
SUBSTANCE ABUSE IN HAWAII

ADULT POPULATION HOUSEHOLD TELEPHONE SURVEY (1998)

July 24, 2000

Dr. John Gartrell, Ph.D.

Dr. D.W. Wood, MPH, Ph.D.

Andrew Ovenden, MA

University of Hawaii at Manoa, School of Public Health

Contract by:

Hawaii Department of Health,
Alcohol and Drug Abuse Division
Kukuihewa Building, 601 Kamokila Blvd.
Kapolei 96707

TABLE OF CONTENTS

TABLE OF CONTENTS..... **i**

LIST OF TABLES..... **iv**

1. PURPOSE OF THE ADULT POPULATION STUDY..... **1**

 1.1 The Research Problem 1

 1.2 Methods 1

 1.3 Background 3

 1.4 Study Objectives 5

2. RESEARCH DESIGN..... **7**

 2.1 Sample Population 7

 2.2 Household (PSU) Sampling Frame: 7

 2.3 Sample Design and Sample Size: 9

 2.4 Measurement 10

3. PILOT TESTING..... **17**

4. SAMPLING RESULTS..... **20**

 4.1 Fielding 20

 4.2 Respondent Selection and Response Rates 21

 4.3 Demographic Composition of the Sample 24

 4.4 Sample Weighting 25

 4.5 Analysis and Presentation of Results 27

 4.6 A Cautionary Note 28

5. THE PREVALENCE OF ALCOHOL AND TREATMENT NEEDS IN Hawaii (1998). **32**

 5.1 Patterns in the Use of Alcohol in Hawaii 32

 5.1.1 Treatment Needs: Alcohol Dependence 33

 5.2 Alcohol Use for Men and Women by Age 34

 5.2.1 Alcohol Dependence by Age and Gender 37

 5.3 Ethnic Differences in Alcohol Use 39

 5.3.1 DSM-III-R Diagnosis for Alcohol by Ethnicity 40

 5.4 Alcohol use by Ethnicity and Gender 41

 5.4.1 DSM-III-R Diagnosis by Gender, County and Ethnicity 43

 5.5 Alcohol Use: Age, Gender and Ethnicity 45

 5.5.1 DSM-III-R Diagnosis by Age, Gender and Ethnicity 46

6. NON-MEDICAL USE OF DRUGS IN Hawaii (1998)..... **55**

 6.1 Non-Medical Use Of Drugs By County 55

6.2	Non-Medical Drug Use by Age and Gender	57
6.3	Ethnicity and Non-Medical Drug Use in Hawaii	59
7.	PREVALENCE OF ILLEGAL DRUG USE IN Hawaii.....	65
7.1	Marijuana Use in Hawaii	65
7.1.1	Treatment Needs for Marijuana	69
7.2	Methamphetamine Use in Hawaii	71
7.2.1	Methamphetamine Treatment Needs	73
7.3	Hallucinogen Use in Hawaii	74
7.3.1	Hallucinogen Treatment Needs	75
7.4	Cocaine Use in Hawaii	76
7.5	Heroin Use in Hawaii	78
8.	TOBACCO USE IN Hawaii.....	92
9.	USE OF MULTIPLE DRUGS.....	99
9.1	Multiple Substance ("Polydrug") Use and Treatment Needs ...	99
9.2	Population Estimates for Multiple Drug Use	100
10.	SUBSTANCE USE AND TREATMENT NEEDS AMONG WOMEN OF CHILDBEARING AGE.....	106
10.1	Substance Use and Treatment Need by County Among Women of Childbearing Age.....	106
10.2	Substance Use and Treatment Need by Age Among Women of Childbearing Age.....	108
10.3	Substance Use and Treatment Need by Ethnicity Among Women of Childbearing Age.....	111
11.	TREATMENT NEEDS IN Hawaii.....	117
11.1	Male and Female Treatment Needs (Hawaii and Counties)	118
11.2	Level of Treatment Need	120
11.3	Lifetime and Current Diagnosis of Treatment Need	120
11.4	Lifetime and Current Diagnosis by Age and Gender	122
11.5	Lifetime and Current Diagnosis by Ethnicity	123
11.6	Treatment Utilization and Barriers to Treatment	124
12.	DRUG USE IN THE 1990S: 1991, 1995 AND 1998 ESTIMATES.....	131
12.1	Change in Drug Use by Gender: 1991 and 1998	131
12.2	Treatment Needs: Population Estimates for 1995 and 1998 ..	133
12.3	The Prevalence of Alcohol and Drug Use and Treatment Needs: 1995 and 1998.....	134
12.4	Gender Differences: 1995 and 1998	138
12.5	Age and Gender Differences: 1995 and 1998	140
12.6	Ethnic Differences: 1995 and 1998	143
13.	DISCUSSION.....	153
13.1	Situation	153
13.2	Research Methods	158
14.	REFERENCES.....	163

Appendix A: Substance Use Within Each County	A.1
A.1Honolulu County.....	A.1
1.1 <i>Patterns in the Use of Alcohol in Honolulu County</i>	A.1
1.2 <i>Patterns of Drug Use in Honolulu County</i>	A.2
1.3 <i>Diagnoses of Abuse or Dependence in Honolulu County</i>	A.4
A.2Hawaii County.....	A.7
2.1 <i>Patterns in the Use of Alcohol in Hawaii County</i>	A.7
2.2 <i>Patterns of Drug Use in Hawaii County</i>	A.8
2.3 <i>Diagnoses of Abuse or Dependence in Hawaii County</i>	A.10
A.3Kauai County.....	A.13
3.1 <i>Patterns in the Use of Alcohol in Kauai County</i>	A.13
3.2 <i>Patterns of Drug Use in Kauai County</i>	A.14
3.3 <i>Diagnoses of Abuse or Dependence in Kauai County</i>	A.16
A.4Maui County.....	A.18
4.1 <i>Patterns in the Use of Alcohol in Maui County</i>	A.18
4.2 <i>Patterns of Drug Use in Maui County</i>	A.19
4.3 <i>Diagnoses of Abuse or Dependence in Maui County</i>	A.21
 Appendix B: Codebook	 B.1
 Appendix C: Study Protocol	 C.1
 Appendix D: Sample and Population Weights	 D.1
D.1Overview.....	D.1
D.2Population Estimates.....	D.3
D.3Calculation Of Sample And Population Weights.....	D.5
D.4Standard Errors In Population Estimates.....	D.7
 APPENDIX E: MARKET TRENDS PACIFIC, FINAL TECHNICAL REPORT	 E.1
 APPENDIX F: MARKET TRENDS PACIFIC, PILOT TEST REPORT	 F.1

LIST OF TABLES

Table 2.4: ... DSM-III-R Criteria for Abuse or Dependence Diagnosis
10

Table 3.1: Pilot Test Telephone Sample Disposition
15

Table 4.2: Final Disposition of Telephone Numbers
18

Table 4.3: Demographic Characteristics of the Sample, by County
(Unweighted) 24

Table 4.4: Demographic Characteristics of the Sample, by County
(Weighted) 25

Table 5.1: Alcohol Use by County
38

Table 5.2a: Alcohol Use by Age and Gender
39

Table 5.2b: Alcohol Use by Age, Gender, and County
40

Table 5.3: Alcohol Use by Ethnicity and County
41

Table 5.4a: Alcohol Use by Ethnicity and County (Males)
42

Table 5.4b: Alcohol Use by Ethnicity and County (Females)
43

Table 5.5: Alcohol Use by Age, Gender and Ethnicity
44

Table 6.1: Non-Medical Drug Use (Hawaii and Counties)
50

Table 6.2: Non-Medical Drug Use by Age and Gender
51

Table 6.3: Non-medical Drug Use by Ethnicity
52

Table 7.1a: Marijuana Use by Gender, Age, Ethnicity and County
65

Table 7.1b: Marijuana Use by Gender, Age, Ethnicity and County
66

Table 7.1c: Marijuana Abuse or Dependence by Gender, Age, and
Ethnicity 67

Table 7.2a: Methamphetamine Use by Gender, Age, Ethnicity, and
County 68

Table 7.2b: Diagnosis of Methamphetamine Abuse or Dependence by
Gender, Age,
Ethnicity, and County 69

Table 7.3a: Hallucinogen Use by Gender, Age, Ethnicity, and County
70

Table 7.3b:Diagnosis of Hallucinogen Abuse or Dependence by Gender, Age, Ethnicity, and County	71
Table 7.4a:..... Cocaine Use by Gender, Age, Ethnicity, and County 72	
Table 7.4b:Diagnosis of Cocaine Abuse or Dependence by Gender, Age, Ethnicity, and County	73
Table 7.5a:Heroin/Opiate Use by Gender, Age, Ethnicity, and County 74	
Table 7.5b:Diagnosis of Heroin/Opiate Abuse or Dependence by Gender, Age, Ethnicity, and County	75
Table 8.1:..... Tobacco Use by County 79	
Table 8.2:..... Tobacco Use by Age and Gender 80	
Table 8.3:..... Tobacco Use by Ethnicity 81	
Table 9.1a:..... Heavy Drinking and Drug Use 85	
Table 9.1b:..... Drug Use and DSM-III-R Diagnosis 85	
Table 9.1c:..... Heavy Drinking, Drug use and DSM-III-R Diagnosis 86	
Table 9.2: Multiple Substance Use: Population Estimates for Hawaii 87	
Table 9.3:Multiple Substance Use by Age, Gender, Ethnicity and County	88
Table 10.1:Use of Alcohol and Non-medical Drugs by Women of Childbearing Age (18 to 44 Years), by County	96

Table 10.2:Use of Alcohol and Non-medical drugs by Women of Childbearing Age (18 to 44 Years), by Age	97
Table 10.3:Use of Alcohol and Non-medical Drugs by Women of Childbearing Age (18 to 44 Years) by Ethnicity	98
Table 11.1:Population Estimates of Adult Treatment Need by County and Gender	106
Table 11.2:Estimate Of Adult Dependence and Abuse Of Alcohol and Other Drugs By County	107
Table 11.3:..... Current and Lifetime Diagnoses by County	108
Table 11.4:..... Current and Lifetime Diagnoses by Age and Gender	109
Table 11.5:..... Current and Lifetime Diagnoses by Ethnicity	110
Table 12.1:..... Change in Drug Use in Hawaii, 1991 to 1998	124
Table 12.2:Prevalence of Treatment Need (Abuse or Dependence Diagnosis), by County, 1995 and 1998	125
Table 12.3:..... Changes in Drug Use, 1995 to 1998, by County	126
Table 12.4:Drug Abuse and Treatment Needs by Gender, 1995 and 1998	127
Table 12.5:Drug Use and Treatment Needs by Age and Gender, 1995- 1998	128
Table 12.6:Changes in Drug Use and Treatment Needs by Ethnicity, 1995 and 1998	129
Table A.1 :Alcohol Consumption and Drug Use by Gender, Age, and Ethnicity: Honolulu County	A.5
Table A.2 :Alcohol Consumption and Drug Use by Gender, Age, and Ethnicity: Hawaii County	A.10
Table A.3:Alcohol Consumption and Drug Use by Gender, Age, and Ethnicity: Kauai County	A.14
Table A.4 :Alcohol Consumption and Drug Use by Gender, Age, and Ethnicity: Maui County	A.18
Table D1:Sample Survey of Substance Abuse in Hawaii: Unweighted Responses by Age, Gender, Ethnicity and County	D.8
Tables D2 through D5:Population Estimates by Age, Gender, Ethnicity and County (Gallup 1995; BRFSS 1995	D.9
Table D6:Comparison of Population Estimates for Hawaii: Age and Gender Distributions by County (1995-1997)	D.10
Tables D7:Average Population Estimates (Gallup 1995, BRFSS 1996, 1997) by Age, Gender, Ethnicity and County	D.11
Table D8:..... Alcohol Use by Age Group and Gender	D.12

1. PURPOSE OF THE ADULT POPULATION STUDY

1.1 The Research Problem

Substance abuse results in social and personal problems ranging from emotional pain and physical illness through family dysfunction, to lost productivity, and high health and welfare system costs. Indeed, substance abuse has been recognized as the greatest single preventable cause of morbidity and mortality in the U.S.A. In the face of these problems there remains a continuing need to better understand the etiology of substance abuse, and to develop policies and plans to respond to substance abuse behaviors and treatment needs (SAMHSA, 1992).

1.2 Methods

In 1997 the Federal Center for Substance Abuse Treatment (CSAT) funded the Alcohol and Drug Abuse Division (ADAD) of the Hawaii Department of Health to contract with the School of Public Health (SPH), University of Hawaii at Manoa to conduct a telephone survey of adults residing in Hawaii. The research methodology to be used was premised upon the National Technical Center's (NTC) contention that a telephone survey of state households should be the centerpiece of studies designed to obtain information for treatment planning. Population-based prevalence estimates are most efficiently obtained through self-reports

gathered in telephone interviews of representative samples. A telephone household survey is less expensive than face-to-face interviews. Telephone surveys require a shorter period to field, are easier to administer, and allow closer monitoring of data collection and processing (Aquilino, 1992; Fenig et al., 1993; Frank, 1985). Numerous applications of telephone surveys have proven to be effective in gathering substance abuse treatment needs assessment data from adult populations (Johnson and Barrett, 1992; Gilbert et al., 1990; McAuliffe et al., 1991; Spence et al., 1989). The research protocol is included in Appendix C.

The School of Public Health team which was to manage the adult household study in Hawaii therefore proposed a telephone survey using a questionnaire developed by NTC based upon the Diagnostic Interview Schedule as the tool to measure addiction (Robins, et al., 1982). The survey was conducted to generate the information necessary to reliably estimate the current (1998) prevalence of adult substance use and the need for treatment services. The School of Public Health (SPH) sub-contracted with an experienced local commercial firm, Market Trends Pacific Inc. (MTP), to pretest and field the survey, and to produce machine readable data necessary to estimate substance use prevalence and treatment needs.

Hawaii is a difficult state to survey efficiently because its population is relatively small and is geographically widely disbursed on several islands. This is complicated by the fact that the population is also ethnically diverse. The survey conducted for ADAD estimates

prevalence and treatment needs within the State of Hawaii for marijuana, cocaine, hallucinogens, heroin, crystal methamphetamine and alcohol. The sampling design is also intended to produce reliable estimates within four sub-state planning areas: the counties of Honolulu, Hawaii, Maui and Kauai. In order to effectively survey substance abuse and treatment needs within Hawaii's diverse population, estimates are also produced for five ethnic groups: Caucasians, Japanese, Native Hawaiians and part-Hawaiians, Filipinos, and Others.

1.3 Background

Hawaii has been noted to have a recent history of relatively high levels of substance abuse. Alcohol and crystal methamphetamine (ice) have become predominant as substances of choice. As the Gallup Organization noted in their protocol for the 1995 survey of substance abuse in Hawaii, in 1989 fully 20% of Hawaiian adult respondents reported alcohol binge drinking (five or more drinks in one sitting) during the past month. Hawaii ranked fourth highest in adult alcohol abuse among the 40 states participating in the Behavioral Risk Factor Surveillance System (BRFSS). With an additional 7% reporting chronic drinking (60 or more drinks in the past month), in 1989 Hawaii ranked as the state with the highest percentage of chronic drinkers. About 6% of adult respondents for the BRFSS reported current marijuana use, and over 2% reported other non-medical drug use.

In Hawaii's 1991 BRFSS household survey, almost one-third of current drinkers were classified as "heavy drinkers"

(at least one binge in the previous month, or chronic use, or both). Among women who drank, almost one in five reported heavy drinking, and 7% reported drinking behavior indicative of alcohol dependence. Among Native Hawaiians who reported drinking, fully two-thirds self-identified as heavy drinkers. This proportion rose to over 90% among young males 18 to 34 who drank. Two-thirds of Hawaiian females reported drinking behavior consistent with the classification of heavy drinker.

In total, more than one in five Native Hawaiian or part-Hawaiian drinkers reported behavior consistent with alcohol abuse or dependence. Despite the prevalence of these problems with alcohol, Native Hawaiian drinkers were less than half as likely as others in the population to utilize treatment services for alcohol problems.

The 1995 Adult Household Survey of Substance Use and Treatment Needs conducted by the Gallup Organization for ADAD interviewed 5,807 residents of Hawaii (Kroliczak et al. 1996). The DSM-III-R diagnosis of substance dependence for alcohol was employed by this study because these criteria were substantially more rigorous than the criteria of self-reported binge and/or chronic use. For example, the DSM-III-R criteria address consequences of excessive use (e.g., tolerance to alcohol, withdrawal symptoms, life problems) and failed attempts to control substance use.

Measured by DSM-III-R criteria, Gallup reported that 4.9% of adults were dependent on alcohol and another 3.0% were alcohol abusers. Using DSM-III-R criteria, 0.9% were

dependent on cocaine and about 0.7% were dependent on crystal methamphetamine or other amphetamines. Gallup made no attempt to reconcile these prevalence estimates with their description of Hawaii's previous history (Kroliczak et al. 1996).

Based upon Gallup's 1995 survey, 6.4% of adults were judged to need treatment for alcohol abuse or dependence. Another 1.1% needed treatment for drugs and a further 1.4% were estimated to need treatment for both drugs and alcohol. Treatment needs were fairly consistent across counties, and over 90% of those who desired more treatment were between the ages of 25 and 44 and were residents of Honolulu, Hawaii and Kauai counties. Women with children were as likely to desire more treatment as men. Over one-half (52%) of the adults who desired more treatment were injection drug users (Kroliczak et al. 1996).

1.4 Study Objectives

The interview questionnaire provided by NTC and a sampling frame provided by the Department of Health were used to:

- a. Reliably estimate the prevalence of alcohol and other drug use among adult residents of the State of Hawaii using a standardized survey instrument prepared by the National Technical Center (NTC) and adapted for use in Hawaii. Prevalence estimates were obtained for adults 18 years of age and older for alcohol, marijuana, cocaine (including crack

cocaine), hallucinogens, heroin, and methamphetamine and other amphetamines;

- b. Determine the patterns of alcohol and other drug use activity;
- c. Generate prevalence estimates for substance abuse in terms of the social and demographic characteristics of the population (county, ethnic status, age and gender and socio-economic status);
- d. Estimate the prevalence of substance abuse and dependence diagnosis based on DSM-III-R criteria for the adult population 18 years of age and older for the state as a whole and within the four sub-state planning areas and the five ethnic groups;
- e. Based upon these prevalence estimates of use and dependence to produce valid and reliable data describing treatment needs through estimation and description of the extent to which alcohol and other drug users have sought treatment, have been in treatment and face barriers to treatment. These estimates will inform efforts to plan and review substance abuse treatment.
- f. Provide information necessary to complete the required Substance Abuse Prevention and Treatment (SAPT) Block Grant application forms.

2. RESEARCH DESIGN

2.1 Sample Population

The study population consisted of Hawaii residents, 18 years of age and older. The population was stratified into four sub-state planning areas (counties) and separate samples were drawn within each stratum. An eligible respondent for the purpose of this study was therefore a resident member 18 years of age or older of a household (non-institutional place of permanent residence) within the State of Hawaii.

2.2 Household (PSU) Sampling Frame:

The household was the primary sampling unit (PSU) and only households with working telephones were included in the sampling frame. The sampling frame was provided to SPH by ADAD through the Office of Health Status Monitoring (OHSM). Using SAS software and programming in the relevant telephone exchanges for Hawaii, OHSM generated a sample of approximately 1,000 seven-digit telephone numbers for the pretest, and approximately 50,000 seven-digit phone numbers for the main sample. The main sample was stratified by county with 40% of the numbers drawn from Honolulu County and 20% of the telephone numbers generated for each of the remaining three counties (Hawaii, Maui and Kauai). OHSM submitted

the pretest and the main sample to GTE, who selected the working, residential telephone numbers and returned that list to OHSM. This process yielded 23,223 working residential telephone numbers.

In order to improve response rates, a letter introducing the survey was mailed to establish the survey's legitimacy, to inform the selected residential households about the purpose of the survey, and to urge residents in the household to provide a positive response to the request for an interview. (ADAD provided envelopes and copies of the letter on Department of Health stationery signed by the Director of Health.) Using reverse telephone directories, OHSM determined which of the selected telephone numbers could be matched with listed names and addresses. Labels were printed for those addresses listed in the current reverse directories, and printed address labels were provided to Market Trends Pacific (MTP), who would do the interviewing.

The sub-contractor for the data collection, Market Trends Pacific, Inc., under the supervision of SPH, mailed the letters of introduction to prospective respondents. The effectiveness of this procedure was limited by the high proportion of unlisted telephone numbers in Hawaii. Approximately 40% of the residential telephone numbers are unlisted. There was also some difficulty in insuring the timely arrival of letters prior to the household being telephoned.

Given the limitations of reverse directories, MTP was able to mail only 9,033 pre-survey announcements, 38.9%

of the 23,223 working telephone numbers selected for the sample. Of these, 1,771 (19.6%) were returned as undeliverable because they had a rural route address with no mail receptacle or because the addressee had moved.

Despite managing the mail-out activities using full names and addresses, MTP designed the interview sessions such that the survey was completely anonymous. The interviewer asked only the first name of the respondent, and the first name only was used during the interview and to complete callbacks. Names are not recorded in the permanent database.

2.3 Sample Design and Sample Size:

The goal of the survey's sampling scheme was to estimate treatment needs for the State of Hawaii as a whole, four sub-state planning areas (counties) and five separate ethnic groups. Market Trends Pacific, Inc. was sub-contracted to conduct the interviewing. The pretest was to include at least 100 interviews. The main sample was to include at least 5,000 telephone interviews in which respondents substantially completed the telephone questionnaire (Appendix B). The sample was stratified so that at least two thousand (2,000) interviews were to be conducted in the County of Honolulu on the Island of Oahu and at least one thousand (1,000) interviews in each of the other counties: Hawaii, Maui (including Molokai and Lanai, and Kauai. Included in this sampling frame were quotas to generate interviews with at least eight hundred seventy-five (875) adults in each of at least five (5) ethnic groups. The five ethnic groups were distributed in

a proportionate manner across the four counties. The five ethnic groups were Caucasian, Japanese, Hawaiian or part-Hawaiian, Filipino, and other ethnicities. Stratification of the sample by ethnicity was accomplished by random quota sampling methods.

MTP utilized the PSU sampling frame issued by the State's Office of Health Status Monitoring (OHSM) to conduct the interviews. Within a household selected in the primary sample, respondents were selected in a quota sample designed to over-represent young males. Interviews were completed with any young male 18 to 34 years of age who was present at the time of contact and who agreed to be interviewed. Young females between 18 and 34 years of age were given second preference followed by older adults of either gender. This quota sampling was intended to improve estimates of substance use, abuse and dependence. Young male adults are most likely to be diagnosed as abusing or dependent on substances, but they are also the most difficult to represent by simple random sampling within households. This problem is particularly acute in Hawaii, where households are relatively large and many contain more than two adults.

2.4 Measurement

The questionnaire instrument used to estimate substance abuse and treatment needs was based upon the NTC Telephone Household Survey Version 6.52. SPH also supplemented the instrument in a number of areas important to the estimation and description of substance abuse, and to the prevention and the planning of

treatment needs in Hawaii (Appendix B). These additions are described in the research protocol (Appendix C).

In order to expand the investigation of substance abuse to consider tobacco products, the respondents were asked if they currently used tobacco products (Yes/No). For those who answered "Yes", information was gathered on types of products used (multiple response) and frequency of use. These additional questions were added at the beginning of Module B and were asked of all respondents.

The wording of many of the questions were simplified from the original version written by the National Testing Center for Substance Abuse Needs Assessment (NTC) and supplied to SPH by ADAD. Many respondents speak English as a second language or speak "pidgin" English that, in many respects, represents a simplification of English as well as a combination of words from other languages. This simplification was intended to facilitate interviewers' performance.

The drug categories listed by NTC as "optional" (sedatives, stimulants, analgesics and inhalants) were omitted from the interview as separate drug categories. Prior research in Hawaii has found very low prevalence for each of these drug categories. Based upon the findings in Gallup's 1996 study, the expected prevalence would be so low in the general population of adults in Hawaii as to render reliable estimates impossible, even with a sample of at least 5,000 respondents (Kroliczak et al. 1996).

Crystal methamphetamine ("crystal meth", or "ice") use was measured separately because its use and treatment are of relevance in Hawaii and because problems with this drug are a priority for the State. Also added was an "other drug" question in which respondents are asked to report use of drugs not specifically covered in the questionnaire. This was followed by direct questions on difficulties obtaining treatment.

See Table 2.4: DSM-III-R Criteria for Abuse or Dependence Diagnosis

Measurement of treatment need for substance abuse or dependence was based upon the presence of a substance abuse or dependence diagnosis. Diagnosis is the basis for the definition of treatment need, rather than extrapolation from measurement of the frequency or amount of substance use. A diagnosis of substance dependence required meeting three of the nine DSM-III-R criteria that have persisted (for at least one month) or occurred repeatedly over a longer period. The nine criteria measure substance tolerance and withdrawal, problems in meeting social role expectations, and failed attempts to control substance use.

Table 2.4: DSM-III-R Criteria for Dependence Diagnosis

1. Substance taken in larger amounts or for a longer period of time than intended.
2. Persistent desire or unsuccessful efforts to control use.

3. Much time obtaining, taking, or recovering from substance.
4. Frequent intoxication or withdrawal symptoms when fulfilling role obligations at work, school, or home, or when use is physically hazardous.
5. Activities given up or reduced.
6. Continued use despite knowledge of persistent problem caused or exacerbated by use.
7. Marked tolerance for substance.
8. Withdrawal symptoms
9. Use to relieve or avoid withdrawal symptoms.

(National Technical Center, 1996)

DSM-III-R criterion one refers to a respondent's admission to taking substances in larger amounts or over a longer period than the respondent intended. Criterion two refers to persistent desire or unsuccessful efforts to cut down or control substance use. Criterion three is based upon an admission of spending a great deal of time on activities necessary to procure a drug, take the substance, or recover from its effects.

Criterion four refers to problems meeting role expectations at home, school or at work (being high while at work, school or while taking care of children; interference with housework; missing work, losing a raise or promotion or getting fired; being suspended from school or doing poorly on tests). It also includes reporting admitted hazardous substance use that resulted in increased risk when driving a car, using knives, machinery or guns, crossing against traffic, climbing or

swimming. Criterion five refers to important social occupational or recreational activities given up or reduced because of substance use.

DSM-III-R criterion six refers to admission of continued substance use despite knowledge of having persistent or recurrent psychological, social or physical problems that were caused or exacerbated by the use of the substance. Criterion seven is a marked tolerance for the substance (need for increased amounts in order to achieve intoxication or desired effects, or markedly diminished effect with continued use of the same amount). It also includes adequate functioning at doses of the substance that would produce significant impairment in a casual user.

Criterion eight includes reports of characteristic withdrawal symptoms. These symptoms include being sick, depressed, anxious, having trouble concentrating, being tired, having trouble sleeping, trembling, sweating, nausea, diarrhea, affects on appetite, seeing or hearing things, having runny eyes, having seizures, having muscle pains or having a fast heart rate. Criterion nine asks whether substances are taken to relieve or avoid withdrawal symptoms.

The screening for other drugs used for non-medical reasons was rather straight-forward. Those who reported using marijuana five times or more in the past 18 months were asked the diagnostic questions. Any use of hallucinogens, cocaine or heroin within the past 18 months, any report of a drug-related hospitalization, or

any report of having a problem with or being addicted to a drug resulted in a screening for a drug diagnosis.

However, the screening for alcohol diagnosis was more complicated. To screen for the alcohol diagnosis, respondents were asked if they had consumed any alcohol in the 18 months prior to the interview. If the respondent said "yes", and they reported typically consuming five or more drinks, then they were asked the diagnosis and treatment questions. If they said they did not drink in the last 18 months, they were asked if they had ever drunk alcohol. If they had, they were asked if they had "binged" (had five or more drinks on one occasion, or had gone two or more days without sobering up) within the last 18 months. If they had binged, they were then asked the diagnostic and treatment questions for alcohol. If they had not binged, respondents were still screened for past hospitalization for alcohol related problems and were asked if they had ever had an alcohol problem. If they answered "yes" to either of these questions, then they were asked the questions related to the nine criteria for DSM-III-R diagnosis.

In order to receive a DSM-III-R diagnosis of dependence, respondents had to qualify themselves as having experienced symptoms associated with drug use for three or more of the nine criteria. In addition, these symptoms had to be experienced either frequently or over a considerable period of time.

The DSM-III-R specifies a diagnosis of substance abuse if: (1) the respondent has never met criteria for

substance dependence for the particular substance under investigation, and (2) either admits to a maladaptive pattern of substance use as evidenced by continued use despite knowledge of a persistent or recurrent social, occupational, psychological, or physical problem caused by the substance in question; or admits to using the substance in situations where its use constitutes a physical hazard; and, (3) some symptoms have lasted at least one month, or have occurred repeatedly over a longer period of time (National Technical Center, 1996: p.25.2).

Lifetime diagnosis of abuse or dependence is used to estimate treatment need. The use of lifetime diagnosis to estimate treatment needs insures comparability with results reported by Gallup for their 1995 survey treatment needs in Hawaii (Kroliczak et al. 1996).

3. PILOT TESTING

A pilot test was conducted between March 16-19, 1998. Calls were made during the day (10:00 a.m. to 2:00 p.m.) and in the evening (5:00 p.m. to 9:00 p.m.). OHSM provided a random sample of 508 telephone numbers drawn so as to match the main study (40% from Honolulu County and 20% from each of Hawaii, Maui and Kauai Counties). The sample was screened by GTE-Hawaiian Tel to insure that they were household numbers currently in service. To maximize respondent participation, MTP mailed out letters to all those among the sample of 508 who were listed in reverse directories (N=268). Forty six (17.2%) letters were returned as not deliverable.

When this sample did not readily produce the desired quota of 100 interviews, it was supplemented by a random digit dialing (RDD) sample of 1,581 telephone numbers. Altogether, 125 interviews were completed with a median length of interview of approximately 16 minutes. However, some interviews took as long as 90 minutes to complete. The disposition results for the survey are listed below in Table 3.1.

These results demonstrated the utility of GTE-Hawaiian Tel's screening. The GTE-Hawaiian Tel sample had a smaller proportion of non-working and business numbers and resulted in over twice the rate of completed

interviews than in the RDD sampling frame that was less than one-third the size. This sampling procedure was therefore approximately 6 times more effective than RDD procedures.

The secondary (within household) sample selection quotas yielded the sample segmentation desired. The pilot sample was almost equally split between men (48%) and women (52%), and 40% of the respondents were under 35 years of age. In terms of ethnicity, 24% were Caucasian, 21% Japanese, 16% Hawaiian or Part-Hawaiian and 12% classified themselves as Filipino. This left 27% classified as "other ethnicities." Almost two-thirds of the pilot test respondents were from Oahu (Honolulu County), while 18% were from Hawaii, 11% were from Kauai and only 5% were from Maui. The proportion of respondents from Maui was relatively low due to the lack of RDD sampling in this area.

Table 3.1: Pilot test telephone sample disposition

Codes	Total Sample		OHSM Sample		MTP Sample	
	%	N	%	N	%	N
Completed Surveys	5.9	125	10.2	52	4.6	73
No Answer	22.3	466	28.5	145	20.3	321
Busy Signal	<0.01	20	1.2	6	<0.01	14
Answering Machine	13.4	280	17.7	90	12.0	190
No Eligible Respondents	<0.01	18	3.0	15	<0.01	3
Immediate Refusal	13.1	273	16.7	85	11.9	188
Non-Working Number	26.4	552	6.3	32	32.9	520
Call-Back	4.3	90	3.3	17	4.6	73
Language Barrier	2.1	44	4.9	25	1.2	19
Physical/Mental Handicap	<0.01	8	1.6	8	0	0
Mid-Refusal/Terminate	1.9	40	3.1	16	1.5	24
Business Number	4.4	92	<0.01	4	5.6	88
Caller ID	1.1	24	1.2	6	1.1	18

Fax Number	2.7	57	1.4	7	3.2	50
------------	-----	----	-----	---	-----	----

Note: Total sample: 2,089. OHSM Sample: 508. MTP Sample: 1,581.

4. SAMPLING RESULTS

4.1 Fielding

The methods used in fielding the sample are described in detail in Appendix E (Market Trends Pacific Final Report). In fielding the survey MTP made 112,283 calls to the 23,223 telephone numbers provided by OHSM. Prior to calling, MTP mailed out 9,033 pre-survey announcements in eight sequential batches to households with phone numbers published in reverse directories. Only 38.9% of the telephone numbers, which GTE Hawaiian Tel screened as residential numbers currently in service, were listed in published reverse directories. The State of Hawaii has a very high proportion of unlisted residential telephone numbers. Of the 9,033 letters which were mailed, 1,771 or 19.6% were returned to ADAD as undeliverable ("no mail receptacle" for rural route addresses, or "moved and left no address" or "unclaimed").

The purpose of the introduction letters was to maximize respondent participation, confirm official sponsorship of the study and to provide residents with an opportunity to notify ADAD if they had any concerns about the study. No assessment of the success of this mailing was possible, since the household addresses provided to MTP by ADAD were not linked to phone numbers.

4.2 Respondent Selection and Response Rates

Potential respondents were pre-screened to make sure they were residents of Hawaii as well as willing and able to answer the survey. Interviews were conducted in English and in "pidgin." Within the household, interviewers were instructed to ask for younger males 18 to 34 years of age, then younger females 18 to 34 years of age, then older adults.

As interviewing progressed, sampling quotas were introduced to complete the sampling design. All county and ethnic quotas were met with the exception of the quota of 875 Filipinos. Only 700 Filipinos were interviewed. The required quota was difficult to achieve because it was nearly double the proportion of Filipinos estimated to reside in the State.

The final dispositions for the 23,223 telephone numbers are given in Table 4.1. Interviewers were able to get some response (talked to someone) in 17,577 households. This contact rate represented 75.7% of the 23,223 telephone numbers. Non-working telephones (N= 2,535, 11%) constituted the most prevalent reason for non-contact, followed by no-answer on repeated calls (4.2%), caller ID (3.4%), machine answer only and no response to messages (2.5%) and FAX machines (2.9%).

Telephone numbers where a call-back was arranged without success, (initial contact but no subsequent contact, (N=1,843) reduced the contact rate to 67.8% (total N=15,734). Of these 15,734 households who were contacted,

Table 4.2: Final disposition of telephone numbers		
Type of Call	Total	Percentage
(01) No Answer	977	4.2
(02) Busy	58	0.02
(03) Answering Machine	594	2.5
(04) Complete	5,050	21.7
(05) Refusal	5,782	24.9
(06) Non-Working	2,535	11.0
(07) Call-Back	1,843	7.9
(08) Language Barrier	1,028	4.4
(9) Termination	520	2.2
(10) Phys/Mental Handicap	262	1.1
(11) Business	366	1.5
(12) Caller ID	803	3.4
(13) Fax Machine	679	2.9
(14) Over Quota-Ethnicity	1,834	7.9
(15) Over Quota-Gender	892	3.8
Total	23,223	100.0%

a total of 4,382 households did not have a respondent who satisfied the eligibility criteria for the study (27.9%). Over-quota respondents constituted more than half of this number (N= 2,726), while households where nobody spoke either English or "pidgin" constituted a further one-quarter (N=1,082).

Among the 11,352 households where someone was eligible to be interviewed, a slight majority (N=5,782, 50.9%) refused. Interviews were completed with 44.5% of these eligible contacts and interviews that were begun but not completed (terminated) made up the remaining 4.6%. These response rates were achieved in part because MTP successfully converted a number of initial refusals: 513

households, or approximately 10%, were converted. The final completed disposition of the 23,223 calls made by MTP, was that 5,050 (21.7%) resulted in a complete, usable interview.

The low response rate may be attributed to several factors. In Hawaii, a high emphasis on privacy is indicated by the very high percent of unlisted telephone numbers. Response rates have been low in Hawaii (Kroliczak et al. 1996), particularly because Asian populations seem to be less likely to participate. Also, the current poor economy may lead to considerable pressure and stress for adults, and substance abuse itself may be a sensitive topic for some.

The Council of American Survey Research Organization (CASRO) response rates reflect the ratio of the number of telephone calls made with unknown eligibility status (e.g. the telephone rings but no-one answers, or telephone is busy) to telephone calls in which an eligible respondent is contacted. The resulting CASRO response rate estimates reflect both telephone sampling efficiency as well as the degree of cooperation among eligible respondents contacted. The CASRO rate for this study was 36.3%, primarily as a result of the high refusal rate. The upper bound rate, which includes only refusals, terminations and completed interviews was 44.5%. This low response rate was obtained despite our prior mailing to inform respondents about the survey, as many as 20 attempts to contact each telephone phone number and the conversion of 10% of the initial refusals.

MTP validated 1,671 of the completed interviews (33.1%) using several methods: re-contact of a random sample of respondents and re-contact of incomplete interviews to improve the completeness of interviews. To complete missing data, 998 respondents were called back to establish how many telephone lines were available in each household. The re-contact rate was 100%. In addition, 95 respondents were re-contacted to complete the last section of the questionnaire. The success rate with this sub-sample was 68.4% (65 were re-interviewed).

4.3 Demographic Composition of the Sample

The unweighted sample contained 45.4% of males, despite the fact that males (particularly young males) were given preference in second stage sampling. Males were only slightly under-represented in the sample.

The unweighted sample contains 33.2% "young adults" under the age of 35 years (Table 4.2). The second stage sampling preference for younger adults was successful in over-sampling those who were more likely to use drugs.

See Table 4.3: Demographic Characteristics of the Sample, by County (Unweighted)

The sampling design also specified a second stage sample that was to contain a minimum of 875 respondents from each of five ethnic categories. This quota was not obtained for Filipino residents of Hawaii, despite

drawing a supplementary sample of telephone numbers from Kauai and instituting a preference for Filipinos during the final stages of the interviewing. The sample of 700 Filipinos does over-represent this ethnic group, and this sample size will yield reliable estimates of substance abuse and treatment needs for the State of Hawaii as a whole.

The sampling quotas for counties were more nearly met. The sampling design called for 2,000 interviews in Honolulu County and 1,000 interviews each in Hawaii, Maui and Kauai. The smallest number of interviews was recorded for Kauai county (N=928). This proved sufficient to yield accurate estimates.

4.4 Sample Weighting

Sample weighting is described in detail in Appendix D. The sample was weighted to adjust for the number of telephone lines reported for the household. This weighting adjusted for the fact that the greater the number of separate telephone numbers (lines) reported to be available in the household, the greater the probability that a household would be selected in the initial sample of telephone numbers. The sample was also weighted to adjust for the number of adults in the household. The larger the number of adults in the household, the smaller the probability that an adult from that household would be selected in the second stage sampling within the household.

