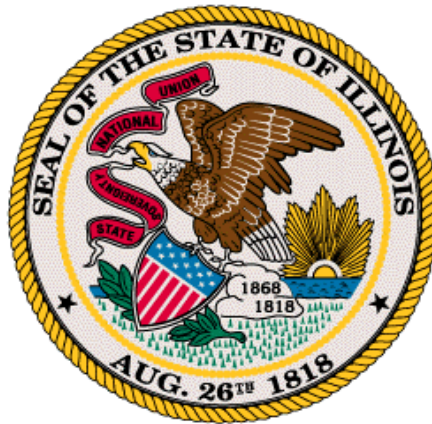


# Alcohol, Tobacco, and Other Drug Use Among Illinois Office of Mental Health Clients: Prevalence and Treatment Need, 2000



George H. Ryan, *Governor*  
Linda Reneé Baker, *Secretary*



U.S. Center for  
Substance Abuse  
Treatment

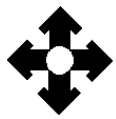


*Funded by the U.S. Center for Substance Abuse Treatment under the State Needs Assessment Program.*



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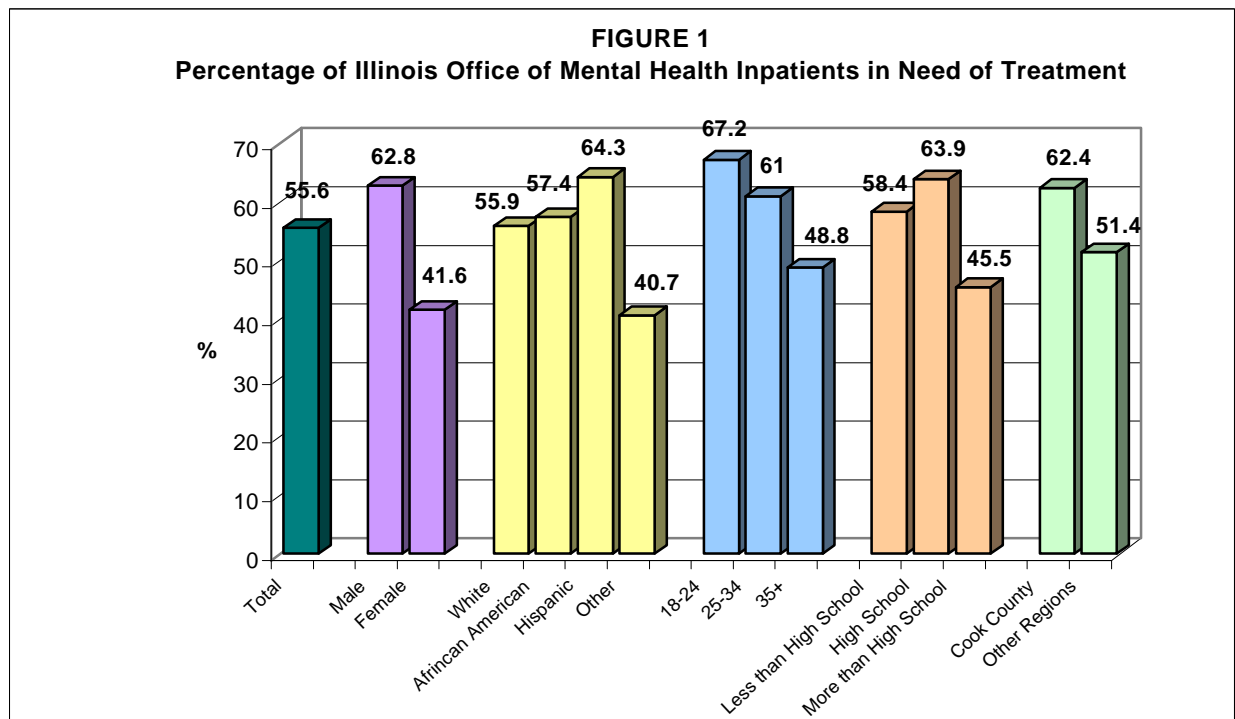


## EXECUTIVE SUMMARY

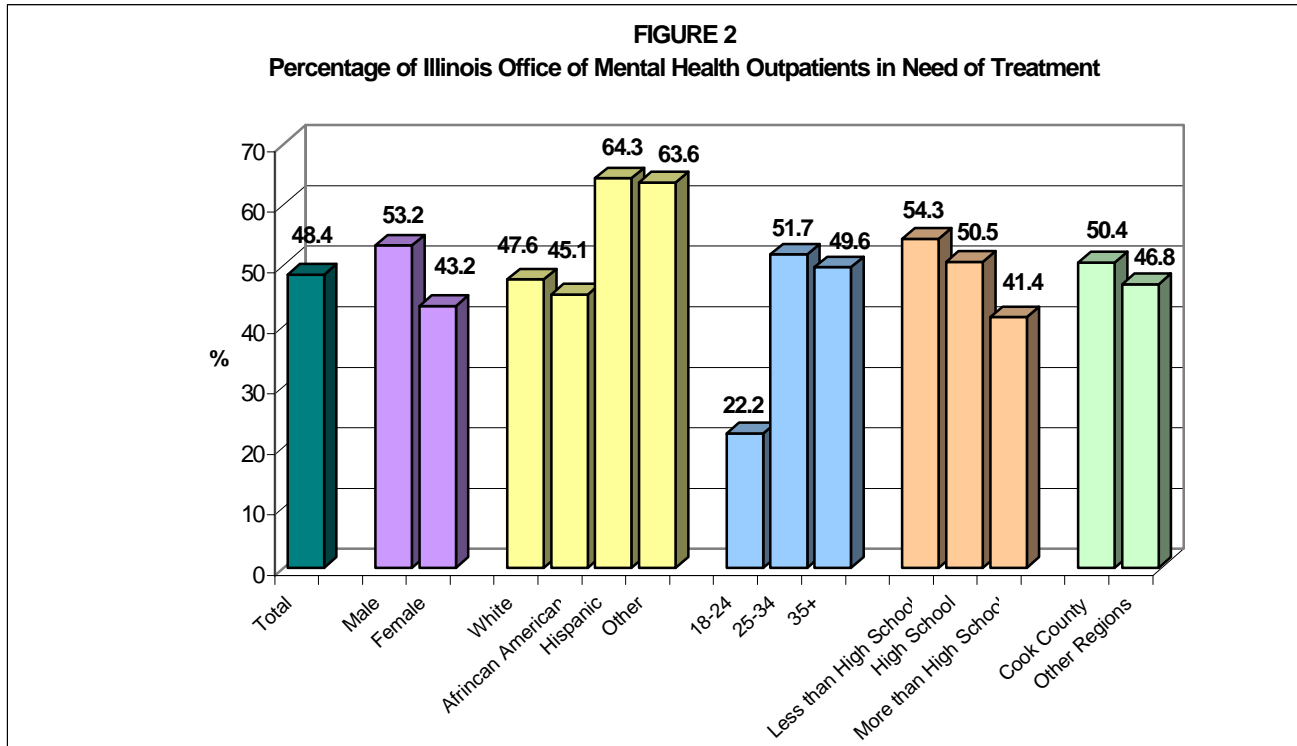
### Need for Alcohol or Drug Abuse Treatment

To estimate the need for alcohol and drug treatment services among clients of the Illinois Office of Mental Health, the diagnostic criteria for substance abuse and dependence from the CAGE screening instrument were used. Basic results are presented in **Figure 1** for inpatients and **Figure 2** for outpatients.

