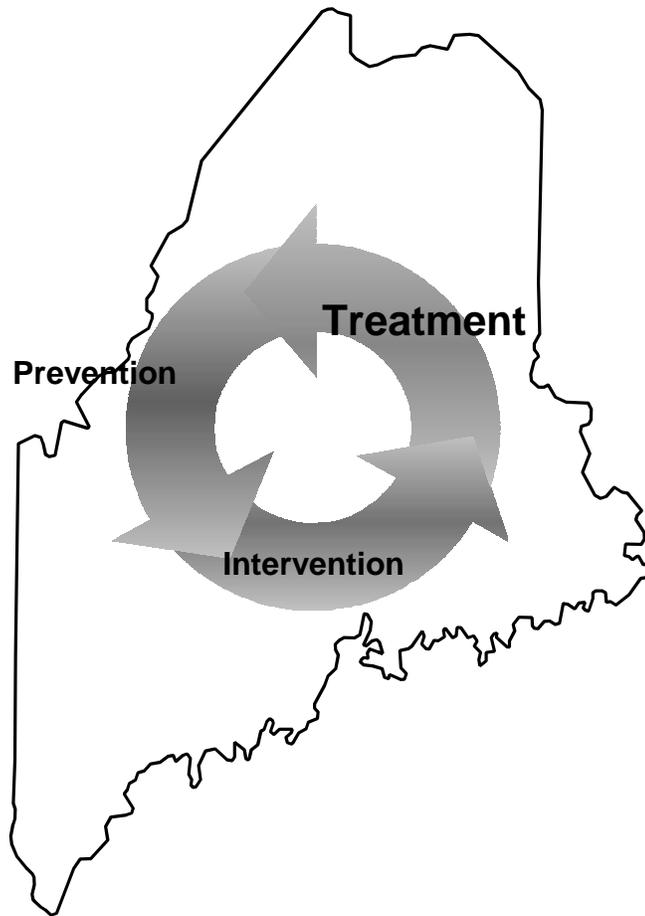


State of Maine Substance Abuse Treatment Needs Assessment



Study 6: Integrated Population Estimates of Substance Abuse Treatment and Intervention Needs in the State of Maine

Maine Office of Substance Abuse
Department of Mental Health, Mental
Retardation, and Substance Abuse Services
December 1999

State of Maine

Substance Abuse Treatment Needs Assessment

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FINAL REPORT

Prepared in Collaboration with
the
Maine Office of Substance Abuse

by

Research Triangle Institute

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December 1999

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CONTENTS

Chapter	Page
Acknowledgments	ii
Tables	ix
Figures	xi
Executive Summary	ES-1
1. INTRODUCTION	1-1
1.1 Overview of the State Demand and Needs Assessment Family of Studies ..	1-1
1.2 Overview and Rationale of the Integrative Study	1-2
1.3 Role of Needs Assessment in Treatment Planning	1-2
1.4 Review of Needs Assessment Literature	1-4
1.4.1 Nature of the Problem	1-4
1.4.2 Literature Review	1-5
1.5 Conducting a Needs Assessment in Maine: Status and Challenges	1-9
1.5.1 Population and Geography	1-9
1.5.2 Current Treatment System	1-10
1.6 Purpose and Scope of the Integrative Study	1-13
1.7 Organization of the Integrative Study Report	1-13
2. SUMMARY OF FINDINGS FROM FAMILY OF STUDIES	2-1
2.1 Household Telephone Survey	2-1
2.1.1 Prevalence and Correlates of Alcohol and Illicit Drug Use	2-1
2.1.2 Need for Treatment or Intervention for Alcohol or Illicit Drug Use	2-2
2.2 Adult Arrestee Survey	2-4
2.2.1 Overall Rates of Substance Use Among Adult Arrestees	2-4
2.2.2 Need for Treatment and Intervention Among Adult Arrestees	2-5
2.3 Youth Synthetic Estimation Study	2-6
2.4 Social Indicator Study	2-8
3. INTEGRATIVE STUDY METHODOLOGY	3-1
3.1 Treatment Needs Matrix	3-1
3.1.1 Mutually Exclusive Population Groups in the Integrative Framework	3-1
3.1.2 Special Populations in the Integrative Framework	3-4
3.2 Data Integration Steps	3-5
3.3 Determining Population Bases	3-7
3.3.1 Determining Population Bases for Mutually Exclusive Population Groups	3-7
3.3.2 Determining Population Bases for Special Populations	3-10

CONTENTS (continued)

Chapter	Page
3.4	Determining Prevalence Estimates 3-11
3.4.1	Data Sources for Prevalence Estimates 3-11
3.4.2	Generating Prevalence Rates 3-13
4.	INTEGRATIVE STUDY RESULTS 4-1
4.1	Estimates of Population Bases 4-1
4.1.1	Population Bases for Mutually Exclusive Groups 4-1
4.1.2	Population Bases for Special Populations 4-8
4.2	Estimates of Substance Abuse Treatment Needs Across Mutually Exclusive Populations 4-8
4.2.1	Statewide Estimates of Substance Abuse Treatment Needs Across Mutually Exclusive Populations 4-8
4.2.2	Regional Estimates of Substance Abuse Treatment Needs Across Mutually Exclusive Populations 4-14
4.2.3	County-Level Estimates of Adult Substance Abuse Treatment Needs 4-22
4.3	Estimates of Substance Abuse Treatment or Intervention Needs Across Special Populations 4-22
4.3.1	Statewide Estimates of Substance Abuse Treatment or Intervention Needs Across Special Populations 4-22
4.3.2	Regional Estimates of Substance Abuse Treatment or Intervention Needs Across Special Populations 4-24
4.4	Summary of Estimated Substance Abuse Treatment Needs Statewide 4-25
4.5	Treatment System Capacity Versus Estimated Need 4-27
5.	IMPLICATIONS FOR TREATMENT SERVICES IN MAINE 5-1
5.1	Overview 5-1
5.2	Mutually Exclusive Groups 5-1
5.2.1	Household Adults 5-1
5.2.2	Incarcerated Adults 5-2
5.2.3	Homeless Adults 5-3
5.2.4	Household Adolescents 5-4
5.3	Special Population Groups 5-5
5.3.1	Childbearing Women and Pregnant Adolescents 5-5
5.3.2	People Who Are Injection Drug Users 5-5
5.3.3	Adults Charged with OUI 5-6
5.3.4	Adults with Co-Morbid Substance Abuse and Psychiatric Disorders 5-8

CONTENTS (continued)

Chapter	Page
5.4 Study Limitations	5-9
5.4.1 Limits of Population-Based Estimates	5-9
5.4.2 Limits of Prevalence Rate Estimates	5-10
5.4.3 Differentiating Between Alcohol and Drug Treatment Needs	5-12
5.5 Barriers to Access to Substance Abuse Treatment	5-13
5.5.1 Introduction	5-13
5.5.2 Personal Barriers to Access	5-13
5.5.3 Structural Barriers to Access	5-15
5.6 Summary	5-16
References	R-1

Appendices

A	Sources of Information on Substance Abuse Prevalence Estimates for Missed and Special Populations	A-1
B	Issues in Defining Substance Use and Abuse Among Adolescents	B-1
C	Maine Population by DMHMRSAS Region and by County, 1997	C-1
D	County Population Estimates Across Mutually Exclusive Groups of Adults	D-1
E	Number of Adults in Need of Substance Abuse Treatment, by Age, Ethnicity, and Gender Statewide and by Region	E-1
F	Regional Estimates of Substance Abuse Treatment Needs Among Adults, by Gender	F-1
G	Regional Estimates of Substance Abuse Treatment Needs Among Adults, by Age	G-1
H	Regional Estimates of Substance Abuse Treatment Needs Among Adults, by Ethnicity	H-1

TABLES

Number		Page
1.1	Populations Covered and Not Covered in the Maine Treatment Needs Assessment Project	1-3
3.1	Mutually Exclusive Population Groups in the Integrative Framework	3-1
3.2	Special Populations in the Integrative Framework	3-4
3.3	Summary of Data Integration Steps for Maine	3-6
3.4	Sources of Substance Abuse Prevalence Data for Mutually Exclusive Adult Population Groups	3-12
3.5	Sources of Substance Abuse Prevalence Data for Special Populations	3-12
3.6	Population Groups, Sources of Data, and Estimated Prevalence of the Need for Substance Abuse Services	3-14
4.1	Populations for Mutually Exclusive Groups in Maine, by DMHMRSAS Region	4-2
4.2	Total Adult Population in Maine, by Demographic Breakdown	4-3
4.3	Regional Adult Populations, by Gender	4-5
4.4	Regional Adult Populations, by Age	4-6
4.5	Regional Adult Populations, by Ethnicity	4-7
4.6	Size of Special Populations in Maine	4-8
4.7	Statewide Estimates of Substance Abuse Treatment Needs Across Mutually Exclusive Populations	4-9
4.8	Comparison of Distribution of Total Adult Population and Total Adults in Need of Treatment	4-10
4.9	Statewide Estimates of Adult Substance Abuse Treatment Needs, by Gender ...	4-11
4.10	Statewide Estimates of Adult Substance Abuse Treatment Needs, by Age	4-12
4.11	Statewide Estimates of Adult Substance Abuse Treatment Needs, by Ethnicity ..	4-13

TABLES (continued)

Number		Page
4.12	Regional Estimates of Substance Abuse Treatment Needs Across Mutually Exclusive Populations	4-15
4.13	Regional Estimates of Adult Substance Abuse Treatment Needs, by Gender	4-17
4.14	Regional Estimates of Adult Substance Abuse Treatment Needs, by Age	4-20
4.15	Regional Estimates of Adult Substance Abuse Treatment Needs, by Ethnicity ..	4-21
4.16	County Estimates of Adult Substance Abuse Treatment Needs	4-23
4.17	Statewide Estimates of Substance Abuse Treatment or Intervention Needs Across Special Populations	4-24
4.18	Estimates of Substance Abuse Treatment or Intervention Needs Across Special Populations	4-25
4.19	Summary of Estimated Need for Treatment Services Statewide in Maine	4-26
4.20	Summary of Estimated Need for Treatment Services Statewide Across Special Populations	4-27
4.21	Assessment of Maine's Treatment System: Capacity, Utilization, and Estimated Need for Treatment	4-30

FIGURES

Number		Page
1.1	Maine Counties, by Department of Mental Health, Mental Retardation, and Substance Abuse Services (DMHMRSAS) Regions	1-6
4.1	Gender Differences in Statewide Treatment Needs Across Mutually Exclusive Populations of Adults	4-11
4.2	Age Differences in Statewide Treatment Needs Across Mutually Exclusive Populations of Adults	4-12
4.3	Ethnic Differences in Statewide Treatment Needs Across Mutually Exclusive Populations of Adults	4-14
4.4	Gender Differences in Regional Treatment Needs Across Mutually Exclusive Populations of Adults	4-17
4.5	Age Differences in Regional Treatment Needs Across Mutually Exclusive Populations of Adults	4-18
4.6	Ethnic Differences in Regional Treatment Needs Across Mutually Exclusive Populations of Adults	4-21

State of Maine Substance Abuse Treatment Needs Assessment

Integrated Population Estimates of Substance Abuse Treatment Needs in the State of Maine

Executive Summary

Prepared by

**Maine Office of Substance Abuse
DMHMRSAS
and
Research Triangle Institute**

Introduction

This report is the sixth and final study of the initial Maine State Treatment Needs Assessment Project. It summarizes and expands on the earlier studies that developed information concerning the need for substance abuse treatment or intervention among diverse population groups in Maine. Our integrative approach incorporates many hard-to-reach populations (e.g., the homeless, the incarcerated) who are often ignored in traditional needs assessments because they are inaccessible through general population studies. Including these high-risk population groups in needs assessment efforts changes the profile as well as the number of people estimated to need substance abuse services in the State of Maine and sheds light on priority populations with high levels of service needs. An integrated approach to treatment planning may prove beneficial for targeting limited resources at neglected populations with intensive and multifaceted problems.

This report examines the proportion and number of the adults and adolescents estimated to need substance abuse treatment or intervention services. The adult population (aged 18 years or older) was categorized into five mutually exclusive population groups based on residential status. The five residential categories are as follows:

- adults living in households with telephones,
- adults living in households without telephones,

- homeless/transient adults,
- institutionalized adults,¹ and
- incarcerated adults.

Substance abuse problems among adolescents (aged 12 to 17 years) were examined among the total household population and separately for school dropouts. The need for substance abuse services is presented as a whole for the state, for the Department of Mental Health, Mental Retardation, and Substance Abuse Services' (DMHMRSAS's) three regions, and for counties and then broken down by residence, gender, age, and ethnicity (statewide and DMHMRSAS regions only). In addition, this report covers issues regarding substance abuse problems among high-priority populations who are particularly difficult to outreach and treat and, thus, require special services such as pregnant women and adolescents, injection drug users (IDUs), adults charged with operating a vehicle while under the influence of alcohol (OUI), and adults with co-occurring substance abuse and psychiatric disorders.

Approach

In order to develop the estimates of substance abuse treatment and intervention needs, two critical pieces of information were needed:

- the number of people residing in a DMHMRSAS region (or county) by gender, age, ethnicity, and household status; and
- the proportion of these groups believed to need substance abuse treatment or intervention services.

Population bases for each of the counties, DMHMRSAS regions, and the state as a whole by age, gender, and ethnic composition were determined using updated data from the 1990 U.S. Bureau of the Census. The Census data also were used to estimate the number of individuals in the various residential categories. Estimates of the prevalence of substance abuse problems and the need for treatment were obtained from an analysis of previous Maine treatment needs assessment studies as well as a review of the extant literature.

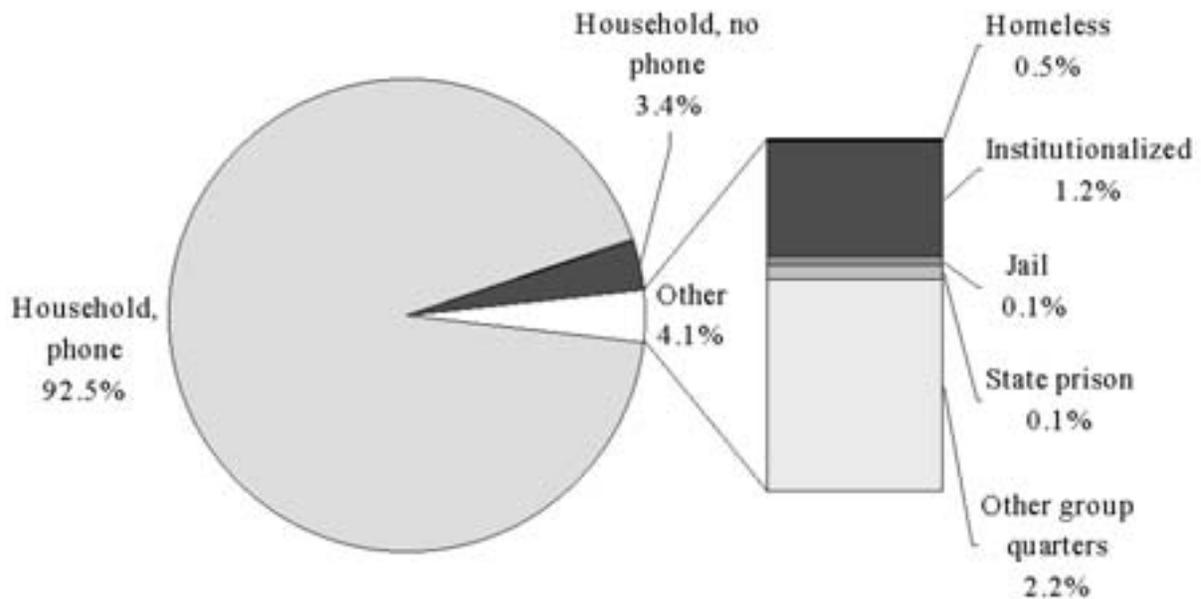
¹According to the Census Bureau, institutionalized persons include persons under formally authorized supervised care or custody at the time of enumeration. Such persons are classified as "patients or inmates" of an institution regardless of the availability of nursing or medical care, the length of stay, or the number of persons in the institution. Generally, institutionalized persons are restricted to the institutional buildings and grounds (or most have passes or escorts to leave) and thus have limited interaction with the surrounding community. Also, they are generally under the care of trained staff who have responsibility for their safekeeping and supervision.

Highlights of Findings

Residential Status

As shown in Figure ES.1, most adults in Maine reside in households with telephones (92.5%). An additional 3.4% reside in households without telephones. The remaining 4.1% of the adult population can be found in nonhousehold settings. Approximately 1.2% of Maine adults are institutionalized (in correctional facilities or hospitals or schools for the elderly, mentally retarded, etc.), 0.2% are jail or state prison inmates, 0.5% are homeless or transient, and 2.2% live in other group quarters such as college dormitories or military barracks. Adults in other group quarters are not included in the study because they are generally not considered consumers of the public treatment system. An estimated 108,033 adolescents aged 12 to 17 years reside in households in the State of Maine. Approximately 2% of these household adolescents are school dropouts.

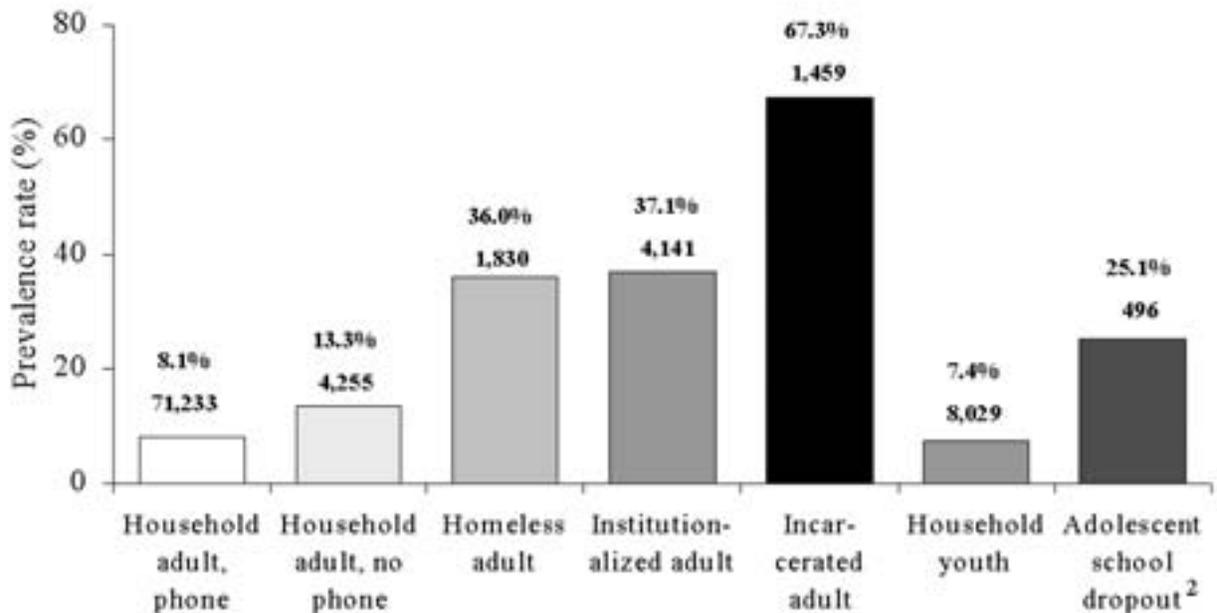
Figure ES.1 Adult Population Distribution, by Mutually Exclusive Residential Group



Prevalence of Substance Abuse Treatment or Intervention Needs, by Population Group

Overall, approximately 8.8% of the Maine 1997 population aged 12 or older, or 90,947 individuals, were estimated to need substance abuse services in the State of Maine. Substance abuse treatment needs among adults varied significantly by residential status. Among the adult household population, those without telephones had higher treatment need rates than those living in households with phones (13.3% vs. 8.1%). Prevalence rates were much higher among the adult nonhousehold populations. Over one third of adults who were homeless or residing in institutions and over two thirds of incarcerated adults were estimated to have had active substance abuse problems within the past year. The overall treatment need rate for household adolescents (including school dropouts), 7.4%, was lower than that of the adult population. However, the treatment need rate among adolescent school dropouts (25.1%) was much higher than the overall rate both for household adolescents and/or adults.

Figure ES.2 Proportion and Number of Individuals in Need of Substance Abuse Treatment or Intervention,¹ by Population Group

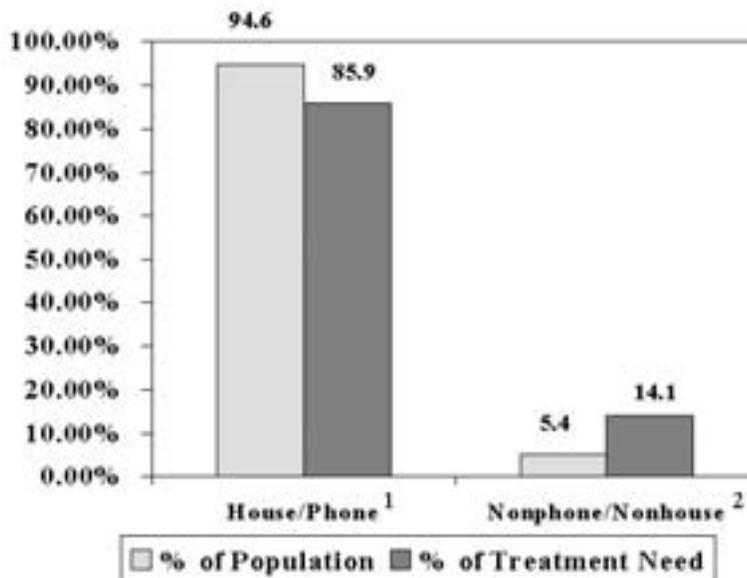


¹ Service needs were defined as treatment for adults and treatment or intervention (employing less stringent symptom criteria) for adolescents.

² The estimates of household youth include school dropouts.

Although adult nontelephone and nonhousehold populations (excluding adults in Federal prisons and other group quarters) represented only 5% of the adult population, they represented 14% of the adult population in need of treatment. (See Figure ES.3 for comparison.) This difference is due to the exceptionally high level of substance abuse problems among the homeless, institutionalized, and incarcerated. Regardless of these high prevalence rates, the majority of adults in need of substance abuse services may still be found in households.

Figure ES.3 Comparison of Adult Population and Treatment Needs Distribution, by Telephone/Household Status



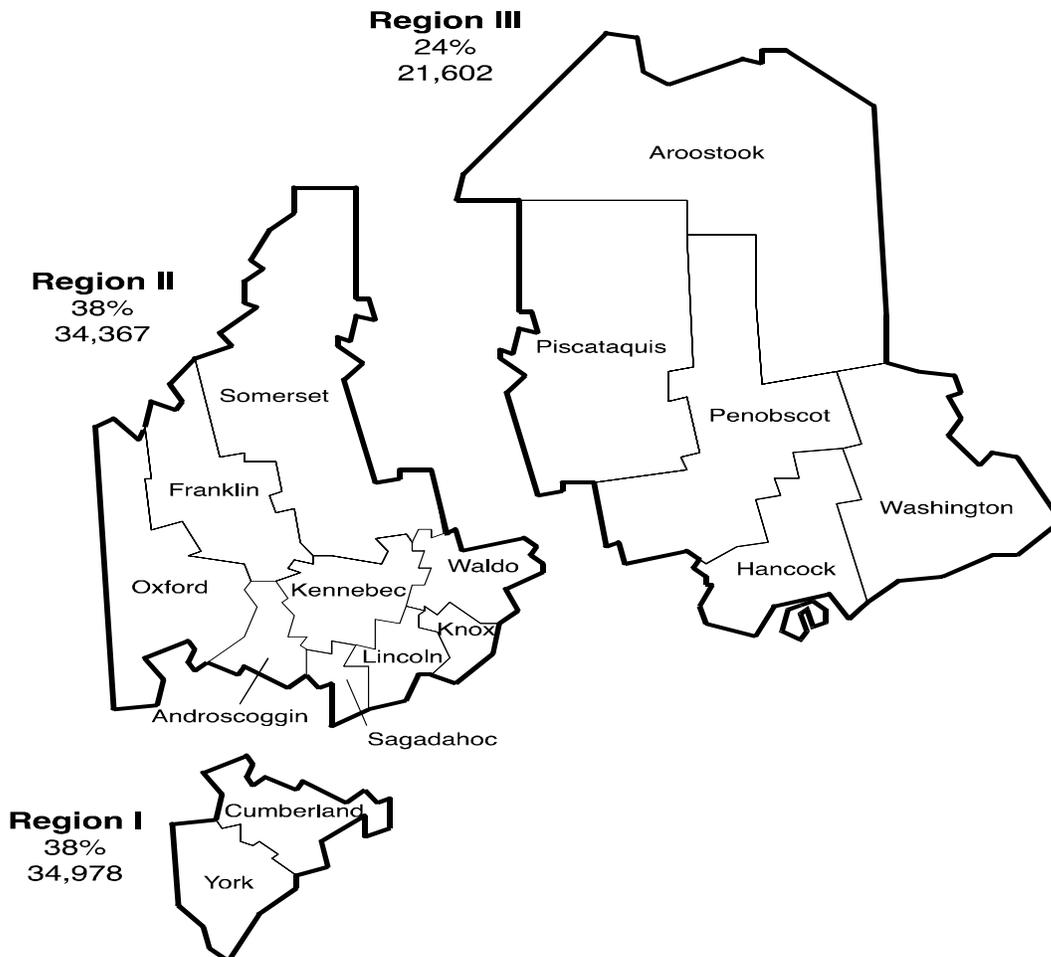
¹Adults residing in households with phones.

²Adults residing in households without phones or adults who are homeless, institutionalized, or incarcerated.

Regional Differences in Substance Abuse Treatment or Intervention Need

As shown in Figure ES.4, Region I contained 38% of the overall (adult and adolescent) substance abuse treatment or intervention needs. This translated into approximately 34,978 people. Region II also contained 38% of the overall State needs, equaling 34,367 people. The fewest number of people needing substance abuse treatment or intervention lived in Region III (24% of the total need, or 21,602 people).

