

Prevalence and Cost Estimates of Psychiatric and Substance Use Disorders and Mental Retardation and Developmental Disabilities in NYC



New York City Department of Health and Mental Hygiene



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**Derived from National Best Estimate Studies and New York City and State Data
August 2003**

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Executive Summary

Mental Health: A Report of the Surgeon General (1999) made a powerful argument for the use of a population-based public health model for quality mental health service delivery. With the Surgeon General's Report as a guide, the New York City Department of Health and Mental Hygiene (NYC DOHMH) has created this document of population-based prevalence and cost estimates to help us better understand and meet the mental hygiene needs of the City.

Few community studies of the prevalence and cost of mental hygiene disorders have been conducted in NYC. Therefore, many of the estimates contained in this document are derived from applying the "best estimates" reported in the Surgeon General's Report to the 2000 NYC census figures. In addition to these nationally derived estimates for NYC, this document includes NYC-specific prevalence, cost and utilization data where available. Because methodologies, definitions of disorder and types of reported cost differ across studies, comparisons of estimates from one study to the next should be made with caution.

We have organized the data in this document by disability area where appropriate, and, consistent with the Surgeon General's Report, the data are presented separately for each of three population groups: youth, adults, and older adults.

Summary Charts of the data, which appear in greater detail in the document, are presented on the following pages.

We are hopeful that this report will advance all our thinking about how best to meet the mental hygiene needs of the residents of New York City.

Summary Chart 1.

Estimates of Disorder in NYC Based on Findings from National Studies

Source/ Reference	Type of Disorder/Disability	Population	Estimated Rate (%)	Estimated Number of Persons Affected
Shaffer, et. al. (1996)	Any Psychiatric Disorder (Including Substance Disorders)	Ages 9-17	20.9	199,000
	Any Substance Use Disorder		2.0	19,000
Surgeon General's Report (1999)	Any Psychiatric Disorder (Not Including Substance Disorders)	Ages 18-54	21.0	934,000
		Age 55 and Older	19.8	321,000
Narrow, et. al. (2002)	Any Substance Use Disorder	Ages 18-54	11.5	511,000
		Age 55 and Older	2.8	45,000
Kessler, et. al. (1996)	Co-occurring Psychiatric and Substance Use Disorders (MICA)	Ages 15-54	3.5	166,000
Larson, et. al. (2001)	Mental Retardation/ Developmental Disabilities	Ages 0-5	3.8	25,000
		Ages 6-17	3.2	41,000
		Age 18 and Older	.8	48,000

Summary Chart 2.

Estimates of Disorder in NYC Based on New York City and State Sources

Source/ Reference	Type of Problem/Disorder	Population	Estimated Rate (% unless stated otherwise)	Estimated Number of Persons Affected
NYS OASAS School Study (1998)	"Heavier" Substance Use	7th–12th Graders	21	129,000
NYC CDC Youth Risk Behavior Study (2001)	Attempted Suicide (1 or More Attempts)	9th–12th Graders	7.8	21,000
NYC DOHMH Community Health Survey (2002)	Serious Mental Illness	Age 18 and Older	6.4	381,000
	Heavy Alcohol Use		4.8	280,000
	Co-occurring Serious Mental Illness and Heavy Alcohol Use		.3	17,000
NYC DOHMH Vital Statistics (2001)	Completed Suicide	Ages 10-19	1.7/100,000	18
		Age 20 and Older	6.7/100,000	390
NYC DOHMH Vital Statistics (2001)	Deaths Due to Psychoactive Substances (Not Including Alcohol or Tobacco)	Ages 15-19	1.9/100,000	10
		Age 20 and Older	13.4/100,000	783
Schultz, et. al. (1995) English, et.al. (1999) NYC DOHMH Vital Statistics (2001)	Alcohol-Related Deaths	All Ages	—	1,574

**Summary Chart 3.
Utilization of Psychiatric and Substance Use Services in NYC**

Source/ Reference	Type of Disorder	Type of Service	Population	Number of Admissions (A), Discharges (D) or Persons Served (PS)
NYSOMH Patient Characteristics Survey (One Week, 1999)	Any Psychiatric Disorder	Any State-Operated or Local Mental Health Facility	Ages 9-17	10,595 PS
			Ages 18-54	44,509 PS
			Age 55 and Older	17,772 PS
NYS DOH SPARCS (2001)	Any Psychiatric or Substance Use Disorder	Any Acute Care Hospital	Ages 9-17	3,312 D
			Ages 18-54	93,874 D
			Age 55 and Older	14,893 D
NYS OASAS (2000)	Any Substance Use Disorder	Any ASA Treatment Facility	Age 17 and Younger	3,760 A
			Ages 18-54	123,410 A
			Age 55 and Older	6,983 A

**Summary Chart 4.
Estimates of Cost of Treatment and Support of Individuals in NYC with Mental
Hygiene Disorders and Disabilities Based on Findings from National Studies**

Source/Reference	Type of Disorder/Disability	Population	Estimated Cost (2002 Dollars)
Rice and Miller (1990)	Psychiatric and Substance Use Disorder	Ages 0-17	\$400 million in Direct Costs \$ 1.2 billion in Total Costs
		Age 18 and Older	\$ 1.5 billion in Direct Costs \$13.1 billion in Total Costs
Larson, et. al. (2001) Braddock, et. al. (2002)	Mental Retardation/Developmental Disabilities	All Ages	\$1.5 billion in Direct Costs \$ 597 million in Out-Of-Pocket Family Expenses

**Summary Chart 5.
Expenditures on Services in NYC Based on NYC and State Sources**

Source/Reference	Type of Disorder/Disability	Type of Expenditure	Cost
NYSOMH (2000)	Psychiatric Disorders	Total of Local and State Expenditures	\$2.2 billion
NYS OASAS (2003)	Substance Use Disorders	Medicaid Expenditures	\$546 million
NYS OMRDD (2003)	Mental Retardation/Developmental Disabilities	2003 Budget	\$990 million

Mental Illness, Substance Use, Mental Retardation and Developmental Disabilities: Estimating Prevalence and Cost in NYC

Joining the Nation & State in Epidemiologically-Based Mental Hygiene Services Research

Mental Health: A Report of the Surgeon General (1999) made a powerful argument for the use of a population-based public health model for mental health service delivery. Since its publication, a trend has emerged in services research toward using prevalence estimates of mental hygiene disorders to determine service penetration and utilization; to assess and improve access to care; to formulate prevention strategies; and to identify and promote best practices. For example, SAMHSA's proposed Performance Partnership Grant (PPG) program, designed to replace the Community Mental Health Services Block Grant to state governments, would require states to report their estimated population of seriously mentally ill individuals. The intention of the PPG program is to support a data-driven, outcome-based service system utilizing a continuous quality improvement methodology.

