PREVENTION AND SERVICES RELATED TO MENTAL HEALTH PROBLEMS

Chapter 11

MENTAL HEALTH PROBLEMS: PREVENTION AND SERVICES

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MENTAL HEALTH PROBLEMS: PREVENTION AND SERVICES

Introduction

A popular view of adolescent mental health is that adolescence is inevitably a time of "storm and stress" (158a). Inner turmoil and doubt, as well as conflict with family members and the larger society, are commonly assumed to be normal signs of psychological development in adolescence.

While adolescence is clearly a time of significant physiological, cognitive, and social changes, serious emotional disturbance is not inevitably the result of attempting to cope with the changes of adolescence (148). Research over the past two decades has demonstrated little support for the idea that emotional problems are a hallmark of adolescence. Nonetheless, the available data do indicate that a substantial proportion of the adolescent population suffers from psychological problems serious enough to warrant mental health treatment.

This chapter provides an overview of adolescent mental health problems and illustrates issues related to prevention with analyses in two areas: 1) efforts related to the promotion of mental health and 2) efforts related to the prevention of suicide. It also examines the mental health treatment system. The chapter ends with a review of major Federal programs and policies pertaining to adolescent mental health and conclusions and policy implications.

Background on Adolescent Mental Health

A widely accepted system for classifying mental disorders of children, adolescents, and adults is the *Diagnostic and Statistical Manual of Mental Disorders*, 3rd ed. (revised) of the American Psychiatric Association—also referred to as DSM-III-R (6). Although there is criticism of its lack of a developmental perspective (74,45) and controversy over the applicability of adult diagnoses for disorders of childhood and adolescence (l), this widely used classification system provides clinicians and researchers with a common language for identifying mental disorders, Use of the DSM-III-R classification system in epidemiologic and clinical research also enhances the comparability of results from different investigations.

Examples of DSM-III-R mental disorders that affect adolescents are shown in box 1 l-A. Some of these disorders are usually first diagnosed in childhood, and others are most commonly seen in adults.[1]

Recent studies that have looked specifically at the prevalence of mental health problems among adolescents are discussed below. Also discussed at length are suicide and suicide attempts, which, though not DSM-III-R mental disorders, are behavior indicators of mental health problems. Finally, this section considers briefly the consequences of severe mental health problems for adolescents, for their families, and for society.

Prevalence of Mental Health Problems Among Adolescents

Prevalence of Diagnosable Mental Disorders Among Adolescents

In its 1986 report on children's mental health, OTA concluded that at least 12 percent of the population under the age of 18 (approximately 7.5 million of the 63 million children and adolescents in the United States) suffered from some type of diagnosable mental disorder (202). This finding was supported by a 1989 Institute of Medicine review suggested that the 12 percent figure was probably a conservative estimate of the prevalence mental disorders among children and adolescents (139). The overall prevalence of diagnosable mental disorders among individuals under age 20 may actually be higher than 12 percent—i.e., closer to 20 percent, or one child in five (51) (see table 1 l-l). In an examination of five recent epidemiologic investigations (9,23,52, 149,22 1), Costello found overall prevalence rates of diagnosable mental disorders ranging from 17.6 percent to approximately 25 percent in samples including adolescents (51). Kashani found a prevalence rate of 18.7 percent in a small study of

[1]Even though problems related t. psychoactive substance use are also included in the DSM-III-R classification of mental disorders, the volume of literature on adolescent substance abuse treatment and prevention is sufficiently large to warrant separate discussion. Thus, substance abuse problems and their treatment in adolescence are included in ch. 12, ''Alcohol, Tobacco, and Drug Abuse: Prevention and Services, in this volume.

Box 11-A—Examples of DSM-III-R Mental Disorders That Affect Adolescents[1]

Disruptive Behavior Disorders-The three primary behavior disorders of concern during adolescence are attention deficit hyperactivity disorder, oppositional defiant disorder, and conduct disorder.

Attention deficit hyperactivity disorder is a diagnosis made when adolescents have difficulty organizing their schoolwork or cooperating in group activities because of hyperactivity and inattentiveness. The onset of attention deficit disorder is typically before the age of 4, and the disorder often persists into adolescence.

Oppositional defiant disorder is a diagnosis made on the basis of a pattern of hostile and defiant behavior. Adolescents with oppositional defiant disorder are often argumentative, resentful, and easily annoyed by others, but not physically aggressive or prone to violate social norms.

Conduct disorder is a more serious diagnosis, although it also is made on the basis of a pattern of hostile and defiant behavior. Conduct disorder involves a pattern of behavior (lasting at least 6 months) in which the young person violates others' rights as well as age-appropriate social norms and displays at least 3 of 13 specified behavioral symptoms (e.g., truancy, lying, stealing, fighting).

Eating Disorders-Eating disorders in adolescence primarily include *anorexia nervosa* and *bulimia.* Anorexia nervosa is the severe and prolonged refusal to eat, with severe weight loss and an intense fear of becoming obese. Bulimia involves episodic and excessive eating binges unrelated to feelings of hunger. It is usually followed by self-induced vomiting or the use of laxatives. Death is less likely for bulimics than for anorexics, but physical health problems are common for both groups.

Mood (Affective) Disorders-Diagnoses of *depressive disorder are* made when individuals suffer from prolonged and severely disabling depression, as distinguished from the temporary and normal moods of unhappiness. Feelings of worthlessness, hopelessness, or irritability and thoughts of death or suicide are common. There is some evidence that antisocial behavior, aggressiveness, or substance abuse may hide or mask clinical depression but this notion remains controversial.

Bipolar or *manic-depressive disorder* involves extreme swings in mood between severe depression and intense elation. During the manic phase, hyperactivity and a decreased need for sleep are common, as are an inflated sense of self-esteem and a lack of recognition that the behavior is not normal. These manic periods alternate with periods of depression, sometimes immediately following each other and sometimes with a period of normal moods between the manic and depressive phases.

Anxiety Disorders--Anxiety disorders are disorders in which excessive anxiety is the primary symptom. *Separation anxiety disorder* involves irrational fears or panic about being separated from those to whom one is attached, usually the parent(s). Physical complaints may accompany the disorder. While separation anxiety disorder is more common among children, it may continue into adolescence.

Individuals suffering from *avoidant disorder* become anxious in the presence of unfamiliar people and socially withdraw, causing severe impairment in their social functioning. *Overanxious disorder* involves generalized anxiety about future events or one's performance in a variety of situations such as exams or social activities.

Adjustment Disorder-Adjustment disorder develops in reaction to a stressful event or series of events (e.g., parental divorce, illness or death, moving). The disorder impairs ability to function in school or on the job, because the individual cannot cope with problems in an appropriate way and may become emotionally incapacitated by stress.

Schizophrenia-schizophrenia is a severe and disabling mental illness that involves disturbances in emotional expression, behavior, or thought patterns. Although the illness occurs most commonly in adults, it frequently has its onset in the later teen years. Also, many people who become schizophrenic as adults show precursory symptoms of the disorder during their adolescent years. Among the essential features of schizophrenia are the presence of psychotic symptoms, which may include delusions, hallucinations, or catatonia.

Suicide and Suicidal Ideation--Suicide and suicidal ideation are not diagnostic categories included in DSM-III-R but are behavioral symptoms of underlying problems, many, but not all, of which may relate to the mental health status of an individual. Suicide is the taking of one's own life. Suicidal ideation involves preoccupation with thoughts about committing suicide and may be a precursor to the act itself.

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[1] Substance abuse problems, including alcohol and drug dependency, are other DSM-III-R disorders that affect adolescents, but they are not included in this box. For further information, see ch. 12, "Alcohol, Tobacco, and Drug Abuse: Prevention and Services," in this volume.

SOURCE: Adapted from American Psychiatric Association *Diagnostic and Statistical Manual of Mental Disorders,* 3rd cd., revised (Washington, DC: 1987).

Table n-l-Prevalence Rates of DSM-III Diagnoses in Nonclinic Samples: Studies Using Methods Suitable for Nonclinician Interviews

Study[a]	Anderson et al., 1987	Bird et al., 1989	Velez et al., 1989	Costello et al., 1988	Offord et al., 1987	Kashani et al., 1987	National Health Interview Survey, 1988 (Zilland Schoenbom, 1990)
Country	New Zealand	Puerto Rico	Us.	Us.	Us.	Us.	Us.
Informants	Child (Interview) Parent (Checklist) Teacher (Checklist)	Child (Interview) Parent (Interview)	Child (Interview) Parent (Interview)	Child (Interview) Parent (Interview)	Parent (Interview) Teacher (Checklist)	Parent (Checklist) Child (Checklist) Child (Interview)	Parent (Interview)
Sample	N = 782 Age 11	N = 777 Ages 4-16	N = 776 Ages 11-20	N = 789 Ages 7-11	N = 2,679 Ages 4-16	N = 150 Ages 14-16	N = NA[b] Ages 6-11 and ages 12-17
Specific diagnosis							
Attention deficit disorder (± Hyperactivity)	6.7%	10.1%	4.3%	2.2%	6.2%	2.7%	—
Oppositional disorder,		9.7	6.6	6.6	NA	6.0	—
Conduct disorders	: : :	1.5	5.4	2.6	5,5	8.7	—
Separation anxiety	3.5	4.8	5.4	4.1	NA	(All anxiety disorders)	-
overanxious disorder,	2.9	NA	2.7	1.6	("Emotional disorder")	NA	—
Simple phobia	2,4	2.3	NA	9.2	NA	NA	—
Depression, dyethymia	1.8	5.9	1.7 (Major depression)	2.0	NA	8.0	—
Enuresis (bedwetting)	NA	4.8	NA	4.4	NA	0.7	—
Total with one or mom diagnoses	17.6%	18.0% ± 3.4%	20.6%	22.0% * 3.4%	18.10/0	18.7%	6-11: 12.7% 12-17: 18.5%[c]

NA = Not available.

[a] Full reference citations are listed at the end of this chapter.