Figure ES.4 Distribution of Total Service Need and Counts of Adults and Adolescents in Need of Substance Abuse Services, by Region

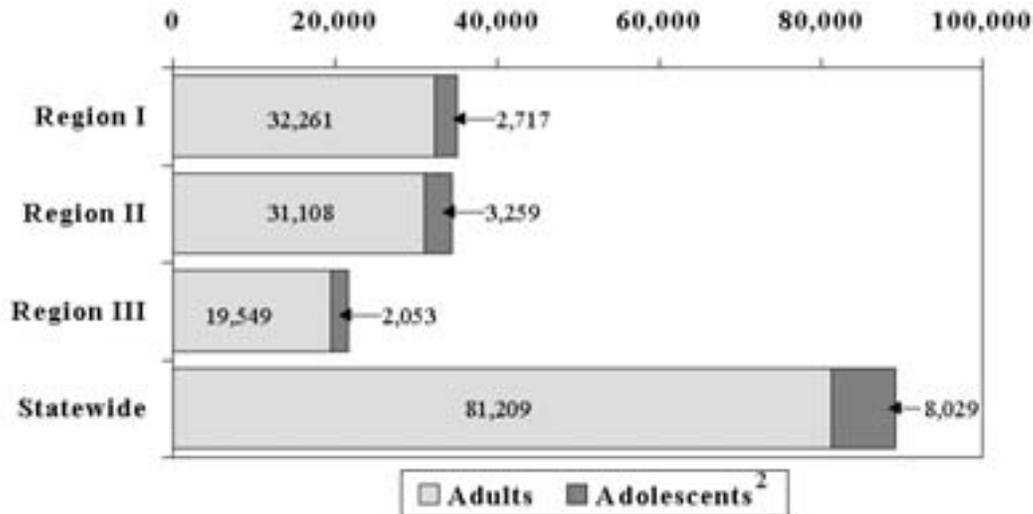


Note: Includes adolescents (aged 12 to 17) and adults (aged 18 or older).

In Region III, 19,549 adults were in need of treatment, compared with 32,261 in Region I and 31,108 in Region II. (See Figure ES.5.) Among the institutionalized and incarcerated populations, the greatest number of adults in need was found in Region II. Despite differences in magnitude, the overall pattern of gender, age, and ethnic differences was similar in all regions such that substance abuse problems were more common among males, non-Hispanic whites, and adults aged 25 to 44 years.

Overall, 7.4%, or 8,029 household adolescents, were estimated to need substance abuse services. The largest proportion (41%) of adolescents in need of intervention were located in Region II (3,259), which has the largest youth population. Thirty-four percent (2,717) of all youths in need of services were located in Region I, and the remaining 25% (2,053) were found in Region III. The regional ranking of service needs among youth dropouts was similar to the overall household distribution: the largest proportion lived in Region II (38%), followed by Region I (35%), and Region III (26%).

Figure ES.5 Number of Adults and Adolescents in Need of Substance Abuse Treatment or Intervention,¹ by Region



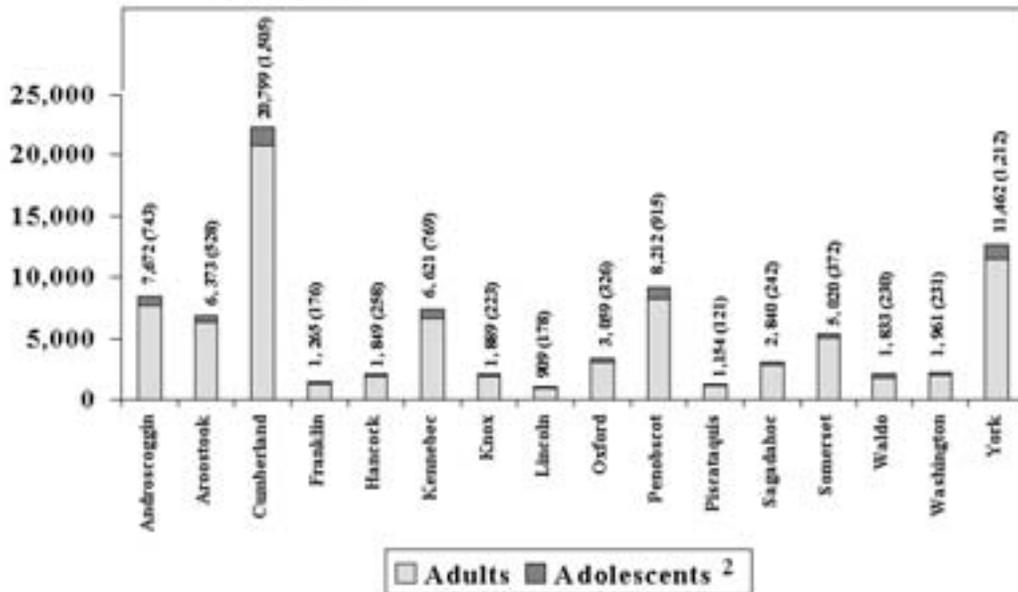
¹ Service needs were defined as treatment for adults and treatment or intervention (employing less stringent symptom criteria) for adolescents.

² Adolescents include both household and school dropouts.

County-Level Estimates of Adult and Adolescent Substance Abuse Treatment Needs

County-level estimates of substance abuse treatment needs are provided for adults and adolescents in Figure ES.6. The overall prevalence rates across counties ranged from a low of 3.7% of the total adult population in Lincoln County to a high of 13% in Somerset County. In terms of actual numbers, adults in need of substance abuse services ranged from 909 in Lincoln County to 20,799 in Cumberland County. The prevalence of substance abuse problems among adolescents varied from 6.29% in Lincoln County to 8.64% in Androscoggin County. The number of adolescents needing intervention was lowest in Piscataquis County (121) and highest in Cumberland County (1,505).

Figure ES.6 Number of Adults and Adolescents in Need of Substance Abuse Treatment or Intervention,¹ by County



¹ Service needs were defined as treatment for adults and treatment or intervention (employing less stringent symptom criteria) for adolescents.

² Adolescents include both household and school dropouts.

High-Priority Populations

Five special population groups prioritized for substance abuse treatment services were also highlighted: pregnant women, adolescent mothers, people who are injection drug users, adults charged with operating a vehicle while under the influence of alcohol (OUI), and adults with co-occurring substance abuse and mental health problems. These groups are more likely to be composed of individuals with no insurance, inadequate private insurance, Medicaid coverage only, or dwelling in state institutions and, therefore, falling under the responsibility of state-sponsored programs. Further, because many of these populations are not household-based, they require special consideration for outreach and service provision.

Pregnant Women and Adolescents

Pregnant women and adolescent mothers were not included as separate populations within the integrative framework because of the difficulty containing them within mutually exclusive residential categories. However, this report addresses their service needs because the personal and social costs of ignoring perinatal substance abuse are serious. Overall, approximately 17.6% of pregnant women and 14.5% of pregnant adolescents (10 to 17 years old) were estimated to use alcohol or drugs during pregnancy. This translates into 2,430 females in the State of Maine who may be placing their unborn child at risk. Pregnant women comprise a high-priority service group because of the irreversible consequences of prenatal substance exposure.

People Who Are Injection Drug Users

People who are injection drug users constitute another high-priority group because of the serious public health threats resulting from shared needle use and unsafe sexual practices. Approximately 2,834 adults in Maine were estimated to have injected drugs for nonmedical purposes over the past year. People who are injection drug users make pressing demands on the treatment system because they tend to consume a disproportionate share of the resources and have high-intensity and multifaceted needs.

Adults Charged with OUI

The Maine Office of Substance Abuse has declared OUI offenders as a priority population for intervention. Adults who operate a vehicle while under the influence of alcohol or other drugs constitute a serious threat to society and themselves through accidents and injury. In 1997, there were 7,531 adults, 21 years or older in Maine charged with OUI. Intervention is critical because the majority of OUI offenders, especially repeat offenders, are problem drinkers.

**Adults with
Co-
Occurring
Disorders**

Many individuals with concurrent substance abuse and psychiatric disorders also have problems with violence, criminality, suicidality, homelessness, neuropsychological dysfunction, and increased risk to human immunodeficiency virus (HIV) infection. Approximately 21,309 adults in Maine were estimated to have co-occurring substance abuse and mental health disorders. People with both substance abuse and mental health problems have special treatment issues, including lower treatment retention, greater relapse rates, and increased inability to access and maintain involvement in treatment.

The integrative study provides a rich resource to substance abuse treatment planners and providers who must make difficult decisions regarding how to allocate limited resources. This study presents a picture of the substance abuse needs across the State of Maine and highlights some of the challenges of administering a system required to meet the intensive, yet diverse, needs of a multitude of clients.

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1. INTRODUCTION

1.1 Overview of the State Demand and Needs Assessment Family of Studies

Substance abuse is one of the Nation's major health problems. Numerous studies document the negative consequences associated with substance abuse, including poor health, disrupted social relations, decreased work productivity or inability to maintain employment, and inability to perform role functions (e.g., parenting). In addition to the toll that substance abuse takes on the individual, the repercussions often extend to the community in terms of increased accidents, crime, and other social ills, including child abuse and domestic violence (Horgan, Marsden, & Larson, 1993). Although difficult to treat, substance abuse is not intractable. Research shows that treatment of substance abuse is successful in reducing or eliminating use and the symptoms associated with abuse. Furthermore, treatment has proven cost-effective. Decreased crime and health care costs and increased employment and productivity have been correlated with substance abuse recovery (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 instance, the Center for Substance Abuse Treatment (CSAT) has made funding available for states to conduct studies of the prevalence of substance abuse in their communities. In response, the State of Maine, in tandem with the Research Triangle Institute (RTI), has designed a family of 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 project are 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.

To achieve these objectives, Maine's demand and needs assessment project consists of a series of complementary studies based on both primary data collection and secondary analysis of existing data. These studies were selected to achieve broad coverage of the state's population, to

provide good information on met and unmet needs, and to develop tools that can be used by the state in future years. The studies include:

- Study 1: Alcohol and Other Drug Household Estimates;
- Study 2: Use of Alcohol and Illicit Drugs and Need for Treatment Among Maine Adult Arrestees;
- Study 3: Estimating Need for Treatment or Intervention Among Youth in Maine Counties: A Synthetic Estimation Approach;
- Study 4: Using Social Indicators to Estimate Substance Use and Treatment Needs in Maine;
- Study 5: Assessment of Maine’s Substance Abuse Treatment System: Structure, Capacity and Utilization, 1997; and
- Study 6: Integrated Population Estimates of Substance Abuse Treatment and Intervention Needs in the State of Maine.

1.2 Overview and Rationale of the Integrative Study

The purpose of the present study is to integrate the information obtained from the studies comprising Round I of the Maine treatment needs assessment project into a useful framework for assessing treatment needs in Maine. Further, the integrative study seeks to merge available substance abuse information related to populations not covered by the Maine treatment needs assessment project into a comprehensive basis for statewide treatment service planning and resource allocation. The key element in this process was bringing together findings from the five studies along with information on noncovered populations to form a comprehensive assessment of treatment needs in the state. As a whole, the needs assessment studies provide broad coverage of the state’s population. Data from the household telephone survey, the adult arrestee survey, and the youth survey cover well over 90% of Maine’s population. However, despite the number and diversity of studies conducted under this needs assessment project, we were unable to study several important populations. Some of the missed (i.e., not covered) populations are listed in Table 1.1. Although these 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 in this integrative study.

1.3 Role of Needs Assessment in Treatment Planning

Since 1993, receipt of both substance abuse prevention and treatment Block Grants has been predicated on the documentation of need. Specifically, Section 1929 of Public Law 102-

Table 1.1 Populations Covered and Not Covered in the Maine Treatment Needs Assessment Project

Population	Household Adult Population	Homeless Adults	Institutionalized Adults	Youths
Covered populations ¹	Households with phones		Jail inmates	Household adolescents (includes school dropouts)
Populations not covered	Households without phones ² Childbearing women ² Injection drug users ² Adults charged with operating under the influence of alcohol (OUI) Adults with co-occurring disorders	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 Adolescent mothers

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

²For 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.

321, dated July, 1992, states: “The Secretary may make a [Block] grant under section 1921 only if the state submits to the Secretary an assessment of the need in the state for authorized activities (which assessment is conducted in accordance with criteria issued by the Secretary), both by locality and by the state in general” (request for proposal [RFP], p. 9). To assist in this process, CSAT designated a special research program (i.e., the demand and needs assessment studies) to provide funds and technical assistance to states.

The purpose of the prevention and treatment needs assessment portion of the application is to document the populations in greatest need for substance abuse treatment services and their geographic location to serve as a vehicle for thoughtful planning for service delivery. Specific needs assessment requirements, listed under Section 1929 of Public Law 102-321, include the following:

- the incidence and prevalence in the state of drug abuse, alcohol abuse, and alcoholism;
- the current prevention and treatment activities in the state;

- the state's need for technical assistance to carry out prevention and treatment activities;
- the efforts by the state to improve such activities; and
- the extent to which the availability of such activities is insufficient to meet the need for the activities, the interim services to be made available under Sections 1923(a) and 1927(b), and the manner in which such services are to be made available.

Further, data documenting substance abuse problem levels must be collected and reported statewide and by regional planning areas as well as by gender, age, and ethnicity. Information on five core substance abuse problems is requested, including marijuana (including hashish), cocaine (including crack), hallucinogens (including phencyclidine [PCP]), heroin, and alcohol. The Secretary also requires the use of common diagnostic criteria for dependence that characterize the cluster of cognitive, behavioral, and physiological symptoms that indicate a person has impaired control of substance use.

1.4 Review of Needs Assessment Literature

1.4.1 Nature of the Problem

As described above, federal monies support the administration and delivery of state substance abuse treatment services. This money was assured by the Public Health Service (PHS) Act, 42 U.S.C. 300x-21-300x-35, Sections 1921 to 1954, authorizing the Secretary of the Department of Health and Human Services (DHHS) to provide Substance Abuse Prevention and Treatment (SAPT) Block Grants to states for the prevention and treatment of substance abuse. In recent years, a single Block Grant was sent to each state, with designated amounts set aside for mental health and substance abuse services. This act was amended in 1992 to establish separate Block Grants for mental health and substance abuse services.

The act provides for allotments each year to states for planning, performing, and evaluating activities to prevent and treat substance abuse. Statutory and regulatory requirements are established for application content, procedures, allowable uses of funds, and reporting. Receipt of federal Block Grant funds is contingent upon the conduct of needs assessments to document statewide levels and types of substance abuse problems and to serve as a vehicle for thoughtful planning to identify and prioritize gaps in service delivery. To assist in this process, CSAT's special research program (i.e., the demand and needs assessment studies) provides funds and technical assistance to states to improve needs assessment methodologies and to emphasize the application of findings for decisionmaking and resource allocation.

Although the State of Maine has a well-developed management information system (MIS) containing information on substance abuse clients, encounters, and capacity, the demand and needs assessment family of studies is the first to comprehensively assess substance abuse treatment needs based on clinical criteria in the general (i.e., nontreatment) population. Although the annual National Household Survey on Drug Abuse (NHSDA) incorporates some respondents from Maine, the numbers are too small to provide precise estimates of substance use for the state or for the three regions shown in Figure 1.1. In addition, although NHSDA collects information about past year symptoms of dependence and negative consequences associated with use, these data do not sufficiently document treatment needs, especially unmet needs, among the household population in Maine. More detailed data on substance abuse and dependence and drug treatment histories are needed to indicate what percentage of the Maine household population might meet diagnostic criteria for substance abuse disorders as outlined in the third, revised edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R) (American Psychiatric Association [APA], 1987) and what percentage of those who meet diagnostic criteria have not received treatment.

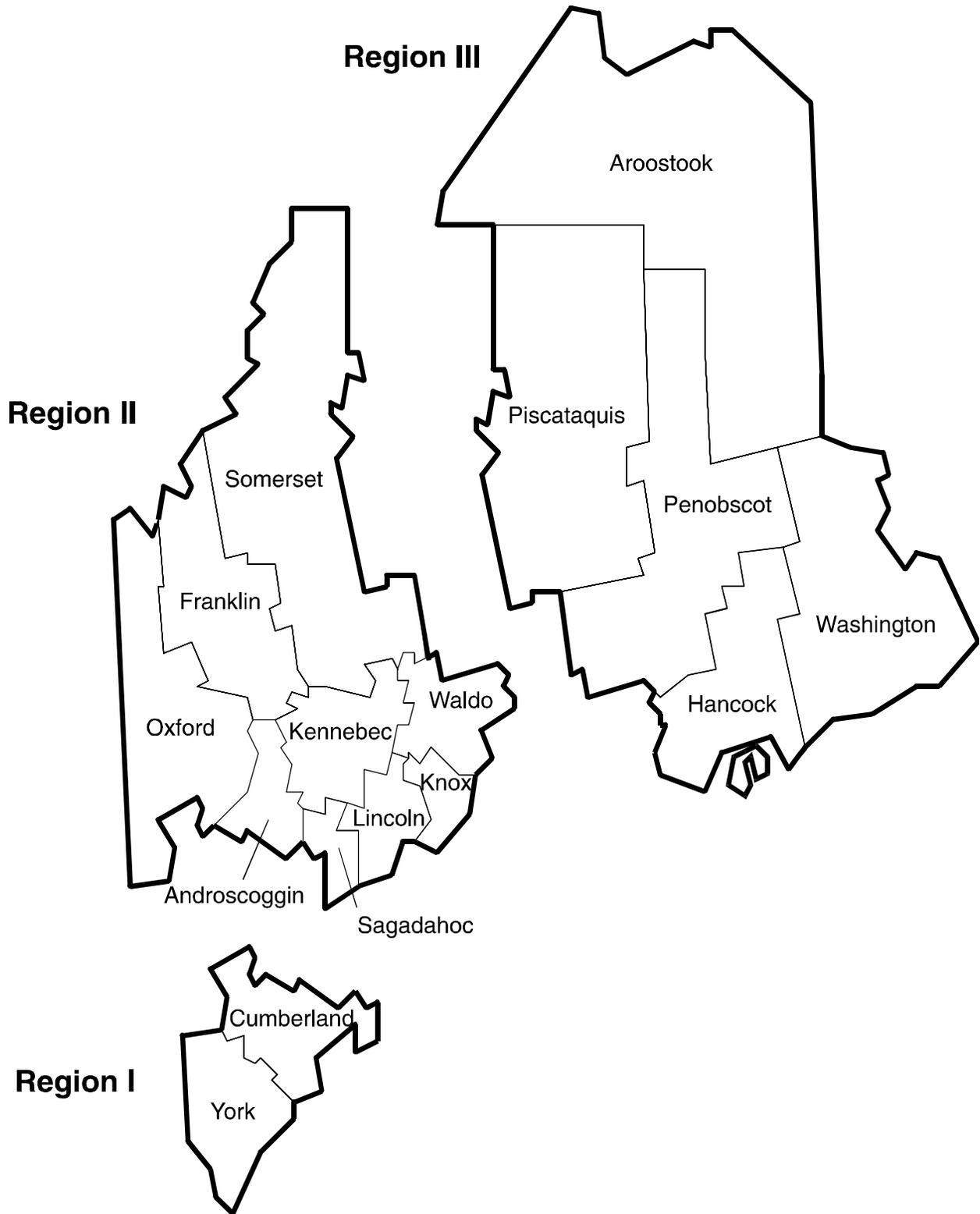
1.4.2 Literature Review

Planning and assessing substance abuse services are formidable tasks. Needs assessments may improve upon the outcomes of these tasks by drawing on data to make informed decisions about the most effective and efficient delivery of mental health services. Needs assessments identify problems in a target population and evaluate the adequacy of service provision to this population (McKillip, 1987). The overall goal of needs assessments is to improve planning, resource allocation, and program development by increasing the accuracy of the estimates of need and demand and determining the services necessary to meet this level of need and demand (Kimmel, 1993).

Many tools are available for conducting needs assessments, including surveys, social indicators, prevalence studies, forums, key informants, and service data. However, reviews of the literature revealed that none of these methods offered a well-developed set of guidelines on how to actually use needs assessment data to plan or guide service delivery. Although many needs assessments have been performed, there is little evidence of their actual use, and there have been criticisms regarding the lack of integration in needs assessments and a call for use of a combination of methods (“Prevalence Estimation Techniques,” 1993; Soriano, 1995).

The two most popular approaches among policymakers and treatment planners are conducting large-scale household surveys to estimate the prevalence of substance abuse problems and collecting institutional records or staff reports to determine the number of clients with substance abuse disorders. Used alone, both of these methodologies have shortcomings. The

Figure 1.1 Maine Counties, by Department of Mental Health, Mental Retardation, and Substance Abuse Services (DMHMRSAS) Regions



major weakness of the household survey is that it excludes nonhousehold populations, 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 (Weisner, Schmidt, & Tam, 1995). This weakness is particularly significant because individuals living in these settings tend to have higher rates of substance abuse problems. Thus, their exclusion introduces systematic bias into prevalence estimates. Another method, common among human service agencies, is the compilation of records from health and human service settings. This strategy also introduces bias due to lack of comparability among measures and difficulties with obtaining an unduplicated account of service users, given that the same individuals often present at different agencies.

Efforts have been made to expand general population studies to include hard-to-reach individuals suspected of having high rates of substance abuse. Federal studies include the Washington, DC, Metropolitan Area Drug Study (DC*MADS) (National Institute on Drug Abuse [NIDA], 1994), which surveyed household, institutionalized, and homeless and transient populations, and the Epidemiologic Catchment Area (ECA) studies that targeted both the household population and those living in nursing homes, psychiatric inpatient hospitals, and correctional institutions (Regier et al., 1988). These studies confirm higher rates of both illicit drug use and heavy drinking among the nonhousehold population. The nonhousehold populations reflecting the greatest burden on substance abuse resources are the jail and welfare populations (Weisner et al., 1995).

To obtain the most precise estimates of need, surveys must extend beyond typical household populations and include those who are hard to reach. For example, 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 groups had relatively high rates of drug use, their small number (less than 1% of the total population) constrained their impact on overall 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 looking at the specific drugs used, DC*MADS found 9,000 more marijuana users, 11,000 more crack/cocaine users, and 3,000 more heroin users. (These numbers do not

total to 14,000 because individuals used more than one drug.) 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). Although the extensive effort to include hard-to-reach populations did not significantly affect the overall prevalence rate, it did identify a large number of hard-core drug users who would have been overlooked in typical household surveys, thus assisting in targeting services to those most in need.

Research collected through the ECA study 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%).

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). 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. These populations contribute a greater-than-average share toward substance abuse problems, and their misuse results in pressing social problems.

Information gathered on these populations indicated that they represented 24% of the population in need: 3% of individuals in need were homeless, 6% were incarcerated, 13% were on probation or parole, and 2% were childbearing women (Gerstein & Harwood, 1990). The remaining 76% lived in households. The resulting treatment need for drug abuse was approximately 5.5 million people: 4.6 million living in households, 170,000 homeless, 320,000 living in prison or jail, 730,000 on probation or parole, and 105,000 childbearing women. Those needing treatment were predominantly males and young adults (aged 18 to 34 years). Most participated in the labor force, but the unemployment rate among those needing treatment was

double that of the national average. Although many individuals held down jobs, their income was relatively low.

Taken together, these studies suggest that any comprehensive planning effort to address the substance abuse needs of a state population must include groups not traditionally found among the household populations. Efforts must be made to estimate and plan for the needs of marginalized populations likely to have high needs for publicly funded rehabilitative services. Maine's integrative study does 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.

1.5 Conducting a Needs Assessment in Maine: Status and Challenges

1.5.1 Population and Geography

Maine is a large state (30,865 square miles) with a small population of approximately 1,242,051 residents in 1997. The state's 16 counties have an average of 40 residents per square mile. The rural population makes up more than two thirds of the population. Nine of the state's 16 counties have fewer than 50 residents per square mile (Piscataquis, Aroostook, Somerset, Washington, Franklin, Oxford, Hancock, Penobscot, and Waldo). Based on 1997 estimates, Cumberland County has the largest population (251,438) and is the most densely populated, accounting for approximately 20% of the state's population. The City of Portland, located in Cumberland County, is the state's largest city, with a population of 63,123. The next largest city is Lewiston (Androscoggin County), with a population of 36,830. The population of Maine increased slightly between 1990 and 1997 (by 1.2%). In order to develop the substate estimates required for this study, we used the DMHMRSAS three regions to divide the 16 counties. These regions are shown in Figure 1.1.

The population of Maine is homogeneous, with whites accounting for 98.4% of the population. However, about 40% of the white population are Franco-Americans, and many speak English as a second language. The nonwhite population is made up of 0.5% African Americans, 0.5% Native Americans, and 0.7% Asians or Pacific Islanders. The majority of the nonwhite population resides in Cumberland, Penobscot, York, and Aroostook counties. Of the Maine population, 3% are foreign born and 9.2% speak a language other than English at home.

Approximately 11.2% of Maine's residents lived below the poverty level in 1996. The elderly, women, and children are disproportionately affected—14.0% of Maine residents aged 65 or older live in poverty, along with 8% of all families and 19.4% of children younger than 18

years of age. Of female-headed households with children, 30% have incomes below the poverty level. In 1996, median household income was \$34,696.

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.

Two populations are of particular interest in Maine: females, particularly childbearing women and adolescent mothers, and injecting drug users (IDUs). The state Block Grant requires set asides for these special populations. Other groups of interest include adolescents, especially school dropouts, adults who operate a vehicle under the influence of alcohol or other drugs (OUI), and adults with co-occurring substance use and mental disorders.

1.5.2 Current Treatment System

Maine's publicly supported substance abuse service system is complex and community-based, providing education, prevention, early intervention, and treatment services. In the state's fiscal year 1997 (SFY97), the public system admitted more than 12,000 adults, children, and adolescents throughout the state. Contracts were in effect with 61 providers, with at least one provider per county.