The merger of the Department of Mental Health, Mental Retardation & Alcoholism Services with the Department of Health on July 1, 2002, to create the Department of Health & Mental Hygiene (DOHMH) provides an opportunity to develop a broader public health framework in the pursuit of quality mental hygiene services in New York City. This document, building on the 1999 Surgeon General's Report, is an early step in the newly merged Department's efforts to develop reliable prevalence and cost estimates for mental hygiene. Once developed, these estimates will enable DOHMH to work with providers and federal and state agencies to more accurately assess the quality, effectiveness and reach of mental hygiene services.

Available Mental Hygiene Data

Few population-based studies of the prevalence and cost of mental hygiene disorders have been conducted in New York City. Therefore, many of the estimates for New York City contained in this document are derived from the "best estimates" reported in the Surgeon General's Report. These "best estimates," obtained from large national studies, are applied to New York City's population figures from the 2000 U.S. census. Because these estimates are not specific to New York City, they do not take into account its unique socio-demographic characteristics, some of which (e.g., relatively high rates of poverty, homelessness, and immigration) are associated with higher rates of disorder and higher costs. In addition to these nationally-derived estimates for New York City, this document includes NYC-specific prevalence, cost and utilization data where available. Because methodologies, definitions of disorder and types of reported cost differ across studies, comparisons of estimates from one study to the next should be made with caution.

Data in this document are grouped by disability area where appropriate and, consistent with the Surgeon General's Report, are presented separately for each of three population groups: youth, adults, and older adults.

Meeting the Data Needs of NYC

The creation of the Department of Health and Mental Hygiene has enabled collaborative work between its divisions of Mental Hygiene and Epidemiology. This increased collaboration has already provided NYC-specific data, including prevalence data on mental health and substance use, which are among the most difficult to obtain. Data from the first NYC Community Health Survey are included in this report. We expect that future surveys will yield important information that New York City can use for the planning and evaluation of mental hygiene services.

This report focuses primarily on pre-9/11 estimates of prevalence and cost. However, studies of New Yorkers since 9/11 indicate that the mental health impact of that disaster was significant. Findings from post-9/11 studies will be included in future reports.

Section 1

Prevalence of Psychiatric, Substance Use, and Co-occurring Disorders among Youth

Prevalence Estimates from National Studies

Shaffer, et. al., (1996) found that in the course of six months about 1 in 5 youth ages 9-17 experiences a psychiatric or substance use disorder with accompanying impairment. Applying this estimate to the NYC population, DOHMH estimates that in a similar time period about 199,000 young New Yorkers may be affected.

Table 1.1. Estimated Six-Month Prevalence of Psychiatric and Substance Use Disorders in NYC Youth, Ages 9–17, 2000.

Type of Disorder	Estimated Prevalence Rate (%)	Estimated Affected Population
Any Disorder	20.9	199,000
Any Anxiety Disorder	13.0	124,000
Simple Phobia	2.6	25,000
Social Phobia	5.4	51,000
Agoraphobia	3.3	31,000
Separation Anxiety	3.9	37,000
Overanxious	5.7	54,000
Any Depression	6.2	59,000
Major Depression	4.9	47,000
Any Disruptive Behavior Disorder	10.3	98,000
ADHD	4.1	39,000
Oppositional Defiant	6.2	59,000
Conduct Disorder	3.7	35,000
Any Substance Use Disorder	2.0	19,000

Source: Shaffer, D., Fisher, P., Dulcan, M.K., Davies, M., Piacentini, J., Schwab-Stone, M.E., Lahey, B.B., Bourdon, K., Jensen, P.S., Bird, H.R., Canino, G., and Regier, D.A. (1996). The NIMH Diagnostic Interview Schedule for Children Version 2.3 (DISC-2.3): Description, acceptability, prevalence rates, and performance in the MECA Study. *Methods for the Epidemiology of Child and Adolescent Mental Disorders Study*. *Journal of the American Academy of Child and Adolescent Psychiatry*, 25, 865-877.

Notes:

1. Studies of children younger than age 9 are limited and inadequate for estimating prevalence.
2. Estimates of the affected population are based on 2000 U.S. Census data for NYC. The 2000 census estimate of the NYC population ages 9-17 is 952,532.
3. Borough estimates of the population ages 9-17 with "Any Disorder" are: Bronx, 40,000; Brooklyn, 69,000; Manhattan, 26,000; Queens, 52,000; Staten Island, 12,000.
4. Individuals may have more than one disorder; therefore, the sum of the estimates of affected populations within subgroups may exceed the totals.
5. Kandel and colleagues studied a subgroup of the Shaffer, et. al. sample population and found that among substance abusing teens, ages 14 - 17, there was a high prevalence of psychiatric disorder. Among the 24 substance abusing subjects in Kandel et al.'s subpopulation of 401 teens, 76% had an anxiety, mood, disruptive behavior or antisocial personality disorder: 20% with an anxiety disorder; 32% with a mood disorder; and, 68% with a disruptive behavior or antisocial personality disorder. Applying this study's findings to the NYC population ages 14-17, DOHMH estimates that approximately 25,000 NYC youth in this age category have a substance use disorder and of them 19,000 experience a co-occurring psychiatric disorder. However, because Kandel et. al.'s subgroup of substance abusing teens is very small, estimates of prevalence and affected populations derived from this study should be regarded with caution. (Reference: Kandel, D.B., Johnson, J.G., Bird, H.R., Weissman, M.M., Goodman, S.H., Lahey, B.B., Regier, D.A., and Schwab-Stone, M.E. (1999). Psychiatric comorbidity among adolescents with substance use disorders: Findings from the MECA study. *Journal of the American Academy of Child and Adolescent Psychiatry*, 38 (6), 693-699).