- More than half of the inpatients (55.6%) and slightly less than half of the outpatients (48.4%) had alcohol or other drug treatment needs.
- Most inpatients with treatment needs were in need of treatment for both alcohol and other drugs. Treatment for both types of substances was also most common among the outpatients interviewed.
- Among inpatients, 63 percent of males and 42 percent of females were classified as being in need of treatment. Fifty-three percent of male outpatients and 43 percent of female outpatients were in need of treatment for alcohol or drugs.
- Younger inpatients were more likely to have some form of treatment need than were older inpatients. Younger outpatients (age 18–24) were least likely to be identified as alcohol or drug abusers.
- Among inpatients, high school graduates were most likely to meet CAGE criteria of treatment need, compared with those with more than high school or less than high school education.

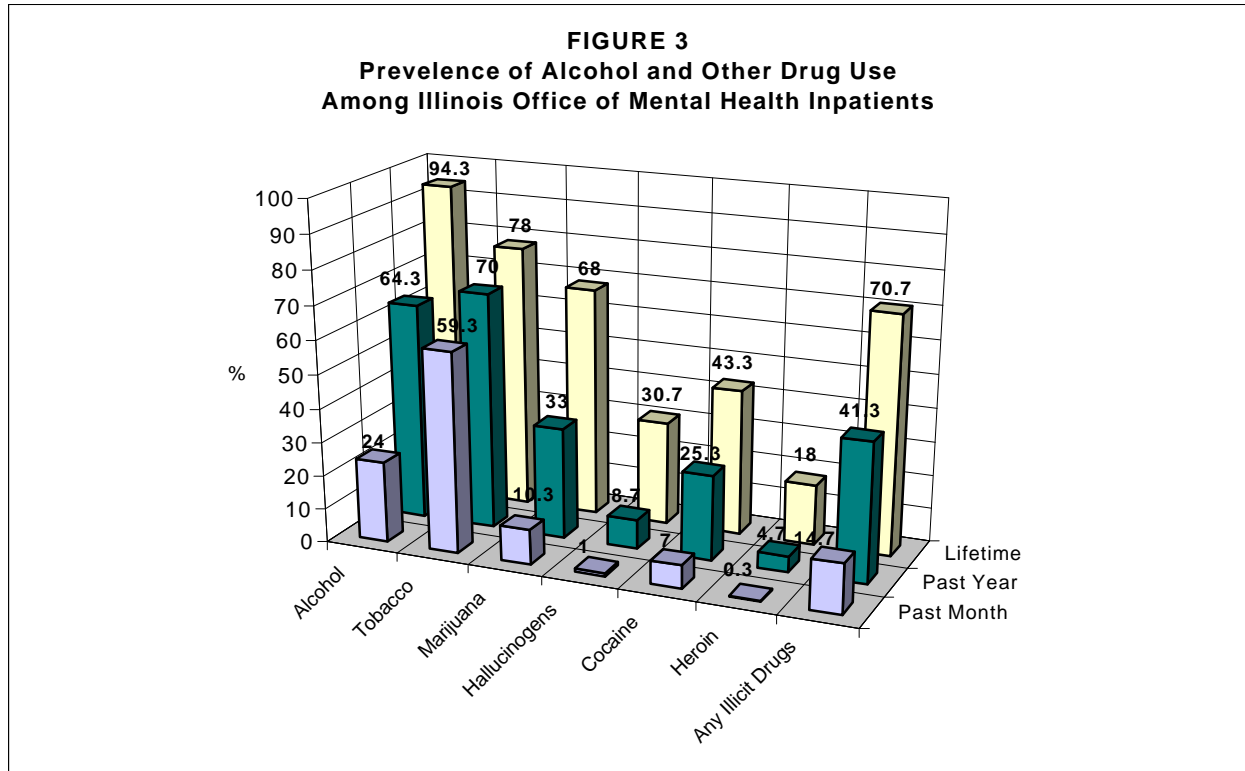


- Overall, 35 percent of inpatients and 29 percent of outpatients reported having been treated for substance abuse at least once in their lifetimes. Among those who had abused one or more substances, approximately 60 percent of inpatients and 54 percent of outpatients had ever received treatment.



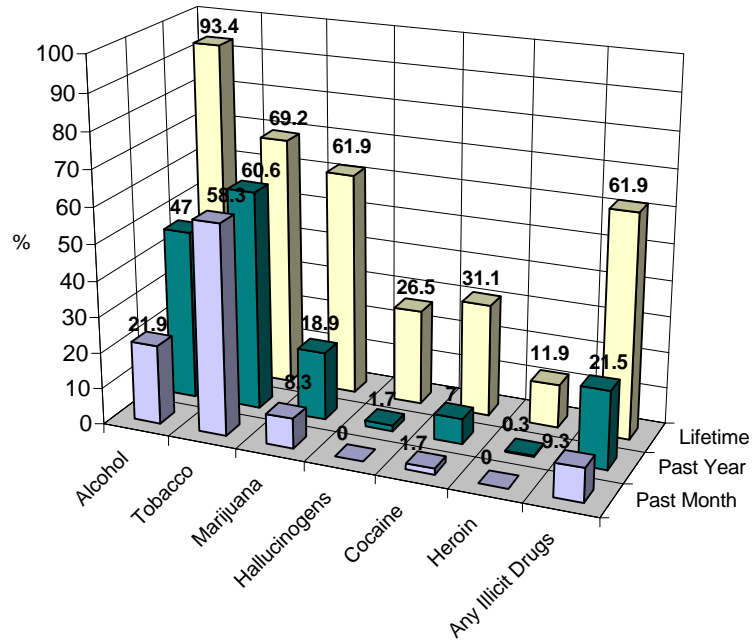
## Prevalence of Alcohol and Other Drug Use

Prevalence of alcohol, tobacco, and other drugs also were estimated for respondents' lifetimes, the past year, and the past month. They are summarized in **Figure 3** for inpatients and **Figure 4** for outpatients.



- Overwhelming majorities of inpatients and outpatients reported lifetime use of alcohol. Sixty-four percent of inpatients and 47 percent of outpatients indicated that they had used alcohol during the 18 months before the interview, and more than 20 percent of inpatients and outpatients reported drinking in the previous 30 days.
- Thirty-five percent of inpatients and 14 percent of outpatients were found to be heavy drinkers. Male inpatients were significantly more likely to have been drinking heavily than female inpatients.
- Seventy-eight percent of inpatients and 69 percent of outpatients reported using tobacco at some point in their lifetimes. Female inpatients were less likely than male inpatients to have ever smoked tobacco products. Less than 60 percent of inpatients and outpatients smoked in the previous 30 days.
- More than 70 percent of inpatients and 62 percent of outpatients reported having used at least one illicit drug during their lifetimes. A little less than 15 percent of inpatient and 9.3 percent of outpatients reported recent (last month) use of any illicit drug(s).
- The most commonly used drugs among mental patients were marijuana and cocaine.
- Male patients were more likely to be users of illicit drugs than were females.

**FIGURE 4**  
**Prevalence of Alcohol and Other Drug Use**  
**Among Illinois Office of Mental Health Outpatients**



## I. Introduction

Among persons suffering from mental illness, substance abuse is the most common condition found to co-occur (Minkoff & Drake, 1991). Data from the Epidemiologic Catchment Area Survey indicate that 28.9 percent of those persons ever having a mental disorder diagnosis also had a lifetime diagnosis of alcohol and/or other drug abuse/dependence (Regier et al., 1990). Comparisons with persons never diagnosed with a mental disorder suggest that this condition places individuals at more than twice the risk of having an alcohol-related disorder and more than four times the risk of some other drug-related disorder. The more recent National Comorbidity Survey reported similar findings (Kessler et al., 1996). In particular, roughly half of all respondents with a lifetime substance disorder also were found to have a lifetime mental disorder, and half of all persons with a lifetime mental disorder also were found to have a lifetime substance use disorder.