The overall administrative responsibility for the substance abuse service system in Maine resides with the Office of Substance Abuse (OSA). OSA 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:

- to advise OSA in developing and implementing significant policy matters related to substance abuse;
- to advise, consult, and assist the Governor and other government branches with activities of state government related to substance abuse prevention; and
- 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 followup care for individuals who have experienced dysfunction due to their alcohol and other drug problems. During SFY97, OSA maintained a viable treatment continuum of services in the state, which include:

- Shelter—providing 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—providing a structured therapeutic environment for clients on a treatment waiting list.
- Detoxification—providing 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—providing a long-term supportive environment for late-stage substance abusers.
- Residential rehabilitation—providing treatment services in a full (24-hour) residential setting.
- Halfway house—providing a community-based, peer-oriented residential program offering treatment and supportive services in a chemical-free environment.

- Intensive outpatient—providing an intensive and structured program of evaluation, diagnosis, and treatment services in a setting that does not include an overnight stay.
- Outpatient care—providing 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.

Maine's OSA plays a leading role in shaping the state's substance abuse services system. 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. An MIS system provides data on performance compliance.

The Maine Office of Substance Abuse works closely with other state agencies to plan and coordinate substance abuse services. For example, OSA works closely with the Department of Corrections to plan services for its population. OSA is working with the Department of Human Services to begin screening persons receiving Temporary Assistance for Needy Families (TANF) for substance abuse problems and to deliver Medicaid services to substance abusers. OSA, as part of the Department of Mental Health, Mental Retardation, and Substance Abuse Services, is working to plan and provide treatment services to persons with dual disorders, as well as working with Children's Services to screen and refer children/adolescents.

The total number of Maine residents admitted into substance abuse treatment during 1997 was 10,607 (an unduplicated count). Eighty percent of those entering treatment reported alcohol as the primary drug abused, and 44% reported a secondary drug problem. Women accounted for 26.6% of admissions. The average age at the time of admission was 35.2 years. Youth admissions (those younger than 20 years) represented 10.1% of the total. Unemployment continues to be a serious problem among those seeking treatment, with approximately one third of those admitted being unemployed. Of that number, 60% reported that they were involved in the legal system when they were admitted (i.e., probation, awaiting trial, incarcerated, driving under the influence). Approximately 67.5% had been arrested at least once during the 12 months prior to admission. Between 26% and 30% were admitted with a concurrent psychological problem. More than half (65%) of those admitted reported having had a prior substance abuse treatment episode.

1.6 Purpose and Scope of the Integrative Study

This report integrates information from the Maine treatment needs assessment project and other sources of information on the need for substance abuse treatment for various population groups, including:

- the adult household population,
- homeless adults,
- institutionalized adults,
- incarcerated adults (i.e., jail and prison inmates), and
- household youths (including school dropouts).

As such, determination of treatment needs will encompass high-risk groups often left out of traditional needs assessment approaches because they are inaccessible through general population studies. The inclusion of these groups changes the number and profile of people determined to be in need of substance abuse services statewide. The report provides estimated rates and numbers of people expected to need substance abuse treatment for each population group for each of the three state DMHMRSAS regions as well as for the state as a whole. This report also covers issues of treatment utilization among special populations of interest to OSA, including:

- childbearing women,
- adolescent mothers,
- people who are injection drug users,
- adults charged with OUI, and
- substance abusers with co-occurring psychiatric conditions.

1.7 Organization of the Integrative Study Report

Chapter 2 provides a summary of the first five studies in the Maine family of studies. In this chapter, we highlight each study's methodology, followed by a brief description of the principal findings. In Chapter 3, we provide a more detailed summary of the methodology we used for the integrative study. This chapter includes information about the treatment needs matrix, the framework that guided our data collection. Next, we provide an overview of the eight data integration steps used in this report. In the third section, we describe the data sources used to determine population estimates and how they were calculated. In Section 4, we describe the same for treatment needs prevalence estimates.

We present our results in Chapter 4. We begin by describing the final population base estimates we used throughout the calculations of the numbers of people in need of treatment. Next, we outline our main findings on substance abuse treatment needs or by mutually exclusive populations. These findings are presented both statewide and by region as totals, followed by estimates by gender, age, and ethnicity. The next section presents a similar discussion of county estimates but only as totals. Section 4.3 describes statewide and regional estimates of needs for the special populations.

Some implications from the integrative effort are outlined in Chapter 5. We begin this chapter by outlining the possible study limitations, in terms of how we calculated population sizes and prevalence rates and how we differentiated between alcohol and drug service needs. Next, in recognition that our treatment needs estimates do not account for the fact that not everyone who needs treatment either seeks it or receives it, we describe the commonly reported barriers to accessing substance abuse treatment among our mutually exclusive and special populations. Then we outline the priority populations for the state (which include subgroups from the mutually exclusive populations as well as from the special populations) for substance abuse treatment. For each population, we summarize our findings in terms of what we know about access barriers in order to outline the special treatment needs and issues for each priority population.

1. INTRODUCTION	1-1
1.1 Overview of the State Demand and Needs Assessment Family of Studies	1-1
1.2 Overview and Rationale of the Integrative Study	1-2
1.3 Role of Needs Assessment in Treatment Planning	1-2
1.4 Review of Needs Assessment Literature	1-4
1.4.1 Nature of the Problem	1-4
1.4.2 Literature Review	1-5
1.5 Conducting a Needs Assessment in Maine: Status and Challenges	1-9
1.5.1 Population and Geography	1-9
1.5.2 Current Treatment System	1-10
1.6 Purpose and Scope of the Integrative Study	1-13
1.7 Organization of the Integrative Study Report	1-13

1.1 Populations Covered and Not Covered in the Maine Treatment Needs Assessment Project 1-3

2. SUMMARY OF FINDINGS FROM FAMILY OF STUDIES

This integrative study relies primarily on data from three of Maine's family of demand and needs assessment studies: two targeted adult population surveys (i.e., adult telephone-surveyed household members and adult arrestees) and one youth synthetic estimation study. In addition, it incorporates estimates from ancillary sources to address the unstudied needs of missing populations. The 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. Supplemental data sources were used to estimate treatment needs among missed and special populations. The methodology for extracting data from these supplemental sources is described in Chapter 3. The following sections summarize the methodology and principal findings of each study.

2.1 Household Telephone Survey

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.

2.1.1 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. In addition, 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.

2.1.2 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. In particular, more than half of young males aged 18 to 24 could be considered in need of some form of intervention because they experienced problems related to their substance use or they exhibited a pattern of use that would place them at high risk for problems. Similarly, more than 40% of females aged 18 to 24 could be considered in need of intervention. Nearly 35% of males aged 25 to 44 and 16% of females in this age group could be considered in need of intervention for their substance use. Although rates of need for intervention generally declined for adults aged 45 or older, about 17% of males aged 45 to 64 and about 8% of males aged 65 or older were in need of intervention.

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.

2.2 Adult Arrestee Survey

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.

2.2.1 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. In terms of illicit drug use, 9 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.

These rates of substance use, 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%).

2.2.2 Need for Treatment and Intervention Among Adult Arrestees

In addition to the overall rates of substance use among adult arrestees, the 1997 Maine adult arrestee survey also estimated the need for alcohol or drug treatment, the treatment histories of respondents, and the perceived barriers to treatment. Drug and alcohol use severe enough to qualify for a diagnosis of substance abuse or dependence during the lifetime (using the third, revised edition of the Diagnostic and Statistical Manual of Mental Disorders [DSM-III-R] (American Psychiatric Association [APA], 1987) was noted among approximately 60% of males and females. The vast majority of these respondents continued to use the substance and to have problems related to their use in the past year.

Respondents were considered to be in need of treatment in the past 12 months if they had received treatment for their use of alcohol or other drugs in the past 12 months. A second group of people who also were determined to be in need were those who met lifetime DSM-III-R (1987) diagnostic criteria for dependence/abuse, had used that substance in the past 12 months, and had either one or more symptoms of abuse/dependence in the past 12 months or exhibited a “problem” pattern of substance use. Some substance users who had never met the criteria for substance abuse or dependence could still have been in need of treatment or some form of less

intensive intervention for their substance use. In an effort to capture this group, those who never had a lifetime diagnosis of dependence/abuse but who nevertheless had either one or more symptoms of dependence/abuse in the past 12 months or exhibited a problem pattern of substance use also were identified.

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).

Finally, a key finding in this report 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.

2.3 Youth Synthetic Estimation Study

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).

Adolescents were considered in need of alcohol intervention if they had been drunk on more than five occasions in the past year, if they had drunk five or more drinks on five or more occasions in the past month, or if they reported at least one negative consequence associated with alcohol use. Negative consequences for adolescents were similar to those used in the DSM-III-R (1987). These included spending a great deal of time getting, using, or getting over the effects of alcohol; using alcohol more often or in larger amounts than intended; developing a physiologic tolerance to alcohol; wanting or unsuccessfully attempting to cut down on alcohol use; experiencing health problems as a result of alcohol use; experiencing psychological problems as a result of alcohol use; or decreasing involvement in school, work, or recreational activities because of alcohol use. Need for drug-related intervention was based on frequent drug use or the experience of symptoms associated with use. Weekly users of marijuana, cocaine, hallucinogens, or heroin were considered frequent users. Consequences associated with drug use were the same ones described above for alcohol.

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).

According to the results, 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 (DeSimone et al., 1999).

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.

2.4 Social Indicator Study

This section presents findings from a study designed to estimate substance abuse treatment needs for counties and DMHMRSAS regions within Maine based on social indicators obtained from archival data sources and substance use rates from the 1997 telephone survey of Maine's adult household population. According to the premises underlying this approach, social, demographic, and economic characteristics of counties and local planning areas are associated with substance use and treatment needs and these characteristics are already available through existing sources. The outcome measures for the models were past year heavy drinking, past year illicit drug use, need for alcohol or drug intervention, and need for alcohol or drug treatment.

Data on 45 social indicators were collected at the county level across multiple years. These variables reflected indices of community crime and violence, community disorganization and transition, and demographic and socioeconomic characteristics and indicators of abuse such as alcohol- and drug-related traffic accidents, treatment rates, morbidity, and mortality. Factor analysis was used to reduce the full set of social indicators to a more manageable number of variables to be included in the predictive models. A six-factor solution emerged that accounted for 80% of the total variance. These factors represented the following constructs: social disorder, community crime and violence, social consequences of substance abuse, population demographics, socioeconomic deprivation, and single-parent families. Bivariate correlations showed strong associations between the social indicators and the measures of substance abuse treatment needs.

A subset of indicators was chosen to represent each of the factors and was used as a predictor in a series of logistic regression models. The indicators were selected based on theoretical considerations, results of the factor analysis, and pair-wise correlations between the indicators and the measures of substance use and abuse. Logistic regression models were created in an attempt to predict the outcome measures of substance use and need for intervention or treatment using the social indicators. A guided model-building strategy was used to emphasize variables that would be salient across all models. Variables were added to the model until a good fit was found and no additional social indicators were significant at $p < .10$.

Across all models, the variable describing the percentage of the population who are males aged 15 to 34 was consistently associated with the outcome measures. The correlation was always in the same direction, implying that higher concentrations of this population are

associated with a greater need for services. This variable was included in every model. In addition to the percentage of males aged 15 to 34 years, two other variables were significant predictors of treatment needs: population density and urbanicity. The variable representing males aged 15 to 34 was the only significant predictor in the heavy drinking and need for alcohol or drug treatment models. Urbanicity enhanced the goodness of fit for the alcohol intervention need model, while population density enhanced the fit of the model when predicting both illicit drug use and need for drug treatment. Thus, these models suggest that the need for substance abuse services is higher among urban counties with high population densities and high proportions of young males in the population. Overall, the models explained a significant percentage of the variance in the outcomes of interest. Pseudo R^2 values ranged from .127 to .603.

Parameter estimates from the logistic regression equations were used to estimate the prevalence of the substance use and misuse measures within each county and DMHMRSAS region in Maine. A comparison of the model-derived estimates with the household survey estimates shows that they generally differed by less than 1%. These results are very encouraging and highlight the potential application of this method for generating county-level estimates of treatment or intervention needs in the absence of annual population surveys. Using the knowledge gained from modeling the associations between the indicators and the substance use measures, we also were able to examine the degree to which changes in the indicator variables were linked with changes in the need for treatment or intervention variables. This information may be used by health planners to gauge differences in treatment needs across counties with different social indicator levels. In addition, this information may be used to project how changes in county sociodemographics may be linked with changes in service needs over time.

Findings from this study suggest that social indicators may be useful for health service planning because they are correlated with various measures of substance use and treatment needs. Furthermore, the results show that these outcomes may be successfully modeled by a few easy-to-obtain and reliably measured variables describing the population characteristics of local communities. Contrary to expectations, social indicators such as alcohol- and drug-related morbidity, mortality, crime, or communicable disease did little to account for variation in the need for substance abuse services across counties. The regression modeling results do not imply that the many indicators that were not selected for the final models are irrelevant but rather that their contribution to predicting levels of treatment needs may overlap with the contributions of the selected variables. For example, the variable for males aged 15 to 34 was highly correlated with several other indicators, including residential instability, density, crime, and sexually transmitted diseases (STDs). Thus, the male variable appears to reflect a more global construct of social pathology or disorder. When the male variable was included in the model, it showed

the strongest relationship with the outcome measures and left little opportunity for the other indicators to add unique variance to the prediction of substance use and misuse. Given that many of these variables are tapping the same construct, it is likely that some indicators could be replaced with similar (i.e., highly correlated) indicators without substantively affecting the model-based estimates.

Overall, these findings suggest that in the absence of up-to-date, comprehensive population surveys, social indicator studies may be very useful in estimating differences in substance abuse treatment and intervention needs, both within and across counties in the State of Maine.

3. INTEGRATIVE STUDY METHODOLOGY

3.1 Treatment Needs Matrix

The heart of the integrative study rests in the construction of a series of treatment needs matrices. Each matrix combined information on substance abuse prevalence rates, population sizes, and numbers in need (prevalence rate multiplied by population size) from multiple sources. Separate matrices were developed for statewide and regional 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) were further broken down by gender, age (18 to 24, 45 to 64, and 65 or older), and ethnicity (non-Hispanic, white, and other).

3.1.1 Mutually Exclusive Population Groups in the Integrative Framework

In an effort to generate integrated rates of substance abuse treatment needs across Maine, the statewide adult population was divided into mutually exclusive groups based on where individuals reside at any given moment in time. The mutually exclusive population groups were composed of household and nonhousehold populations of adults and 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 mutually exclusive population groups in this study are outlined in Table 3.1.

Table 3.1 Mutually Exclusive Population Groups in the Integrative Framework

Household Adults	Nonhousehold Adults	Youths
Phone	Homeless	Household adolescents
No phone	Institutionalized	School dropouts
	Jail inmates	
	State prison inmates	

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

The adult household population was further broken down into households with and without telephones. Research on the nontelephone population suggests that the size of this group is dwindling—declining from a high of 19.4% in 1963 to 6.4% in 1994 (Keeter, 1995). Telephone penetration rates depend on characteristics of the household as well as external factors such as installation charges. Individuals without telephones are more likely to be unemployed,

live in a central city, be a member of an ethnic minority group, receive government assistance, pay rent, and have no insurance coverage or have coverage through Medicaid. In addition, they are generally poorer, less educated, and live in larger households. People living in nontelephone households also move more frequently and report less involvement in religious institutions, fewer group memberships, and less frequent voter turnout. Studies obtained from the literature review suggest that lifetime and past year substance abuse rates are higher among people living in households without phones compared to those living in households with phones (Gfroerer & Hughes, 1991). Examination of data from the National Household Survey on Drug Abuse (NHSDA) shows that past year uses of marijuana and cocaine were much higher among nontelephone households than telephone households (24.9% compared with 9.4% for marijuana and 8.7% compared with 4.0% for cocaine). Based on this information, the nontelephone household population was expected to have different rates of treatment needs from the telephone household population and, thus, was treated separately.

Household youths covered in this study included all adolescents (aged 12 to 17 years). Understanding alcohol and drug use patterns among youths is important because patterns of heavy and unhealthy use of substances tend to begin in adolescence. For this study, adolescents were defined as people aged 12 to 17 years living in households. Although a large proportion of adolescents experiment with substances, a substantially smaller population group uses alcohol or drugs in a manner that threatens their health and development. Identifying youths who exhibit problem use and intervening before more serious levels of addiction develop are important goals of substance abuse prevention, intervention, and treatment.

Within the group of household adolescents, we looked at the subgroup of adolescents who dropped out of school. It has been suggested that drug use is related to dropping out of school. They share many correlates and may be related because of shared selection factors or because drug use increases the risk of leaving school (Mensch & Kandel, 1988). A study by Chavez, Edwards, and Oetting (1989) found a greater proportion of adolescent dropouts and academically at-risk youths had used selected substances in their lifetime compared with controls. This pattern appears to persist into young adulthood. Research has shown that a greater proportion of young adults who were high school dropouts currently used illicit drugs, compared with those who were not dropouts (Gfroerer, Greenblatt, & Wright, 1997; Mensch & Kandel, 1988). Because dropping out of school is related to drug use, the school dropout population was treated separately. 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 and federal prisons, and adults in other group quarters.

Despite the number and diversity of studies in the Maine demand and needs assessment project, the homeless and institutionalized populations were missed. Homeless adult populations include people using emergency and domestic violence shelters and individuals living on the street. Research suggests that the prevalence of substance use among the homeless population is two to four times higher than that among the household population (Fischer, Shapiro, Breakey, Anthony, & Kramer, 1986; Kogel & Burnam, 1988; Kogel, Burnam, & Farr, 1988; Smith, North, & Spitznagel, 1993).

Institutionalized adult populations include people in nursing homes and psychiatric hospitals. Research has found higher rates of substance abuse among institutionalized adults, predominantly due to the high prevalence among psychiatric patients with co-morbidities. In a study by Reiger and colleagues (1990), the lifetime prevalence of substance use disorders among adults in mental institutions was at least twice that among the general population. Similarly, a study by O'Farrell (1983) found that alcohol abuse among hospital psychiatric patients was three times that of the general population.

Research indicates that adults in the criminal justice system need substance abuse treatment at a much higher rate than the general population (Gerstein & Harwood, 1990). Further, the Institute of Medicine (IOM) has recommended that any needs assessment activities targeting substance abuse should assess the criminal justice population separately. Prior drug problems are quite common among state prison inmates. Data from the Epidemiologic Catchment Area (ECA) study showed that almost three fourths of prisoners had a lifetime history of substance abuse problems (Reiger et al., 1990). Studies investigating the extent of clinical levels of substance abuse and dependence in prison populations estimate that approximately 43% of all inmates need treatment for substance abuse or dependence (Gerstein & Harwood, 1990). In this study, incarcerated adults were separated into those in jail and those in state prisons because these groups are expected to have very different treatment issues. Jails hold unsentenced people (e.g., those who cannot get out on bail, had bail refused, and so on) and convicted people serving short sentences. Prisons incarcerate convicted people serving longer sentences (i.e., a year or more). Because inmates are short-term jail residents, treatment must be adapted accordingly. Further, the revolving door phenomenon may be an issue. However, as in the IOM report, similar rates of need are applied to both populations.

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.

Because the nontelephone and nonhousehold population groups make up a small percentage of the overall statewide adult population, their impact on the statewide or regional prevalence rates may be minimal. However, with their greater treatment needs, these populations are likely to have a significant effect on the absolute number and profile of people needing substance abuse treatment.

3.1.2 Special Populations in the Integrative Framework

The State of Maine identified several populations as important priority groups for substance abuse treatment and intervention planning efforts. 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. Substance use among these special populations may pose a serious threat to society along with some of the mutually exclusive populations included in this analysis. Hence, their treatment needs are often prioritized by state planners. The special populations assessed in this study are outlined in Table 3.2.

Table 3.2 Special Populations in the Integrative Framework

Childbearing Females	Other Special Populations
Adults	People who are injection drug users
Adolescents	Adults charged with OUI
	Adults with co-occurring substance use and mental disorders

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

Childbearing women are considered a population group with special treatment planning needs because of the potentially devastating effects of perinatal alcohol and other drug exposure. Given the number of short- and long-term adverse health effects to infants associated with maternal use, any substance use among childbearing women is considered to indicate intervention or treatment need (Gomby & Shiono, 1991). Any substance use is even more serious among adolescent mothers, not only because of the potential harm caused to the infant but also because of the health risks associated with adolescent pregnancy in and of itself (Alan Guttmacher Institute, 1998; Furstenberg, Brooks-Gunn, & Chase-Lansdale, 1989; Zabin & Hayward, 1993). Overall, estimates of the prevalence of substance use among adolescent

mothers were slightly lower than, but fell within the range of, those estimated for childbearing adults.

People who are injection drug users constitute another special population group. This population is prioritized at the federal or state level for treatment services. They have higher crime and disease rates as well as more severe substance abuse disorders requiring intensive services (e.g., long-term residential treatment). Furthermore, shared needle use and unsafe sexual practices are common among this population. These behaviors create a serious public health threat; thus, any person who injects drugs is determined to be in need of treatment.

Adults who operate a vehicle under the influence of alcohol or other drugs (OUI) constitute a serious threat to society and themselves through accidents and injury. Over the past decade, Maine's legislature has revised its approach to dealing with impaired drivers. In order to have their suspended license reinstated, all convicted OUI offenders must satisfy the legally imposed penalty of the state's Bureau of Motor Vehicles associated with the OUI conviction. In addition, they must satisfy a separate obligation to the state's Office of Substance Abuse (OSA). This obligation involves mandatory participation in the Drivers Education and Evaluation Program (DEEP) and receipt of substance abuse education, evaluation, and treatment, if necessary. These revisions to Maine's approach to dealing with OUI offenders demonstrate its special interest in adults charged with OUI.

The co-occurrence of substance abuse disorders with other psychiatric disorders such as depression, anxiety, schizophrenia, or antisocial personality disorder, is very prevalent. Many individuals with co-morbid disorders also have problems with violence, criminality, suicidality, noncompliance, homelessness, neuropsychological dysfunction, and increased risk for human immunodeficiency virus (HIV) infection (Brady et al., 1996). Research suggests that people who have both substance abuse and mental health problems have lower treatment retention and greater relapse rates (Brady et al., 1996; Horton, 1997). Furthermore, patients with multiple disorders are generally less able to access and maintain involvement in treatment. Thus, people with concurrent substance abuse and psychiatric problems have special treatment issues.

3.2 Data Integration Steps

The analytic steps used in this integrative study are summarized in Table 3.3. First, definitions of treatment needs were identified across the three prevalence studies included in the Maine demand and needs assessment family of studies (i.e., the household telephone survey, the adult arrestee survey, and the youth synthetic estimation survey). Then, the level at which the data were broken down from each study was based on federal requirements for the Block Grant application as well as availability of adequate sample sizes across studies (i.e., by gender, age,

Table 3.3 Summary of Data Integration Steps for Maine

Step 1	Designate definition of treatment need for each study.
Step 2	Determine level at which data will be broken down (e.g., DMHMRSAS region by gender by age).
Step 3	Determine population bases for all mutually exclusive and special populations.
Step 4	Extract prevalence rates from the three Maine prevalence studies and, based on population estimates determined in Step 3, calculate the number in need of treatment.
Step 5	Address issues of generalizability of the prevalence rates obtained to the three DMHMRSAS regions.
Step 6	Identify prevalence rates from other available studies and from reviews of the literature for populations not covered in the state needs assessment project (i.e., homeless and institutionalized adults) as well as for special populations (i.e., childbearing women and adolescent mothers, IDUs, OUIs, and adults with co-morbid substance use and mental disorders).
Step 7	Address issues of multiplicity in sampling frames across studies.
Step 8	Integrate data from across all studies using weighted prevalence estimates for substance abuse treatment needs statewide, by DMHMRSAS 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.

and ethnicity). The third step involved estimating the population bases, primarily from 1990 U.S. Bureau of the Census data. Population bases were estimated for the total state population and then by region for all mutually exclusive populations and for special populations (i.e., nonmutually exclusive populations). The fourth step consisted of extracting prevalence rates for the mutually exclusive populations from the three prevalence studies in the Maine demand and needs assessment project. These rates were combined with the population estimates determined in Step 3 to estimate counts of people in need of substance abuse services.

In Step 5, generalizability issues were addressed by comparing study findings with prevalence rates reported in the published literature. Step 6 involved obtaining prevalence rates for the missed and special populations from the existing research base. These rates were combined with the associated population estimates obtained in Step 3 to determine the number of people in need of services. Once the model was reconceptualized as being formed of distinct (mutually exclusive) groups, there was no need for multiplicity adjustment (Step 7). The final prevalence rate for each group (Step 8) is an integrated rate that is weighted to reflect each group's proportion of the population.

3.3 Determining Population Bases

The 1990 U.S. Census was the primary data source for determining the 1997 population bases statewide and for the three DMHMRSAS regions by age, gender, and ethnicity. Other sources of data were used to estimate population bases for the special populations of childbearing women and adolescent mothers, and adolescent school dropouts; these sources are discussed in Section 3.4.2. Because people who are injection drug users, impaired drivers, and adults with co-occurring substance use and mental disorders are, by definition, in need of substance abuse treatment or intervention, it was not necessary to determine population bases for these groups.

3.3.1 Determining Population Bases for Mutually Exclusive Population Groups

The Census data contained 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 included 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 in the Census were 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). Individuals in other group quarters were not incorporated into this integrative study because, in general, they were either not eligible to receive or not users of publicly funded substance abuse treatment or intervention services.

Several U.S. Census data sets were identified from the Internet for use in this project. Multiple data files were accessed because no single data source offered the level of detail necessary for this study. Detailed data at the county level were needed in order to produce population counts by DMHMRSAS region, age, gender, and ethnicity, as well as to calculate these counts separately for households with telephones, households without telephones, and non-household populations. The following Census files were used:

- <http://www.census.gov/population/estimates/county/casrh>. This file contains estimates of the resident population of each U.S. county and state on July 1 of each of year from 1990 through 1997. This file contains estimates for 5-year age groups (i.e., 0 to 4 years, 5 to 9 years, ..., 85 years or older), gender, and ethnicity (white, nonwhite).
- <http://www.census.gov/population/estimates/county/cas>. This file contains estimates of the resident population of each U.S. county and state by single year of age (age was a continuous variable) and by gender on July 1 of each year from 1990 through 1997.