[b] In total, parents of 17,110 children ages 3 t. 17 were interviewed in the 1988 National Health Interview Survey. The proportion of children or adolescents a9es 6 to 11 and 12 to 17 is not readily available; however, the estimates shown were deemed reliable by NCHS.

[c] The number shown is the percentage of children of that age who "ever has an emotional or behavioral problem that lasted 3 months or more or required psychological help" (235).

SOURCE: Office of Technology Assessment, 1991.

15014- to 16-year-olds (106), and the 1988 National Health Interview Survey (NHIS) conducted by the National Center for Health Statistics in the U.S. Department of Health and Human Services (DHHS) found a lifetime prevalence rate for 6- to 11-year-olds of 12.7 percent, and a lifetime prevalence rate for 12- to 17-year-olds of 18.5 percent (235). Thus, international, national, and local studies find similar overall rates of mental health problems among adolescents.[2]

In two studies reviewed by Costello that focused on adolescents (9, 221), the most common disorders were the disruptive behavior disorders of attention deficit disorder, oppositional defiant disorder, conduct disorder,[3] and the anxiety disorder known as separation anxiety disorder (51). A third study among adolescents found a higher rate of depression than the other investigations (106). The most notable variations from study to study were those relating to the rates of specific diagnoses—accounted for, in part, by different measures and differences in the samples. In addition, the studies reviewed by Costello, and the NHIS study, found differences in demographic risk factors for overall prevalence of emotional and behavioral problems. Older children were generally more likely than younger children to have a mental health problem; males were generally more likely than females to have a mental health problem; and those of low socioeconomic status were consistently more likely than those of high socioeconomic status to have a mental health problem.[4] Costello did not report on racial or ethnic differences, but NHIS found that white, non-Hispanic parents were more likely to report the existence of an emotional or behavioral problem than were black or Hispanic parents (235).[5] Further, NHIS reported a higher lifetime prevalence of emotional and behavioral problems among those 12-to 17-year-olds: 1) in urban areas[6] (19.1 percent) than in rural areas[7] (16.5 percent); and 2) living with families headed by a biological mother and a stepfather (29. 1 percent), biological mother alone (2.5 percent), and "all other" family structures (25.8 percent), than by a biological mother and father (1 1.6 percent) (235).

Prevalence of Subjective Distress Among Adolescents

As discussed in chapters 2,3, and 4 of this Report, there are several aspects of adolescence that may cause emotional distress among adolescents. Adolescents are rarely asked about such subjective distress, and the relationship of subjective distress to diagnosable mental disorders is not known.[8] Subjective distress is an important issue because access to formal sources of mental health treatment may depend on the existence of a diagnosable mental

[2]It should be noted that the National Health Interview Survey (NHIS) differed from the other, more local, surveys in some respects. It involved only parents as respondents, it was in large part an estimate of lifetime prevalence, and the results pertain to a global rating, rather than to specific problems or disorders. Specifically, estimates of the prevalence of mental health problems were based on the responses of parents of children 3 to 17 to the following 1988 NHIS Child Health supplement questions: First, all parents were asked, "Has [your child] ever had an emotional or behavioral problem that lasted 3 months or more?" Parents who had not reported that their child had had such a problem were asked, "Has [your child] ever seen a psychiatrist, psychologist, doctor, or counselor about any emotional, mental, or behavioral problem?" Those who responded negatively to this question were asked, "During the past 12 months, have you felt or has anyone suggested, that [your child] needed help for any emotional, mental, or behavioral problem?" If the parent answered affirmatively to either of the latter questions, the child was counted as having had an emotional or behavioral condition, even if the parent had answered the initial question about such conditions in the negative (235).

[3]Some behaviors that might lead to a diagnosis of conduct disorder may also result in an adolescent's being considered delinquent. For further discussion, see ch. 13, "Delinquency: Prevention and Services, " in this volume.

[4]Costello did not report quantitative results from the five studies she reviewed. In the NHIS study, the following percentages by family income were reported for 12- to 17-year-olds: 22.5 percent in families with incomes of less than $10,000; 19.3 percent in families with incomes between $10,000 and $24,999; 19.6 percent in families with incomes between $25,000 and $39,999; and 17.6 percent in families with incomes of $40,000 or more (235). Thus, while there were differences, they were not very substantial. If mother's education were to be used as an indicator of socioeconomic status, the picture is more complicated; 18.5 percent of 12- to 17-year-olds whose mothers had less than 12 years of education were reported to have had an emotional or behavioral problem some time in their lives, compared to 16.7 percent whose mothers had 12 years of education, and 20.1 percent whose mothers had more than 12 years of education (235).

[5]For 12-t. 17-year-olds, the following percentages of parents reported the existence of problems lasting 3 months or mOre, or requiring psychological help, sometime during the child's life: 19.5 percent of white parents v. 15.1 percent of black parents; 18.9 percent of non-Hispanic parents v. 14.8 of Hispanic parents.

[6]Urban areas were defined as Metropolitan Statistical Areas (235).

[7]Rural areas were defined as areas other than Metropolitan Statistic Areas (235).

8As is implicit in box 11-A and table 11-1, DSM-III-R diagnoses for adolescents are somewhat weighted toward mental health problems that result in impairment obvious to an observer (e.g., oppositional defiant disorder, conduct disorder, attention deficit disorder, separation anxiety disorder). As noted above, investigators tend to find that these disorders are the most common among adolescents. Thus, the mental health problems of adolescents have often been referred to in summary fashion as "behavior disorders" a characterization that has been criticized recently (155 b).

disorder (202). Two studies that did ask adolescents about their levels of distress are the National Adolescent Student Health Survey (8) and the Adolescent Health Survey conducted by the University of Minnesota (see 204).

The National Adolescent Student Health Survey of 8th and 10th graders found that, *on average, 45* percent of respondents found coping with stressful situations at home and school ''hard" (29.8 percent) or ''very hard' (15.6 percent), 61 percent felt sad and hopeless in the past month either ' 'sometimes' (36.9 percent) or ''often' (24 percent); 36 percent felt that they had nothing to look forward to in the past month either "sometimes" (23,0 percent) or "often" (13.2 percent) (8). On all items, females were more likely to report distress than were males (8).

The University of Minnesota survey found that, *on average across grade levels,* up to 28 percent of 7th through 12th graders reported experiencing "extreme stresses and strains' up to 25 percent reported that they were dissatisfied with their personal lives; up to 23 percent reported that life was uninteresting; up to 26 percent reported that they were tired or worn out; and 19 percent reported that they were not feeling emotionally secure-all in the month before the survey (see 204). These survey results are more or less consistent with those of Offer and his colleagues, who have consistently found that about 1 out of 5 adolescents find adolescence extremely difficult (148).

If one compares adolescents' reports and reports of parents, one finds that adolescents may report more—and different—symptoms than do their parents. It is often difficult to detect these differences because psychiatric epidemiologists often combine the reports of parents and adolescents to come to a single estimate of prevalence (51). Kashani found that there were differences between parents and adolescents in overall prevalence of mental disorders (106a). In addition, parents were more likely to report symptoms of oppositional defiant disorder among their 17-year-olds; the 17-year-olds themselves were more likely to report symptoms pertaining to all other disorders measured (conduct disorder, anxiety disorders, depression, enuresis, and substance abuse) than symptoms of oppositional defiant disorder (106a).

The Minnesota survey distinguished among metropolitan and rural Minnesota adolescents, and also conducted a survey of American Indian and Alaska Native adolescents (see 204). Of the Minnesota adolescents, urban females reported the highest prevalence of subjective distress on three out of five items. Rural males were, however, most likely to endorse the item, "life was uninteresting. " Preliminary results of the surveys among American Indian and Alaska Native adolescents found that American Indian and Alaska Native adolescents were much more likely to endorse the statements that ''life was uninteresting" (45 percent of males and 41 percent of females), that they were not feeling emotionally secure (43 percent for both males and females), and somewhat more likely to report that they *were* feeling tired and worn out (23 percent of males and 31 percent of females) (see 204).

Thus, both the level of subjective distress and the level of symptoms of diagnosable disorders reported by adolescents are quite high. As a general matter, diagnosable disorders are more common among male adolescents (5 1,235), but subjective distress is more common among female adolescents (8,204).

Prevalence of Suicide, Suicide Attempts, and Suicidal Ideation Among Adolescents

As noted in box 1 l-A, suicide and suicidal ideation are not diagnostic categories included in DSM-III-R. Rather they are behavioral symptoms of underlying problems, many, but not all, of which may relate to the mental health status of an individual.[9]

Despite its seriousness, suicide *appears* to *be* a relatively uncommon cause of mortality in U.S. adolescents, accounting for about 10 percent of all deaths to U.S. adolescents. In 1986, for example, there were 2,146 cases of suicide reported among U.S. adolescents ages 10 to 19 (220). In contrast, there were 11,231 cases of accidental death in 1986-accounting for 54 percent of all deaths for adolescents in that year.[10] Nonetheless, suicide still

[9]Despite its inclusion in this chapter on mental health, some observers suggest that suicide maybe caused by a variety of factors other than mental illness (e.g., financial pressures, social protest, loneliness). Suicide has been included in the discussion of mental health issues because mental health status is a major contributing factor in many suicides and suicide prevention and treatment interventions are often located within programs for mental health service delivery.

[10]See ch. 5, ''Accidental Injuries: Prevention and Services, '' in this volume for a discussion of morbidity among adolescents due to accidental injuries.