Since the selection of telephone numbers disproportionately represented the population distribution of the four counties in Hawaii, the sample was re-weighted to yield the proportion of adults in the population of each county. Also, second stage sampling selected individuals from within the household disproportionately by ethnicity, age and gender. The sample was further re-weighted to produce the appropriate proportion of adults by these three factors. The 80-cell sampling matrix indicating the resultant sample distribution is reported in Table 4.4.

See Table 4.4: Demographic Characteristics of the Sample, by County (Weighted)

The re-weighting of the sample altered the proportion of respondents in Honolulu County from an observed 43.0% to 74.7%. The other three counties were weighted "down" to represent their estimated proportions in the population: Hawaii from 18.8% to 11.2%, Maui from 19.8% to 9.6% and Kauai from 18.4% to 4.6%. Since these latter three counties were over-represented, sampling estimates for substance use and treatment will be more accurate than weighted sample sizes would apparently indicate.

The ethnic distribution for the state was adjusted so that Caucasians represented 30.0% of the sample. Hawaiians and part-Hawaiians comprised 12.6%, Japanese comprised 23.8%, Filipinos comprised 12.0% and those with other ethnic identifications totaled 21.6%.

Sample adjustments for both gender and age were relatively minor. Males comprised 48.3% of the unweighted sample and 48.8% of the re-weighted sample. As planned in the sample design, the youngest age groups in the survey were well represented, since a relatively high prevalence of substance abuse was anticipated in these cohorts. This strategy was designed to improve the sample estimates for these relatively small cohorts. Those under the legal drinking age in Hawaii, respondents 18 to 20 years of age, represented the smallest cohort that will be reported separately. They comprised 5.2% of the unweighted sample and 4.8% of the re-weighted sample used for population estimates. In general, however, re-weighting for age was relatively minor.

4.5 Analysis and Presentation of Results

The prevalence of substance use was reported as percentages with appropriate standard errors for each estimate. Where possible, tables have been simplified to report percentages in the columns and total populations or sub-populations on the margins of the table. Population estimates can then be calculated by applying the percentages to the column population totals.

The population estimate that corresponds to the standard errors are calculated similarly by multiplying the percentage given by the population (or sub-population) given in the column total. When multiplied in turn by the value of an appropriate test statistic (e.g. Student's t), these standard errors can then be used to estimate confidence intervals or to perform significance tests. A

close approximation of confidence intervals may be obtained by multiplying observed standard errors by 2.0. Results are then added and subtracted from point estimates to provide a 95% confidence interval (the range within which we would expect to observe the true population estimate 95 times out of 100 with samples similar in size to our own). For a more complete description of these procedures, see Appendix D.

Where the prevalence of use or DSM-III-R diagnosis (treatment need) was broken down by more than two factors (e.g. age, gender and county, as in Table 5.2b), calculations of population estimates were entered in the tables.

4.6 A Cautionary Note

It is prudent to remember that these estimates of substance abuse and treatment need are most likely conservative. In addition to substance use, determination of an individual's need for treatment requires admission of multiple behavioral effects of drug abuse or dependence (e.g. loss of control, impairment of social functioning). Respondents who do not recognize and report the effects of substance use are not deemed to be in need of treatment.

At any one time, some proportion of the population of drug users is not available for interview because they are institutionalized. Some abusers are not reachable by telephone, some are not willing to be interviewed, and some are unable to respond, even if they are willing.

People may be more willing to admit to the effects of a legal intoxicant, such as alcohol, than an illegal drug such as methamphetamine. Indeed, there is some evidence that it is now more legitimate to admit addiction to tobacco, particularly past addiction. The degree to which these factors distort estimates of substance abuse and treatment needs in Hawaii is unknown.

5. THE PREVALENCE OF ALCOHOL AND TREATMENT NEEDS IN Hawaii (1998)

5.1 Patterns in the Use of Alcohol in Hawaii

Most of the adult respondents had tried alcohol at some point during their life ($90.1\% \pm 0.4\%$), and these rates varied little by county (Table 5.1). For the state as a whole, there was a high rate of abstinence reported. In this report, abstinence is defined as reporting not having consumed alcohol (or other substance) in the month prior to the survey. For the total sample, 35.1% had not had a drink of alcohol during the 18 months prior to the survey, and 64.9% ($\pm 0.7\%$) reported that they had had a drink of alcohol in the past month. The rate of abstinence was similar across all four counties.

See Table 5.1: Alcohol Use by County

While there was a high rate of abstinence (47.6%) among adults in the State of Hawaii, there was also a high rate of heavy drinking ($21.0\% \pm 0.6\%$). Heavy drinking is defined as one or more incidents of a binge (at least 5 drinks at one sitting) or 60 or more drinks per month (or both). For the state as a whole, 19.6% ($\pm 0.6\%$) of adults reported at least one binge episode with alcohol (within

the past 18 months), and 8.2% ($\pm 0.4\%$) reported that they consumed at least 60 drinks per month over the same period. The estimates of the numbers of chronic drinkers and binge drinkers are not exclusive of each other. When these two behaviors were combined, 21% ($\pm 0.6\%$) of the adult population reported that they had engaged in heavy drinking. On the basis of these survey results, there is a 95% certainty that between 19.8% and 22.2% of the population are heavy drinkers. In actual numbers, there is a 95% certainty that between 177,292 and 198,782 adults from the Hawaii State population of 895,414 adults, engaged in heavy drinking in the 18 months prior to the survey.

The rates of heavy drinking (binge or chronic drinking) were high across all counties. Heavy drinking was highest in Hawaii County (the "Big Island"), where 22.4% ($\pm 1.4\%$) reported at least one binge episode in the last 18 months, and 10.6% ($\pm 1.0\%$) reported having at least 60 drinks in the same period. From Table 5.1, 24.2% ($\pm 1.4\%$) of the adults interviewed from Hawaii County reported heavy alcohol use during the 18 months prior to the survey. Rates of heavy alcohol use were relatively low for Honolulu County (20.3% $\pm 0.9\%$) and for Kauai County (19.9% $\pm 1.3\%$).

5.1.1 Treatment Needs: Alcohol Dependence

A diagnosis of alcohol dependence according to DSM-III-R criteria was made for 5.3% (± 0.2) of the adults who responded to the survey. This represents between 45,666

to 49,246 of the state's population who would be judged to be in need of substance abuse treatment. These rates varied from a high of 6.7% ($\pm 0.6\%$) reported for Hawaii County to a low of 4.1% ($\pm 0.5\%$) for Kauai County. A similar pattern was reflected for DSM-III-R diagnosis of alcohol abuse. For the state as a whole, 2.8% of adults ($\pm 0.3\%$) were diagnosed as alcohol abusers, or between 19,700 and 30,443 adults. Again, rates of diagnosis for alcohol abuse were substantially higher for Hawaii County ($3.7\% \pm 0.8\%$).

In general, rates of abstinence from alcohol within the past month were high for the state as a whole and for all the counties. On the other hand, rates of heavy drinking and alcohol dependence and abuse were also high for the state as a whole and for all counties. Only a minority of the adult population used alcohol and used it moderately. The County of Hawaii reported the highest rates of all the counties for heavy drinking, alcohol dependence and alcohol abuse.

5.2 Alcohol Use for Men and Women by Age

Table 5.2 reports alcohol use by age and gender for the State of Hawaii as a whole. Both the use of alcohol and the heavy use of alcohol decrease with age. Also, males were significantly more likely to use alcohol than females, and males were also statistically more likely to report heavy use of alcohol than were females.

See Table 5.2a: Alcohol Use by Age and Gender

The age at which one may purchase alcohol in Hawaii is 21 years. Therefore, 18 to 20 year old adults were not legally old enough to drink. However, only 48.2% ($\pm 3.1\%$) of this cohort reported no alcohol consumption in the month prior to the interview. Therefore, approximately 52% of this cohort reported having used alcohol in the month prior to the survey. The usage rate for underage adults was similar to the rate reported by adults 21 to 34 years of age. The 18 to 20 years of age "under age" cohort in our sample was also more likely than any other age group to report heavy use of alcohol ($37.8\% \pm 3.0\%$). When compared with adults who were 50 years of age and older, the 18 to 20 year old cohort is more than three times as likely to report heavy drinking.

Males were more likely to report using alcohol in the month prior to the survey ($56.6\% \pm 1.0\%$ versus $39.0\% \pm 1.0\%$ for females). Males were also more likely to report heavy drinking ($31.0\% \pm 0.9\%$ versus $11.5\% \pm 0.6\%$ for females). Age differences in alcohol use by gender were quite striking. Almost one-half of the underage 18 to 20 year old male cohort ($47.7\% \pm 4.3\%$) reported heavy drinking compared with $26.8\% (\pm 4.0\%)$ for females of similar age. The prevalence of heavy drinking drops to 38.6% for males 21 to 34 years of age, compared to 19.6% for females, and continues to decline with age for both genders. This decrease is more striking for females than

it is for males, as relatively few females 50 years of age or older (4.3%) reported heavy drinking.

When alcohol use is broken down by age and gender separately for each county (Table 5.2b), abstinence and heavy use show notable variation. For young males, 18 to 34 years of age, abstinence was highest on Maui (41.7%) and lowest on Kauai (33.7%). Abstinence rates were higher for young females, ranging from a low of 51% for Hawaii to a high of 60.3% for Honolulu. Older adults (35 years of age and older) had higher rates of abstinence. Abstinence rates for older males ranged from 40.5% and 40.8% in Hawaii and Maui respectively, to a high of 48% in Honolulu. Abstinence rates for older females were considerably higher, and showed smaller variation across counties: from a low of 59.9% in Hawaii County to 64.8% in Kauai.

See Table 5.2b: Alcohol Use by Age, Gender, and County

Rates of heavy drinking showed somewhat wider variation among young males aged 18 to 34 years. Hawaii had the highest rate of heavy drinking reported by young adults (49.2%), while Honolulu County had the lowest rate (38.3%). Older males reported lower rates of heavy alcohol use. Similar patterns were present for different counties. Honolulu County had the lowest rates (24% ± 1.7%) and Hawaii County had the highest (33% ± 2.5%).

Rates of heavy drinking for young females were lower still, ranging from 18.6% ($\pm 3.3\%$) in Kauai County to 27.6% ($\pm 4.0\%$) for Hawaii County. Rates of heavy use were substantially lower for older females, and varied little across counties. The lowest rates were observed for Kauai (6.1% $\pm 1.2\%$) and for Hawaii (6.5% $\pm 1.3\%$), while the highest rates were observed for Maui (9% $\pm 1.5\%$).

In summary, there were marked differences in the consumption of alcohol by age and gender. Young adult males were much more likely to use alcohol, and they were also much more likely to use it heavily. Still, a substantial proportion of young males (about 38% among 18 to 34 year olds) had not used alcohol at all in the month prior to the survey. A slightly larger proportion reported that they had used alcohol heavily. This leaves only 23.7 percent of this cohort who used alcohol and used it in moderation. Young males who use alcohol were almost twice as likely to drink heavily as they were to drink in moderation. Almost half (49.2%) of the young adults resident in Hawaii County reported heavy drinking.

Legal efforts to restrain drinking among adults 18 to 20 appear to have had little success.

5.2.1 Alcohol Dependence by Age and Gender

The results for DSM-III-R diagnosis broken down by age and gender give even more striking comparisons (Table 5.2a). Over 22% ($\pm 3.5\%$) of under-age males (5,019 of 22,507) received a DSM-III-R diagnosis of alcohol abuse

or dependence compared to 10.5% of males 21-34 years of age (14,449 of 137,606). More than one in five males between the age of 18 and 21 would be judged to be in need of clinical treatment for alcohol dependence.

See Table 5.2a: Alcohol Use by Age and Gender

When DSM-III-R diagnoses is broken down by age and gender within counties, results show large differences by both age and gender and substantial variation in those differences across county. Hawaii County has by far the highest rate of diagnosis for alcohol dependence for young males aged 18 to 34 years ($19.8\% \pm 3.9\%$) and for older males 35 years and older ($11.8\% \pm 1.7\%$). Maui and Honolulu Counties had rates that were about two-thirds of those observed for Hawaii County, while Kauai had somewhat lower rates for young males ($8.0\% \pm 2.7\%$) but rates that were similar to Honolulu for older males ($6.9\% \pm 1.5\%$).

See Table 5.2b: Alcohol Use by Age, Gender, and County

Hawaii County also had the highest rates of DSM-III-R diagnosis for young females age 18 to 34 years ($14.4\% \pm 3.2\%$), followed by Maui County ($12.0 \pm 2.5\%$) and Honolulu County ($10.0\% \pm 1.4\%$). County differences for those 35

years of age and older are much smaller, ranging from 7.2% in Maui County to 5.1% in Hawaii County. Hawaii County has a particularly strong contrast between the proportion of young females who need treatment (14.4%) and the rate of treatment needs for older females (5.1%).

5.3 Ethnic Differences in Alcohol Use

Ethnic differences in the use of alcohol were socially very complex in Hawaii. For the State as a whole, Filipinos were most likely (64.0% ± 1.8%) to report abstinence from alcohol (Table 5.3). Japanese and Hawaiian respondents also had a high proportion who reported that they abstained from using alcohol. Caucasians were by far the least likely to report abstinence (40.4% ± 1.4%), and they were the most likely to report heavy drinking (26.1% ± 1.3%). Japanese respondents were least likely to report heavy drinking (15.0% ± 1.2%), although Filipino respondents reported similarly modest rates (17.2% ± 1.5%). While a majority (57.3% ± 1.6%) of Hawaiian respondents reported abstinence, 25.0% (± 1.4%) reported heavy drinking. Hawaiians were similar to the Japanese and Filipinos in having a high rate of abstinence, but they were unlike the Japanese and Filipinos and more like Caucasians in reporting a high rate of heavy drinking.

See Table 5.3: Alcohol Use by Ethnicity and County

In general, differences in the use of alcohol were larger across the different ethnic groups than across Counties. Ethnic groups reported similar patterns of alcohol use in different counties. Filipinos who live in Maui were the most likely to abstain from alcohol use (73.4%). Japanese who lived on Kauai were the least likely to report that they drank heavily.

Hawaiians who live on the Big Island were the most likely to report heavy drinking (30.3% ± 3.0%), followed closely by Hawaiians who lived on Maui (28.1% ± 3.3%) and Caucasians in all counties. The Japanese who lived on the island of Hawaii also reported elevated rates of heavy drinking (24.6% ± 3.1%) compared to Japanese who lived in other counties (ranging from 12.5% ± 2.6% for Kauai to 18.6% ± 3.2% for Maui).

5.3.1 DSM-III-R Diagnosis for Alcohol by Ethnicity

DSM-III-R diagnoses show more marked differences among ethnic groups than did heavy drinking (Table 5.3). Caucasians (13.1% ± 1.0%) and Hawaiians (11.7% ± 1.0%) had very high rates, while rates among Japanese (3.9% ± 0.6%), Filipino (4.1% ± 0.8%) and other ethnic groups (7.5% ± .8%) were much lower. Standard errors for these statewide population estimates were relatively small, even for the slightly smaller samples gathered among Filipinos. Rates of DSM-III-R diagnosis were statistically significant for all ethnic groups. Based upon our survey results it is 95% certain that between 11.1% and 15.1% of Caucasians or between 29,864 and

40,627 Caucasian adults are in need of clinical treatment services for alcohol dependence.

See Table 5.3: Alcohol Use by Ethnicity and County

Caucasians resident in Maui County reported the highest level of DSM-III-R diagnosis for alcohol (14.5% ± 2.1%) followed closely by the Caucasians resident in Honolulu County (13.2% ± 1.7%). Hawaiians also had high rates of DSM-III-R diagnosis across the counties with the exception of those Hawaiians resident in Kauai (6.2% ± 1.7%). Japanese and Filipino respondents who lived in Honolulu, Kauai and Maui counties generally had low rates of DSM-III-R diagnosis (2.1% to 4.1%), many of which were not statistically significant. The exceptions for these two ethnic groups were the rates of DSM-III-R diagnosis reported for Hawaii County. Nine percent (± 2.1%) of the Japanese resident in Hawaii County and 9.6% (± 3.0%) of the Filipinos resident in Hawaii County received a DSM-III-R diagnosis for alcohol.

5.4 Alcohol use by Ethnicity and Gender

Tables 5.4a and 5.4b provide breakdowns of alcohol use by ethnicity within county separately for males (Table 5.4a) and for females (Table 5.4b). Male Filipinos who reside on Kauai had the highest rates of abstinence (61.2%). Hawaiian males who reside in Hawaii County had the

highest rates of heavy drinking (47.1%) followed by the Hawaiians who live in Maui County (38.2%).

See Table 5.4a: Alcohol Use by Ethnicity and County (Males)

Caucasian males had the highest rates of use of alcohol within the month prior to the survey on all the islands, with the single exception of those of "other" ethnicity (*i.e.* not Caucasian, Japanese, or Filipino). Caucasian males also had relatively uniformly high rates of heavy alcohol use in all counties. Japanese males who live in Hawaii County or Maui County had relatively elevated rates of heavy drinking, 36.2% and 35.3% respectively compared to Japanese males in Honolulu or Kauai Counties

See Table 5.4b: Alcohol Use by Ethnicity and County (Females)

Females reported higher rates of abstinence than did males. As was the case with male respondents, Filipino women were most likely to report abstinence from using alcohol (Table 5.4b). Among Filipino women who resided in Maui County, 84.6% (\pm 4.4%) reported that they did not use alcohol in the month prior to the interview. At the other end of the spectrum, Caucasian women were the most likely to report alcohol use, no matter what their county

of residence. Their abstinence rates were consistently 20 to 30 percentage points lower than those reported by other ethnic groups.

Filipino women consistently reported relatively low rates of heavy drinking for all counties. Hawaiian women reported the highest rates of heavy alcohol use, particularly on Maui and Hawaii. This pattern parallels the pattern observed for men. Caucasian women who resided in Honolulu County and in Maui County reported high rates of heavy drinking (16.3 ± 2.5% and 15.4% ± 2.9% respectively). Japanese women who lived on Hawaii also reported relatively high rates of heavy drinking (12.5%) compared to Japanese women who lived in other counties, where rates ranged from 5.2% (± 1.4%) for Honolulu to 2.5% (± 1.8%) for Maui. Women and men both had higher rates of heavy alcohol use in Hawaii County.

5.4.1 DSM-III-R Diagnosis by Gender, County and Ethnicity

Hawaiian males were most likely to receive a DSM-II-R diagnosis of alcohol dependence or abuse (Table 5.4a), particularly if they resided in Hawaii County (18.8% ± 3.6%) or in Maui County (17.6% ± 4.1%) followed by Caucasians (15.2% ± 3.4% and 12.7% ± 2.9% respectively). These results show a pattern similar to those reported for reported heavy drinking.

The lowest rates of DSM-III-R diagnosis were observed for Japanese males who resided in Honolulu (3.8% ± 1.3%),

Kauai ($3.1\% \pm 2.0\%$) and Maui ($4.7\% \pm 2.6\%$). Some of these rates fail to meet the significance criteria (they are not approximately twice their standard errors). However, Japanese who lived in Hawaii County were several times more likely to receive a diagnosis ($12.6\% \pm 3.5\%$). The same pattern was observed for Filipino males. There was a low prevalence of DSM-III-R diagnosis for alcohol for Filipino males who lived in Honolulu ($5.7\% \pm 2.2\%$), Kauai ($5.2\% \pm 2.5\%$) and Maui ($6.1\% \pm 3.6\%$, not statistically significant) and a much higher rate (more than twice as high) for the Filipino males who lived in Hawaii County ($11.6\% \pm 4.8\%$).

The highest prevalence of DSM-III-R diagnosis among women was observed for Caucasians, particularly those who resided in Maui ($16.2\% \pm 3.0\%$) and in Honolulu County ($15.0 \pm 2.4\%$) (Table 5.4b). Despite lower rates of heavy alcohol use than men for all counties, these rates of DSM-III-R diagnosis rivaled or surpassed the highest rates of DSM-III-R diagnosis for males in any county.

The lowest prevalence of a DSM-III-R diagnosis was observed for Filipino and Japanese women. Often these rates failed to attain statistically significant levels (two times their standard errors). Again, the exception was observed for those Filipino women and Japanese women who resided in Hawaii County.

5.5 Alcohol Use: Age, Gender and Ethnicity

Differences in alcohol use by age, gender and ethnicity were striking (Table 5.5). Among young males, abstinence was highest for Filipino men ($48.2\% \pm 4.0\%$) and lowest for Caucasians ($29.6\% \pm 4.2\%$). Rates of abstinence were considerably higher among young female adults, and the same ethnic pattern of differences was observed. Young female Caucasians reported the lowest rates of abstinence ($49.7\% \pm 4.2\%$), while Filipino women again reported the highest ($69.8\% \pm 3.5\%$).

See Table 5.5: Alcohol Use by Age, Gender and Ethnicity

Among adults aged 35 years and older Caucasian males again had the lowest rates of abstinence ($37.4\% \pm 2.4$), as did Caucasian females ($45.6\% \pm 2.3$). The highest rates of abstinence for males 35 years of age and older was observed among Hawaiians ($55.3\% \pm 3.1$), and older adult Filipino women had the highest rates of abstinence of any cohort ($80.2\% \pm 2.9\%$).

Heavy drinking showed marked age and gender differences among ethnic groups. Generally, both male and female Japanese and Filipino respondents were less likely to report heavy drinking. Hawaiian and Caucasian respondents were considerably more likely to report heavy drinking. For example, $31.3\% (\pm 4.2\%)$ of 18 to 34 year old Japanese

males and 39.6% ($\pm 3.9\%$) of young Filipino males reported heavy drinking. This contrasted sharply with the 45.1% ($\pm 4.5\%$) of young, Caucasian males who drank heavily and the 50.3% ($\pm 3.6\%$) of young Hawaiian males who reported heavy drinking. Young Hawaiian males were the only cohort in which a majority reported heavy drinking.

Among females, only 3.1% ($\pm 1.4\%$) of older Filipino women and 3.3% ($\pm 1.0\%$) of older Japanese women reported heavy alcohol use compared to 10.4% ($\pm 1.7\%$) of older Hawaiians and 11.1% ($\pm 1.3\%$) of older Caucasians.

5.5.1 DSM-III-R Diagnosis by Age, Gender and Ethnicity

Among young males, Hawaiians (20.5% \pm 2.9%) were almost twice as likely to receive a DSM-III-R diagnosis for alcohol as other ethnic groups. Rates were much lower among those 35 years of age and older, where Caucasians had the highest rates (12.7% \pm 1.7%) followed by Hawaiians (10.6% \pm 1.9%). Older Japanese and Filipinos (whose rates were not statistically significant) had low rates of DSM-III-R diagnosis.

Young Caucasian females had very high rates of DSM-III-R diagnosis for alcohol (15.9% \pm 3.1%), while young Japanese and Filipinos had relatively low rates (5.5% and 5.2%). Young Hawaiian women fell in the middle with a rate of 9.5% \pm 2.2%. Rates of DSM-III-R diagnosis for alcohol among females 35 years of age and older showed a

similar pattern with Caucasians reporting the highest rate (13.9%).

6. NON-MEDICAL USE OF DRUGS IN HAWAII (1998)

6.1 Non-Medical Use Of Drugs By County

The survey gathered detailed information concerning the lifetime (or ever at any time in respondent's life) and current (within the 18 months prior to the survey) use of marijuana (pot), crystal methamphetamine (ice), hallucinogens, cocaine (coke), heroin and other opiates (heroin), and other drugs. Table 6.1 describes estimates of the prevalence of use for these drugs for the state as a whole and for each county. Prevalence estimates were reported as percentages, which may be applied to total population estimates reported for each county and the state.

See Table 6.1: Non-Medical Drug Use (Hawaii and Counties)

For lifetime (or ever) use, the most prevalent drug was marijuana (38.1% \pm 0.7%). The next most prevalent drugs for lifetime (or ever) use were prescription painkillers (for non-medical use, such as Darvon or Talwin) (15.5% \pm 0.5%), hallucinogens (13.9% \pm) and methamphetamine (11.9% \pm 0.5%). In general, this pattern held true for each of

the four counties, with substantially higher lifetime (or ever) use of marijuana, painkillers, hallucinogens and methamphetamines outside of heavily urbanized Honolulu County, particularly in Hawaii and Maui Counties. In Hawaii County lifetime (or ever) use of marijuana was 45.1% ($\pm 1.6\%$), painkillers reached 19.3% ($\pm 1.3\%$), followed by hallucinogens 19.0% ($\pm 1.2\%$) and methamphetamine 17.7% ($\pm 1.2\%$).

For the state as a whole, relatively low levels of lifetime cocaine use were reported (2.9% $\pm .2\%$). Cocaine use was less prevalent even than heroin (4.9% $\pm 0.3\%$).

Marijuana was also the most prevalent drug used in the last 18 months (7.4% $\pm 0.4\%$), followed by hallucinogens (1.2% $\pm 0.1\%$), heroin (0.9% $\pm 0.1\%$), and methamphetamine (0.7% $\pm 0.1\%$). Again, the prevalence of the use of these four drugs was considerably higher outside Honolulu. The highest prevalence in current use of marijuana was reported in the County of Maui (12.6% $\pm 1.1\%$). Residents of Kauai reported the highest current use of hallucinogens (2.3% $\pm 0.5\%$) and methamphetamine (1.3% $\pm 0.3\%$).

Patterns of "more frequent" (more than one or two times in the 18 months prior to the survey) use showed statistically significant levels for marijuana (4.8% $\pm 0.3\%$), methamphetamine (0.4% $\pm 0.1\%$), hallucinogens (0.6% $\pm 0.1\%$) and heroin (0.6% $\pm 0.1\%$). When applied to the population estimates for the state, the survey estimates

that there were 3,600 repeat methamphetamine users (plus or minus about 1,790), and about one and a half times as many users of hallucinogens and heroin (approximately 5,400 for each drug).

Hawaii County had the highest rates of more frequent use of marijuana ($8.1\% \pm 0.9\%$). The more frequent use of hallucinogens was most prevalent in Kauai ($1.2\% \pm 0.4\%$) and Hawaii ($1.0\% \pm 0.3\%$). More frequent methamphetamine use was most prevalent in Maui ($0.7\% \pm 0.2\%$) and Hawaii ($0.6\% \pm 0.2\%$) counties. More frequent heroin use was the least prevalent (and non-significant statistically) in Kauai County ($0.2\% \pm 0.2\%$), and higher for the other counties.

In terms of both current and repeated use, prevalence of cocaine use was not statistically significant in any county with the possible exception of Hawaii (current use, $0.2\% \pm 0.1\%$).

6.2 Non-Medical Drug Use by Age and Gender

For the total population, males generally had substantially higher rates of drug use than did females, and young adults generally had higher prevalence rates for current use than did older adults (Table 6.2). There were some exceptions to this pattern for lifetime (or ever) use, which may be period effects or may reflect greater exposure for older cohorts. Other exceptions to this pattern for the state as a whole were observed for the current and repeated use of cocaine, where difference

in prevalence rates were not statistically significant for either gender in any age group.

See Table 6.2: Non-Medical Drug Use by Age and Gender

Lifetime (or ever) use of marijuana was high for young males (55.2%) and females (38.9%), and decreased with age. The opposite pattern was observed for methamphetamine use. Lifetime (or ever) use of methamphetamine was higher for the males 25 to 34 (18.1%) than for males 18 to 24 (17.2%) and lifetime (or ever) use was considerably higher for females using the same comparison (10.9% versus 5.9%). Hallucinogens followed a similar pattern with 25 to 34 year olds reporting substantial higher lifetime (or ever) use rates than 18 to 24 year olds for both males (20.5% versus 12.2%) and females (15.0% versus 6.8%). Increases with age for cocaine were considerably smaller, except for an increase for males older than 35 years of age. Lifetime (or ever) heroin use peaked at 10.8% for males 25 to 34 years of age and dropped to 4.9% for those over 35 years.

Among "other drugs", painkillers showed high levels for both genders in the older cohorts (17.1% for males and 15.8% for females older than 35 years of age). The lifetime (or ever) use of inhalants, sedatives and particularly stimulants was also higher in older cohorts.

Current marijuana use in the 18 months prior to the survey was much higher among males 18 to 24 years of age (30.0%) than among older males (9.4% for 25 to 34 year olds and 5.9% for 35 years and older). A similar pattern was observed among females, where current use dropped from 17.7% among those aged 18 to 24 years to 6.0% for those aged 25 to 34 years and to 2.9% for those older than 35 years of age.

The reported use of methamphetamine in the 18 months preceding the interview was largely concentrated among males 18 to 24 years of age. At 6.1% ($\pm 1.3\%$) this cohort had the only clearly statistically significant usage. Hallucinogen use was highest among males and females 18 to 24 (2.6% $\pm 1.1\%$ and 2.4% $\pm 1.0\%$, respectively) and among males 25 to 34 (2.8% $\pm 0.7\%$).

Repeated use patterns were similar, particularly in those instances where statistically significant prevalence of drug use was observed (for marijuana, methamphetamine and heroin. Repeated marijuana and methamphetamine use was by far the highest in the youngest cohort of males (21.0% $\pm 2.4\%$ and 3.6% $\pm 0.8\%$ respectively).

6.3 Ethnicity and Non-Medical Drug Use in Hawaii

As indicated in Table 6.3 below, lifetime (or ever) use of marijuana was highest for Hawaiians (48% $\pm 1.6\%$) and Caucasians (45.2% $\pm 1.5\%$) and lowest among Filipinos (27.5% $\pm 1.7\%$). Methamphetamine use was substantially higher among Caucasians (20.4% $\pm 1.3\%$) than among other

ethnic groups and use of methamphetamine was relatively low but still statistically significant among both Japanese (5.6% ± 0.7%) and Filipinos (3.9% ± 0.7%). Hallucinogens showed a similar pattern of use across ethnic groups (Caucasians highest at 20.2% ± 1.3% and Japanese and Filipinos considerably lower), although use among Hawaiians was relatively high at 17.6% (± 1.2%). Cocaine use was concentrated among Caucasians (5.4% ± 0.6%) and Hawaiians (2.6% ± 0.5%), as was heroin use. Estimates for heroin use put Hawaiians at 8.7% (± 0.9%) and Caucasians at 5.1% (± 0.6%). Among other drugs, painkillers and stimulants both had relatively high rates overall, and both were used proportionately more by Caucasians and Hawaiians.

See Table 6.3: Non-medical Drug Use by Ethnicity

Reported use in the last 18 months was highest for marijuana among Hawaiians (11.2% ± 1.0%) and Caucasians (10.7% ± 1.0%). Current use rates were much lower but still statistically significant among Japanese (3.0% ± 0.6%) and Filipino respondents (3.9% ± 0.9%). Current methamphetamine use was highest among Caucasians (0.9 ± 0.3%) and Hawaiians (1.3% ± 0.3%). Current use rates were not statistically significant among Japanese and Filipino respondents. Hallucinogen rates were also highest among Caucasians (1.5% ± 0.4%) and Hawaiians (1.7% ± 0.4%) and

were only marginally statistically significant among Japanese and Filipinos. The pattern of heroin use was quite different. Current heroin usage rates were highest for Hawaiians ($2.1\% \pm 0.5\%$) and lowest among Caucasians ($0.5\% \pm 0.2\%$).

More frequent use marijuana (more than just once or twice in the 18 months prior to the survey) of marijuana was highest among Caucasians ($7.2\% \pm 0.9\%$) and Hawaiians ($8.0\% \pm 0.9\%$), as was more frequent methamphetamine use ($0.8\% \pm 0.3$ and $0.8\% \pm 0.2\%$, respectively). More frequent use of methamphetamine was not statistically significant for Japanese or Filipino respondents. More frequent cocaine use was not statistically significant in any ethnic group.

More frequent heroin use had a different pattern of ethnic distribution compared to other drugs. Hawaiians had the highest rates ($1.6\% \pm 0.4\%$). While Caucasians had the lowest rates ($0.3\% \pm 0.1\%$), more frequent use rates were statistically significant for this ethnic group.

7. PREVALENCE OF ILLEGAL DRUG USE IN HAWAII

7.1 Marijuana Use in Hawaii

As we have noted above, among adults in Hawaii, marijuana is a frequently used non-medical (non-prescription) drug. Among the approximately 895,000 adults resident in the state, approximately 66,000 adults reported that they had used marijuana in the 18 months previous to the survey. For Hawaii as a whole, males (9.7% \pm 0.7%) were much more likely to report use of marijuana than were females (5.2% \pm 0.5%).

Differences in use by males across counties, seen in Table 7.1a, were quite striking. Use by males was considerably heavier in the less heavily urbanized counties of Hawaii (17.1% \pm 1.7%), Kauai (14.7% \pm 1.7%) and Maui (16.0% \pm 1.7%) than it was in Honolulu County (7.6% \pm 0.8%). Still, the more populated Honolulu County had an estimated 25,000 users, which was more than all the other counties combined.

See Table 7.1a: Marijuana Use by Gender, Age, Ethnicity and County

A similar pattern of county differences was observed for females, but these differences were less marked. Females in Maui County showed the highest rates of marijuana use ($9.4\% \pm 1.3\%$). Females in Honolulu county showed the lowest rates ($4.5\% \pm 0.6\%$). Again, because Honolulu County contains the bulk of the population in Hawaii, there were considerably more users in Honolulu County (over 15,000) than there were in all the other three counties combined.

In general, older adults were much less likely to report marijuana use than were younger adults (Table 7.1a). Again, because it has a much larger population, most of the young and older adult users were resident in Honolulu County. Rates of use for both young and older adults were considerably higher in Hawaii County, Kauai County and Maui County than they were in Honolulu County. Rates of marijuana use for young adults (18 to 34 years of age) were highest in Maui County ($24.7\% \pm 2.3\%$).

The three counties outside Honolulu reported considerably higher rates of use for adults 35 years of age and older. The highest rates of marijuana use were reported for Hawaii ($8.7\% \pm 1.0\%$). The lowest rates of marijuana use for this age group were reported for Honolulu County ($3.0\% \pm 0.5\%$).

Hawaiians ($11.2\% \pm 1.0\%$) and Caucasians ($10.7\% \pm 1.0\%$) were considerably more likely to report the use of marijuana than were Japanese ($3.0 \pm 0.6\%$) or Filipino ($3.9\% \pm 0.9\%$) respondents (Table 7.1a). This overall

pattern of differences was modified for each of the three counties outside Honolulu. Except for the ambiguous "other" ethnic group on Maui ($17.7\% \pm 2.4\%$), Caucasians in Maui ($17.2\% \pm 2.2\%$), Hawaii ($16.9 \pm 2.4\%$) and Kauai ($15.7 \pm 2.3\%$) counties reported the highest rates of marijuana use. In all counties, Japanese and Filipino respondents reported relatively low use of marijuana.

More frequent use of marijuana (more than just once or twice in the 18 months prior to the survey) is described below in Table 7.1b. Our survey estimated that over 43,000 of the 66,000 marijuana users in Hawaii reported marijuana use more than once or twice in the past 18 months. For the state as a whole, males were more likely to be frequent users ($6.8\% \pm 0.6\%$) than females ($2.9\% \pm 0.4\%$). This gender difference was again more marked in the counties outside Honolulu. Gender differences in more frequent marijuana use were higher in Kauai and Hawaii Counties than in Honolulu and Maui Counties. Frequent marijuana use was higher for males than for females in Kauai County ($10.7\% \pm 1.5\%$ for males compared to $2.8\% \pm 0.6\%$ for females) and in Hawaii County ($13.2\% \pm 1.5\%$ for males compared to $3.7\% \pm 0.8\%$ for females). Gender differences for Honolulu County were 5.0% ($\pm 0.7\%$) for males versus 2.3% ($\pm 0.5\%$) for females. Despite higher use rates overall, the gender difference for Maui County (males $12.5\% \pm 1.5\%$ and females $6.6\% \pm 1.1\%$) was more like that reported for Honolulu County.

See Table 7.1b: Marijuana Use by Gender, Age, Ethnicity and County

Younger respondents (18 to 34 years of age) were almost three times as likely as older respondents to report frequent marijuana use (8.5% versus 2.9%, Table 7.1b). Differences were less marked in Hawaii County. There, 11.2% ($\pm 2.0\%$) of the adults 18 to 34 years of age used marijuana frequently compared to 7% ($\pm 0.9\%$) of the adults 35 years of age and older. The age difference was smaller because older adults had higher rates of frequent use. The highest rates of use were observed for Maui, where 18.1% ($\pm 2.0\%$) of younger adults reported frequent user compared to 5.8% ($\pm 0.9\%$) of the older adults.

Breakdowns by ethnicity (Table 7.1b) show that for the State of Hawaii as a whole, frequent use of marijuana was relatively high among Hawaiians (8.0% $\pm 0.9\%$) and Caucasians (7.2% $\pm 0.9\%$). Frequent use was much less likely to be reported among Filipino (2.3% $\pm 0.7\%$) and Japanese (1.3% $\pm 0.4\%$) respondents.

This relatively high prevalence of frequent marijuana use among Hawaiians was primarily attributable to the relatively larger number of Hawaiians resident on Oahu (Honolulu County). The relatively high prevalence of frequent marijuana use for Caucasians was attributable to Caucasians living on the other islands. Frequent use of

marijuana was relatively low among Japanese and Filipino respondents in all counties.

A somewhat different pattern of ethnic differences was observed for marijuana use by Caucasians and Hawaiians in Honolulu County (Oahu) than for the other islands. In Honolulu County, where there were somewhat lower frequent use rates, 8.1% ($\pm 1.4\%$) of Hawaiians reported frequent use of marijuana compared to 4.8% of Caucasians. For each of the other three counties, frequent marijuana use was more prevalent and Caucasians were more likely to report frequent use than were Hawaiians. In Maui County 14.4% ($\pm 2.0\%$) of the Caucasians reported frequent use compared to 10.1% ($\pm 2.2\%$) of the Hawaiians. In Hawaii County 12.7% ($\pm 2.2\%$) of the Caucasians reported frequent use compared to 6.6% of the Hawaiians and in Kauai County 10.1% of the Caucasians reported frequent use compared to 6.5% of the Hawaiians.