YOUTH

Prevalence Estimates from New York City and State Sources

The 1998 New York State OASAS School Survey, which included 11,035 NYC public and private school 7th–12th graders, found that 21% of them were “heavier” users of alcohol or drugs. Applying these estimates to the NYC population, DOHMH estimates that about 129,000 NYC 7th–12th grade students may be affected annually.

Table 1.2. New York State OASAS School Survey: Estimated One-Year Prevalence of NYC 7th–12th Grade Students with “Heavier” Alcohol or Drug Use, 2000.

Type of Disorder	Estimated Prevalence Rate (%)	Estimated Affected Population
Any Heavier Alcohol or Drug Use	21	129,000
Heavier Alcohol and Heavier Drug Users	7	43,000
Heavier Alcohol and Lighter Drug Users	5	31,000
Heavier Drug and Lighter Alcohol Users	6	37,000
Heavier Alcohol-Only Users	2	12,000
Heavier Drug-Only Users	1	6,000

References: NYS OASAS 2003 County Resource Book, Volume 1, and OASAS School Survey: Alcohol and drug use among 5th–12th grade students, 1998, New York City Report, prepared by OASAS, Bureau of Applied Statistics.

Notes:

1. “Heavier Drug Use” is defined as 3 or more illicit substances or psychoactive prescription drugs taken nonmedically in the past 6 months; “Heavier Alcohol Use” is defined as at least 2–4 alcoholic drinks consumed weekly. Any use less than “Heavier” is defined as “Lighter.”
2. Estimates of the affected population were calculated by DOHMH based on the population estimate of the number of 7th–12th graders in 2000 reported in the 2003 County Resource Book and the 1998 prevalence estimates of alcohol and drug consumption reported in the OASAS School Survey. No correction was made for differences in prevalence and population estimates across grades.

The New York City DOHMH Office of Vital Statistics reports that in 2001, 18 NYC youths ages 10–19, or approximately 1.7 per 100,000 NYC youths in this age category, committed suicide in NYC. No suicides of children 9 and younger were reported. In 2001, the Centers for Disease Control and Prevention (CDC)–sponsored Youth Risk Behavior Survey (YRBS) found that 7.8% of NYC high school students, approximately 14 to 18 years old, reported having attempted suicide in the 12 months prior to the survey.

Table 1.3. Estimated One-Year Prevalence of Suicidal Ideation or Attempts by NYC High School Students, 2001.

Suicidal Ideation or Attempts in Past 12 Months	Estimated Prevalence Rate (%)	Estimated Affected Population
Attempted Suicide (one or more times)	7.8	21,000
Attempted Suicide Required Medical Attention	1.7	5,000
Made a Suicide Plan	10.6	28,000
Seriously Considered Suicide	15.0	40,000

Source: NYC DOHMH preliminary findings from the NYC CDC Youth Risk Behavior Study (YRBS), 2001.

YOUTH

The New York City DOHMH Office of Vital Statistics reported that in 2001, 10 NYC youth ages 15–9, or approximately 1.9 per 100,000 NYC youths in this age category, died in NYC due to the use of or accidental poisoning by psychoactive substances (excluding alcohol and tobacco). No deaths from psychoactive substances were reported for youths age 14 and younger.

Table 1.4. Deaths of NYC Youths, Ages 15–19, Due to Psychoactive Substances, 2001.

Number of Deaths	Estimated Rate per 100,000
10	1.9

Source: NYC DOHMH Office of Vital Statistics. Note: Any deaths of NYC youth outside NYC are not included.

Utilization Data from New York City and State Sources

The New York State Office of Mental Health reports that during its survey week in the Fall of 1999, 10,595 youth, ages 9–17, or approximately 1% of the total NYC population in this age category, were served in NYC mental health facilities. One hundred sixty three of these youths had co-occurring psychiatric and substance use disorders (MICA), and 6733 were identified as seriously emotionally disturbed (SED).

Table 1.5. Number of NYC Youth, Ages 9–17, Served in NYC Mental Health Facilities during a Survey Week by Primary Diagnosis and MICA Status, November 1999.

Primary Diagnosis	Number Served
All Psychiatric Diagnoses	10,595
Schizophrenia & Related Disorders	201
Schizophrenia	109
Affective Disorders	1,771
Major Depression	737
Other Psychotic Disorders	302
Non-Psychotic Psychiatric Disorder	7,502
Anxiety Disorders	771
Attention Deficit Disorder	2,786
Conduct Disorder	1,784
Adjustment Disorder	1,650
Organic Mental Disorders	14
Other/ Unknown Disorders	805
Seriously Emotionally Disturbed (SED)	6,733
Mentally Ill Chemical Abusers (MICA)	163

Source: NYS Office of Mental Health Patient Characteristics Survey, 1999. For more detailed results, see www.omh.state.ny.gov.

Notes:

1. The survey includes all state operated and local programs; does not include private clinicians and programs operated by the U.S. Veterans Administration.
2. The 2000 U.S. Census estimate of the NYC population, ages 9–17, is 952,532.
3. The total number of youth ages 9–17 served from each of the boroughs is: Bronx, 2,423; Brooklyn, 3,182; Manhattan, 2,064; Queens, 2,443; Staten Island, 483.
4. "Other/Unknown Disorders" may include some nonpsychiatric diagnoses. Clients with a primary diagnosis of MR/DD or Substance Abuse are not included in this table.
5. For almost one third of the 10,595 clients, SED status was unknown.

YOUTH

Analyses of the NY Statewide Planning and Research Cooperative System (SPARCS) data, collected statewide for all Article 28 inpatient hospital facilities, indicate that in 2001 there were 3,312 discharges from acute care hospitals of NYC youth whose primary diagnoses were psychiatric or substance use disorder. Five hundred twelve of these discharges were of youths who were diagnosed as mentally ill with a co-occurring substance use disorder (MICA).

Table 1.6. Number of Discharges from Acute Care Hospitals of NYC Youth, Ages 9–17, with a Primary Diagnosis of Psychiatric or Substance Use Disorder, 2001.

Primary Diagnosis	Number of Discharges
Any Psychiatric or Substance Use Disorder	3,312
Schizophrenia & Related Disorders	162
Schizophrenia	87
Affective Disorders	923
Major Depression	592
Other Psychotic Disorders	297
Non Psychotic Psychiatric Disorder	1,734
Anxiety Disorders	90
Organic Mental Disorders	77
Drug Use Disorder	48
Alcohol Use Disorder	38
Alcohol-Related Organic Mental Disorders	33
Mentally Ill Chemical Abusers (MICA)	512

Source: NYS Department of Health SPARCS, 2001. Note: Some patients may have multiple hospitalizations and, therefore, multiple discharges.