Table n-2-Suicide Deaths per 100,000 Among U.S. Adolescents Ages 10 to 14 and 15 to 19, 1979-87

	Suicide deaths/100,000 population											
	Ages 10 to 14						Ages 15 to 19					
	Total	Male	Female	White	Black	Other	Total	Male	Female	White	Black	Other
1979	0.81	1.09	0.59	0.91	0.26	1.21	8.35	13.32	3.2	8.92	4.38	12.13
1980	0.76	1.21	0.29	0.86	0.33	0	8.51	13.82	3.02	9.29	3.59	11.02
1981	0.89	1.23	0.54	1.01	0.22	0.79	8.63	13.56	3.54	9.45	3.53	11.28
1982	1.09	1.71	0.44	1.13	0.81	1.29	8.7	14.07	3.15	9.58	3,86	8.26
1983	1.09	1.58	0.57	1.1	1.0	1.23	8.7	13.98	3.24	9.4	4.15	12.32
1984	1.28	1.91	0.63	1.38	0.71	1.51	9.01	14.26	3.54	9.92	3.8	10.12
1985	1.61	2.31	0.87	1.76	0.83	1.62	9.97	15.98	3.73	10.81	4.86	12.07
1986	1.5	2.3	0.66	1.58	0.96	2.05	10.18	16.36	3.76	11.28	4.59	8.36
1987	1.5	2.3	0.6	1.6	1.0	0	10.3	16.2	4.2	11.2	5.8	0.7

SOURCE: U.S. Congress, Office of Technology Assessment, 1991, based on U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, unpublished data on suicide deaths among adolescents, Hyattsville, MD, 1990.

fluctuates between being the second or third leading cause of death among U.S. adolescents, largely because of the relatively sound physical health of this age group.[11]

According to the National Center for Health Statistics in DHHS, the suicide rate among U.S. adolescents ages 15 to 19 has doubled since the late 1960s, from 5.0 suicides per 100,000 in 1968 to 10.3 suicides per 100,000 in 1987 (219a,220). The suicide rate among adolescents ages 10 to 14 has always been much lower than that for 15- to 19-year-olds, but has almost tripled since 1968, from a rate of 0.6 per 100,000 in 1968 to 1.5 suicides per 100,000 in 1987 (219a,220). Suicide rates for U.S. adolescents in the years 1979 to 1987 are shown in table 11-2.

Official suicide statistics are likely to significantly underrepresent the actual incidence of suicide. Holinger and Offer suggest that the numbers of reported suicides among adolescents may very well be two to three times lower than the actual figures (101).

Factors that seem to influence the reporting of death by suicide include the following: 1) variations in medical criteria used to determine cause of death in different jurisdictions, 2) a tendency to discount intentional self-destruction as a cause of death among the young, and 3) practical considerations such as potential loss of insurance benefits and family or community concerns about the stigma attached to suicide (57,96,102). Another factor that may influence the reporting of suicides, especially suicides among children and adolescents, may be the desire to protect families from the distress resulting from a finding of suicide (96,206).

Finally, some suicides may not be recognized as such. Young men in particular may be seen as reckless or impulsive rather than suicidal, especially if their deaths result from falls, drowning, or drug overdoses (158). On the basis of investigations of fatal motor vehicle accidents, some researchers estimate that as many as 10 percent of deaths among adolescents involved in single-vehicle accidents are suicides (75, 182,233). Conversely, accidental deaths may sometimes be erroneously classified as suicides (175,153). Currently available postmortem methods for determiningg suicide are inadequate to determine the extent to which completed suicides among the young are underreported (35,67).

Although the documented increase in completed suicides would suggest a concomitant increase in suicide attempts, little information is available on trends in nonfatal suicidal behavior (96). There is no national reporting system for suicide attempts. Many writers assert that there has been a marked increase in suicide attempts among adolescents in recent years (e.g., 57), although studies that have found increasing rates of suicide attempts among young people have not separated those below the age of 20 from young adults over **20 (110,226,230). One investigation** of the proportion of people under age 21 among suicide attempters admitted to a New Haven hospital, however, found an increase between

[11] Adolescents do have physical health problems that require medical intervention, however. For a review of epidemiologic and other data on the prevalence of physical health problems of adolescents, see ch. 6, "Chronic Physical Illnesses: Prevention and Services," in this volume. For a review of the primary health care services system for adolescents, see ch. 15, "Major Issues in the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III.

1970 and 1975 (230), while a second study in a Boston hospital found no increase in intentional adolescent drug overdoses between 1964 and 1974 (147). The latter study may simply reflect stable rates of intentional drug overdose. It is not known if suicide attempts by other means were also stable during this time period.

Berman and Cohen-Sandler have pointed out that there is little consistency across studies in the criteria used for classifying suicidal behavior or even suicide attempts (22). Only 4 of the 38 studies they reviewed contained operational definitions of suicidal behavior in the sample being studied.

Further, data on attempted suicides are based largely on clinical samples of adolescents admitted to hospitals following suicide attempts. Studies based on clinical samples obviously overlook those suicide attempters who do not come into contact with hospitals. One study found that the number of cases of suicide attempts identified through sources other than hospitals (e.g., jails, private health care providers, social service agencies) was more than double the number identified through hospitals (231). There may also be substantial numbers of adolescent suicide attempters who do not receive treatment. One study found that only 12 percent of the suicide attempters responding to a school-based survey received medical attention following their suicide attempt (179).

Even school-based samples suffer from methodological limitations. Information on suicide attempts from adolescents in a single community (or even a single high school) cannot be generalized to provide accurate estimates of regional or national attempt rates, and school-based samples will necessarily be unrepresentative of the significant numbers of young people who have dropped out of school.[12] Also, the relationship between self-reported attempts and the actual rate of suicide attempts in a population is unknown.

Despite these limitations, local and national school-based studies in offer some insight into the prevalence of suicide attempts among adolescents. In Oregon, 6.2 percent of a sample of high school students reported attempting suicide (1 1). The 1986-87 Minnesota Adolescent Health Survey found that 7 percent of the males and 14 percent of the females in grades 7 through 12 of that State's public schools reported having attempted suicide at least once (12), while 14.2 percent of a nationwide sample of 8th and 10th grade students reported suicide attempts in a survey by the American School Health Association (8). The differences in estimates maybe attributable to variations in the questions or actual differences in the populations represented by each sample.

Prior suicide attempts are predictive of completed suicide among adolescents, but the vast majority of adolescents who attempt or threaten suicide do not actually go on to kill themselves (76,81,137).

Consequences of Selected Severe Mental Health Problems in Adolescence

Mental health problems in adolescence range in seriousness from relatively minor behavioral issues to severely disabling mental illnesses that can be life threatening. Sometimes the comparatively less severe problems, if left untreated, produce long-lasting consequences for social adjustment, self-image, interpersonal relationships, or other factors influencing the quality of life. At other times these less severe mental health problems may not warrant professional intervention. Experience and the maturation process may prove a sufficient remedy (202). Unfortunately, little is known about the short- and long-term consequences of the apparently less severe adolescent mental health problems.

For mental health diagnoses of the more dysfunctional and persistent variety, the consequences are frequently profound for the affected adolescent, the adolescent's family, and society at large. The consequences of serious mental health problems are the focus of the discussion that follows, because something more than passive tolerance is necessary to avoid the potentially devastating results of such disorders.

Consequences for Individual Adolescents

Adolescents with serious mental health problems may be stigmatized by their peers because of odd behaviors, labeled in school as troublemakers, and become alienated from their personal support systems (particularly the family) as a consequence of expressed hostility, inability to communicate effectively, or other factors (83). They may become socially isolated and self-abasing. Their academic performance frequently suffers, and they may ex-

[12] See ch. 4, ''Schools and Discretionary Time, '' in this volume for information on the numbers of dropouts.

hibit underachievement in other areas as well. The lack of ability to hold a job or interact in other environmental settings can further exacerbate a debilitating mental condition. Encounters with the juvenile justice system may result from antisocial or disruptive behaviors. For some disorders, substance abuse may become a feature of self-medication or comorbidity.[13] Violence toward others or self-inflicted injury or death may follow a descending cycle of pain and depression.[14]

Although there is little research on the relationship between childhood mental disorders and adult mental illnesses, some adult disorders do seem to be preceded by mental health problems in adolescence. In a review of research on the long-term prognosis for adolescents identified as having conduct disorders, Kazdin found that adolescents with conduct disorders had an increased likelihood of later mental health problems, psychiatric hospitalization, and alcohol and drug abuse (107). Kandel and Davies found that the long-term effects of adolescent depression manifest themselves in a reduced ability to establish intimate relationships in young adulthood, with increased use of minor prescription tranquilizers (for women), and with more deviant activities and accidents as young adults (104a). Data from the National Institute of Mental Health (NIMH) in DHHS indicate that several major adult mental disorders, including anxiety disorders and some types of depressive and substance abuse disorders, commonly begin during the late adolescent years (44).

Consequences for Adolescents' Families

Families are the primary caregivers for most adolescents with mental health problems. As caregivers, families are expected to provide food, shelter, and a loving, supportive environment for their adolescent members. But this familial and social expectation is imposed without significant supportive services or respite programs to alleviate the burden it often represents (84,133).

Thus, families seeking to cope with serious mental health problems in adolescents can experience enormous stress (16,43,94). Typically, mental health problems in adolescents are initially discounted by families as ''normal' teenage rebellion or ''quirkiness. ' But as symptoms persist, families are frequently forced into behavior patterns that may be destructive of the family unit as a whole.

Mental Health Effects for Parents and Siblings--Parents of adolescents with serious mental health problems may begin to blame themselves or their spouse for failure to provide appropriate discipline or nurturance. Widespread societal ignorance about mental disorders and their causes may reinforce this idea of parental responsibility. Some family therapies also continue to ascribe a causal relationship between faulty parenting and mental disorder in children (93,133). Over time, disputes between parents may yield to estrangement or permanent alienation from one another. Frustration, anxiety, and feelings of hopelessness may accompany life with an adolescent with mental health problems. Unable to cope rationally with their environment, parents may sometimes retreat into substance abuse or violence to relieve unremitted tensions (43,133).

Siblings may encounter similar feelings of guilt and frustration. Some may become overly protective of their mentally disordered brother or sister. Others may withdraw and ignore their ill relative. Many siblings experience fear that they may also have mental health problems in the future. Resentment is common, as family attention focuses--of necessity—almost exclusively upon the adolescent with problems (43).