7.1.1 Treatment Needs for Marijuana

A description of those respondents who received a diagnosis of marijuana abuse or dependence according to the DSM-III-R criteria is reported in Table 7.1c below. Those who receive such a diagnosis are judged to be in need of clinical treatment. For the State of Hawaii as a whole, males (1.2% \pm 0.3%) were almost 50% more likely to need treatment than females (0.8% \pm 0.2%). The need for treatment was almost twice as high on Maui (2.2% for males and 1.5% for females). The gender differences were considerably larger (and rates of treatment needs higher)

in both Hawaii (2.8% for males, 1.3% for females) and Kauai (2.1% for males, 0.8% for females) Counties. By contrast, there were almost no gender differences in treatment needs in the much more populous Honolulu County (0.8% for males and 0.7% for females).

See Table 7.1c: Marijuana Abuse or Dependence by Gender, Age, and Ethnicity

Age differences in marijuana treatment needs were relatively small for respondents in Honolulu County and were larger in other counties. Three percent of those aged 18 to 34 years of age in Maui ($\pm 0.9\%$) were in need of treatment for marijuana abuse or dependence, while 1.3% ($\pm 0.5\%$) of those 35 years or older were diagnosed as needing treatment.

Caucasians and Hawaiians were more likely to receive a DSM-III-R diagnosis denoting a treatment need. Treatment needs were highest for Hawaiians in Kauai County (3.8% \pm 1.4%) and for Caucasians in Hawaii County (3.2% \pm 0.6%).

In many other cases, sample sizes were insufficient to generate reliable estimates and standard errors were less than half the estimates themselves.

7.2 Methamphetamine Use in Hawaii

Rates of current methamphetamine use were lower than rates of marijuana use (compare Table 7.1a, above with Table 7.2a, below). However, gender differences in prevalence were more pronounced for methamphetamine use. Males ($1.2\% \pm 0.2\%$) were four times more likely than females ($0.3 \pm 0.1\%$) to report having used methamphetamine in the 18 months prior to the survey. The estimated prevalence rates of methamphetamine use for females for the State as a whole were statistically significant (i.e., more than twice their standard error) even though these prevalence estimates appear relatively small (See Appendix D, section 4, for an explanation of standard errors in population estimates).

See Table 7.2a: Methamphetamine Use by Gender, Age, Ethnicity, and County

Prevalence rates for males were high enough to be statistically significant (significantly different from zero) in all four counties. Gender differences were largest on Kauai, where 2.8% of the males and none of the females reported methamphetamine use. Gender differences were also large for Hawaii County, where prevalence for males was over six times as high as the prevalence for females ($2.0\% \pm 0.6\%$ for males compared to $0.3\% \pm 0.3\%$ for females). However, none of the prevalence rates for

females within county were statistically significant (twice or more their respective standard errors).

Prevalence rates for reported methamphetamine use (Table 7.2a) by young adults (18 to 34 years of age) were over 5 times the rates of methamphetamine use for adults 35 years of age and older ($1.6\% \pm 0.3\%$ versus $0.3\% \pm 0.1\%$). Prevalence rates were highest for the counties outside Honolulu, with the highest prevalence rates observed for young males on Kauai ($2.9\% \pm 0.9\%$). Prevalence rates for young adults were only slightly lower for Hawaii ($2.2\% \pm 0.8\%$) and Maui ($2.2 \pm 0.7\%$) Counties. Rates of methamphetamine use were considerably lower for Honolulu County, both for adults 18 to 34 years of age ($1.4\% \pm 0.4\%$) and for adults 35 years of age and older ($0.1\% \pm 0.1\%$). Methamphetamine use was not statistically significant among this older group in Honolulu County.

Even with the relatively low prevalence rates for methamphetamine use in Honolulu County, the fact that Honolulu has a much larger population than other counties still means that almost half of the roughly 6,400 users in the State of Hawaii were young or male and living in Honolulu County.

For the State of Hawaii as a whole, Hawaiians reported the highest prevalence rates for methamphetamine use ($1.3\% \pm 0.3\%$) followed by Caucasians ($0.9\% \pm 0.3\%$). Japanese and Filipino adults did not have statistically significant rates of methamphetamine use. Prevalence rates were highest for young Caucasian adults outside

Honolulu County, particularly those resident on Kauai ($2.9\% \pm 0.9\%$). The prevalence of methamphetamine use was low for Hawaiians in Kauai and Maui Counties. Methamphetamine prevalence was low for Japanese and Filipino respondents in all counties.

7.2.1 Methamphetamine Treatment Needs

Approximately 1,900 adults were estimated to have a lifetime DSM-III-R diagnosis (*i.e.*, ever received any diagnosis of abuse or dependence on a substance or substances) for methamphetamine use, and most of these (over 70%) were males. However, treatment needs for the sample as a whole were less prevalent for younger adults. The lower rates for young adults reverses the age differences observed for the prevalence of use of methamphetamine.

Table 7.2b Diagnosis of Methamphetamine Abuse or Dependence by Gender, Age, Ethnicity, and County

Young males in Kauai County had the highest prevalence ($0.8\% \pm 0.2\%$) of methamphetamine abuse or dependence. The prevalence of diagnosis among females was too low for prevalence rates to be reliably calculated in any county. In Kauai and Maui Counties, there was not a single case of diagnosed methamphetamine abuse or dependence among females. For those 18 to 34 years of age, only Kauai had

a statistically significant prevalence rate ($1.3 \pm 0.4\%$).

Honolulu and Hawaii Counties had the only statistically significant prevalence rates for methamphetamine abuse or dependence for those 35 years of age and older ($0.3\% \pm 0.1\%$ and $0.4\% \pm 0.2\%$ respectively).

Given the low prevalence of methamphetamine diagnosis observed for Hawaii, ethnic differences were difficult to reliably estimate. Overall, the highest rate of diagnosis for methamphetamine abuse or dependence was observed for Caucasians, with particularly high rates in Kauai and Hawaii Counties. Caucasians constituted 74% of all those diagnosed as needing treatment and 61% of those lived in Honolulu County.

7.3 Hallucinogen Use in Hawaii

For the sample as a whole, males ($1.6\% \pm 0.3\%$) were more likely than females ($0.9\% \pm 0.2\%$) to report use of hallucinogens. Again, the counties outside Honolulu recorded higher prevalence rates. The highest prevalence rates for males were observed for Kauai County ($3.5\% \pm 0.8\%$). Kauai also recorded the largest male-female difference in the prevalence of hallucinogens. Males were almost three times more likely to report the use of hallucinogens.

See Table 7.3a: Hallucinogen Use by Gender, Age, Ethnicity, and County

Age differences followed a pattern similar to that observed for other drugs. Younger adults were about three times as likely to report use of hallucinogens compared to adults over the age of 35 ($2.1\% \pm 0.4\%$ for younger adults compared with $0.7\% \pm 0.2\%$ for the older adults). Again, these rates were higher and the age differences larger in the counties outside Honolulu. Young adults in the three other counties reported rates ranging from $4.0\% (\pm 1.2\%)$ for Hawaii County to $4.6\% (\pm 1.2\%)$ for Kauai County. Age differences ranged from a low of just over 3 times (young over old) for Kauai to a high of five times for both Hawaii and Maui Counties.

Ethnic differences for the prevalence of hallucinogen use were similar to those observed for other drugs. Hawaiians ($1.7\% \pm 0.4\%$) and Caucasians ($1.5\% \pm 0.4\%$) reported the highest use rates, while Japanese ($0.4\% \pm 0.2\%$) and Filipinos ($0.8\% \pm 0.4\%$) reported considerably lower rates of use. Within county prevalence rates for hallucinogen use were not statistically significant for Filipinos or Japanese. Prevalence rates were highest for Caucasians resident in Kauai County ($4.1\% \pm 1.2\%$).

7.3.1 Hallucinogen Treatment Needs

Females ($0.8\% \pm 0.2\%$) were almost as likely as males ($1.0\% \pm 0.2\%$) to need treatment for hallucinogen abuse or dependence. Gender differences were larger in the counties other than Honolulu. For example, males in Kauai County ($2.1\% \pm 0.7\%$) were three times more likely to

receive a DSM-III-R diagnosis compared to females (0.7% \pm 0.4%). Prevalence rates were slightly lower, but gender differences were similar in Hawaii and Maui Counties.

See Table 7.3b: Diagnosis of Hallucinogen Abuse or Dependence by Gender, Age, Ethnicity, and County

Young adults (1.4% \pm 0.3%) were more likely than older adults (0.6% \pm 0.1%) to receive a diagnosis of hallucinogen abuse or dependence. Again, rates for young adults were highest for Kauai Counties and lowest for Honolulu County. Age differences were similar in all counties, although they were slightly larger in Maui County (1.8% versus 0.6%).

Treatment needs for hallucinogens were highest for Caucasians (1.6% \pm 0.4%) and for Hawaiians (0.9% \pm 0.3%) and were lowest for Filipinos and Japanese. Neither of these latter groups had statistically significant levels of hallucinogen diagnosis. In general, these patterns were reproduced for each of the counties. Treatment needs were highest for Caucasians resident in Kauai County (2.4% \pm 0.9%).

7.4 Cocaine Use in Hawaii

The prevalence of cocaine use in Hawaii was low (Table 7.4a) and there was no discernable gender difference in

prevalence rates. The survey did not detect statistically significant levels of cocaine use among either males or females for the State of Hawaii as a whole nor for any of the four counties. Only among young adults 18 to 34 years of age and among Hawaiians was there a statistically significant rate of cocaine use ($0.2\% \pm 0.1\%$ in both cases). Because of the smaller sample sizes drawn within counties, the rates of cocaine use were not statistically significant for any population subgroup in any county (Table 7.4a).

See Table 7.4a: Cocaine Use by Gender, Age, Ethnicity, and County

The prevalence of treatment needs for cocaine use was low (Table 7.4b). For the state as a whole, there were statistically significant treatment needs among only males ($0.2\% \pm 0.1\%$). The only statistically significant treatment needs detected within a population subgroup was within the "other" ethnic group on Maui ($0.4\% \pm 0.2\%$).

See Table 7.4b: Diagnosis of Cocaine Abuse or Dependence by Gender, Age, Ethnicity, and County

7.5 Heroin Use in Hawaii

For the State of Hawaii as a whole, heroin and other opiate use (Table 7.5a) was slightly more prevalent among male respondents ($1.0\% \pm 0.2\%$) than among females ($0.7\% \pm 0.2\%$). This gender difference was greatest on Kauai ($1.3\% \pm 0.6\%$ for males compared to 0.0% for females) and in Hawaii County ($1.5\% \pm 0.6\%$ for males compared to $0.7\% \pm 0.4\%$ for females).

See Table 7.5a: Heroin/Opiate Use by Gender, Age, Ethnicity, and County

Heroin use was more prevalent for young adults ($1.9\% \pm 0.4\%$) than among older adults ($0.4\% \pm 0.1\%$). This difference was substantial for all the counties except for Kauai. The difference between young and old was largest for Maui ($3.1\% \pm 1.0\%$ versus $0.4\% \pm 0.5\%$) and was substantial for Hawaii (2.7% versus 0.4%) and Honolulu ($1.7\% \pm 0.5\%$ versus $0.3\% \pm 0.2\%$) as well.

Among the five ethnic groups, Hawaiians recorded the highest prevalence rates of heroin/opiate use ($2.1\% \pm 0.5\%$) and Caucasians recorded the lowest ($0.5\% \pm 0.2\%$). Similar rates were observed for Caucasians and Hawaiians for Honolulu and Maui Counties. Filipinos in Hawaii County had relatively high (but unreliable) rates (2.4%

±1.5%) while no ethnic group in Kauai County reported statistically significant use rates.

Treatment needs based upon heroin or opiate abuse or dependence for the State of Hawaii were greater for males than for females, and higher for the young than for the old. However, ethnic differences did not follow the pattern for other drugs where Caucasians and Hawaiians had the highest rates. Japanese reported the highest levels of lifetime treatment need for heroin or opiates (0.6% ± 0.2%).

See Table 7.5b: Diagnosis of Heroin/Opiate Abuse or Dependence by Gender, Age, Ethnicity, and County

The differences between males and females were largest for Maui (1.2% ± 0.5% for males, 0.3% ± 0.3% for females). Statistically significant rates of heroin or other opiate diagnosis were not observed for either males or females in Hawaii and Kauai Counties.

Age differences in treatment needs were largest in Maui County where the younger age group, aged 18 to 34 years (1.8% ± 0.7%) had substantially higher treatment needs than did the older group, 35 years and older (0.3% ± 0.2%). Again, treatment needs were not statistically significant for either age group in Hawaii or Kauai Counties.

While Japanese respondents were most likely to receive a diagnosis, the highest rate of treatment needs was observed for Caucasians on Maui ($0.8\% \pm 0.5\%$). However, this rate was not statistically significant. Incidence rates were too low and sample sizes too small to detect statistically significant rates of heroin treatment needs within ethnicity by county.

8. TOBACCO USE IN HAWAII

Reported lifetime (or ever) tobacco use was relatively high in the State of Hawaii compared to mainland States and rates vary little amongst the four counties (Table 8.1). A majority of the adult population ($51.8\% \pm 0.7\%$) reported use at some time in their life. This compares with 44.8% of males and 31.7% of females who have tried marijuana at some time (Table 6.2). Over 43.5% ($\pm 0.7\%$) of those who have used tobacco reported that they had tried to quit. Many of those who had tried to quit appear to have been successful, since only 20.8% ($\pm 0.6\%$) of the adults in the state reported current tobacco use. Differences between counties were small, with Hawaii County having the highest proportion of current users ($23.9\% \pm 1.4\%$) and Kauai County the lowest ($17.9\% \pm 1.3\%$).

Most of the current tobacco users were cigarette smokers with current use reported by 18.6% ($\pm 0.6\%$). Cigarette use also varied little by county. Most of the cigarette users (an estimated 13.3% of the population $\pm 0.5\%$) reported levels of smoking that entail long term health risk (more than 10 cigarettes per day).

See Table 8.1: Tobacco Use by County

Lifetime, or ever, use of tobacco was higher for males than for females, and generally higher in the oldest age cohort (Table 8.2). However, rates were not appreciably different for the youngest cohort of males (59.1% ± 2.9% for those 18 to 24 years of age) than for males 35 years of age and older (60.7% ± 1.2%). Female rates of lifetime (or ever) use were lowest for the cohort 25 to 34 years of age (43.9% ± 2.1) as compared to 48.2% (± 2.9%) for the 18 to 24 years age group and 44.3% (± 1.2%) for those 35 years and older. Most of those who have ever used tobacco products also reported "quitting" or trying to quit using tobacco, particularly males and females over 35 years of age.

See Table 8.2: Tobacco Use by Age and Gender

Approximately one-quarter of the adult population of Hawaii reported current use of tobacco products, primarily cigarettes. The use of tobacco products other than cigarettes (by about 4.2% of the population, found by subtracting number of cigarette smokers from the number of tobacco users in Table 8.2) is almost exclusively a male behavior.

Current use of tobacco was highest in the younger cohorts, particularly among males 18 to 24 years of age (35.1% ± 2.6%). Among females, those 18 to 24 years of age were also the most likely to report cigarette use (23.6% ± 2.6%). Prevalence rates for smoking 10 or fewer

cigarettes daily for males 25 to 34 years of age ($6.1\% \pm 1.0\%$) were less than one half the prevalence for males 18 to 34 years of age ($13.4\% \pm 1.9\%$). Rates were halved again for males 35 years of age and older ($3.1\% \pm 0.4\%$). The prevalence of females smoking 10 or fewer cigarettes per day was considerably lower than the males only in the 18 to 24 years age group ($8.7\% \pm 1.7\%$ for females compared to $13.4\% \pm 1.9\%$ for males). However, the prevalence of smoking 10 or fewer cigarettes daily was higher for females than males in the two older age groups, although the age differences were less pronounced for females (varying from $8.7\% \pm 1.7\%$ to $4.8\% \pm 0.5\%$).

For those who reported smoking more than 10 cigarettes per day (half a pack or more), males and females in the 18 to 24 year age group had the highest prevalence rates ($18.3\% \pm 2.2\%$ for males and $14.9\% \pm 2.2\%$ for females). For males, the prevalence of smoking more than 10 cigarettes a day decreased to $15.1\% (\pm 1.7\%)$ in the 25 to 34 year age group, but increased to $16.0\% (\pm 0.9\%)$ in the 35 year and older age group. For women, the prevalence of smoking more than 10 cigarettes a day decreased by approximately 5.2% between the youngest and oldest age groups (from $14.9\% \pm 2.2\%$ for the 18 to 24 year olds to $9.7\% \pm 0.7\%$ for women 35 years and older).

These patterns suggest that while older adults are giving up tobacco (cigarettes in particular), younger adults are still smoking in substantial numbers. Also, those who

smoke are more likely to smoke more than a half-pack of cigarettes daily.

Ethnic differences in tobacco use were quite marked (Table 8.3). Caucasians (59.4% \pm 1.5%) and Hawaiians (56.4% \pm 1.6%) had the highest lifetime (or ever) rates of tobacco use, while Filipinos had the lowest rates (39.4% \pm 1.9%). Filipinos who have used tobacco (39.4% \pm 1.9%) were relatively the most likely to have also tried to quit (34.1% \pm 1.8%). Hawaiians were the most likely to report currently using tobacco (28.8% \pm 1.5%) and currently smoking cigarettes (27.4% \pm 1.4%). Filipinos had the lowest rates of current use of tobacco (15.9% \pm 1.5%) and cigarettes (15.5% \pm 1.5%). A level of cigarette use over 10 cigarettes per day was most often reported by Hawaiians (21% \pm 1.3%).

See Table 8.3: Tobacco Use by Ethnicity

9. USE OF MULTIPLE DRUGS

9.1 Multiple Substance ("Polydrug") Use and Treatment Needs

Heavy drinkers were much more likely to have used other drugs within 18 months prior to the interview (Table 9.1a). Approximately 31% (30.8%) of those who were heavy drinkers had also used other drugs, while only 7.0% of those who were not heavy drinkers had used drugs.

*See Table 9.1a: Heavy Drinking and Drug Use;
Table 9.1b: Drug Use and DSM-III-R Diagnosis;
Table 9.1c: Heavy Drinking, Drug use and DSM-
III-R Diagnosis*

Those who had used drugs within the 18 months prior to the interview were also more likely to receive a DSM-III-R diagnosis for either drug or alcohol (Table 9.1b). Among those who had not used drugs, only 7.6% received such a diagnosis compared to 29.3% among those who had used drugs.

Only 7.0% of those who were neither heavy drinkers nor drug users were unlikely to receive a DSM-III-R diagnosis (Table 9.1c). Among those who were both heavy drinkers

and drug users, 44.6% received a DSM-III-R diagnosis of abuse or dependence on any substance.

9.2 Population Estimates for Multiple Drug Use

While 4.7% of the sample used at least two of the drugs examined in the survey (including heavy use of alcohol), multiple drug use excluding alcohol was observed for 1.7% of the sample (Table 9.2a). When both marijuana and alcohol were excluded, 0.6% of the sample reported current use of more than one of the remaining four types of drugs (crystal methamphetamine, hallucinogens, cocaine and heroin).

Population estimates for multiple drug use are reported in Table 9.2a. In Panel A approximately three-quarters (75.3%) of the adult population 18 years of age or older reported abstaining from all substances (use of illegal drugs, heavy use of alcohol) and did not receive a DSM-III-R diagnosis. Twenty percent of the population abused only one drug (including alcohol). This corresponded to a population estimate of 178,923 adults. The survey estimated that 29,743 adults (3.3%) abused two drugs, 9,047 adults (1.0%) abused three drugs, and 3,202 (0.4%) abused four drugs. The 315 adults (0.04%) who were estimated to have abused five drugs constitute a number that is too small to be statistically reliable.

*See Table 9.2a: Multiple Substance Use:
Population Estimates for Hawaii*

When alcohol is removed from consideration (Table 9.2, Panel B), we estimate that 56,253 adults (6.3%) abused only one of the five drugs, 10,868 adults (1.2%) abused two drugs, 3,426 adults (0.4%) abused three drugs and 923 (0.1%) abused four drugs. Summing up these estimates, 15,217 (1.7%) adults abused two or more drugs.

Multiple substance use was higher among young males, among Caucasians and Hawaiian males and in the more rural counties other than Honolulu with Maui County having the highest prevalence (Table 9.3). These patterns mirror those for substance use itself.

*See Table 9.2b: Multiple Substance Use by Age,
Gender, Ethnicity and County*

**10. SUBSTANCE USE AND TREATMENT NEEDS AMONG WOMEN OF
CHILDBEARING AGE**

**10.1 Substance Use and Treatment Need by County Among Women
of Childbearing Age**

Table 10.1 below estimates drug and alcohol use for women of childbearing age (between 18 and 44 years of age) for Hawaii and its counties. Heavy drinking of alcohol was reported by 15.5% ($\pm 0.9\%$) of these women, and heavy drinking was particularly prevalent in Hawaii County (18.5% ± 2.4). The public health concern is that even one instance of heavy drinking by a pregnant woman may place her fetus at risk.

The prevalence of current use of marijuana was 7.4% ($\pm 0.7\%$) with the heaviest use in Maui (12.2% $\pm 1.9\%$) and Hawaii (9.1% $\pm 0.9\%$) Counties. Maui County also had the highest prevalence of more frequent marijuana use (8.7% $\pm 1.7\%$). The prevalence of diagnosis for marijuana abuse or dependence was also highest among residents of Maui County (2.6% $\pm 0.9\%$).

*See Table 10.1: Use of Alcohol and Non-medical
Drugs by Women of Childbearing Age (18 to 44
Years), by County, Hawaii, 1998*

Methamphetamine use was statistically significant among these women only in Maui (1.0% ± 0.5%) and more frequent methamphetamine use was not statistically significant in any county or for the State as a whole. However, lifetime (ever) diagnosis for methamphetamine abuse or dependence was statistically significant only in Honolulu County (0.2% ± 0.1%).

Current hallucinogen use (during the last 18 months) was more prevalent outside of Honolulu County, particularly in Hawaii County (2.8% ± 1.1%). The prevalence of more frequent use of hallucinogens was statistically significant for Honolulu County (0.5% ± 0.2%) and Maui County (0.8% ± 0.4%). The prevalence of diagnosis for hallucinogen abuse or dependence was statistically significant for the state as a whole (1.3% ± 0.3%) and for Honolulu County (1.4% ± 0.4%) and Maui County (0.8% ± 0.4%).

The prevalence of cocaine use among women of childbearing age was not statistically significant for the state as a whole or for any county. Similar results were observed for more frequent use and for diagnosis.

Current heroin use was statistically significant for the state (1.1% ± 0.3%), and for the Counties of Honolulu (1.3% ± 0.8%) and Maui (1.8% ± 0.8%). More frequent heroin use was highest for Honolulu County (0.8% ± 0.3%) and diagnosis for heroin abuse or dependence was not statistically significant in any county or for the state

as a whole (i.e., the standard errors were greater than twice the estimate).

10.2 Substance Use and Treatment Need by Age Among Women of Childbearing Age

Table 10.2 reports the use of alcohol and non-medical drugs by women of childbearing age (between 18 and 44 years of age) by age groups. Current consumption of alcohol (within one month prior to the survey) was highest for younger women aged between 18 and 24 years ($46.6\% \pm 2.9\%$). The prevalence of alcohol use was lower ($38.3\% \pm 2.1\%$) for the age group, 25 to 34 years, but was higher ($42.2\% \pm 1.9\%$) for the oldest age group (35 to 44 years).

See Table 10.2: Use of Alcohol and Non-medical drugs by Women of Childbearing Age, by Age, Hawaii, 1998

Prevalence of heavy consumption of alcohol decreases with age. Heavy consumption for the 25 to 34 year age group was less than half that of the youngest age group and heavy use was estimated at $15\% (\pm 1.6\%)$ for the middle age group compared to $31.3\% (\pm 2.7\%)$ for the younger group. Less than 10% ($9.8\% \pm 1.2\%$) of the older, 35 to 44 years, group reported heavy consumption of alcohol in the 18 months prior to the survey.

Prevalence of diagnosis of alcohol abuse or dependence was 9.8% ($\pm 0.7\%$) for the state as a whole. Prevalence of abuse or dependence diagnosis was highest for the youngest (18 to 24 years) age group (14.0% $\pm 2.0\%$), which was substantially higher than either of the two older age groups. The prevalence of diagnosis was 8.4% ($\pm 1.1\%$) for the middle, 25 to 34 years, age group, and 9.2% ($\pm 1.0\%$) for those older than 35 years.

Prevalence of lifetime use of marijuana was relatively constant across the age groups, ranging from 38.3% ($\pm 2.1\%$) for the middle group to 43.8% ($\pm 1.9\%$) for the oldest group. However, prevalence of current use of marijuana was three times higher among the youngest group of women (17.7% $\pm 2.4\%$) compared the two older age groups (6.0% $\pm 1.0\%$ and 5.0% $\pm 0.9\%$, respectively). A similar pattern was observed for more frequent use of marijuana. Diagnosis of marijuana abuse or dependence was statistically significant (1.8% $\pm 0.5\%$) for the 25 to 34 year olds, and was 1.4% ($\pm 0.5\%$) for those over 35 years of age. Both older age groups had higher rates of diagnosis than did younger women (1.1% $\pm 0.4\%$).

The prevalence of lifetime (ever) use of methamphetamine was higher among the older age cohorts. Prevalence of lifetime methamphetamine use was highest for the oldest age cohort (13.2% $\pm 1.4\%$), who were more than twice as likely to have used methamphetamine compared to the youngest (18 to 24 year) group (5.9% $\pm 1.5\%$). Current use of methamphetamine, although highest among the 25 to 34

year age group, was not statistically significant for any age group. Prevalence of abuse or dependence diagnoses for methamphetamine was not significant for any age group or for the State as a whole.

Prevalence of lifetime (ever) hallucinogen use was statistically significant for all age groups and was greatest for women in the oldest age group (older than 35 years). Prevalence of lifetime hallucinogen use for the oldest age group was 16.7% ($\pm 1.6\%$), more than twice the prevalence rate for women 18 to 24 years of age (6.8% $\pm 1.6\%$). Current (within the last 18 months) use of hallucinogens was higher for the younger two age cohorts: 2.4% $\pm 1.0\%$ for 18 to 24 year olds, and 1.0% $\pm 0.5\%$ for those between 25 and 34 years of age. More frequent use of hallucinogens (more than one or two times in the 18 months prior to the survey) was not statistically significant for any age group. Prevalence of abuse or dependence diagnosis, according to DSM-III-R criteria, was statistically significant for all three age groups, and was highest for those aged between 25 and 34 years of age (1.7% $\pm 0.4\%$).

Lifetime (ever) use of cocaine was low. Lifetime cocaine use similar for the two older age cohorts (2.5% $\pm 0.5\%$ for those aged 25 to 34 years, and 2.4% $\pm 0.7\%$ for those 35 and older). Current and more frequent current use of cocaine was not statistically significant for any age group. Prevalence of cocaine abuse or dependence diagnosis was not statistically significant for any age group.

Heroin or other opiate lifetime (ever) use was higher for the two younger age cohorts, but highest for those aged between 25 and 34 years ($6.3\% \pm 1.0\%$) and only marginally lower for the youngest group (18 to 24 years) ($5.1\% \pm 1.3\%$). For current use within the 18 months prior to the survey, the only age cohort for whom prevalence was statistically significant was the 25 to 34 age group ($1.7\% \pm 0.5\%$). The same age cohort also had the only statistically significant prevalence of more frequent use ($1.6\% \pm 0.4\%$). In terms of treatment need, only the 18 to 24 year age cohort had statistically significant levels of DSM-III-R diagnosis of heroin or opiate abuse or dependence ($0.6\% \pm 0.3\%$).

10.3 Substance Use and Treatment Need by Ethnicity Among Women of Childbearing Age

Table 10.3 reports estimates of alcohol and drug use and treatment need by ethnicity for women of childbearing age. Caucasian women were the most likely to report recent alcohol use ($52.1\% \pm 2.8\%$) and heavy drinking ($18.4\% \pm 2.1\%$). Hawaiians had similar prevalence of heavy drinking ($17.8\% \pm 2.1\%$), while Japanese ($10.5\% \pm 2.0\%$) and Filipinos ($10.2\% \pm 1.8\%$) had lower levels. Caucasian women were most likely to receive a dependence or abuse diagnosis for alcohol ($17.2\% \pm 2.1\%$). Hawaiian women were also relatively likely to receive such a diagnosis ($10.8\% \pm 1.6\%$).

*See Table 10.3: Use of Alcohol and Non-medical
Drugs by Women of Childbearing Age (18 to 44
Years) by Ethnicity, Hawaii, 1998*

Ethnic differences in current marijuana use again showed Caucasians and Hawaiians as having the highest prevalence rates ($9.8\% \pm 1.8\%$ and $10.0\% \pm 1.5\%$, respectively). Prevalence for Japanese women and Filipino women was much lower ($3.2\% \pm 1.2\%$ and $4.3\% \pm 1.4\%$, respectively). More frequent use of marijuana followed a similar pattern, and the prevalence of diagnosis for marijuana abuse or dependence was only statistically significant for Caucasians ($3.5\% \pm 1.0\%$) and for Hawaiians ($1.8\% \pm 0.9\%$).

Lifetime (ever) use of methamphetamine among women of childbearing age was relatively high and statistically significant for all ethnic groups. Prevalence of ever use of methamphetamine for Caucasians ($20.2\% \pm 2.4\%$) was between two and five times the rates of any other ethnic group and of the State as a whole ($11.1\% \pm 0.8\%$). Filipino women of childbearing age had the lowest prevalence rate of ever use of methamphetamine ($3.4\% \pm 1.1\%$). Reporting of the prevalence of current methamphetamine use, more frequent methamphetamine use, or diagnosis of methamphetamine abuse or dependence among women of childbearing age was not statistically significant for any ethnic group.

Hallucinogen use among women of childbearing age was the second most prevalent after marijuana. Lifetime (ever) use of hallucinogen abuse or dependence was highest among Caucasians (21.9% ± 2.4%) and among Hawaiians (16.4% ± 2.0%). Lifetime (ever) use of hallucinogens among Caucasians is statistically the same as that of lifetime methamphetamine use. Current hallucinogen use is highest among the "other" ethnic category (1.9% ± 0.8%) and among Hawaiians (1.4 ± 0.7), but not statistically significant among the other three ethnic groups. More frequent hallucinogen use was not statistically significant for any ethnic group. Lifetime diagnoses of hallucinogen abuse or dependence was statistically significant among Caucasians (3.0% ± 0.8%) and among those of "other" ethnicity (1.7% ± 0.7%).

Lifetime (ever) use of cocaine among women of childbearing age was highest among Caucasian women (5.3% ± 1.2%). Current or more frequent cocaine use and diagnosis of cocaine abuse or dependence were not statistically significant for any ethnic group.

Current heroin use was most prevalent among Hawaiian women (2.4% ± 0.8%), with very little use among Filipino women (0.4% ± 0.5%). More frequent heroin use was highest among Hawaiian women (1.8% ± 0.7%) and was also statistically significant among Caucasian women (1.2% ± 0.4%). The prevalence of a diagnosis for heroin abuse or dependence was not statistically significant in any ethnic group.

11. TREATMENT NEEDS IN HAWAII

Need for treatment is defined as anybody with a current diagnosis, or a lifetime diagnosis of substance abuse or dependence who both used the substance and had a symptom in the past 18 months. Respondents in full remission (i.e., those with no use of the relevant substance or some use but no symptoms in the trailing six months) would not be considered in need of treatment. Respondents in "partial remission" (i.e., those with some use of the substance and fewer than three symptoms in the past six months) are regarded as remaining in need of treatment (National Technical Center, 1996: p.25.3)

The definitions of definite dependence, indeterminate dependence, and substance abuse are as follows:

Definite dependence: The DSM-III-R specifies a diagnosis of definite substance dependence if: (1) the respondent exhibits at least three of nine possible symptoms (see Table 2.4) arising from tolerance to a substance, inability to cease substance use despite knowledge of social, psychological, or physical problem caused by continued use, withdrawal from the substance or dysfunction in major role obligations, and (2) some symptoms persist for at least one month, or have occurred repeatedly over a longer period of time (National Technical Center, 1996: p.25.2).

Indeterminate dependence: An "indeterminate" diagnosis of substance dependence pertains to those respondents who either: (1) responded affirmatively to fewer than three symptoms of dependence and did not provide information - either positive or negative - on a sufficient number of the remaining symptoms to establish the presence or absence of substance abuse; or (2) responded affirmatively to at least three symptoms of dependence, but provided no information - either positive or negative - to establish the duration of at least two of the symptoms (National Technical Center, 1996: p.25.3).

Substance Abuse: The DSM-III-R specifies a diagnosis of substance abuse if: (1) the respondent has never met criteria for substance dependence for the particular substance under investigation, and (2) either admits to a maladaptive pattern of substance use as evidenced by continued use despite knowledge of a persistent or recurrent social, occupational, psychological, or physical problem caused by the substance in question; or admits to using the substance in situations where its use constitutes a physical hazard; and, (3) some symptoms have lasted at least one month, or have occurred repeatedly over a longer period of time (National Technical Center, 1996: p.25.2).

11.1 Male and Female Treatment Needs (Hawaii and Counties)

A summary of adult treatment needs using the DSM-III-R "clinical" criteria to define dependence is presented in Table 11.1. The 1998 survey estimates that 43,107 males (9.86% of the male population) and 39,773 females (8.68%

of the female population) resident in Hawaii currently needed treatment for alcohol or drug abuse. Males were considerably more likely than females to need treatment in Hawaii, Kauai and Maui Counties. In Honolulu County, both the proportions and numbers of males and females needing treatment were similar.

See Table 11.1: Population Estimates of Adult Treatment Need by County and Gender

By far, the largest number of males and females needing treatment reside in the far more populous Honolulu County. Numbers of males and females needing treatment were lowest for Kauai, the least populated county. However, the rate of dependence for males was highest for Hawaii County (15.61%) and second highest for Maui County (12.86%). Kauai (9.17%) and Honolulu (8.70%) Counties had considerably lower rates. The rate of dependence for females was highest for Maui County (10.18%) and second highest for Hawaii County (9.11%).

Adults needing treatment for alcohol dependence were four times more prevalent than adults who need drug treatment alone, and in general, almost one-third of those who need treatment for drug abuse also need treatment for alcohol abuse. Among those needing treatment for alcohol abuse alone, males were more likely to need treatment than females in every county except in more heavily populated and urbanized Honolulu County where the rates were similar.

11.2 Level of Treatment Need

The level of treatment need for various types of drugs is estimated in Table 11.2. Diagnosis for definite dependence was more likely than diagnosis for abuse or indeterminate dependence. As we would expect, given its much larger population, Honolulu County has the largest population needing treatment for all drugs. Hawaii County has the highest rate of definite dependence based treatment need for alcohol (6.65%) and for marijuana (1.91%). Kauai has the highest rate of definite dependence on hallucinogens at 1.40%, followed by Hawaii County with 1.11%. Heroin dependence was highest for Maui County (0.71%) and methamphetamine dependence was highest in Kauai (0.40%) and Hawaii County (0.38%). Cocaine dependence was low for all counties.

See Table 11.2: Estimate Of Adult Dependence and Abuse Of Alcohol and Other Drugs By County

11.3 Lifetime and Current Diagnosis of Treatment Need

As would be expected, current diagnosis has a substantially lower prevalence than does lifetime diagnosis (Table 11.3). While the Gallup (1995) report focused exclusively on lifetime diagnosis, this survey addresses both the prevalence of current abuse and lifetime diagnosis of treatment need.

*See Table 11.3: Current and Lifetime Diagnoses
by County*

Prevalence rates for current diagnoses (Table 11.3) for alcohol problems and marijuana problems are the only estimates of current abuse that allow meaningful specification by type of diagnosis (abuse, indeterminate dependence, definite dependence). Current abuse levels for alcohol were estimated at 1.3% ($\pm 0.2\%$) for the State of Hawaii, with the highest prevalence rate reported for Hawaii County (2.1% $\pm 0.5\%$). An indeterminate diagnosis of current dependence on alcohol was made for an additional 0.2% ($\pm 0.1\%$) of the population. These cases reside largely in Honolulu County (0.2% $\pm 0.1\%$) and Hawaii County (0.5% $\pm 0.2\%$). Current definite dependence on alcohol was estimated to have a prevalence of 2.7% ($\pm 0.2\%$) for the State of Hawaii, with the largest number of cases in Honolulu County (2.6% $\pm 0.3\%$) and the highest prevalence rate was in Hawaii County (3.4% $\pm 0.6\%$).

The 1998 survey estimated that there was a statistically significant current definite dependence on marijuana among a very small proportion of the adults in the state (0.2% $\pm 0.1\%$), and a small but statistically significant level of definite dependence in Honolulu, Hawaii and Maui Counties. The highest prevalence of definite dependence was estimated for Hawaii County (0.5% $\pm 0.2\%$).

Hallucinogen use in Hawaii County ($0.5\% \pm 0.2\%$) was the only other instance in which current diagnosis was estimated statistically to be significantly different from zero.

11.4 Lifetime and Current Diagnosis by Age and Gender

When current diagnosis for alcohol problems was broken down by age and gender (Table 11.4), the highest rates of current abuse were observed for young females ($4.8\% \pm 1.3\%$). Current abuse rates decrease with age, regardless of gender, though rates of current abuse among females were higher than rates for males in all three age cohorts.

*See Table 11.4: Current and Lifetime Diagnoses
by Age and Gender*

Rates of indeterminate alcohol dependence were not statistically significant (i.e., the estimate was less than 1.96 times the standard error) for males or females, 35 years of age and older or for males and females 18 to 24 years of age. Only among the 25 to 34 year old cohort were the rates statistically significant. Current definite dependence constituted most of the current diagnosis for alcohol. As age increased, rates of current definite dependence decreased markedly, and rates for males were consistently higher than rates for females in all cohorts.

Diagnoses for marijuana were statistically significant only for current definite dependence. Rates were statistically significant for males overall, but not for females. Rates were statistically significant only for the 25 to 34 year old cohort (for which they were statistically significant for both males and females).

For hallucinogens, only statewide current definite dependence for females was statistically significant, and this appeared to be among women 25 to 34 years of age.

Current diagnoses for cocaine, heroin and other opiates and for methamphetamine were not statistically significant for the state or for any of the cohorts examined.

11.5 Lifetime and Current Diagnosis by Ethnicity

When current diagnoses were broken down by ethnicity (Table 11.5), the highest rates of current abuse of alcohol were among those of Hawaiian background ($2.1\% \pm 0.4\%$) and among Caucasians ($1.7\% \pm 0.4\%$). Japanese and Filipino respondents had substantially lower rates (0.7% and 0.7% , respectively). Indeterminate dependence diagnosis was statistically significant for Caucasians ($0.4\% \pm 0.1\%$) and was lower but still statistically significant for Filipinos ($0.2\% \pm 0.1\%$). Current definite dependence diagnosis was highest among Hawaiians ($4.2\% \pm 0.7\%$) and among Caucasians ($3.4\% \pm 0.5\%$).