In 2000, there were 3,760 admissions of NYC youth age 17 and younger to New York State ASA (alcohol and substance abuse) treatment facilities.

Table 1.7. Number of Admissions of NYC Youth, Age 17 and Younger, to ASA Treatment Facilities in New York State, 2000.

Number of Admissions	3,760
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Source: NYS Office of Alcoholism and Substance Abuse Services, 2003 Resource Book, Vol. 1.

Notes:

1. Some patients may have had multiple admissions.
2. The number of admissions is calculated from the total number of admissions for all ages and the percent of admissions of youths, age 17 and younger, reported in the Resource Book.

Section 2

Prevalence of Psychiatric, Substance Use, and Co-occurring Disorders among Adults and Older Adults

Prevalence Estimates from National Studies

The Surgeon General's report (1999) estimates that in the course of one year about 1 in 5 adults, age 18 and older, experiences a psychiatric disorder. Applying this estimate to the NYC population, DOHMH estimates that approximately 934,000 New Yorkers ages 18-54 and 321,000 New Yorkers age 55 and older are affected annually.

Table 2.1. Estimated One-Year Prevalence of Psychiatric Disorders in NYC Adults, 2000.

Type of Disorder	AGES 18-54		AGES 55+	
	Estimated Annual Prevalence (%)	Estimated Affected Population	Estimated Annual Prevalence (%)	Estimated Affected Population
Any Disorder	21.0	934,000	19.8	321,000
Any Anxiety Disorder	16.4	729,000	11.4	185,000
Simple Phobia	8.3	370,000	7.3	120,000
Social Phobia	2.0	89,000	1.0	16,000
Agoraphobia	4.9	220,000	4.1	66,000
Generalized Anxiety Disorder	3.4	150,000	n/a	n/a
Panic Disorder	1.6	71,000	0.5	8,000
Obsessive-Compulsive Disorder	2.4	110,000	1.5	24,000
Posttraumatic Stress Disorder	3.6	160,000	n/a	n/a
Any Mood Disorder	7.1	320,000	4.4	71,000
Major Depressive Episode	6.5	290,000	3.8	62,000
Unipolar Major Depression	5.3	240,000	3.7	60,000
Dysthymia (chronic depressed mood)	1.6	71,000	1.6	26,000
Bipolar I (min. of 1 manic episode)	1.1	49,000	0.2	3,000
Bipolar II (min. of 1 depressed, 1 hypomanic ep.)	0.6	30,000	0.1	2,000
Schizophrenia	1.3	58,000	0.6	10,000
Non-affective Psychosis	0.2	9,000	n/a	n/a
Somatization	0.2	9,000	0.3	5,000
Antisocial Personality Disorder	2.1	93,000	0.0	0
Anorexia Nervosa	0.1	4,000	0.0	0
Severe Cognitive impairment	1.2	53,000	6.6	110,000

Reference: U.S. Department of Health and Human Services (1999). Mental health: A report of the Surgeon General. Rockville, MD: U.S. Department of Health and Human Services. Substance Abuse and Mental Health Services Administration. Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health.

Notes:

1. Rates do not include homeless or institutionalized adults.
2. Estimates of the affected populations are based on 2000 Census data for NYC. The 2000 census estimate of the NYC population ages 18-54 is 4,446,698; the estimate of the population age 55 and older is 1,621,311.
3. Borough estimates of the population ages 18-54 with "Any Disorder" are: Bronx, 147,000; Brooklyn, 277,000; Manhattan, 200,000; Queens, 260,000; Staten Island, 50,000. Borough estimates of the population age 55 and older with "Any Disorder" are: Bronx, 47,000; Brooklyn, 96,000; Manhattan, 65,000; Queens, 95,000; Staten Island, 18,000.
4. Those who experience a major depressive episode are likely also to be included in one of the other mood disorder categories.

ADULTS AND OLDER ADULTS

Narrow, et. al., (2002) estimate that in the course of one year about 1 in 9 adults ages 18-54 and about 1 in 40 adults age 55 and older have a substance use disorder. Applying these estimates to the NYC population, DOHMH estimates that approximately 511,000 New Yorkers ages 18-54 and approximately 45,000 New Yorkers age 55 and older experience a substance use disorder annually.

Table 2.2. Estimated One-Year Prevalence of Substance Use Disorders in NYC Adults, 2000.

Type of Disorder	AGES 18-54		AGES 55+	
	Estimated Annual Prevalence (%)	Estimated Affected Population	Estimated Annual Prevalence (%)	Estimated Affected Population
Any Substance Use Disorder	11.5	511,000	2.8	45,000
Alcohol Use Disorder	9.1	400,000	2.8	45,000
Drug Use Disorder	3.6	160,000	0.1	2,000

Reference: Narrow, W.E., Rae, D.S., Robins, L.N., and Regier, D.A. (2002). Revised prevalence of mental disorders in the United States: Using a clinical significance criterion to reconcile two surveys' estimates. *Archives of General Psychiatry*, 59, 115-123.

Notes:

1. Rates do not include homeless or institutionalized adults.
2. Estimates of the affected populations are based on 2000 census data for NYC. The 2000 census estimate of the NYC population ages 18-54 is 4,446,698; the estimate of the population age 55 and older is 1,621,311.
3. Disorders reported in the above table are consistent with DSM diagnoses of alcohol or drug disorders; they include both abuse and dependence.
4. Borough estimates of the population ages 18-54 with "Any Substance Use Disorder" are: Bronx, 80,000; Brooklyn, 152,000; Manhattan, 109,000; Queens, 143,000; Staten Island, 27,000. Borough estimates of the population age 55 and older with "Any Substance Use Disorder" are: Bronx, 7,000; Brooklyn, 14,000; Manhattan, 9,000; Queens, 13,000; Staten Island, 3,000.

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Kessler, et. al., (1996) estimate that in the course of one year almost half of the population between the ages of 15 and 54 who have a substance use disorder also have an anxiety or mood disorder and, conversely, about 1 in 7 of those with any anxiety or mood disorder also has a substance use disorder. Applying these prevalence figures to the NYC population, DOHMH estimates that approximately 166,000 NYC adults and older adolescents have a co-occurring psychiatric and substance use disorder annually.