Financial Costs for Families-Families bear the financial costs of adolescent mental health problems in several ways:

1. They may pay direct out-of-pocket expenses for professional mental health services which may or may not be reimbursed by insurance. Health insurance coverage for mental health services is frequently more limited than coverage for other health services, with higher copayments and deductibles or lifetime or annual benefit restrictions.[15] Benefit structures may also favor a medical model of treatment, driving service utilization in a particular direction that may be more expensive (43).
2. Parents may lose work days because they are needed to supervise, intervene, or participate

[13] Substance abuse problems in adolescents are discussed inch. 12, "Alcohol, Tobacco, and Drug Abuse: Prevention and Services, ' in this volume.

[14] The problem of violence is discussed in ch. 13, "Delinquency: Prevention and Services, " in this volume.

[15] For further information on health insurance coverage of mental health services, see ch. 16, ''Financial Access to Health Services, ' in Vol. III.

in their adolescent's educational, therapeutic, or other activities.

3. Families may incur losses from property damaged by the aggressive behavior of an adolescent with a mental health problem or from financial resources spent to cover irresponsible expenditures or provide special assistance to the adolescent in distress. For example, an adolescent with a mental health problem may be aggressive and kick a hole in a wall, break furniture, or wreck the family vehicle (accidentally or intentionally). Or, an adolescent with a credit card may make excessive purchases beyond his or her means, and the family resources may be used to cover the expenditures. Or, a runaway adolescent with bipolar (manic-depressive) disorder may incur expenses associated with return travel when he or she seeks to return home.
4. Siblings may forgo college assistance or other financial benefits as the family struggles to meet mounting costs and allocate limited resources.

Social Costs for Families—Families of adolescents with mental disorders frequently encounter social ostracism. Longtime friendships may be ruined. Certain activities may become off-limits for fear that the adolescent with a disorder may become disruptive or embarrassing. In some families, a siege mentality may develop, and the entire family unit may become isolated and introverted (43).

Consequences for Society

The costs of adolescent mental health problems for society are of two general types: direct costs related to mental health treatment and indirect costs (e.g., losses in productivity, burden on public services). None of these costs have been quantified with a high degree of confidence.

Using the best evidence and method available, OTA estimates that the total cost of mental health *treatment* for adolescents in 1986 may have been $3.5 billion (see below, ''Mental Health Treatment Costs' for details).[16]

Quantifying the indirect costs of adolescent mental health problems is even more difficult than quantifying direct costs. Indirect costs include such diverse factors as lost productivity (for both the adolescent and frequently for the family caregiver); increased burdens upon the educational, welfare, police and juvenile justice systems; disorder-related damage to property due to accident or aggression; and impact on hopelessness (139). Perhaps one of the greatest indirect costs is the forgone talent and potential contribution to society of an adolescent whose education is interrupted and never becomes what he or she might have been—whether physician or artist, poet or plumber--or worse, whose premature death through suicide deprives society of an unknown future benefit. Value-laden as they are, such costs cannot be estimated, but they are nonetheless significant.

Mental Health Promotion and the Prevention of Mental Health Problems in Adolescents

Mental health promotion and the prevention of mental health problems have been widely espoused as means of averting the devastating costs of adolescent mental health problems on afflicted individuals, families, and society. Furthermore, a broad professional field has developed around these mental health promotion and preventive endeavors. Such endeavors include the following:

- mental health promotion programs to promote positive mental health in the general population;
- primary prevention efforts intended to avoid the onset of specific mental health problems; and
- secondary prevention efforts intended to keep high-risk populations from developing mental health difficulties and to delay the course of a disorder or prevent its recurrence.

This section illustrates the field by focusing on two areas that may be thought of as opposite ends of the spectrum of mental health. It begins by describing programs designed to promote positive mental health (not necessarily prevent specific disorders) among adolescents. Then, it describes programs designed to prevent adolescent suicide, both among the general population of adolescents (i.e., primary prevention) and among high-risk groups, such as those who have attempted suicide (i.e., secondary prevention). Issues relating to evaluating the effectiveness of all mental health promotion and prevention efforts are also discussed.

[6 Direct costs for treatment of mental illnesses across all age groups have been estimated at $35 billion (139).

Promoting Adolescent Mental Health

It seems almost unnecessary to argue that the promotion of positive mental health among adolescents is a worthwhile endeavor. But the notion that a young person's mental health status can be protected or improved by preventive interventions has been the source of considerable professional and social controversy (e.g., 152b,169). Despite the controversy, there is mounting evidence that adolescents *can* receive supportive services that affect their mental health in a positive way. This section explores some of those approaches and identifies potential problems associated with the promotion of mental health.

The Concept of Mental Health Promotion

While behavioral scientists have not embraced a precise common definition of positive mental health,[17] certain general characteristics are consistent themes in various definitions:

- a sense of overall subjective well-being, despite periodic variations in mood,
- a belief that the self is competent and effective in areas that are personally important to the individual,
- the ability to get along with others in mutually satisfying ways,
- psychological and behavioral flexibility in dealing with stress,
- a sense of personal autonomy and control,
- commitment to personal goals that are valued in one's social environment, and
- a repertoire of behavioral skills needed to solve interpersonal problems and problems of daily living in a competent way (47).

In the discussion to follow, positive mental health is not viewed as the antithesis of mental illness.[18] Rather than being simply the absence of mental disturbance, positive mental health is a concept based on the psychological and emotional competence of an individual to function effectively in his or her environment. While the absence of psychopathology is a necessary condition for positive mental health status, it is not sufficient to ensure the presence of adaptive behaviors or feelings of well-being (2,3). Mental health promotion activities are intended to meet that need.

Mental health promotion seeks to foster a healthy mental equilibrium and maintain emotional stability rather than to restore the effective functioning of an individual with a major mental illness (63). As a result, mental health promotion programs have developed along lines that differ from those of traditional medical models for treating psychopathology.

As Catalano and Dooley have pointed out, a mental health problem may be avoided by either of two means: eliminating the problem *after* onset or intervening *before* onset (42). Positive mental health promotion focuses on the latter approach by concentrating on the healthy population and perhaps those with subclinical manifestations of disorders.

Sound mental health status in adolescents maybe fragile and difficult to maintain, given the tremendous physical and emotional changes that occur during this period of life. Individual variables, such as genetic predispositions, biological factors, social and cultural differences, and personality characteristics, can affect both the subjective well-being and the behavioral competence of adolescents. Changing family and peer relationships further complicate the picture. Positive mental health promotion focuses on keeping the well-adjusted adolescent able to function in psychologically healthy ways.

Thus, interventions have been devised to strengthen adolescents' autonomy and ability to cope with stresses, while promoting their self-esteem and appropriate peer relationships. Because of the importance of the educational system in developing academic and interpersonal skills and its convenience as a social unit, schools have served as the primary context for many of the programs to promote positive mental health in adolescents (25).[19] Community mental health centers also have served

[17] One point of controversy is the degree to which an individual should embrace social conventions or behave in socially acceptable ways. Within any pluralistic community, there may be numerous subcultures with competing values. It may be that an individual can function in a way that is congruent with the norms of a particular subculture (e.g., a street gang) and be considered mentally healthy in that context alone, while the same behavior suggests mental health problems from the perspective of society-at-large. This debate on social values is not enjoined in the following discussion.

[18] See ch. 2, "What Is Adolescent Health?" in this volume for a more extensive discussion of the meaning of adolescent health and the various definitions which have been developed. Throughout this Report, OTA uses a broad definition of health that includes the absence of physical or mental pathology but also encompasses behavioral, environmental, and subjective considerations.

[19] The role of schools in adolescents' lives is discussed in ch. 4, "Schools and Discretionary Time," in this volume.

as program sites in some areas of the country. Less frequently, but still affording largely untapped opportunities, health care settings like health maintenance organizations and family group practices can serve as program delivery sites. The following section examines selected mental health promotion strategies and programs and provides information about their effectiveness.

Selected Mental Health Promotion Programs and Their Effectiveness

The most widely used mental health promotion programs have attempted to enhance individuals' social competence and life skills by strengthening their adaptive abilities, reducing stressors, and creating mental-health-promoting environments. These mental health promotion programs are of three types:

. broad-based mental health promotion programs that are delivered as part of a school curriculum,
. programs to help adolescents with a specific risk factor (e.g., parental divorce), and
. programs to prevent a specified problem.

Each of these types is discussed below. The first type is the purest form of mental health promotion. The second and third categories overlap with primary prevention programs because of their targeted nature, even though they use positive mental health program techniques and provide generic mental health benefits beyond their avowed focus.[20]

Broad-Based Mental Health Promotion Programs-Mental health promotion programs that are broad-based and generic are typically implemented as part of a public school curriculum. The aim of these programs has been the development of a set of basic problem-solving and coping skills that can be applied to different types of stressful events. Such programs tend to be designed for delivery to all segments of a particular population (e.g., a particular adolescent age group).

- *Yale-New Haven/Social-Problem-Solving Project (YNH-SPS), the Improving-Social-Awarenessl Social-Problem- Solving Project (ISA-SPS), and the Comprehensive Stress Management Program for Children Project—YNH-SPS (224),* ISA-SPS (59), and the Comprehensive Stress Management program for Children (1 19) are programs designed to teach children without apparent mental health problems social competence, decisionrnaking, and stress management skills. Thus, these programs are generally known as 'socia.competence-promotion' models. The programs are typically implemented in schools as part of the regular school curriculum. They may involve 8 to 20 sessions conducted by teachers or counselors with special mental health training. Weissberg and others have developed a 6-step response sequence in which YNH-SPS students are asked to: 1) stop, calm down, and think before they act; 2) state the problem and how they feel about it; 3) set positive goals; 4) think of alternative solutions; 5) think of the consequences of each solution; and 6) implement the solution which seems most appropriate (224). Other models have 4-step (15), 8-step (59), or 1 l-step (88) sequences, reflecting differing views about the appropriate number of sequences to be learned by students at different age levels.