*See Table 11.5: Current and Lifetime Diagnoses
by Ethnicity*

Current diagnosis for definite dependence on marijuana was only statistically significant among Caucasians (0.6% ± 0.2%). None of the three levels of current diagnosis for hallucinogens, cocaine and methamphetamine were statistically significant in any ethnic group. Current definite dependence on heroin or other opiates was statistically significant among those of Japanese ethnicity (0.3% ± 0.1%) and among Filipinos (0.2% ± 0.1%).

Unfortunately, these current diagnosis estimates provide little assistance to planning for different service areas within the state.

11.6 Treatment Utilization and Barriers to Treatment

In examining the estimates on actual treatment utilization, it must be remembered that to be included in this analysis, the respondents not only had to admit to substance use, but to the fact that they had unresolved problems associated with that use. Based upon the responses obtained in the survey, nearly 32,000 (31,956 or 3.6%) of the state's population reported having a drinking problem or an addiction to alcohol. A total of 19,513 (2.2%) have had a problem or felt addicted to drugs and 7,634 or (0.9%) had a problem with, or addiction, to both drugs and alcohol. Nearly nineteen

thousand (18,876) respondents (2.2%) reported having ever received alcohol or drug treatment in their lifetime. Three-thousand, seven hundred forty eight (3,738 or 0.4%) individuals reported having received alcohol or drug treatment in the 12 months prior to the survey. Of the 17,517 respondents (2.0%) estimated to have ever attended a self-help group (Alcoholics Anonymous, Al-Anon, Narc-Anon, etc.), about one-half (9,525, or 1.1%) attended a self-help meeting in the 12 months prior to the survey. Approximately 11,560 (1.3%) people were estimated to have obtained professional therapy or counseling for their alcohol or drug use. Of those, 4,256 sought professional help within the 12 months prior to the survey.

Because a small number of respondents reported that they sought treatment within the last year, further breakdowns of those seeking treatment (i.e., by age, gender, county, ethnicity, etc.) and analysis of barriers to treatment did not yield reliable estimates.

12. DRUG USE IN THE 1990s: 1991, 1995 AND 1998 ESTIMATES

The 1991 Survey of Behavioral Health (D.W. Wood, 1991) interviewed 2,200 adults 18 years of age and older who were resident in the State of Hawaii. The relatively small sample size limited the detail with which estimates could be calculated. The small sample and the low rate of use of many drugs limited estimation of prevalence rates for current use to alcohol, tobacco and marijuana. Treatment needs were not measured in a manner comparable to the 1998 SPH survey.

12.1 Change in Drug Use by Gender: 1991 and 1998

Table 12.1 below compares drug use in 1991 to use in 1998. The prevalence of heavy drinking increased dramatically over the decade, rising from 12.9% in 1991 to 21.0% in 1998. For males, prevalence of heavy drinking increased from 21.5% to 31.0%. For females, the prevalence of heavy drinking increased from 5.8% to 11.5%.

*See Table 12.1: Change in Drug Use in Hawaii,
1991 to 1998*

While the prevalence of lifetime use of tobacco (ever used tobacco) increased over the decade, current tobacco use declined slightly. Apparently, more people tried smoking, but then stopped. Lifetime (ever) use increased from 47.2% in 1991 to 51.8% in 1998, while current use declined from 23.4% in 1991 to 20.8% in 1998. Current use for males declined from 26.7% to 25.3% and current use for females declined from 20.7% to 16.6%.

Lifetime (ever) use of marijuana increased over the decade from 28.9% to 38.1%. Current use increased from 5.8% to 7.4%. Lifetime (ever) use increased from 34.8% for males to 44.8%, while lifetime (ever) use for females increased from 23.9% to 31.7%. Current use for males increased from 7.9% to 9.7%, while current use for females increased from 4.0% to 5.2%.

Only prevalence of lifetime (ever) use could be calculated for other drugs. Current use estimates from the 1991 survey were not presented in that report. Cocaine was the only drug to exhibit a decline in use (from 4.4% to 2.9%), with a decline for both males (5.4% to 4.2%) and females (3.5% to 1.7%). Methamphetamine use tripled, from 3.8% in 1991 to 11.9% in 1998, with similar rates of increase for both males and females. Hallucinogen use rose from 4.6% to 13.9%, with males increasing from 5.8% to 17.4% and females increasing from 3.5% to 10.5%. Heroin use increased from 1.1% to 4.9%, with males increasing from 1.6% to 6.9% and females increasing from 0.7% to 3.0%.

The use of sedatives increased from 3.3% to 5.4%, with males increasing from 4.1% to 5.7% and females increasing from 2.6% to 5.2%. The prevalence of analgesic (painkillers) use increased from 2.9% to 15.5%, with similar increases for both males (3.6% to 16.4%) and females (2.3% to 14.7%). Inhalants increased relatively slightly from 2.0% to 3.5%. The prevalence of male lifetime (or ever) use of inhalants increased from 2.6% to 4.7% and females lifetime (or ever) use increased from 1.5% to 2.4%.

12.2 Treatment Needs: Population Estimates for 1995 and 1998

Table 12.2 compares the SPH 1998 estimates of diagnosis for Hawaii and its constituent counties (N=5,050) with estimates of treatment need generated by Gallup from their 1995 survey (N=5,808). It was estimated that the number of adults in the State had changed relatively little (1.18%) in the 3 years between 1995 and 1998, perhaps due to a slowing of economic growth.

Despite the small increase in the total number of adults, the rate of total treatment need increased from 8.94% to 9.26% (Table 12.2). The total adult population needing treatment for alcohol or drugs increased from 79,119 in 1995 to 82,880 in 1998, an increase of 4.75%.

*See Table 12.2: Prevalence of Treatment Need
(Abuse or Dependence Diagnosis), by County,
1995 and 1998*

Kauai was the only county to experience an overall decrease in the number of adults needing treatment for alcohol and/or drugs (from 3,886 to 3,259). Estimates of the numbers of adults diagnosed in Honolulu County increased very little (57,192 to 57,623), while there was a somewhat larger (7.7%) increase for Maui from 9,120 to 9,822. By far the largest increase in treatment need for adults was experienced by Hawaii County. Hawaii County experienced a 50% increase in those needing treatment for alcohol alone, and a 25% increase in those who needed treatment for drugs alone. The estimated number of adults in Hawaii County who received a diagnosis as needing treatment increased from 9,098 in 1995 to 12,176 in 1998.

12.3 The Prevalence of Alcohol and Drug Use and Treatment Needs: 1995 and 1998

Table 12.3 examines changes from 1995 to 1998 in the heavy use of alcohol and the use of illegal drugs. Current (within the month prior to the survey) alcohol use increased from 40.7% to 47.6% for the State of Hawaii, with the largest increase observed in Hawaii County (from 37.6% to 50.8%). The prevalence of heavy consumption of alcohol increased from 18.4% to 21% statewide, with the largest increases again observed for Hawaii County (18.6% to 24.2%).

See Table 12.3: Changes in Drug Use, 1995 to 1998, by County

The statewide prevalence of marijuana use over the 18 months preceding the survey (any use and more frequent use) increased between 1995 and 1998. Increases were modest in Honolulu County (5.6% to 6.0%), and much larger in other counties for any use. The rate of increase was highest in Kauai County (6.0% to 9.9%), Hawaii (8.2% to 11.2%) and Maui County (8.2% to 12.6%) experienced large increases from a substantial base.

A similar pattern was observed for the more frequent use of marijuana. There was a very small increase in Honolulu County and considerably larger increases in the other counties. The more frequent use of marijuana increased from 3.8% to 6.6% for Kauai County, from 6.5% to 8.1% for Hawaii County, and from 6.7% to 9.4% for Maui County.

The prevalence of diagnoses decreased statewide for marijuana between 1995 and 1998 from 1.3% to 1.0%. Honolulu (1.0% to 0.8%), Kauai (1.8% to 1.4%) and Maui Counties (2.8% to 1.8%) observed decreases. Hawaii County observed a small increase from 1.9% to 2.0%.

The use of methamphetamine (at least one use over the 18 months prior to the survey) remained stable statewide, as did the more frequent use of methamphetamine. Honolulu County experienced a slight decrease in use (0.8% to 0.6%) and more frequent use (0.5% to 0.4%), while all other counties experienced increases between 1995 and 1998. The prevalence of use increased from 0.2% to 1.3% for Kauai, giving it the highest prevalence of methamphetamine use in 1998. Increases in any use of methamphetamine in Hawaii and Maui Counties were also

substantial (0.7% to 1.1% and 0.6% to 0.9% respectively). In terms of more frequent use, Kauai also saw a dramatic increase from 0.0% in 1995 to 0.4% in 1998. Increases in more frequent use were also observed for Hawaii County (0.3% to 0.6%) and for Maui County (0.4% to 0.7%).

The prevalence of DSM-III-R diagnosis for methamphetamine problems increased from 0.7% to 0.9% statewide, meaning there was approximately 1,864 more individuals who could be diagnosed as abusing or dependent on methamphetamine. While there was no increase in Honolulu County, Hawaii County increased from 0.7% to 1.2%, Kauai County increased from 0.6% to 1.4% and Maui County increased from 0.4% to 1.0%.

The statewide use of hallucinogens increased slightly (1.0% to 1.2%), approximately 1,895 more users. The prevalence of hallucinogen use increased slightly in Honolulu County (0.8% to 1.0%), more noticeably in Hawaii County (1.2% to 1.7%) and even more noticeably for Kauai County (1.0% to 2.3%). Statewide, frequent hallucinogen use increased from a prevalence of 0.3% in 1995 to 0.6% in 1998. Increases in the prevalence of frequent use were marked in Honolulu County (0.1% to 0.6%) and in Kauai County (0.3% to 1.2%). There was a statistically significant (at the .05 level) decrease in the prevalence of frequent use for Maui County (1.4% to 0.4%).

The prevalence of DSM-III-R diagnosis for hallucinogens increased statewide from 0.1% to 0.4%. This increase was observed primarily in Honolulu County (0.0% to 0.3%) and in Maui County (0.5% to 0.8%). The prevalence of

diagnosis remained relatively stable in both Hawaii and Kauai Counties.

Cocaine use decreased dramatically statewide (1.0% to 0.1%) with large decreases observed in every county. The more frequent use of cocaine showed a similar pattern, with statewide prevalence dropping from 0.5% to 0.0% and decreased prevalence of more frequent use in all counties. DSM-III-R diagnosis for cocaine use for the state decreased from 1.0% to 0.1%, and more than any other drug, the prevalence of diagnosis rates for cocaine appears to be very similar to rates of actual cocaine use. Substantial decreases in the prevalence of diagnoses for cocaine were observed in all counties.

Between 1995 and 1998, prevalence of the use of heroin and other opiates increased from 0.3% to 0.9%, an increase of approximately 5,404 users. Increases were observed in every county, from Honolulu (0.3% to 0.8%) where most of the population resides, to Kauai, the smallest County (0.3% to 0.6%). Increases were significant and large for Maui (0.4% to 1.2%) and Hawaii (0.2% to 1.1%) Counties. Substantial increases in more frequent use of heroin and other opiates were also observed for the state as a whole (0.1% to 0.6%), and for the counties of Honolulu (0.1% to 0.6%) and Hawaii (0.0% to 0.7%). Maui County experienced a smaller increase in the prevalence of frequent use of heroin and other opiates. More frequent heroin use in Kauai County was not significant in either study.

The prevalence of diagnoses for heroin abuse or dependence did not increase significantly for the State of Hawaii or for any of the counties.

12.4 Gender Differences: 1995 and 1998

Table 12.4 examines changes in drug use by gender. The prevalence of heavy drinking by males increased from 28.8% in 1995 to 31.0% in 1998. For females, the prevalence of heavy drinking increased from 9.6% to 11.5%.

*See Table 12.4: Drug Abuse and Treatment Needs
by Gender, 1995 and 1998*

The prevalence of marijuana use exhibited similar increases for both males and females from 8.6% to 9.7% for males and from 4.0% to 5.2% for females. More frequent use increased more for males than for females (6.0% to 6.8% versus 2.7% to 2.9%), widening gender differences. However, despite increases in frequent use, the prevalence of diagnosis decreased for both males and females (from 1.7% to 1.2% for males and from 0.9% to 0.8% for females).

Gender differences in the prevalence of methamphetamine use increased markedly over the period. The prevalence of methamphetamine use increased substantially for males (0.8% to 1.2%), but decreased significantly for females (0.6% to 0.3%). Yet diagnoses for abuse or dependence

upon methamphetamine decreased for males from 0.7% to 0.1%, while diagnosis rates remained at 0.8% for females.

The prevalence of hallucinogen use remained at 1.6% for males, but increased from 0.4% to 0.9% for females. More frequent use increased significantly for males (0.3% to 0.8%), while increases for females were small (0.3% to 0.4%). The prevalence of diagnosis for hallucinogen abuse or dependence increased significantly for males (0.1% to 0.5%), but more moderately for females (0.1% to 0.2%).

Cocaine use showed larger decreases for males (1.9% to 0.1%) than for females (0.5% to 0.1%). The prevalence of more frequent use of cocaine fell to zero for both males and females. The prevalence of diagnosis for females fell to zero from 0.6% and the prevalence of diagnosis fell to 0.2% from 1.4% for males.

The prevalence of heroin use by males increased significantly from 1995 to 1998 (0.4% to 1.0%). The prevalence of heroin use also increased significantly for females over the same period (0.1% to 0.7%). The prevalence of more frequent heroin use increased for males (0.1% to 0.6%) and for females (0.1% to 0.5%). The prevalence of a diagnosis for heroin increased slightly for males (0.2% to 0.3%) and decreased slightly for women (0.3% to 0.1%). These changes were not statistically significant.

12.5 Age and Gender Differences: 1995 and 1998

Table 12.5 reports changes in drug use and diagnosis broken down by age and gender. The prevalence of heavy drinking increased most dramatically in the youngest cohort of females, 18 to 24 years of age, from 19.8% in 1995 to 31.3% in 1998. This dramatic increase is reflected in the increase of DSM-III-R diagnoses for alcohol for the same cohort of females, 18 to 24 years of age, from 7.6% in 1995 to 14.0% in 1998. Males in the same age cohort exhibited an increase in the prevalence of heavy drinking from 40.5% in 1991 to 45.2% in 1998. However, the prevalence of DSM-III-R diagnosis of alcohol abuse or dependence in the same cohort decreased slightly from 16.0% in 1995 to 15.2% in 1998.

See Table 12.5: Drug Use and Treatment Needs by Age and Gender, 1995-1998

The most dramatic change in marijuana use was observed for young males. The prevalence of marijuana use increased from 17.7% to 30.0%. More frequent marijuana use also increased markedly for the same age cohort (from 10.6% to 21.0%). Yet, lifetime diagnosis for marijuana decreased in the two younger cohorts, while increasing only slightly among those 35 years of age and older.

The prevalence of methamphetamine use increased among young males, from 1.4% in 1995 to 6.1% in 1998 (Table 12.5). Among young female adults the prevalence of

methamphetamine use decreased from 1.4% in 1995 to 0.4% in 1998. The 25 to 34 year old cohort showed declines in the prevalence of methamphetamine use for both males (1.9% to .08%) and females (1.5% to 0.6%). There was little change in the older cohort. The prevalence of more frequent use increased for males 18 to 24 years of age (1.0% to 3.6%), but decreased for females in the same cohort (0.9% to 0.4%). The prevalence of more frequent use declined for males and females. This decline encompassed males and females in the 25 to 34 year old age cohort and males 35 years of age and older.

Gender differences in the prevalence of diagnosis for methamphetamine abuse or dependence increased over the three years. The prevalence of diagnosis for methamphetamine abuse or dependence increased for males of all cohorts, but decreased for females in the youngest two cohorts. For example, the prevalence of diagnosis of methamphetamine abuse or dependence among males aged 18 to 24 years increased from 0.9% to 1.2%, while, for females, rates decreased from 1.7% to 0.6%. In the 25 to 34 year age cohort, prevalence of methamphetamine diagnosis increased from 0.6% to 1.6%, while females in the same age cohort decreased only slightly from 1.9% to 1.7%. In the oldest age cohort, prevalence of methamphetamine diagnosis increased for both males and females (0.6% to 0.8% for males and 0.3% to 0.5% for females).

For young adults, gender differences in the prevalence of hallucinogen use decreased between 1995 and 1998. The prevalence of hallucinogen use decreased for young males

ages 18 to 24 years (4.7% to 2.6%), but increased for young females (2.0% to 2.4%). But the prevalence of more frequent use changed in exactly the opposite manner. Young males' more frequent use increased from 0.9% in 1995 to 1.1% in 1998, and young females' use decreased from 1.4% in 1995 to 0.4% in 1998.

Use of hallucinogens increased for both males (1.5% to 2.8%) and females (0.4% to 1.0%) in the cohort 25 to 34 years of age, and use also increased slightly among adults 35 years of age and older. Similar patterns were observed for more frequent use. The prevalence of more frequent hallucinogen use increased for both genders in both of the older age categories.

The prevalence of diagnosis for hallucinogen use remained low for both males and females 18 to 24 years of age, but increased for older males and females. The increase was particularly notable for males 25 to 34 years of age (0.3% ± 0.2% in 1995 to 1.3% ± 0.6% in 1998).

The prevalence of cocaine use decreased in all age-sex cohorts. In fact, the prevalence of cocaine use fell to zero for the youngest males and females (18-24 years of age). Treatment needs followed a similar pattern.

The prevalence of heroin use increased markedly among 18 to 24 year old males (0.4% to 2.9%) and among females of the same age (0.1% to 1.6%). The prevalence of use also increased for males and females 25 to 34 years of age (0.8% to 1.8% and 0.0% to 1.7%, respectively). Adults of

both sexes who were over 35 years of age reported only small, non-significant increases.

More frequent use of heroin also increased markedly for both males and females who were under 35 years of age. However, estimates of treatment need remained low for all cohorts. The prevalence of diagnosis increased very little for males, and actually decreased for females.

There was a pattern of increasing prevalence among young adults of both genders and a high proportion (64.8%) of more frequent users. If these patterns persist, we might expect future increases in treatment needs for heroin.

12.6 Ethnic Differences: 1995 and 1998

Table 12.6 shows a prevalence of current alcohol use that was highest among Caucasians in both 1995 (58.5%) and 1998 (59.6%). While the prevalence of current use increased for all ethnic groups, relatively large increases were observed among the Japanese (30.9% to 40.5%) and among Filipinos (26.8% to 36.0%). The prevalence of heavy drinking increased for all ethnic groups except among those of Japanese ethnicity, where there was a substantial decline (20.9% \pm 1.5% in 1995 and 15.0% \pm 1.2% in 1998). The prevalence of heavy drinking increased slightly (but not significantly) for Caucasians (23.5% \pm 1.1% in 1995 to 26.1% \pm 1.3%) and for Filipinos (16.2% to 17.2%). The prevalence of the heavy use of alcohol increased substantially for Hawaiians (14.0% \pm 1.1% to 25.0% \pm 1.4%). Also, the rates of DSM-III-R

diagnosis of alcohol abuse or dependence more than doubled among Hawaiians between 1995 and 1998 (from 4.6% \pm 0.7% to 11.7% \pm 1.0%). The prevalence of diagnosis of alcohol abuse or dependence decreased for Caucasians (13.7% \pm 0.9% to 13.1% \pm 1.0%) and for Filipinos (5.1% \pm 0.7% to 4.1% \pm 0.8%). Among those of Japanese descent, the rate in 1998 of diagnosis of alcohol abuse or dependence was half that for 1995 (from 8.3% \pm 0.1% in 1995 to 3.9% \pm 0.6% in 1998.1

See Table 12.6: Changes in Drug Use and Treatment Needs by Ethnicity, 1995 and 1998

Current use of marijuana remained high among Caucasians (10.4% to 10.7%) and increased markedly among Hawaiians between 1995 and 1998 (2.6% to 11.2%). The prevalence of use among those of Japanese ancestry decreased from 5.6% to 3.0% and the prevalence of use among Filipino respondents increased marginally from 3.4% to 3.9%.

Between 1995 and 1998, "more frequent" use (more than one or two times in the 18 months prior to the survey) of marijuana decreased marginally for Caucasians (7.9% to 7.2%) and among those of Japanese ethnicity (3.7% to 1.3%). The prevalence of more frequent use increased somewhat among Filipinos (1.3% to 2.3%) and increased markedly among Hawaiians (1.5% to 8.0%). The prevalence of diagnosis of abuse or dependence on marijuana decreased for the Japanese, Filipinos and the "others"

(from 1.9% to 0.5% for Japanese, from 0.6% to 0.0% among the Filipinos, and from 1.1% to 0.5% for the "other" ethnicities). Hawaiians and Part Hawaiians were the only group to have an increase in the prevalence of abuse or dependence diagnosis (from 0.5% to 1.6%).

Methamphetamine use increased only marginally among Caucasians, but increased substantially among Hawaiians (0.0% to 1.3%). The prevalence of methamphetamine use decreased among Japanese (1.8% to 0.1%) and among Filipinos (1.0% to 0.2%). The prevalence of more frequent use of methamphetamine increased among Caucasians (0.4% to 0.8%) and among Hawaiians (0.0% to 0.8%). The prevalence of more frequent use of methamphetamine decreased among the Japanese (1.2% to 0.1%) and among Filipinos (0.6% to 0.1%). The prevalence of diagnosis for methamphetamine abuse or dependence according to DSM-III-R criteria decreased for all ethnic groups.

The prevalence of hallucinogen use decreased slightly between 1995 and 1998 for Caucasians (1.9% to 1.5%) and for Japanese (0.8% to 0.4%) and increased significantly for Hawaiians (0.1% to 1.7%) and for Filipinos (0.2% to 0.8%). More frequent use increased substantially among Caucasians (0.4% to 1.0%) and among Hawaiians (0.0% to 0.6%), increased marginally among Filipinos (0.0% to 0.2%) and decreased marginally among Japanese (0.4% to 0.2%). The prevalence of diagnosis for hallucinogen abuse or dependence increased between 1995 and 1998 for Caucasians (from 0.2 to 1.6%) and for Hawaiians and Part Hawaiians (from 0.0% to 0.9%). The increase reported for respondents of Japanese descent was not statistically significant.

Cocaine use decreased between 1995 and 1998 for all ethnic groups, particularly among Caucasians (1.8% to 0.0%) and Japanese (1.5% to 0.0%). The prevalence of more frequent use of cocaine fell to virtually zero in all ethnic groups, with the largest change for Caucasians (1.0% to 0.0%). Lifetime diagnosis for cocaine abuse or dependence also decreased markedly for all ethnic groups, particularly among Caucasians (1.5% to 0.3%).

The prevalence of heroin use between 1995 and 1998 increased substantially among Hawaiians (0.2% to 2.1%) and Japanese (0.3% to 1.0%). Use among Filipinos increased somewhat (0.4% to 0.8%), while use among Caucasians remained unchanged at 0.5%. The prevalence of more frequent heroin use remained the same (0.3%) for Caucasians and increased only slightly for Japanese (0.3% to 0.5%). Increases were substantial among Hawaiians (0.0% to 1.6%) and Filipinos (0.0% to 0.6%). The prevalence of diagnosis remained at 0.0% for Filipinos, decreased slightly for Caucasians (0.8% to 0.3%) and increased marginally for Hawaiians (0.1% to 0.5%). Diagnosis prevalence increased significantly among those of Japanese descent (0.1% to 0.6%).

13. DISCUSSION

13.1 Situation

During the period of data collection for this study, state economic issues continue to be the focus of most public and private sector initiatives. After nine years of recession, Hawaii's tax base has eroded to the point that even minor changes (0.1%) are applauded if they are positive. Tourism, mainly because of the economic crisis in Asia, is down sharply with Waikiki hotels operating with only marginal occupancy. Agriculture and aquaculture, potential bases for economic development, have lost hundreds of workers to the closure of the sugar cane plantations over the past decade. Many displaced workers have left the agricultural life for wage jobs in the city. Fishing and aquaculture in Hawaii play relatively minor economic roles with long liners and other highly productive types of vessels registered abroad, minimizing the impact on the state economy. Finally, for the past three decades a major part of the Hawaii economy has come from federal transfer payments to support a large military presence in the State. With downsizing in the military, the prospect of stable funding does not look good for the future.

The socio-economic troubles of the state only underscores the seriousness of other social problems. Higher rates of

unemployment, higher proportions of persons dependent on financial aid, food stamps and/or subsidized health insurance, higher rates of uninsured, higher rates of incarceration, higher incidences of family violence, etc. all describe a society that is seriously stressed. As the system of care attempts to respond to these needs, the impact of the budget cuts of the past several years becomes obvious. The helping agencies of the community have been decimated by the loss of state contracts, resulting in lay-offs and service reductions, reducing their capacity to manage the ever-increasing demand for services. For many, the impact of the fiscal problems of the state has been the exacerbation of existing problems with inadequate prevention, treatment and follow-up programs resulting in increased numbers in trouble with the law.

Drive-by shootings, drug-related homicides, and clandestine drug laboratories have had a sobering effect on residents and visitors alike. While still quite low in frequency of occurrence, these apparent random acts of violence in the community have made residents uneasy. The fact that many of these acts are drug-related violence, drug-related crimes, or drug-related risks means that the "drug problem" in Hawaii entails very direct social and economic pressures.

Arrests for illicit drug-related activity have never been higher. Police are hard-pressed to keep up with the trend of increased use and abuse. The courts are overwhelmed by the numbers of drug and drug-related cases, resulting in long waits for trial dates, despite the use of probation

as an alternative to incarceration, and use of parole as a tool to reduce prison populations. The correctional system is also overtaxed, with most in-State facilities operating at 125% to 150% capacity. To accommodate the overflow, more than 500 Hawaii inmates are housed in jails outside the state in space contracted by the State. The treatment system is also overtaxed, with funding unavailable for new beds to meet the high demand for service.

In a state where budget surpluses had become the norm, the 5-year deficit and the projected continuation of this recession or at least a guarded prediction for the future for the next year has meant that budgets for health and social programs are at a decade low in spite of soaring demand.

Between 1991 and 1998 and in the shorter term between 1995 and 1998, there were substantial increases in the prevalence of heavy drinking and the need for treatment of alcohol abuse and dependence. Between 1995 and 1998 the overall need for alcohol and drug treatment increased from 8.94% to 9.26% (an increase of 4.75% using 1995 as the base), to an estimated 82,880 adults. Most of these adults (76,100) needed treatment for alcohol problems.

The prevalence of need for treatment for alcohol abuse or dependence was 22% for young males 18 to 20 years of age. Young females 18 to 24 years of age had the greatest increase in the prevalence of heavy alcohol use (19.8% to 31.3%). The need for early intervention for diagnosis, for treatment of young adults and for the provision of

culturally competent treatment services (especially for Hawaiians) is obvious.

The prevalence of substance abuse and treatment need was higher among males than females, greater for young adults compared to old adults and greater for Caucasians and Hawaiians. With its large population base, Honolulu County has most of the population requiring treatment. However, it is also the most readily served and has the largest resource base of treatment programs from which to draw. With the major exception of hallucinogens, increases in the prevalence of drug use and treatment need were generally higher in more rural counties outside Honolulu. The rural areas, where the need (based on prevalence rates) is highest, have the greatest difficulty providing treatment services as the resource base in many of these areas is quite limited. As treatment facilities in these counties are already overwhelmed, any increases in treatment need would be hard-pressed to meet the demand for services.

In 1998, an estimated 8,100 adults required treatment for abuse or dependence related to the use of methamphetamine (up 30.1% from 1995). Since that time, treatment needs have increased for males of all ages, for young males in particular. The methamphetamine or "ice" problem appears to have decreased for females. Again, the need for early intervention for diagnosis and treatment is critical. In this study, the use of "ice" may have been seriously underestimated. The recent high stigma attached to "ice" use by the media, the intense publicity of incidents of violence associated with "ice" use, and the fact that the

study was a telephone survey, making it difficult to capture the users for interview, may have combined to suppress the actual rates of abuse. Certainly when comparing these findings to Community Epidemiology Work Group reports, to police reports, and to anecdotal reports from emergency departments and the emergency medical services of the state, increased use is consistently noted and the rate of increase is seen as high.

The prevalence of hallucinogen use increased by 20% between 1995 and 1998 to include an estimated 10,545 adults. Treatment need related to hallucinogen use increased four-fold between 1995 and 1998 to 3,600 adults, including both genders approximately equally. The use of these substances has received much less press but nonetheless remains a big problem in terms of numbers.

As with much of the country, heroin use increased markedly. In the 1998 survey, an estimated 8,100 adults, two-thirds of whom used heroin more than just once or twice were found to be at risk for dependence and addiction. Increases in use were largest among young adults of both genders. Treatment needs for heroin did not increase substantially, probably because of the time needed for the addiction process to fully involve the user. However, here again there is an intense need to intervene with young adults for early diagnosis and treatment.

Cocaine was the only illegal drug for which there was a substantial decline for all age and sex cohorts and all

ethnicities for both use and treatment needs. While similar data have been reported from the mainland over this period, the period of decline in use has been short lived and cocaine use is on the rise again.

The prevalence of tobacco use also declined between 1991 and 1998 from 23.4% to 20.8%, with decreases reflected for both males and females.

13.2 Research Methods

It is recommended that several methodological issues be addressed before another statewide household survey is undertaken.

The survey protocol, particularly the survey instrument as provided by CSAT, was designed for a mainland population. The survey instrument required significant adaptation in terms of language and culturally-relevant content before it could be implemented with a population such as Hawaii's.

Because of the large number of respondents for whom English is a second language, or who speak "pidgin," more intricate, sometimes quite technical, language usage in the original instrument provided by CSAT was very likely to be misinterpreted by many respondents. Therefore, many questions and instructions had to be changed to fit the local population. For example, Gallup noted in its 1995 survey final report that, of all the states in which it administered the survey, Hawaii had the highest non-response rate due to language difficulties. This was

generally not the case during this survey. The use of "local" interviewers reduced the language problems suffered during the 1995 survey.

It is recommended that up to a year be allotted to the pre-testing and revising of the survey instrument before implementing the final data collection. The project staff changed the structure of the interview (including all the question and stem numbers) prior to fielding the survey. Changing the interview structure facilitated programming of the questionnaire in the Computer Assisted Telephone Interviewing (CATI) system. A new question labeling/coding convention was developed to be more efficient in referencing specific questions. However, this became a significant problem during the analysis phase of the project as the project staff had to restructure the data files in order to apply the diagnosis algorithms written by NTC. The NTC program also used its own question labeling convention, meaning that each question had to be relabeled in order to compute the treatment needs algorithms.

In the future, more technical support needs to be assured by CSAT if they are going to dictate the content of both the interview and the data output. The software containing the algorithms to calculate treatment need were not given to the project until data collection was nearly completed. Due to CSAT termination of its contract with NTC, there was no technical support to provide assistance. The software documentation was inadequate.

More time is required to garner cooperation among state agencies. State agencies, such as the Office of Health Status Monitoring (OHSM), expressed hesitancy to share population data that might be construed as official population estimates. The initial hesitancy resulted in some delay to the progress of the study. Access to and sharing of reliable data sources is especially critical for sampling issues such as estimating population breakdowns.

As is reflected in the current US Census, survey response rates for the islands are relatively low compared to other states. Even with a population of around one million residents, arriving at a sample of 5,000 that adequately represents age and sex within ethnicity within counties is very difficult. It is extremely difficult to reach the State's population that is widely dispersed across several islands, several ethnic groups, in rural and urban areas, and that uses a wide variety of languages. Compounding this problem is reluctance, particularly among the state's Asian populations, to discuss substance use and illegal behavior.

A simple solution to facilitating data collection and to stimulate better response rates is to shorten and simplify the questionnaire. Too few questions were asked about factors that are more relevant to respondent's actual substance use, such as their environment (e.g., whether other household members abuse certain substances or require treatment). Instead, many of the question sets included in the interview are redundant and overly specific. The original data file produced from the

interviews included over 1,400 variables. Many of the questions apply only to portions of the sample that are too small to be statistically reliable. For example, questions dealing with insurance and the respondent's ability to pay for treatment, detoxification, rehabilitation, etc. stretch across three sections of the questionnaire and yielded very little analyzable data.

In future, there should also be more specificity about the objectives of the data collection and what concepts or issues need to be examined. There needs to be understanding and agreement on specific operational definitions of specific concepts (e.g., substance abuse, heavy use, and treatment need) before the data are collected and analyzed. Such specification would provide a greater level of integration within the family of surveys being conducted by ADAD and would facilitate the CSAT Block Grant Application process. There needs to be participation of a wider range of experts within ADAD at earlier stages of the survey, such as prior to fielding and prior to performing the data analysis. For example, invaluable comments from clinicians at ADAD were not provided until after the third draft of the final report was submitted.

The strategy to randomly sample telephone numbers in stage I sampling then quota sample in stage II within household worked well. The sample required relatively little re-weighting for population estimates. Even so, an alternative, or supplement, to such a large-scale household survey is to follow up a telephone interview with in-person interviews where possible to improve

response rates. Such interviews would be solicited on a voluntary basis. Incentives might be provided to the respondent to increase the response rate.

More targeted geographical analyses should be provided for in the future. The current survey did ask the respondent for their residence zip code. In accordance with the approved protocol, the respondents' telephone numbers were deleted from the data file by MTP, Inc. before the data were submitted to the project. However, the telephone first 4 digits of the telephone number could have been used for geo-coding to allow estimates for sub-areas (e.g. school districts). Such information could be used to target specific local areas and coordinate both treatment and prevention program needs.

14. REFERENCES

- American Psychiatric Association. 1987 *Diagnostic and Statistical Manual of Mental Disorders: Third Edition, Revised (DSM-III-R)*. Washington, DC,
- Aquilino, W.S. 1992. *Telephone Versus Face-to-face Interviewing for Household Drug Use Surveys*. *International Journal of the Addictions* 27(1):71-91.
- Fenig, S. et al. 1993. *Telephone vs Face-to-face Interviewing in a Community Psychiatric Survey*. *American Journal of Public Health* 83(6):896-898.
- Frank, B. 1985. *Telephone Surveying for Drug Abuse: Methodological Issues and an Application, Self-report Methods of Estimating Drug Use: Meeting Current Challenges to Validity*, NIDA Research Monograph No. 57:71-83,
- Gilbert, G.G.; Wilson, L.; and Wellford, C. 1990. *Maryland State Household Drug Survey, September 4, 1990*. College Park, MD: Center for Substance Abuse Prevention and Control, University of Maryland,
- Kroliczak, A., Chattopadhyay, M., and Larsen, M. (Gallup). (May 1996). *Technical Report: Hawaii 1995 Adult Household Survey of Substance Use and Treatment Needs*. The Gallup Organization,
- Institute for Health Policy. 1993. *Substance Abuse: The Nation's Number One Health Problem*. Waltham, MA: Brandeis University,
- Johnson, T.P. and Barrett, M.E. 1992. *Substance Use in the Adult Population of Illinois: 1990. A report*

prepared for the Department of Alcoholism and Substance Abuse, State of Illinois, June.

McAuliffe, W.E. *et al.* 1991. "Assessment of Drug Abuser Needs in Rhode Island." *American Journal of Public Health* 81(3):365-371.

National Technical Center for Substance Abuse Needs Assessment (NTC). 1996. *Assessment of Substance Dependence Treatment Needs: A Telephone Survey Manual and Questionnaire.*

Robins, L.N., Helzer, J.E., Ratclif, K.S. and Seyfried, W. 1982. *Validity of the Diagnostic Interview Schedule, Version II: DSM-III diagnoses.* *Psychological Medicine* 12:855-870.

SAMSHSA (Substance Abuse and Mental Health Services Administration), Office of Applied Studies. 1992. *1991 National Drug and Alcoholism Treatment Unit Survey.* Rockville, MD.

Spence, R.T.; Fredlund, E.V. and Kavinsky, J. 1989. *1988 Texas Survey of Substance Use Among Adults.* Austin, TX: Texas Commission on Alcohol and Drug Abuse (March, 1989).

Wood, D.W. *Hawaii Behavioral Health Survey (1991).* ADAD, Hawaii Department of Health and the School of Public Health, University of Hawaii at Manoa, 1991.

APPENDIX A: SUBSTANCE USE WITHIN EACH COUNTY

The following appendix presents additional analyses of the data within each service area (county).

A.1 HONOLULU COUNTY

1.1 Patterns in the Use of Alcohol in Honolulu County

While Honolulu County has the highest rate of abstinence among adults, there was also a relatively high rate of heavy drinking. Slightly more than half (53.0% \pm 1.1%) of the adult respondents in Honolulu County abstained from drinking any alcohol in the month prior to the survey. One in five (20.3% \pm 0.9%) respondents in the total sample reported "heavy" use of alcohol. Heavy drinking is defined as one or more incidents of a binge (at least 5 drinks at one sitting) or 60 or more drinks per month (or both).

*See Table A.1 : Alcohol Consumption and Drug Use
by Gender, Age, and Ethnicity: Honolulu
County*

As was observed for the state as a whole, there were significant differences in alcohol use by gender, age, and ethnicity. Heavy use of alcohol in Honolulu County was most prevalent among the respondents 18 to 24 years of age (36.8% \pm 2.8%), which was 10% and 20% higher, respectively, than the older two age groups. Almost one-third (29.6% \pm 1.4%) of males in Honolulu report heavy consumption of alcohol, which was well more than twice the estimated prevalence for females (11.3% \pm 1.0%).

Caucasians had substantially higher current alcohol usage (58.3% \pm 2.4%) than the other ethnic groups. The next highest ethnic group, "other," has a rate of 46.9% (\pm 2.1%). Although heavy use was still highest for Caucasians (26.9% \pm 2.1%), this estimate was not significantly different from the Hawaiian and "Other" groups (23.8% \pm 2.2% and 19.3% \pm 1.7%, respectively). Rates of diagnosis for alcohol abuse and/or dependence were about the same for both Caucasians and Hawaiians (11.4% \pm 1.6% and 11.3% \pm 1.6% respectively).

1.2 Patterns of Drug Use in Honolulu County

In comparison to the other counties, Honolulu has the lowest prevalence of drug use. The prevalence of marijuana use in Honolulu as a whole was about half that of Hawaii and Maui. Approximately 6.0 % (\pm 0.5%) of the respondents in Honolulu County reported any use of marijuana in the 18 months prior to the survey. The prevalence of current use of hallucinogens, methamphetamine, and heroin were 1.0% or less. In terms

of both current and repeated use, cocaine was not statistically significant.

