail Inmates</i>	<i>State Prison Inmates</i>		<i>Household Youths</i>	<i>Adolescent Dropouts</i>		
Region I	25,856	1,551	1,203	1,319	178	357	30,464	3,786	171	3,786	34,249
Cumberland	15,302	918	710	58	105	211	17,304	2,147	97	2,147	19,451
York	10,554	633	492	537	73	146	12,436	1,639	74	1,639	14,075
Region II	28,778	1,723	235	1,901	234	427	33,298	4,402	191	4,402	37,700
Androscoggin	5,965	357	49	395	48	88	6,902	874	38	874	7,776
Franklin	1,703	102	14	113	13	25	1,970	263	11	263	2,233
Kennebec	6,738	403	55	446	55	100	7,796	1,032	45	1,032	8,828
Knox	2,324	139	0	153	20	35	2,671	325	14	325	2,996
Lincoln	1,963	118	16	130	15	29	2,271	290	13	290	2,562
Oxford	3,137	188	26	207	26	47	3,630	504	22	504	4,133
Sagadahoc	1,975	118	16	130	16	30	2,285	325	14	325	2,611
Somerset	2,895	173	24	191	24	43	3,350	469	20	469	3,819
Waldo	2,078	124	17	137	17	31	2,404	319	14	319	2,723
Region III	18,346	1,100	437	1,038	155	133	21,208	2,726	136	2,726	23,935
Aroostook	4,376	6,932	100	239	36	30	11,713	631	31	631	12,345
Hancock	2,970	178	71	168	25	22	3,433	441	22	441	882
Penobscot	8,250	495	196	467	69	59	9,538	1,206	60	1,206	2,412
Piscataquis	974	58	23	55	9	7	1,126	161	8	161	322
Washington	1,930	116	46	109	16	14	2,231	287	14	287	574
Statewide Total	72,980	4,374	1,875	4,258	567	917	84,970	10,914	497	10,914	95,885

Source: *Integrated Population Estimates of Substance Abuse Treatment Needs in Maine, 2002.*

Exhibit 13. Maine Estimates of Statewide Treatment Need for Special Population Groups

Special Population	Rate of Need for Treatment for Alcohol or Illicit Drugs¹	Rate of Need for Treatment <u>or</u> Intervention for Alcohol or Illicit Drugs	Total Population	Number of In Need of Alcohol or Illicit Drug Treatment	Number In Need of Alcohol or Illicit Drug Treatment <u>or</u> Intervention
<u>Pregnant Adult Women</u>					
<u>State Total</u>	12.0%	17.6%	12,286	1,474	2,162
<u>Region I Total</u>	12.0%	17.6%	4,702	564	828
Cumberland	12.0%	17.6%	2,793	335	492
York	12.0%	17.6%	1,909	229	336
<u>Region II Total</u>	12.0%	17.6%	4,700	564	827
Androscoggin	12.0%	17.6%	1,084	130	191
Franklin	12.0%	17.6%	270	32	48
Kennebec	12.0%	17.6%	1,040	125	183
Knox	12.0%	17.6%	343	41	60
Lincoln	12.0%	17.6%	255	31	45
Oxford	12.0%	17.6%	467	56	82
Sagadahoc	12.0%	17.6%	391	47	69
Somerset	12.0%	17.6%	476	57	84
Waldo	12.0%	17.6%	374	45	66
<u>Region III Total</u>	12.0%	17.6%	2,884	346	508
Aroostook	12.0%	17.6%	642	77	113
Hancock	12.0%	17.6%	448	54	79
Penobscot	12.0%	17.6%	1,368	164	241
Piscataquis	12.0%	17.6%	117	14	21
Washington	12.0%	17.6%	309	37	54

¹Percentages are only hypothetical and not based on valid data.

Source: *Integrated Population Estimates of Substance Abuse Treatment Needs in Maine, 2002* and Maine Office of Data, Research and Vital Statistics report *All Live Births and Out-of-Wedlock Live Births by Mother's Age, Sex of Child and Birth Order: Maine Counties and State Totals, 1999*.

Exhibit 13. Maine Estimates of Statewide Treatment Need for Special Population Groups (continued)