- *Empowerment* Models—A number of different mental health promotion models are based on the concept that adolescents are already basically competent but are impeded from being effective in their environment by social structures or lack of resources. The perceived deficit is that of power to influence the course of one's activities.

  Thus, empowerment models attempt to provide individuals with opportunities to control their own lives. Professionals are engaged not

[20] Felner and Felner used a different typology to describe the variety of positive mental health promotion programs tried throughout the country (63). In their analysis, mental health promotion programs were identified as being: 1) person-focused; 2) transaction-focused; or 3) environmentally focused. *Person-focused programs* include programs that provide information, assertiveness training, coping skills, interpersonal social problem-solving skills, behavioral skill-building, and reduction of psychological vulnerability. *Transaction-focused program* include programs that rely on peer support and self-help networks, but also include projects to help children through major life crises or to build abilities for future use (ala Head Start or High Scope-type initiatives). Parent-focused programs like Parent Effectiveness Training belong to this genre, as do educational readiness programs which attempt to match students' educational deficits to remedial supports. *Environmentally focused programs* include efforts to provide social and economic supports for homeless children, nutrition programs, home-based education supplementation programs, and efforts to modify the structure of educational institutions.

Paroles and colleagues suggested yet another typology for mental health prevention programs, categorizing some programs as *universal interventions* intended for all members of a particular population *indicated interventions* targeted to individuals with clinical or preclinical problems; and *selected interventions*, which focus on high-risk groups (152 b).

to solve problems before they occur, but to work cooperatively with others to facilitate self-directed solutions. In the educational arena, the Maryland Department of Education's Instructional Leadership Project is an example (135). This program uses a collaborative approach involving students and teachers in instructional decisions.

Programs To Help Adolescents Experiencing a Specific Risk Factor—Mental health promotion programs to assist adolescents in coping with a specified risk factor (e.g., stressful events like parental divorce, school transitions), chronic problems in the social environment, or community problems (e.g., gang violence) are directed toward those portions of the population with epidemiologically established risk factors for mental health problems .21

Adolescence may be a stressful time of life. But the sources of adolescent stress appear to vary by age and may thus lend themselves to differing stress-reduction strategies. One study looked at three adolescent age groups and found that family stresses dominated the concerns of 12- to 14-year-olds; peer stresses were uppermost among 15- to 17-year-olds; and academic stresses preoccupied the older adolescents (222). The investigators concluded, "If prevention programs are to be effective in helping youngsters manage stress, they will need to account for the types of stress that are significant for the age group targeted by the program" (222).

- *Children of Divorce Intervention Project—The* Children of Divorce Intervention Project follows the specified risk model of mental health promotion (154). This project is a 16-session, school-based intervention for 4th through 6th grade children whose parents are divorcing. The program focuses on five main goals: 1) fostering a supportive group environment, 2) facilitating the identification and expression of divorce-related feelings, 3) promoting an understanding of divorce-related concepts and clarifying misconceptions, 4) teaching problem-solving skills, and 5) enhancing positive perceptions of self and family (5,154).

Programs To Prevent a Specified Problem—Some mental health promotion programs intended to prevent a specified problem (substance abuse, adolescent pregnancy, or aggressive/antisocial behavior) are focused on high-risk groups, and others are primarily targeted toward individuals who have clinical or preclinical problems. The focus on identifiable problems places programs of this type more appropriately under the broader label of primary prevention than of health promotion, although some programs stress generic mental health maintenance skills that could be taught to a wider audience in a variety of settings.

. *Life Skills Training* (LST)--The LST approach to the prevention of substance abuse is an example of a program that focuses on a particular problem but teaches skills that have broad applicability (26,29). Although it was initially conceived to deal with the harmful consequences of substance use, LST has a broader application because it improves life skills in general and encourages self-directed behavioral change techniques that can be useful in many situations. LST teaches interpersonal skills, mechanisms for coping with anxiety, and promotes independent decisionmaking A booster program for 8th and 10th graders has also been designed. A detailed teacher's manual gives a complete description of the content and activities of each session. These step-by-step lesson plans permit regular classroom teachers to implement LST after attending a training workshop (29).

- *School Transitional Environment Project—The* School Transitional Environment Project is a program that was designed to reduce the problems experienced by children entering large junior and senior high schools from relatively small feeder elementary schools. Entering students were assigned to a core curriculum with 60 to 80 students. They primarily interacted with their "core" peers in different classes throughout the day, thereby reducing the number of new classmates they needed to meet. Efforts were made to minimize the students' fear and confusion by providing some stability in the school day. Teachers served as administrative links between the school, home, and student, providing counseling and support as necessary (66).

[21]For a discussion of environmental risk factors for mental health problems in children and adolescents, see OTA'S 1986 background paper *Children's Mental Health: Problems and Services* (202).

Effectiveness of Mental Health Promotion Programs-A review of the literature indicates that broad-based mental health promotion programs implemented in schools have demonstrated some success in enhancing the coping skills of adolescents and the ability of adolescents to function in social settings. At this point, though, the link between these gains at specific developmental stages and the long-term maintenance of generally healthy mental status remains unclear.

An evaluation of the YNH-SPS [Yale-New Haven/ Social Problem-Solving Project] found that program participants improved their ability to use effective and planned solutions to problems relative to untrained controls (225). Program participants had increased involvement with their peers, improved academic performance, better impulse control, and decreased self-reports of misbehavior.

An evaluation of the ISA-SPS [Improving-Social-Awareness/Social-Problem-Solving Project] found that children who had completed the program, in comparison to a control group of nonparticipants, had increased sensitivity to the feelings of others, greater understanding of the consequences of their actions, and an increased ability to analyze and understand interpersonal situations and plan appropriate actions, according to one assessment (59). Participants also enjoyed a more positive self-concept, were rated by their teachers as better adjusted, showed improved ability to handle the transition to middle school, and were relied upon by their peers for help with problems.

An evaluation of the Comprehensive Stress Management Program for Children found that adolescents who participated in the program, as compared with controls, demonstrated a higher ability to use emotion-focused coping skills and had a decreased perception of stress (48). The elementary school children in the program also self-reported fewer symptoms of anxiety and depression than their control counterparts.

The Maryland Department of Education's Instructional Leadership Project has resulted in heightened satisfaction and feelings of empowerment for both teachers and students participating in the program (1 35).

Programs with a social-competence-promotion focus that have been targeted to specific risk factors have also shown success. Participants in the Children of Divorce Intervention Project program (relative to controls) have demonstrated reductions in behavior problems and improvement in their school adjustment, according to ratings by children, teachers, and parents (5,154,155).

A number of studies have shown the LST [Life Skills Training] program to be successful in delaying, or perhaps eliminating, substance use. Although the changes have been small, participants in LST programs were found to be less likely than controls to begin smoking cigarettes (30,31,32) or marijuana (28) or drinking alcoholic beverages (27). The extent to which generic life skills are developed during the course of the program is unclear, however (27a) .22

In 2- and 5-year followups on the School Transitional Environment Project program, participating students were compared with controls in the same schools. The dropout rate for School Transitional Environment Project students was half that of students in the control group. The studies also suggested that School Transitional Environment Project students had higher self-concept and lower incidence of behavioral and emotional troubles, including decreased likelihood of engaging in illicit substance use (62).

Problems in Mental Health Promotion

Problems in Program Design--Compas warns that too little has been done to assess what adolescents', parents', teachers', and other stakeholders' expectations are for the outcomes of positive mental health promotion programs (47). In the absence of such assessments, mental health promotion programs have tended to be designed to provide outcomes valued by mental health professionals; these outcomes may or may not be consistent with the expectations of adolescents and others affected by the programs. If the expectations are not congruent, the effectiveness of the programs may suffer.

The effectiveness of positive mental health promotion programs can also be affected by the site of the program. Shaffer observes that school boards and community mental health centers may fail to implement an intervention appropriately because the organization is not ready to accept the program

[22]Life Skills Training studies are discussed more fully in ch. 12, "Alcohol, Tobacco, and Drug Abuse: Prevention and Services," in this volume.

(169). The intervention may be inappropriately presented by its supporters, or it may have to be adapted to local conditions, thereby losing, distorting, or damaging necessary or core program elements. Weissberg, Caplan, and Sivo note that many social-competence-promotion programs have originated in elementary schools (225). These authors point out that it is administratively easier to introduce such programs at the elementary school level than at the secondary school level, in part because of the greater stability and structure of the school day (e.g., elementary students typically remain in a single classroom for longer periods of time and classes are smaller and more manageable) (225).

Two additional design-related problems relevant to mental health promotion programs should be noted. First, there is a need to identify what factors contribute to the continuation of successful projects after project funding has ceased. And secondly, there is a need to identify and develop appropriate methods for replicating successful positive mental health promotion models beyond project sites (27a).

Potential Harmful Effects-The promotion of positive mental health among adolescent populations requires careful curriculum design and implementation by properly trained and skillful staff. Programs that assist adolescents in the development of coping, decisionmaking, or other life competencies may occasionally touch upon sensitive topics for individual adolescents. Capable personnel are essential to handle such difficulties and help these adolescents work through their problems.

Some observers have noted that universal interventions, if improperly designed and implemented, can sometimes cause more harm than good (58,79, 124,132). One study demonstrated, for example, that apparently premature application of a preventive intervention to reduce anxiety and aggression actually increased the occurrence of anxiety and aggression in the experimental population (79). In other words, the major risk to the target population seemed to be the intervention itself. While such studies may speak more to the design and implementation of particular programs rather than to the concept of positive mental health promotion itself, they do provide a cautionary note of potential iatrogenic effects and emphasize the need for standards to assure the quality of both program content and staff training.

On the other hand, selected or indicated interventions that require the identification of adolescents at risk raise the disturbing possibility that young people with only minimal symptomatology may be adversely labeled (169). Avoidance of stigmatization is a difficult issue, particularly in school-based programs.