- □ <http://www.govinfo.kerr.orst.edu/cgi-bin/usaco>. This file contains estimates of the group quarters population (all people not living in households) for each U.S. county and state on July 1 of each year from 1990 through 1995. The file also contains county-level population counts for 1990 of people in correctional institutions, nursing homes, mental (psychiatric) hospitals, juvenile institutions, college dormitories, military quarters, and emergency shelters for the homeless and of those living on the street. The 1990 total population counts for institutional group quarters and for noninstitutional group quarters also are broken down by broad age groups (i.e., under 18 years, 18 to 64 years, and 65 years or older).
- 1990 Census Public Use Microdata Samples (PUMS). These files contain individual records of responses (with identifiers removed) to the 1990 Decennial Census of Population and Housing questionnaires. The 1990 PUMS files contain 5% and 1% samples weighted to represent the total population, which can be used to make custom tabulations. Geographic descriptions are available for those areas that contain at least 100,000 people. The CD-ROM files enable users to produce their own tabulations within the limits of the data provided. This file also is available on the Internet at <http://www.census.us.gov/des>.
- □ <http://www.icpsr.umich.edu/NAJCD/archive.html>. This site contains a great deal of information about jails and prisons, including the 1990 Census of State and Federal Adult Correctional Facilities and the 1993 National Jail Census.

The population bases mentioned above were generated through a complex iterative fitting process described in detail below. 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 DMHMRSAS 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 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.

A number of assumptions were inherent in producing the population estimates, as follows:

- the decisions made in allocating the group quarters block populations to gender, age, and ethnicity cross-classifications were reasonably accurate;
- the data from the 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; and
- 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 percentages of people in need of treatment. These estimates were considered along with other indications in estimating the overall percentage in need across individual population groups.

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.

3.3.2 Determining Population Bases for Special Populations

The special population groups included in this study were determined from the Maine demand and needs assessment family of studies, the literature, and the OSA. Population bases for special populations were determined based on data from the U.S. Bureau of the Census, Maine's Department of Education, and Maine's Department of Human Services. By definition, IDUs, adults charged with OUI, and adults with co-occurring substance use and mental disorders

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 and adolescent mothers were obtained from the Maine Department of Human Services, but different measures were available for each. The number of pregnancies was available for adolescents aged 10 to 17 years but not for adolescents aged 12 to 17 years. Thus, in contrast to the definition used for household youths (i.e., aged 12 to 17 years), adolescent mothers were defined as females between 10 and 17 years. 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 adolescent pregnancy and live births to women were applied to the 1997 population bases obtained from the Census to estimate the number of childbearing women and adolescent mothers in 1997. Again, both statewide and regional estimates were calculated based on county-level data.

3.4 Determining Prevalence Estimates

Despite the diversity of Maine's demand and needs assessment family of studies, some mutually exclusive population groups and special populations were missed. Information from literature reviews was used to supplement data from the family of studies. Tables 3.4 and 3.5 outline the sources of substance abuse prevalence data for mutually exclusive population groups and special populations.

3.4.1 Data Sources for Prevalence Estimates

As outlined in Table 3.4, alcohol and drug abuse prevalence rates for adults living in households with telephones are based on findings from the household telephone study. Comparable prevalence information on adults in jail and in state prisons is based on the adult arrestee study. Table 3.5 shows that the youth synthetic estimation study was used to estimate alcohol or drug intervention needs among household adolescents and school dropouts. Table 3.5 also shows that some information on IDUs was obtained from the household and arrestee studies; however, it was used for comparative purposes only. See Chapter 2 for a summary of the methods and findings from each of these three data sources.

To obtain information on treatment needs for the adult populations missed in the Maine family of studies (i.e., nontelephone households, the homeless, and the institutionalized) and for nonadolescent special populations and adolescent mothers, literature reviews were conducted.

Table 3.4 Sources of Substance Abuse Prevalence Data for Mutually Exclusive Adult 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.

Table 3.5 Sources of Substance Abuse Prevalence Data for Special Populations

Data Source	Childbearing Females		Other Special Populations of Adults		
	Women	Adolescents	Adult IDUs	Adults Charged with OUIs	Co-Morbid Adults
Household Study			X	X	X
Arrestee Study			X		
Youth Synthetic Estimation Study					
Literature Review	X	X	X	X	X

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

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.

The citation database (NEEDWIN.dat) consists of articles, books, and journals collected on issues such as substance abuse epidemiology; treatment; substance abuse among special populations such as childbearing women, homeless persons, the incarcerated, and youths; and

needs assessment methodologies. Approximately 5,400 abstracts are contained in this database. A literature review for the special population was conducted and articles were accessed from 1980 onward, using key words such as homeless, incarcerated, childbearing women, and youth. Relevant abstracts were examined and articles with direct relevance to this study (i.e., contained prevalence data) were reviewed. 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. 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 were used to estimate the prevalence rates of populations not targeted in the state needs assessment studies.

3.4.2 Generating Prevalence Rates

Information on substance *use* provided the baseline measurement for determining substance *abuse* prevalence rates. Substance use refers to alcohol and other drug use, excluding tobacco. Substance abuse also refers to alcohol or drug abuse. 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 and the arrestee 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. In this section, the definitions of substance abuse used among the mutually exclusive populations as well as among the special populations are described and summarized in Table 3.6.

3.4.2.1 Prevalence Estimates for Mutually Exclusive Populations. Prevalence estimates for adults living in households with telephones, incarcerated adults, adolescents in households, and adolescent school dropouts were taken directly from the Maine family of studies. This section provides a brief summary of the definitions of substance abuse used in these studies.

Substance *abuse* prevalence and, therefore, *treatment need* among adults living in households with telephones was defined according to whether a person had experienced serious adverse effects of alcohol or drug use or reported a pattern of substance use that strongly suggests the existence of a problem. Individuals were determined to be in need of treatment if they met

Table 3.6 Population Groups, Sources of Data, and Estimated Prevalence of the Need for Substance Abuse Services

Population	Source	Estimated Prevalence of Treatment or Intervention Need (Range)
Household adults with phones	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	Arrestee Survey	67.3
Household youths	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)
Adolescent mothers	Hall et al., 1993; Sarvella & Ford, 1993	14.5 (1 – 28)
Adult IDUs	Bray & Marsden, 1999	100%
Adults charged with OUI	Maine Department of Public Safety, Uniform Crime Reporting, 1997	100%

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

lifetime DSM-III-R (1987) criteria for alcohol or drug abuse or dependence, used alcohol and/or drugs within the past 12 months, and had one or more symptoms of dependence or abuse in the past 12 months. Need for treatment also was extended to include those exhibiting a problem pattern of use. Those defined as problem users also met DSM-III-R (1987) lifetime diagnostic criteria and reported at least one of the following:

- binge drinking in the past year;¹
- consumption of eight or more drinks on average in a 24-hour period (six or more drinks for women) in the past year;

¹Respondents were asked whether they had ever gone on binges where they kept drinking for a couple of days or more without sobering up.

- heavy alcohol consumption in the past year—defined as consuming on average five or more drinks in a 24-hour period (four or more drinks for women) at least once a week in the past year; or
- consumption of five or more drinks in a 24-hour period (four or more drinks for women) on 4 or more days in the past month.

For drugs other than alcohol, individuals were defined as having a current problem pattern of use in the past 12 months if they indicated:

- use of marijuana at least once a week,
- use of hallucinogens at least once a week,
- any use of cocaine (including crack), or
- any use of heroin or other opiates.

The substance abuse and treatment need definitions for the jail inmate populations were identical to those described above for adults living in households with telephones, with one caveat. Jail inmates also were considered in need of treatment if they did not meet the above criteria but were problem users.²

For the telephone household and incarcerated adult populations, when sample size was adequate, subgroup-level data were used to determine the prevalence of substance abuse needs for treatment by region, gender, age, and ethnicity. When the sample size was too small (i.e., cell size less than 30) to provide a reasonably accurate estimate of treatment needs, the state prevalence rate was used to calculate the proportion in need for that particular demographic subgroup.

Treatment and intervention need estimates for the population of household adolescents and adolescent school dropouts were based on data from the youth synthetic estimation study. Because there is no commonly accepted definition of substance abuse among adolescents, a less stringent measure, *problem use*, was used in this study. Current research suggests that problem drinking among adolescents can be categorized in three distinct ways: heavy intake or use intensity, frequent intoxication, and experiencing specific negative consequences of drinking (White, 1987). A summary of the literature surrounding measurement issues and illustrations of uses of these three criteria as applied to adolescent populations are provided in Appendix B. In

²There were slight variations in the operationalization of problem use among the arrestee and telephone household samples.

the absence of a commonly accepted measure of abuse, the youth synthetic estimation study developed several criteria that were consistent with this literature to come up with definitions for need for alcohol *and* drug treatment or intervention. In turn, a variable representing a need for alcohol *or* drug treatment or intervention was created. These measures are described below.

Indicators of heavy alcohol use and negative consequences from alcohol use were used to indicate need for alcohol treatment or intervention. *Heavy alcohol use* was defined as getting drunk on more than five occasions in the past year or consuming five or more alcoholic drinks on five or more occasions in the past month. Youths were categorized as having experienced negative consequences of alcohol use if they reported any of the following in the past year:

- spending a great deal of time getting alcohol, using alcohol, or getting over its effects for a period of a month or more;
- using alcohol much more often or in larger amounts than intended;
- building up a tolerance for alcohol so that the same amount had less effect than before;
- wanting or unsuccessfully trying to stop or cut down on alcohol use;
- experiencing any health problems as a result of alcohol use (e.g., such as liver disease, stomach disease, pancreatitis, feet tingling, numbness, memory problems, an accidental overdose, a persistent cough, a seizure or fit, hepatitis, or abscesses);
- avoiding school, work, or recreational activities because of alcohol use; or
- experiencing any emotional or psychological problems as a result of alcohol use.

Adolescents were categorized as in need of alcohol treatment or intervention if they met either of the two measures of heavy alcohol use (i.e., having been drunk on more than five occasions in the past year or having drunk five or more drinks on five or more occasions in the past month) or experienced at least one of the negative consequences of alcohol use.

Frequent illicit drug use and the presence or absence of negative consequences from illicit drug use were used to indicate need for treatment or intervention. Youths were categorized as frequent illicit drug users if they reported weekly use of marijuana, cocaine, hallucinogens, or heroin in the past year. The measure for negative consequences of drug use was analogous to the measure of negative consequences of alcohol use described above. Youths were categorized as

in need of drug treatment or intervention if they reported frequent drug use or experiencing at least one of the negative consequences of drug use.

3.4.2.2 Prevalence Estimates for Special Populations. An average prevalence rate of treatment need was calculated for populations not covered in the Maine demand and needs assessment family of studies and for special population groups based primarily on reviews of the literature (see Appendix A). For the missed, mutually exclusive adult population groups, the ranges represent the lowest and highest substance abuse prevalence rates reported in a study. For childbearing women and adolescent mothers, the ranges represent the lowest and highest rates of alcohol use during pregnancy or by childbearing women in the past month. Hence, these rates are likely to underestimate the prevalence of substance use because they do not include the use of illicit drugs.

Excluding the nontelephone household population, prevalence rates for demographic subgroups also were based on the literature. Demographic breakdowns for the nontelephone household population were proportional to demographic differences found in the household telephone study.

The number of injection drug users was estimated based on the Maine household telephone survey and the Washington, DC, Metropolitan Area Drug Study (DC*MADS) (Bray & Marsden, 1999). Although data from the Maine household telephone survey showed that 0.9% of the household population with telephones in Maine reported lifetime injection drug use, less than 1% reported injection drug use in the past year. However, DC*MADS found that 0.3% of adults living in households, institutions, or on the street were current IDUs. Because of the greater generalizability of DC*MADS to adult populations, the current IDU rate of 0.3% was used to estimate the number of IDUs in Maine. To estimate the number of IDUs in each of the three DMHMRSAS regions, the regional breakdown of lifetime IDUs from the Maine household telephone survey was used.

The number of adults in Maine arrested in 1997 for OUI was obtained from the Department of Public Safety, Uniform Crime Reporting. Both statewide and regional estimates of the OUI population were calculated based on county-level data.

The proportion of adults in need of substance abuse treatment who also have a mental disorder was estimated based on a study by Reiger and colleagues (1990) using data from the ECA study. According to their study, 15.1% of adults currently have a mental disorder, and 6.1% currently have a substance use disorder (alcohol, 4.8%; other drugs, 2.0%). Furthermore, 10.6% of adults with mental disorders have a co-occurring substance use disorder, and 24.4% of

adults with alcohol disorders and 29.9% of adults with other drug disorders have a co-occurring mental disorder. Using these data, the calculated prevalence rate of current mental illness among adults with substance abuse treatment needs was 26.2%. This rate, multiplied by the number in need of treatment, was used to estimate the number of adults in Maine who currently have a substance use disorder and a co-occurring mental disorder.

4. INTEGRATIVE STUDY RESULTS

4.1 Estimates of Population Bases

Based on 1990 U.S. Bureau of the Census data, the 1997 total population of Maine was estimated to be 1,242,051 people. Approximately 78% of the statewide population are adults (949,530 people) and the remaining 22% are 17 years of age or younger (292,251 youths). By region, the largest proportion of people (39.7%) live in Region II, which is a nine-county area in western Maine. Approximately 34.2% of the population dwell in Region I, comprised of two counties in the southwestern part of the state. The five-county easternmost region, Region III, consists of 26.1% of the state's population. Detailed population estimates by DMHMRSAS region and by county are provided in Appendix C.

4.1.1 Population Bases for Mutually Exclusive Groups

4.1.1.1 Statewide Population Estimates. The growth-adjusted population of Maine's mutually exclusive groups of adults was determined to be 949,530 people (Table 4.1). Nearly all adults reside in households, of which 92.5% (878,465 adults) live in households with phones and 3.4% (32,064 adults) live in households without phones. The nonhousehold adult population comprises roughly 4% of the total adult population (39,001 people). Nonhousehold populations include 5,052 homeless (0.5% of all adults), 11,163 institutionalized (1.2% of adults), 2,166 jail inmates or people in state prisons (0.23% of adults), and 20,590 people living in other group quarters (2.2% of adults). Statewide, 48% of adults are male (458,432 people) and 52% are female (491,098 people). The household populations have similar gender breakdowns. A greater percentage of institutionalized adults are female (71%). Conversely, the other, nonhousehold groups have a greater percentage of males (i.e., 55% of homeless, 93% of jail inmates, 97% of state prison inmates, and 58% of persons in other group quarters are male).

An estimated 108,667 people in Maine are adolescents between the ages of 12 and 17 years. Adolescents represent about 9% of the total population in the state. The vast majority (108,033 adolescents) live in households, the largest proportion of whom live in Region II (41%), followed by Region I (32%) and Region III (27%).

More than 66,000 students were enrolled in secondary schools for the 1996-97 school year in Maine. Approximately 92% were in public secondary schools and 8% were in private ones. A greater number of students were enrolled in Region II (41%), followed by Region I (31%) and Region III (29%). This distribution paralleled the population distribution of adolescents. An estimated 1,981 students (3.0%) dropped out of secondary schools over the year.

Table 4.1 Populations for Mutually Exclusive Groups in Maine, by DMHMRSAS Region

Region	Household Adults		Nonhousehold Adults						Total Adults	Youths		Total Adults and Youths
	Phone	No Phone	Homeless ¹	Institutionalized	Jail Inmates	State Prison Inmates	Federal Prison Inmates	Other Group Quarters ²		Household Youths ³	Adolescent Dropouts	
Region I	305,010	11,140	3,212	3,386	255	510	0	5,314	328,827	34,855	681	363,682
Region II	347,187	12,658	641	5,001	343	625	0	5,789	372,244	44,323	760	416,567
Region III	226,268	8,266	1,229	2,776	233	200	0	9,487	248,459	28,855	540	277,314
Statewide	878,465	32,064	5,082	11,163	831	1,335	0	20,590	949,530	108,033	1,981	1,057,563

¹Census estimates were adjusted based on number of homeless in Maine’s Office of Substance Abuse Data System (OSADS).

²Other group quarters includes college dormitories and military barracks.

³Adolescents are defined as between the ages of 12 and 17. Household youths include school dropouts.

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

Approximately 38% of those were in Region II, 34% were in Region I, and 27% were in Region III. School dropouts represented approximately 2% of household adolescents. Region I had the highest secondary school dropout rate of 3.3%, while both Region II and Region III had a dropout rate of 2.8%. Among enrolled students, 97% were still in school at the end of the school year. The distribution also was similar to the household adolescent population, with 41% in Region II, 31% in Region I, and 29% in Region III.

The total adult-only population in Maine, broken down by demographic characteristic, is provided in Table 4.2. With regard to age, the larger proportion of adults in Maine (41% of all adults) are between the ages of 25 and 44 (391,107 adults), 29% are between the ages of 45 and 64 (274,133 adults), 18% are aged 65 or older (173,558 adults), and 12% are between the ages of 18 and 24 years (110,732 adults). Again, the age breakdown of household populations parallels the state distribution. The homeless and incarcerated populations tend to be younger—more than 70% of adults in these groups are younger than 45 years old. The other group quarters population is very young—nearly all are in the 18 to 24 age group. In contrast, Maine’s institutionalized population tends to be older—87% of this population group are aged 65 years or older.

Table 4.2 Total Adult Population in Maine, by Demographic Breakdown

Mutually Exclusive Group	Gender		Age				Ethnicity		Total
	Male	Female	18-24	25-44	45-64	65+	White, non-Hispanic	Other	
Household									
Phone	421,393	457,072	91,298	369,183	261,209	156,775	861,815	16,650	878,465
No phone	15,381	16,683	3,341	13,500	9,521	5,702	31,257	807	32,064
Nonhousehold									
Homeless	4,461	621	1,077	2,483	1,207	315	4,752	330	5,082
Institutionalized	3,267	7,896	105	293	1,099	9,666	11,059	104	11,163
Jail inmates	775	56	291	470	66	4	773	58	831
State prison inmates	1,291	44	317	852	155	11	1,255	80	1,335
Federal prison inmates	0	0	0	0	0	0	0	0	0
Other group quarters ¹	11,865	8,725	14,303	4,326	876	1,085	18,958	1,632	20,590
Statewide Total	458,433	491,097	110,732	391,107	274,133	173,558	929,869	19,661	949,530

¹Other group quarters includes college dormitories and military barracks.

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

The vast majority of Maine adults are of white, non-Hispanic ethnicity and only 2% are of another race or ethnicity. Similar patterns were observed among each of the other mutually exclusive groups. The percentage of white, non-Hispanic adults in individual groups ranged from 92% of the other group quarters population to 99% among the institutionalized. Among the homeless and incarcerated, 94% are white, non-Hispanic.

4.1.1.2 Regional Population Estimates. The household populations have regional breakdowns similar to what was observed statewide, with 34.7% of the total household population residing in Region I, 39.5% in Region II, and 25.8% in Region III. The institutionalized and incarcerated populations had the largest proportion of their populations (45%) in Region II, followed by Region I (30% and 58%) and Region III (25% and 20%). However, the homeless and other group quarters populations had markedly different distributions across regions. The smallest number of homeless (641 adults, or 13% of the total homeless population) lived in Region II, while the largest (3,212 adults, or 63% of the homeless population) lived in Region I. Among the other group quarters population, similar numbers of adults lived in Region I (5,314 adults, or 26%) and Region II (5,789 adults, or 28%), while almost half lived in Region III.

The adult population distribution for Region I and Region II across mutually exclusive groups paralleled the statewide picture; however, the distribution in Region III differed. Although the greatest proportion of adults in Region III are similarly living in households with phones, the number of jail inmates exceeds the count of state prison inmates, and the other group quarters population outnumbers the nontelephone household population.

Gender breakdowns for Maine's planning regions can be found in Table 4.3. The gender breakdowns varied less among the household populations than among the nonhousehold populations. In all three regions, approximately 48% of adults in phone and nonphone households are male and 52% are female—the same as the state breakdown. The proportion of males varied slightly across regions for the institutionalized and incarcerated populations—institutionalized from 27% to 31%, jail inmates from 92% to 94%, and state prison inmates from 91% to 100%. Among the other group quarters populations, the proportion of males in Region III differed considerably from the other regions. Approximately half of adults in other group quarters are male in Region I and Region II. In contrast, in Region III, approximately two thirds of these populations are male. In addition, the majority of adults in the estimated homeless population were males, ranging from 85% in Region II to 89% in Region I.

Table 4.3 Regional Adult Populations, by Gender

Mutually Exclusive Group	Region I		Region II		Region III	
	Male	Female	Male	Female	Male	Female
Household						
Phone	144,889	160,121	167,241	179,946	109,263	117,005
No phone	5,292	5,848	6,098	6,560	3,991	4,275
Nonhousehold						
Homeless	2,859	353	545	96	1,057	172
Institutionalized	918	2,468	1,568	3,433	781	1,995
Jail inmates	234	21	322	21	219	14
State prison inmates	466	44	625	0	200	0
Federal prison inmates	0	0	0	0	0	0
Other group quarters ¹	2,885	2,429	2,863	2,926	6,117	3,370
Statewide Total	157,543	171,284	179,262	192,982	121,628	126,831

¹Other group quarters includes college dormitories and military barracks.

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

More regional variation was observed for age breakdowns. Table 4.4 presents regional populations broken down by age. The age breakdowns for household and institutionalized populations were consistent between regions and differed only 1% or 2% from the state breakdown. Among the household populations, 10% to 11% were aged 18 to 24, 41% to 44% were aged 25 to 44, 28% to 31% were aged 45 to 64, and 17% to 18% were aged 65 or older. Less than 2% of institutionalized adults were 18 to 24 years old, less than 4% were 25 to 44 years old, 8% to 12% were 45 to 64 years old, and 85% to 87% were 65 years old or older. The jail inmate population differed slightly between regions. The proportion of adults in jails aged 18 to 24 ranged from 32% to 40%; 25 to 44, from 52% to 59%; 45 to 64, from 7% to 9%; and 65 or older, from 0% to 1%.

The age distribution among the homeless, people in state prisons, and those living in other group quarters varied greatly, with differences ranging as high as 17%. Among the homeless, 16% to 24% were 18 to 24 years old, 36% to 58% were 25 to 44, 17% to 36% were 45 to 64, and 4% to 10% were 65 or older. Homeless adults in Region I were younger, with almost one quarter being 18 to 24 years old. Homeless adults in Region II were older, with over one third being 45 to 64 years old and 10% being 65 or older. Over half of adults in Region III were 25 to 44 years old. Among state prison inmates, 15% to 35% were 18 to 24 years old, 57% to 70% were 25 to 44, 7% to 15% were 45 to 64, and 1% were 65 or older. In Region I, state prison inmates were younger, with over one third being 18 to 24 years old and only 8% being

Table 4.4 Regional Adult Populations, by Age

Mutually Exclusive Group	Region I				Region II				Region III			
	18-24	25-44	45-64	65+	18-24	25-44	45-64	65+	18-24	25-44	45-64	65+
Household												
Phone	32,185	133,653	86,805	52,367	35,538	143,244	104,944	63,461	23,575	92,286	69,460	40,947
No phone	1,178	4,891	3,166	1,905	1,299	5,230	3,822	2,307	864	3,379	2,533	1,490
Nonhousehold												
Homeless	771	1,542	771	128	115	231	231	64	191	710	205	123
Institutionalized	60	92	353	2,881	42	194	407	4,358	3	7	339	2,427
Jail inmates	87	147	20	1	110	203	30	0	94	120	16	3
State prison inmates	176	293	37	4	96	436	88	5	45	123	30	2
Federal prison inmates	0	0	0	0	0	0	0	0	0	0	0	0
Other group quarters ¹	3,501	1,183	259	371	4,270	582	327	610	6,532	2,561	290	104
Statewide Total	37,958	141,801	91,411	57,657	41,470	150,120	109,849	70,805	31,304	99,186	72,873	45,096

¹Other group quarters includes college dormitories and military barracks.

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

45 years old or older. Among state prison inmates in Region II, similar numbers of adults (15%) were 18 to 24 years old and 45 years or older. Among adults in other group quarters, 66% to 74% were 18 to 24 years old, 10% to 27% were 25 to 44, 3% to 6% were 45 to 64, and 1% to 11% were 65 or older. Only 4% of adults in other group quarters in Region III were 45 years old or older. Region II had similar numbers of adults (10% to 11%) who were 25 to 44 years old and 65 years old or older, while almost three fourths were 18 to 24 years old.

The ethnicity breakdowns within each mutually exclusive group varied little across the three regions. Regional populations broken down by ethnicity are presented in Table 4.5. The proportion of homeless adults who were white, non-Hispanic ranged from a low of 91% in Region I to a high of 98% in Region II. The proportions of white, non-Hispanic adults among the other groups were 98% to 99% in telephone households, 97% to 98% in nontelephone households, 98% to 99% of the institutionalized, 91% to 94% of jail inmates, 93% to 96% of state prison inmates, and 91% to 94% in other group quarters.

County-level population estimates of the mutually exclusive adult populations are provided in Appendix D.

Table 4.5 Regional Adult Populations, by Ethnicity

Mutually Exclusive Group	Region I		Region II		Region III	
	White, non-Hispanic	Other	White, non-Hispanic	Other	White, non-Hispanic	Other
Household						
Phone	298,392	6,618	342,157	5,030	221,266	5,002
No phone	10,820	320	12,412	246	8,025	241
Nonhousehold						
Homeless	2,946	266	631	10	1,175	54
Institutionalized	3,327	59	4,975	26	2,757	19
Jail inmates	238	17	324	19	211	22
State prison inmates	473	37	591	34	191	9
Federal prison inmates	0	0	0	0	0	0
Other group quarters ¹	4,875	439	5,457	332	8,626	861
Statewide Total	321,071	7,756	366,547	5,697	242,251	6,208

¹Other group quarters includes college dormitories and military barracks.