Table 2.3. Estimated One-Year Prevalence of Co-occurring Psychiatric and Substance Use Disorders in NYC Residents, Ages 15-54, 2000.

Type of Psychiatric Disorder	Percent of Population with Psychiatric Disorder with Co-occurring Substance Use Disorder	Percent of Population with Substance Use Disorder with Co-occurring Psychiatric Disorder	Estimated Affected Population
Any One or More Mental Disorders	14.7	42.7	166,000
Any Anxiety Disorder	15.2	35.6	139,000
Simple Phobia	13.5	14.5	57,000
Social Phobia	17.4	16.6	65,000
Agoraphobia	17.7	8.4	33,000
Generalized Anxiety Disorder	21.0	8.1	32,000
Panic Disorder	16.0	4.5	18,000
Posttraumatic Stress	17.7	8.3	32,000
Any Mood Disorder	18.3	24.5	96,000
Major Depressive Episode	18.4	22.9	89,000
Dysthymia	18.8	2.4	9,000
Mania	37.1	1.7	7,000

Reference: Kessler, R.C., Nelson, C.B., McGonagle, K.A., Edlund, M.J., Frank, R.G., and Leaf, P.J. (1996). The epidemiology of co-occurring addictive and mental disorders: Implication for prevention and service utilization. *American Journal of Orthopsychiatry*, 66 (1), 17-31.

Notes:

1. Rates do not include homeless or institutionalized adults.
2. Estimates of affected populations are based on 2000 U.S. census data for NYC. The 2000 census estimate of the NYC population ages 15-54 is 4,754,158.
3. Borough estimates of the population ages 15-54 with "Any One or More Mental Disorders" and a co-occurring substance use disorder are: Bronx, 27,000; Brooklyn, 50,000; Manhattan, 35,000; Queens, 46,000; Staten Island, 9,000.
4. Regier et. al. report that 47% of individuals, age 18 and older, with a lifetime diagnosis of schizophrenia or schizophreniform disorder meet the criteria for some form of substance use dependence: 33% meet criteria for an alcohol disorder and 27.5% for another drug disorder. (Reference: Regier, D.A., Farmer, M.E., Rae, D.S. Locke, B.Z., Keith S.J. Judd, L. and Goodwin, F.K. (1990) Comorbidity of mental disorders with alcohol and other drug abuse: Results from the Epidemiological Catchment Area (ECA) Study. *Journal of the American Medical Association*, 264 (10), 2511-2518.)
5. A SAMHSA study found that almost 1 in 20 adults age 50 and older suffered from a serious mental illness (SMI), and, of that population, about 1 in 5 used illicit drugs within the year prior to the study. In other words, almost 1 in 100 adults, or 20,000 older New Yorkers, may suffer from SMI and use illicit drugs. (Reference: Substance Abuse and Mental Health Services Administration (2002). Percentage of persons aged 18 or older with past year Serious Mental Illness, by past year any illicit drug use and demographic characteristics: 2001. Office of Applied Studies, National Household Survey on Drug Abuse). Available: www.samhsa.gov/oa/NHSDA/2k1NHSDA/vol12/appendix6.htm

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Prevalence Estimates from New York City and State Sources

The 2002 New York City Community Health Survey of 10,000 New York City residents found that 6.4% of adults, age 18 and older, reported distress consistent with serious mental illness (SMI). Applying this estimate to the NYC population, DOHMH estimates that approximately 381,000 adult New Yorkers have SMI, and almost 5 percent of them, or approximately 17,000, drink heavily. The survey also found that among all NYC adults the rate of heavy or chronic binge drinking was over 4%.

Table 2.4. Estimated Prevalence of Serious Mental Illness (SMI) in NYC Adults, Age 18 and Older, 2002.

Age Group	Estimated Prevalence Rate (%)	Estimated Affected Population
All Adults	6.4	381,000
18-54	6.4	260,000
55+	7.4	112,000

Source: NYC DOHMH Community Health Survey, 2002. For full survey details, see www.nyc.gov/health/survey.

Notes:

1. Persons with SMI experience distress consistent with a DSM diagnosis and substantial impairment in functioning. Participants were asked about the 30 days prior to the survey. For a further discussion of SMI and the instrument used to measure it in the DOHMH Community Health Survey, see Kessler, R.C., Andrews, G., Colpe, L.J., Hiripi, E., Mroczek, D.K., Normand, S-L.T., Walters, E.E., and Zaslavsky, A.M. (2002). Short screening scales to monitor population prevalence and trends in non-specific psychological distress. *Psychological Medicine*, 32, 959-976.
2. Estimates of the affected populations are based on 2000 U.S. census data for NYC.
3. The total of all affected adults includes adults whose ages are unknown.

Table 2.5. Estimated Prevalence of Heavy Alcohol Consumption and Chronic Binge Drinking in NYC Adults, Age 18 and Older, 2002.

Age Group	HEAVY ALCOHOL USE		CHRONIC BINGE DRINKING	
	Estimated Prevalence Rate (%)	Estimated Affected Population	Estimated Prevalence Rate (%)	Estimated Affected Population
All Adults	4.8	280,000	4.3	256,000
18-54	5.3	226,000	5.0	215,000
55+	3.4	50,000	2.4	35,000

Source: NYC DOHMH Community Health Survey, 2002. For full survey details, see www.nyc.gov/health/survey.

Notes:

1. "Heavy Alcohol Use" is defined for women as more than 30 drinks in the past 30 days, and for men as more than 60 drinks in the past 30 days. (This is the CDC's definition of "heavy alcohol use.")
2. "Chronic Binge Drinking" is defined as 5 or more drinks on the same occasion on at least 5 different days in the past 30 days. (This is SAMHSA's definition of "heavy drinking".)
3. Estimates of the affected populations are based on 2000 U.S. census data for NYC.
4. The total of all affected adults includes adults whose ages are unknown.
5. Approximately 36.4% of heavy drinkers are also binge drinkers, and approximately 47.5% of binge drinkers are also heavy drinkers.

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Table 2.6. Estimated Prevalence of Co-occurring Serious Mental Illness (SMI) and Heavy Alcohol Consumption in NYC Adults, Age 18 and Older, 2002.