Preventing Adolescent Suicide

Interventions to prevent adolescents from attempting or completing suicide have a less positive focus than many mental health promotion programs. As noted earlier, suicide consistently ranks as the second or third leading cause of death among adolescents (219). Although suicide can result from the interaction of numerous personal and environmental factors and should not be viewed as solely a mental health problem, it is sometimes associated with mental health problems and is considered in this chapter because of its programmatic affinity with mental health services.

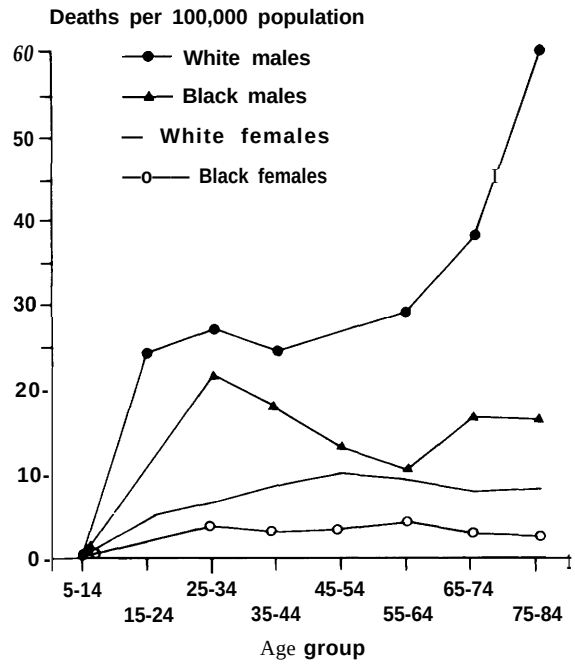
Factors Associated With Suicide Risk

In reviewing reported factors associated with suicide risk, one should bear in mind that most studies of completed suicide in adolescence have, of necessity, included extremely small numbers of subjects. Studies with sample sizes of 30 or fewer, covering a wide range of ages, are common. Few studies have used control or comparison groups. Thus, it is unclear to what extent characteristics found to be common among adolescents who commit suicide are also common among other groups of emotionally disturbed or even normal adolescents.

Individual Factors--As shown in figure 11-1, male adolescents are more likely to commit suicide than females. Females, however, are more likely to make a suicide *attempt.* Estimates of the ratio of adolescent female-to-male suicide attempts have ranged from approximately 2.5: 1 (11) to almost 8:1 (184).

Some researchers have theorized that because young women are more likely to attempt suicide without killing themselves, while young men are more likely to complete suicide, males' attempts are indicative of more serious suicidal intent (96,97). Others have theorized that the differences relate to socially approved gender roles which permit females to express themselves through emotional gestures

Figure 11-1—U.S. Suicide Rates by Sex, Race and Age, 1986



SOURCE: U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, *Report of the Secretary's Task Force on Youth Suicide, Volume //: Risk Factors for Youth Suicide,* DHHS Pub. No. (ADM) 89-1622 (Washington, DC: U.S. Government Printing Office, January 1989).

which males often repress until they reach a more intense level (189). A third reason offered to explain the different suicide rates for males and females is that males are more likely to have access to guns or other lethal weapons which, once used, provide little margin for recanting a suicidal intent. Young women, on the other hand, may select the less lethal means that are more socially acceptable (e.g., prescription and nonprescription drugs) and accordingly be more likely to survive a suicide attempt (130,233).

As figure 11-1 also shows, white adolescents are more likely than black adolescents to commit suicide. White adolescent males have a higher suicide rate than black adolescent males, white adolescent females, or black adolescent females (90,219).

Information on adolescent suicides among other racial and ethnic groups is more limited.[23] Data from national mortality statistics suggest, however, that suicide rates for races other than white and black more closely approximate the rates for white adolescents (208,209). Those aggregate figures obscure the fact that in 1986, American Indian adolescents, although not a monolithic group, generally had a much higher suicide rate-four times higher than all other races among 10- to 14-year-olds (6.9 suicides per 100,000 population among American Indians v. **1.6** suicides per 100,000 population among all other races) and almost 21/2 times higher than all other older adolescents (26.3 v. 11.3 per 100,000) (204).

Beyond simple demographic descriptors, a previous suicide attempt is possibly the most important risk factor for completed suicide. Studies of adolescent suicides have found that as many as half had made previous attempts (50,54,168).

Mental health problems are common among adolescents who attempt or commit suicide (190a). In a study of adolescents attending clinics designed to comprehensively serve the health problems of high-risk adolescents and young adults, 25 percent of the suicide attempters could be diagnosed as experiencing major depression (184). Thirty-five percent of the depressed adolescents in the sample had attempted suicide. Several studies have found that as many as a third of their subjects were receiving mental health treatment at the time they committed suicide (50,77,168).

Many of the characteristics of adolescents who commit suicide are also commonly found in adolescents receiving treatment for mental health problems. Thus, potential risk factors may provide clues for early intervention strategies, but they are not specific enough to exclude many *nonsuicidal* adolescents who may be experiencing mental health problems. In a small study, researchers found that suicidal ideation and high levels of hopelessness distinguished between adolescents who had attempted suicide and adolescents with other known risk factors who had not attempted suicide (190a).

Substance abuse problems are also frequently associated with completed or attempted suicide in adolescence (122,160) and suicidal ideation (183,190a). As noted elsewhere in this Report, reports from hospital emergency rooms in major metropolitan areas find that over 60 percent of 10- to 17-year-olds' drug-related encounters are actually suicide

[23] The paucity of data on the health status of racial and ethnic minority groups is discussed further in ch. 18, "Issues in the Delivery of Services to Selected Groups of Adolescents," in Vol. III.

attempts (213b).[24] Alcohol consumption is often implicated as a contributory factor in adolescent suicides (173,166).

Sexual identity issues may similarly increase the risk of adolescent suicide attempts. There is some evidence that gay and lesbian adolescents are significantly more likely to attempt suicide than their heterosexual peers (80,138).

Prior school problems appear regularly among young people who commit suicide, although one study found above average intellectual ability in adolescents who killed themselves (168). It is unclear whether declining school achievement is the result of a common underlying factor or a discrete causal factor in suicide (151a).

Family Factors-Family disruption and parental loss (e.g., divorce, death, abandonment) occur with greater frequency in the families of adolescents who commit suicide than among the general population (50,168). Having a parent with a serious emotional disability or substance abuse problem may also place an adolescent at greater risk of suicide. Adolescents in families where a suicide has been attempted or committed are at a higher risk of suicide themselves, perhaps because of the imitative or role modeling effect or increased genetic risk (168). Although there is very little information available on the relationship between sexual abuse by family members and suicide risk, it has been suggested that sexual abuse may be a contributing factor in suicidal behavior among some adolescents (lo).

Social/Environmental Factors-Changes in peer relationships, especially rejection by a boyfriend or girlfriend or a fight with a close peer, seem to place some adolescents at a greater risk of suicide. However, the cause-and-effect relationship in these situations is unclear (166).

Perhaps the most troublesome social factor is the so-called *cluster* effect, where a number of adolescent suicides occur over a short period of time and in close geographical proximity. Having a friend or acquaintance who commits or attempts suicide seems to create a greater risk for vulnerable adolescents (34,87), although one study found no relationship (54). The potential for imitation or copycat suicides may be increased through media accounts of actual or fictional suicide (68,156), but, here again, the research is inconclusive (21,109).

Environmental features such as the relative size of the adolescent population and an increased competition for available jobs also have been hypothesized to influence the adolescent suicide rate. Holinger and Offer suggest that entire generations of adolescents may be placed at relatively greater or lesser risk at different points in time as a result of such subtle interplay between complex environmental factors and individual characteristics (100).

Means of Suicide---The method of implementing a suicide attempt appears to influence substantially the risk of death. As figure 11-2 shows, handguns and other firearms are by far the most commonly used instruments in suicides among adolescents. In 1987, handguns and other firearms accounted for over half of all completed suicides among adolescents ages 10 to 19. The rate of suicide involving firearms increased 225 percent among adolescents ages 15 to 19 between 1968 and 1987, while the rate by other means increased about 180 percent (66). This increase has been hypothesized to be a reflection of increasing accessibility and availability of handguns during this period (33,167).

Overall, the second most frequent method of adolescent suicide is by hanging, strangulation, or suffocation (220). Self-poisoning, through ingestion of solid or liquid substances (e.g., prescription drugs) or inhalation of gases or vapors (e.g., carbon monoxide), constitutes the third most prevalent means of suicide.

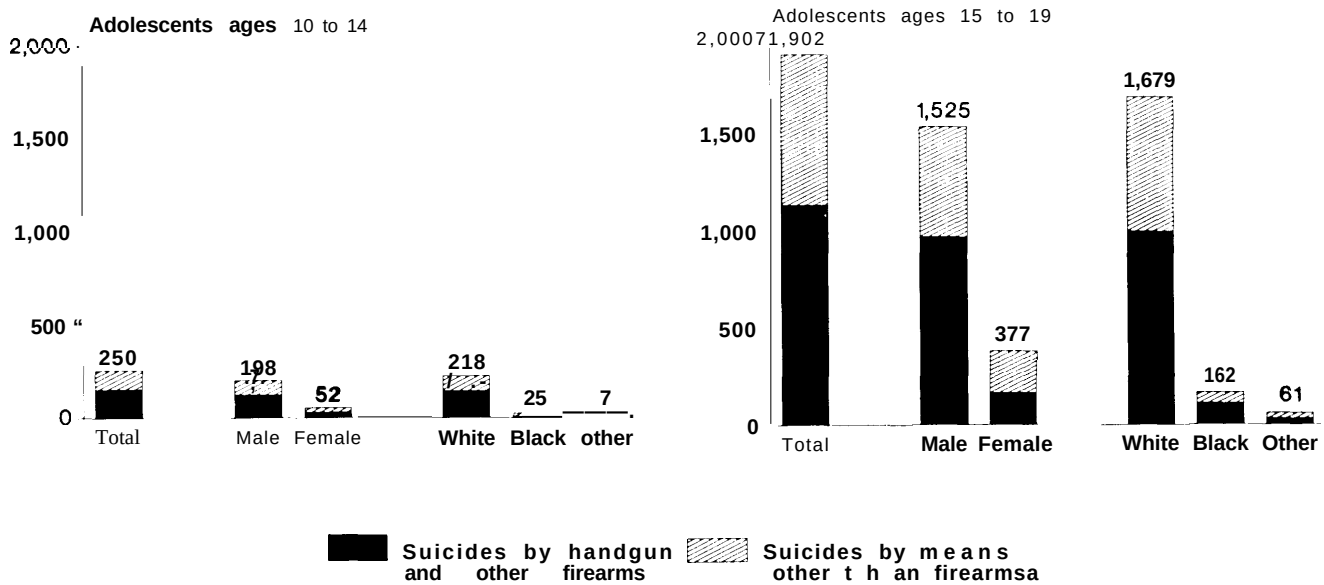
Drug overdoses account for the largest proportion (about 38 percent) of adolescent suicide *attempts* that come to the attention of health care providers, although self-inflicted lacerations are almost as high, constituting about one-third of all attempts (75). These methods are followed in prevalence by injuries due to firearms, injuries from jumping from high places, attempted hangings, and carbon monoxide poisoning (75).