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

4.1.2 Population Bases for Special Populations

The state and regional population estimates for special populations are provided in Table 4.6. The number of live births by age of mother (i.e., 18 or older) in 1997 was used to estimate the annual number of women giving birth (referred to as childbearing women) in Maine. Based on the birth records, approximately 13,228 women gave birth statewide in 1997 (representing 5.3% of all women of childbearing age). The largest proportion of childbearing women for that year lived in Region I (39%). With regard to the size of the adolescent mother population (adolescents in this case are defined as females between the ages of 10 and 17 years), an estimated 703 adolescents statewide were pregnant in 1997. The greatest proportion of adolescent mothers lived in Region II (45%). The estimated size of the other special population groups of adults (i.e., people who are injection drug users, adults charged with operating a vehicle while under the influence of alcohol [OUI], and adults with co-morbid conditions) is discussed in Section 4.2.3.

Table 4.6 Size of Special Populations in Maine

Special Population Group	Statewide	Region I	Region II	Region III
Childbearing women ¹	13,228	4,994	5,097	3,137
Adolescent mothers ²	703	244	317	140

¹Based on the number of live births to women 18 years or older.

²Adolescent mothers includes live births, abortions, and fetal deaths to females aged 10 to 17. The statewide total includes two abortions of an unknown county.

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

4.2 Estimates of Substance Abuse Treatment Needs Across Mutually Exclusive Populations

4.2.1 Statewide Estimates of Substance Abuse Treatment Needs Across Mutually Exclusive Populations

Table 4.7 provides statewide estimates of substance abuse treatment needs for each of the mutually exclusive populations. The integrative study identified approximately 90,947 individuals (or 8.8% of the total population of adults and household adolescents comprising the mutually exclusive groups in this study) who are in need of substance abuse services. Adults identified from the telephone household survey data alone (71,233 people) made up the largest proportion (83.1%) of the mutually exclusive populations in need. Approximately 9.0% of the total population in need were youths (8,029 youths) identified through the synthetic estimation study on household youths. The next largest proportion of people in need of substance abuse services (4.7% of the total population in need) were adults

living in households without phones. Institutionalized adults comprised about 4.6% of the total population in need. Incarcerated adults (jail and state prison inmates) made up 1.6% (or 1,459 people) of the those in need. To fulfill the Block Grant application requirements, estimates of substance abuse treatment needs by age, gender, and ethnicity among adult populations are provided in Appendix E. Table E.1 provides the statewide breakdowns, and Tables E.2, E.3, and E.4 provide the same for Region I, Region II, and Region III, respectively.

Table 4.7 Statewide Estimates of Substance Abuse Treatment Needs Across Mutually Exclusive Populations

Mutually Exclusive Group	Population Size	Prevalence¹	Number in Need
Household Adults			
Phone	878,465	8.1 ²	71,233
No phone	32,064	13.3	4,255
Nonhousehold Adults			
Homeless	5,082	36.0	1,830
Institutionalized	11,163	37.1	4,141
Jail inmates	831	67.3	560
State prison inmates	1,335	67.3	899
Total Adults	928,940³	–	82,918
Youths			
Household youth (including school dropouts) ⁴	108,033	7.4 ⁵	8,029
School dropouts ⁶	1,981	25.1	496
Statewide Total³	1,036,973	8.6	90,947

¹Rates rounded to the nearest tenth.

²Estimated rate for need of treatment from the 1997 Maine Household Telephone Survey.

³Total does not include federal prison inmates or people living in other group quarters.

⁴Adolescents are 12 to 17 years old.

⁵Estimated rate for need of treatment from Study 3: Estimating Need for Treatment or Intervention Among Youth in Maine Counties: A Synthetic Estimation Approach.

⁶Students who dropped out of secondary school. Secondary schools may include grades less than 9.

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

As illustrated in Table 4.8, the nontelephone household population, as well as all of the nonhousehold populations, was overrepresented among adults in need of treatment compared to their distribution in the total adult population. Excluding adults in federal prisons and other group quarters, the nontelephone and nonhousehold populations represented approximately 5% of the adult population, but their representation increased to 14.1% among the adult population in need of treatment. This increase is attributed to nontelephone and nonhousehold groups having

Table 4.8 Comparison of Distribution of Total Adult Population and Total Adults in Need of Treatment

Mutually Exclusive Group	Percent Distribution ^{1,2}	
	Total Adult Population	Total Adults in Need of Treatment
Household		
Phone	94.6%	85.9%
No phone	3.5%	5.1%
Nonhousehold		
Homeless	<0.5%	2.2%
Institutionalized	1.2%	5.0%
Jail inmates	0.1%	0.7%
State prison inmates	0.1%	1.1%

¹Numbers may not add up to 100.0 because of rounding.

²Total does not include federal prison inmates and people living in other group quarters.

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

higher rates of treatment needs compared with the telephone household population. The telephone household group still comprised the majority of the adult population in need because of its large representation in that population. However, with the lowest prevalence of treatment needs, its representation dropped from 94.6% of the adult population to 85.9% among adults in need.

4.2.1.1 Statewide Estimates of Adult Substance Abuse Treatment Needs, by Gender.

The treatment needs data by gender are provided in Table 4.9 and illustrated in Figure 4.1. Statewide among adults, the prevalence rate for men was 12.9% and only 5.0% for women—the male-to-female ratio of the total number of adults in need of treatment was estimated to be 2.4:1. The prevalence rate for substance abuse treatment needs was much higher among household populations of males than among females. These prevalence rate differences translate into an estimated 54,347 males in contrast to 21,141 females in need of substance abuse services. Similarly, the prevalence rate was greater among males for all nonhousehold groups of adults but by much less of a margin. In terms of actual numbers of nonhousehold adults in need, males outnumbered females as well, with the exception of institutionalized adults. In this case, 68% of the institutionalized population (2,798 people) were female, whereas 32% (1,343 people) were male.

Table 4.9 Statewide Estimates of Adult Substance Abuse Treatment Needs, by Gender

Mutually Exclusive Group	Prevalence ¹		Number in Need	
	Male	Female	Male	Female
Household				
Phone	12.2	4.4	51,281	19,952
No phone	19.9	7.1	3,066	1,189
Nonhousehold				
Homeless	36.5	32.5	1,628	202
Institutionalized	41.1	35.4	1,343	2,798
Jail inmates	68.1	58.0	528	32
State prison inmates	67.7	58.0	873	26
Statewide Total²	12.9	5.0	58,719	24,199

¹Rates rounded to the nearest tenth.

²Total does not include federal prison inmates and people living in other group quarters.

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

Figure 4.1 Gender Differences in Statewide Treatment Needs Across Mutually Exclusive Populations of Adults



4.2.1.2 Statewide Estimates of Adult Substance Abuse Treatment Needs, by Age.

Treatment needs also were examined by age (Figure 4.2). These data are presented in Table 4.10. By far, the largest proportion of people needing treatment were between the ages of 25 and 44 years (42,489 adults), accounting for over half the number in need. This group had the largest population and the second highest prevalence rate for need of treatment (10.8%). Although the 18- to 24-year-old age group is the smallest in population, its very high prevalence rate of 21.8% made it the second highest in terms of need (21,098 people), accounting for more

Figure 4.2 Age Differences in Statewide Treatment Needs Across Mutually Exclusive Populations of Adults

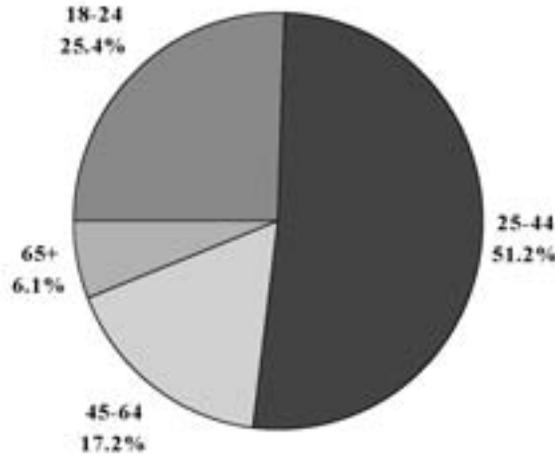


Table 4.10 Statewide Estimates of Adult Substance Abuse Treatment Needs, by Age

Mutually Exclusive Group	Prevalence ¹				Number in Need			
	18-24	25-44	45-64	65+	18-24	25-44	45-64	65+
Household								
Phone	21.0	10.4	4.8	0.8	19,181	38,266	12,485	1,301
No phone	34.3	16.9	7.8	1.4	1,145	2,288	743	79
Nonhousehold								
Homeless	30.3	36.0	39.9	40.6	326	894	482	128
Institutionalized	48.7	47.9	36.7	36.7	51	140	404	3,546
Jail inmates	65.2	68.4	69.1	69.1	190	321	46	3
State prison inmates	64.8	68.0	68.8	68.2	205	580	107	7
Statewide Total²	21.8	10.8	5.1	2.9	21,098	42,489	14,267	5,064

¹Rates rounded to the nearest tenth after computations.

²Total does not include federal prison inmates and people living in other group quarters.

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

than a quarter of the treatment need. The older age groups had much lower prevalence rates of 5.1% for those aged 45 to 64 years and 2.9% for those 65 years or older. Consequently, these older groups represented a smaller proportion of adults in need, with only 17% being 45 to 64 years old and 6% being 65 years or older.

The pattern of treatment need prevalence by age varied across mutually exclusive groups of adults. Among the household and institutionalized populations, young adults had the highest prevalence rates. However, among the homeless and incarcerated populations, prevalence estimates were greater among the older adults. The greatest number of adults in need of treatment services were 25 to 44 years old in all the mutually exclusive groups except the institutionalized. Similar to the statewide totals, those 25 to 44 years old represented the majority in need among the household and incarcerated populations (54% to 62%), followed by those aged 18 to 24 (27%), those aged 45 to 64 (10% to 18%), and those aged 65 or older (0.5% to 1%). The homeless also had the largest number needing treatment among 25- to 44-year-olds (49%), but they were followed by those 45 to 64 years old (26%), those 18 to 24 years old (18%), and those 65 years or older (7%). In contrast to the other mutually exclusive groups, institutionalized adults needing substance abuse treatment tended to be older. The majority of institutionalized adults in need of treatment were in the 65 years or older age group (86%), followed by those aged 45 to 64 years (10%), those aged 25 to 44 years (3%), and those aged 18 to 24 years (1%).

4.2.1.3 Statewide Estimates of Adult Substance Abuse Treatment Needs, by Ethnicity. Substance abuse treatment need data by ethnicity are provided in Table 4.11 and illustrated in Figure 4.3. The white, non-Hispanic population had a lower prevalence rate of treatment need (8.6%) compared with the other ethnicity population (13.8%). Still, the vast majority of adults needing treatment (97%, or 80,213 adults) were white, non-Hispanic because

Table 4.11 Statewide Estimates of Adult Substance Abuse Treatment Needs, by Ethnicity

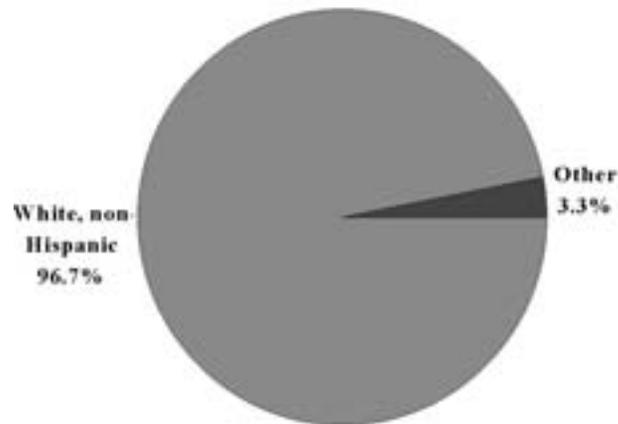
Mutually Exclusive Group	Prevalence ¹		Number in Need	
	White, non-Hispanic	Other	White, non-Hispanic	Other
Household				
Phone	8.0	13.6	68,961	2,272
No phone	13.0	22.3	4,075	180
Nonhousehold				
Homeless	35.9	38.2	1,704	126
Institutionalized	37.1	32.9	4,107	34
Jail inmates	67.4	67.1	521	39
State prison inmates	67.4	67.1	845	54
Statewide Total²	8.6	13.8	80,213	2,705

¹Rates rounded to the nearest tenth after computations.

²Total does not include federal prison inmates and people living in other group quarters.

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

Figure 4.3 Ethnic Differences in Statewide Treatment Needs Across Mutually Exclusive Populations of Adults



of the greater number of white, non-Hispanic people in the population. Only 3% of adults in need (2,705 adults) were of another ethnicity.

Differences in prevalence rates by ethnicity were observed across the mutually exclusive groups. As in the state, the white, non-Hispanic population in the household and homeless groups experienced lower prevalence rates (telephone household: 8.0%, nontelephone household: 13.0%, and homeless: 35.8%) compared with the other ethnicity population (telephone household: 13.6%, nontelephone household: 22.3%, and homeless: 38.0%). In contrast, the white, non-Hispanic population in the institutionalized and incarcerated groups had higher prevalence rates (37.1% and 67.4%, respectively) than the other ethnicity population (32.9% and 67.1%, respectively). Regardless of which ethnic group had higher prevalence rates, in all mutually exclusive groups, the proportion of adults in need who were white, non-Hispanic was much greater than the proportion who were of another ethnicity. The percentage of adults needing treatment who were white, non-Hispanic ranged from 93% among the homeless and jail inmate populations to 99% among the institutionalized population. Among the household populations, 96% to 97% were white, non-Hispanic.

4.2.2 Regional Estimates of Substance Abuse Treatment Needs Across Mutually Exclusive Populations

Table 4.12 provides regional estimates of adult substance abuse treatment needs among the mutually exclusive population groups. Region I and Region II had similar numbers of adults in need of substance abuse treatment while Region III had the smallest number. In Region III, 19,549 adults (24%) were in need of treatment, compared with 32,261 (39%) in

Table 4.12 Regional Estimates of Substance Abuse Treatment Needs Across Mutually Exclusive Populations

Region	Household Adults		Nonhousehold Adults					Youths			Total in Need ¹	Overall Prevalence ²
	Phone	No Phone	Homeless	Institutionalized	Jail Inmates	State Prison Inmates	Total Adults	Household Youths ³	School Dropouts ⁴	Total Youths		
Region I	27,756	1,660	1,074	1,256	172	343	32,261	2,717	175	2,717	34,978	9.4
Region II	26,733	1,595	273	1,855	231	421	31,108	3,259	190	3,259	34,367	8.2
Region III	16,744	1,000	483	1,030	157	135	19,549	2,053	131	2,053	21,602	7.7
Statewide	71,233	4,255	1,830	4,141	560	899	82,918	8,029	496	8,029	90,947	8.6

¹Total does not include federal prison inmates and people living in other group quarters.

²Rates rounded to the nearest tenth.

³Household youths (aged 12 to 17) include school dropouts.

⁴Students who dropped out of secondary school. Secondary schools may include grades less than 9.

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

Region I and 31,108 (37%) in Region II. The household populations experienced similar breakdowns. Among the institutionalized and incarcerated populations, the greatest number of adults in need was found in Region II. The percentage distribution needing substance abuse treatment among these groups ranged from 41% to 47% in Region II, followed by 30% to 38% in Region I and 15% to 28% in Region III. In contrast to the other mutually exclusive groups, the smallest proportion of treatment needs among the homeless was in Region II (15%). The largest proportion was in Region I (59%). The proportion of homeless needing treatment in Region II appears substantially lower than the proportions in Regions I and III. This may be due, in part, to the fact that there is no homeless shelter in Region II. Therefore, homeless that may actually reside in Region II are utilizing shelters and treatment services in other regions.

Overall, 7.4%, or 8,029 household adolescents, were estimated to need substance abuse intervention. The largest proportion of youths (41%) in need of substance abuse-related services live in Region II (3,259 youths), which has the largest adolescent population. The overall prevalence rate for substance abuse problems among youths was observed to be about 7.3% in Region I. The second largest proportion of youths in need (34%) reside in Region I. Approximately 2,717 youths were identified in this region, where about 7.8% of adolescents have a substance abuse-related problem. In Region III, an estimated 7.1% of the youths were in need—2,053 individuals, or 25% of the total statewide population of youths in need.

Approximately 25% of school dropouts (496 adolescents) were expected to need substance abuse-related services. These high-risk youths were fairly evenly distributed across the three DMHMRSAS regions. In terms of actual numbers of youths, most school dropouts in need of such services live in Region II (190 adolescents) and comprise about 38% of all school dropouts with substance abuse-related problems. In Region I, 175 of the total 681 adolescent dropouts were identified as needing substance abuse intervention. These youths represented about 35% of the total population of high-risk youths. In Region III, a somewhat smaller proportion (26% of the total population of school dropouts) were identified (131 youths).

4.2.2.1 Regional Estimates of Adult Substance Abuse Treatment Needs, by Gender.

Regional estimates of the number of adults in need of treatment by gender are provided in Table 4.13. As in the statewide estimates, males in each region were more likely to need substance abuse treatment than females (Figure 4.4). In each region, 67% to 79% of those in need were male while only 21% to 33% were female. The regional distribution differed slightly between males and females. Among males needing treatment, 37% were in Regions I and II and 26% were in Region III. Among females, 43% of those in need of treatment were in Region I, 40% were in Region II, and 17% were in Region III. Detailed tables of regional estimates of substance abuse treatment needs broken down by mutually exclusive group and by gender can be found in

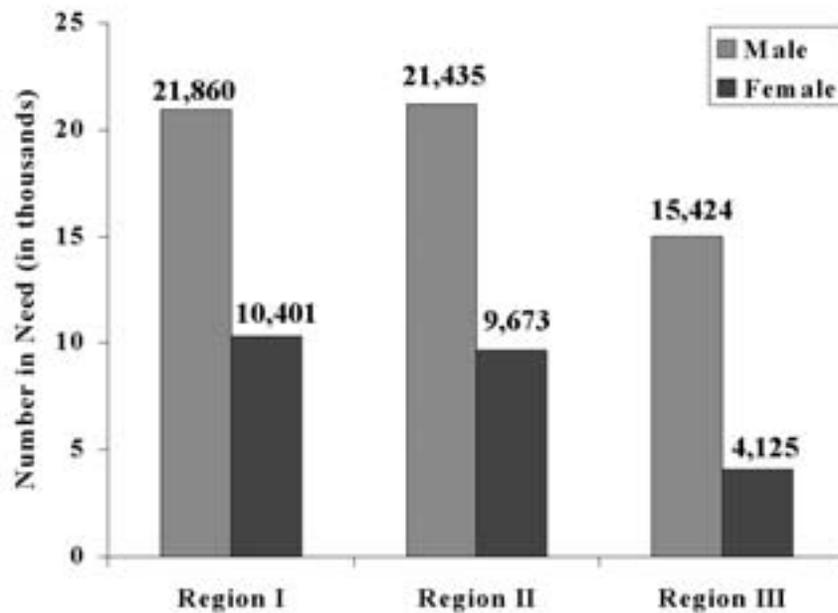
Table 4.13 Regional Estimates of Adult Substance Abuse Treatment Needs, by Gender

Mutually Exclusive Group	Region I		Region II		Region III	
	Male	Female	Male	Female	Male	Female
Household						
Phone	18,913	8,843	18,790	7,943	13,578	3,166
No phone	1,132	528	1,122	473	812	188
Nonhousehold						
Homeless	959	115	241	32	428	55
Institutionalized	379	877	642	1,213	322	708
Jail inmates	160	12	219	12	149	8
State prison inmates	317	26	421	0	135	0
Regional Total¹	21,860	10,401	21,435	9,673	15,424	4,125

¹Total does not include federal prison inmates and people living in other group quarters.

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

Figure 4.4 Gender Differences in Regional Treatment Needs Across Mutually Exclusive Populations of Adults

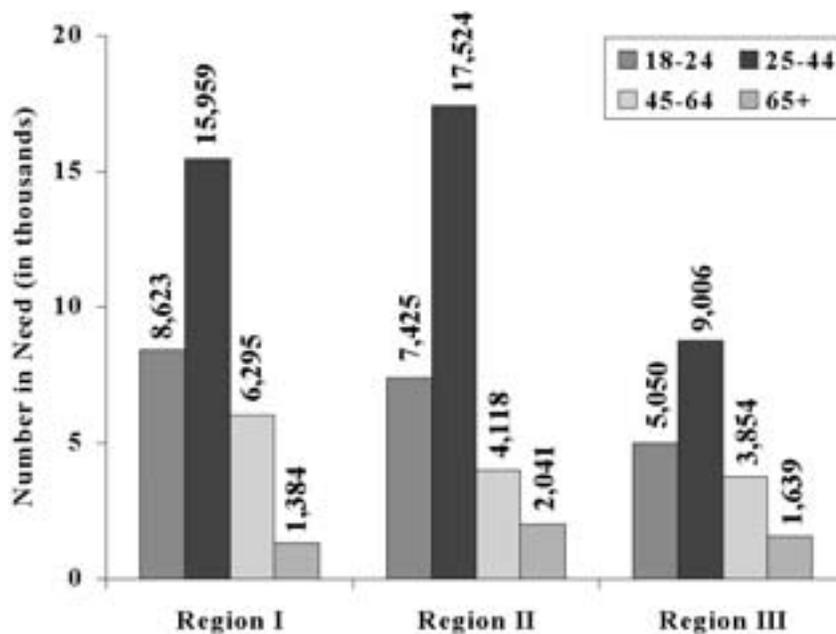


Appendix F. The distribution of need by gender varied across the mutually exclusive groups. More regional variation was observed among the household, homeless, and state prison populations. The percentage of those in need who were males ranged from 68% to 81% in households, 87% to 93% of the homeless, and 93% to 100% in state prisons. Less variation occurred in the institutionalized and jail populations. The percentage of those in need who were males in these populations ranged from 30% to 35% of the institutionalized and from 93% to 95% of jail inmates.

4.2.2.2 Regional Estimates of Adult Substance Abuse Treatment Needs, by Age.

Similar to the state estimates, the largest numbers in need in each of the regions were observed in those aged 25 to 44 years (46% to 57%), followed by those 18 to 24 years (24% to 27%), those 45 to 64 years (13% to 20%), and those 65 years or older (4% to 8%) (Figure 4.5). In the age groups for those 18 to 24 years and those 45 to 64 years, the greatest proportion of adults in need of substance abuse treatment were found in Region I, followed by Region II. Among 18- to 24-year-olds needing treatment, 41% were in Region I, 35% were in Region II, and 24% were in Region III. Similarly, in the 45 to 64 age group, the largest proportion of those in need of treatment were in Region I (44%), followed by 29% in Region II and 27% in Region III. In contrast, of those 25 to 44 years and those 65 years or older, the greatest proportion of adults needing treatment were found in Region II. Among adults in need aged 25 to 44, 42% were in

Figure 4.5 Age Differences in Regional Treatment Needs Across Mutually Exclusive Populations of Adults



Region II, 37% were in Region I, and 21% were in Region III. In the 65 or older age group, 41% of those in need of treatment were in Region II. However, this was followed by 32% in Region III and 27% in Region I.

Appendix G provides regional estimates of substance abuse treatment needs by age; Table 4.14 is an abbreviated table showing only the number in need. Regional variation across the mutually exclusive groups in the distribution of need by age was similar to the variation found for gender. Greater regional variation was observed among the household, homeless, and state prison populations, especially in the middle and younger age groups. Among household adults who were in need of treatment, the percentage who were 25 to 44 years old ranged from 48% to 60% and the percentage who were 45 to 64 years old ranged from 13% to 20%. Among homeless adults who were in need of treatment, 35% to 58% were 25 to 44 years old and 18% to 39% were 45 to 64 years old. In state prisons, 15% to 33% of adults needing treatment were 18 to 24 years old and 58% to 70% were 25 to 44 years old. Although the greatest variation was still observed in the middle and younger age groups, less variation occurred in the institutionalized and jail populations. In institutions, 0.3% to 5% of adults needing treatment were 25 to 44 years old and 8% to 12% were 45 to 64 years old. Among jail inmates who were in need of treatment, 31% to 39% were 18 to 24 years old and 53% to 60% were 25 to 44 years old.

4.2.2.3 Regional Estimates of Adult Substance Abuse Treatment Needs, by Ethnicity. Paralleling the state distribution, adults in need of substance abuse treatment in each of the regions were more likely to be white, non-Hispanic than of another ethnicity (Figure 4.6). The percentage of adults in need who were white, non-Hispanic ranged from 96% in Region I to 99% in Region III. For both white, non-Hispanic adults and adults of another ethnicity, the greatest number needing substance abuse treatment was found in Region I. Among white, non-Hispanic adults needing treatment, 38% were in Regions I and II and 24% were in Region III. The pattern differed among adults of another ethnicity—a greater proportion of need was observed in Region I (50%), a slightly smaller proportion in Region II (40%), and a much smaller proportion in Region III (10%).

Differences in the distribution of needs across regions for the mutually exclusive groups also were examined by ethnicity. Adult substance abuse treatment need estimates for each region by ethnicity can be found in Appendix H; Table 4.15 is an abbreviated table showing only the number in need. Slight regional variation by ethnicity was observed among the majority of the mutually exclusive groups. The percentage of those in need who were white, non-Hispanic ranged from 96% to 99% in telephone households, 95% to 98% in nontelephone households, 91% to 96% of the homeless population, 98% to 100% of the institutionalized, 91% to 94% of jail inmates, and 93% to 96% in state prisons.