Persons who are mentally ill face unique risks for substance abuse. They may be vulnerable to smaller amounts of substances (Drake et al., 1996) and to a wider variety of types of substances (Cuffel, 1996). As with the general population, substance abuse often goes undetected in psychiatric patients (Ananth et al., 1989). The presence of these co-morbid conditions likely decreases the effectiveness of treatment for either. Indeed, empirical research confirms

that patients with more severe psychiatric conditions are less likely to experience successful outcomes of treatment for alcohol and drug abuse (McLellan et al., 1983). They are considered by some professionals to be “treatment noncompliant” (Drake et al., 1991).

Substance abuse among persons with mental disorders has been associated with more severe psychiatric symptoms; disruptive behaviors such as verbal hostility, aggression, and criminal activity; and suicide-related behaviors (Drake et al., 1991). Persons with dual diagnoses also are at increased risk for homelessness (Fischer & Breakey, 1991; Koegel & Burnam, 1987) and incarceration (Drake et al., 1991).

These concerns suggest the need to investigate substance use patterns among persons receiving mental health treatment services. This need is acute particularly in Illinois, where little information is currently available for the planning of treatment services for this population. The purpose of this report is to address this need by providing an overview of findings from a statewide survey designed to measure the prevalence of alcohol, tobacco, and other drug (ATOD) use among persons receiving services through the Illinois Office of Mental Health and their associated treatment needs.

## II. Results

In this section, demographic characteristics; overall alcohol, tobacco, and other drug prevalence rates; and treatment need estimates are presented separately for inpatient and outpatient populations. Statistical tests of significance were applied to all demographic comparisons of treatment needs and substance use prevalence. Significant differences are identified in each table. Details of the study's methodology can be found in the Technical Appendix at the end of this report.

### A. Demographic Characteristics

**Table 1** presents general demographic characteristics of the samples of inpatients and outpatients. Of the 300 inpatients, 66 percent were male, and about 60 percent were white. The average age of the inpatients

was 36, with a majority being 35 or older (54.8%). In terms of education, approximately a third of inpatients had not completed high school, a third had earned a high school degree or GED, and a third had completed some post-secondary education. Most of the inpatients (61%) interviewed were residents of Cook County.

Male and female patients were equally represented in the sample of outpatients. As with the inpatient sample, a majority of the outpatients interviewed were white. The average age of outpatients was 42, with more than 74 percent of the sample being 35 or older. About two-thirds of all outpatients had completed high school or received a GED, of which more than 56 percent had completed some post-secondary education. Of the total outpatient sample, 57 percent were Cook County residents.

**Table 1**  
**Demographics of the Survey Sample**

	Total	Inpatients		Outpatients	
		N	%	N	%
<b>Gender</b>					
Male		199	66.3	154	51.0
Female		101	33.7	148	49.0
<b>Race</b>					
White		177	59.0	206	68.2
African American		68	22.7	71	23.5
Hispanic		28	9.3	14	4.6
Other		27	9.0	11	3.6
<b>Age</b>					
18–24		58	19.4	18	6.0
25–34		77	25.8	60	19.9
35 and older		164	54.8	224	74.2
<b>Education</b>					
Less than High School		101	33.8	92	30.6
High School		97	32.4	91	30.2
More than High School		101	33.8	118	39.2
<b>Region</b>					
Cook County		117	39.0	129	42.7
Other Counties		183	61.0	173	57.3

## B. Overall Prevalence of Alcohol, Tobacco, and Other Drug Use

Prevalence rates are defined as the percentage of patients who report any use of a substance during a specified time period, e.g., lifetime, past year, past month. **Lifetime prevalence**, for instance, refers to the percentage of the sample that reports ever having used a substance at least once in their lifetime. Similarly, **past year prevalence** measures the percentage of the sample who report having used a given substance at any point in the last 12 months, and **past month prevalence** refers to the percentage of survey respondents who reported using a substance at least once during the 30 days prior to the interview.

**Table 2** presents overall prevalence rates of each substance for inpatients, outpatients, and comparison data from the 1998 Illinois Office of Alcoholism and Substance Abuse survey of Illinois adults (Cho et al., 2000). Large majorities of inpatients and outpatients receiving services through the Illinois Office of Mental Health (OMH) reported lifetime experience using alcohol. A very similar proportion of Illinois adults (93.1%) also reported lifetime alcohol use. However, the general population was more likely to report more recent alcohol

consumption (i.e., past year and past month) than were either inpatients or outpatients.

Most OMH health patients reported experience with tobacco products. More than three-quarters of all inpatients and more than two-thirds of all outpatients reported lifetime use. In contrast, less than half of all Illinois adults (44.6%) reported ever having used tobacco. Among the general public, 22.2 percent reported currently using tobacco, while majorities of each patient group reported current use (59.3% of inpatients and 58.3% of outpatients).

OMH clients were also more likely to have used illicit drugs. Whereas approximately 60 percent and 70 percent of outpatients and inpatients, respectively, reported lifetime use of any illicit drugs, one-third of adults in the general population reported illicit drug use. Patients receiving services through OMH were also more likely to have used illicit substances during the past year and the past month when compared to adults in general. Among the illicit drugs examined, marijuana was the drug of choice among both OMH clients and the general household population, followed by cocaine and hallucinogens.

**Table 2**  
Lifetime, Past Year, and Past Month ATOD Use (%)

Substance	Inpatients			Outpatients			General Household		
	Lifetime	Past Year	Past Month	Lifetime	Past Year	Past Month	Lifetime	Past Year	Past Month
Alcohol	94.3	64.3	24.0	93.4	47.0	21.9	93.1	72.9	53.5
Tobacco	78.0	70.0	59.3	69.2	60.6	58.3	44.6	25.8	22.2
Marijuana	68.0	33.0	10.3	61.9	18.9	8.3	37.3	7.3	3.4
Hallucinogens	30.7	8.7	1.0	26.5	1.7	0.0	8.5	0.7	--
Cocaine	43.3	25.3	7.0	31.1	7.0	1.7	10.6	0.8	--
Heroin	18.0	4.7	0.3	11.9	0.3	0.0	1.9	--	--
Any Illicit Drugs	70.7	41.3	14.7	61.9	21.5	9.3	33.7	7.6	3.5

## C. Need for Alcohol and Other Drug Treatment

### Estimating Treatment Need

Treatment need was estimated using the CAGE criteria for alcohol and drug abuse. The CAGE is a short, easily-administered screening instrument that has been used in a variety of clinical and research settings over the past several decades (Mayfield et al., 1974; Ewing, 1984). During the interview, patients reporting any use of alcohol or illicit drugs (marijuana, hallucinogens, cocaine, and heroin) in their lifetimes were asked about four CAGE symptoms that were indicative of abuse. The CAGE symptoms include:

- Having felt a need to cut down on one's drinking or drug use.
- Being annoyed by people criticizing one's drinking or drug use.
- Having ever felt bad or guilty about one's drinking or drug use.
- Ever had a drink or used a drug first thing in the morning to steady one's nerves or to get rid of a hangover.

For purposes of this study, those respondents admitting to two or more of these symptoms for any specific substance were classified as having a treatment need for that substance.

### Need for Treatment

As **Table 3** indicates, more than half of the inpatients (55.6%) and slightly less than half of the outpatients (48.4%) interviewed had alcohol or other drug treatment needs. Most inpatients with treatment needs were in need of treatment for both alcohol and other drugs. Treatment for both types of substances was also most common among the outpatients interviewed.