Primary Prevention of Adolescent Suicide

Although much has been written about adolescent suicide, knowledge about its causes and effective means for prevention remains extremely tentative. Preventive interventions for adolescent suicide are largely at the formative stage. Although it is unlikely

[24] See ch. 12, "*Alcohol*, Tobacco, and Drug Abuse: Prevention and Services," in this volume.

Figure n-2-Suicide Deaths Among U.S. Adolescents Ages 10 to 14 and 15 to 19, by Method of Suicide, Sex, and Race, 1987



[a]Means of suicide other than firearms include 1) hanging, strangling, or suffocation, 2) gases and vapors, 3) prescription or nonprescription dregs, 4) ingesting poison, and 5) all other means (e.g., drowning, motor vehicle crashes, jumping from high places, jumping or lying down before a moving object, fire or burns, cutting or piercing injuries).

SOURCE: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, unpublished 1987 data on suicide deaths among adolescents, Hyattsville, MD, 1990.

that adolescent suicide can ever be totally eliminated, innovative primary prevention strategies are being tested in attempts to significantly reduce its incidence. The examples of school- and community-based primary prevention programs below indicate the breadth of those efforts and examine their potential effectiveness.

School-Based Suicide Prevention Programs--The number of school-based programs for suicide prevention has been increasing in recent years. Although there are no current figures on the total numbers of such programs, one survey in 1986 found over 100 school-based suicide prevention efforts which were estimated to reach about 180,000 adolescents, mostly high school students (78). Approximately 44 percent of surveyed programs provided interventions in the elementary grades.

The major goals of these school-based suicide prevention programs were as follows:

- increasing student, teacher, and staff awareness of the problem of adolescent suicide;
- promoting case-finding or identification of potentially suicidal adolescents by teachers or students;
- providing information about existing mental health services in the community; and
- enhancing adolescents' problem-solving and coping skills (171).

Programs may use small discussion groups of targeted students, present information in school assemblies, or integrate suicide prevention into existing curricula. Most programs are not lengthy. In fact, a national survey found that 66 percent of the 115 responding school-based interventions to prevent suicide were only 2 hours or under in duration (78).

Only three systematic evaluations of the impact of school-based primary suicide prevention programs have been identified. One study assessed students 10 weeks after completing a suicide prevention curriculum and found significant but relatively small increases in knowledge and a decrease in feelings of hopelessness (18 1). The changes this study detected in students' *attitudes* toward the problem of suicide (as distinguished from knowledge or feelings of hopelessness) were attributed to sensitizing from a

pretest rather than to the program itself.[25] Another study found that a school-based suicide prevention program had very little impact on students' knowledge or attitudes toward suicide (172). The third study found that participants in a school-based prevention program had significantly higher levels of knowledge about suicide than a pretest group had (144). Attitudes about suicide also shifted, although the magnitude of the difference was small. Changes in suicide rates—the ultimate indicator of a suicide prevention program's effectiveness—were not investigated and would be difficult to demonstrate in relatively small samples like the samples used in these studies.

Unfortunately, the link between changes in attitudes toward and knowledge about suicide and behavioral outcomes is unknown. As Wynne has pointed out, not much is known about the types of information or attitudes that may help protect adolescents against suicidal thoughts or actions (234). Shaffer and his colleagues recently found that self-identified suicide attempters were less likely than non-attempters to endorse views consistent with suicide prevention curricula at baseline, suggesting that suicide attempters may indeed have attitudes toward suicide that differ from adolescents who have not attempted suicide (172a). Unfortunately, Shaffer and his colleagues also found that attempters' views were not influenced in the desired direction by exposure to the suicide prevention curricula, and that in some instances suicide attempters developed attitudes more favorable toward suicide as a solution to life's problems and less favorable toward getting assistance for those problems (172a).

Brief school-based suicide prevention programs may alter adolescents' knowledge or attitudes and strengthen their coping skills, but research has not shown that such programs have an impact on suicidal behavior. In light of evidence that some school-based (172a) and mass-media suicide prevention programs (discussed below) have adverse effects (86), there is some fear that poorly designed programs may have an iatrogenic effect (171).

On the other hand, some evidence suggests that school-based suicide prevention programs may increase the demand for mental health services among adolescents (128). One suicide prevention center that sponsored an intervention found that the number of students contacting the center increased almost threefold following the school-based suicide prevention program, as did the number of requests from school personnel for consultation and assistance with suicidal adolescents (163). Increased demand for mental health services may reflect the effectiveness of a suicide prevention program, or it may be yet another expression of iatrogenic impact in that discussion of suicide may have caused distress among adolescents. Further research is necessary to fully assess these findings.

Community-Based Suicide Prevention Interventions-Beyond the school-based suicide prevention programs, other initiatives have been developed at the community level to focus on the stresses affecting adolescents, with the ultimate aim of reducing suicide risk. Some preventive interventions have been guided by the research that points toward chronic family problems as likely predictors of suicide. These community-based interventions have generally sought to strengthen social supports for families or to the adolescents themselves (96). Other community interventions have focused on identification of adolescents at risk or on improving existing community services for dealing with the mental health needs of potentially suicidal adolescents (171).

Still other community-based interventions seek to increase awareness of the problem of youth suicide and reduce the possible contagion effect of suicides which have already occurred. After a suicide death, for example, some interventions involve efforts to work with target family members and friends of the suicide victim as well as others in the victim's school or community. Such interventions often use trained crisis teams to provide individual and group counseling to suicide survivors (i.e., family and fiends). Suicide survivors may also be given information on warning signs for early identification and monitor-

[25] Students' attitudes toward suicide were measured by agreement/disagreement with statements such as, ''Teenagers who try to kill themselves are 'weak' or very disturbed, ' or 'It's none of my business if my friend says he/she wants to kill him/herself or tries to kill Mm/herself.' Knowledge about suicide was assessed by asking respondents to indicate if statements like the following were true or false (the accurate response is given at the end of each statement): ''Teenagers who talk about suicide don't kill themselves" (False); ''Giving away possessions is a sign that a student maybe thinking about suicide" (True); or ''If I talk to someone about their suicidal feelings it may cause them to commit suicide" (False).

ing of others who may be contemplating suicide (150).

Little is known about the impact of most community interventions designed to prevent adolescent suicidal behavior. OTA is aware of only one study that evaluated the impact of a community-based program for adolescents thought to be at high risk of suicide. Feldman, Stiffman, and Jung examined support programs for families in which a parent has a substance abuse or mental health problem and found no evidence that such services had any impact on attempted or completed suicide among participating adolescents (61).

Even more discouraging than the lack of evidence for the effectiveness of community-based suicide prevention strategies are the data suggesting that some types of interventions may actually have deleterious effects. A study of the impact of four nationally broadcast television programs dramatizing an adolescent suicide or adolescents' responses to a parental suicide—all of which were intended to increase public awareness and were coordinated with existing community services-found that the incidence of suicidal deaths and attempted suicides among adolescents *increased* significantly following three of the four programs (86). These data suggest that there is still much to be learned about the prevention of adolescent suicide.

Interventions To Reduce Access to Means of Suicide—As discussed above, self-inflicted gunshot wounds are the leading method of adolescent suicide, and medication overdose is the chief method used in suicide attempts (see above). Thus, at least one observer has suggested limiting access to firearms through various gun control measures and to prescription drugs with lethal potential through restrictions on quantities dispensed (41). Holinger has recommended that adolescents who are prescribed antidepressants or other psychotropic medications should also receive an emetic or antidote with the original prescription, since overdoses of such medications are sometimes used in subsequent suicide attempts (100). Strategies for reducing access to other instruments of suicide (e.g., ropes used for hanging or strangulation, gases and vapors, automobiles) have not been devised.

Epidemiological studies have been used to estimate that perhaps as many as 20 percent of all youth who would commit suicide by firearms may be deterred completely by restricting access to guns, and another 50 percent would turn to other, perhaps less lethal, methods (41,100). A comparison between the rates and methods of suicide in King County, Washington, and Vancouver, British Columbia, revealed a higher suicide rate among 15- to 24-year-olds in King County; the higher rate was almost entirely accounted for by the rate of handgun suicide in King County-10 times the rate in Vancouver (178). Possibly, however, social and cultural factors influenced these findings (120).

In the United States, Lester and Murrell looked at the relationship in each State between suicide rates for all ages and the strictness of gun control laws (121). They found that as gun control laws increased in strictness, suicide rates decreased among males. While their findings suggest that strict gun control laws have a preventive effect on males, the correlations may also be related to other factors as yet unidentified and not necessarily imply a causal relationship. It would be difficult, but not impossible, to design several studies to assess more rigorously the impact of reduced access to guns on adolescent suicide.