Special Population	Rate of Need for Treatment for Alcohol or Illicit Drugs	Rate of Need for Treatment or Intervention for Alcohol or Illicit Drugs	Total Population	Number of In Need of Alcohol or Illicit Drug Treatment	Number In Need of Alcohol or Illicit Drug Treatment or Intervention
<u>Injection Drug Users</u>					
<i>State Total</i>	<i>100.0%</i>	<i>100.0%</i>	<i>2,834</i>	<i>2,834</i>	<i>2,834</i>
<i>Region I Total</i>	<i>100.0%</i>	<i>100.0%</i>	<i>652</i>	<i>652</i>	<i>652</i>
Cumberland (or Region I Total)	100.0%	100.0%	652	652	652
York	0.0%	0.0%	0	0	0
<i>Region II Total</i>	<i>100.0%</i>	<i>100.0%</i>	<i>935</i>	<i>935</i>	<i>935</i>
Androscoggin (or Region II Total)	100.0%	100.0%	935	935	935
Franklin	0.0%	0.0%	0	0	0
Kennebec	0.0%	0.0%	0	0	0
Knox	0.0%	0.0%	0	0	0
Lincoln	0.0%	0.0%	0	0	0
Oxford	0.0%	0.0%	0	0	0
Sagadahoc	0.0%	0.0%	0	0	0
Somerset	0.0%	0.0%	0	0	0
Waldo	0.0%	0.0%	0	0	0
<i>Region III Total</i>	<i>100.0%</i>	<i>100.0%</i>	<i>1,247</i>	<i>1,247</i>	<i>1,247</i>
Aroostook (or Region III Total)	100.0%	100.0%	1,247	1,247	1,247
Hancock	0.0%	0.0%	0	0	0
Penobscot	0.0%	0.0%	0	0	0
Piscataquis	0.0%	0.0%	0	0	0
Washington	0.0%	0.0%	0	0	0

Source: *Integrated Population Estimates of Substance Abuse Treatment Needs in Maine, 2002.*

**Exhibit 13. Maine Estimates of Statewide Treatment Need for Special Population Groups
(continued)**

Special Population	Rate of Need for Treatment for Alcohol or Illicit Drugs	Rate of Need for Treatment <u>or</u> Intervention for Alcohol or Illicit Drugs	Total Population	Number of In Need of Alcohol or Illicit Drug Treatment	Number In Need of Alcohol or Illicit Drug Treatment <u>or</u> Intervention
<u>TANF</u>					
<i>State Total</i>	13.7%	28.7%	8,602	1,178	2,469
<i>Region I Total</i>	13.7%	28.7%	2,534	347	727
Cumberland	13.7%	28.7%	1,472	202	422
York	13.7%	28.7%	1,062	145	305
<i>Region II Total</i>	13.7%	28.7%	3,439	471	987
Androscoggin	13.7%	28.7%	822	113	236
Franklin	13.7%	28.7%	271	37	78
Kennebec	13.7%	28.7%	621	85	178
Knox	13.7%	28.7%	200	27	57
Lincoln	13.7%	28.7%	144	20	41
Oxford	13.7%	28.7%	553	76	159
Sagadahoc	13.7%	28.7%	164	22	47
Somerset	13.7%	28.7%	440	60	126
Waldo	13.7%	28.7%	224	31	64
<i>Region III Total</i>	13.7%	28.7%	2,629	360	755
Aroostook	13.7%	28.7%	623	85	179
Hancock	13.7%	28.7%	238	33	68
Penobscot	13.7%	28.7%	1,372	188	394
Piscataquis	13.7%	28.7%	116	16	33
Washington	13.7%	28.7%	280	38	80

Source: *Integrated Population Estimates of Substance Abuse Treatment Needs in Maine, 2002* and Maine DHS report AAF070B *Geographic Distribution of TANF and FS Money Payment Caseload Giving Unduplicated Counts of Total Recipients by County for December 2000.*

**Exhibit 13. Maine Estimates of Statewide Treatment Need for Special Population Groups
(continued)**

Special Population	Rate of Need for Treatment for Alcohol or Illicit Drugs	Rate of Need for Treatment or Intervention for Alcohol or Illicit Drugs	Total Population	Number of In Need of Alcohol or Illicit Drug Treatment	Number In Need of Alcohol or Illicit Drug Treatment or Intervention
<u>OUI</u>					
<i>State Total</i>	100.0%	100.0%	7,292	7,292	7,292
<i>Region I Total</i>	100.0%	100.0%	2,703	2,703	2,703
Cumberland	100.0%	100.0%	1,552	1,552	1,552
York	100.0%	100.0%	1,151	1,151	1,151
<i>Region II Total</i>	100.0%	100.0%	2,861	2,861	2,861
Androscoggin	100.0%	100.0%	582	582	582
Franklin	100.0%	100.0%	182	182	182
Kennebec	100.0%	100.0%	702	702	702
Knox	100.0%	100.0%	371	371	371
Lincoln	100.0%	100.0%	169	169	169
Oxford	100.0%	100.0%	305	305	305
Sagadahoc	100.0%	100.0%	189	189	189
Somerset	100.0%	100.0%	209	209	209
Waldo	100.0%	100.0%	152	152	152
<i>Region III Total</i>	100.0%	100.0%	1,728	1,728	1,728
Aroostook	100.0%	100.0%	469	469	469
Hancock	100.0%	100.0%	269	269	269
Penobscot	100.0%	100.0%	758	758	758
Piscataquis	100.0%	100.0%	90	90	90
Washington	100.0%	100.0%	142	142	142

Source: *Integrated Population Estimates of Substance Abuse Treatment Needs in Maine, 2002* and Maine Department of Public Safety *Crime in 2000*.

women by region, the largest number of pregnant women in both categories of need live in Region I or II. Among the 16 counties, Cumberland County had the most pregnant women in need of services.