Among inpatients, males and younger patients were more likely to have some form of treatment need, as were those with a high school education or less. Among outpatients, males were more likely to have drug-related treatment needs, and persons with a high school education or less were more likely to

have treatment needs for both alcohol and drug use.

### Specific Symptoms Associated with Alcohol and Other Drug Use

**Table 4** presents the proportions of inpatients and outpatients that acknowledged each of the four CAGE symptoms associated with substance abuse by diagnosis. Overall, 75.3 percent of inpatients and 64.9 percent of outpatients reported having experienced at least one symptom.

Each of these four symptoms demonstrated a strong ability to discriminate between persons with and without a substance abuse condition among both inpatients and outpatients. The symptom demonstrating the best ability to differentiate between those with and without a substance abuse condition was using alcohol or an illicit drug first thing in the morning to steady nerves or cope with a hangover. Inpatients with a substance abuse condition were approximately eighteen times more likely to endorse it.

The symptom concerned with having felt guilt about one's substance use was sixteen times more likely to be endorsed by outpatients and 7.5 times more likely to be endorsed by inpatients with substance abuse conditions.

Having been annoyed by others' criticism of their substance use also showed good discrimination. Among outpatients, it was 14.5 times more likely to be endorsed by those with identified as substance abusers. Among inpatients, this item was 9.4 times more likely to be acknowledged by substance abusers.

The item most likely to be endorsed both by patients with and without substance abuse conditions was the weakest discriminator of substance abusers. Nonetheless, having felt that one should cut down on drinking or other drug use was 4.7 times more likely to be endorsed by outpatients and 3.9 times more likely to be endorsed by inpatients classified as

substance abusers. Large majorities of both inpatients (93.4%) and outpatients (95.9%) with substance abuse conditions acknowledged this symptom.

Although the four CAGE items each demonstrated an ability to discriminate

between patients with and without substance abuse conditions, these questions all appear to be more effective in differentiating outpatient, compared to inpatient, substance abusers.

**Table 3**  
**Percentage of Respondents Meeting CAGE Criteria**  
**for Substance Abuse**

	Inpatients				Outpatients			
	Alcohol or Drug Problem	Alcohol Problem Only	Drug Problem Only	Alcohol & Drug Problem	Alcohol or Drug Problem	Alcohol Problem Only	Drug Problem Only	Alcohol & Drug Problem
<b>Total</b>	<b>55.6</b>	15.0	8.3	32.3	<b>48.4</b>	16.2	10.3	21.9
<b>Gender</b>	***			**	+		*	
Male	<b>62.8</b>	16.6	8.0	38.2	<b>53.2</b>	14.9	13.6	24.7
Female	<b>41.6</b>	11.9	8.9	20.8	<b>43.2</b>	17.6	6.8	18.9
<b>Race</b>								
White	<b>55.9</b>	16.4	7.9	31.6	<b>47.6</b>	16.5	10.7	20.4
African American	<b>57.4</b>	8.8	13.2	35.3	<b>45.1</b>	12.7	7.0	25.4
Hispanic	<b>64.3</b>	25.0	3.6	35.7	<b>64.3</b>	14.3	14.3	35.7
Other	<b>40.7</b>	11.1	3.7	25.9	<b>63.6</b>	36.4	18.2	9.1
<b>Age</b>	*				+			
18–24	<b>67.2</b>	12.1	13.8	41.4	<b>22.2</b>		16.7	5.6
25–34	<b>61.0</b>	20.8	7.8	32.5	<b>51.7</b>	16.7	13.3	21.7
35 and older	<b>48.8</b>	13.4	6.7	28.7	<b>49.6</b>	17.4	8.9	23.2
<b>Education</b>	*							**
< High School	<b>58.4</b>	16.8	6.9	34.7	<b>54.3</b>	15.2	9.8	29.3
High School	<b>63.9</b>	16.5	9.3	38.1	<b>50.5</b>	13.2	9.9	27.5
> High School	<b>45.5</b>	11.9	8.9	24.8	<b>41.5</b>	18.6	11.0	11.9
<b>Region</b>	+				+			
Cook County	<b>62.4</b>	12.8	11.1	38.5	<b>50.4</b>	12.4	11.6	26.4
Other Counties	<b>51.4</b>	16.4	6.6	28.4	<b>46.8</b>	19.1	9.2	18.5

+  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$  (Chi-Square Test).

**Table 4**  
**Percentage of Respondents Reporting CAGE Criteria**

	Inpatients			Outpatients		
	Without Diagnosis	With Diagnosis	Total Inpatients	Without Diagnosis	With Diagnosis	Total Outpatients
• Felt I ought to <i>cut down</i> drinking or drug use	24.1	93.4	62.7	20.5	95.9	57.0
• <i>Annoyed</i> by criticism about my drinking or drug use	9.0	85.0	51.3	5.8	84.2	43.7
• Felt <i>guilt</i> about my use of alcohol or drug	11.3	84.4	52.0	5.1	81.5	42.1
• Used alcohol/drug first thing in the morning	4.5	58.1	34.3	2.6	46.6	23.8

**Lifetime Treatment Experience**

All OMH clients who reported ever having used alcohol or other drugs were asked if they had ever been treated for substance abuse. Overall, 35 percent of the inpatients and 29.1 percent of the outpatients interviewed indicated that they had been treated at least once.

Approximately 60 percent of all inpatients meeting the CAGE substance abuse criteria reported receiving treatment at some time in their lives. Among outpatients, 54.1 percent of those meeting the criteria indicated that they had received treatment.

As indicated in **Table 5**, there were few differences across patient subgroups in the likelihood that those identified as having substance abuse conditions had ever received treatment for it.

**Table 5**  
**Percentage of Respondents Meeting CAGE Criteria for Substance Abuse Who Reported Ever Receiving Treatment by Demographic Characteristics**

	Inpatients	Outpatients
<b>Total</b>	59.3	54.1
<b>Gender</b>		
Male	57.6	56.1
Female	64.3	51.6
<b>Race</b>	+	
White	65.7	51.0
African	53.8	56.3
Hispanic	55.6	77.8
Other	27.3	57.1
<b>Age</b>		
18–24	53.8	75.0
25–34	61.7	51.6
35 and older	60.0	54.1
<b>Education</b>		
< High School	54.2	56.0
High School	61.3	58.7
> High School	63.0	46.9
<b>Region</b>		
Cook County	57.5	58.5
Other Counties	60.6	50.6

+  $p < 0.1$  (Chi-Square Test).

## Current Psychiatric Conditions and Substance Abuse

**Table 6** presents the current conditions of OMH clients, as abstracted from their medical charts, for lifetime non-substance-abusing and substance-abusing patients identified by CAGE. Two of the most common psychiatric disorders among the inpatients were schizophrenia (35.3%) and alcohol abuse (31.7%). Among the non-substance abusers, schizophrenia was even more prevalent (42.1%). Of those who were identified by CAGE as substance abusers, alcohol and drug abuse were the most commonly diagnosed psychiatric conditions among the inpatients (50% and 44%, respectively). Among those who did not meet CAGE criteria for substance abuse, 15 percent were found to be

suffering from alcohol abuse, and about 10 percent were identified as drug abusers.

As with the inpatients, schizophrenia was found to be the most prevalent condition among the sample of outpatients. Thirty-seven percent of the outpatients were found to have this condition, and it was prevalent equally among both non-substance abusers and substance abusers. Of those who had ever met two or more CAGE criteria for substance abuse, about 30 percent were currently suffering from alcohol abuse and 21.3 percent from drug abuse. Major depression was found to be the second most common condition among the outpatients. The prevalence rates of this condition among non-substance abusers and abusers were 22.4 percent and 27.4 percent, respectively.