Table 4.14 Regional Estimates of Adult Substance Abuse Treatment Needs, by Age

Mutually Exclusive Group	Region I				Region II				Region III			
	18-24	25-44	45-64	65+	18-24	25-44	45-64	65+	18-24	25-44	45-64	65+
Household												
Phone	7,745	14,232	5,511	268	6,816	15,953	3,571	393	4,620	8,081	3,403	640
No phone	462	853	329	16	407	952	212	24	276	483	202	39
Nonhousehold												
Homeless	216	530	286	42	47	92	105	29	63	272	91	57
Institutionalized	29	44	129	1,054	21	93	149	1,592	1	3	126	900
Jail inmates	57	100	14	1	72	138	21	0	61	83	11	2
State prison inmates	114	200	26	3	62	296	60	3	29	84	21	1
Regional Total¹	8,623	15,959	6,295	1,384	7,425	17,524	4,118	2,041	5,050	9,006	3,854	1,639

¹Total does not include federal prison inmates or people living in other group quarters.

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

Figure 4.6 Ethnic Differences in Regional Treatment Needs Across Mutually Exclusive Populations of Adults

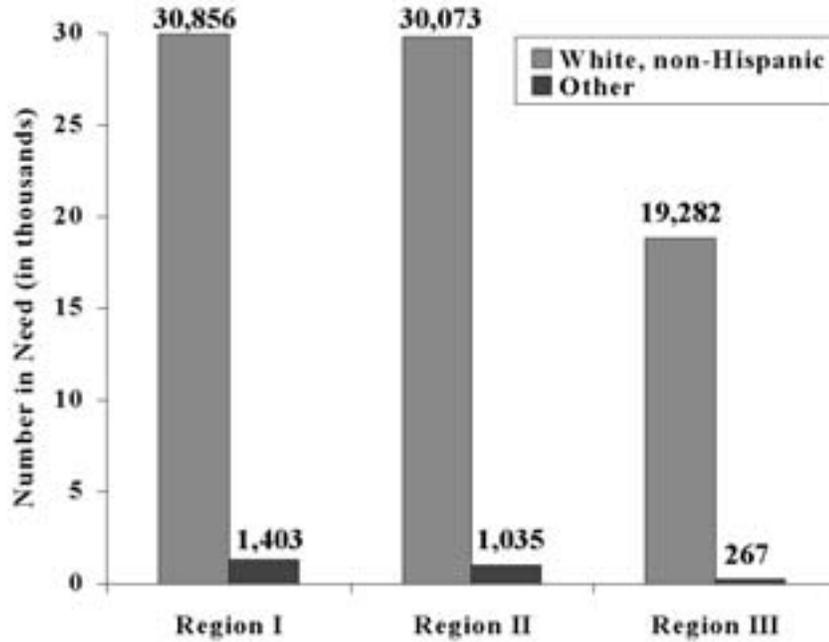


Table 4.15 Regional Estimates of Adult Substance Abuse Treatment Needs, by Ethnicity

Mutually Exclusive Group	Region I		Region II		Region III	
	White, non-Hispanic	Other	White, non-Hispanic	Other	White, non-Hispanic	Other
Household						
Phone	26,603	1,153	25,816	917	16,542	202
No phone	1,569	91	1,522	73	984	16
Nonhousehold						
Homeless	970	104	273	0	461	22
Institutionalized	1,237	19	1,846	9	1,024	6
Jail inmates	161	11	218	13	142	15
State prison inmates	318	25	398	23	129	6
Regional Total¹	30,858	1,403	30,073	1,035	19,282	267

¹Total does not include federal prison inmates or people living in other group quarters.

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

4.2.3 County-Level Estimates of Adult Substance Abuse Treatment Needs

County-level estimates of substance abuse treatment needs in Maine were available only for the mutually exclusive populations of adults and are provided in Table 4.16. The overall prevalence rates across counties ranged from a low of 3.7% of the total population in Lincoln County to a high of 13% in Somerset County. In terms of actual numbers of adults in need of substance abuse services, the populations ranged from 909 individuals in need in Lincoln County to 20,799 individuals in need in Cumberland County. The pattern of household adults in need mirrored the pattern of the overall adult population in need. In contrast, the pattern of need among nonhousehold populations varied considerably from the total adult population. For example, in only a few counties was a need for substance abuse treatment services for state prison inmates observed. Further, the number of people in need who live in institutions ranged from only 39 in Waldo County to 696 in Cumberland County, and the number of homeless ranged from 7 in Sagadahoc and Washington Counties to 870 in Cumberland County.

The variance in prevalence rates between counties within DMHMRSAS regions demonstrates the heterogeneity of treatment need, which is masked at the regional level. However, these estimates should be viewed with caution because many of the telephone household estimates had large standard errors because of small sample sizes in the survey data. Further, county estimates of need by demographic breakdown were not calculated due to small sample sizes. However, given the findings in this report of the sizable differences across demographic characteristics of Maine's population, additional variation in county-level treatment need is likely.

4.3 Estimates of Substance Abuse Treatment or Intervention Needs Across Special Populations

4.3.1 Statewide Estimates of Substance Abuse Treatment or Intervention Needs Across Special Populations

Table 4.17 provides statewide estimates of substance abuse treatment or intervention needs for each special population group. More than 2,300 childbearing women were estimated to need substance abuse treatment or intervention (or 17.6% of all childbearing women statewide). Childbearing women represented about 5.5% of all nonmutually exclusive populations in need. Over 100 adolescent mothers were estimated to need substance abuse treatment or intervention (14.5% of all adolescent mothers statewide).

The number of people who are injection drug users was determined using data from the Maine telephone household survey and the Washington, DC, Metropolitan Area Drug Study (DC*MADS) (Bray & Marsden, 1999) as described in Chapter 3. An estimated 2,834 adults in

Table 4.16 County Estimates of Adult Substance Abuse Treatment Needs

Region	County	Household		Nonhousehold				Total in Need ¹	Overall Prevalence Rate ²
		Phone	No Phone	Homeless	Institutionalized	Jail Inmates	State Prison Inmates		
II	Androscoggin	6,644	397	111	457	63	0	7,672	9.9
III	Aroostook	5,678	339	24	305	27	0	6,373	10.9
I	Cumberland	17,729	1,061	870	696	100	343	20,799	10.2
II	Franklin	1,095	66	9	66	29	0	1,265	5.8
III	Hancock	1,553	93	19	173	11	0	1,849	4.8
II	Kennebec	5,592	333	53	561	44	38	6,621	7.5
II	Knox	1,262	75	24	123	22	383	1,889	6.4
II	Lincoln	755	45	11	98	0	0	909	3.7
II	Oxford	2,628	156	26	227	22	0	3,059	7.5
III	Penobscot	6,867	409	418	364	87	67	8,212	7.1
III	Piscataquis	1,000	60	15	68	11	0	1,154	8.3
II	Sagadahoc	2,600	156	7	77	0	0	2,840	10.6
II	Somerset	4,485	267	17	207	44	0	5,020	13.0
II	Waldo	1,672	100	15	39	7	0	1,833	6.8
III	Washington	1,646	99	7	120	21	68	1,961	7.2
I	York	10,027	599	204	560	72	0	11,462	8.6
I, II, & III	Statewide	71,233	4,255	1,830	4,141	560	899	82,918	8.6

¹Total does not include federal prison inmates or people living in other group quarters.

²Rates rounded to the nearest tenth.

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

Table 4.17 Statewide Estimates of Substance Abuse Treatment or Intervention Needs Across Special Populations

Special Population	Population Size	Prevalence Rate (%)	Number in Need
Childbearing women ¹	13,228	17.6	2,328
Adolescent mothers ²	703	14.5	102
People who are injection drug users	2,834	100	2,834
Adults charged with OUI ³	7,351	100	7,351
Adults with co-occurring conditions ⁴	21,309	100	21,309

¹Live births to women 18 years or older.

²Adolescent mothers includes live births, abortions, and fetal deaths to females aged 10 to 17.

³Not including adults younger than 21 years who were arrested for OUI. Those arrests are considered to be minor administrative suspensions.

⁴Adults with a current substance use disorder who also have a current mental disorder.

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

Maine reported drug injection in 1997. People who are injection drug users represented approximately 6.7% of the total in-need, nonmutually exclusive population. In 1997, 7,351 adults 21 years or older were charged with operating a vehicle while under the influence (OUI), or 17% of all nonmutually exclusive populations in need. Finally, the proportion of adults in need of substance abuse treatment who also have a mental disorder was estimated to be 26.2% (Reiger et al., 1990). By multiplying this proportion with the estimated number of adults needing treatment in Maine, the number of people needing substance abuse treatment who have co-morbid mental disorders was estimated to be 21,309 adults.

4.3.2 Regional Estimates of Substance Abuse Treatment or Intervention Needs Across Special Populations

Regional estimates of substance abuse treatment needs among special population groups in Maine are provided in Table 4.18. Childbearing women in need of substance abuse-related services were estimated to number 2,328 women, or 17.6% of the total population of childbearing women. Similar numbers were estimated for Region I (879 women) and Region II (897 women). Each of those regions represented approximately 38% of the total number of childbearing women in need. The remaining quarter of the childbearing women in need of substance abuse treatment or intervention were observed in Region III (552 women). With regard to adolescent mothers, an estimated 14.5% of them (102 adolescents) were estimated to need substance abuse treatment or intervention. Almost half of adolescent mothers in need of substance abuse treatment or intervention were in Region II (46 adolescent mothers), followed by Region I, which had about one third of the total population in need. About one fifth of adolescent mothers in need of such services live in Region III.

Table 4.18 Estimates of Substance Abuse Treatment or Intervention Needs Across Special Populations

Special Population Group	Overall Prevalence Rate (%)	Number in Need		
		Region I	Region II	Region III
Childbearing women ¹	17.6	879	897	552
Adolescent mothers ²	14.5	35	46	21
People who are injection drug users	100.0	652	935	1,247
Adults charged with OUI ³	100.0	2,680	2,868	1,803
Adults with co-occurring conditions ⁴	100.0	8,202	8,096	5,011

¹Live births to women 18 years or older.

²Adolescent mothers includes live births, abortions, and fetal deaths to females aged 10 to 17.

³Not including adults younger than 21 years who were arrested for OUI. Those arrests are considered to be minor administrative suspensions.

⁴Adults with a current substance use disorder who also have current a mental disorder.

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

An estimated 2,834 adults in Maine were currently injecting drugs in 1997. Approximately 1,247 of them (or 44% of all people who are injection drug users statewide) reside in Region III. The second largest proportion of people who are injection drug users were observed in Region II (935 individuals, or 33% of the total population who are injection drug users). In Region I, 652 individuals reported injection drug use, which represented the remaining 23% of the total population of people who are injection drug users.

With regard to the number of adults charged with OUI, of the 7,351 adults arrested, most arrests occurred in Region II (39%, or 2,868 individuals charged), followed closely by Region I (36%, or 2,680 individuals). The remaining quarter of adult OUI arrests occurred in Region III (1,803 individuals).

An estimated 26% of all adults we identified as needing substance abuse-related services (81,209 adults) have a co-occurring mental disorder (21,309 adults). Approximately 38% of those with dual diagnoses live in Region I, 38% live in Region II, and 24% live in Region III.

4.4 Summary of Estimated Substance Abuse Treatment Needs Statewide

Based on the integrative study findings, Table 4.19 provides a summary of the number of adults and household adolescents who are in need of substance abuse treatment services in Maine (or 8.6% of the total population of adults and household adolescents). In terms of numbers of people in need of substance abuse services, adults living in households with phones represent the

Table 4.19 Summary of Estimated Need for Treatment Services Statewide in Maine

Mutually Exclusive Group	Prevalence	Number in Need
Household Adults		
Phone	8.1	71,233
No phone	13.3	4,255
Nonhousehold Adults		
Homeless	36.0	1,830
Institutionalized	37.1	4,141
Jail inmates	67.3	560
State prison inmates	67.3	899
Total Adults	–	82,918
Youths		
Household youths ¹ (includes school dropouts)	7.4	8,029
School dropouts ¹	25.1	496
Total Statewide	8.6	90,947

¹Household youths (aged 12 to 17) include school dropouts.

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

largest group—79.8% of the total population in need of services in Maine. The next largest group in need of substance abuse services is the population of household adolescents (8,029), who make up approximately 9.0% of people in need of treatment statewide.

Statewide, the need for substance abuse services among mutually exclusive groups of adults was greatest among males. Gender differences were most evident among the household and homeless populations. Among the remaining nonhousehold populations, the proportions of males and females in need of treatment were comparable. With regard to age, although prevalence rates were higher among young adults (18 to 24 years), in terms of numbers of people in need of treatment services, those 25 to 44 years old formed the largest group. Among institutionalized people, the largest numbers in need were the older age groups (45 to 64 years and 65 years or older). Calculating treatment needs by ethnicity, we observed that most people needing substance abuse-related services in Maine were white, non-Hispanic.

The number of people in need across all special populations is summarized in Table 4.20. Approximately 2,834 adults who reported injection drug use were identified. The size of the population of childbearing women in need of substance abuse services annually was estimated to be 2,328 and only 102 among adolescent mothers specifically. We observed very few homeless adolescents in Maine and, therefore, did not compute the number in need of substance abuse services.

Table 4.20 Summary of Estimated Need for Treatment Services Statewide Across Special Populations

Special Populations	Prevalence Rate	Number in Need
Childbearing women ¹	17.6	2,328
Adolescent mothers ²	14.5	102
People who are injection drug users	100	2,834
Adults charged with OUI ³	100	7,351
Adults with co-occurring conditions ⁴	100	21,309

¹Live births to women 18 years or older.

²Adolescent mothers includes live births, abortions, and fetal deaths to females aged 10 to 17.

³Not including adults younger than 21 years who were arrested for OUI. Those arrests are considered to be minor administrative suspensions.

⁴Adults with a current substance use disorder who also have a current mental disorder.

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

4.5 Treatment System Capacity Versus Estimated Need

Information about the need for treatment among adults in Maine was coupled with information about the treatment system, including static capacity, annual or dynamic capacity, average daily census, and total annual admissions. This information was developed for Study 5: Assessment of Maine’s Treatment System 1997: Structure, Capacity, and Utilization (Durcharme et al., 1999). Multiple data sources were used to collect information on treatment capacity and service utilization, including the Substance Abuse and Mental Health Services Administration’s (SAMHSA’s) Uniform Facility Data Set (UFDS) and the Treatment Episode Data Set (TEDS) as well as a survey of 87 state-funded treatment providers. The goal was to estimate the patient capacity of substance abuse treatment programs operating at least partially with state funds. Capacity is difficult to define. Because patients vary in the amount of time they spend in treatment and because these variations are evident across treatment modalities (and, in some instances, within modalities across programs or service delivery units), we include two different measures—static capacity and annual (or dynamic) capacity.

Static capacity reflects the number of patients who could be treated on any given day. These figures represent a point-prevalence or “snapshot” approach. Static capacity was estimated by recording the number of treatment slots for each modality that could have been filled at each treatment program on an average day from October 1, 1996 to September 30, 1997. These estimates were drawn from the provider survey and subsequent data collection for specific programs. For all inpatient services, static capacity refers to a count of the number of beds. Determination of static capacity for outpatient services requires a different approach. Unlike inpatient treatment, where slots are tangible and easily defined (i.e., number of beds), outpatient

capacity varies with the number of patients who can be accommodated in treatment groups and the number of group and individual sessions that can be offered at any given time. Both the number of sessions and the session capacity are fundamentally linked to the number of counselors a program has on staff and the patient/counselor ratio. The static capacity for each clinic providing outpatient services was determined based on reports from the providers to the OSA Provider Survey.

Annual or dynamic capacity offers a different viewpoint of the treatment system. Annual capacity estimates the number of patients who could be treated over the course of one full year. Determination of annual capacity requires looking beyond the number of treatment slots available and examining the flow of clients through these slots. In order to do this, several dimensions of substance abuse treatment must be considered. First, clients have different lengths of stays or retention rates in treatment regimens. This is attributable to differences across treatment modalities as well as to differences across patients in treatment compliance. Second, intensity of treatment differs across clients, due in large part to differences in severity of substance abuse or dependence. Third, retention, turnover rates and treatment plans vary across clients and programs; clients may or may not complete a treatment episode, and some clients will re-enter the system multiple times. Dynamic capacity was estimated as equal to the static capacity times a factor determined by dividing 365 days (or 52 weeks for outpatient services) by the average length of stay (ALOS) in days or weeks. The ALOS was based on provider reported experience and, for practical reasons, a common ALOS was used within DMHMRSAS regions across different programs within the same modality.

This study also considers *utilization* of treatment services by Maine residents. The “actual cases” or *average daily census* reflects the average daily number of persons in treatment (a point-prevalence measure) for outpatient and inpatient modalities, respectively, whereas the total number of *annual admissions* is a count of the number of persons serviced in a 12-month period and includes a duplicated patient count. The provider survey yielded information on each program’s average daily census across each level of care. Information on annual admissions was obtained from the provider survey for the year October 1, 1996 to September 30, 1997.

Based on estimates of static capacity, the system (on a daily basis) can accommodate 7,967 people statewide, 94% of which is provided through outpatient services (see Table 6.5) (Ducharme et al., 1999). Region III has the greatest estimated capacity, and Regions 1 and 2 have about equal capacity. In contrast, the average daily census showed that 7,780 individuals were treated on an average day from October 1, 1996, to September 30, 1997. The vast majority, 7,516, received outpatient care, while 264 received inpatient detoxification or residential care.

When comparing the static capacity to the average daily census, it is evident that, overall, the Maine treatment system was working at full capacity (98%) on a daily basis.

The OSA state-funded system was estimated to have an annual capacity capable of serving 40,667 persons. The majority of care (71%) is provided through outpatient services, while 29% of annual capacity is available through inpatient detoxification or residential treatment.

Estimates of annual admissions revealed that OSA-approved services provided treatment for 44,935 admissions during the reference year (this includes multiple admissions for individuals). Similar to findings comparing static capacity to average daily census, the contrast between annual capacity and annual admissions suggests that the Maine system is working over capacity on a year-round basis. The number of admissions exceed “capacity” by 4,268. The system—based on the reported admission data and estimated annual capacity data—is overall, operating at 110% of capacity. With respect to the number of persons estimated to need treatment, the estimates are for persons needing treatment during the past 12 months. It is important to recognize that if this number is compared to admissions, including duplicated admissions, the estimates may expand due to readmission. Readmission rates for clients vary by type of substance use or problems experienced, but for most, readmission within 2 years is common.

Table 4.21 also shows the comparison of estimated capacity, utilization, and treatment need for each region and statewide. The last column of Table 4.21 provides a ratio of the number of persons estimated to need treatment for each available treatment slot on an annual basis. For example, in Region I, for every one open treatment slot, 5.7 people need services, while in Region III, 1.5 people are expected to need treatment for every one slot available. Striking regional differences exist. Although all regions demonstrate a greater need than availability, Region I displays the highest disproportionate ratio. We suggest caution in interpreting these comparisons because there may be inaccuracies in the estimates of treatment capacity, utilization, or need. Furthermore, we cannot infer the type of treatment *need* that exists in each region because information on the need for specific modalities or services is not determined nor do we investigate the extent to which certain population groups (e.g., pregnant and parenting women) are able to access the types of specialized care they require. Moreover, there is strong evidence from the household survey (Kroutil et al., 1998) that the proportion of those in need of treatment who actually perceive a need for obtaining services is low. In addition, not all those who may demand services would access or need to access the public treatment system. In the next chapter, we discuss service issues for these special populations and highlight the challenges of the public system to provide adequate care for the most marginalized populations.

Table 4.21 Assessment of Maine’s Treatment System: Capacity, Utilization, and Estimated Need for Treatment

Region	Static Capacity	Average Daily Census¹	Annual (Dynamic) Capacity Estimate^{2, 5}	Total Annual Admissions	Estimated Substance Abuse Treatment Need³	Ratio of (Annual) Slots to Estimated Treatment Need⁴
Region I	2,207	2,092	12,713	9,773	32,261	2.5:1
Region II	2,241	2,220	11,410	25,060	31,108	2.7:1
Region III	3,518	3,468	16,544	10,102	19,549	1.2:1
Statewide	7,967	7,780	40,667	44,935	82,918	2.0:1

¹Refers to average daily active cases for outpatient programs and average daily census for inpatient facilities for the period October 1, 1997 to September 30, 1998.

²Treatment capacity refers to state-approved slots and excludes those that are privately or otherwise funded in whole or in part.

³Refers to adults only; additionally, approximately 8,029 adolescents aged 12 to 17 in the state need alcohol and/or drug treatment or intervention.

⁴This ratio is based on comparing the estimated substance abuse treatment need to estimates of the annual (dynamic) capacity estimate.

⁵Annual (dynamic) capacity was estimated using the number of available beds and average length of stay for inpatient services, and average daily census and average length of stay for outpatient services. Please refer to *Study 5: Assessment of Maine’s Substance Abuse Treatment System: Structure, Capacity, and Utilization* for a detailed discussion of Maine’s treatment system, including capacity, utilization, and estimated need for treatment.

Source: Maine’s Integrated Population Estimates of Substance Abuse Treatment and Intervention Needs in the State of Maine; Assessment of Maine’s Substance Abuse Treatment System: Structure, Capacity, and Utilization.

4.	INTEGRATIVE STUDY RESULTS	4-1
4.1	Estimates of Population Bases	4-1
4.1.1	Population Bases for Mutually Exclusive Groups	4-1
4.1.2	Population Bases for Special Populations	4-8
4.2	Estimates of Substance Abuse Treatment Needs Across Mutually Exclusive Populations	4-8
4.2.1	Statewide Estimates of Substance Abuse Treatment Needs Across Mutually Exclusive Populations	4-8
4.2.2	Regional Estimates of Substance Abuse Treatment Needs Across Mutually Exclusive Populations	4-14
4.2.3	County-Level Estimates of Adult Substance Abuse Treatment Needs	4-22
4.3	Estimates of Substance Abuse Treatment or Intervention Needs Across Special Populations	4-22
4.3.1	Statewide Estimates of Substance Abuse Treatment or Intervention Needs Across Special Populations	4-22
4.3.2	Regional Estimates of Substance Abuse Treatment or Intervention Needs Across Special Populations	4-24
4.4	Summary of Estimated Substance Abuse Treatment Needs Statewide	4-25
4.5	Treatment System Capacity Versus Estimated Need	4-27
4.1	Populations for Mutually Exclusive Groups in Maine, by DMHMRSAS Region	4-2
4.2	Total Adult Population in Maine, by Demographic Breakdown	4-3
4.3	Regional Adult Populations, by Gender	4-5
4.4	Regional Adult Populations, by Age	4-6
4.5	Regional Adult Populations, by Ethnicity	4-7
4.6	Size of Special Populations in Maine	4-8
4.7	Statewide Estimates of Substance Abuse Treatment Needs Across Mutually Exclusive Populations	4-9
4.8	Comparison of Distribution of Total Adult Population and Total Adults in Need of Treatment	4-10
4.9	Statewide Estimates of Adult Substance Abuse Treatment Needs, by Gender	4-11
4.10	Statewide Estimates of Adult Substance Abuse Treatment Needs, by Age	4-12
4.11	Statewide Estimates of Adult Substance Abuse Treatment Needs, by Ethnicity	4-13
4.12	Regional Estimates of Substance Abuse Treatment Needs Across Mutually Exclusive Populations	4-15
4.13	Regional Estimates of Adult Substance Abuse Treatment Needs, by Gender	4-17
4.14	Regional Estimates of Adult Substance Abuse Treatment Needs, by Age	4-20
4.15	Regional Estimates of Adult Substance Abuse Treatment Needs, by Ethnicity	4-21
4.16	County Estimates of Adult Substance Abuse Treatment Needs	4-23
4.17	Statewide Estimates of Substance Abuse Treatment or Intervention Needs Across Special Populations	4-24
4.18	Estimates of Substance Abuse Treatment or Intervention Needs Across Special Populations	4-25

4.19	Summary of Estimated Need for Treatment Services Statewide in Maine	4-26
4.20	Summary of Estimated Need for Treatment Services Statewide Across Special Populations	4-27
4.21	Assessment of Maine’s Treatment System: Capacity, Utilization, and Estimated Need for Treatment	4-30
4.1	Gender Differences in Statewide Treatment Needs Across Mutually Exclusive Populations of Adults	4-11
4.2	Age Differences in Statewide Treatment Needs Across Mutually Exclusive Populations of Adults	4-12
4.3	Ethnic Differences in Statewide Treatment Needs Across Mutually Exclusive Populations of Adults	4-14
4.4	Gender Differences in Regional Treatment Needs Across Mutually Exclusive Populations of Adults	4-17
4.5	Age Differences in Regional Treatment Needs Across Mutually Exclusive Populations of Adults	4-18
4.6	Ethnic Differences in Regional Treatment Needs Across Mutually Exclusive Populations of Adults	4-21

5. IMPLICATIONS FOR TREATMENT SERVICES IN MAINE

5.1 Overview

Studies conducted under the Maine treatment needs assessment project provide information on patterns of substance abuse service needs across the state. Collectively, this integrative study provides a comprehensive picture of treatment needs across the entire population of people aged 12 years or older, with the exception of incarcerated and institutionalized and homeless adolescents. Based on the integrative effort, household adults represent the largest group of people in need of treatment in Maine, followed by household adolescents. Aside from the household populations, however, the integrative study strongly suggests that a substantial proportion of people across the state in need of substance abuse treatment probably do not live in households. Special population groups include childbearing women and adolescents, people who are injection drug users, adults charged with operating a vehicle while under the influence of alcohol (OUI), and adults with co-occurring psychiatric disorders.

Many of the high-risk populations we studied are likely to be composed of individuals with no insurance or inadequate private insurance or dwelling in state institutions and, therefore, falling under the responsibility of state-sponsored programs. Further, many people in these populations do not live in households, so they require special consideration for outreach and service provision. In this chapter, we outline some of the reasons why these populations represent important targets for planning and policymaking surrounding the provision of substance abuse services in Maine. We also merge data from the prevalence surveys and published research with information collected on treatment access barriers to highlight the treatment/intervention planning issues and challenges specific to these populations.

5.2 Mutually Exclusive Groups

5.2.1 Household Adults

In terms of numbers of people in need, our findings revealed that the adult household population with phones (71,233 people) makes up the largest proportion (85.9%) of the total adult population in need of substance abuse services in Maine. Another 4,255 people in households without phones are in need of treatment. These estimates include people covered by private insurance. According to the Maine household telephone survey, approximately 74.7% of the people surveyed who needed substance abuse services had private health insurance coverage. However, the interview generally did not examine whether people with private insurance had substance abuse services as a covered benefit. Therefore, it is likely that at least the majority of

the household population identified in this study will need substance abuse services provided by the public sector.