Age Group	Estimated Percent of Adults with SMI who are Heavy Drinkers	Estimated Percent of Adult Heavy Drinkers who have SMI	Estimated Affected Population
All Adults	5.0	5.7	17,000
18-54	6.3	7.2	16,000
55+	0.5	1.0	1,000

Source: NYC DOHMH Community Health Survey, 2002. For full survey details, see www.nyc.gov/health/survey.

Notes:

1. Persons with SMI experience distress consistent with a DSM diagnosis and substantial impairment in functioning. Participants were asked about the 30 days prior to the survey. For a further discussion of SMI and the instrument used to measure it in the DOHMH Community Health Survey, see Kessler, R.C., Andrews, G., Colpe, L.J., Hiripi, E., Mroczek, D.K., Normand, S-L.T., Walters, E.E., and Zaslavsky, A.M. (2002). Short screening scales to monitor population prevalence and trends in non-specific psychological distress. *Psychological Medicine*, 32, 959-976.
2. "Heavy Alcohol Use" is defined for women as more than 30 drinks in the past 30 days, and for men as more than 60 drinks in the past 30 days. (This is the CDC's definition of "heavy alcohol use.")
3. Estimates of the affected population are based on 2000 U.S. census data for NYC.

The New York City DOHMH Office of Vital Statistics reports that in 2001, 390 NYC adults, age 20 and older, or approximately 6.7 per 100,000 New Yorkers in that age category, committed suicide in NYC.

Table 2.7. Suicide Rates of NYC Adults, Age 20 and Older, 2001.

Age Group	Number of Suicides	Estimated Rate per 100,000
All Adults	390	6.7
20-54	266	6.3
55+	124	7.6

Source: NYC DOHMH Office of Vital Statistics. Note: Any deaths of NYC residents outside NYC are not included.

The New York City DOHMH Office of Vital Statistics reports that in 2001, 783 NYC adults, age 20 and older, or approximately 13.4 per 100,000 New Yorkers in that age category, died in NYC due to the use of or accidental poisoning by psychoactive substances (excluding alcohol and tobacco).

Table 2.8. Deaths of NYC Adults, Age 20 and Older, Due to Psychoactive Substances, 2001.

Age Group	Number of Deaths	Estimated Rate per 100,000
All Adults	783	13.4
20-54	703	16.6
55+	80	4.9

Source: NYC DOHMH Office of Vital Statistics. Note: Any deaths of NYC residents outside NYC are not included.

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Based on several studies of the burden of alcohol misuse and the number of deaths of NYC residents from different causes as reported in the NYC Summary of Vital Statistics, DOHMH estimates there were 1,574 alcohol-related deaths of NYC residents in 2000.

Table 2.9. Estimated One-Year Alcohol-Related Mortality of NYC Residents, 2000.

Cause of Death	Estimated Number of Alcohol- Related Deaths
All Causes Related to Alcohol	1,574
Explicitly Alcohol Related Causes: Alcohol Liver Disease, Alcohol-Related Psychiatric Disorders, Alcoholic Cardiomyopathy and Chronic Alcohol Pancreatitis	650
External Causes: Homicide, Unintentional Injuries, Motor Vehicle Accidents and Suicide	526
Other Causes: Pneumonia and Influenza, Diabetes, Chronic Pancreatitis, Acute Pancreatitis, Other Liver Cirrhosis, Hypertension, Malignancies (Oropharyngeal, Esophageal, Hepatic, Laryngeal), and Other Gastrointestinal Conditions	398

References: Shultz, J.M., Rice, D.P., Parker, D.L., Goodman, R.A., Stroh, Jr., G., and Chalmers, N. (1991). Quantifying the disease impact of alcohol with ARDI software. *Public Health Reports*, 106,443-450. English, D.R., Holman, C.D.J., Milne, E., Hulse, G., and Winter, M.G. (1995). *The Quantification of Drug-Caused Morbidity and Mortality in Australia*. Commonwealth Department of Human Services and Health, Canberra. Smith G.S., Branas, C.C., and Miller, T.R. (1999). Fatal Nontraffic injuries involving alcohol: a meta-analysis. *Annals of Emergency Medicine*, 33, 659-668.

Note: Any deaths of NYC residents outside NYC are not included.

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Utilization Data from New York City and State Sources

The New York State Office of Mental Health reports that during its survey week in the Fall of 1999, 62,281 adults, or about 1% of all NYC adults, were served in NYC mental health facilities. Approximately 45,000 of these adults were ages 18-54, and almost 18,000 were age 55 and older. Of the adults 18-54, 35,695 were identified as seriously and persistently mentally ill (SPMI); of the adults 55 and older, 15,600 were identified as SPMI. The numbers of adults ages 18-54 and age 55 and older with a mental illness and a co-occurring substance use disorder (MICA) were 8,899 and 1,274, respectively.

Table 2.10. Number of Adults Served in NYC Mental Health Facilities during a Survey Week by Primary Diagnosis and MICA Status, November, 1999.

Primary Diagnosis	NUMBER OF CLIENTS SERVED		
	Ages 18-54	Ages 55+	All Adults
All Psychiatric Diagnoses	44,509	17,772	62,281
Schizophrenia & Related Disorders	16,241	4,729	20,970
Schizophrenia	11,028	3,478	14,506
Affective Disorders	15,853	8,453	24,306
Major Depression	9,113	5,854	14,967
Bipolar	3,613	1,082	4,695
Dysthymia	3,127	1,517	4,644
Other Psychotic Disorders	1,637	525	2,162
Non Psychotic Psychiatric Disorder	7,538	2,245	9,783
Anxiety Disorders	3,226	1,297	4,523
Organic Mental Disorders	419	864	1,283
Other/Unknown Disorders	2,821	956	3,777
Seriously & Persistently Mentally Ill (SPMI)	35,695	15,600	51,295
Mentally Ill Chemical Abusers (MICA)	8,899	1,274	10,173

Source: NYS Office of Mental Health Patient Characteristics Survey, 1999.