**Table 6**  
Current Conditions of Respondents by Lifetime CAGE Diagnosis

	Inpatients			Outpatients		
	Without Diagnosis	With Diagnosis	Total Inpatients	Without Diagnosis	With Diagnosis	Total Outpatients
• Schizophrenia	42.1	29.9	35.3	37.8	36.3	37.1
• Paranoia	12.0	9.6	10.7	12.8	10.3	11.6
• Manic-Depressive Disorder	19.5	18.0	18.7	11.5	15.8	13.6
• Major Depression	17.3	17.4	17.3	22.4	27.4	24.8
• Anti-Social Personality Disorder	.8	7.2	4.3	3.2	2.7	3.0
• Alcohol Abuse	15.0	44.9	31.7	7.1	29.5	17.9
• Drug Abuse	9.8	44.3	29.0	3.2	21.2	11.9
• Other	55.6	52.1	53.7	57.7	55.5	56.6

### III. Prevalence of Alcohol, Tobacco, and Other Drug Use by Demographic Background

This section presents prevalence estimates separately by substance and demographics for both outpatients and inpatients receiving services through the Office of Mental Health.

#### A. Alcohol

Detailed alcohol prevalence estimates for inpatients and outpatients are presented in **Table 7**.

##### *Inpatients*

Slightly less than 95 percent of all inpatients reported using alcohol in their lifetimes. Few differences were found across subgroups in terms of lifetime alcohol use.

Just under two-thirds of all inpatients (64.3%) reported using alcohol in the past 18 months, and males were more likely than females to have done so (69.3% vs. 54.5%). In addition, over three-quarters (77.6%) of inpatients age 18–24 indicated past year alcohol consumption, compared to about 65 percent of those age 25–34 and less than 60 percent of those 35 and older.

Among inpatients, 24 percent reported having used alcohol during the past month. No important subgroup differences were detected in past month alcohol use prevalence.

##### *Outpatients*

Most outpatients also reported lifetime alcohol use experiences (93.4%), and 47 percent indicated past year alcohol use. Younger outpatients were more likely to have used alcohol in the past year: 66.7 percent of those age 18–24 and 63.3 percent of inpatients age 25–34 reported past year alcohol use, compared to about 41 percent of those 35 or older. About one in five reported past month consumption of alcohol (21.9%).

**Table 7**  
**Lifetime, Past Year, and Past Month Prevalence of Alcohol Use**  
**Among Respondents by Demographic Characteristics**

	Inpatients			Outpatients		
	Lifetime	Past Year	Past Month	Lifetime	Past Year	Past Month
Total	94.3	64.3	24.0	93.4	47.0	21.9
<b><u>Gender</u></b>		*				
Male	94.5	69.3	26.1	94.2	48.1	22.7
Female	94.1	54.5	19.8	92.6	45.9	20.9
<b><u>Race</u></b>						
White	95.5	63.8	26.6	94.2	46.6	19.4
African American	92.6	67.6	22.1	90.1	45.1	26.8
Hispanic	89.3	75.0	17.9	100.0	71.4	35.7
Other	96.3	48.1	18.5	90.9	36.4	18.2
<b><u>Age</u></b>		*	+		**	+
18–24	91.4	77.6	27.6	88.9	66.7	33.3
25–34	96.1	64.9	14.3	90.0	63.3	30.0
35 and older	94.5	59.1	27.4	94.6	41.1	18.8
<b><u>Education</u></b>						
Less than High School	92.1	64.4	22.8	90.2	50.0	20.7
High School	96.9	70.1	26.8	94.5	40.7	20.9
More than High School	94.1	59.4	22.8	94.9	49.2	23.7
<b><u>Region</u></b>						
+						
Cook County	97.4	69.2	23.9	93.0	43.4	24.0
Other Counties	92.3	61.2	24.0	93.6	49.7	20.2

+ Past 18 months; +  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$  (Chi-Square Test).

## Heavy Drinking

All patients also were asked about the average number of drinks consumed per day on those days when they did drink during the past 18 months. Inpatients reported consuming an average of 4.34 drinks per day; outpatients reported an average of 2.06 drinks per day. For purposes of this report, an average of five or more drinks per day for males and four or more drinks per day for females was defined as “heavy drinking.” Results are presented in **Table 8**.

### Inpatients

Over a third of all inpatients (35.0%) were heavy drinkers. Men were more likely to be heavy drinkers than were women, with about 40 percent of men and 25 percent of women being so classified. Just under half of all Hispanic inpatients interviewed were heavy drinkers (46.4%), compared to 39.5 percent of whites, 25 percent of African Americans, and 18.5 percent of members of “other” racial groups. Inpatients with less education were also more likely to be defined as heavy drinkers. Among those with less than a high school education, 41.6 percent were heavy drinkers, compared to 38.1 percent of high school graduates and 25.7 percent of those with at least some post-secondary education.

### Outpatients

A much smaller proportion of outpatients were classified as heavy drinkers (14.2%). As with inpatients, education was associated with heavy drinking behavior. Over 20 percent of those with a less than high school education were heavy drinkers, compared to about 13 percent of high school graduates and less than 10 percent of those who had continued their education past high school.

**Table 8**  
Percentage of Respondents Defined as Heavy Drinkers During the Past Year by Demographic Characteristics

	Total	Inpatients	Outpatients
<b>Gender</b>		**	
Male		40.2	14.3
Female		24.8	14.2
<b>Race</b>		*	
White		39.5	12.6
African American		25.0	16.9
Hispanic		46.4	28.6
Other		18.5	9.1
<b>Age</b>		+	
18–24		46.6	11.1
25–34		36.4	18.3
35 and older		29.9	13.4
<b>Education</b>		*	*
< High School		41.6	21.7
High School		38.1	13.2
> High School		25.7	9.3
<b>Region</b>			
Cook County		39.3	14.0
Other Counties		32.2	14.5

+  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; (Chi-Square Test).

## B. Tobacco

As reported earlier, tobacco use was considerably elevated among OMH clients relative to the general adult population. In this section, demographic correlates of tobacco use are explored.

### *Inpatients*

As presented in **Table 9**, 78.0 percent of all inpatients reported using tobacco at some point in their lifetimes. Females were less likely than males to have ever used tobacco products (84.9% vs. 64.4%).

Only a slightly lower percentage of inpatients (70%) reported past year usage of tobacco. Again, the prevalence rate was higher for men than women.

Just under 60 percent of all inpatients used tobacco in the thirty days preceding the interview. As with lifetime and past year use, men were more likely to have used this substance in the previous month. However, racial differences in past month tobacco use also were observed. With 65.5 percent reporting tobacco use, whites were most

likely to be recent users, compared to members of “other” racial groups (55.6%), African Americans (52.9%), and Hispanics (39.3%).

### *Outpatients*

Tobacco use prevalence rates for outpatients ranged from 69.2 percent (lifetime use) to 58.3 percent (past month use). Tobacco use was associated with age and education in each prevalence category, with older and less-educated respondents more likely to have used tobacco at some point in their lifetimes, in the preceding year, and in the thirty days prior to being interviewed.

What is most striking about these findings is that clear majorities of all OMH clients are current tobacco users. These estimates are approximately double those found among adults in general (Cho et al., 2000).