Injection drug users number approximately 2,834 individuals statewide with an estimated 100% in need of treatment. Based on regional population estimates, the largest proportion of injection drug users in need of treatment live in Region III (44%), and the least in Region I (23%).

The estimated rate of treatment need among TANF recipients is 13.7%, and rate of treatment or intervention need is 28.7%. The largest populations of TANF recipients in both categories of need live in Region II (40% of all TANF recipients in need of treatment, and 40% of those in need of treatment or intervention). Among the 16 counties, Cumberland County had the largest estimated number of TANF recipients in need of services.

The population of individuals with OUI arrests is estimated to be about 7,292 (i.e., based on 100% in need of treatment). The largest number of individuals with OUI arrests live in Region I or II (2,703 and 2,861, respectively). Again, of all the counties, Cumberland had the largest number of persons arrested for OUI in need of services.

5.5 Treatment System Capacity, Utilization, and Unmet Demand

Exhibit 14 (model Table 3E) presents the annual capacity of the State treatment system serving adults, the total number of adult admissions, and the number of adults expected to need and seek treatment. Based on these data, the ability of the treatment system to meet the demand is estimated in terms of capacity excess/shortage, capacity to utilization ratio, and unmet treatment need. Key findings from this effort are:

- Statewide, there appears to be annual shortage of the treatment system's ability to serve adult clients (to the sum of about 355 individuals).
- The capacity shortage is occurring in Region I (with an annual capacity of 5,837 clients but a total annual admissions estimate of 6,412) and Region III (with an annual capacity of 3,889 clients but a total annual admissions estimate of 5,219).
- Excess capacity is observed in Region II, which is estimated to have a capacity to utilization ratio of 1.5.
- Based upon the total number of annual admissions and the estimated number of adults in need of treatment who would seek services, there is an estimated 27,935 adults in need of treatment who did not receive services. Region II has the highest estimated number of individuals with unmet treatment need, which comprises approximately 50% of the statewide total. Among the 16 counties,

Exhibit 14. Assessment of State Treatment System							
Region/County	Annual Capacity	Total Annual Admissions	Estimated Number in Need	Estimated Number in Need Who Would Seek Treatment¹	Capacity Excess/ Shortage	Capacity to Utilization Ratio	Unmet Treatment Need
Region I	5,837	6,412	30,464	15,232	-575	0.9	-8,820
Cumberland	4,910	5,721	17,304	8,652	-811	0.9	-2,931
York	927	691	12,436	6,218	236	1.3	-5,527
Region II	4,469	2,919	33,298	16,649	1,550	1.5	-13,730
Androscoggin	1,687	422	6,902	3,451	1,265	4.0	-3,029
Franklin	46	72	1,970	985	-26	0.6	-913
Kennebec	1,778	890	7,796	3,898	888	2.0	-3,008
Knox	119	407	2,690	1,345	-288	0.3	-938
Lincoln	66	165	2,271	1,136	-99	0.4	-971
Oxford	248	174	3,630	1,815	74	1.4	-1,641
Sagadahoc	249	284	2,285	1,143	-35	0.9	-859
Somerset	114	241	3,350	1,675	-127	0.5	-1,434
Waldo	162	264	2,404	1,202	-102	0.6	-938
Region III	3,889	5,219	21,208	10,604	-1,330	0.7	-5,385
Aroostook	333	797	4,880	2,440	-464	0.4	-1,643
Hancock	203	91	3,433	1,717	112	2.2	-1,626
Penobscot	3,056	4,083	9,538	4,769	-1,027	0.7	-686
Piscataquis	56	90	1,126	563	-34	0.6	-473
Washington	241	158	2,231	1,115	83	1.5	-957
Statewide Total	14,195	14,550	84,970	42,485	-355	1.0	-27,935

¹Numbers are only hypothetical and not based on valid data.

Note: Numbers include adults only and do not include the number of youth admissions or number of youth in need.

Sources: *Integrated Population Estimates of Substance Abuse Treatment Needs in Maine, 2002* and *Maine Treatment System Study: Services, Capacity, and the Current Treatment System (Study 2)*.

York County has the highest estimated number of individuals with unmet treatment need (5,527).

5.6 Summary

This study updates data from the 1999 integration study conducted as part of Maine's first STNAP and incorporates information from two additional assessments conducted as part of the State's second STNAP, new 2000 Census data, and research findings from other sources. In the process of updating the initial integration report, this report also provides an overview of the structure and content of the newly developed Maine Automated Integration Model (AIM). The Maine AIM, used in conjunction with the user's manual, provides the State of Maine with a valuable and user-friendly tool to update need for treatment services at the State, regional, and county levels as new data become available.

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APPENDIX A

Maine AIM Output Tables

For a copy of the Maine AIM output tables, please contact:

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Web: <http://www.state.me.us/bds/osa>
E-Mail: osa.ircosa@state.me.us
1-800-499-0027
TTY: 207-287-4475
TTY (toll free in Maine): 1-800-215-7604