The prevalence of drug use among men was roughly twice that of women for all types of drugs, and for both current and repeated use. The exception was frequent heroin use, which was roughly equal for males and females ($0.6\% \pm 0.3\%$ and $0.6 \pm 0.2\%$). In general, the youngest cohort (aged 18 to 24 years) reported significantly higher current and repeat usage in all drug categories. For example, current and repeated use of marijuana among 18 to 24 year olds ($21.4\% \pm 2.4\%$ and $12.5\% \pm 2.0\%$ respectively) was roughly three times that of 25 to 24 year olds ($6.2\% \pm 1.0\%$ and $4.1\% \pm 0.8\%$ respectively) and more than six times that of the oldest age group (35 years and older) ($3.1\% \pm 0.5\%$ and $1.8\% \pm 0.4\%$).

The highest prevalence of any drug use, both current and repeat use for each drug category, was found among Hawaiians. The exception to this was for more frequent hallucinogen use, for which Caucasians had the highest prevalence ($0.9\% \pm 0.4\%$). Prevalence of current marijuana use was 11.5% ($\pm 1.7\%$) among Hawaiians. Caucasians had the second highest rate ($8.1\% \pm 1.3\%$). Current heroin use among Hawaiians ($2.1\% \pm 0.7\%$) was nearly twice that of the next highest group, the Japanese ($1.2\% \pm 0.5\%$).

1.3 Diagnoses of Abuse or Dependence in Honolulu County

Table A.1 also reports clinical diagnoses of substance abuse or dependence requiring treatment (treatment need) in three categories: alcohol only, drug only, and alcohol and drug, as defined in the *DSM-III-R*. There was no statistically significant difference between males and females in terms of treatment need for each of the three categories. The youngest age group (18 to 24 years old) has the highest prevalence of treatment need for alcohol only ($14.7\% \pm 2.1\%$), more than twice that of both older age groups. However, in terms of treatment for drugs only and treatment for both alcohol and drugs, the 25 to 34 year age cohort has the highest prevalence ($2.6\% \pm 0.6\%$).

Caucasians and Hawaiians had prevalence of abuse or dependence diagnosis for alcohol only ($11.4\% \pm 1.6\%$ and $11.3\% \pm 1.6\%$, respectively) that were more than three times the prevalence for Japanese ($3.3\% \pm 0.8$) and Filipinos ($3.7\% \pm 1.2\%$). For Caucasians, the prevalence of abuse or dependence diagnosis for alcohol and drugs together was especially high ($1.8\% \pm 0.6\%$).

Although the prevalence rates of alcohol and drug use and of treatment need were generally lower in Honolulu County, the reader is also reminded of the disproportionate number of adult residents (668,644) compared to the other three counties. For example, the actual population estimate of adults requiring treatment for any substance abuse or dependence numbers

approximately 62,000 in Honolulu County (7.4% + 1.2% + 0.7% x 668,644).

A.2 HAWAII COUNTY

2.1 Patterns in the Use of Alcohol in Hawaii County

In terms of aggregate use, Hawaii County has the highest consumption rates of alcohol in the state. Approximately one half (50.8% ± 1.6%) of Hawaii County's adult population report recent consumption of alcohol and nearly a quarter (24.2% ± 1.4%) were considered heavy drinkers. Heavy drinking is defined as one or more incidents of a binge (at least 5 drinks at one sitting) or 60 or more drinks per month (or both).

*See Table A.2 : Alcohol Consumption and Drug Use
by Gender, Age, and Ethnicity: Hawaii County*

More than a third of males (37.6% ± 2.3%) were heavy drinkers, three times more than females (12.3% ± 1.5%). Prevalence of heavy use among 18 to 24 year olds on the Big Island was the highest among the three age categories anywhere in the state. More than one half (56.0% ± 5.5%) of 18 to 24 year olds report behavior consistent with heavy drinking. Put another way, of the 61.7% (± 5.4%) in the 18 to 24 year age group who consume alcohol, nearly all (91%) can be considered heavy drinkers. The latter

rate is approximately twice the rate reported by adults 25 to 34 years of age.

Although the rate of current use of alcohol was substantially greater among Caucasians (61.2% ± 3.2%) than any other ethnic group, Caucasians' rate of heavy alcohol use was the second lowest in the county (22.2% ± 2.7%). Among Hawaiians, rates of heavy alcohol use (30.3% ± 3.0%) was not substantially lower than current use (38.9% ± 3.2%). Hawaiians had the highest rates of heavy use of alcohol in the county even though they also had the lowest rate of current use. The prevalence of current and heavy alcohol use for Japanese (current use, 45.7% ± 3.6%; heavy use, 24.6% ± 3.1%) in Hawaii County was significantly higher compared to Japanese living in other counties

2.2 Patterns of Drug Use in Hawaii County

Prevalence of current marijuana use (11.2% ± 1.0%) and more frequent marijuana use in Hawaii County were relatively high (8.1% ± 0.9%). Use of hallucinogens was the next most prevalent drug category (1.7% ± 0.4%), with heroin and methamphetamine both at 1.1% (± 0.3%). Men had two to three times higher rates of use than women in all cases except for hallucinogens, for which the rates were roughly similar (males, 1.9% ± 0.6%; women, 1.5% ± 0.6%). Cocaine use was not statistically significant for either gender.

The youngest age cohort (18 to 24 years) has a notably high rate of current marijuana use ($30.2\% \pm 4.9\%$), nearly three times that of the older two age groups ($11.2\% \pm 2.4\%$ and $8.7\% \pm 1.0\%$ respectively). A similar ratio exists for prevalence of more frequent marijuana use ($18.1\% \pm 4.0\%$ compared to $7.7\% \pm 2.1\%$ and $7.0\% \pm 0.9\%$ respectively).

In terms of methamphetamine use, the highest rate of all the counties was found among the young age group (18 to 24 years) in Hawaii County. Five point three percent ($5.3\% \pm 2.0\%$) of the youngest age category report any current (in the last 18 months) use of methamphetamine. Current methamphetamine use among the older age groups in the county was not statistically significant, except among the oldest age group ($0.7\% \pm 0.3\%$). More frequent use of methamphetamine was also the highest in the four counties for the youngest age group ($4.6\% \pm 1.7\%$). In the same age category, heroin use was the second highest in the four counties at $4.0\% (\pm 2.3\%)$.

The prevalence of current marijuana use ($16.9\% \pm 2.4\%$) and more frequent marijuana use ($12.7\% \pm 2.2\%$) among Caucasians in Hawaii County was roughly twice that of Hawaiians ($6.6\% \pm 1.7\%$ respectively).. For drugs other than marijuana, the Caucasians' rate of use was similar or lower to both Hawaiians and "Other." Among the Japanese and Filipinos, marijuana was the only drug with a statistically significant rate of use. The exception to this was the prevalence of current heroin use by

Filipinos ($2.4\% \pm 1.5\%$). This rate was marginally the highest among all five ethnic groups. There was no significant variation among Caucasians, Hawaiians, and "Other" in terms of methamphetamine use ($1.7\% \pm 0.7$, $1.2\% \pm 0.7\%$, and $1.7\% \pm 0.8\%$ respectively). Use of cocaine was not statistically significant except in the "Other" ethnic category ($1.2\% \pm 0.7\%$).

2.3 Diagnoses of Abuse or Dependence in Hawaii County

Hawaii County has the highest prevalence of abuse or dependence diagnoses of all four counties. Nearly one in ten ($9.7\% \pm 0.9\%$) individuals in Hawaii County could be diagnosed with abuse or dependence on alcohol. Approximately 13,200 adults in Hawaii County require some form of treatment for substance abuse or dependence.

There was a significant difference in the need for treatment between males and females in Hawaii County. The rate of treatment need (for alcohol and/or drug abuse or dependence) for males in Hawaii County was the highest in the state. More than 12% ($12.2\% \pm 1.5\%$) of males require some form of treatment for alcohol abuse or dependence compared to 7.4% ($\pm 1.1\%$) of females. For males, Hawaii and Maui Counties share similarly high rates of abuse or dependence on drugs alone requiring treatment at 3.4% ($\pm 0.9\%$) for Hawaii and 3.5% ($\pm 0.8\%$) for Maui. These rates were roughly twice those of the females in those counties.

An estimated 17.7% (\pm 4.4%) of the 18 to 24 year olds require some treatment for alcohol abuse or dependence. For treatment for any substance (drugs or alcohol), although the total prevalence of treatment need was highest among the youngest age category (approximately 21.1%), in terms of actual numbers of individuals requiring treatment for alcohol abuse or dependence, the oldest age category represents a greater number of individuals requiring treatment (approximately 7,440 individuals in the oldest category and 1,988 individuals in the youngest category).

A.3 KAUAI COUNTY

3.1 Patterns in the Use of Alcohol in Kauai County

Prevalence of alcohol use in Kauai County was nearly identical to that of Hawaii County and very similar to Honolulu County. More than one half (52.8% ± 1.6%) of the respondents in Kauai County abstained from alcohol use in the month prior to the survey. Less than 20 percent (19.9% ± 1.3%) of Kauai respondents reported heavy use of alcohol, the lowest rate of heavy drinking among the four counties. Heavy drinking is defined as one or more incidents of a binge (at least 5 drinks at one sitting) or 60 or more drinks per month (or both). Males had approximately three times the heavy use of alcohol as women (31.0% ± 2.2% compared with 9.7% ± 1.3%).

*See Table A.3: Alcohol Consumption and Drug Use
by Gender, Age, and Ethnicity: Kauai County*

Between the three age groups, the rates of current and heavy use of alcohol in Kauai County were not as dramatic as in the other counties. Kauai was the only county that for which the rate of current alcohol use increased between the youngest and the middle age group. The

youngest age group (18 to 24 years of age) had a current use rate of 52.1% (\pm 5.1%) compared to the middle (25 to 34 years of age) group with 58.5% (\pm 4.0%). Rates of heavy use of alcohol were roughly similar (31.1% \pm 4.6% compared to 29.9% \pm 3.5%). The rate of heavy drinking was much lower for the oldest age group (15.5% \pm 1.4%).

Rates of current and heavy alcohol use for Caucasians (64.4% \pm 3.4% and 25.2% \pm 2.8% respectively) was significantly higher than every other ethnic group, and roughly double that of the Japanese and Filipinos in Kauai County. With the exception of Filipinos living in Maui County, the Japanese and Filipinos living in Kauai County had the highest rates of abstinence from alcohol. Only 31.0% (\pm 3.5%) of Filipinos and 32.4% (\pm 3.6%) of Japanese living in Kauai County reported consuming any alcohol in the month prior to the survey. These two groups also had correspondingly low prevalence of heavy use (Japanese, 12.5% \pm 2.6%; and Filipinos, 14.2% \pm 2.7%).

3.2 Patterns of Drug Use in Kauai County

Prevalence of current marijuana use ((9.9% \pm 0.9%) and more frequent marijuana use (6.6% \pm 0.8%) in Kauai County was the second lowest (after Honolulu) of all four counties. However, the overall prevalence of methamphetamine use (1.3% \pm 0.3%) and hallucinogen use (2.3% \pm 0.5%) were the highest of all four counties. There was no reported methamphetamine use among female

respondents in the sample. Among males, the prevalence of methamphetamine use was 2.8% (\pm 0.7%). Males also accounted for all of the reported heroin use (1.3% \pm 0.6%) on the island of Kauai, and most of the hallucinogen use (3.5% \pm 0.8% compared to 1.2% \pm 0.4% for females).

The two younger age cohorts (18 to 24 and 25 to 34 years) had notably high levels of hallucinogen use. Hallucinogen use among the younger (18 to 24 year old) group was 5.8% (\pm 2.2%) and 3.9% (\pm 1.4%) among the 24 to 25 year old age group. The 18 to 24 year olds in the sample reported over twice the rate of any marijuana use (28.4% \pm 4.6%) compared to the 25 to 24 year age group, and over four times as much as the oldest (35 years and older) age group. There was no significant difference in the prevalence rates of methamphetamine, hallucinogen, and heroin use between the two younger age groups. The prevalence rates for the two younger age cohorts were among the highest in the state for all three of these drug categories.

Caucasians in Kauai County had proportionately the highest rates of marijuana (15.7% \pm 2.3%, methamphetamine (2.5% \pm 0.9%), and hallucinogen (4.1% \pm 1.2%) use. The "Other" ethnic category had roughly comparable rates (12.1% \pm 2.3% for marijuana, 2.1% \pm 1.0% for methamphetamine, and 2.7% \pm 1.1% for hallucinogens).

3.3 Diagnoses of Abuse or Dependence in Kauai County

Of the four counties, Kauai had the lowest overall prevalence of abuse or dependence diagnoses. About 8.7% (approximately 3,600) of the sample received a diagnosis for alcohol and/or drug abuse or dependence that would require treatment. There was no significant difference in the percentage of males (6.4% \pm 1.2%) and females (5.6% \pm 1.0%) with an alcohol-only diagnosis of abuse or dependence.

The young (18 to 24 years) age group in Kauai County had the highest rate (6.1% \pm 2.0%) of drug-only diagnoses in each of the four counties. Among the ethnic categories for Kauai County, Caucasians had the highest prevalence of alcohol-only diagnosis (9.7% \pm 2.2%). Hawaiians had the highest drug-only prevalence indicating that 3.8% (\pm 1.4%) required treatment for drug abuse or dependence.

A.4 MAUI COUNTY

4.1 Patterns in the Use of Alcohol in Maui County

Slightly more than one half (51.4% ± 1.6%) of the respondents in Maui County had abstained from consuming alcohol in the month prior to the survey. Heavy use of alcohol for Maui county was relatively high (23.1% ± 1.3%). Heavy drinking was defined as one or more incidents of a binge (at least 5 drinks at one sitting) or 60 or more drinks per month (or both).

*See Table A.4 : Alcohol Consumption and Drug Use
by Gender, Age, and Ethnicity: Maui County*

Males in Maui County had a substantially higher prevalence of current use of alcohol (59.1% ± 2.3%), and a higher prevalence of heavy use of alcohol (34.6% ± 2.2%) compared to women. Women in Maui and Hawaii Counties share the highest rate for women in the state for prevalence of heavy drinking (12.3% ± 1.5%).

The 18 to 24 year age group has the highest prevalence of heavy drinking (39.3% ± 4.5%), which was 10 and 20

percentage points higher than the two older age groups respectively.

Prevalence of drinking alcohol was considerably higher for Caucasians (63.1% ± 2.8%) than any other ethnic group. The next highest groups in terms of prevalence of drinking were "Other" (50.9% ± 3.2%) and Hawaiians (42.8% ± 3.6%). Hawaiians had a slightly higher rate of heavy drinking (28.1% ± 3.3%) than Caucasians (26.1% ± 2.6%). While Caucasians had the highest prevalence of drinking, the estimates suggest that a higher proportion of Caucasians were likely to drink more moderately (i.e., less likely to binge or abstain).

4.2 Patterns of Drug Use in Maui County

Current use of marijuana was highest in Maui County (12.6% ± 1.1%) compared to the other three counties. More frequent use (two or more times in 18 months) was also the highest in Maui County (9.4% ± 0.9%). The county also had some notable hallucinogen use (1.9% ± 0.4%) and the highest aggregate heroin use in the state (1.2% ± 0.4%).

Although there was a substantial gap between marijuana use for males (16.0% ± 1.7%) and for females (9.4% ± 1.3%), the prevalence of marijuana use for women in Maui County was the highest among women in all four counties. The next highest prevalence rates for marijuana use among was for women in Hawaii County with a rate of 5.9% (± 1.0%). Hallucinogen use in Maui County was relatively

high for both men ($2.4\% \pm 0.7\%$) and for women ($1.5\% \pm 0.5\%$).

The youngest age group (18 to 24 years of age) in Maui County had the highest prevalence in the state for any age group for current marijuana use ($40.4\% \pm 4.4\%$), more frequent marijuana use ($31.2\% \pm 4.1\%$), current heroin use ($5.9\% \pm 2.4\%$), and more frequent heroin use ($4.1\% \pm 2.0\%$). The 25 to 34 year age group also had relatively high levels of current marijuana use ($16.3\% \pm 2.4\%$) and more frequent marijuana use ($11.0\% \pm 2.0\%$). Hallucinogen use does not decrease significantly as age increases. Respondents 18 to 24 years of age had prevalence rates of hallucinogen use of $4.7\% (\pm 2.0\%)$ and respondents in the 25 to 34 year age group had rates of $4.3\% (\pm 1.3\%)$.

Marijuana use was relatively high for "Other" ($17.7\% \pm 2.4\%$), Caucasians ($17.2\% \pm 2.2\%$), and Hawaiian ($13.5\% \pm 2.6\%$) ethnic groups. Methamphetamine use was statistically significant among Caucasians ($1.8\% \pm 0.8\%$). The rates of hallucinogen use among Caucasians ($2.8\% \pm 1.0\%$), Hawaiians ($2.1\% \pm 1.0\%$), and "Others" ($2.4\% \pm 0.9\%$) were similar. Heroin use was only statistically significant among Hawaiians ($2.8\% \pm 1.3\%$) and "Others" ($2.3\% \pm 0.9\%$).

4.3 Diagnoses of Abuse or Dependence in Maui County

Prevalence of alcohol abuse or dependence diagnosis in Maui County ($8.8\% \pm 0.9\%$) was the second highest of the four counties, and highest for the treatment of drugs alone ($2.7\% \pm 0.5\%$). Prevalence of alcohol abuse or dependence diagnosis in Maui County was relatively high for both males ($9.4\% \pm 1.4\%$) and females ($8.2\% \pm 1.2\%$). Males in Maui County had the highest treatment need in the state for drugs alone ($3.5\% \pm 0.8\%$).

Prevalence of overall treatment need decreased between the three age groups. However, prevalence of treatment need for alcohol-only abuse or dependence remained relatively high even in the oldest (35 years or older) age group ($7.5\% \pm 1.0\%$). Considering the relative size of the older age group ($N=60,143$), 7.5% represents over 4,500 individuals requiring treatment for alcohol alone.

The prevalence of alcohol-only abuse or dependence diagnoses for Caucasians ($12.8\% \pm 2.0$) was statistically similar to that of Hawaiians ($12.2\% \pm 2.4\%$). Abuse or dependence diagnosis for drugs alone were also similar between Caucasians ($3.6\% \pm 1.1\%$) and Hawaiians ($3.0\% \pm 1.3\%$).

APPENDIX B: CODEBOOK

RESPNUM: Respondent ID number

WEIGHT: Respondent sample weight

POPWGT: Respondent population weight

MODULE B:

B1: Please tell me how old you were on your last birthday. (OPEN-END NUMERIC RESPONSE)

B2: So you are a -year old male/female, is that correct?

Male	1
Female	2

B2b.1: Before you were 16 years old, how many years did you live in Hawaii? (OPEN-END NUMERIC RESPONSE)

B2b.2: How many years in total have you lived in Hawaii? (OPEN-END NUMERIC RESPONSE)

B3: Now, when you think of yourself, what is your ancestry or ethnic background?

White/Caucasian	1
Hawaiian	2
Part Hawaiian	3
Chinese	4
Filipino	5
Japanese	6
Korean	7
Samoan	8
Tongan	9
Black/African American	10
Native American/American Indian	11
Native Alaskan (Aleut/Eskimo/Inuit)	12
Vietnamese	13
Asian Indian/Pakistani	14
Portuguese	15
Guamanian/Chamorro	16
Hispanic/Latino	17
Mixed/Non-Hawaiian	18
Other (SPECIFY)	19
DON'T KNOW/NOT SURE	20
REFUSED	21

B3a.1-B3a.4: Of what ethnic background is your mother? (Multiple Response)

B3b.1-B3b.4: Of what ethnic background is your father? (Multiple Response)

White/Caucasian	1
Hawaiian	2
Part Hawaiian	3
Chinese	4
Filipino	5
Japanese	6
Korean	7
Samoan	8
Tongan	9
Black/African American	10
Native American/American Indian	11
Native Alaskan (Aleut/Eskimo/Inuit)	12
Vietnamese	13
Asian Indian/Pakistani	14
Portuguese	15
Guamanian/Chamorro	16
Hispanic or Latino	17
Mixed/Non-Hawaiian	18
Other (SPECIFY)	19
DON'T KNOW/NOT SURE	20
REFUSED	21
NOTHING ELSE/GO TO NEXT QUESTION	22

B3c: Are you of hispanic or latino background?

Yes	1
No	2
Don't know	3
Refused	4

B4: What race do you consider yourself to be? The U.S. Census categories are:

White	1
Black (African-American)	2
Asian	3
Native Hawaiian or Other Pacific Islander	4
American Indian	5
Native Alaskan (Eskimo/Aleutian)	6
Other (SPECIFY)	7
DON'T KNOW (SKIP TO QUESTION B5)	8
REFUSED (SKIP TO QUESTION B5)	9

B4a: (IF NATIVE AMERICAN) What tribe do you consider yourself to be?

1	SPECIFY ANSWER:	(verbatim to be provided later)
2	DON'T KNOW	
3	REFUSED	

B4b: (IF ASIAN OR PACIFIC ISLANDER) Are you: (READ CHOICES)

Cambodian	1
Chinese	2
Filipino	3
Hawaiian	4
Korean	5
Laotian	6
Vietnamese	7
Japanese	8
Guamanian	9
Samoan	10
Asian Indian	11
Thai	12
Some other national origin (SPECIFY)	13
DON'T KNOW	14
REFUSED	15

B5:	How much school have you completed?	
	No school completed	1
	First through 8th grade	2
	Some high school, but no diploma	3
	High school graduate (or equivalent; GED; vocational/trade school graduate)	4
	Some college, but no degree	5
	Associate degree (1-2 yr. occupational, technical or academic program)	6
	Four year college graduate	7
	Advanced degree (including master's, professional degree, or doctorate)	8
	DON'T KNOW	9
	REFUSED	10

B5a: How many years, in total, of schooling have you completed? (OPEN-END NUMERIC RESPONSE)

B6: How many people, including you, live in your household and are age 18 or older? (OPEN-END NUMERIC RESPONSE)

B7: During the past 12 months has your physical health been excellent, very good, good, fair, or poor?

B8: During the past 12 months has your emotional or psychological health been excellent, very good, good, fair, or poor?

Excellent	1
Very good	2
Good	3
Fair	4
Poor	5
DON'T KNOW	6
REFUSED	7

B9.a: In the past month, were you distressed by feeling no interest in things?

B9.b: In the past month, were you distressed by feeling blue?

B9.c: In the past month, were you distressed by feeling hopeless about the future?

B9.d: In the past month, were you distressed by feeling sad or depressed?

B9.e: In the past month, were you distressed by feeling lonely?

B9.f: In the past month, were you distressed by feelings of worthlessness?

B9.g: In the past month, were you distressed by thoughts of death and dying?

B9.h: In the past month, were you distressed by thoughts of ending your life?

Not at all	1
Sometimes	2
Often	3
Very Often	4
DON'T KNOW	5
REFUSED	6

- B10.a:** How often did you feel particularly excited about something?
B10.b: How often did you feel so restless that you couldn't sit long in a chair?
B10.c: How often did you feel proud because someone complimented you on something you had done?
B10.d: How often did you feel lonely or remote from other people?
B10.e: How often did you feel pleased about having accomplished something?
B10.f: How often did you feel bored?
B10.g: How often did you feel on top of the world?
B10.h: How often did you feel depressed or very unhappy?
B10.i: How often did you feel that things were going your way?
B10.j: How often did you feel upset because someone criticized you?
- | | |
|------------|---|
| Never | 1 |
| Sometimes | 2 |
| Often | 3 |
| Very Often | 4 |
| DON'T KNOW | 5 |
| REFUSED | 6 |

-
- B11:** During the past couple of weeks, how stressful have your daily activities been to you?
(READ)
- | | |
|-----------------------|---|
| Not at all stressful | 1 |
| A little stressful | 2 |
| Moderately stressful | 3 |
| Quite a bit stressful | 4 |
| Extremely stressful? | 5 |
| DON'T KNOW | 6 |
| REFUSED | 7 |

-
- B12:** Do you suffer from a chronic illness or a disability that causes you significant discomfort or limits your daily activities?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |

-
- B12a:** How much discomfort? How much does it limit your daily activities?
- | | |
|------------|---|
| Very often | 1 |
| Often | 2 |
| Sometimes | 3 |
| Never | 4 |
| DON'T KNOW | 5 |
| REFUSED | 6 |

SMOKING SECTION:

T1: Have you ever used tobacco products, such as cigarettes, cigars, pipe tobacco, or chewing tobacco?

- Yes 1
- No 2
- DON'T KNOW 3
- REFUSED 4

T1a: How old were you when you first tried tobacco? (This includes smoking a cigarette, cigar or pipe, or chewing tobacco or using snuff.) (OPEN-END NUMERIC RESPONSE)

T1b: How old were you when you first began using tobacco regularly? (This includes smoking a cigarette, cigar or pipe, or chewing tobacco or using snuff.) (OPEN-END NUMERIC RESPONSE)

T1c: Have you ever quit or tried to quit smoking or chewing tobacco?

T1d: Are you currently using tobacco products such as cigarettes, cigars, chewing tobacco, or snuff?

T2a1: Do you smoke cigarettes?

- Yes 1
- No 2
- DON'T KNOW 3
- REFUSED 4

T2a2: Approximately how many cigarettes do you smoke per day?

- 1 ENTER NUMBER OF CIGARETTES
- 2 ENTER NUMBER OF PACKS
- 3 DON'T KNOW
- 4 REFUSED

T2a3: ENTER NUMBER OF CIGARETTES PER DAY. (OPEN-END NUMERIC RESPONSE IF 1 IN T2A2)

T2a4: ENTER NUMBER OF PACKS PER DAY (OPEN-END NUMERIC RESPONSE IF "2" IN T2A2)

T2b1: Do you smoke cigars?

- Yes 1
- No 2
- DON'T KNOW 3
- REFUSED 4

T2b2: Approximately how many cigars do you smoke per day? (ENTER 0 IF LESS THAN 1) (OPEN-END NUMERIC RESPONSE)

T2c1.1-T2c1.7: Do you use OTHER tobacco products? (*Multiple Response*)

Chewing tobacco	1
Snuff	2
Pipe tobacco	3
DON'T KNOW	4
Nothing/do not use other tobacco products	5
REFUSED	6

Module C:

C1x: How important to you is drinking (alcohol) to the success of social occasions that you attend?

Very important	1
Somewhat important	2
Not very important	3
Not at all important	4
DON'T KNOW	5
REFUSED	6

C1: In the last 18 months have you had an alcoholic drink? By drink, I mean a glass of wine or beer, a can of beer, a mixed drink, or a shot or jigger of hard liquor.

Yes	1
No	2
Never had a drink in my life	3
DON'T KNOW	4
REFUSED	5

C1a: Have you ever had a drink in your life?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

C2.1-C2.5: About how many times in the last 18 months have you used.. in any form, for nonmedical reasons?

1 or 2 times	1	C2.1: Marijuana
3 to 5 times	2	C2.2: Crystal Meth
6 to 10 times	3	C2.3: Hallucinogens
11 to 49 times	4	C2.4: Cocaine
50 to 99 times	5	C2.5: Heroin
100 or more times	6	
No use in any form in last 18 months	7	
Never used drug in my life	8	
Don't know	9	
Refused	10	

C2a.1-C2a.5: Have you ever used .. even once in your entire life?

Yes	1	C2a.1: Marijuana
No	2	C2a.2: Crystal Meth
DON'T KNOW	3	C2a.3: Hallucinogens
REFUSED	4	C2a.4: Cocaine
		C2a.5: Heroin

C2b.1-C2b.10: Have you ever used any of the following drugs at least once in your entire life?

(Multiple Response)

Stimulants	1
Inhalants	2
Sedatives	3
Painkillers	4
Steroids	5
Other (Please Specify)	6
Did not use any other drugs	7
Don't Remember/Don't Know	8
Refused	9

***C2b.1a: You said that you have used drugs other than marijuana, cocaine, crystal meth, and heroin at least once in your entire life. Have you ever had difficulty receiving treatment for your use of these drugs?**

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

Module D:

- D1: In the last 18 months, have you had at least a little to drink?**
- | | |
|------------------------|---|
| Every day | 1 |
| Almost every day | 2 |
| 3-4 days a week | 3 |
| 1 or 2 days a week | 4 |
| 1-3 days a month | 5 |
| Less than once a month | 6 |
| DON'T KNOW | 7 |
| REFUSED | 8 |
-

**D2: In the past 18 months, when you drank, about how many drinks would you have?
(OPEN-END NUMERIC RESPONSE)**

D2a: In the last 18 months, did you even once have 5 or more drinks in one day?

- D3: During the past MONTH, have you had at least one drink of any alcoholic beverage?**
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |
-

- D3a: During the past MONTH, on about how many days did you have at least one drink?**
- | | |
|---|-----------------------|
| 1 | ANSWER DAYS PER MONTH |
| 2 | DON'T KNOW |
| 3 | REFUSED |
-

D3aMonth: (OPEN-END NUMERIC RESPONSE FROM IF D3a IS "1")

**D3b: During the past MONTH, on the days when you drank, about how many drinks did you have?
(OPEN-END NUMERIC RESPONSE.)**

***D3c.1-D3c.10: On what types of occasions during the past month have you had more than a couple of drinks?**

- | | |
|------------------------|---|
| Family get-togethers | 1 |
| Sports and Recreation | 2 |
| Funeral | 3 |
| Wedding | 4 |
| Pau Hana | 5 |
| Other (Please Specify) | 6 |
| Don't Know/No Answer | 7 |
| Refused | 8 |
| No other answer | 9 |
-

D4:	Have you ever gone on binges where you kept drinking for a couple of days or more without sobering up?	
	Yes	1
	No	2
	DON'T KNOW	3
	REFUSED	4

D4iiMO: When was the last time this happened? Please tell me the month and the year.

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

D4iiYR: ENTER YEAR: (OPEN-END NUMERIC RESPONSE IF D4iiMO=1)

D4a: Did you neglect some of your usual responsibilities at those times?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

D4i: How many times has this [neglected your responsibilities] happened? (OPEN-END NUMERIC RESPONSE)

D5: Have you ever been admitted to a hospital or emergency room for an alcohol-related illness or injury?

D6: Have you ever had a drinking problem or been addicted to alcohol?

D7: Has there ever been a period in your life when you drank more than you did during the last 18 months?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

D7a: Think about the period of time in your life when you were drinking the most. At that time, how frequently did you drink?

Every day	1
Almost every day	2
3-4 days a week	3
1 or 2 days a week	4
1-3 days a month	5
Less than once a month	6
DON'T KNOW	7
REFUSED	8

D7b: During that period when you were drinking the most, about how many drinks would you usually have in a single day? (OPEN-END NUMERIC RESPONSE)

- D7c: When you drank...and .. drink(s) per day, were you still able to behave normally?
- D8i: Were there ever objections about your drinking from your family (spouse, child, other relative)?
- D8ii: Were there ever objections about your drinking from friends?
- D8iii: Were there ever objections about your drinking from your boss or people at work or school?
- D8iv: Did your doctor or clergyman ever try to persuade you to stop drinking?
- D8v: Have the police ever stopped or arrested you or taken you to a treatment center because of your drinking?
- D8vi: Have you ever had a traffic accident because of drinking?
- D8a: Did you continue to drink after you realized drinking caused you any of these problems?
- *D8a.i: Did you ever drink most days for a month or more once you realized it was causing any of these problems?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |

-
- *D8a.iiMO: When was the last time you continued to drink when you realized drinking was causing you any of these problems? Please tell me the month and the year.
- | | |
|---|----------------------|
| 1 | ENTER MONTH AND YEAR |
| 2 | DON'T KNOW |
| 3 | REFUSED |

*D8a.iiYR: (OPEN-ENDED RESPONSE IF D8.iiMO=1)

- D8b: Did the police stop or arrest you or take you to a treatment center because of your drinking during the last year?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |

*D8b.i: How many times? (OPEN-END NUMERIC RESPONSE)

- D9: Have you ever accidentally injured yourself when you had been drinking, for example, had a bad fall or cut yourself badly?
- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |

D9a: How many times have you accidentally injured yourself when you had been drinking? (NUMERIC RESPONSE)

***D9a.iMO: When was the last time? Please tell me the month and the year.**

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

***D9a.iYR: (OPEN-END RESPONSE IF D9a.iMO=1)**

***D9a.ii: Did you go to a hospital as a result?**

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***D9a.ii1: How many times? (OPEN-END NUMERIC RESPONSE)**

D10: How often have you been high from drinking in a situation where it increased your chances of getting hurt - for instance, when driving a car or boat, using knives, machinery, or guns, crossing against traffic, climbing or swimming?

Very often	1
Often	2
Sometimes	3
Never	4
DON'T KNOW	5
REFUSED	6

***D10a.MO: When was the last time? Please tell me the month and the year.**

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

***D10a.YR: (OPEN-END RESPONSE IF D10a.MO=1)**

D11: Did your drinking or being hung over frequently keep you from household chores or taking care of children?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***D11i.MO: When was the last time? Please tell me the month and the year.**

1	ENTER MONTH AND YEAR
2	DON'T KNOW
3	REFUSED

***D11i.YR: (OPEN-END NUMERIC RESPONSE IF D11i.MO=1)**

D11a: Did your drinking or being hung over cause you to miss work frequently, lose a raise or promotion, or get fired?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***D11a.iMO: When was the last time? Please tell me the month and the year.**

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

***D11a.iYR: (OPEN-END NUMERIC RESPONSE IF D11a.iMO=1)**

D11b: Did your drinking or being hung over cause you to miss school, be suspended from school, or do poorly on school work?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***D11b.iMO: When was the last time? Please tell me the month and the year.**

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

***D11b.iYR: (OPEN-END NUMERIC RESPONSE IF D11b.iMO=1)**

D12: Have you often drunk more than you intended to?

D12a: Have you often drunk for a longer period of time than you intended to?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***D12b.MO: When was the last time? Please tell me the month and the year.**

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

***D12b.yr: (OPEN-END NUMERIC RESPONSE IF D12b.MO=1)**

D12c: Has that ever occurred most days for at least one month?

*D12c.i: Has that occurred several times?

D13: Have you ever found that you had to drink more than you used to in order to get the same effect?

D13a: Did you ever find that the same amount of alcohol had less effect on you than before?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

*D13b.MO: When was the last time? Please tell me the month and the year.

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

*D13b.YR: (OPEN-END NUMERIC RESPONSE IF D13b.MO=1)

D13c: Has that ever occurred most days for a month or more?

*D13c.i: Has that occurred several times?

D14: Have you ever tried to quit or cut down on drinking?

D14a: Have you often wanted to quit or cut down on your drinking?

D14b: Were you ever unable to quit or cut down?

D14c: Were you unable to quit or cut down several times?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

*D14c.iMO: When was the last time you tried to or wanted to quit or cut down?

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

D14c.iYR: (OPEN-END NUMERIC RESPONSE IF D14c.iMO=1)

D15: Some people try to control their drinking by making rules like not drinking alone or not before 5 o'clock. Have you ever made any rules because you were having trouble limiting the amount you were drinking?

D15a: Did you try that several times or for a month or longer?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

*D15b.MO: When was the last time you made rules because you were having trouble limiting the amount you were drinking? Tell me the month and the year.

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

***D15b.YR: (OPEN-END NUMERIC RESPONSE IF D15b.MO=1)**

D16: Has there ever been a period when you spent a great deal of time drinking alcohol or getting over its effects?

D16a: Did that period last a month or longer?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***D16b.MO: When was the last time there was a period when you spent a great deal of time drinking alcohol or getting over its effects? Tell me the month and the year.**

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

***D16b.YR: (OPEN-END NUMERIC RESPONSE IF D16b.MO=1)**

D17: Have you ever given up or greatly reduced important activities in order to drink - like sports, work, or associating with friends or relatives?

D17a: Did you do that for at least a month, or several times? (IF D17=1)

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***D17b.MO: When was the last time you gave up or greatly reduced important activities in order to drink? Tell me the month and the year.**

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

***D17b.YR: (OPEN-END NUMERIC RESPONSE IF D17b.MO=1)**

D18: People who cut down or stop drinking after drinking for a considerable time often have withdrawal symptoms. Common ones are the 'shakes' (hands tremble), being unable to sleep, feeling anxious or depressed, sweating, heart beating fast or the DELIRIUM TREMENS (DTs), or seeing or hearing things that aren't really there. Have you had any problems like that when you stopped or cut down on drinking?

D18a: Have you had withdrawal symptoms several times?

D18b: Have you ever had fits or seizures after stopping or cutting down on drinking?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***D18c.MO: When was the last time you had withdrawal symptoms after stopping or cutting**

down on drinking?

- | | |
|---|-----------------------|
| 1 | ENTER MONTH AND YEAR: |
| 2 | DON'T KNOW |
| 3 | REFUSED |

***D18c.YR: (OPEN-END NUMERIC RESPONSE IF D18c.MO=1)**

D18d: How severe, at its worst, was the withdrawal during the past 12 months?

- | | |
|----------------------|---|
| Not at all severe | 1 |
| Only slightly severe | 2 |
| Moderately severe | 3 |
| Very severe | 4 |
| DON'T KNOW | 5 |
| REFUSED | 6 |

D19: Have you ever taken a drink to keep from having a hangover, the shakes, or any withdrawal symptoms, or taken a drink to make them go away?

D19a: Have you done that several times?

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |

***D19b.MO: When was the last time? Tell me the month and the year.**

- | | |
|---|-----------------------|
| 1 | ENTER MONTH AND YEAR: |
| 2 | DON'T KNOW |
| 3 | REFUSED |

***D19b.YR: (OPEN-END NUMERIC RESPONSE IF D19b.MO=1)**

D20: There are several health problems that can result from drinking. Did drinking ever cause you to have liver disease, or yellow jaundice, give you stomach disease, or make you vomit blood, cause your feet to tingle or feel numb, give you memory problems even when you weren't drinking, or give you pancreatitis?

D20a: Did you continue to drink (more than once) knowing that drinking caused you to have a health problem?

***D20a.i: Did you ever drink for a month or more once you knew it caused these health problems?**

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |

D20aiiMO: When was the last time you drank knowing that drinking caused you to have a health problem? Tell me the month and the year.

- | | |
|---|-----------------------|
| 1 | ENTER MONTH AND YEAR: |
| 2 | DON'T KNOW |
| 3 | REFUSED |

D20aiiYR: (OPEN-END NUMERIC RESPONSE IF D20aiiMO=1)

D20b: Did you enter a hospital as a result of one of these health problems during the last year?