**Table 9**  
**Lifetime, Past Year, and Past Month Prevalence of Tobacco Use**  
**Among Respondents by Demographic Characteristics**

		Inpatients			Outpatients		
		Lifetime	Past Year	Past Month	Lifetime	Past Year	Past Month
	<b>Total</b>	78.0	70.0	59.3	69.2	60.6	58.3
<b>Gender</b>		***	*	*			
	Male	84.9	74.4	64.3	70.8	59.7	57.8
	Female	64.4	61.4	49.5	67.6	61.5	58.8
<b>Race</b>				*			
	White	81.4	72.9	65.5	68.9	59.7	57.8
	African American	70.6	64.7	52.9	64.8	59.2	54.9
	Hispanic	71.4	57.1	39.3	85.7	71.4	71.4
	Other	81.5	77.8	55.6	81.8	72.7	72.7
<b>Age</b>					***	**	**
	18–24	79.3	75.9	58.6	38.9	38.9	38.9
	25–34	71.4	62.3	50.6	51.7	46.7	45.0
	35 and older	80.5	71.3	63.4	76.3	66.1	63.4
<b>Education</b>		+			**	**	**
	Less than High School	85.1	73.3	61.4	81.5	72.8	69.6
	High School	75.3	69.1	58.8	70.3	63.7	61.5
	More than High School	73.3	67.3	57.4	58.5	48.3	46.6
<b>Region</b>							
	Cook County	78.6	70.9	55.6	67.4	60.5	58.9
	Other Counties	77.6	69.4	61.7	70.5	60.7	57.8

+  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$  (Chi-Square Test).

## C. Marijuana

The estimated prevalence of marijuana use among inpatients and outpatients, by demographic subgroups, is presented in **Table 10**.

### *Inpatients*

Sixty-eight percent of all inpatients reported having used marijuana in their lifetimes. Lifetime prevalence rates were different for men and women. Over three-quarters of male inpatients reported having ever used marijuana, compared to slightly over half of all female inpatients. The youngest inpatients (age 18–24) were more likely to report lifetime marijuana use (81%) than were those between 25 and 34 (74%) and much more likely than inpatients 35 or older (60.4%). With regard to differences by educational level, prevalence rates were highest for high school graduates (77.3%) and lowest for those receiving some education beyond high school (59.4%).

About one-third of all inpatients (33.0%) indicated they had used marijuana in the previous twelve months. As with lifetime use, males were more likely than females to report past year use (38.7% vs. 21.8%). Further, the age-related pattern for past year marijuana use mirrors that of lifetime use. A higher percentage of inpatients between the ages of 18 and 24 reported using this substance in the

preceding year than did those 25 to 24 and 35 or older (21.9% vs. 7.6% and 5.6%, respectively).

Just over 10 percent of all inpatients used marijuana in the month preceding their interview. Once again, prevalence rates were highest for men (who were over four times more likely to report past month marijuana use: 13.6% vs. 4%) and the youngest inpatients (who were more than twice as likely to have used the drug than the oldest inpatients: 17.2% vs. 7.3%). Those inpatients with more than a high school education were less likely to be currently using marijuana (4%) compared to those with a high school education (13.4%) or less (13.9%).

### *Outpatients*

The prevalence rates for lifetime, past year, and past month marijuana use for outpatients were 61.9 percent, 18.9 percent, and 8.3 percent, respectively. Men were more likely to report having ever used marijuana (68.2% vs. 55.4% of women). Older outpatients were more likely to report lifetime use of marijuana but less likely to report past year and past month use. The youngest outpatients (age 18–24) were most likely to report last year and last month use of marijuana.

**Table 10**  
**Lifetime, Past Year, and Past Month Prevalence of Marijuana Use Among Respondents**  
**by Demographic Characteristics**

	Total	Inpatients			Outpatients		
		Lifetime	Past Year	Past Month	Lifetime	Past Year	Past Month
<b>Gender</b>		68.0 ***	33.0 **	10.3 *	61.9 *	18.9	8.3
Male		75.9	38.7	13.6	68.2	21.4	7.1
Female		52.5	21.8	4.0	55.4	16.2	9.5
<b>Race</b>							
White		66.1	31.6	10.2	62.1	18.9	8.7
African American		73.5	35.3	10.3	60.6	19.7	7.0
Hispanic		57.1	39.3	17.9	64.3	21.4	14.3
Other		77.8	29.6	3.7	63.6	9.1	
<b>Age</b>		**	***	+	**	**	*
18–24		81.0	58.6	17.2	55.6	38.9	22.2
25–34		74.0	33.8	11.7	61.7	30.0	13.3
35 and older		60.4	23.8	7.3	62.5	14.3	5.8
<b>Education</b>		*		*			
< High School		68.3	33.7	13.9	59.8	20.7	6.5
High School		77.3	37.1	13.4	65.9	24.2	12.1
> High School		59.4	28.7	4.0	61.0	13.6	6.8
<b>Region</b>		+	+				
Cook County		74.4	39.3	11.1	65.9	17.1	5.4
Other Counties		63.9	29.0	9.8	59.0	20.2	10.4

+  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$  (Chi-Square Test).

## D. Cocaine

The reported prevalence of cocaine use for inpatients and outpatients is presented in **Table 11**.

### *Inpatients*

Approximately 43 percent of all inpatients reported lifetime experience with cocaine. Male inpatients were almost twice as likely to report both lifetime and past year cocaine use in comparison to their female counterparts. Prevalence rates for lifetime and past year use of this substance were also

greater for inpatients who were residents of Cook County.

### *Outpatients*

Among persons receiving outpatient treatment for mental health, 31.1 percent reported lifetime cocaine use, 7 percent reported past year use, and 1.7 percent reported past month use. Outpatients who were African American were more likely to report having used cocaine in the preceding twelve months (14.1%), compared to Hispanic (7.1%) and white (4.9%) outpatients.

**Table 11**  
**Lifetime, Past Year, and Past Month Prevalence of Cocaine Use**  
**Among Respondents by Demographic Characteristics**

	Inpatients			Outpatients		
	Lifetime	Past Year	Past Month	Lifetime	Past Year	Past Month
<b>Total</b>	43.3 ***	25.3 **	7.0	31.1	7.0	1.7
<b>Gender</b>						
Male	51.3	30.2	8.0	34.4	6.5	1.3
Female	27.7	15.8	5.0	27.7	7.4	2.0
<b>Race</b>		+			*	
White	40.7	22.0	7.3	32.0	4.9	1.5
African American	51.5	35.3	10.3	28.2	14.1	2.8
Hispanic	39.3	32.1	3.6	42.9	7.1	--
Other	44.4	14.8	--	18.2	--	--
<b>Age</b>						
18–24	36.2	29.3	5.2	22.2	11.1	5.6
25–34	51.9	24.7	6.5	33.3	5.0	1.7
35 and older	42.1	24.4	7.9	31.3	7.1	1.3
<b>Education</b>				+		
Less than High School	46.5	25.7	6.9	30.4	8.7	2.2
High School	45.4	29.9	8.2	39.6	8.8	3.3
More than High School	38.6	20.8	5.9	25.4	4.2	--
<b>Region</b>		*	**			
Cook County	52.1	35.0	9.4	34.1	8.5	0.8
Other Counties	37.7	19.1	5.5	28.9	5.8	2.3

+  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$  (Chi-Square Test); -- percentage was too small to report (less than 0.5).

## D. Heroin

The estimated lifetime and past year prevalence of heroin use by inpatients and the lifetime prevalence for outpatients are depicted in **Table 12**. Rates of past year heroin use among outpatients and past month use for both patient groups were too low (i.e., 0.3% or less) to warrant including in tabular form.

### *Inpatients*

Eighteen percent of all inpatients reported lifetime use of heroin. Males were approximately twice as likely to report some heroin involvement (21.1% vs. 11.9% of females).

Almost 5 percent of all inpatients reported using heroin in the previous year.