Notes:

1. The survey includes all state-operated and local programs; it does not include private clinicians and programs operated by the U.S. Veterans Administration.
2. The 2000 U.S. Census estimates of the populations ages 18-54 and age 55 and older are 4,446,698 and 1,621,311, respectively.
3. Borough estimates of the population ages 18-54 served are: Bronx, 8,525; Brooklyn, 12,745; Manhattan, 12,219; Queens, 8,984; and Staten Island, 2,039. Borough estimates of the population age 55 and older served are: Bronx, 2,515; Brooklyn, 6,605; Manhattan, 4,524; Queens, 3,490; Staten Island, 638.
4. "Other/Unknown Disorders" may include some nonpsychiatric diagnoses. Clients with a primary diagnosis of MRDD or Substance Abuse are not included in this table.

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Analyses of the NY Statewide Planning and Research Cooperative System (SPARCS) data, collected statewide for all Article 28 inpatient hospital facilities, indicate that in 2001 there were 108,767 discharges from acute care hospitals of NYC adults whose primary diagnoses were psychiatric or substance use disorder. Of this total, 93,874 were of adults ages 18-54 and 14,893 were of adults age 55 and older. Among the discharges of younger adults, 38,143 had a mental illness and a co-occurring substance use disorder (MICA); among the older adults, 4,819 were diagnosed as MICA.

Table 2.11. Number of Discharges from Acute Care Hospitals of NYC Adults with a Primary Diagnosis of Psychiatric or Substance Use Disorder, 2001.

Primary Diagnosis	NUMBER OF DISCHARGES		
	Ages 18-54	Ages 55+	All Adults
Any Psychiatric or Substance Use Disorder	93,874	14,893	108,767
Schizophrenia & Related Disorders	13,271	2,666	15,938
Schizophrenia	8,181	1,623	9,804
Affective Disorders	12,793	3,545	16,338
Major Depression	6,728	2,324	9,052
Other Psychotic Disorders	3,054	701	3,755
Non Psychotic Psychiatric Disorder	3,909	631	4,540
Anxiety Disorders	534	251	785
Organic Mental Disorders	9,986	2,703	12,689
Drug Use Disorder	30,481	1,110	31,591
Alcohol Use Disorder	11,091	1,473	12,564
Alcohol-Related Organic Mental Disorders	9,289	2,064	11,386
Mentally Ill Chemical Abusers (MICA)	38,143	4,819	42,962

Source: NYS DOH SPARCS, 2001. Note: Some patients may have had multiple admissions and, therefore, multiple discharges.

In 2000, there were 130,393 admissions of NYC adults to ASA (alcohol and substance abuse) treatment facilities in New York State.

Table 2.12. Number of Admissions of NYC Adults to ASA (Alcohol and Substance Abuse) Treatment Facilities in New York State, 2000.

Age Group	Number of Admissions
All Adults	130,393
18-54	123,410
55+	6,983

Source: NYS Office of Alcoholism and Substance Abuse Services, 2003 Resource Book, Vol.1.

Notes:

1. Some patients may have had multiple admissions.
2. The number of admissions is calculated from the total number of admissions for all ages and the percent of adult admissions by different age groups reported in the Resource Book.

Section 3

Prevalence of Mental Retardation and Developmental Disabilities

Prevalence Estimates from National Studies

Larson, et. al., (2001) estimate that almost 1.5% of noninstitutionalized persons are mentally retarded or developmentally disabled (MR/DD) with functional impairment. Applying this percentage to the NYC population, DOHMH estimates that approximately 119,000 noninstitutionalized New Yorkers have mental retardation or a developmental disability with impairment.

Table 3.1. Estimated One-Year Prevalence of Mental Retardation and Developmental Disabilities by Age in the Noninstitutionalized NYC Population, 2000.

Category/Age	Estimated Prevalence (%) of MR/DD	Estimated Affected Population
Developmental Disabilities, Mental Retardation, or Both		
All Ages	1.5	119,000
0-5	3.8	25,000
6-17	3.2	41,000
18+	0.8	48,000
Developmental Disabilities only		
All Ages	0.7	57,000
0-5	3.4	22,000
6-17	1.1	15,000
18+	0.3	16,000
Mental Retardation only		
All Ages	0.4	29,000
0-5	0.0	0
6-17	1.2	16,000
18+	0.2	12,000
Both Developmental Disabilities and Mental Retardation		
All Ages	0.4	34,000
0-5	0.5	3,000
6-17	0.8	10,000
18+	0.3	19,000

Reference: Larson, S.A., Lakin, K.C., Anderson, L., Kwak, N., Lee, J.H., and Anderson, D. (2001). Prevalence of mental retardation and developmental disabilities: Estimates from the 1994/1995 National Health Interview Survey Disability Supplements. *American Journal on Mental Retardation*, 106 (3), 231-252.

Notes:

1. Estimates of the affected populations are based on 2000 U.S. Census data for NYC.
2. Borough estimates of the total number of persons with "DD, MR, or Both" are: Bronx, 20,000; Brooklyn, 37,000; Manhattan, 23,000; Queens, 33,000; Staten Island, 7,000.

Section 4

Costs for Treatment and Support of Individuals with Mental Disorders and Disabilities in NYC

Cost Estimates from National Studies

The following estimates of the direct costs of treatment and support for psychiatric and substance use disorders in NYC are based on Rice and Miller's (1990) cost-of-illness model. These authors' estimates of costs were reported in 1985 dollars, but have been adjusted to 2002 dollars in the table below.

Table 4.1. Estimated Annual Direct Cost of Treatment and Support for Psychiatric and Substance Use Disorders in NYC, 2002.

Age Group of Consumer	Estimated Annual Direct Cost (in billions)
All Ages	\$4.9
0-17	\$0.4
18-64	\$2.6
65+	\$1.8

Reference: Rice, D.P., Kelman, S., Miller, L.S., and Dunmeyer, S. (1990). The economic costs of alcohol and drug abuse and mental illness: 1985. Report submitted to the Office of Financing and Coverage Policy of the Alcohol, Drug Abuse and Mental Health Administration, U.S. Department of Health and Human Services. San Francisco, CA: Institute for Health and Aging, University of California.

Note: "Direct Cost" is based on 2000 U.S. census data for NYC. Included are costs such as hospital and nursing home care, physician and other professional services, prescription costs, and expenditures for medical research and training. Not included in direct cost estimates are indirect costs due to morbidity and mortality or related costs, such as costs incurred by the criminal justice or social welfare system.