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |
-

***D20b.i: How many times? (OPEN-END NUMERIC RESPONSE)**

D21: Have you continued to drink when you knew you had any (other) serious physical illness that might be made worse by drinking?

D21a: Did you ever drink for a month or more once you knew you had any other illness that might be made worse by drinking?

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |
-

***D21b.MO: When was the last time you drank in spite of an illness that could be made worse by drinking? Tell me the month and the year.**

- | | |
|---|-----------------------|
| 1 | ENTER MONTH AND YEAR: |
| 2 | DON'T KNOW |
| 3 | REFUSED |
-

***D21b.YR: (OPEN-END NUMERIC RESPONSE IF D21b.MO=1)**

D21c: Did you enter a hospital as a result of one of these illnesses during the last year?

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |
-

***D21c.i:How many times? (OPEN-END NUMERIC RESPONSE)**

D22: Has alcohol ever caused you emotional or psychological problems, such as feeling uninterested in things, depressed, suspicious of others or paranoid, or caused you to have strange ideas?

D22a: Did you continue to drink (more than once) after you knew that drinking caused you psychological or emotional problems?

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |
-

***D22a.iMO: When was the last time that you continued to drink after you knew that drinking caused you psychological or emotional problems?**

- | | |
|---|-----------------------|
| 1 | ENTER MONTH AND YEAR: |
| 2 | DON'T KNOW |
| 3 | REFUSED |

***D22a.iYR: (OPEN-END NUMERIC RESPONSE IF D22a.iMO=1)**

***D22a.ii: Did you ever drink for a month or more once you found out it was causing you psychological or emotional problems?**

D22b: Did you enter a hospital as a result of one of these emotional problems during the last year?

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |

***D22b.i: How many times? (OPEN-END NUMERIC RESPONSE)**

D23: Have you ever been prescribed sedatives such as tranquilizers, sleeping pills, barbiturates or others for a medical problem?

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |

D23a: How often have you taken them in the last 18 months?

- | | |
|-----------------------------|---|
| 1 or 2 times | 1 |
| 3 to 10 | 2 |
| 11 to 49 | 3 |
| 50 to 99 | 4 |
| 100 or more times | 5 |
| Never in the last 18 months | 6 |
| DON'T KNOW | 7 |
| REFUSED | 8 |

D23b: Have you ever experienced a seizure or fit because you stopped taking these prescribed sedatives, including tranquilizers or barbiturates such as Xanax, Valium, Serax, or phenobarbital?

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |

***D23b.iMO: When was the last time? Tell me the month and the year.**

- | | |
|---|-----------------------|
| 1 | ENTER MONTH AND YEAR: |
| 2 | DON'T KNOW |
| 3 | REFUSED |

*D23b.iYR: (OPEN-END NUMERIC RESPONSE IF D23b.iMO=1)

Module E:

Andrew: All questions (with exception of those with ☒ before the question name) in Module E contain extensions .1 thru .5.

Extension .1 is the cell for **Marijuana** users, .2 is the cell for **Crystal Meth** users, .3 is the cell for **Hallucinogen** users, .4 is the cell for **Cocaine** users, and .5 is the cell for **Heroin** users.

E1.1-E1.5: When was the most recent time that you used .. in any form, for nonmedical reasons?

In the past 7 days (1-7 days)	1
8 to 30 days ago (8-30 days)	2
1 to 6 months ago (31-182 days)	3
6 to 12 months ago (183-365 days)	4
12 to 18 months ago (366-547 days)	5
(DO NOT READ) DON'T KNOW	6
(DO NOT READ) REFUSED	7

E2.1-E2.5: On about how many different days did you use .. during the past 30 days for nonmedical reasons?

ENTER -3 IF NOT APPLICABLE (NO USE IN THE PAST 30 DAYS)

☒E3: Have you ever been admitted to a hospital or emergency room for a drug-related illness or injury?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

E3a.1-E3a.5: Were you hospitalized for complications due to your use of...

Yes	1
No	2
DON'T KNOW	3
REFUSED	4
NOT APPLICABLE	5

☒E4: Have you ever had a problem with, felt addicted to, or hooked on marijuana, crystal meth, cocaine, heroin or other opiates?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

E4a.1-E4a.5: Have you ever had a problem with, felt addicted to, or hooked on....

Yes	1
No	2
DON'T KNOW	3
REFUSED	4
NOT APPLICABLE	5

E4b.MO.1-E4b.MO.5: When was the last time you had a problem with ..

- | | |
|---|-----------------------|
| 1 | ENTER MONTH AND YEAR: |
| 2 | DON'T KNOW |
| 3 | REFUSED |

E4b.YR.1-E4b.YR.5: (OPEN-END NUMERIC RESPONSE IF E4b.MO.* =1)

**E5a1: Think about the period of time in your life when you were using.. most frequently.
During that period, how much would you usually use in a day?**

- THAT APPLIES. DECIMALS ARE ALLOWED HERE. ENTER 0 OTHERWISE.)
- | | |
|--------------------|-----------------|
| Milligrams | (E5a1.1-E5a1.5) |
| Grams | (E5a2.1-E5a2.5) |
| Ounces | (E5a3.1-E5a3.5) |
| Pills, capsules | (E5a4.1-E5a4.5) |
| Lines | (E5a5.1-E5a5.5) |
| Bags | (E5a6.1-E5a6.5) |
| Joints, cigarettes | (E5a7.1-E5a7.5) |
| Hits | (E5a8.1-E5a8.5) |
| Other (SPECIFY) | (E5a9.1-E5a9.5) |

E5b.1.1-E5b.1.5: What was the longest period of using that amount of ..

- | | |
|---|-------------------------|
| 1 | ANSWER NUMBER OF DAYS |
| 2 | ANSWER NUMBER OF MONTHS |
| 3 | ANSWER NUMBER OF YEARS |
| 4 | DON'T KNOW |
| 5 | REFUSED |

***E5bDay.1-E5bDay.5: (OPEN-END RESPONSE IF E5bDay.* =1)**

***E5bMO.1-E5bMO.5: (OPEN-END RESPONSE IF E5bMO.* =1)**

***E5bYR.1-E5bYR.5: (OPEN-END RESPONSE IF E5bYR.* =1)**

***E5c.MO.1-E5c.MO.5: When was the last time you used that amount of ..**

- | | |
|---|-----------------------|
| 1 | ENTER MONTH AND YEAR: |
| 2 | DON'T KNOW |
| 3 | REFUSED |

***E5c.YR.1-E5c.YR.5: (OPEN-END RESPONSE IF E5c.YR.* =1)**

E5d.1-E5d.5: When you used that amount of .. were you still able to behave normally?

☒ E6: Have you ever injected any drug by needle for nonmedical reasons?

☒ E6a.1: Tell me which drugs you injected by answering "yes" when I mention its name:
Hallucinogens

☒ E6a.2: Tell me which drugs you injected by answering "yes" when I mention its name:
COCAINE

☒ E6a.3: Tell me which drugs you injected by answering "yes" when I mention its name:
Heroin and other opiates/opioids (Codeine, Demerol, morphine, Percodan, Methadone,
Dilaudid)

☒ E6a.4: Tell me which drugs you injected by answering "yes" when I mention its name:
Crystal Meth (ice, methamphetamine, batu)

☒ E6a.5: Have you ever injected a speedball (cocaine or heroin/opiates combined)?

☒ E6a.6: Have you ever injected some other drug?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

☒ E7: When was the most recent time you used any drug for nonmedical reasons with a
needle?

In the past 30 days (1-30 days)	1
1-6 months ago (31-182 days)	2
6-12 months ago (183-365 days)	3
12-18 months ago (366-547 days)	4
18 months to 5 years ago	5
5-10 years ago	6
10-15 years ago	7
(DO NOT READ) DON'T KNOW	8
(DO NOT READ) REFUSED	9

☒ E8: How often on average have you injected a drug by needle for non-medical reasons in
the past 18 months?

Daily (469-547 days)	1
1-6 days a week (78-468 days)	2
1-3 days a month (18-77 days)	3
Every other month or so (9-17 days)	4
3-8 days total	5
1-2 days total	6
(DO NOT READ) DON'T KNOW	7
(DO NOT READ) REFUSED	8

Module F:

All questions (with exception of those with ☒ before the question name) in Module F contain extensions .1 thru .5.

Extension .1 is the cell for **Marijuana** users, .2 is the cell for **Crystal Meth** users, .3 is the cell for **Hallucinogen** users, .4 is the cell for **Cocaine** users, and .5 is the cell for **Heroin** users.

F1.1-F1.5: Has there ever been a period when you spent a great deal of time using these drugs, getting them, or getting over their effects?

F1a.1-F1a.5: Have you ever spent a great deal of time getting, using, or getting over the effects of ..

F1a.i.1-F1a.i.5: Was that period ever as long as one month?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

F1b.MO.1-F1b.MO.5: When was the last time you spent a great deal of time getting, using, or getting over the effects of ..

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

F1b.YR.1 (OPEN-END NUMERIC RESPONSE IF F1b.MO.* =1)

☒ F2: Have you often used larger amounts of one of these drugs than you intended to?

☒ F2a: Have you often used one of these drugs for a longer period than you intended to?

F2b.1-F2b.5: Have you often used ... in larger amounts or used it for a longer period than you intended to?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***F2b.iM.1-F2b.iM.5: When was the last time?**

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

***F2b.iY.1-F2b.iY.5: (OPEN-END NUMERIC RESPONSE IF F2b.iM.* =1)**

F2b.ii.1-F2b.ii.5: Has that ever occurred on most days for at least one month?

***F2b.iA.1-F2b.iA.5: Has that ever occurred repeatedly over a longer period of time?**

☒ F3: Have you often wanted to cut down on any of these drugs, or have you ever tried to cut

down but couldn't?

F3a.1-F3a.5: Have you often wanted to cut down on .. or ever tried to cut down but couldn't?

F3a.i.1-F3a.i.5: Were you unable to quit or cut down on .. several times?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

*F3a.iM.1-F3a.iM.5: When was the last time?

1 ENTER MONTH AND YEAR:
2 DON'T KNOW
3 REFUSED

F3a.iY.1-F3a.iY.5: (OPEN-END NUMERIC RESPONSE IF F3a.iM. =1)

 F4: Did you ever find that you had to use a lot more of any of these drugs than you used to in order to get the same effect?

Yes	1	<i>(SKIP TO F4a)</i>
No	2	
DON'T KNOW	3	
REFUSED	4	

 F4i: Did you ever find that the same amount of any of these drugs had much less effect on you than before?

Yes	1	
No	2	<i>(SKIP TO F5)</i>
DON'T KNOW	3	<i>(SKIP TO F4a)</i>
REFUSED	4	<i>(SKIP TO F5)</i>

F4a.1-F4a.5: Did you ever find you needed a lot more .. to get the same effect or find that the same amount had much less effect than before?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

*F4a.iM.1-F4a.iM.5: When was the last time?

1 ENTER MONTH AND YEAR:
2 DON'T KNOW
3 REFUSED

F4a.iY.1-F4a.iY.5: (OPEN-END RESPONSE IF F4a.iM. =1)

F4a.ii.1-F4a.ii.5: Has that ever occurred most days for a month or more?

*F4a.iA.1-F4a.iA.5: Has that occurred several times?

F5: Has stopping or cutting down on any of these drugs made you sick or given you

withdrawal symptoms?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

F5a.1-F5a.5: Did quitting or cutting down on .. make you sick or give you withdrawal symptoms?

(READ LIST OF SYMPTOMS AS NEEDED)

(being depressed, being anxious, having trouble concentrating, being tired, having trouble sleeping, trembling, sweating, being nauseated, having diarrhea, affecting your appetite, seeing or hearing things, having runny eyes, having seizures, having muscle pains, or having a fast heart rate.)

F5b.1-F5b.5: Have you ever experienced a fit or a seizure because you stopped using sedatives?

F5c.1-F5c.5: Did you get sick several times from quitting or cutting down on ..

F5c.i.1-F5c.i.5: Did your withdrawal symptoms ever last at least one month?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

F5d.MO.1-F5d.MO.5: When was the last time you had any of those symptoms from cutting down on..

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

F5d.YR.1-F5d.YR.5: (OPEN-END NUMERIC RESPONSE IF F5d.MO.* =1)

F5e.1-F5e.5: How severe, at its worst, was the withdrawal from .. during the past 12 months?

Was it not at all severe, only slightly severe, moderately severe, or very severe?

Not at all severe	1
Only slightly severe	2
Moderately severe	3
Very severe	4
DON'T KNOW	5
REFUSED	6

F6: Have you ever used any of these drugs to make withdrawal symptoms go away or to keep from having them?

F6a.1-F6a.5: Have you ever used .. to make withdrawal symptoms go away or to keep from having them?

F6a.i.1-F6a.i.5: Have you done that several times?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

*F6a.iM.1-F6a.iM.5: When was the last time?

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

F6a.iY.1-F6a.iY.5: (OPEN-END RESPONSE IF F6a.iM. =1)

F7: Did you have any physical health problems like an accidental overdose, a persistent cough, a seizure (fit), an infection, a cut, sprain, burn, or other injury as a result of using any of these drugs?

F7a.1-F7a.5: Did .. cause you physical health problems?

F7a.i.1-F7a.i.5: Did you continue to use .. after you knew it caused you these problems?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

*F7a.iM.1-F7a.iM.5: When was the last time you continued to use .. after you knew it caused you health problems?

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

F7a.iY.1-F7a.iY.5: (OPEN-END NUMERIC RESPONSE IF F7a.iM. =1)

F7a.i2.1-F7a.i2.5: Did you ever use .. for a month or more after you knew it caused these health problems?

F7b.1-F7b.5: Did you enter a hospital as a result of one of these health problems during the last year?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

F7b.i.1-F7b.i.5: How many times? (OPEN-END NUMERIC RESPONSE)

F8: Did any of these drugs cause you considerable problems with your family, friends, on the job, at school, or with the police?

F8a.1-F8a.5: Did .. cause you considerable problems with your family, friends, on the job, at school, or with the police.

F8a.i.1-F8a.i.5: Did you continue to use .. after you realized it was causing you any of those problems?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***F8a.iM.1-F8a.iM.5: When was the last time?**

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

F8a.iY.1-F8a.iY.5: (OPEN-END NUMERIC RESPONSE IF F8a.iM.* =1)

F8a.i2.1-F8a.i2.5: Did you ever use .. for a month or more after you realized it was causing you any of those problems?

F8b: Did you enter a hospital as a result of one of these health problems during the last year?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

F8b.i: How many times? (OPEN-END NUMERIC RESPONSE)

F9: Have you often been high on any of these drugs or suffering their after-effects while at work, school, or taking care of children?

F9a.1-F9a.5: Have you often been high on or suffering the after-effects of .. while working, at school, or taking care of children?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***F9a.iM.1-F9a.iM.5: When was the last time?**

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

F9a.iY.1-F9a.iY.5: (OPEN-END NUMERIC RESPONSE IF F9a.iM. =1)

F9a.ii.1-F9a.ii.5: Has that ever occurred on most days for a month or more?

*F9a.iA.1-F9a.iA.5: Has that ever occurred repeatedly over a longer period of time?

F10a.1-F10a.5: Did .. use often keep you from doing household chores or taking care of children?

F10b.1-F10b.5: Did .. cause you to miss work frequently, lose a raise or promotion, or get fired?

F10c.1-F10c.5: Did .. cause you to miss school, be suspended from school, or do poorly on tests?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

*F10d.M.1-F10d.M.5: When was the last time your .. use caused your work, school, or other responsibilities to suffer?

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

F10d.Y.1-F10d.Y.5: (OPEN-END NUMERIC RESPONSE IF F10d.M.* =1)

F11: Have you been high on (this drug/one of these drugs) or feeling its after-effects in a situation where it increased your chances of getting hurt - for instance, when driving a car or boat, using knives, machinery, or guns, crossing against traffic, climbing, or swimming?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

F11a.1-F11a.5: How often have you been high on .. in a situation where it increased your chances of getting hurt?

Very often	1
Often	2
Sometimes	3
Never	4
DON'T KNOW	5
REFUSED	6

*F11a.M.1-F11a.M.5: When was the last time?

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

F11a.Y.1-F11a.Y.5: (OPEN-END NUMERIC RESPONSE IF F11a.M. =1)

*F11a.A.1-F11a.A.5: Has that ever occurred for a month or more?

*F11a.B.1-F11a.B.5: Has that ever occurred repeatedly over a longer period of time?

F12: Did you have any emotional or psychological problems from using (this drug/ these drugs) - such as feeling uninterested in things, depressed, suspicious of people, paranoid, or having strange ideas?

F12a.1-F12a.5: Did .. give you emotional or psychological problems?

F12a.i.1-F12a.i.5: Did you continue to use .. after you knew it caused you those problems?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

*F12a.M.1-F12a.M.5: When was the last time you continued using .. after you realized it was causing you emotional or psychological problems?

1	ENTER MONTH AND YEAR:
2	DON'T KNOW
3	REFUSED

F12a.Y.1-F12a.Y.5: (OPEN-END NUMERIC RESPONSE IF F12a.M. =1)

*F12a.A.1-F12a.A.5: Did you ever use .. for a month or more after you found out it was causing you emotional or psychological problems?

F12b: Did you enter a hospital as a result of one of these emotional problems during the last year?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

F12b.i: How many times? (OPEN-END NUMERIC RESPONSE)

F13: Have you ever given up or greatly reduced important activities in order to get or use this drug/one of these drugs) - activities like sports, work, school, or associating with friends or relatives?

F13a.1-F13a.5: Did you give up any important activities to get or use ..

F13a.i.1-F13a.i.5: Did you give up any activity several times for .. or for a month or more?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***F13a.M.1-F13a.M.5: When was the last time you gave up important activities for ..**

- | | |
|---|-----------------------|
| 1 | ENTER MONTH AND YEAR: |
| 2 | DON'T KNOW |
| 3 | REFUSED |

***F13a.Y.1-F13a.Y.5: (OPEN-END NUMERIC RESPONSE IF F13a.M.* =1)**

F14a: Have you ever used sedatives, such as tranquilizers, sleeping pills, or barbiturates, for nonmedical reasons?

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |

 ***F14a.i: How often have you used them in the last 18 months?**

- | | |
|-----------------------------|---|
| 1 or 2 times | 1 |
| 3 to 5 times | 2 |
| 6 to 10 times | 3 |
| 11 to 49 times | 4 |
| 50 to 99 times | 5 |
| 100 or more times | 6 |
| Never in the last 18 months | 7 |
| Don't know | 8 |
| Refused | 9 |

F14b: Have you ever experienced a seizure or fit because you stopped using sedatives, including tranquilizers or barbiturates such as Xanax, Valium, Serax, or phenobarbital?

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |

 ***F14b.MO: When was the last time?**

- | | |
|---|-----------------------|
| 1 | ENTER MONTH AND YEAR: |
| 2 | DON'T KNOW |
| 3 | REFUSED |

 ***F14b-YR: (OPEN-END NUMERIC RESPONSE IF F14b.MO)**

Module G:

G1: Have you ever received treatment for your alcohol or other drug use?

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |

G1a: How many different times in your life? (OPEN-END NUMERIC RESPONSE)

G1b: Have you received treatment in the last 12 months?

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |

***G1b.i: How many different times? (OPEN-END NUMERIC RESPONSE)**

G1c: In the past 12 months, did you have to wait a week or more before receiving treatment because there was no opening?

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |

***G1c.i: How long did you have to wait?**

- | | |
|---|--------------------------|
| 1 | ANSWER NUMBER OF DAYS: |
| 2 | ANSWER NUMBER OF WEEKS: |
| 3 | ANSWER NUMBER OF MONTHS: |
| 4 | DON'T KNOW |
| 5 | REFUSED |

G1cDays: (OPEN-END NUMERIC RESPONSE IF G1c.1=1)

G1cWeeks: (OPEN-END NUMERIC RESPONSE IF G1c.1=2)

G1cMonth: (OPEN-END NUMERIC RESPONSE IF G1c.1=3)

G2: Let's begin with detoxification. People are usually detoxified for a few days at the start of treatment to get help with withdrawal sickness and medical problems associated with it. "Detoxes" often occur in a hospital or residential center, where you stay 24 hours a day.

Did you ever receive detoxification treatment, either by itself or as part of a longer program?

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |

***G2.i: How many different times in your life? (OPEN-END NUMERIC RESPONSE)**

G2a: Were you ever detoxified in a hospital? It could have been a general psychiatric, or military hospital.

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***G2a.i: How many different times in your life? (OPEN-END NUMERIC RESPONSE)**

***G2a.ii: Have you been detoxed in a hospital in the last 12 months?**

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***G2a.ii1: How many different times in the last 12 months? (OPEN-END NUMERIC RESPONSE)**

G2b: Were you ever detoxified in a non-hospital residential facility?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***G2b.i: How many different times in your life? (OPEN-END NUMERIC RESPONSE)**

***G2b.ii: How many different times in the last 12 months? (OPEN-END NUMERIC RESPONSE).**

G2c: Were you ever detoxified on an outpatient basis, where you may have received medication, such as methadone? Outpatient detox means you did not stay at the facility overnight (24 hours).

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***G2c.i: How many times? (OPEN-END NUMERIC RESPONSE)**

***G2c.ii: How many different times were you detoxed as an outpatient in the last 12 months? (OPEN-END NUMERIC)**

***G2c.ii1: (HEROIN/OPIATE USERS ONLY) Did you receive methadone as part of the treatment?**

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***G2d.1.1-G2d.1.18: Was the detoxification treatment you received in a HOSPITAL in the last 12 months paid for by:**

Private health insurance (such as HMSA, Kaiser, an HMO, etc.)	1
Medicaid	2
Medicare	3
Quest	4
Military health services	5
Veterans benefits	6
Your own personal funds	7
State funds, because you don't have insurance or ... (*)	8
The Indian Health Service	9
Other (SPECIFY)	10
Other (SPECIFY)	11
Other (SPECIFY)	12
NONE OF THE ABOVE, because the treatment was free to everyone	13
DON'T KNOW	14
REFUSED	15
NOTHING ELSE/GO TO NEXT QUESTION	16

(*) your benefits didn't cover the treatment.

***G2d.2.1-G2d.2.18: Was the detoxification treatment you received in a NON-HOSPITAL RESIDENTIAL FACILITY in the last 12 months paid for by: (Multiple Response)**

***G2d.3.1-G2d.3.18: Was the detoxification treatment you received on an OUTPATIENT BASIS in the last 12 months paid for by: (Multiple Responses)**

Private health insurance (such as HMSA, Kaiser, an HMO, etc.)	1
Medicaid	2
Medicare	3
Quest	4
Military health services	5
Veterans benefits	6
Your own personal funds	7
State funds, because you don't have insurance or ... (*)	8
The Indian Health Service	9
Other (SPECIFY)	10
Other (SPECIFY)	11
Other (SPECIFY)	12
NONE OF THE ABOVE, because the treatment was free to everyone	13
DON'T KNOW	14
REFUSED	15
NOTHING ELSE/GO TO NEXT QUESTION	16

(*) your benefits didn't cover the treatment.

G3: Did you ever receive residential rehabilitation treatment?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

G3a: Did you ever receive rehabilitation treatment as an inpatient in a hospital?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***G3a.i: How many times? (OPEN-END NUMERIC RESPONSE)**

***G3a.ii: How many different times in the last 12 months? (OPEN-END NUMERIC RESPONSE)**

G3b: Did you ever receive rehabilitation treatment in a residential care facility where the treatment was supposed to last more than 30 days? By residential care facility, I mean one in which you were not free to leave the premises unless escorted.

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***G3b.i: How many times have you received rehabilitation treatment in a residential center where the treatment was supposed to last more than 30 days? (OPEN-END NUMERIC RESPONSE)**

***G3b.ii: How many different times in the last 12 months? (OPEN-END NUMERIC RESPONSE)**

G3c: Did you ever receive rehabilitation treatment that was supposed to last 30 days or less in a residential care facility, that you did not leave unless escorted?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***G3c.i: How many times? (OPEN-END NUMERIC RESPONSE)**

***G3c.ii: How many different times in the last 12 months? (OPEN-END NUMERIC RESPONSE)**

***G3d.1.1-G3d.1.18: Was the residential rehabilitation treatment you received in a HOSPITAL.. in the last 12 months paid for by: (*Multiple Response*)**

***G3d.2.1-G3d.2.18: Was the residential rehabilitation treatment you received in a RESIDENTIAL CARE FACILITY where the treatment was supposed to last more than 30 days in the last 12 months paid for by:**

***G3d.3.1-G3d.3.18: Was the residential rehabilitation treatment you received in a RESIDENTIAL CARE FACILITY where the treatment was supposed to last 30 days or**

less in the last 12 months paid for by:	<i>(Multiple Response)</i>
Private health insurance (such as HMSA, Kaiser, an HMO, etc.)	1
Medicaid	2
Medicare	3
Quest	4
Military health services	5
Veterans benefits	6
Your own personal funds	7
State funds, because you don't have insurance or ... (*)	8
The Indian Health Service	9
Other (SPECIFY)	10
Other (SPECIFY)	11
Other (SPECIFY)	12
NONE OF THE ABOVE, because the treatment was free to everyone	13
DON'T KNOW	14
REFUSED	15
NOTHING ELSE/GO TO NEXT QUESTION	16
(*) your benefits didn't cover the treatment.	

G4: Were you ever in a halfway house or recovery house, where people live in a supervised residence but go unescorted to work, treatment, or other activities during the day? It may also have been a part of a residential program where you went out to work but still lived in the facility for a while.

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

G4a: How many times? (OPEN-END NUMERIC RESPONSE)

G4b: Were you in a halfway house at any time during the last 12 months?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***G4b.i: How many different times were you in a halfway house during the last 12 months? (OPEN-END NUMERIC)**

G4d.1-G4d.18: Was the halfway house treatment you received in the last 12 months paid for

by: *(Multiple Responses)*

Private health insurance (such as HMSA, Kaiser, an HMO, etc.)	1	
Medicaid	2	
Medicare	3	
Quest	4	
Military health services	5	
Veterans benefits	6	
Your own personal funds	7	
State funds, because you don't have insurance or ... (*)	8	
The Indian Health Service	9	
Other (SPECIFY)	10	
Other (SPECIFY)	11	
Other (SPECIFY)	12	
NONE OF THE ABOVE, because the treatment was free to everyone		13
DON'T KNOW	14	
REFUSED	15	
NOTHING ELSE/GO TO NEXT QUESTION	16	

(*) your benefits didn't cover the treatment.

G5: Have you ever received outpatient rehabilitation treatment?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

G5.i: How many different times in your life have you received outpatient treatment? (OPEN-END NUMERIC RESPONSE)

G5a: Sometimes outpatient treatment is intensive, lasting two or more hours a day for three or more days per week over a period of time. If it occurs all day, it may be called "day treatment." It may also occur in the evening and may be called "evening care."

Have you ever received intensive outpatient treatment?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***G5a.i: How many different times did you start intensive outpatient treatment in your life? (OPEN-END NUMERIC RESPONSE)**

***G5a.ii: Were you in intensive outpatient treatment at any time during the last 12 months?**

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***G5a.ii1:** **How many different times**
were you in intensive outpatient treatment during the last 12 months?
(OPEN-END NUMERIC RESPONSE)

G5b: Have you ever received less intensive outpatient treatment that was provided for less than two hours at a time or for once or twice a week?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***G5b.i: How many different times have you been admitted to such a program? (OPEN-END NUMERIC RESPONSE)**

***G5b.ii: How many different times did you start or were already in less intensive outpatient treatment during the last 12 months? (OPEN-END NUMERIC RESPONSE)**

G5c: Did you ever receive outpatient methadone maintenance treatment?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***G5c.i: How many different times have you been admitted to a methadone maintenance program? (OPEN-END NUMERIC RESPONSE)**

***G5c.ii: Have you received methadone maintenance in the last 12 months?**

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***G5d.1.1-G5d.1.18: Was the INTENSIVE outpatient treatment you received in the last 12 months paid for by:**

***G5d.2.1-G5d.2.18: Was the LESS INTENSIVE outpatient treatment you received in the last 12 months paid for by:**

***G5d.3.1-G5d.3.18: Was the METHADONE MAINTENANCE treatment you received in the last 12 months paid for by:**

Private health insurance (such as HMSA, Kaiser, an HMO, etc.)	1	<i>(Multiple Response)</i>
Medicaid	2	
Medicare	3	
Quest	4	
Military health services	5	
Veterans benefits	6	
Your own personal funds	7	
State funds, because you don't have insurance or ... (*)	8	
The Indian Health Service	9	
Other (SPECIFY)	10	
Other (SPECIFY)	11	
Other (SPECIFY)	12	
NONE OF THE ABOVE, because the treatment was free to everyone		13
DON'T KNOW	14	
REFUSED	15	
NOTHING ELSE/GO TO NEXT QUESTION	16	

(*) your benefits didn't cover the treatment.

G6: Have you ever attended meetings of any self-help groups such as Alcoholics Anonymous, Al-Anon, Narcotics Anonymous or Cocaine Anonymous for help with your alcohol or drug use?

G6a: Did you attend any meetings in the last 12 months?

G7: Did you ever obtain therapy or counseling about the extent of your drinking or drug use or about problems resulting from it with a psychiatrist, psychologist, social worker, or counselor outside of a formal drug or alcohol program?

G7a: Have you done so in the last 12 months?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***G7b.1.1-G7b.1.18: Was the treatment you received outside of a formal program in the last 12 months paid for by:**

Private health insurance (such as HMSA, Kaiser, an HMO, etc.)	1	<i>(Multiple Response)</i>
Medicaid	2	
Medicare	3	
Quest	4	
Military health services	5	
Veterans benefits	6	
Your own personal funds	7	
State funds, because you don't have insurance or ... (*)	8	
The Indian Health Service	9	
Other (SPECIFY)	10	
Other (SPECIFY)	11	
Other (SPECIFY)	12	
NONE OF THE ABOVE, because the treatment was free to everyone	13	
DON'T KNOW	14	
REFUSED	15	
NOTHING ELSE/GO TO NEXT QUESTION	16	

(*) your benefits didn't cover the treatment.

G8: Did you ever talk about the extent of your drinking or drug use or about problems resulting from it with a minister, priest, rabbi, or pastoral counselor outside of a formal program?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

G8a: Have you done so in the last 12 months?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

G9: What kind of treatment, help or counseling have you received for drug or alcohol use?

1	ENTER OPENEND ANSWER
2	DON'T KNOW
3	REFUSED

Module H:

H1: In the past 12 months, were there any other types of help, treatment or services that you would have sought if they had been readily available? This includes detoxification, residential rehabilitation, halfway house, outpatient treatment, self-help, counseling outside of a formal program, and other social services you may have required as a result of alcohol or drug use.

***H1a.i1:** Would you have sought
DETOXIFICATION treatment if it had been readily available?

***H1a.i2:** You mean you would
have sought more than you received during the last 12 months?

***H1a.ii1:** Would you have sought
RESIDENTIAL or INPATIENT REHABILITATION treatment if it had been readily
available?

***H1a.ii2:** You mean you would
have sought more than you received during the last 12 months?

***H1a.iii1:** Would you have sought a
HALFWAY HOUSE or RECOVERY HOUSE if it had been readily available?

***H1a.iii2:** You mean you would
have sought more than you received during the last 12 months?

***H1a.iv1:** Would you have sought
OUTPATIENT REHABILITATION if it had been readily available?

***H1a.iv2:** You mean you would
have sought more than you received during the last 12 months?

***H1a.v1:** Would you have sought a
SELF-HELP GROUP if it had been readily available?

***H1a.v2:** You mean you would
have sought more than you received during the last 12 months?

***H1a.vi1:** Would you have sought
treatment OUTSIDE A FORMAL PROGRAM if it had been readily available?

***H1a.vi2:** You mean you would
have sought more than you received during the last 12 months?

***H1a.vii:** Would you have sought
other types of services such as child care, family counseling, food stamps, and so on...
if they had been readily available?

Yes

1

No

2

DON'T KNOW	3
REFUSED	4

***H1ai.1-H1ai.10: What kind of additional DETOX services did you want? (Multiple Response)**

Detox in a hospital	1
Detox in a residential facility	2
Outpatient detox	3
Outpatient methadone detox	4
NONE OF THE ABOVE	5
DON'T KNOW	6
REFUSED	7
NOTHING ELSE/GO TO NEXT QUESTION	8

***H1aii.1-H1aii.10: Which type of additional RESIDENTIAL REHABILITATION did you want? (Multiple Response)**

Rehab in a hospital	1
Residential rehab that lasted more than 30 days	2
Residential rehab that lasted up to 30 days	3
NONE OF THE ABOVE	4
DON'T KNOW	5
REFUSED	6
NOTHING ELSE/GO TO NEXT QUESTION	7

***H1aiv.1-H1aiv.10: Which type of additional OUTPATIENT REHABILITATION did you want? (Multiple Response)**

An intensive outpatient program that lasted 2 or more hours per day for 3 or more days a week	1
An outpatient counseling program that lasted less than 2 hours or once or twice a week	2
A methadone maintenance program	3
NONE OF THE ABOVE	4
DON'T KNOW	5
REFUSED	6
NOTHING ELSE/GO TO NEXT QUESTION	7

***H1avii.1-H1avii.9**

H1avi.10-H1avi.12: Which type of additional services did you want as part of your alcohol or drug related treatment?

Medical care	1	<i>(Multiple Response)</i>
Mental health care	2	
Employment counseling	3	
Child care	4	
Family counseling	5	
Assistance in obtaining housing, food stamps, legal help, etc...	6	
NONE OF THE ABOVE	7	
DON'T KNOW	8	
REFUSED	9	
NOTHING ELSE/GO TO NEXT QUESTION	10	

***H1b.i.1-H1b.i.18: If you had received additional treatment for DETOX, would it have been paid**

for by:

***H1b.A.1-H1b.A.18: If you had received additional RESIDENTIAL/INPATIENT rehabilitation treatment would it have been paid for by:**

***H1b.B.1-H1b.B.18: If you had received additional HALFWAY HOUSE treatment, would it have been paid for by:**

***H1b.C.1-H1b.C.18: If you had received additional OUTPATIENT REHABILITATION treatment, would it have been paid for by:**

***H1b.D.1-H1b.D.18: If you had received additional treatment OUTSIDE A FORMAL PROGRAM, would it have been paid for by:**

- | | | |
|---|----|------------------|
| Private health insurance (such as HMSA, Kaiser, an HMO, etc.) | 1 | <i>(Multiple</i> |
| <i>Response)</i> | | |
| Medicaid | 2 | |
| Medicare | 3 | |
| Quest | 4 | |
| Military health services | 5 | |
| Veterans benefits | 6 | |
| Your own personal funds | 7 | |
| State funds, because you don't have insurance or ... (*) | 8 | |
| The Indian Health Service | 9 | |
| Other (SPECIFY) | 10 | |
| Other (SPECIFY) | 11 | |
| Other (SPECIFY) | 12 | |
| NONE OF THE ABOVE, because the treatment was free to everyone | | 13 |
| DON'T KNOW | 14 | |
| REFUSED | 15 | |
| NOTHING ELSE/GO TO NEXT QUESTION | 16 | |
- (*) your benefits didn't cover the treatment.
-

- *H2.a: You were not able to obtain more help because:
The treatment facilities, program or provider were not accessible by public transportation and you lacked personal transportation.
- *H2.b: You were not able to obtain more help because:
The nearest facilities were too far away.
- *H2.c: You were not able to obtain more help because:
The treatment facility only had hours when you had to work.
- *H2.d: You were not able to obtain more help because:
The treatment facilities or programs were full.
- *H2.e: You were not able to obtain more help because:
You couldn't get the type of treatment you wanted.
- *H2.f: You were not able to obtain more help because:
You were on the waiting list, but by the time they called you had changed your mind.
- *H2.g: You were not able to obtain more help because:
You didn't have insurance or any way to pay for more treatment.
- *H2.h: You were not able to obtain more help because:
You have a physical handicap or disability so the facility was not accessible to you.
- *H2.i: You were not able to obtain more help because:
The facility or program put you through too much red tape or hassle.
- *H2.j: You were not able to obtain more help because:
The facility or program didn't have counselors from your ethnic group or who spoke your language.
- *H2.k: You were not able to obtain more help because:
The facility or program was not sensitive to the special needs of women.
- *H2.l: You were not able to obtain more help because:
The facility or program did not have the special services you needed, such as medical or mental health care, housing, employment counseling, child care, etc.

Please answer yes or no.

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| DON'T KNOW | 3 |
| REFUSED | 4 |
-

***H2.li.1-H2.li.12: I'll read a list of services and you tell me which services you needed. (Multiple Response)**

Medical care	1
Mental health care	2
Employment counseling	3
Child care	4
Family counseling	5
Assistance in obtaining housing, food stamps, legal help, etc.	6
NONE OF THE ABOVE	7
DON'T KNOW	8
REFUSED	9
NOTHING ELSE/GO TO NEXT QUESTION	10

***H2.m: You were not able to obtain more help because of other reasons not mentioned above..**

Please answer yes or no.

Yes (SPECIFY)	1
No	2
DON'T KNOW	3
REFUSED	4

H3: If you had sought more treatment in the past 12 months, would your poor physical health have made detoxification medically dangerous?

Yes	1
No	2
Not sure	3
REFUSED	4

H4: If you had sought more treatment in the past 12 months, would your poor psychological or emotional health have kept you from starting or finishing treatment?

Yes	1
No	2
Not sure	3
REFUSED	4

Module I:

I1: At any time during the last 12 months, did you need treatment for drug or alcohol use? Treatment includes detoxification, residential rehabilitation, being in a halfway house, outpatient treatment, self-help groups such as Alcoholics Anonymous, and counseling outside of a formal program.

I2: Would you have sought treatment for drug or alcohol use at any time during the last 12 months if it had been readily available?

I3: Did you take any steps to obtain treatment, such as asking friends what's available, talking to an Employee Assistance Program (EAP) counselor, calling a detox or other treatment center, getting a referral, or visiting a treatment facility in the last 12 months?

***I3a.1: Did you ask friends about what's available?**

***I3a.2: Did you talk to an EAP counselor?**

***I3a.3: Did you get a referral?**

***I3a.4: Did you call a detox or other program?**

***I3a.5: Did you visit a treatment facility?**

***I3a.6: Did you take any other steps to obtain treatment?**

I4a: I'm going to ask you about several types of treatment you might have sought last year if they were available. For each, tell me "yes" or "no" if you considered it. Would you have undergone detoxification treatment to help you get clean or dried out, and help with DTs or withdrawal symptoms?