Younger inpatients (age 18–24) were most likely to report past year use (12.1%) compared to those age 25–34 (1.3%) and those 35 or older (3.7%). Those inpatients who were residents of Cook County were also more likely to report past year heroin use (7.7%) compared to those who resided in other parts of the state (2.7%).

### *Outpatients*

Among outpatients, 11.9 percent indicated some lifetime experience with heroin. Few differences across outpatient subgroups in terms of heroin use were observed.

**Table 12**  
**Lifetime Prevalence of Heroin Use Among Respondents by Demographic Characteristics**

	Inpatients		Outpatients
	Lifetime	Past Year	Lifetime
<b>Total</b>	18.0	4.7	11.9
<b>Gender</b>	*		
Male	21.1	5.0	13.6
Female	11.9	4.0	10.1
<b>Race</b>			
White	17.5	6.2	13.1
African American	17.6	1.5	8.5
Hispanic	17.9	7.1	7.1
Other	22.2		18.2
<b>Age</b>		**	
18–24	27.6	12.1	
25–34	14.3	1.3	10.0
35 and older	16.5	3.7	13.4
<b>Education</b>	+		
< High School	24.8	4.0	14.1
High School	13.4	6.2	11.0
> High School	15.8	4.0	11.0
<b>Region</b>	+	*	+
Cook County	24.8	7.7	15.5
Other Counties	13.7	2.7	9.2

+  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$  (Chi-Square Test).

## F. Hallucinogens

**Table 13** presents lifetime and past year prevalence estimates of hallucinogen use for both inpatient and outpatient populations. Past month use of hallucinogens was one percent or less for each patient group.

### *Inpatients*

Among the inpatients interviewed, just over 30 percent reported using hallucinogens during their lifetimes. Males were more likely to have ever used hallucinogens (35.2%) compared to females (21.8%). Lifetime hallucinogen use also varied by race. Whites were most likely and Hispanics were least likely to have used hallucinogens (37.3% and 17.9%, respectively). About 22 percent of both African Americans and “other” races reported lifetime hallucinogen use. In addition, high school graduates were more likely than both less- and more-educated respondents to report lifetime hallucinogen use (40.2% vs. 28.7% with less and 23.8% with more than a high school degree).

Approximately 9 percent of inpatients reported having used hallucinogens in the preceding twelve months. The youngest inpatients (age 18–24) were much more likely to have used hallucinogens in the past year (24.1% vs. 5.2% of those age 25–34 and 4.9% of inpatients age 35 and older). High school graduates were also more likely to report past year use (14.4%) than were those with more (5%) or less (6.9%) educational attainment.

### *Outpatients*

More than a quarter of all outpatients (26.5%) reported lifetime hallucinogen use. As with inpatients, racial differences were observed. African Americans were much less likely than members of the other racial groups to have ever used hallucinogens (9.9%); the lifetime prevalence rate was highest for Hispanics (35.7%), followed by whites (31.6%) and inpatients in “other” racial categories (27.3%).

Less than 2 percent of all outpatients reported past year hallucinogen use.

**Table 13**  
**Lifetime Prevalence of Hallucinogen Use Among Respondents**  
**by Demographic Characteristics**

	Inpatients		Outpatients	
	Lifetime	Past Year	Lifetime	Past Year
<b>Total</b>	30.7	8.7	26.5	1.7
<b>Gender</b>	*			
Male	35.2	10.6	35.7	1.9
Female	21.8	5.0	16.9	1.4
<b>Race</b>	*		**	
White	37.3	10.2	31.6	1.9
African American	22.1	5.9	9.9	0.0
Hispanic	17.9	7.1	35.7	7.1
Other	22.2	7.4	27.3	0.0
<b>Age</b>		***		
18–24	39.7	24.1	16.7	5.6
25–34	28.6	5.2	25.0	3.3
35 and older	28.7	4.9	27.7	0.9
<b>Education</b>	*	*		
Less than High School	28.7	6.9	23.9	2.2
High School	40.2	14.4	27.5	1.1
More than High School	23.8	5.0	28.0	1.7
<b>Region</b>	+	*		
Cook County	36.8	13.7	29.5	1.6
Other Counties	26.8	5.5	24.3	1.7

+  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$  (Chi-Square Test).

## G. Any Illicit Drugs

In **Table 14**, prevalence estimates for aggregated measures of any use of marijuana, cocaine, heroin, or hallucinogens are presented.

### Inpatients

Approximately 71 percent of all inpatients reported lifetime use of illicit drugs. About 40 percent reported past year use, and just under 15 percent indicated recent (i.e., past month) illicit drug use. Male inpatients were more likely to report lifetime, past year, and past month use, and younger inpatients were more likely to report lifetime and past year use of illicit drugs. Persons with a high school degree were more likely to report lifetime use of illicit drugs compared to those with more or less education. Those

inpatients residing in Cook County were more likely to report lifetime and past year use of illicit drugs.

### Outpatients

Among outpatients, approximately 62 percent reported lifetime illicit drug use. About 22 percent indicated past year use and 9.3 percent reported use during the past month. Male outpatients were more likely than their female counterparts to report lifetime use. Outpatients age 34 or younger were more likely to report past year use, compared to those age 35 and older. Those with a high school degree or less were also more likely to report illicit drug use during the past year.

**Table 14**  
**Lifetime, Past Year, and Past Month Prevalence of Any Illicit Drug Use**  
**Among Respondents by Demographic Characteristics**

	Total	Inpatients			Outpatients		
		Lifetime	Past Year	Past Month	Lifetime	Past Year	Past Month
<b>Gender</b>		70.7 ***	41.3 **	14.7 **	61.9 *	21.5	9.3
Male		79.4	47.7	18.6	68.2	23.4	8.4
Female		53.5	28.7	6.9	55.4	19.6	10.1
<b>Race</b>			+				
White		68.4	37.9	15.3	62.1	20.9	9.7
African American		76.5	52.9	16.2	60.6	25.4	8.5
Hispanic		60.7	46.4	17.9	64.3	21.4	14.3
Other		81.5	29.6	3.7	63.6	9.1	0.0
<b>Age</b>		*	**		*		+
18–24		81.0	62.1	19.0	55.6	38.9	22.2
25–34		76.6	42.9	15.6	61.7	31.7	13.3
35 and older		64.0	33.5	12.8	62.5	17.4	7.1
<b>Education</b>		*			*		
Less than High School		71.3	45.5	18.8	59.8	25.0	7.6
High School		79.4	45.4	16.5	65.9	27.5	14.3
More than High School		62.4	33.7	8.9	61.0	14.4	6.8
<b>Region</b>		*	**				
Cook County		77.8	53.0	16.2	65.9	21.7	6.2
Other Counties		66.1	33.9	13.7	59.0	21.4	11.6

+  $p < 0.1$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$  (Chi-Square Test).

## IV. Conclusions

The high co-occurrence of mental illness and substance abuse is now widely recognized in the United States (Drake et al., 1991), as are the needs for special approaches to the treatment of this highly vulnerable population (Carey, 1996). This survey of substance use patterns and associated treatment needs among persons receiving services through the Illinois Office of Mental Health strongly suggests several relevant conclusions. First, recent patterns of substance use involvement are generally higher among OMH clients, compared to the general adult population. (The only exception to this pattern is recent alcohol consumption, which is lower among mental health patients.) In general, illicit drugs and tobacco were three to four times more likely to be used currently by OMH clients. Second, approximately half of both the inpatients and outpatients currently receiving mental health treatment can be classified as abusers of drugs, alcohol, or both. Third, about half of these individuals report never having received any treatment for substance abuse. Successful treatment of either condition is unlikely to be successful without also aggressively addressing the other.