5.2.2 Incarcerated Adults

A total of 1,459 incarcerated adults in state facilities in Maine were estimated to need substance abuse treatment services during the past year (those located in federal prisons were excluded because their behavioral health needs are not under the purvey of the Office of Substance Abuse [OSA]). Of these, 62% (or 899 individuals) live in state prisons, and the remaining 38% (560 individuals) are jail inmates. The vast majority of the incarcerated population in need of substance abuse services are white males between the ages of 25 and 44 years. Approximately 45% of jail inmates in need are located in Region II, which is the most populated area of the state.

Research indicates that those in the criminal justice system need substance abuse treatment at a much higher rate than the general household population (Bray & Marsden, 1999; Institute of Medicine [IOM], 1990). Similar to our findings, data from the Epidemiologic Catchment Area (ECA) Study showed that almost three fourths of persons in prisons had a lifetime history of substance abuse problems (Regier et al., 1990). Further, incarcerated adults remain a priority population because of the strong link between substance abuse and repeated criminal behavior. For these individuals, treatment may be a necessary, often mandatory, part of their rehabilitation. Research also demonstrates that treatment of offenders reduces recidivism (Hubbard et al., 1989; Leukefeld & Tims, 1993). Individuals involved with the criminal justice system who may not be incarcerated (i.e., those who have been booked and are awaiting sentencing or those on probation or parole) also represent a group with high treatment needs. As such, the IOM recommends that any needs assessment activities targeting substance abuse should assess the criminal justice population separately (IOM, 1990).

The provision of treatment services to those housed in prisons and jails presents a number of implementation challenges. Providing services in prisons may be somewhat easier given there is a captive audience. Research shows that the effectiveness of substance abuse treatment in prisons is related to the length of time an individual remains in treatment, regardless of the type of treatment they receive (Hubbard et al., 1989). However, there is considerable controversy over the efficacy of “forcing” incarcerated individuals into treatment. Several studies indicate that clients who enter treatment because they are forced to do so by the criminal justice system make as much progress as those who enter voluntarily, but others document no benefits to coerced treatment (IOM, 1990). Some clinicians are opposed to coerced treatment on philosophical or constitutional grounds, above and beyond the effectiveness issues. Jails are less-than-ideal settings for effective treatment because of short stays, varying lengths of stays,

frequent disruptions such as court appearances, overcrowding, and understaffing (Lipton, Falkin, & Wexler, 1992). In addition, transitional support services for people moving from institutional to community settings are scarce. Most studies advocate a comprehensive, coordinated continuum of care approach, but the actual composition of services and strategies for coordination vary widely (Leukfield & Tims, 1993).

For its part, in response to these challenges, the State of Maine has sponsored a Substance Abuse Corrections Initiative to develop a comprehensive model for Maine's prison system (1996). The purpose of the initiative is to:

- examine the nature and extent of alcohol and drug problems among the inmate population; and
- assess the clinical, financial, and managerial aspects of delivering substance abuse treatment to inmates.

Further, the Maine Task Force on Substance Abuse (1998) offered the following recommendations as part of their plan to address the hidden costs of substance abuse in the state:

- screen every offender for substance abuse problems within 30 days of intake,
- provide a five-level differentiated therapeutic intervention program for adult prisoners,
- provide a residential prerelease transitional treatment center for offenders in prison, and
- provide continuing care through regional networks for individuals involved with the criminal justice system who have been released into the community.

5.2.3 Homeless Adults

A total of 1,830 substance-abusing homeless adults were projected for the State of Maine. This number is higher than the 1,075 people (or 737 adults) admitted to emergency homeless shelters in Maine for the month of July 1997. This point-prevalence estimate of shelter users reveals that most homeless people in the state are male (63%), young (average age = 29 years), single (87%), unemployed (83%), and have serious problems such as chronic mental illness or substance abuse (OSA, 1997). Homeless people represent a very small proportion of the overall population, yet their substance abuse rates are very high, and the social and moral costs of leaving them untreated are large.

Homeless people represent a population that is difficult to access and treat. They remain hidden, living marginalized lives unconnected to social and economic resources. Furthermore, the chronicity and severity of their substance abuse disorder, coupled with a multiplicity of other physical and mental health problems, present enormous challenges to the treatment system. Homeless people who receive substance abuse treatment often find themselves at greater risk of relapse due in large part to their release back into environments that may encourage and reward substance misuse (Dennis et al., 1999; Johnson & Barrett, 1995). Their recovery rates also are lower because they tend to move in and out of treatment and lack the social support needed to maintain sobriety. Many homeless people distrust figures of authority and, therefore, do not utilize available resources (Wenzel, Koegel, & Gelberg, 1996).

To be effective, substance abuse treatment programs for the homeless need to coordinate access to multiple services. These services include, for example, aftercare support, stable housing, economic assistance, medical care for other physical and mental health-related problems, and training for any kind of marketable employment (Green et al., 1995; Wenzel et al., 1996). Further, most treatment programs are very structured, and homeless people often have trouble staying in treatment simply because they have an entirely different time orientation (Wenzel et al., 1996).

5.2.4 Household Adolescents

The integrative study revealed that 8,029 household adolescents were identified as in need of substance abuse-related services. Of these, we observed 496 youths in need who had dropped out of school. Many of these youths were identified as in need of intervention because of unhealthy or risky alcohol or drug use practices, as opposed to meeting clinical diagnostic criteria. Because the severity and chronicity of their problem may be less pronounced, different intervention strategies may be more effective. A three-stage model is useful for framing prevention and intervention approaches with youths. The first stage is primary prevention, which focuses on education and/or skill-building among the general population. Secondary prevention targets youths at-risk for alcohol or drug problems and provides more intensive prevention or health promotion efforts. The final stage emphasizes treatment among youths with discernable alcohol and drug problems. As such, a continuum of care is crucial for adolescents, including pretreatment service options and outpatient, inpatient, and residential care. Because the prevalence of substance abuse problems is much greater among youths who drop out of school, special considerations also are needed for educating, outreaching, and recruiting youths who cannot be found in traditional settings.

Youth-focused treatment facilities avoid labeling youths as “addicts,” try to work within the framework of the youths’ culture, and focus on promoting the achievement of developmental

tasks (e.g., identity formation). The focus in this kind of treatment is on understanding inappropriate substance use as one of many expressions of the maturation process. Such programs offer a wide range of activities, including those with an educational, recreational, and vocational focus. Youth-focused programs stress outreach and early intervention and are more likely to utilize peer counseling. Regardless of treatment philosophy, some kind of treatment is considered better than no treatment at all. Researchers are uncertain, however, about whether the steady improvement seen over time with adolescent problem drinking is more of a function of “maturing out” than of treatment itself (IOM, 1990).

5.3 Special Population Groups

5.3.1 Childbearing Women and Pregnant Adolescents

Approximately 2,328 childbearing women and 102 pregnant adolescents statewide were estimated to be in need of substance abuse services. The distribution of childbearing women and adolescents across regions appears to be fairly even; we observed slightly more females in need in the more populated Region II. It is likely that some of these women are not addicted to alcohol or drugs; however, they remain a high priority for allocating treatment resources because of the irreversible teratogenic effects of alcohol or drugs on developing fetuses (Khalsa & Gfroerer, 1991). The following considerations need to be taken into account when planning services for this population. First, many females feel alienated in substance abuse treatment programs because they tend to be male-oriented and, thus, inappropriate for their needs (Dvorchak, Grams, Tate, & Jason, 1995; Finkelstein, 1994). Second, services need to be sensitive to the specific needs of women of different ethnic and age groups. Third, many programs have traditionally focused on one or two substances, despite the potentially wide spectrum of polydrug use among a subset of this population (Grella, 1997). Also, the programs must be comprehensive in scope, with a range of support services including psychotherapy, access to health services for themselves and their infants and children, child care, transportation, job training, and adequate housing (Dvorchak et al., 1995; Finkelstein, 1994; Grella, 1997; Kumpfer, 1991; Mitchell, 1993).

5.3.2 People Who Are Injection Drug Users

We estimated the number of people who are injection drug users in Maine to be about 2,834 individuals in 1997. People who are injection drug users constitute another high-priority subgroup due to the serious public health threat resulting from shared needle use. The risk of communicable diseases in this population is very high. Nearly one quarter of all persons with the acquired immunodeficiency syndrome (AIDS) in the United States are infected through injection drug use and, among women specifically, the proportion is nearly one half. In a large

study of people who are injection drug users not in treatment, more than 70% reported needle-sharing behavior (Mandell, Vlahov, Latkin, Oziemkowska, & Cohn, 1994). In fact, federal regulations require rapid admission into treatment as a way to curb the spread of AIDS, as well as comprehensive outreach efforts to inform people who are injection drug users of the available resources and the benefits of treatment (McAuliffe & Mulvaney, 1994).

Substance abuse treatment services provide a useful mechanism to reducing needle-sharing and other high-risk behaviors among people who are injection drug users but require special provisions to address their multiple needs. Successful strategies to provide substance abuse treatment to this population include using ex-addicts or persons familiar with the community to make contact with people who are injection drug users. Outreach workers distribute AIDS prevention materials and information and recruit people who are injection drug users into programs and services (Broadhead, Heckathorn, Grund, Stern, & Anthony, 1995). Mobile units also are imperative because people who are injection drug users face numerous barriers to accessing treatment, including lack of transportation and economic resources and possible discrimination due to poor hygiene or illness. Mobile units offer information on health, testing for the human immunodeficiency virus (HIV) antibody and other sexually transmitted diseases (STDs), education and risk-reduction programs, and referrals to drug treatment programs and other community services.

5.3.3 Adults Charged with OUI

OSA has declared OUI offenders as a priority population for intervention. Approximately 7,351 adults are expected to need intervention due to an OUI conviction. In Maine, in addition to satisfying the legally imposed penalty of the state's Bureau of Motor Vehicles (BMV), individuals convicted of impaired driving must participate in the Driver Education and Evaluation Program (DEEP) and, if deemed necessary, receive substance abuse education, evaluation, and treatment in order to have their suspended license reinstated. DEEP is a mandatory program established by the state legislature to address the societal problem of impaired driving. DEEP provides education to offenders about the effects of alcohol and drug use on families and society. Evaluating offenders is a crucial component of DEEP and may lead to more intensive behavioral intervention. There are four major programs within DEEP. The Adult Assessment Program is for first-time offenders no aggravating factors. Participants are required to attend a 2-hour alcohol and drug education session and participate in a substance abuse screening assessment. Based on the outcome of the results, further education or more intensive evaluation may be recommended. Follow-up is not required to have one's license reinstated. The Moving Ahead program is designed for youths younger than 21 years. Young offenders must attend 10 hours of alcohol and drug education and undergo an assessment. Participation is mandatory. As deemed necessary, offenders may be required to attend more

intensive evaluation, additional education, or treatment. The third program is the Weekend Intervention Program (WIP); it is intended for repeat offenders, adult first-time offenders with aggravating conditions, or adult first-time offenders who refuse to submit to a blood alcohol contact (BAC) and are convicted. WIP is a highly structured residential intervention, which takes place over a Saturday and Sunday. It consists of at least 22 hours of individual and group discussion with a facilitator on the effects of substance use, abuse, and addiction. An assessment of the need for more intensive treatment also is made. Clients determined to need more treatment are mandated to successfully complete it in order to satisfy their DEEP requirements. The fourth DEEP program is the Completion of Treatment Program, which consists of offenders who acknowledge that they have a substance abuse problem serious enough to warrant treatment and who enter treatment with a state-licensed or -approved provider voluntarily.

Intervention is critical because many impaired driving offenders, especially repeat offenders, are problem drinkers. In addition to motor vehicle offenses, research suggests that at least 20% of offenders have a prior criminal record and are more likely to have accrued multiple, nonalcohol-related moving violations (Donovan, Umlauf, & Salzberg, 1990).

Given the serious toll impaired driving takes on the state, the Maine Task Force on Substance Abuse (1998) has several recommendations aimed at reducing impaired driving, including:

- creating a law enforcement task force to develop a comprehensive, joint action plan to combat alcohol and/or other drug intoxicated drivers;
- investigating policies and procedures adopted by other states regarding chronic impaired drivers;
- determining the extent to which marijuana and other drugs are involved in motor vehicle accidents and fatalities;
- reporting on the effectiveness of the young driver legislation passed in 1998;
- developing legislation to allow more flexibility in DEEP programming; and
- making training in the proper use of the intoxilyzer machine, Horizontal Gaze Nystagmus, and advanced OUI recognition techniques a requirement of basic police training.

5.3.4 Adults with Co-Morbid Substance Abuse and Psychiatric Disorders

We estimate that approximately 21,309 adults in Maine have both substance abuse and mental health problems. This group represents 26.2% of all individuals expected to need treatment for substance abuse problems. Co-morbidity in substance-abusing populations is very prevalent and refers to the co-occurrence of substance abuse disorders with other psychiatric disorders such as depression, anxiety, schizophrenia, or antisocial personality disorder. Many of these individuals also have problems with violence, criminality, suicidality, noncompliance, homelessness, neuropsychological dysfunction, and increased risk for HIV infection (Brady et al., 1996). Several national studies assessing the prevalence of co-morbidity among substance abusers have been conducted, including the ECA study, the National Co-morbidity Study (NCS), and the Drug Abuse Treatment Outcome Study (DATOS). These studies suggest that co-morbidity is a serious problem among substance abusers and that the most prevalent co-occurring diagnoses are for depression, anxiety, schizophrenia and antisocial personality disorder. The NCS found that more than 50% of all lifetime mental health disorders occurred in the 14% of the population that had a history of three or more co-morbid disorders. DATOS, the only national study examining co-morbidity specifically among individuals in substance abuse treatment, revealed that 39.3% of drug-abusing adults had a co-diagnosis of antisocial personality disorder, 11.7% had a co-occurring major depressive disorder, and 3.7% had a co-occurring generalized anxiety disorder (Flynn, Craddock, Luckey, Hubbard, & Dunteman, 1996).

The etiology of co-morbid disorders is unknown. Researchers speculate three possibilities: mental illness may increase the risk of developing substance abuse problems by precipitating the onset or exacerbating mild alcohol or drug problems, substance abuse disorders may precede mental health problems and influence their development, and mental health and substance abuse problems may share similar risk factors (i.e., they co-occur through similar causal mechanisms rather than one disorder influencing the other) (Clark & Bukstein, 1998).

Diagnosis of co-morbid psychiatric conditions is sensitive, given that the acute effects of drugs, the symptoms of withdrawal, or the residual effects of drug abuse may mimic a number of psychiatric diagnoses. However, several diagnostic instruments have been specifically developed for assessing co-occurrence of mental health problems in substance-abusing populations, including the Composite International Diagnostic Interview (CIDI-SAM) (Cottler, 1990). Accurate assessment of co-morbid disorders is critical for treatment planning, because research suggests that people who have both substance abuse and mental health problems have lower treatment retention and greater relapse rates (Brady et al., 1996; Horton, 1997). Treatment of co-occurring disorders presents both clinical and systems challenges. Patients with multiple disorders are generally less able to access and maintain involvement in treatment. Thus, treatment providers need to take more responsibility for coordinating diverse services for their

care. Multiple systems may need to be linked, including substance abuse treatment and mental health providers, the criminal justice system, legal services, social and welfare agencies, general health care providers, vocational and rehabilitative services, housing, educational systems, and HIV/AIDS prevention and treatment services. The Center for Substance Abuse Treatment (CSAT) (1994) recommends the following to enhance the efficacy of treatment services for adults with co-occurring disorders:

- Treatment should be individualized.
- A continuum of care should be provided.
- Treatment should be provided from a holistic, biopsychosocial approach.
- Case management plays a key role.
- Multidisciplinary teams are essential.
- Ongoing support, relapse management, and prevention are necessary.
- Programs should be culturally competent and gender-specific.

5.4 Study Limitations

5.4.1 Limits of Population-Based Estimates

Exact population counts for each of the mutually exclusive population groups within the three DMHMRSAS regions are impossible to obtain given that a number of statistical adjustments had to be made to calculate 1997 data from the 1990 Census. For instance, the process of aging the 1990 Census involved taking into account the in- and outmigration of individuals, information that comes from data on annual births, deaths, and migration from vital statistics and administrative records. When these data are aggregated, the numbers may be slightly off at the individual cell level. A further limitation of the household population estimates rests in the fact that we separated households into those with phones and those without phones to produce estimates of persons by gender, age, and ethnicity. Because of the type of data file we used for this purpose, these data were not identifiable for small population areas; thus, estimates produced for small population counties may not be accurate. In fact, large changes in any of the key variables between 1990 and 1997 (e.g., telephone ownership, household composition, ethnic distribution, population age distribution, and so on) at the county level could make some of the county-level estimates for 1997 inaccurate.

With regard to estimates for the homeless populations specifically, this study is likely to reflect underestimates, given that this population tends to be well-hidden. On the positive side, the information on other nonhousehold populations (i.e., the institutionalized and the incarcerated) should be very accurate, given the much narrower list of living quarters these

populations are found in and the thoroughness of coverage of these quarters in the data collection phase.

Population estimates of adult and adolescent mothers were based on the number of live births by age of mother (19 years or younger; 20 years or older) in 1997 (Maine Department of Health, 1998). Our estimates for adolescents may represent underestimates, given that many adolescents move out of state during pregnancy and for childbirth.

The number of people who are injection drug users (IDUs) in Maine was obtained by first observing the rates computed from both the arrestee and household survey data sets and then comparing them to a large-scale study of household and nonhousehold adult populations residing in Washington, DC (Bray & Marsden, 1999). We used the DC study rate rather than the one we obtained from Maine-specific data. To calculate the rates based on Maine data, we used information on cocaine and heroin use rather than self-reports of injection drug use. This method was deemed necessary because the number of IDUs in individual surveys in each region was too small to calculate stable estimates. On the other hand, the DC study included an aggregated IDU rate for household, homeless, incarcerated, *and* institutionalized populations. The rate, nonetheless, is still likely to be an underestimate for Maine, given that people who are injection drug users remain among the most difficult populations to access.

5.4.2 Limits of Prevalence Rate Estimates

The estimated prevalence rates used in the integrative framework may reflect several potential weaknesses inherent to survey data generally, as well as those due to limitations in specific studies and those created in the process of combining estimates across studies. In this section, we review these weaknesses and our strategies to minimize their impact on the prevalence estimates we produced. Below, we describe some of the limitations inherent in substance abuse survey data generally. Then, we highlight specific limitations in the estimates for individual missed and special populations.

Much of the survey data on substance use and abuse is based on self-reported data. As such, the quality of the information obtained in this manner is highly dependent upon the degree to which respondents are truthful about their behaviors and beliefs. In fact, many researchers question the validity of self-reported data on sensitive topics such as alcohol and drug consumption. A series of studies has demonstrated that although self-reports may sometimes underestimate the true prevalence rate, the method generally provides useful and meaningful data (Harrison, 1995). A general conclusion emerging from this body of literature is that most people are truthful if they believe in the legitimacy of the research, they are given privacy, they are assured that their responses are confidential (preferably also anonymous), and they believe that

those collecting the data can be trusted. For instance, given the anonymity of the telephone survey, it is possible that the respondents in this survey were more truthful than, say, the respondents of the arrestee survey, which was not anonymous. Other circumstances impeding honest responses among specific population groups such as pregnant women and adolescents are discussed below.

The main concerns about data obtained from the household telephone survey center around nonresponse and inadequate population coverage. However, the response rate for the Maine household survey was acceptable, and statistical adjustments were used to compensate for potential bias due to nonresponders. Furthermore, the sample was relatively large; therefore, we have confidence in the statewide and regional estimates. When cell sizes were small (i.e., less than 30 individuals) or when the standard errors were high, state averages were used rather than calculating separate rates for regional subpopulations. Finally, the Maine prevalence rate was consistent with rates found by other state and national studies of household populations.

The arrestee study has limited generalizability, given that data collection was restricted to specific areas of the state. It is possible that adults detained in one jail differ from those arrested elsewhere in the state. We tried to compensate for this by incorporating prevalence data from other national and state studies to ensure that our estimates were in line with findings in the published research. Despite the fact that we were further limited by the rigor of each individual study's methods, we found considerable convergence in estimates of prevalence rates for incarcerated adults across studies.

We note several potential limitations to the generalizability of our prevalence estimates among sampled youths to all household youths statewide. The school age estimates were developed from models estimated using National Household Survey on Drug Abuse (NHSDA) data. In-school adolescents and dropouts were handled separately. Data specific to each region and county in Maine were used to develop estimates of adolescent treatment needs, but it is possible that estimating models based on local data would have produced different parameter estimates. Further, the fact that the same definition of heavy alcohol use was used for both male and female adolescents indicates that we may be overestimating need among female adolescents. Some studies have taken into account the fact that females typically have a lower body weight, which reduces their ability to metabolize alcohol. Nevertheless, we believe that the estimates produced are highly useful for the state's planning efforts.

One general concern across all missed and special populations (including the studied group of household adolescents) is that we pooled multiple studies together, thereby combining several definitions of substance abuse. The majority of estimates gathered from other sources

were restricted to those that included instrumentation designed to produce “clinical” levels of need. However, for pregnant women and adolescents, IDUs, and homeless youths, the definitions varied considerably. Overall, the criteria for substance abuse treatment used for all population groups were designed to capture those in greatest need. For those groups not assessed to meet established clinical diagnostic thresholds for abuse or dependence, we tried to identify only the individuals reporting recent, very high levels of use.

5.4.3 Differentiating Between Alcohol and Drug Treatment Needs

Treatment need in the integrative study was defined as having an alcohol *or* drug problem. For most of the population groups (i.e., household, homeless, and incarcerated adults), we did not differentiate in detail between those who needed *alcohol* treatment and those who needed *drug* treatment. Distinguishing between alcohol and drug abuse is important for treatment planning for several reasons. First, the probability of actually seeking out help seems to differ by primary drug of abuse. For instance, the Maine treatment system study reported that marijuana users were more likely to seek treatment than cocaine and heroin users. Also, the types of treatment needed varied by drug of addiction. Physiological detoxification treatment, for example, is required for alcohol and opiate dependence, while methadone maintenance treatment is specific to opiate dependence (McAuliffe & Mulvaney, 1994). Third, the profile of alcohol abusers differs from that of drug abusers. Findings from the telephone household survey suggest that drug abusers are more likely to be young, minority, single, unemployed, and have no insurance or government-funded coverage than alcohol abusers. Thus, treatment programs must—as part of their charter—address the specific drugs of abuse and be geared to the unique needs of individuals likely to show up for treatment.

Further, it is important to distinguish between use of alcohol or other drugs and polydrug abuse. Research indicates that people who abuse multiple drugs represent a sizable proportion of the population in need of treatment, particularly among incarcerated populations. National data from the 1991 National Drug and Alcoholism Treatment Unit Survey (NDATUS) indicate that 38% of substance abuse clients across the country abused *both* alcohol and drugs, 37% abused alcohol only, and 25% abused drugs only (Office of Applied Studies [OAS], 1992). Polydrug abusers may be more likely to seek treatment because they experience more severe and debilitating symptoms, or they may be more likely to be mandated into treatment (Leukefeld & Tims, 1993).

On the positive side, we were able to make important distinctions between the need for alcohol-only, drug-only, or polydrug abuse treatment for some populations, namely childbearing women, adolescent mothers, adolescents in general, and incarcerated adults. Moreover, as we continue our analysis of the household database, OSA will be able to characterize and more

closely examine those in need of alcohol treatment only, drug treatment only, or alcohol and drug abuse treatment. Keeping in mind the limits to generalizability due to design differences across studies, the estimates from the published literature for women and youths provide useful guideposts for service planning for these high-risk populations. In addition, we know from the household survey that alcohol appears to be the primary drug of addiction among the adult household population. However, we observed considerable variation across subpopulations of adults by gender, age, and ethnicity. Further, from the household survey and the arrestee survey, we found that polydrug abuse appears to be particularly high among incarcerated populations.

5.5 Barriers to Access to Substance Abuse Treatment

5.5.1 Introduction

Another limitation in our estimates is that we could not distinguish between *need* for treatment and *demand* for treatment. Indeed, not everyone who needs treatment wants it or perceives a need for it, nor does everyone seeking services actually obtain them. The estimated ratio of untreated to treated individuals with substance abuse problems ranges from 3:1 to 13:1 (Sobell et al., 1992). Even fewer had received treatment within the past 12 months. We also observed that among adults receiving treatment, three quarters reported a desire for additional services.

To successfully attract and effectively treat individuals with substance abuse problems, it is important to understand their reasons for not seeking or being able to seek services. A substantial body of research addresses cross-cutting issues related to barriers to substance abuse treatment. We summarize this literature below by using a typology commonly employed in this research—namely, to classify barriers as personal or structural (IOM, 1990). Personal barriers (also referred to in the literature as internal or individual barriers) include sociodemographic characteristics, real and perceived illness severity, income and insurance status, and beliefs and attitudes toward services. Structural barriers (also referred to as external barriers) comprise a host of characteristics of the treatment system that may impede an individual from obtaining services, including availability, location, and other issues about how services are financed, organized, and delivered. We review personal and structural barriers that appear to be common to most substance-abusing populations, highlighting along the way those specific to the special populations identified in Maine.

5.5.2 Personal Barriers to Access

Simply being an adolescent (Jenson et al., 1995), female—especially a pregnant or parenting female (Breitbart, Chavkin, & Wise, 1994; Finkelstein, 1994; Grella, 1997; Mitchell,

1993)—or a member of a minority group (Allen, 1994) often translates into experiencing more difficulty in gaining access to the substance abuse treatment system. Based on 1997 data from the Maine treatment system study, we found that the vast majority of people in treatment were adult males. Adolescents were among the clients with the highest proportion to receive no services or diagnostic and evaluation services only. They also were the most likely to be discharged against medical advice. Other commonly identified personal barriers to access include low educational level, low income, and inadequate or no health insurance (Cunningham, Sobell, Sobell, Agrawal, & Toneatto, 1993). According to the household survey, one in five people with substance abuse problems has no health insurance coverage. Lack of financial resources is an especially common barrier among homeless populations (Wenzel et al., 1996) and women (Grella, 1997).