- *14a.i: Would you have wanted to be detoxified in a hospital?
 - *14a.ii: Would you have wanted to be detoxified in a residential (non-hospital) facility?
 - *14a.iii: Would you have wanted to be detoxified as an outpatient?
 - *14a.iv: Would you have wanted an outpatient methadone detox?
 - 14b: Would you have entered a residential rehabilitation facility?
 - *14b.i: Would you have wanted the rehabilitation services in an alcohol or drug rehabilitation unit in a psychiatric or general hospital?
 - *14b.ii: Would you have wanted the rehabilitation services in a residential program that lasted more than 30 days?
 - *14b.iii: Would you have wanted the rehabilitation services in a residential program that lasted up to 30 days?
 - 14c: Would you have entered a halfway house?
 - 14d: Would you have entered an outpatient rehabilitation treatment?
 - *14d.i: Would you have entered a methadone maintenance program?
 - *14d.ii: Would you have entered a day-long outpatient program?
 - *14d.iii: Would you have entered an intensive outpatient program (2 or more hours per day for 3 or more days per week)?
 - *14d.iv: Would you have entered an outpatient program (less than 2 hours, or once or twice a week)?
 - 14e: Would you have attended meetings of any self-help group such as Alcoholics Anonymous, Al-Anon, Narcotics Anonymous, or Cocaine Anonymous?
 - 14f: Would you have obtained substance abuse treatment or counseling from a psychiatrist, psychologist, social worker, or counselor outside of a formal program?
 - 14g: Would you have obtained substance abuse treatment or counseling from a minister, priest, rabbi, or pastoral counselor outside of a formal program?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4
-

- *I4h.a.1-I4h.a.18: If you had received DETOXIFICATION treatment, would it have been paid for by: *(Multiple Response)***
- *I4h.b.1-I4h.b.18: If you had entered a residential rehabilitation facility, would it have been paid for by: *(Multiple Response)***
- *I4h.c.1-I4h.c.18: If you had entered a halfway house, would it have been paid for by: *(Multiple Response)***
- *I4h.d.1-I4h.d.18: If you had entered outpatient rehabilitation treatment, would it have been paid for by: *(Multiple Response)***
- *I4h.f.1-I4h.f.18: If you had obtained substance abuse treatment or counseling from a psychiatrist, psychologist, social worker or counselor outside of a formal program? *(Multiple Response)***

Private health insurance (such as HMSA, Kaiser, an HMO, etc.)	1	
Medicaid	2	
Medicare	3	
Quest	4	
Military health services	5	
Veterans benefits	6	
Your own personal funds	7	
State funds, because you don't have insurance or ... (*)	8	
The Indian Health Service	9	
Other (SPECIFY)	10	
Other (SPECIFY)	11	
Other (SPECIFY)	12	
NONE OF THE ABOVE, because the treatment was free to everyone	13	
DON'T KNOW	14	
REFUSED	15	
NOTHING ELSE/GO TO NEXT QUESTION	16	
(*) your benefits didn't cover the treatment.		

You were not able to obtain help because:

- *I5.a: The treatment facilities, program or provider were not accessible by public transportation and you lacked personal transportation.**
- *I5.b: The nearest facilities were too far away.**

- *15.c: The treatment facility only had hours when you had to work.
- *15.d: The treatment facilities or programs were full.
- *15.e: You couldn't get the type of treatment you wanted.
- *15.f: You were on the waiting list, but by the time they called you had changed your mind.
- *15.g: You didn't have insurance or any way to pay for treatment.
- *15.h: You have a physical handicap or disability so the facility was not accessible to you.
- *15.i: The facility or program put you through too much red tape or hassle.
- *15.j: The facility or program didn't have counselors from your ethnic group or who spoke your language.
- *15.k: The facility or program was not sensitive to the special needs of women.
- *15.l: The facility or program did not have the special services you needed, such as medical or mental health care, housing, employment counseling, childcare, etc.

Please answer yes or no.

- Yes 1
- No 2
- DON'T KNOW 3
- REFUSED 4

***15-li.1-15.li.12: I'll read a list of services and you tell me which services you needed. (Multiple Response)**

- Medical care 1
- Mental health care 2
- Employment counseling 3
- Child care 4
- Family counseling 5
- Assistance in obtaining housing, food stamps, legal help, etc. 6
- NONE OF THE ABOVE 7
- DON'T KNOW 8
- REFUSED 9
- NOTHING ELSE/GO TO NEXT QUESTION 10

***15.m: You were not able to obtain help because of other reasons not mentioned above**

Please answer yes or no.

- Yes (SPECIFY) 1
- No 2
- DON'T KNOW 3
- REFUSED 4

16: If you had sought treatment in the past 12 months, would your poor physical health

have made detoxification medically dangerous?	
Yes	1
No	2
Not sure	3
REFUSED	4

17: If you had sought treatment in the past 12 months, would your poor psychological or emotional health have kept you from starting or finishing treatment?

During the last 12 months:

***18.a: People you lived with often used ALCOHOL at home.**

***18.b: People you lived with often used DRUGS at home.**

***18.c: People you worked with often used ALCOHOL when you were with them.**

***18.d: People you worked with often used DRUGS when you were with them.**

***18.e: People you lived with were emotionally, physically or sexually abusive.**

***18.f: If you had continued using or relapsed, your job performance would have affected the health or safety of others.**

***18.g: You didn't have transportation to get yourself to or from alcohol or drug treatment.**

***18.h: People you lived or worked with would not have been supportive of your treatment.**

Yes	1
No	2
Not sure	3
REFUSED	4

You did not try to get help because:

- *19.a: the treatment facilities, program or provider were not accessible by public transportation and you lacked personal transportation.
- *19.b: The nearest facilities were too far away.
- *19.c: The treatment facilities only had hours when you had to work.
- *19.d: The treatment facilities or programs were always full.
- *19.e: You didn't have insurance or any way to pay for treatment.
- *19.f: You have a physical handicap or disability so that no nearby facility was accessible to you.
- *19.g: You didn't know where to go or whom to call.
- *19.h: Programs or facilities put you through too much red tape or hassle.
- *19.i: The facilities or programs didn't have counselors from your ethnic group or who spoke your language.
- *19.j: The facilities or programs were not sensitive to the special needs of women.
- *19.k: The facilities or programs did not have other special services you need, such as medical or mental health care, housing, employment counseling, child care, etc.

Please answer yes or no.

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

*19.ki.1-19.ki.12: I'll read a list of services and you tell me which services you needed. (*Multiple Response*)

Medical care	1
Mental health care	2
Employment counseling	3
Child care	4
Family counseling	5
Assistance in obtaining housing, food stamps, legal help, etc.	6
NONE OF THE ABOVE	7
DON'T KNOW	8
REFUSED	9
NOTHING ELSE/GO TO NEXT QUESTION	10

***19.I: You did not try to get help because of other reasons not mentioned above.**

Please answer yes or no.

Yes (SPECIFY)

1

No

2

DON'T KNOW

3

REFUSED

4

Module J:

J1: How many telephone lines does your household have? (OPEN-END NUMERIC RESPONSE)

J1a: Which of the following describes your employment situation?

Employed full time	1	
Employed, but on maternity leave or on leave for some other reason	2	2
Employed part time	3	
Unemployed	4	
REFUSED	5	

J1b: Are you attending school full or part time?

Yes, a full-time student	1	
Yes, a part-time student	2	
No, not a student	3	
REFUSED	4	

***J1b.i: Do you receive your medical care from a student health service?**

Yes	1	
No	2	
DON'T KNOW	3	
REFUSED	4	

J1c: Are you on regular (not reserve) active duty in the military?

Yes	1	
No	2	
REFUSED	3	

J1d: Which of the following describes your current situation? Are you:

Retired	1	
A full-time homemaker	2	
Disabled	3	
On social security survivor's benefits	4	
Volunteering your time	5	
Looking for work	6	
Recently laid off	7	
Not looking for work	8	
Something else (SPECIFY)	9	
REFUSED	10	

***J1d.i: Do you live in a nursing home, long-term care facility, or hospital?**

Yes	1
No	2
REFUSED	3

***J1e.5: In total, how many years of schooling did your father complete? (OPEN-END NUMERIC RESPONSE)**

J1e-8: In total, how many years of schooling did your mother complete? (OPEN-END NUMERIC RESPONSE)

J2: What is your marital status? Are you...

Divorced	1
Separated	2
Widowed	3
Now married	4
Single and never married	5
REFUSED	6

J2a: Are you currently living with someone in a marriage-like relationship?

J3: Were you pregnant during the last 12 months?

Yes	1
No	2
REFUSED	3

J3a: Did you receive prenatal care during the last 12 months?

J3b: Were you pregnant when you were in treatment last year?

J3c: Were you pregnant during the time you would have sought (additional) treatment if it were readily available last year?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

J4: For how many children under age 18 did you have primary day-to-day childcare responsibilities in the last 12 months? (OPEN-END NUMERIC RESPONSE)

J5: Are you a resident of this state?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

J6: In what county do you live?
1 SPECIFIC ANSWER
2 DON'T KNOW
3 REFUSED

J7a1: In what zip code do you live? (OPEN-END NUMERIC RESPONSE)

J8: Not counting minor traffic violations, have you ever been arrested and booked? Being "booked" means that you were taken into custody and processed by the police, even if you were then released.

Yes 1
No 2
DON'T KNOW 3
REFUSED 4

***J8.1: How often? (OPEN-END NUMERIC RESPONSE)**

***J8.2: How often were you convicted? (OPEN-END NUMERIC RESPONSE)**

***J8.3: Have you been arrested and booked within the last 12 months?**

***J8.4: Have you ever operated a motor vehicle after having more than 1 or 2 drinks?**

Yes 1
No 2
DON'T KNOW 3
REFUSED 4

***J8.5: How often have you done so (operated a motor vehicle after having more than one or two drinks) in the past two years (24 months)? (OPEN-END NUMERIC RESPONSE)**

***J8.6: Have you ever been arrested for driving under the influence?**

Yes 1
No 2
DON'T KNOW 3
REFUSED 4

***J8.7: How many times? (OPEN-END NUMERIC RESPONSE)**

J8a.1: Have you ever been arrested for possession or sale of Marijuana?

Yes	1	
No	2	<i>(SKIP TO J8a-2)</i>
DON'T KNOW	3	<i>(SKIP TO J8a-2)</i>
REFUSED	4	<i>(SKIP TO J8a-2)</i>

***J8a.1i: How often? (OPEN-END NUMERIC RESPONSE)**

***J8a.1ii:** How often were you
 convicted? (OPEN-END NUMERIC RESPONSE)

***J8a.1iii:** Have you ever been arrested
 within the last 12 months?

***J8a.2: Have you ever been arrested for possession or sale of Hallucinogens?**

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***J8a.2i: How often? (OPEN-END NUMERIC RESPONSE)**

***J8a.2ii:** How often were you
 convicted? (OPEN-END NUMERIC RESPONSE)

***J8a.2iii:** Have you ever been arrested
 within the last 12 months?

***J8a.3: Was the charge for possession or sale of Cocaine?**

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***J8a.3i: How often? (OPEN-END NUMERIC RESPONSE)**

***J8a.3ii:** How often were you
 convicted? (OPEN-END NUMERIC RESPONSE)

***J8a.3iii:** **Have you ever been arrested**
within the last 12 months?

***J8a.4: Have you ever been arrested for possession or sale of Heroin?**

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***J8a.4i: How often? (OPEN-END NUMERIC RESPONSE)**

***J8a.4ii:** **How often were you**
convicted? (OPEN-END NUMERIC RESPONSE)

***J8a.4iii:** **Have you ever been arrested**
within the last 12 months?

J8b: Have you been arrested for driving under the influence in the last 12 months?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***J8b.i: How many times? (OPEN-END NUMERIC RESPONSE)**

***J9 Do you have someone you can really talk with (share your most intimate feelings and thoughts with)?**

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

***J9ai How many people like that do you have? (OPEN-END NUMERIC RESPONSE)**

***J9aii: How easily accessible are they to you? About what percent of the time are they available? (OPEN-END NUMERIC RESPONSE)**

- J9a: I have little control over the things that happen to me.
- J9b: There is really no way I can solve some of the problems I have.
- J9c: There is little I can do to change many of the important things in my life.
- J9d: I often feel helpless in dealing with the problems of life.
- J9e: Sometimes I feel that I'm pushed around in life.
- J9f: What happens to me in the future mostly depends on me.
- J9g: I can do just about anything I really set my mind to do.

Strongly agree	1
Somewhat agree	2
Somewhat disagree	3
Strongly disagree	4
DON'T KNOW	5
REFUSED	6

- J9h: Was there a serious accident or illness within the last twelve months?
- J9i: Did someone close to you die within the last twelve months?
- J9j: Did you have any trouble with the law within the last twelve months?
- J9k: Was anyone in your family robbed or attacked within the last twelve months?
- J9l: Was there an unwanted pregnancy, abortion or miscarriage within the last twelve months?
- J9m: Were you separated or divorced within the last twelve months?
- J9n: Did you have a major financial crisis within the last twelve months?
- J9o: Did anyone in your family lose a job or have major problems or changes at work within the last twelve months?
- J9p: Did you or anyone in your family drop out or fail school in the last twelve months?
- J9q: Were you accused or arrested for a crime in the last twelve months?
- J9r: Were you involved in a law suit in the last twelve months?
- J9s: Did you have increased arguments with your partner in the past twelve months?
- J9t: Did you change your place of residence within the past twelve months?
- J9u: Did you have a child move out or back in the house within the last twelve months?

Yes	1
No	2
DON'T KNOW	3
REFUSED	4

- J9v: You are trying to take on too many things at once.
- J9w: Too much is expected of you.
- J9x: You don't have enough money to buy the things that you or your family needs.
- J9y: Your rent or mortgage is too high.
- J9z: You don't have the money for a down payment on a home.
- J9aa: You have more work to do than most people.
- J9bb: Your job often leaves you feeling tired.
- J9cc: You don't get paid enough for what you do.
- J9dd: You can't find the job you want.
- J9ee: Your partner doesn't understand you.
- J9ff: You don't get what you deserve out of your relationship.
- J9gg: You have a lot of conflict with your partner.
- J9hh: Your partner doesn't show enough affection.
- J9ii: You find it too difficult to find someone with whom you are compatible.
- J9jj: You are alone too much.
- J9kk: You wish you had children, but you cannot have them.
- J9ll: One of your children seems very unhappy or misbehaves a lot.
- J9mm: Your children spend too much time away from home.
- J9nn: You don't have enough friends.
- J9oo: You don't have time for your favorite leisure activities.
- J9pp: You would like to move but you cannot.
- J9qq: Your family and/or friends live too far away.
- J9rr: Someone in your family or a close friend has a long-term illness or handicap.
- J9ss: You have a parent, child or partner who is in poor health and may die.
- J9tt: Someone in your family has an alcohol or drug problem.
- J9uu: A long term health problem prevents you from doing the things you like to do.
- J9vv: You often take care of an aging parent or someone else in your family.
- J9ww: When you were growing up, one or both of your parents caused problems for your family by drinking or using drugs.
- J9xx: You were abused by one of your parents.
- J9yy: You have been abused by a spouse or partner.
- J9zz: Your spouse, partner, or child has been addicted to alcohol.

- Very true 1
- Somewhat true 2
- Not true 3
- DON'T KNOW 4
- NOT APPLICABLE 5
- REFUSED 6

J9-Real: So that we can be sure we're getting a cross section of all people, I'd like you to estimate your household's total income for the last calendar year (1997) before taxes were taken out. Include wages, social security, welfare, and any other income. Into which of the following categories does it fall? Stop

me when I get to approximately your household's total income. As with all of the interview, this information will be strictly confidential.

0 to less than \$5,000	1
\$5,000 to less than \$10,000	2
\$10,000 to less than \$15,000	3
\$15,000 to less than \$20,000	4
\$20,000 to less than \$25,000	5
\$25,000 to less than \$30,000	6
\$30,000 to less than \$35,000	7
\$35,000 to less than \$40,000	8
\$40,000 to less than \$50,000	9
\$50,000 to less than \$60,000	10
\$60,000 to less than \$80,000	11
\$80,000 to less than \$100,000	12
\$100,000 to less than \$120,000	13
\$120,000 to less than \$140,000	14
\$140,000 or over	15
DON'T KNOW (PROBE: Can you guess approximately ...)	16
REFUSED	17

J9A-Real: So that we can be sure we're getting a cross section of all people, I'd like you to estimate your personal income for the last calendar year (1997) before taxes were taken out. Include wages, social security, welfare, and any other income. Into which of the following categories does it fall? Stop me when I get to approximately your personal total income. As with all of the interview, this information will be strictly confidential.

0 to less than \$5,000	1
\$5,000 to less than \$10,000	2
\$10,000 to less than \$15,000	3
\$15,000 to less than \$20,000	4
\$20,000 to less than \$25,000	5
\$25,000 to less than \$30,000	6
\$30,000 to less than \$35,000	7
\$35,000 to less than \$40,000	8
\$40,000 to less than \$50,000	9
\$50,000 to less than \$60,000	10
\$60,000 to less than \$80,000	11
\$80,000 to less than \$100,000	12
\$100,000 to less than \$120,000	13
\$120,000 to less than \$140,000	14
\$140,000 or over	15
DON'T KNOW (PROBE: Can you guess approximately...)	16
REFUSED	17

J10: Was there any time during the past two years (24 months) when you did not have a permanent address?

Yes	1
No	2
REFUSED	3

J10a: How long was that for?

1	ANSWER NUMBER OF DAYS:
2	ANSWER NUMBER OF MONTHS:
3	DON'T KNOW
4	REFUSED

J10Days: (OPEN-END NUMERIC RESPONSE IF J10a=1)

J10Month: (OPEN-END NUMERIC RESPONSE IF J10A-2)

J11: Was there any time during the last two years when you did not have a telephone?

Yes	1
No	2
REFUSED	3

J11a: How long was that for?

- 1
 - 2
- MONTHS:
- 3
 - 4

ANSWER NUMBER OF DAYS:
ANSWER NUMBER OF

DON'T KNOW
REFUSED

J11Days: (OPEN-END NUMERIC RESPONSE IF J11a=1)

J11Month: (OPEN-END NUMERIC RESPONSE IF J11a=2)

J12: How strong is your social support ... the support that you get from family and friends?

- Extremely strong 1
- Very strong 2
- Fairly strong 3
- Somewhat strong 4
- Not so strong 5
- Not strong at all 6

K1: When I asked you if you had ever had a problem with alcohol, how truthful did you feel you could be?

Entirely	1
Somewhat	2
Not at all	3
DON'T KNOW	4
REFUSED	5

K2: When I asked you if you had used heroin or cocaine even once in the last 18 months, how truthful did you feel you could be?

Entirely	1
Somewhat	2
Not at all	3
DON'T KNOW	4
REFUSED	5

K3: Is this phone number listed?

Yes	1
No	2
Don't Know	3
Refused	4

K4: Did you receive a letter regarding this survey?

Yes	1
No	2
Don't Know	3
Refused	4

M1: How would you (the interviewer) rate the quality of the information obtained in this interview?

Excellent (no problems at all)	1
Good (a few problems but overall comprehension good)	2
Fair (a number of problems but overall acceptable)	3
Poor (many problems, overall quality open to question)	4
Inadequate (quality judged too poor to be included in data set)	5

M2.1-M2.16: What were the reasons that the quality of information was less than excellent?

(Multiple Response)

Interview not in respondent's native language	1	
Hearing (hearing loss or background noise)	2	
Interruptions or distractions	3	
Poor phone connection	4	
Lack of mental or physical competency to respond	5	
Infirm (too old, weak, sick)	6	
Intoxication	7	
Respondent was rushed	8	
Respondent did not take interview seriously	9	
Respondent did not understand the meaning of some of the questions	10	
Respondent was offended by interview	11	
Respondent may not have been truthful because someone else was listening	12	
Other (SPECIFY)	13	
NOTHING ELSE/GO TO NEXT QUESTION	14	

M3: If language caused difficulty, what is respondent's native language?

Spanish	1
Korean	2
Chinese	3
Vietnamese	4
French	5
German	6
Italian	7
Japanese	8
Native American	9
Filipino	10
Asian Indian	11
Other (SPECIFY)	12
DON'T KNOW	13

M4:	In what language was the interview conducted?	
	English	1
	Spanish	2
	Korean	3
	Chinese	4
	Vietnamese	5
	French	6
	German	7
	Italian	8
	Japanese	9
	Other (SPECIFY)	10

M5:	In what language was the questionnaire written?	
	English	1
	Spanish	2
	Other (SPECIFY)	3

IMPUTED VARIABLES:

IDATE Date of Interview

ETHNIC	State-defined Ethnic Group
1.0	Caucasian
2.0	Japanese
3.0	Hawaiian
4.0	Filipino
5.0	Other
6.0	DK/Refused

AGE Respondent age (imputed)

PHONES household	Number of phone lines in
----------------------------	---------------------------------

ADULTS household	Number of adults in
----------------------------	----------------------------

AGEGRP2 Age group

18-34	1
35 +	2

GENDER	Gender	
	Male	1
	Female	2

COUNTY	County	
	Honolulu	1
	Hawaii	2
	Kauai	3
	Maui	4

ASAM	ASAM Levels of Care	
	Not assigned	0
	Outpatient	1
	Partial Hosp	2
	Med Monitored Inpatient	3
	Med Managed Inpatient	4

DEMAND	Subject has Demand for Treatment	
	No	0
	Yes	1

RLEVEL	ASAM Level of treatment received in past year	
	Outpatient	1
	Partial Hosp	2
	Med Monitored Inpatient	3
	Med Managed Inpatient	4

AL_DEPC	Current Definite Alcohol Dependence	
AL_ABC		Current Alcohol Abuse
AL_INDC		Current Indeterminant Alcohol
	Dependence	
ALDXCUR	Any Current Alcohol Diagnosis	
MJ_DEPC	Current Definite Marijuana Dependence	
MJ_ABC		Current Marijuana Abuse
MJ_INDC	Current Indeterminant Marijuana Dependence	
MJDXCUR	Any Current Marijuana Diagnosis	
HL_DEPC	Current Definite Hallucinogen Dependence	
HL_ABC		Current Hallucinogen Abuse
HL_INDC		Current Indeterminant
	Hallucinogen Dependence	
HLDXCUR	Any Current Hallucinogen Diagnosis	
OP_DEPC	Current Definite Opiate Dependence	

OP_ABC		Current Opiate Abuse
OP_INDC	Current Indeterminant Opiate Dependence	
OPDXCUR	Any Current Opiate Diagnosis	
CO_DEPC	Current Definite Cocaine Dependence	
CO_ABC		Current Cocaine Abuse
CO_INDC	Current Indeterminant Cocaine Dependence	
CODXCUR	Any Current Cocaine Diagnosis	
UP_DEPC	Current Definite Stimulant Dependence	
UP_ABC		Current Stimulant Abuse
UP_INDC		Current Indeterminant
	Stimulant Dependence	
UPDXCUR	Any Current Stimulant Diagnosis	
DXABUSE	Any abuse diagnosis	
DXINDET		Any indeterminate diagnosis
DXDEPND	Any dependence diagnosis	
DXABUCUR	Any current abuse diagnosis	
DXINDCUR	Any current indeterminate diagnosis	
DXDEPCUR	Any current dependence diagnosis	
DXNEED		Meets any lifetime diagnosis
CURRNEED	Meets any current diagnosis	
NUMCURDX	Number of current diagnoses	
	No	0
	Yes	1

AGEGRP3	Age in 3 groups	
	18-24	1
	25-34	2
	35 +	3

AGEGRP4	Age in 4 groups	
	18-20	1
	21-34	2
	35-49	3
	50+	4

AGEGRP7	Age in 7 groups	
	18-20	1
	21-24	2
	25-29	3
	30-34	4
	35-39	5
	40-49	6
	50+	7

UNDERAGE	Less than 21 years	
	Over age 21	0
	Under age 21	1

EVERSMOK	Have you ever used tobacco products?	
QUITSMOK	Ever quit/tried to quit smoking?	
CURRTOBC	Are you currently using tobacco?	
CURRSMOK	Do you smoke cigarettes?	
NUMBPAK1	Smokes less than 1 pack per day	
NUMPAK1A	Smokes less than 1/2 pack per day	
NUMBPAK2	Smokes 1 or more packs per day	
NUMPAK2A	Smokes 1/2 pack or more per day	
MARI1	Used any marijuana in last 18 mos	
MARI2	Used marijuana more than 1 or 2 times in last 18 mos	
MARIEVER	Ever used marijuana in life	
METH1	Used any crystal meth in last 18 mos	
METH2	Used crystal meth more than 1-2 times in last 18 mos	
METHEVER	Ever used crystal m in life	
HALL1	Used any hallucins times in last 18 mos	
HALL2	Used hallucins more than 1-2 times in last 18 mos	
HALLEVER	Ever used hallucins in life	
COKE1	Used any cocaine in last 18 mos	
COKE2	Used cocaine more than 1-2 times in last 18 mos	
COKEEVER	Ever used cocaine in life	
HERO1	Used any heroin in last 18 mos	
HERO2	Used heroin more than 1-2 times in last 18 mos	
HEROEVER	Ever used heroin in life?	
STIMULAN	Ever used stimulant in life?	
INHALANT	Ever used inhalant in life?	
SEDATIVE	Ever used sedative in life?	
PAINKILL	Ever used painkillers in life?	
STEROIDS	Ever used steroids in life?	
OTHEDRUG	Ever used other drug in life?	
DRNKEVER	Ever had drink in life	
DRNK18MO	Drank even a little in 18 mos	
DRNKMO	Drank alcohol in last month	
	No	0
	Yes	1

NODRINK	No alcohol in past month	
	Drank	0
	Abstained	1

CHRONIC1	Chronic past month	
-----------------	---------------------------	--

CHRONIC2	Chronic past 18 mos	
CHRONIC	Chronic drinker	
BINGE	Binge drinker (5+drinks/sitting)	
HEAVY	Heavy drinker	
	No	0
	Yes	1

ASAMAL	Any tx need for alcohol	
ASAMMJ	Any tx need for marijuana	
ASAMHL	Any tx need for hallucinogens	
ASAMOP	Any tx need for opiates	
ASAMCO	Any tx need for cocaine	
ASAMUP	Any tx need for meth	
ASAMAL1	Any lifetime dx for alcohol	
ASAMMJ1	Any lifetime dx need for marijuana	
ASAMHL1	Any lifetime dx need for hallucinogens	
ASAMOP1	Any lifetime dx need for opiates	
ASAMCO1	Any lifetime dx need for cocaine	
ASAMUP1	Any lifetime dx need for methamp	
ASAMAL2	Any current dx for alcohol	
ASAMMJ2	Any current dx need for marijuana	
ASAMHL2	Any current dx need for hallucinogens	
ASAMOP2	Any current dx need for opiates	
ASAMCO2	Any current dx need for cocaine	
ASAMUP2	Any current dx need for methamp	
	No diagnosis	0
	Yes	1

ASAMDGTX	ASAM Drug only diagnosis	
ASAMALTX	ASAM Alcohol only diagnosis	
ASAMALDG	ASAM Alcohol & Drug diagnosis	
DSMIII	ASAM Alcohol OR Drug diagnosis	
	No diagnosis	0
	abusing/dependent	1

UP_ABUS	diagnosis of STIMULANT abuse	
UP_INDET	indeterminate diagnosis of STIMULANT dependence	
UP_DEPND	diagnosis of STIMULANT dependence	
AL_ABUS	diagnosis of alcohol abuse	
AL_INDET	indeterminate diagnosis of alcohol dependence	
AL_DEPND	diagnosis of alcohol dependence	
CO_ABUS	diagnosis of cocaine abuse	
CO_INDET	indeterminate diagnosis of Cocaine dependence	
CO_DEPND	diagnosis of Cocaine dependence	

HL_ABUS	diagnosis of hallucinogen abuse	
HL_INDET	indeterminate diagnosis of Hallucinogen dependence	
HL_DEPND	diagnosis of Hallucinogen dependence	
OP_ABUS	diagnosis of opiate abuse	
OP_INDET	indeterminate diagnosis of Opiate dependence	
OP_DEPND	diagnosis of Opiate dependence	
MJ_ABUS	diagnosis of marijuana abuse	
MJ_INDET	indeterminate diagnosis of Marijuana dependence	
MJ_DEPND	diagnosis of Marijuana dependence	
BOTH	Tx need for both alc & drugs	
ALCONLY	Tx need for alcohol only	
DRUGONLY	Tx need for drug only	
EITHER	Tx need for either alc or drug	
	No	0
	Yes	1

APPENDIX C: STUDY PROTOCOL

1. PURPOSE OF THE ADULT POPULATION STUDY

1.1. Research Problem:

Substance abuse results in social and personal problems ranging from emotional pain and physical illness through family dysfunction, to lost productivity, and health and welfare system cost. Indeed, substance abuse has been recognized as the greatest single preventable cause of morbidity and mortality in the U.S.A. In the face of these problems there remains a continuing need to better understand the etiology of substance abuse, and to develop policies and plans to respond to substance abuse behaviors and treatment needs (SAMSHSA, 1992).

1.2. Proposed Methods:

The Federal Center for Substance Abuse Treatment (CSAT) funded the Alcohol and Drug Abuse Division (ADAD) of the Hawai'i Department of Health to contract with the School of Public Health (SPH), University of Hawai'i at Manoa to conduct a telephone survey of adults resident in Hawai'i. The research methodology is premised upon the National Technical Center's (NTC) contention that a telephone survey of state households should be the centerpiece of studies designed to obtain information for treatment

planning. Population based prevalence estimates are most efficiently obtained through self reports gathered in telephone interviews of representative samples. A telephone household survey is less expensive than face-to-face interviews. Telephone surveys require a shorter period to field, are easier to administer, and allow closer monitoring of data collection and processing (Aquilino, 1992; Fenig et al, 1993; Frank, 1985). Numerous applications of telephone surveys have proven to be effective in gathering substance abuse treatment needs assessment data from adult populations (Johnson and Barrett, 1992; Gilbert et al, 1990; McAuliffe et al, 1991; Spence et al., 1989).

The School of Public Health team managing the adult household study in Hawai'i therefore proposes a telephone survey using a questionnaire developed by NTC based upon the Diagnostic Interview Schedule (DSM-III-R) as the tool to measure addiction (Robins, et al., 1982). The survey will be conducted in a manner designed to generate the information necessary to reliably estimate the current (1998) prevalence of adult substance use and the need for treatment services. The School of Public Health (SPH) proposes to sub-contract with an experienced local commercial firm, Market Trends Pacific In. (MPT), to pretest and field the survey, and to produce machine readable data necessary to estimates of prevalence and treatment needs.

The Department of Health will provide the sampling frame for the survey for SPH. Hawai'i is a difficult State to survey efficiently because its population is relatively

small, is geographically widely disbursed on several islands, and ethnically very diverse. The proposed survey seeks to estimate prevalence and treatment needs within the State of Hawai'i for marijuana, cocaine, hallucinogens, heroin, crystal methamphetamine and alcohol. The proposed sampling design is also intended to produce reliable estimates within sub-state planning areas: the four counties of Honolulu, Hawai'i, Maui and Kauai. In order to effectively survey substance abuse and treatment needs within Hawai'i's diverse population, estimates will also be produced for five ethnic groups: Caucasians, Japanese, Native Hawaiians and part Hawaiians, Filipino, and other ethnic groups.

1.3. Brief Literature Review:

Hawai'i has been noted to have a recent history of relatively high levels of substance abuse, particularly with respect to alcohol. As the Gallup Organization noted in their protocol for the 1995 survey of substance abuse in Hawai'i, in 1989 fully 20% of Hawaiian adult respondents reported alcohol binge drinking (five or more drinks at one time during the past month). Hawai'i ranked fourth highest among the 40 states participating in the Behavioral Risk Factor Surveillance System (BRFSS). With an additional 7% reporting chronic drinking (60 or more drinks in the past month), in 1989 Hawai'i ranked as the state with the highest percentage of chronic drinkers. About 6% of adult respondents for the BRFSS reported current marijuana use, and over 2% reported other non-medical drug use.

In Hawai'i's 1991 BRFSS household survey almost one-third of current drinkers were classified as "heavy drinkers" (at least one binge in the previous month, or chronic use, or both). Among women who drank, almost one in five reported heavy drinking, and 7% reported drinking behavior indicative of alcohol dependence. Among native Hawaiians who reported drinking, fully two-thirds self-identified as heavy drinkers. This proportion rose to over 90% among young males 18-34 who drank. Two-thirds of Hawaiians and part-Hawaiian females identified reported drinking behavior consisted with classification as heavy drinkers.

In total, more than one in five native Hawaiian or part-Hawaiian drinkers reported behavior consistent with alcohol dependence. Despite the prevalence of these problems with alcohol, Native Hawaiian drinkers were less than half as likely as others in the population to utilize alcohol treatment services.

The 1995 Adult Household Survey of Substance Use and Treatment Needs conducted by the Gallup Organization for ADAD interviewed 5,807 residents of Hawai'i. The DSM-III-R diagnosis of substance dependence for alcohol employed by this study was substantially more rigorous than the criteria of self-reported bingeing and chronic use. For example, the criteria include not only "excessive" (high) use, but also reported tolerance to alcohol, withdrawal symptoms, life problems as a result of excessive use, and failed attempts to control substance use without professional help.

By these DSM-III-R criteria, Gallup reported that 4.9% of adults were dependent on alcohol and another 3% were alcohol abusers. By DSM-III-R criteria 1.1% were dependent on cocaine and about 0.7% were dependent on methamphetamine or other amphetamines. Gallup made no attempt to reconcile these prevalence estimates with their description of Hawai'i's previous history in their protocol.

Based upon Gallup's 1995 survey, 6.4% of adults were judged to need treatment for alcohol abuse or dependence. Another 1.1% needed treatment for drugs and a further 1.4% required treatment for both drugs and alcohol. Treatment needs were fairly consistent across counties, and over 90% of those who desired more treatment were between the ages of 25 and 44 and were residents of Honolulu, Hawai'i and Kauai counties. Women were as likely to desire more treatment as men. Over one-half (52%) of those who desired more treatment were injection drug users.

1.4. Study Objectives:

Using the interview questionnaire provided by NTC and a sampling frame provided by the Department of Health:

- a. To reliably estimate the prevalence of alcohol and other drug use among adult residents of the State of Hawai'i using a standardized survey instrument prepared by the National Technical Center and adapted for use in Hawai'i. Prevalence estimates will be obtained for adults 18 years of age and

older for alcohol, marijuana, cocaine (including crack cocaine), hallucinogens, heroin, methamphetamine and other amphetamines;

- b. To determine the patterns of alcohol and other drug use activity by frequency, duration, and quantity;
- c. To describe prevalence estimates in terms of the social and demographic characteristics of the population (ethnic status, sub-state planning region, ethnic status, and socio-economic status);
- d. To estimate the prevalence of substance abuse and dependence diagnosis based on DSM-III-R criteria for the adult population 18 years of age and older for the state as a whole and within the four sub-state planning areas and the five ethnic groups;
- e. Based upon these prevalence estimates of use and dependence to produce valid and reliable data describing treatment needs through estimation and description of the extent to which alcohol and other drug users have sought treatment, have been in treatment and face barriers to treatment. These estimates will inform efforts to plan and review substance abuse treatment.
- f. Completion of required Substance Abuse Prevention and Treatment (SAPT) Block Grant funds.

2. SAMPLE DESIGN

2.1. Population to be Sampled

The production and delivery of an appropriate sampling frame composed of working residential telephone numbers is the responsibility of ADAD.

The study population to be sampled consists of Hawai'i residents, 18 years of age and older. The population will be stratified into four sub-state planning areas (counties) and sampling will be accomplished separately within each stratum. An eligible respondent for the purpose of this study will therefore be a resident member of a household (non-institutional place of permanent residence) within the State of Hawai'i.

2.2. Household (PSU) Sampling Frame:

The household is the primary sampling unit (PSU) and only households with working telephones are included in the sampling frame. The sampling frame is to be provided to SPH by ADAD through the Office of Health Status Monitoring (OHSM). Our understanding is that using SAS software and programming in the relevant telephone exchanges for Hawai'i, OHSM will generate a pretest sample of approximately 1000 seven digit telephone numbers for the pretest, and approximately 50,000 seven digit phone numbers for the main sample. The main sample will be stratified by county with 40% of the numbers drawn from Honolulu County and 20% of the telephone numbers generated for each of the remaining three

counties (Hawai'i, Maui and Kauai). OHSM will submit the pretest and the main sample to GTE, who will select the working, residential telephone numbers and return that list to OHSM. Based upon the previous experience of OHSM in conducting their own surveys, we expect approximately 25,000 working residential numbers . Using reverse directories, OHSM will then determine which of the selected telephone numbers can be matched with listed names and addresses. Labels will be printed for those addresses listed in the current reverse directories and printed address labels will be provided to MTP. ADAD will also provide envelopes and copies of a letter on Department of Health stationary signed by the Director of Health introducing the survey to prospective respondents.

The sub-contractor for the data collection, Market Trends Pacific, Inc. under the supervision of SPH, will mail the letters of introduction to prospective respondents. This mailing is designed to enhance response rates.

2.3. Sample Design and Sample Size:

The goal of the survey's sampling scheme is to estimate treatment needs for the State of Hawai'i as a whole as well as for sub-state planning areas (counties) and for separate ethnic groups. Market Trends Pacific, Inc. (MTP) will be sub-contracted to conduct the interviewing. The pretest will include at least 100 interviews. The main sample will include at least 5,000 telephone interviews in which respondents agree to be interviewed and substantially complete the attached telephone questionnaire. MTP will conduct at least two thousand

(2,000) interviews in the county of Honolulu and at least one thousand (1,000) interviews in each of the other counties (Hawai'i, Maui, and Kauai). Included in this sampling frame will be at least eight hundred seventy-five (875) adults in each of at least five (5) ethnic groups, distributed in a proportionate manner across the four (4) counties. The five (5) ethnic groups shall be Caucasian, Japanese, Hawaiian or part-Hawaiian, Filipino, and other. Stratification of the sample by ethnicity will be accomplished by random quota sampling methods.