Several important limitations of the research presented in this report should be acknowledged. Use of drugs and alcohol are commonly under-reported in epidemiologic surveys (Fendrich et al., 1999; Harrison & Hughes, 1997). In addition to general patterns of substance use concealment, persons with mental disabilities pose additional challenges to accurate assessment due to communication difficulties and poor memory (Drake et al., 1996). Indeed, the questionnaire used in

this survey required considerable modification in order to insure that respondents with psychiatric conditions could understand and interpret questions properly. In addition, because some patients were of necessity excluded because of communication and other difficulties, inferences are most likely applicable only to more highly functioning persons receiving mental health treatment. We also acknowledge that standardized questionnaires are an imperfect substitute for clinical judgment in diagnosing substance abuse conditions and determining treatment needs.

An additional limitation was our inability to randomly sample outpatients. As mentioned in the Technical Appendix, the outpatient sample may thus be biased towards more frequent and consistent outpatient service users. The inability to randomly sample all outpatients also precluded any combined analyses of the inpatient and outpatient populations.

Finally, the large number of statistical comparisons presented in this report makes it likely that the analysis has capitalized on chance associations. That is, some of the differences reported as being “statistically significant” may in fact be a consequence of chance associations rather than true group differences. Readers wishing to avoid this possibility might want to consider accepting as reliable only those differences in the statistical tables identified as  $p < 0.001$ .

Recognizing these important limitations, this report nonetheless provides a careful overview of a highly vulnerable population that has serious substance abuse treatment needs.

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## VI. Technical Appendix

### Study Design

This study was designed to obtain prevalence estimates of patterns of substance use and treatment needs among adults currently receiving mental health services through the Illinois Office of Mental Health. Interviews were conducted with clients in 13 mental health facilities throughout the state. Of these, five were inpatient facilities, and eight served outpatients. Sites purposely were selected to represent a broad range of client demographics, types of mental illness, and geographic locations. For example, some sites were urban, some were rural, some served predominantly African-American clients, and some included both civic and forensic (i.e., not guilty by reason of insanity) cases. As such, the sample of mental health treatment sites cannot be considered a random sample.

Within each facility, attempts were made to obtain a random sample of patients. The structure and cooperation varied considerably across the facilities sampled, and this sometimes impeded sampling efforts. Within the five inpatient sites, respondents were randomly sampled from lists of all hospitalized patients. Patients were classified as ineligible to participate if they had been in residence at the facility for more than 12 months, did not speak English or Spanish, were classified by either hospital or SRL staff as hostile or dangerous, or they could not provide written consent (complete eligibility criteria for both inpatients and outpatients are presented in **Table A-1**).

Within outpatient facilities, sampling was more varied and complex, as patients were not residents and did not necessarily visit the clinics on a regular basis. It was necessary to negotiate access and sampling procedures individually at each facility. In several instances compromises were necessary that required deviations from strict random sampling. Details of the sampling procedures employed within each facility can be found in SRL's *Sample Design and Disposition Report* (Owens, 2000).

These sampling difficulties suggest two important sources of error in this study. First, because nonrandom sampling methods were sometimes used, it is not possible to adjust for differences in probability of selection. As a consequence, the sample may be biased towards more frequent and consistent service users. Second, because some patients had to be excluded from the study because of practical considerations such as inability to communicate, severe mental illness, and/or violence, inferences drawn are likely only applicable to the more highly functioning persons receiving treatment.

### Data Collection

Two pretests of the survey's instrument and procedures were conducted in the fall of 1998 and the spring of 1999. Based upon the first pretest, the survey questionnaire was revised considerably to simplify the cognitive burden placed on respondents.

Interviewing for the main survey began June 16, 1999, and was interrupted from August 27, 1999, to February 22, 2000, due to a restriction on human subjects research that was placed on the University of Illinois at Chicago by the federal government's Office of Protection from Research Risks. Interviewing was completed on August 1, 2000. This study was initially approved by the University of Illinois at Chicago Institutional Review Board (IRB#H-98-111) prior to the start of data collection. It was re-reviewed, along with all other active research protocols at the University, and re-approved subsequent to the imposition of the research restriction. In addition, the study's protocol was reviewed and approved by Institutional Review Boards at three of the facilities that participated in this study.

A \$10.00 incentive for completing an interview was given to each respondent. Interviews were conducted in English and Spanish. Interviews averaged between 30–45 minutes in length. All respondents provided written consent to be interviewed and to give researchers access to medical record

information regarding patient diagnoses and treatment history.

A total of 602 interviews were completed with adults currently receiving inpatient or outpatient treatment in Illinois. The overall response rate for the survey was 76.6 percent (see **Table A-2**). The cooperation rate was 82.6 percent, and the refusal rate was 15.8 percent.

Four of five sampled patients who agreed to be screened were classified as eligible to be interviewed (eligibility rate = 82.2%). Reasons for ineligibility among inpatients vs. outpatients are presented in **Table A-1**.

### Analyses

Because the sample is not strictly random, statistical weighting was not deemed appropriate. Consequently, only unweighted analyses are presented. In addition, all analyses are presented separately for inpatients vs. outpatients because insufficient information is available to apply post-stratification weights to the sample. Missing data were imputed using a hot-decking imputation procedure (Solas, 2000).

**Table A-1**  
**Eligibility Criteria for Survey Participation**

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#### Inpatients

1. Age 18 or older.
2. Able to speak and communicate clearly.
3. Has been evaluated and stabilized (admitted at least 24 hours).
4. Was not involuntarily hospitalized.
5. Current diagnosis of mental illness.
6. No indication of violent behavior (as evaluated by hospital/clinic staff).
7. No indication that the interview will be extremely stressful to the patient (as evaluated by hospital/clinic staff).
8. Patient is competent to sign consent form and release of information (as evaluated by hospital/clinic staff).
9. Current hospitalization has been less than 12 months.

#### Outpatients

1. Age 18 or older.
  2. Able to speak and communicate clearly.
  3. Current diagnosis of mental illness.
  4. No indication of violent behavior (as evaluated by hospital/clinic staff).
  5. No indication that the interview will be extremely stressful to the patient (as evaluated by hospital/clinic staff).
  6. Patient is competent to sign consent form and release of information (as evaluated by hospital/clinic staff).
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**Table A-2**  
**Survey Response and Cooperation Rates**  
**of Adult Mental Health Patients: Total**  
**Sample**

	<b>N</b>	<b>%</b>
<b>Total Sample</b>	<b>959</b>	
Nonduplicates	956	99.7
Cooperation to Screener	950	99.4
<b>Eligible Cases</b>	<b>781</b>	<b>82.2</b>
Contacted	726	93.0
Interview Completed	602	82.9
<b>Response Rate</b>		<b>76.6</b>
<b>Cooperation Rate</b>		<b>82.6</b>
<b>Refusal Rate</b>		<b>15.8</b>

Using standard procedures recommended by the American Association for Public Opinion Research (AAPOR, 1998), response, cooperation, and refusal rates were calculated as follows:

- **Response rate:** proportion of eligible respondents (i.e., known eligible respondents + cases with unknown eligibility estimated to be eligible) who completed the interview  $[(602/781+5)*100= 76.6\%]$ . Cases with unknown eligibility were estimated to be eligible to the same degree as those cases in which eligibility could be determined. Thus, it was estimated that 82.2 percent of the 6 sampled persons (i.e., 5 persons) who did not complete a screener would have been eligible in addition to the 781 known to be eligible.
- **Cooperation rate:** number of completed interviews divided by the sum of the completed interviews and refusals  $[(602/602+124)*100=82.9\%]$ .
- **Refusal rate:** number of refusals divided by the total eligible sample  $[(124/781+5)*100=15.8\%]$ .