COSTS

Although the indirect and related costs of psychiatric and substance abuse disorders are much less tangible and more difficult to calculate than direct costs, they allow for a more comprehensive appreciation of true costs. In the table below are direct costs as well as indirect and related costs. The latter are also based on the Rice and Miller model. Indirect costs include the costs to society of morbidity and mortality due to psychiatric and substance use disorders. Morbidity costs refer to the value of goods and services not produced because of psychiatric and substance use disorders, and mortality costs refer to the value of lifetime earnings lost by those who, because of a disorder, die prematurely. Related costs include, for example, the costs incurred in the criminal justice and social welfare systems and productivity losses due to incarceration or time spent providing care.

Table 4.2. Estimated Total Annual Cost of Psychiatric and Substance Use Disorders in NYC, 2002.

Type of Cost	ESTIMATED TOTAL COST BY AGE (in millions)			
	0-17	18-64	65+	All Ages
Total Costs	\$1,238	\$10,902	\$2,213	\$14,353
Direct Costs: Treatment & Support	\$404	\$2,647	\$1,822	\$4,873
Indirect Costs: Morbidity	\$1	\$4,704	\$27	\$4,732
Indirect Costs: Mortality	\$191	\$1,826	\$47	\$2,064
Related Costs	\$642	\$1,724	\$317	\$2,683

Reference: Rice, D.P., Kelman, S., Miller, L.S., and Dunmeyer, S. (1990). The economic costs of alcohol and drug abuse and mental illness: 1985. Report submitted to the Office of Financing and Coverage Policy of the Alcohol, Drug Abuse and Mental Health Administration, U.S. Department of Health and Human Services. San Francisco, CA: Institute for Health and Aging, University of California.

Note: Costs based on 2000 U.S. census data for NYC.

The following estimates of the cost of specialized services for MR/DD consumers in NYC are based on the work of Larson, et. al., (2001) who estimate the percentage of institutionalized and noninstitutionalized persons with MR/DD in the U.S. and Braddock, et. al., (2002) who estimate total U.S. expenditures on MR/DD services. These authors' estimates of cost were reported in 1998 dollars, but have been adjusted to 2002 dollars in the table below.

Table 4.3. Estimated Annual Direct Cost of Specialized Services for MR/DD in NYC, 2002.

Cost per Case	Estimated Annual Direct Cost
\$12,077	\$1.5 Billion

References: Larson, S.A., Lakin, K.C., Anderson, L., Kwak, N., Lee, J.H., and Anderson, D. (2001). Prevalence of mental retardation and developmental disabilities: Estimates from the 1994/1995 National Health Interview Survey Disability Supplements. *American Journal on Mental Retardation*, 106 (3), 231-252. Braddock, D., Hemp, R., Rizzolo, M.C. Parish, S. and Pomeranz, A. (2002). The state of the states in developmental disabilities: 2002 study summary. Colorado: Coleman Institute for Cognitive Disabilities and Department of Psychiatry, The University of Colorado. Available: www.cu.edu/ColemanInstitute/stateofthestates/summary2002.pdf

Note: "Total Cost" is based on the 2000 U.S. Census data for NYC and includes costs for housing in institutional and community settings, case management, employment, personal assistance, transportation, family support, and vocational training.

COSTS

Below are estimates, based on the work of Fujiura, et. al., (1994), of out-of-pocket care-giving costs incurred in a year by families supporting a MR/DD family member. The literature on the burden of MR/DD is limited and does not include a comprehensive accounting of direct, indirect and related costs.

Table 4.4. Estimated Annual Out-of-Pocket Care-Giving Costs of Supporting a MR/DD Family Member, 2002.

Estimated Annual Cost per Family	Estimated Annual Out-of Pocket Family Costs
\$7,740	\$597 Million

References: Fujiura, G.T., Roccoforte, J.A. and Braddock, D. (1994). Costs of family care for adults with mental retardation and developmental disabilities. *American Journal of Mental Retardation*, 99 (3), 231-252.

Note: Cost based on 2000 U.S. census data for NYC. Cost does not include housing expenditures.

Actual Cost Data from New York City and State Sources

The following fiscal data for NYC are the best and most recently available. Fiscal data for mental health services, reported in Table 4.5, reflect actual expenditures incurred by New York City and State, whereas fiscal data for alcohol and substance abuse services, reported in Table 4.6, reflect Medicaid expenditures only. Fiscal data for MR/DD services, reported in Table 4.7, include monies budgeted by New York State based on present enrollment and the past year's budgeted costs per person.

Table 4.5. Expenditures on Mental Health Services in NYC, 1997.

Type of Service	EXPENDITURES (in millions)		
	State	Local	Total
All Services	\$717	\$1,477	\$2,194
Emergency	\$10	\$99	\$108
Inpatient	\$522	\$619	\$1,141
Outpatient	\$44	\$502	\$547
Community Support Nonresidential	\$40	\$110	\$151
Community Support Residential	\$9	\$132	\$141
Administrative	\$92	\$15	\$106

Source: NYS Chartbook of Mental Health Information, 2000.

COSTS

Table 4.6. Medicaid Expenditures for Alcohol and Substance Abuse Services in NYC, FY 1999/2000.

Type of Service	Expenditures (in millions)
All Services	\$546
Detoxification	\$263
Inpatient Rehabilitation	\$65
Outpatient (not methadone)	\$87
Methadone	\$131

Source: NYS Office of Alcoholism and Substance Abuse Services, 2003 County Resource Book, Vol. 2.

Note: Expenditures include only fee-for-service reimbursements paid through the Medicaid billing system directly to the providers; they do not include payments to providers by Medicaid managed care organizations.

Table 4.7. New York State Budget for MR/DD Services in NYC, FY 2003.

Type of Service	Budget (in millions)
All Services	\$990
Community Housing	\$685
Campus	n/a
Day	\$249
Family and Individual	\$54
Clinics (Article 16 only)	\$1
Respite (Freestanding only)	\$1

Source: NYS Office of Mental Retardation and Developmental Disorders, Local Government Plan Guidelines, 2003-2005.

Notes:

1. The budget is determined by the number of persons enrolled in services as of January 2003 and the prior fiscal year's budgeted cost per person by service category. As of this writing, budget figures are not available for every service within the categories noted above; therefore, the table underestimates the final budget.
2. The budget does not include approximately \$2.8 million from NYC tax levy dollars that support three program categories not included in this table: weekend respite, afterschool respite, and work readiness.