To conduct the interviews, MTP will utilize the PSU sampling frame issued by the State's Office of Health Status Monitoring (OHSM). Within household, respondents will be selected in a quota sample designed to over-represent young males. Interviews will be completed with any young male 18-34 years of age who is present at the time of contact and who agrees to be interviewed. Young females aged 18-34 years will be given second preference (sampled proportionately) followed by older adults of either gender. This quota sampling is necessary to improve estimates of substance use, abuse and dependence. Young male adults are most likely to report substance abuse and dependence, but they are also the most difficult to represent by simple random sampling within households. This problem is particularly acute in Hawai'i, where households are relatively large and are likely to contain several adults. The quota sampling within households (stage two sampling) will allow MTP to over sample younger male adults aged eighteen (18) to thirty-four (34) years by 50%. Once quotas for young

adults and ethnic groups are reached, interviews will be conducted with any eligible respondent.

Necessary weighting to correct for disproportionality due to over sampling shall be used in the calculation of estimates from the sample. Statewide estimates will have a relative sampling error of no more than four (4%) percent; county estimates shall have a relative sampling error of no more than (6%) percent.

2.4. Calling Schedules

The main sample will be furnished by OHSM to MTP weekly in eight equal blocks (of approximately 3000 telephone numbers each), with each sub-sample appropriately stratified by county. This release schedule is designed to maximize completion rates calculated by CASRO methods. Drawing sequential samples over a two month period will minimize the proportion of the sampling frame that is transient and has moved out of the calling area after the sample was validated by GTE.

A "ten plus" call design will be used for this study. That is, up to ten calls will be made to each selected household telephone number in order to establish a connection, request an interview, and to select a specific adult member of the household. Additional calls will then be made, as necessary, to complete strata quotas or to complete an interview with the selected individual. Each telephone number will be called during various times of the day as well as days of the week, as

described below, in order to maximize the potential for human contact (vs answering machine).

Calling Schedule

Calling Period	Number of Attempts
Weekdays (9:00 a.m. to 4:59 p.m.)	2
Week nights (5:00 p.m. to 8:30 p.m.)	3-4
Weekends (11:00 a.m. to 8:30 p.m. Saturday, and 11:00 a.m. to 8:30 p.m. Sunday)	4-5

2.5. Informed Consent:

The adult household survey is completely anonymous. Only the interviewer will use the first name of the respondent, and it will only be used during the interview and to complete callbacks. Names are not recorded in the permanent database.

Informed voluntary consent to participate in the survey will be elicited verbally before the interview is administered. Prospective respondents will be informed as to the purpose and sponsors of the survey and the general subject matter included in the interview. Prospective respondents will be promised that any information that is collected will remain confidential. They will be promised that any information they give will be used only in aggregate form and their name will never be associated with their answers. The sample of telephone numbers, which will be provided by GTE, will include matching address information for approximately 60% of the sampling

frame. Letters will be mailed out in advance informing potential respondents of the survey. Identifying information from the address labels will not be included in the interview or recorded in the database. Interviewers will not see address information as it will be utilized only to mail out the introduction letters.

Data will be collected for this survey with an assurance that the respondents' answers will remain confidential and their responses will help the State in planning the provision of substance abuse treatment services efficiently and effectively. This assurance will be supported in two different ways: 1) all MTP personnel, including interviewers, coders, and professional staff, will sign a statement promising that they will maintain the confidentiality of all survey data. Access to the study data will be limited to MTP employees working on the project who have signed the confidentiality pledge; and 2) the data set delivered to the School of Public Health will not contain any personal information about survey respondents. Personal information will be used only for recontacting households and residents. Once the data are collected and edited, John Itamura the Vice President of MTP acting as project manager will insure that all personal information will be destroyed.

3. MEASUREMENT

The questionnaire instrument used to estimate substance abuse and treatment needs will be based upon the NTC Telephone Household Survey Version 6.52. We plan to supplement the instrument in a number of areas important

to the estimation and description of substance abuse and to the prevention and the planning of treatment needs in Hawai'i. Additions are described in detail below. An copy of the revised questionnaire is appended.

3.1. Ethnicity:

Because of the complexity of ethnicity in Hawai'i, several additional questions concerning ethnicity will be added to the questionnaire detailing mother and father's ethnicity. These items will be adopted from the current BRFSS administered by the State Office of Health Monitoring. These questions will allow multiple responses and will ask for the identification of "primary" ethnicity. They will be added to the instrument immediately after the current question 4b in Module B as items 4c and 4d.

3.2. Phoneless or Homeless:

In order to better estimate survey coverage, questions will be added to ascertain whether respondents have been without a personal telephone or without a permanent residence during the 12 months prior to the survey. These questions will be added at the end of the interview, just prior to question 9 in Module J.

"Was there any time during the past two years (24 months) when you did not have a permanent address?"

(Yes/No)

(IF YES) " How long was that for?" (CODE VERBATIM RESPONSE)

Can you describe the circumstances? (CODE VERBATIM RESPONSE)

"Was there any time during the last 12 months when you did not have a telephone for more than a day?" (Yes/No)

"How long was that for?"

(IF YES) "What were the circumstances?" (CODE VERBATIM RESPONSE)

3.3. Driving Under the Influence (DUI):

Driving while under the influence of alcohol or drugs is one of the major contributors to vehicular accidents. The NTC instrument asks respondents who qualify (meet the screening criteria for alcohol) whether they have ever been arrested and booked and whether they have ever been involved in a motor vehicle accident related to their alcohol use (module D). Module J extends this questioning to arrests and bookings in general and follows with questions concerning drug possession or sale and arrest for DUI. We would like to expand this questioning by changing question 8 Module D to ask whether respondents have ever been arrested and booked. If they reply yes we will ask them for the number of times this has occurred, and when was the last time this occurred. We will also add a question immediately before question 8b to ask all respondents whether they have ever operated a motor vehicle after having more than one or two drinks. Again, if they respond affirmatively, we will ask them "how often" they have done so in the past two years.

3.4. Socio-economic Status:

In order to more fully describe the diverse adult population of the State of Hawai'i, we will add a question requesting employed respondents occupation (job title) and a brief description of what their job entails (recorded verbatim). This information will be used to code occupations according to four digit census codes, which can then be used to estimate prestige of occupation.

"What kind of work do (did) you normally do. That is, what is (was) your job title?" (Record Verbatim)

"What does (did) that job involve?" (Record Verbatim)

Because social background is important to the learning and development of substance abuse behaviors, and because socio-economic status is likely to account for a significant proportion of observed differences in substance abuse between ethnic, age and gender we also will add parallel questions on respondents first full-time job in entering the labor force, father's occupation when the respondent was 16 years of age, and mother and father's total years of education.

To increase the accuracy of measurement of SES, we wish to add more several categories (e.g. above \$40,000) to the family income question (number 9 in module J) and to ask respondents for their own total years of education completed as a follow-up to question 5, Module B.

The socio-economic questions we have added have been extensively used in numerous national surveys over the past three decades. The collection of more detailed socio-economic information is necessary to understand the social origins of substance abuse as a maladaptive coping, to elaborate ethnic differences in Hawai'i, and to more fully understand barriers to treatment.

3.5. Well-being:

In order to elaborate on the self-reported health of respondents (questions 6 and 7 in Module B), we wish to add a small set of items in which respondents are asked to self-report feelings associated with affect (the Bradburn Affect Balance Scale) and depression. The depression sub-scale is adapted from the BSI and would be added to Module C.

3.5.1 Depression and Affect

"I am going to read a list of problems and complaints that people sometimes have. In the past month were you distressed by:

a. feeling no interest in things

Response Categories

b. feeling blue

Not at

all

c. feeling hopeless about the future

Sometimes

d. feeling sad or depressed

Often

e. feeling lonely

Very often

f. feelings of worthlessness

g. thoughts of death and dying

h. thoughts of ending your life

We also propose to add a question reporting perceived stress, a brief list of life stress events, and a number of items dealing with chronic (role) strain (including a question on chronic illness and activity limitation). Several items also elaborate lifetime experience of drug abuse and lifetime experience of physical or sexual abuse. In addition, a set of seven items is included to measure health mastery (Perlin et al., 1981). The Perlin items measure "good" coping skills, as opposed to the presumed maladaptive coping represented in substance abuse. Successful coping skills are necessary to effective treatment and the additional information on stress and coping will provide support for treatment efforts. All of these items attempt to contribute to the identification of conditions which may contribute to "self-healing" over the life course. These items are included in Module J. In order to improve item discrimination, we have also added the response category "excellent" to the two general health (well-being) questions (6 and 7) in Module B. The addition of an added response category to self reported health status items allows more ready comparison to national sample survey results.

3.5.2 Life Events and Chronic Stress

I'd like to ask you about some things that have happened to you. Please tell me which of the

following experiences happened to you in the past 12 months. (Yes, No)

- 1. Was there a serious accident or illness?*
- 2. Did someone close to you die?*
- 3. Was there trouble with the law?*
- 4. Was anyone robbed or attacked?*
- 5. Was there an unwanted pregnancy, abortion or miscarriage?*
- 6. Was there a separation or divorce?*
- 7. Did you have a major financial crisis?*
- 8. Loose a job or have major problems or changes at work?*
- 9. Drop out or fail school?*
- 10. Were you accused or arrested for a crime?*
- 11. Were you involved in a law suit?*
- 12. Did you have increased arguments with your partner?*
- 13. Did you change residence?*
- 14. Did you have a child move out or move back?*

Now I'd like to describe some situations that sometimes come up in people's lives. I'd like you to tell me if these things are not true, somewhat true, or very true for you at this time.

- 15. You are trying to take on too many things at once.*
- 16. Too much is expect of you.*

17. *You don't have enough money to buy the things you or your family needs.*
18. *Your rent or mortgage is too high.*
19. *You don't have the money for a down payment on a home.*
20. *You have more work to do than most people.*
21. *Your job often leaves you feeling tired.*
22. *You don't get paid enough for what you do.*
23. *You can't find the job you want.*
24. *Your partner doesn't understand you.*
25. *You don't get what you deserve out of your relationship.*
26. *You have a lot of conflict with your partner.*
27. *Your partner doesn't show enough affection.*
28. *You find it too difficult to find someone compatible with you.*
29. *You are alone too much.*
30. *You wish you had children but you cannot.*
31. *One of your children seems very unhappy or misbehaves a lot.*
32. *Your children spend too much time away from home.*
33. *You don't have enough friends.*
34. *You don't have time for your favorite leisure activities.*
35. *You would like to move but you cannot.*

36. *Your family or friends live too far away.*
37. *Someone in your family or a close friend has a long-term illness or handicap.*
38. *You have a parent, child or partner who is in poor health and may die.*
39. *Someone in your family has an alcohol or drug problem.*
40. *A long term health problem prevents you from doing the things you like.*
41. *You often take care of an aging parent or someone else in your family.*
42. *When you were growing up, did either of your parents cause problems for your family by drinking or using drugs.*
43. *Were you abused by one of your parents?*
44. *Have you ever been abused by a spouse or partner?*
45. *Has your spouse, partner or child been addicted to alcohol or drugs?*

3.5.3 Perceived Stress and Chronic Illness

"During the past couple of weeks, how stressful have your daily activities been?" (Not at all stressful, a little stressful, moderately stressful, quite a bit stressful or extremely stressful)

"Do you suffer from a chronic illness or disability that causes you significant discomfort or limits your daily activities?" (Yes/No)

3.6. Use of tobacco Products:

In order to expand our investigation of substance abuse to consider tobacco products, we propose to ask respondents if they currently use tobacco products (Yes/No). For those that answer "yes", we will gather information on type of products used (multiple response) and frequency of use. These additional questions are added at the beginning of Module B and will be asked of all respondents..

3.7 Substance abuse:

Pilot testing of the questionnaire revealed the necessity of language simplification in order to facilitate respondents' understanding. Many of the respondents speak English as a second language and local dialect in many respects represents a simplification of English as well as a combination with words from other languages. This simplification also facilitates interviewers' performance.

We have omitted the "optional drug" categories (sedatives, stimulants, analgesics and inhalants) because none of the drugs in these categories are a treatment priority for ADAD. In addition, prior research in Hawaii has found very low prevalence for each of these drug categories. Indeed, expected prevalence is so low in the general population of adults in Hawaii as to render

reliable estimates impossible, even with a sample of at least 5,000 respondents (Kroliczak et al. 1996).

Methamphetamine ("Crystal Meth") use is included explicitly because its use and treatment are of relevance in Hawaii and problems with this drug are a priority ADAD. We have also added an "other drug" question in which respondents are asked to report other drugs (besides those specifically covered in the questionnaire) that they have used. This is followed by direct questions on difficulties obtaining treatment.

4.0 INTERVIEWING PROCEDURES:

MTP will use a computer assisted telephone interview (CATI) system to conduct the Hawai'i adult household interviews. At the present time, MTP has 14 CATI stations on-line and utilizes Sawtooth's Ci3 software. This software allows for the administration of complex questionnaires with virtually no errors and facilitates the timely dissemination of data for weekly review with SPH.

Sawtooth's Ci3 software allows the sample to be queued into its system. The system will be programmed by MTP staff to give up-to-the-minute information on the distribution of pending and completed cases by county and sample group to assist management in reporting and problem solving. During the data collection period (February through April, 1998), summary results will be reported to SPH for weekly meetings with SPH and ADAD.

As each telephone number is dialed, The CATI system records a result code, and a detailed telephone history for each phone number is compiled. This disposition history includes the time and date of each attempt, the interviewer who made the call, and the result of each call. The CATI system notes any number with an unresolved status.

The CATI system will take the interviewer through the questionnaire based upon the responses obtained. After each question is asked, the interviewer will key in the response. The skip patterns will be programmed into the CATI. The progress of each interview is therefore determined by the responses made by each respondent.

In programming the CATI system, several edits will be employed. After a certified, experienced programmer has completed programming the CATI, a second certified expert on the Ci3 system will do a line-by-line walk-through to ensure that all programming has been done accurately and efficiently. As a second edit, two experienced interviewers will proofread the survey through the CATI against the final hard copy. All features of the CATI system will be tested by simulating responses before the formal pretest itself. This will include a review of sampling, scheduling, interview management, data entry, data editing, data compilation, and receipt control. MTP will also conduct testing before the survey pretest to ensure that on-line editing and skip patterns have been programmed accurately.

5. STAFF TRAINING

Since all interviews will be conducted from MTP's Calling Center, the interviewer supervisors and interviewers on staff at MTP will be trained at MTP's interviewing site. SPH staff will participate in both pretest training and the retraining prior to beginning the main data collection. Given the complex nature of the interviewer and the sensitivity of the topic, experienced interviewers will be recruited from MTP's interviewer pool to staff the project.

To facilitate the training, a training manual will be developed by MTP to address specific questions about the survey instrument. SPH will assist in the development of the training manual and in the training of interviewers at the MTP site. Once the training manual is developed, the supervisors will be trained, first with the hard copy of the survey, then with the CATI version of the questionnaire.

Following supervisor training, the interviewers will be trained using a variety of methods. The first method used will be through lecture. The study background and introduction will be presented to the interviewers via this method. The second method utilizes demonstration. To give trainees a clear overview of the questionnaire, a demonstration interview is planned. The demonstration will be conducted by two supervisors, one acting as an interviewer and one as a respondent, following a scripted interview. The advantage of using this method is that it

helps trainees understand the requirements for high-quality data collection right from the start of training.

The third and fourth methods of training will use interactive lectures and group discussions. Mock interviews will be presented to assist and ensure that the interviewers fully understand the important aspects and specifications of the survey instrument. These methods will also present the use of key techniques. The fifth method of training will be role playing. Each trainee will be given the opportunity to act both as the respondent and the interviewer using differently prepared role scripts. Trainees will be instructed to follow the scripts exactly.

The sixth method of training will be on-line practice. The last training session will consist of on-line practice with real participants. Interviewers will call people and conduct the surveys with them. By this time, the interviewers should be sufficiently familiar and confident with the survey instrument to actually conduct the surveys with real participants.

Based upon the experience of the pretest, the interviewer training manual will be revised by MTP in consultation with SPH. The revised manual will be used in the re-training of interviewers immediately prior to the beginning of the main data collection period. Interview procedures will be reviewed at weekly meetings between MTP and SPH and will be continuously updated throughout the data collection.

6. MAXIMIZING RESPONSE: REFUSAL AVERSION AND CONVERSION

The adult telephone household survey training conducted by MTP with the assistance of SPH will instruct interviewers in procedures for contacting sample members and methods for achieving the targeted overall response rate and within each cell of at least a minimally acceptable response rate of fifty percent (50%) as calculated by the Council of American Survey Research Organizations (CASRO) method. Our targeted response rate is 70% for the State as a whole and for each of the four counties the minimally acceptable rate will be 60%. MTP will make up to ten call attempts to achieve a maximum response rate. In the event that nine calls are insufficient to interview an eligible respondent at the household corresponding to the sampled telephone number, MTP interviewers will make additional call attempts to fill sampling strata quotas for counties, ethnic groups, and to achieve the desired proportionality by age and gender specified in the sampling design.

A letter from the Director of Health will be sent to all households with mailing information available in reverse directories published by GTE. According to the experience of OHSM, this is designed to inform potential respondents of the study so as to assure respondents of the legitimacy of the request for an interview and thereby to increase the response rate. MTP interviewers will also be willing to schedule appointments to conduct the interview at the convenience of eligible respondents.

To further facilitate a high response rate interviewing will be conducted so as to accommodate non-English speakers. MTP will employ interviewers who have language skills in non-English languages predominant in Hawaii. When a prospective interviewee indicates a preference for a language other than English, the interview will be switched to an interviewer with appropriate language skills. He or she will re-introduce the survey, and attempt to conduct the interview in English based upon the rapport established. If the interviewer determines that the completion of the interview in English is not possible, the interview will be terminated.

To achieve the targeted response rate, MTP will be utilizing refusal aversion and conversion techniques. These procedures attempt to minimize non-response due to refusal, and include the following:

- a. training of interviewers on refusal aversion and conversion techniques;
- b. frequent review of interviewer refusal rates, and close monitoring and retraining of interviewers who have rates above the norm;
- c. requiring interviewers to record information about refusals which may facilitate subsequent interview attempts;
- d. supervisor review of reasons for refusals and efforts to recontact respondents if refusal conversion is deemed possible.

MTP will instruct interviewers to attempt to convert all "soft" refusals, including refusals that are the result of inconvenience or distractions (for example, where the respondent states, "I don't have time right now," "I'm watching the Winter Olympics right now," "I'm having dinner"). Supervisors will attempt to convert "hard" refusals, cases in which the respondent declines to participate in the survey. MTP will convert a minimum of 15% of all refusals. This rate shall be increased if difficulty in reaching a rate of seventy percent (70%) completions over all eligible contacts is encountered.

To facilitate respondent cooperation, the interviewers will also be given a name and a telephone number at the School of Public Health so that respondents can call to verify the legitimacy of the survey. They will then also have the opportunity to ask questions or express any concerns they may have regarding the survey. Interviewers will also be prepared to give the respondent MTP's 1-800 number to call for verification that interviewers are representing the Hawai'i adult household survey and MTP. In addition to these two telephone numbers, the respondents will be given a name and telephone number of a State of Hawai'i Department of Health contact person, at the respondent's request.

7. INTERVIEW QUALITY CONTROL:

7.1. Maintaining Confidentiality:

MTP will ensure that the data collected for this project will remain confidential. All MTP personnel connected

with this project, including interviewers, supervisors, coders, keypunchers, and professional staff, will sign a statement promising that they will maintain the confidentiality of all survey data. Access to the study data will be limited to selected MTP employees who have signed the confidentiality pledge.

No personally identifying information will be delivered with the resulting data set. Personally identifying information will only be used for recontacting households and respondents. Once the data has been collected, this identifying information will be destroyed.

7.2. Maintaining Quality Control Over Interviewers' Work

Careful supervision of interviewers' work will ensure that high quality data are collected throughout the field period. There are three aspects to quality control supervision.

- a. Interviewers will be monitored by supervisors while conducting interviews. Supervisors can silently monitor an interviewer's work without awareness by either the interviewer or respondent. At least two interviews per shift will be monitored in this way. Provision will be made for SPH personnel to participate in this silent monitoring.
- b. Supervisors will check interviewers' completed work for accuracy and completeness. They will provide feedback to interviewers so that high quality work

is encouraged, misunderstandings are corrected, and completeness is ensured. Respondents may be recontacted, if necessary, to obtain critical data inadvertently missed by an interviewer. It is anticipated that very little such data retrieval will be necessary.

- c. The data processing manager will do a final check and flag any "outliers" or other answers that may seem peculiar to the study.
- d. MTP will validate a minimum of 10% of the completed interviews, including at least two interviews per shift. At the completion of every interview, respondents will be warned that they may be recalled to validate the interview. Supervisors will call back a sample of respondents for interviews completed by every interviewer.

7.3. Pilot Study:

A pilot study of a minimum of 100 interviews will be conducted to pretest the instrument, the CATI system and all fielding procedures. Pretesting is the most effective way in which to maximize data quality.

The generation of the sampling frame for the pretest will be carried out by OHSM and is the responsibility of ADAD. OHSM will generate a statewide sample of 1000 telephone numbers by RDD procedures and will submit this sample to GTE. GTE will select the working, residential numbers and return the file (approximately 500 telephone numbers) to

OHSM. OHSM will check this sample to eliminate households who have been surveyed within the previous year in OHSM surveys. This is designed to minimize respondent burden which is problematic in a small population state such as Hawai'i.

OHSM will utilize a reverse directory to identify respondents who can be sent a letter of introduction to the survey from the Director of Health. From the 500 eligible residential telephone numbers provided by GTE, Health Monitoring expects to identify approximately 300 households (by name and address) and to produce address labels for this sub-sample. MTP will take delivery of these address labels and use envelopes and the letter of introduction to be provided by ADAD to mail out advance notices of the survey on the Tuesday prior to the commencement of pretest interviewing. Interviewing will begin on Oahu two days after the mailing and interviewing will begin for telephone numbers on the other Islands one day later. The experience of Health Monitoring with this procedure indicates that Tuesday is the best day to mail and that it takes two days for first class mail to reach all Oahu (Honolulu County) households. One extra day is allowed for the other islands. These procedures are intended to have the letters arrive as close as possible to the time the telephone interviewing begins.

An important purpose of the pilot study will be to further train the interviewers and provide them with multiple opportunities to go through the entire survey instrument on the CATI system. The pretest will also allow the MTP professional staff to maximize the

efficiency of the CATI program. The pilot study will give MTP and SPH an indication of any problems in fielding the study and any unanticipated difficulties in trying to reach eligible respondents. In order to maximize the observed incidence of drug use, the pretest will include a minimum of 30 young males (18-34 years of age). Interviews will be conducted with members of all five ethnic groups identified in the sampling design as well as residents of all four sub-state planning areas in order to maximize variability in response to the interview. This is necessary to thoroughly test fielding procedures.

8. DATA MANAGEMENT AND DATA ANALYSIS

Data collected during the interview will be entered directly into computer files through Sawtooth's Ci3 software program. Only valid responses will be accepted and stored. In addition, MTP will take other steps to prepare the data for release and analysis and to convert the raw data to a more usable form. After fielding the interviewing, MTP will review respondent data records for completeness and any problem areas. MTP will develop an edit plan for examining problem records. Among the problems for which MTP will check are inappropriate skips, out-of-range values, and input errors. In reality, such circumstances will rarely occur in the structured CATI environment of Sawtooth Ci3.

Sawtooth's Ci3 software permits interviewers to type in open-ended responses as they are given. The list of responses will then be printed for coding. Interviewers

will be instructed to type in the verbatim response if the respondent's answer does not agree exactly with an assigned precode. Some verbatim responses may be recoded into new categories constructed by a coding supervisor, after review by SPH. Coders will examine the remaining responses and group like answers for review by a coding supervisor and the Study Director before entering new codes. After codes have been set and entered, individual responses that do not fit into categories can be printed if necessary.

MTP will convert the raw data from the CATI system to a form that can be used by SPSS. MTP will prepare a clean, edited, and documented data file for analysis. The data will be edited to exclude telephone numbers and any other means of identifying respondents. The file will contain unweighted values for each close-ended item as well as the weighting variables necessary to produce representative sample and population estimates. Within 1 month of completion of the survey, MTP produce a clean, edited and coded SPSS system file with documented flags for missing values and final weighting variables for appropriately weighted estimates. The SPSS system files will include documentation for any construction of variables and other manipulations of the data required by the analysis plan. The documentation will be submitted in hard copy as well as in SPSS command files on IBM-compatible floppy disks.

MTP will produce both unweighted and appropriately weighted descriptive tabulations from the household survey of substance abuse, dependence (according to DSM-

III-R criteria) and treatment needs for each type of substance (drug) investigated. Appropriately weighted cross-tabulations by age and gender will be reported for the state as a whole, the four counties and for different ethnic groups. Tables will be constructed to facilitate comparisons with SAMHSA 1996 National Household Survey Estimates of Drug Abuse.

Scoring algorithms for DMS-III-R diagnosis of substance dependence and abuse will follow the guidelines provided by NTC. These methods utilize the scoring mechanisms for the Diagnostic Interview Schedule (DIS) to determine lifetime diagnosis of substance abuse or dependence as well as the severity of dependence. Severity of dependence is defined as a function of the number of symptoms and the degree of impairment of social functioning.

Statistical estimates of prevalence of substance abuse, appropriately weighted to reflect the sampling design, will be computed using SPSS software and will have a relative sampling error of no more than four percent. County estimates will have a relative sampling error of no more than six percent. Standard errors will be reported for all statistical estimates of prevalence for both substance abuse and treatment.

Methodological analysis will assess the degree to which the survey design was successfully implemented and the accuracy and validity of survey estimates which it produced. This review will include:

1. a case-by-case review of respondents who reported a high proportion of missing data or terminated the interview prior to completion;
2. an analysis of interviewer ratings of data quality and self-reported veracity, particularly as they may differ by socio-demographic characteristics and may be related to extent of substance use reported;
3. an examination of logical inconsistencies in the information reported by respondents;
4. an analysis of differences in response to federal census and State of Hawai'i formats for questions regarding ethnic identification;
5. an examination of the socio-demographic characteristics of those who reported being homeless or without telephone service, and an investigation of the possible effects of these factors on estimates of substance abuse and treatment;
6. a review of possible effects of stage II quota sampling designed to more adequately represent young, male and female adults;
7. analysis of differences in response rates (including CASRO criteria) by sampling strata (county, age, gender, ethnicity).

9. COORDINATION AND COMMUNICATION

Dr. John Gartrell will act as the project director for SPH. Under the direction of the Principle Investigator, Dr. D.W. Wood, Dr. Gartrell will be responsible for coordinating the study, for assisting and overseeing the work of MTP, and for communicating results to ADAD. Communication is facilitated by the continuing flow of written materials between MTP and SPH, and between SPH and ADAD. To supplement this written communication SPH will continue to hold weekly meetings with the ADAD Needs Assessment Coordinator. All written reports by SPH are the responsibility of Dr. Gartrell and Dr. Wood.

The written reports by SPH to ADAD have included a brief (two) page research submitted in November, 1997. A draft protocol was submitted approximately 8 weeks early according to the contract between ADAD and SPH. The remaining deliverables include:

1. the pretest report, which will include the revised questionnaire, the revised CATI program, and a draft codebook;
2. eight weekly fielding reports (interview disposition, fielding problems and remedies) to be presented by MTP to SPH and ADAD. These reports will be discussed at weekly meetings with all three parties. These meetings will begin one week after the beginning of data collection, which is planned for January 29th;

3. an interim (draft) data set with codebook and frequencies submitted following the completion of interviewing (May). After review by ADAD and after analysis of the data by SPH, a final edited copy of the data set with a codebook will be submitted by SPH to ADAD in July;
4. a draft final report will be submitted by SPH to ADAD in July. After review by ADAD the report will be revised by SPH and a final draft will be submitted in October.

Special tabulations will be produced by SPH at the request of state and community agencies. As many as 10 presentations to various state agencies and community groups are planned following the completion of the final report.

12. REFERENCES

- American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders: Third Edition, Revised*. Washington, DC, 1987.
- Aquilino, W.S. Telephone Versus Face-to-face Interviewing for Household Drug Use Surveys. *International Journal of the Addictions* 27(1):71-91, 1992.
- Fenig, S. Et al. Telephone vs Face-to-face Interviewing in a Community Psychiatric Survey. *American Journal of Public Health* 83(6):896-898.
- Frank, B. *Telephone Surveying for Drug Abuse: Methodological Issues and an Application, Self-report Methods of Estimating Drug Use: Meeting*

Current Challenges to Validity, NIDA Research Monograph No. 57:71-83, 1985.

Gilbert, G.G.; Wilson, L.; and Wellford, C. *Maryland State Household Drug Survey, September 4, 1990*. College Park, MD: Center for Substance Abuse Prevention and Control, University of Maryland, 1990.

Institute for Health Policy. *Substance Abuse: The Nation's Number One Health Problem*. Waltham, MA: Brandeis University, 1993.

Johnson, T.P. and Barrett, M.E. *Substance Use in the Adult Population of Illinois: 1990. A report prepared for the Department of Alcoholism and Substance Abuse, State of Illinois*, June, 1992.

McAuliffe, W.E. et al. Assessment of Drug Abuser Needs in Rhode Island. *American Journal of Public Health* 81(3):365-371, 1991.

National Technical Center. *Assessment of Substance Dependence Treatment Needs: A Telephone Survey Manual and Questionnaire*, 1996.

Robins, L.N., Helzer, J.E., Ratclif, K.S. and Seyfried, W. *Validity of the Diagnostic Interview Schedule, Version II: DSM-III diagnoses*. *Psychological Medicine* 12:855-870, 1982.

Spence, R.T.; Fredlund, E.V. and Kavinsky, J. *1988 Texas Survey of Substance Use Among Adults*. Austin, TX: Texas Commission on Alcohol and Drug Abuse, March, 1989.

APPENDIX D: SAMPLE AND POPULATION WEIGHTS

D.1 Overview

In order to weight the sample to adjust for disproportionate sampling, information on the 1998 age and sex distribution within ethnic group within county for the State of Hawaii was required. In order to generate population estimates for the state, estimates of the 1998 population, ideally broken down by age, sex, ethnicity and county was also required.

As described in the protocol (Appendix C), and as summarized in the body of this report, the sampling design was disproportionately stratified by county, ethnicity, and age. This sampling design was adopted in order to represent the small but extremely heterogeneous population of adults aged 18 years and over who were resident in Hawaii. Honolulu County, which contains the state's one large city, Honolulu, provided 40 percent of the sampling frame as opposed to at least 74 percent of the population of adults. The other three counties were variously over-sampled. Hawaii County (about 12 percent of adults), Maui County (10 percent), and Kauai County (5 percent) each comprised 20 percent of the sampling frame.

Within this disproportionate sample, five ethnic groups, Caucasian, Japanese, Hawaiian and Part-Hawaiian, Filipino

and Other were to be randomly quota sampled to yield a minimum of 875 respondents each (with a minimum total sample of 5,000). These target samples were obtained for all but the Filipino sub-sample. Population estimates of ethnic group composition for the state vary widely. There were approximately 29.5 percent Caucasian, about 23.5 percent Japanese, 12.5 percent (to as high as 18 percent) Hawaiian and part-Hawaiian, 9 to 10 percent Filipino, and a multitude of smaller, other Asian groups. In different estimations of ethnic population distributions, the proportion Hawaiian and part-Hawaiian varies a great deal depending on the definition of part-Hawaiian.

During data collection, interviewers exercised a preference for young male respondents between 18 and 34 years of age first, and young female adults second. This preference was instituted to counteract tendencies to under-represent young adults respondents, and particularly to under-represent young male respondents in telephone surveys. This was critical to the survey of substance abuse since young adults have higher prevalence rates than older adults. It was therefore important to maximize the incidence of reported drug use.

In order to establish appropriate sample and population weights for the data set, population estimates for age (younger than 35 years versus 35 years or older) and gender breakdowns within the five ethnic categories for each county were required. Sample weights were then calculated as the ratio of the proportion of these 80 sub-groups in the population to their proportion in the sample.

Among the problems faced in devising appropriate weights to estimate population parameters for this complex sampling design were:

- a. A lack of available information concerning population breakdowns by ethnicity (particularly age and sex distributions within ethnic groups by county);
- b. Considerable variation in available estimates of total population size and variation in estimates of the proportion of young adults in the population.;
- c. A dearth of information about the methods other researchers used to weight previous sample surveys in Hawaii.
- d. Difficulty in obtaining timely provision of available population breakdowns as estimated from various previous surveys.

D.2 Population Estimates

The BRFSS population estimates for 1995 through 1997 were reviewed, as were Gallup's population estimates for 1995 (Tables D2 through D5). The 1995 BRFSS report for ethnicity contained a relatively large proportion of missing data (over 10 percent). These relatively dated estimates were therefore omitted from further consideration where ethnicity was included. It was decided to estimate the proportionate representation in the population for the 80-cell table (age by sex by

ethnicity by county) as a simple average of the other three estimates. Since the Gallup survey (N=5,808) was over three times as large as each of the BRFSS estimates, simple averaging effectively weighted the estimate towards the more recent BRFSS surveys.

See Tables D2 through D5: Population Estimates by Age, Gender, Ethnicity and County (Gallup 1995; BRFSS 1995)

The estimates of total population from the BRFSS showed a population of adults increasing markedly from approximately 881,000 in 1995 to 906,000 in 1996. The population then fell slightly to 895,000 in 1997.

Comparisons of estimates of total population for the same year by different sources yielded some interesting results (Table D6). The estimates of total adult population from the 1995 BRFSS (880,834) and the 1995 Gallup surveys (885,002) were very similar. While estimates by age were reasonably similar (except perhaps for Maui), gender estimates were systematically different in every county (with Gallup reporting fewer males and more females).

See Table D6: Comparison of Population Estimates for Hawaii: Age and Gender Distributions by County (1995-1997)

The estimate, 895,257 adults from the 1997 BRFSS (Table D1) was considerably greater than the adjusted population estimate generated by OHSM (847,837). However, it was similar to the unadjusted population estimate for 1997 by OHSM (884,010). The 1997 BRFSS figures also include a slightly higher proportion of males (0.501) than the OHSM 1997 estimates (0.488), and a lower proportion of young adults (0.295 versus 0.328).

*See Table D1: Sample Survey of Substance Abuse
in Hawaii: Unweighted Responses by Age,
Gender, Ethnicity and County*

Because no adequate information was available to explain or describe how Gallup or BRFSS population estimates were generated, no conclusions can be drawn concerning these differences. In order to optimize the comparability of the current survey results with previous Gallup results, the average of Gallup and recent BRFSS estimates were utilized (Table D4 and Table D5) to weight the 1998 sample data and to produce population estimates of treatment need.

D.3 Calculation Of Sample And Population Weights

To correct for the disproportionate sampling design, sample weights were generated as the ratio of the population proportion (Table D7) to the observed sample proportion (Table D1) separately for each age by sex by ethnicity by county designation. For example, the sample

weight for Caucasian males between 18 to 34 years of age resident in Honolulu County (the top left cell in Tables D1 and D7) would be approximately $4.72 \div 1.34 = 3.52$. These respondents were under-sampled. The sample weight for Filipino males between 18 to 34 years of age in Kauai County were approximately $0.14 \div 0.89 = 0.16$. These respondents were over-sampled. This sample weight was created as a transformed variable in the SPSS data set by 80 transformation statements. This produced a sample weight corrected for disproportionality introduced by the sampling design.

*See Tables D7: Average Population Estimates
(Gallup 1995, BRFSS 1996, 1997) by Age,
Gender, Ethnicity and County*

Since only one adult was interviewed from each household it was necessary to correct for differences in the number of adults in generating population estimates. It was important to correct for the number of telephone lines in each household. The sampling weight produced as the ratio of population proportion to sampling proportion (above), therefore, was multiplied by the number of adults in the household (question B6) and the number of telephone lines (question J12). This product was then divided by the product of the average number of adults per household and the average number of telephone lines per household. This produced the final sample weight. In order to obtain population weights, the sample weights were multiplied by

the inverse of the sampling fraction: the ratio of the population size (N=895,414) to the sample size (N=5,050).

D.4 Standard Errors In Population Estimates

Standard errors were reported in order to indicate the accuracy of population estimates. All standard errors were based upon observed rather than weighted sub-sample sizes.

Standard errors may be interpreted in several different ways. If the population estimate is more than 1.96 times (roughly two times) as large as the standard error, then the prevalence reported may be judged to be statistically significantly different from zero. In other words, if the prevalence in the population was really zero (a null hypothesis), a sample of the size we gathered would yield a rate 1.96 times the standard error, five times in 200 samples. The probability of 5 times in 200 samples was used in order to be a more cautious than the conventional 5 times in 100 samples.

For example, it was observed that 37.8% of the population 18 to 20 years of age reported heavy drinking (Table 5.2, repeated below). The standard error of this estimate is 3.0%. If the estimate had been smaller than 1.96 times 3.0% (approximately 6.0%), then it would have been concluded that there was not a statistically significant level of heavy alcohol use reported by this cohort. Given the sample size used to make the estimate it was judged that the observed prevalence of heavy drinking among people 18 to 20 years of age was so small that the

estimate could not be statistically distinguished from zero (no heavy drinking). The conclusion would follow that there was not a statistically significant prevalence of heavy drinking among 18 to 20 year olds. However, since it was observed that 37.8% of this cohort reports heavy drinking, the results show that it was "statistically safe" in reporting that there was a statistically significant level of heavy drinking.

See Table D8: Alcohol Use by Age Group and Gender

Standard errors can also be used to help interpret observed differences between population sub-groups, for example, males and females. One can evaluate the likelihood that this difference could occur by chance (in random sampling) by pooling the standard errors for the two sub-samples. As a simple approximation, in order to be a statistically significant difference, the percentage difference in heavy drinking among 18 to 20 year-old males and females would have to be more than approximately twice the square root of the sum of the two standard errors squared. This would be calculated as $(4.3^2 + 4.0^2)^{1/2} = 5.87\%$. If the observed percentage difference between the two groups (young males and young females) is larger than 5.87 percent, then the conclusion can be drawn that this is a statistically significant difference. The observed difference is $(47.7\% - 26.8\%) = 20.9\%$. Since this is larger than the estimate of the pooled standard errors, it would be concluded that the

difference between young males and young females is statistically significant. In other words, this observed difference is unlikely to have occurred as a result of the random chance involved in sampling.

In general, standard errors were not reported in the text where samples were large and rates were high. Standard errors were reported in the text where they were relatively large, where population sub-samples were relatively small and observed rates were relatively close to zero, or where differences between groups were questionable as to their significance.

APPENDIX E: MARKET TRENDS PACIFIC, FINAL TECHNICAL REPORT

APPENDIX F: MARKET TRENDS PACIFIC, PILOT TEST REPORT