Perceived illness severity also may act as a barrier to treatment. In a study by Hingson, Mangione, Meyers, and Scotch (1982), 84% of the respondents indicated they did not seek treatment because they felt their problem was not serious enough. They also observed that among the respondents who reported having ever had an alcohol problem but not seeking treatment, more than half (56%) indicated that they did not want to admit they needed help. Youths with substance abuse problems may be the most likely population to perceive that they do not have a problem. The Maine youth synthetic estimation survey observed that only 10% of students who were categorized as needing substance abuse services felt that they ever needed help for their substance use. Similarly, Rounsaville and Kleber (1985) observed that 20% of the opiate addicts they interviewed did not seek treatment because they liked to be high and did not want to give up the intoxication experience. This may be why studies of service users (the Maine treatment system study included) reveal that people in treatment tend to have severe substance abuse disorders and are more often than not dual diagnoses or polydrug abusers (Cunningham et al., 1993).

Another personal barrier is the stigma associated with being labeled an addict or alcoholic or with being in substance abuse treatment (Cunningham et al., 1993). The stigma issue was mentioned in all of the studies on barriers to substance abuse access among female populations, especially pregnant and parenting women and adolescents (Finkelstein, 1994; Kumpfer, 1991; Sandmaier, 1992) and homeless females (Wenzel et al., 1996). For many women, the stigma and blame they experience results in lower self-esteem, guilt, depression, and an increased sense of isolation from their communities. The stigma also may result in a reluctance to seek help through formal channels. Many people prefer to rely on themselves or their informal support system (Biernacki, 1986; Hingson et al., 1982)—a phenomenon that appears to be particularly evident among females, minorities, and people living in rural areas (Cunningham et al., 1993). Among childbearing women, the reluctance also may stem from fear over the legal and child

welfare consequences of entering treatment (Finkelstein, 1994). Further, because many women in treatment have physical and/or sexual abuse histories, they also often fear a lack of protection from their husbands or partners. Among the homeless, there is a sense of distrust of people in authority, which makes them reluctant to use available resources (IOM, 1990; Wenzel et al., 1996). Many homeless youths are runaways and do not seek substance abuse treatment or other health care for fear of being returned home (Greene et al., 1995). Finally, the belief that treatment will not help also has been frequently reported in the literature on substance abusers not in treatment. This barrier may be especially pertinent among incarcerated populations—due to their short stays and because they are mandated into treatment.

5.5.3 Structural Barriers to Access

Two of the most frequently mentioned structural barriers to substance abuse services are the overlapping issues of inadequate availability of services and inaccessibility of existing services (Cunningham et al., 1993). Based on our preliminary findings as well as the published literature, the scarcity of services seems to remain especially pronounced for females—in particular, minority women (Allen, 1994), homeless women (Wenzel et al., 1996), and pregnant women (Grella, 1997; Mitchell, 1993)—and youths, particularly homeless and runaway adolescents (Greene et al., 1995; Pennbridge et al., 1990). As mentioned above, the Maine treatment system study indicated that services for youths are chronically underfunded and understaffed. Availability barriers may be exacerbated by the growth of managed care in the public sector. For instance, increased restrictions on insurance coverage among managed care organizations attempting to contain costs present a structural barrier to access (Cunningham et al., 1993; McCaughin & Howard, 1996).

Even in cases where there are sufficient numbers of services and adequate transportation to them, another common structural barrier identified in the literature is not knowing where to go for treatment. This may be predominantly the case among people with lower educational levels and youths (Cunningham et al., 1993; Greene et al., 1995; Klingemann, 1991). The lack of information on sources of treatment was frequently mentioned in the literature on barriers experienced by homeless substance abusers—in part, because of their detachment from both formal and informal support systems (Cook, 1995; Wenzel et al., 1996).

Providers failing to recognize, screen, or refer clients for substance abuse treatment represent another commonly reported structural access barrier. Some researchers have interpreted the documented inadequate screening among general medical providers as another type of denial, this time on the part of the service provider. The phenomenon is tied to the social stigma surrounding substance abusers, particularly pregnant substance abusers (Finkelstein, 1994).

Long waiting lists at facilities represent another important structural barrier to substance abuse treatment (McCaughin & Howard, 1996). Extended waiting for entry into treatment represents a serious obstacle, particularly for pregnant and parenting women because of the harm continued substance abuse may have on the growing fetus or developing infant or child (Finkelstein, 1994).

Many existing treatment services are not able to address the multiple needs of many substance-abusing clients due to financial constraints. In a national study of clients in alcohol or drug treatment, almost one half reported unmet needs (Etheridge, Craddock, Dunteman, & Hubbard, 1995). The Maine household survey reported a similar finding. Each of the special populations we examined had a distinct list of needs requiring an equally distinct array of support services. To illustrate, one of the most important structural barriers specific to pregnant and parenting women and adolescents is the lack of child care at treatment facilities or the willingness to accept females who are pregnant or have children or teens under their care (Finkelstein, 1994; Grella, 1997). Child care needs and other medical and social problems make it difficult for expectant women or single mothers of young children (and often, women are both) to receive intensive residential treatment and sometimes even to maintain regular outpatient schedules. These types of comprehensive programs require coordination across service sectors that is often lacking (Cunningham et al., 1993; McCaughin & Howard, 1996). For example, research on systems of care for incarcerated individuals suggests that formal and informal linkages between the treatment service system and the criminal justice system are inadequate.

5.6 Summary

The data described in this report provide a rich resource to substance abuse treatment planners and providers in Maine who must make difficult decisions regarding how to allocate limited resources. Like most agencies that oversee treatment systems, OSA operates in an environment where available funding does not match anticipated need and, therefore, priorities must be set to supply services to those deemed in greatest need based on the best information available. We have attempted to highlight these populations through this integrative effort. Overall, a significant proportion of Maine household residents are in need of substance abuse-related services. Household populations comprise the largest number of people in need of treatment. Most of these individuals do not currently receive any help from the public or private sector for their alcohol or drug problems. However, effective service planning and implementation are premised on accurate estimates of the total number of people in need statewide and, more importantly, within service catchment areas such as the state DMHMRSAS regions. We observed that calculating the number of people in need based on household populations alone is likely to result in underestimates. Based on this integrative effort, we determined that a substantial number of special populations—many of whom may not reside in

households much of the year—are in need of treatment in Maine. For many of these vulnerable populations, accessible and appropriate treatment and intervention services are especially scarce. Even with sufficient numbers of treatment programs, providers and policymakers must address the specific access barriers and service needs of these populations in order to ensure program effectiveness.

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APPENDIX A

Sources of Information on Substance Abuse Prevalence Estimates for Missed and Special Populations

Appendix A

Sources of Information on Substance Abuse Prevalence Estimates for Missed and Special Populations

Homeless People

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APPENDIX B

Issues in Defining Substance Use and Abuse Among Adolescents

Appendix B

Issues in Defining Substance Use and Abuse Among Adolescents

One of the challenges of this study was to go beyond describing alcohol and other drug use among adolescents and to define problem substance use and the need for treatment or intervention. To date, no consistent definitions have been established for adolescents. In this section, we provide a brief literature review on these issues, followed by a description of the definitions of problem use and need for treatment or intervention used in this study.

Despite the lack of clear guidance, current research suggests particular components of a definition of problem use. Most of this research has focused on alcohol, the most commonly used and abused substance in this and all age groups (Johnston, O'Malley, & Bachman, 1992; National Institute on Drug Abuse [NIDA] & Office of Applied Studies [OAS], 1993). After reviewing the literature on problem drinking among adolescents, White (1987) concluded that problem drinking has been operationalized in four distinct ways: (1) heavy intake or use intensity, (2) frequent intoxication, (3) use of alcohol for escape reasons, and (4) experiencing specific negative consequences of drinking. Several researchers have used frequency of intoxication and negative consequences attributable to drinking to represent problem drinking among adolescents (Donovan & Jessor, 1978; Jessor & Jessor, 1977; Rachal, Hubbard, Williams, & Tuchfeld, 1976; Sadava, 1985; White, 1987). The specific criteria for their measures included frequency of intoxication in the past year (at least four times for Rachal et al., 1976; at least five times for Jessor & Jessor, 1977; at least six times for Donovan & Jessor, 1978) and/or negative drinking-related consequences in at least two out of five life areas (e.g., trouble at school, with friends, with police). An analysis of longitudinal data collected in Wake County, North Carolina, in middle and high schools showed that level or frequency of alcohol use, problems related to drinking, and early symptoms of dependence were distinct dimensions of problem drinking (Bailey & Rachal, 1993).

Considerably less effort has been directed toward defining and measuring problem use of drugs other than alcohol, especially among adolescents. Several questions have remained unanswered: Does the use of some types of drugs and not others constitute problem use among adolescents? How frequently or how long do the drugs need to be used to be considered problem use? The results of one study that received a great deal of attention suggest that experimental use of drugs (particularly marijuana) may not be personally or socially destructive. More specifically, Shedler and Block (1990) followed a group of adolescents from preschool through age 18 and concluded that adolescents who had engaged in some drug experimentation (compared with both abstainers and frequent users) were the best adjusted in the whole sample.

Such results suggest that experimental users (who do not go on to be regular or frequent users) are not the appropriate group to target for more intensive forms of intervention. Nevertheless, even experimental users would still be at risk for disciplinary actions (e.g., legally, at school, in the family) due to use, possession, or purchase of alcohol, tobacco, or other drugs.

A few other studies have attempted to distinguish between adolescents who try substances and then go on to be regular and/or frequent users and those who try a drug once or twice and then cease use. Several researchers suggest that the factors predictive of initiation of substance use differ from those that predict cessation (Goodstadt, Chan, Sheppard, & Cleve, 1987; Kaplan, Martin, Johnson, & Robbins, 1986). These observations are consistent with stage theories of escalating levels and types of use, in which different factors are involved for progression into each stage of drug use (Hawkins, Lishner, & Catalano, 1985; Kandel, Kessler, & Margulies, 1978). However, research efforts to identify factors predictive of cessation of substance use have produced conflicting results.

Several studies differentiate between motivations for drug use that are oriented to social influences and those driven by drug-specific factors, but these studies disagree as to which type of motivation is most influential. The social influence domain includes such variables as peers' use of drugs, the perceived approval of drug use by peers, the role of normative influences in using drugs, and the social context of drug use. Drug-specific effects typically include the perceived positive and negative consequences of drug use on psychological and physiological functioning. Johnson (1973); Lanza-Kaduce, Akers, Krohn, and Radosevich (1984); and Krohn, Skinner, Massey, and Akers (1985) found social influences to be the more powerful predictor of continued use of substances. On the other hand, Bailey, Flewelling, and Rachal (1992a); Kaplan et al. (1986); and Kandel and Raveis (1989) found drug-specific factors to be the more powerful predictors. Bachman, Johnston, O'Malley, and Humphrey (1988) argued that both social disapproval and the perceived physical and psychological risks of use were responsible for the then-recent national declines in the prevalence of marijuana use among high school seniors.

The most consistent and influential research results suggest the appropriateness of focusing on particular "markers" for problem drug use. Markers are particular, observable types of substance use behavior that may suggest other, often more serious patterns of behavior. Obviously, one marker is the initiation of the use of "serious" types of substances, such as cocaine and heroin, but other, more benign behaviors may signal more serious behaviors. One marker that received a great deal of empirical support is the "early" initiation of any type of substance, including alcohol and cigarettes. Early initiation is the commencement of substance use at an age that is younger than the typical or mean age of initiation. Initiation of a substance at an age that can be considered early is associated with "misuse" of that substance (Anthony & Petronis, 1995; Rachal et al., 1982); recent research has found that lifetime rates of alcohol

dependence decreased by 14% with each increasing year of age at onset of use, and the odds of abuse decreased by 8% (Grant & Dawson, 1997). Additionally, early initiation of substance use has been associated with greater frequency of use and greater involvement in other types of drug use (Fleming, Kellam, & Brown, 1982; Kandel, 1982) and an increase in the probability of continued use (Kandel, 1982).

Heavy use of alcohol and/or cigarettes also was shown to be a marker for the use of several types of illicit substances. Studies of current illicit drug users have indicated that such users are often heavy alcohol and cigarette users (Block & Goodman, 1978; Single, Kandel, & Faust, 1974). However, studying illicit drug users does not provide information on heavy users of alcohol or cigarettes who do not use illicit drugs. Nevertheless, the research mentioned above on adolescents suggests that heavy use of alcohol or cigarettes is a potentially useful marker for other drug use.

Heavy use of alcohol and cigarettes also has been related to the sequencing of drug use initiation and escalation among adolescents. Donovan and Jessor (1983) found that by the time adolescents increase their frequency of drinking to heavy levels, they have typically already initiated marijuana use, and Kandel and Faust (1975) found that adolescents in their sample who were heavy smokers were especially likely to initiate illicit drug use. In an analysis of data for a longitudinal study of Wake County, North Carolina, school students, Bailey (1992) showed that students who increased their cigarette use during the study period were likely to have relatively high prevalences of prior substance use, to concurrently and subsequently initiate substances not yet tried, and to maintain substance use after the increase.

Studies attempting to identify problem users also often measure patterns of use and consequences of respondents' use (as suggested above in the discussion about measuring problem drinking). The revised, third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R) is a commonly used set of criteria in which particular patterns of use and related problems are used to define substance dependence and abuse (American Psychiatric Association [APA], 1987). The DSM-III-R (1987) criteria of dependence or abuse can be applied to this group, but the criteria often are more relevant to adults with a longer pattern of problems. With adolescents, the challenge is identifying use that is currently a major problem or that is likely to continue and evolve to meet the more stringent diagnostic criteria.

APPENDIX C

Maine Population by DMHMRSAS Region and by County, 1997

Appendix C

Table C.1 Maine Population by DMHMRSAS Region and by County, 1997

DMHMRSAS Region/County	Total Population	Population 18 or Older	Population 17 or Younger
Region I	424,950	328,827	96,123
Cumberland	251,438	197,856	53,582
York	173,512	130,971	42,541
Region II	492,768	372,244	120,524
Androscoggin	101,045	76,558	24,487
Franklin	29,015	21,781	7,234
Kennebec	115,885	88,141	27,744
Knox	37,543	29,001	8,542
Lincoln	31,601	24,150	7,451
Oxford	53,776	40,376	13,400
Sagadahoc	35,663	26,809	8,854
Somerset	52,220	38,632	13,588
Waldo	36,020	26,796	9,224
Region III	324,333	248,459	75,874
Aroostook	77,094	58,237	18,857
Hancock	49,638	38,422	11,216
Penobscot	143,300	110,738	32,562
Piscataquis	18,315	13,790	4,525
Washington	35,986	27,272	8,714
MAINE	1,242,051	949,530	292,521

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

APPENDIX D

County Population Estimates Across Mutually Exclusive Groups of Adults

Appendix D

Table D.1 County Population Estimates Across Mutually Exclusive Groups of Adults

County	Household		Nonhousehold						Total
	Phone	No Phone	Homeless	Institutionalized	Jail Inmates	State Prison Inmates	Federal Prison	Other Group Quarters ¹	
Androscoggin	70,641	2,579	260	1,231	94	0	0	1,753	76,558
Aroostook	52,340	1,915	61	822	40	0	0	3,059	58,237
Cumberland	182,142	6,658	2,601	1,876	149	510	0	3,920	197,856
Franklin	20,026	728	21	179	43	0	0	783	21,780
Hancock	35,617	1,296	47	467	17	0	0	978	38,422
Kennebec	81,161	2,957	126	1,512	66	56	0	2,263	88,141
Knox	26,827	977	56	331	33	569	0	208	29,001
Lincoln	22,990	836	26	265	0	0	0	33	24,150
Oxford	38,147	1,389	60	611	32	0	0	137	40,376
Penobscot	99,862	3,648	1,066	981	129	99	0	4,953	110,738
Piscataquis	13,077	475	39	183	16	0	0	0	13,790
Sagadahoc	25,290	930	17	207	0	0	0	365	26,809
Somserset	36,620	1,334	39	559	65	0	0	15	38,632
Waldo	25,485	928	35	106	10	0	0	232	26,796
Washington	25,372	932	17	323	31	101	0	497	27,273
York	122,868	4,482	611	1,510	106	0	0	1,394	130,971
Statewide	878,465	32,064	5,082	11,163	831	1,335	0	20,590	949,530

¹Other group quarters includes college dormitories and military barracks.

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

APPENDIX E

Number of Adults in Need of Substance Abuse Treatment, by Age, Ethnicity, and Gender Statewide and by Region

Appendix E

Table E.1 State Estimates of Adult Substance Abuse Treatment Needs, by Age, Ethnicity, and Gender

Age	White		Other		Male	Female	Total
	Male	Female	Male	Female			
18-24	14,521	5,938	458	181	14,979	6,119	21,098
25-44	29,071	12,027	928	463	29,999	12,490	42,489
45-64	9,796	3,942	304	225	10,100	4,167	14,267
65+	3,540	1,378	101	45	3,641	1,423	5,064
Total	56,928	23,285	1,791	914	58,719	24,199	82,918

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

Table E.2 Region I Estimates of Adult Substance Abuse Treatment Needs, by Age, Ethnicity, and Gender

Age	White		Other		Male	Female	Total
	Male	Female	Male	Female			
18-24	5,630	2,670	250	72	5,880	2,742	8,622
25-44	10,361	4,913	459	227	10,820	5,140	15,960
45-64	4,043	1,918	178	157	4,221	2,075	6,296
65+	897	426	42	18	939	444	1,383
Total	20,931	9,927	929	474	21,860	10,401	32,261

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

Table E.3 Region II Estimates of Adult Substance Abuse Treatment Needs, by Age, Ethnicity, and Gender

Age	White		Other		Male	Female	Total
	Male	Female	Male	Female			
18-24	4,944	2,234	172	75	5,116	2,309	7,425
25-44	11,669	5,271	405	179	12,074	5,450	17,524
45-64	2,741	1,240	97	41	2,838	1,281	4,119
65+	1,359	615	48	18	1,407	633	2,040
Total	20,713	9,360	722	313	21,435	9,673	31,108

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

Table E.4 Region III Estimates of Adult Substance Abuse Treatment Needs, by Age, Ethnicity, and Gender

Age	White		Other		Male	Female	Total
	Male	Female	Male	Female			
18-24	3,938	1,042	40	29	3,978	1,071	5,049
25-44	7,041	1,844	75	42	7,116	1,891	9,007
45-64	3,010	794	30	20	3,040	814	3,854
65+	1,275	338	15	11	1,290	349	1,639
Total	15,264	4,018	160	107	15,424	4,125	19,549

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

APPENDIX F

Regional Estimates of Substance Abuse Treatment Needs Among Adults, by Gender

Appendix F

Table F.1 Region I Estimates of Adult Substance Abuse Treatment Needs, by Gender

Mutually Exclusive Group	Prevalence ¹		Number in Need	
	Male	Female	Male	Female
Household				
Phone	13.1	5.5	18,913	8,843
No phone	21.4	9.0	1,132	528
Nonhousehold				
Homeless	34.0	33.3	959	115
Institutionalized	41.2	35.6	379	877
Jail inmate	68.2	58.5	160	12
State prison inmate	68.1	58.5	317	26
Regional Total²	13.8	6.1	21,860	10,401

¹Rates rounded to the nearest tenth.

²Total does not include federal prison inmates or people living in other group quarters.

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

Table F.2 Region II Estimates of Adult Substance Abuse Treatment Needs, by Gender

Mutually Exclusive Group	Prevalence ¹		Number in Need	
	Male	Female	Male	Female
Household				
Phone	11.2	4.4	18,790	7,943
No phone	18.4	7.2	1,122	473
Nonhousehold				
Homeless	44.2	33.3	241	32
Institutionalized	41.0	35.3	642	1,213
Jail inmate	67.9	58.1	219	12
State prison inmate	67.4	58.1	421	0
Regional Total²	12.1	5.1	21,435	9,673

¹Rates rounded to the nearest tenth.

²Total does not include federal prison inmates or people living in other group quarters.

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

Table F.3 Region III Estimates of Adult Substance Abuse Treatment Needs, by Gender

Mutually Exclusive Group	Prevalence¹		Number in Need	
	Male	Female	Male	Female
Household				
Phone	12.4	2.7	13,578	3,166
No phone	20.3	4.4	812	188
Nonhousehold				
Homeless	40.5	32.1	428	55
Institutionalized	41.2	35.5	322	708
Jail inmate	67.9	57.8	149	8
State prison inmate	67.7	57.8	135	0
Regional Total²	13.1	3.3	15,424	4,125

¹Rates rounded to the nearest tenth.

²Total does not include federal prison inmates or people living in other group quarters.

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

APPENDIX G

Regional Estimates of Substance Abuse Treatment Needs Among Adults, by Age

Appendix G

Table G.1 Region I Estimates of Adult Substance Abuse Treatment Needs, by Age

Mutually Exclusive Group	Prevalence ¹				Number in Need			
	18-24	25-44	45-64	65+	18-24	25-44	45-64	65+
Household								
Phone	24.1	10.6	6.3	0.5	7,745	14,232	5,511	268
No phone	39.3	17.4	10.4	0.8	462	853	329	16
Nonhousehold								
Homeless	28.0	34.4	37.1	32.8	216	530	286	42
Institutionalized	49.0	48.2	36.6	36.6	29	44	129	1,054
Jail inmate	65.2	68.3	69.1	69.1	57	100	14	1
State prison inmate	65.0	68.3	68.9	68.9	114	200	26	3
Regional Total²	25.0	11.1	6.7	2.4	8,623	15,959	6,295	1,384

¹Rates rounded to the nearest tenth.

²Total does not include federal prison inmates or people living in other group quarters.

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

Table G.2 Region II Estimates of Adult Substance Abuse Treatment Needs, by Age

Mutually Exclusive Group	Prevalence ¹				Number in Need			
	18-24	25-44	45-64	65+	18-24	25-44	45-64	65+
Household								
Phone	19.2	11.1	3.4	0.6	6,816	15,953	3,571	393
No phone	31.4	18.2	5.6	1.0	407	952	212	24
Nonhousehold								
Homeless	40.9	39.8	45.9	42.2	47	92	105	29
Institutionalized	48.9	48.1	36.5	36.5	21	93	149	1,592
Jail inmate	65.0	68.2	69.0	69.0	72	138	21	0
State prison inmate	64.5	67.8	68.4	68.4	62	296	60	3
Regional Total²	19.9	11.7	3.7	2.9	7,425	17,524	4,118	2,041

¹Rates rounded to the nearest tenth.

²Total does not include federal prison inmates or people living in other group quarters.

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

Table G.3 Region III Estimates of Adult Substance Abuse Treatment Needs, by Age

Mutually Exclusive Group	Prevalence¹				Number in Need			
	18-24	25-44	45-64	65+	18-24	25-44	45-64	65+
Household								
Phone	19.6	8.8	4.9	1.6	4,620	8,081	3,403	640
No phone	31.9	14.3	8.0	2.6	276	483	202	39
Nonhousehold								
Homeless	32.5	38.5	44.4	46.3	63	272	91	57
Institutionalized	49.6	48.8	37.1	37.1	1	3	126	900
Jail inmate	65.4	68.8	69.3	69.3	61	83	11	2
State prison inmate	64.8	68.1	68.7	68.7	29	84	21	1
Regional Total²	20.3	9.1	5.2	3.5	5,050	9,006	3,854	1,639

¹Rates rounded to the nearest tenth.

²Total does not include federal prison inmates or people living in other group quarters.

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

APPENDIX H

Regional Estimates of Substance Abuse Treatment Needs Among Adults, by Ethnicity

Appendix H

Table H.1 Region I Estimates of Adult Substance Abuse Treatment Needs, by Ethnicity

Mutually Exclusive Group	Prevalence ¹		Number in Need	
	White, non-Hispanic	Other	White, non-Hispanic	Other
Household				
Phone	8.9	17.4	26,603	1,153
No phone	14.5	28.3	1,569	91
Nonhousehold				
Homeless	33.0	38.1	970	104
Institutionalized	37.2	33.0	1,237	19
Jail inmate	67.4	67.2	161	11
State prison inmate	67.3	67.0	318	25
Regional Total²	9.6	18.5	30,858	1,403

¹Rates rounded to the nearest tenth.

²Total does not include federal prison inmates or people living in other group quarters.

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

Table H.2 Region II Estimates of Adult Substance Abuse Treatment Needs, by Ethnicity

Mutually Exclusive Group	Prevalence ¹		Number in Need	
	White, non-Hispanic	Other	White, non-Hispanic	Other
Household				
Phone	7.5	18.2	25,816	917
No phone	12.3	29.6	1,522	73
Nonhousehold				
Homeless	37.5	38.0	273	0
Institutionalized	37.1	33.0	1,846	9
Jail inmate	67.4	67.1	218	13
State prison inmate	67.4	67.1	398	23
Regional Total²	8.3	19.3	30,073	1,035

¹Rates rounded to the nearest tenth.

²Total does not include federal prison inmates or people living in other group quarters.

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

Table H.3 Region III Estimates of Adult Substance Abuse Treatment Needs, by Ethnicity

Mutually Exclusive Group	Prevalence¹		Number in Need	
	White, non-Hispanic	Other	White, non-Hispanic	Other
Household				
Phone	7.5	4.0	16,542	202
No phone	12.3	6.6	984	16
Nonhousehold				
Homeless	39.2	40.0	461	22
Institutionalized	37.1	33.0	1,024	6
Jail inmate	67.4	67.1	142	15
State prison inmate	67.5	67.2	129	6
Regional Total²	8.1	4.7	19,282	267

¹Rates rounded to the nearest tenth.

²Total does not include federal prison inmates or people living in other group quarters.

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