Holinger has estimated that an additional 3 percent of adolescent suicides could be prevented each year by providing emetics or antidotes along with prescribed antidepressants or psychotropic medications dispensed to adolescents (100). Supporting this view, some have cited legislative restrictions on access to prescription sedatives and hypnotic drugs as the primary reason for the decline in suicide rates in Australia during the 1960s (151). In England, self-asphyxiation with cooking gas declined from accounting for 40 percent of all suicides to less than 10 percent of all suicides by 1971, as a result of the conversion of home heating systems from coke gas (which has a high carbon monoxide content) to natural gas (118). After the conversion to natural gas, suicide attempts increased, but completed suicides remained at the lower level for over a decade (60).

Secondary Prevention of Adolescent Suicide

Secondary prevention programs are programs that seek to prevent suicidal adolescents from attempting suicide or completing or repeating a suicide attempt. These efforts tend to fall into two categories: crisis intervention services and treatment interventions

designed to prevent repeat suicide attempts.[26] In addition, the provision of mental health services for all adolescents with mental health problems, as well as those who may be suicidal, has been viewed as a suicide prevention strategy (4,96). These types of prevention efforts and evidence on their effectiveness in terms of preventing adolescent suicide are discussed further below.

Crisis Intervention Services--Adolescent suicide attempts are often impulsive, precipitated by a crisis, and accompanied by serious ambivalence in the wish to die (171), and that observation has led to the development of services that respond to a crisis situation and seek to deter individuals from self-destruction until the immediate crisis has passed. Survey data indicating that adolescents are frequently unaware of suicide prevention services or perceive them to be inaccessible (8) have led to proposals to make those services more readily available and accessible.[27] Most crisis intervention services and suicide prevention centers provide a telephone hot line that is available when traditional mental health services are not (e.g., nights, holidays, and weekends). Some crisis intervention services are staffed 24 hours a day (68). Others provide drop-in counseling or information and referral functions linking clients with existing community services (170). Volunteer workers (including adolescent peers) predominate on the staff of many suicide prevention centers (176).

Studies of hot lines indicate that adolescents constitute only a small proportion of all callers (123). This situation may exist because adolescent suicide attempters are significantly less aware of crisis services than adult attempters *(89).* It is important to note that hot lines are more accessible to some adolescents than to others; adolescents from impoverished homes may not have phones available to them, they may have less privacy, or they may fear that their parents will discover their call on telephone bills (204b).

Three studies known to OTA evaluated crisis intervention services specifically designed for young people (1 11,136,177). Two of these focused on hot lines and did not review the broader array of crisis intervention services available in some programs. One of the two found a high level of user dissatisfaction with the hot line called, but it did not determine how many users were suicidal or assess the impact of hot line intervention on subsequent suicidal behavior (177). The second study found that one-fifth of the women and one-third of the men who used a hot line in a college community believe their contact had *worsened their* problems (111). Other users also expressed dissatisfaction with the assistance they received.

The third study that evaluated crisis intervention services found a small but significant reduction in the rate of suicide among young white women in communities which began crisis centers (136). Given that young women are the most frequent users of hot lines (171) and more satisfied with their encounters (11 1), these results suggest that some crisis intervention services are helpful for certain users.

A 1988 review of the data on general hotlines (not limited to suicide prevention hot lines) concluded that the effectiveness of these services might be improved by greater training of volunteers, combined with standardized procedures and active followup and outreach to suicidal hot line users (171). In addition, the available data suggest that more intensive and directed advertising might make adolescents more aware of crisis services and increase adolescent utilization. Adolescents themselves have suggested that "800" (toll-free) numbers be used for hot lines, so that calls cannot be traced (204b). In the light of negative findings about the effectiveness of some services, it is unclear whether merely increasing awareness and access would have beneficial effects.

Interventions To Prevent Repeat Suicide Attempts--Efforts to keep adolescents who have unsuccessfully attempted suicide from trying again are generally grouped into three categories: inpatient hospitalization, outpatient therapy, and psychopharmacological treatments.

Inpatient hospitalization is perhaps the most common response to an adolescent suicide attempt that comes to the attention of health care providers (129,190). The hospitalization of an adolescent who

[26] Although the interventions described are part of the mental health treatment system, they are evaluated here as a secondary prevention strategy (to prevent high-risk individuals from making or repeating a suicide attempt).

[27] Almost half of 8th and 10th grade students in the National Adolescent Student Health Survey didn't know whether they could locate a community agency for suicide prevention; about 20 percent said that they could *not* locate such an agency (8).

has attempted suicide is one way to provide an opportunity for intensive assessment of the adolescent's mental health status and of the likelihood of a repeat suicide attempt, It can also allow planning for continued outpatient therapy (96).

The most common outpatient therapies following a suicide attempt are family counseling and individual psychotherapy (96). While family support can be important in recovery from an attempted suicide (96), adolescents may resist family involvement in therapy, Further, some families with chronic problems may be resistant to participation. Further, family therapy is not always available, owing to the scarcity of trained family therapists (96).

Very little information is available on the use of pharmacological agents for suicidal adolescents (196). Antidepressants are becoming more common in treating adolescents with major depression, and lithium and monoamine oxidase inhibitors have been used with adolescents who suffer from bipolar disorder (165). Anecdotal evidence suggests that many mental health providers are reluctant to prescribe drugs for adolescents. Reasons for limiting use of pharmacological agents with suicidal adolescents include possible suicidal abuse of medications, the potential for dependence, withdrawal symptoms, and complications associated with concurrent substance abuse (96, 165). The new antidepressant, fluoxetine, appears to avoid most of the adverse effects associated with earlier antidepressants. There have been reports of increased suicidal ideation and actual suicides in patients using fluoxetine (193b), but it is far from clear that *fluoxetine* has been the cause of the suicides (91a), Adolescents have not been involved in trials of fluoxetine for depression (193a),[28]

Generic Mental Health Services--Because of the apparent link between suicide and mental health problems among adolescents, improved screening, diagnosis, and treatment of depression and other psychological disorders have been suggested as a preventive strategy (24). These proposals also seek to increase the ability of health care professionals to detect potentially suicidal adolescents and refer them to appropriate services (191). Access issues have been addressed by recommendations for extended hours, low-cost or no-cost services, and site locations convenient for adolescents, although little has been done to implement such recommendations (19,176).[29]

Overall, there is very little information about the effectiveness of treatment for adolescents who are suicidal (196). In a review of methods of treating suicidal adolescents, Trautman found several studies documenting that adolescents who had attempted suicide had very low rates of keeping outpatient therapy appointments following emergency room treatment or brief hospitalization and high rates of dropout following one or two sessions of outpatient therapy (196). Trautman suggested that cognitive behavioral treatment may be especially effective with suicidal adolescents, given its systematic, highly structured approach and its relatively brief course (196). Although cognitive therapy has been found to be at least as effective as some antidepressant medications with depressed adults (17,197), its impact on suicidal adolescents is unknown (196). Clearly, more research is needed on the treatment of the substantial number of adolescents who appear to be at high risk for suicide.

Services for the Treatment of Mental Health Problems of Adolescents[30]

Perspectives on the Current Mental Health Treatment System for Adolescents

It is somewhat misleading to speak of a mental health treatment system for adolescents. An integrated and well organized mental health system, as such, does not exist for any group in the United States, including adolescents. Instead, one finds a collection of service components which may or may not be linked, organized under different auspices

[28]In line with its general policy on restricting exposure of investigational new drugs to minors and women of childbearing age, the Food and Drug Administration in DHHS specifically requested that adolescents not be included in clinical trials for fluoxetine during the IND (investigational new drug) stage (193a).

[29]One increasingly popular measure is the placement of comprehensive health services in (or near) schools. As discussed inch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents, '' in Vol. III, mental health counseling has become an integral part of these services.

[30]The sections of this chapter that discuss mental health services are based largely on "Mental Health Services for Adolescents" (39) and "Use of Mental Health Sector Services by Adolescents: 1975, 1980, 1986, " both prepared for OTA by Barbara J. Burns, Carl A. Taube and John E. Taube.

(e.g., public, private) and varying in configuration and composition from one part of the country to another.

Despite the lack of an integrated and well-organized mental health treatment system, there have been extensive efforts to implement legitimate systems of mental health care. Significant efforts among these include the child guidance movement and the community mental health center and neighborhood health center movements in the 1960s. In education, the 1975 Education for All Handicapped Children Act (Public Law 94-142)[31] was thought to have the potential to pull together the range of services needed by children and adolescents with disabilities, including mental health problems, through the school system. More recently, the National Institute of Mental Health (NIMH), through its Child and Adolescent Service System Program (CASSP) and the 1986 Comprehensive Planning for Mentally Ill Individuals Act (Public Law 99-660),[32] has been encouraging States to develop comprehensive mental health services for seriously emotionally disturbed children.

The aims of a mental health service system, its operating principles and service components, have been described in the professional literature (187, 202,204). In defining a system of care for severely emotionally disturbed children and adolescents, for example, Stroul and Friedman noted that services should be child-centered, family-focused, and community-based and should include the following components: mental health services, social services, educational services, health services, vocational services, recreational services, and operational services (187).

How reality diverges from the ideal mental health treatment system postulated by Stroul and Friedman becomes evident when one considers data on the utilization of mental health treatment services by adolescents. Fragmentation and lack of coordination are characteristic features of mental health service delivery and are reflected in the segmented, site-specific manner in which utilization data are traditionally considered, with scant attention paid to client movement along a continuum of care (186a).

Utilization of Mental Health Treatment by Adolescents

Sources and Limitations of Data

Many concerns have been raised that children and adolescents do not have appropriate access to mental health services (e.g.,115,202,139). However, it has been difficult to draw firm conclusions about access because of limitations in information about children's use of available mental health services (202). Further, most analyses have focused on children under age 18 as a group and have not disaggregated information about utilization and access for adolescents separately (e.g.,202). This section discusses sources and limitations of current data on the utilization of mental health services by adolescents. It then provides an overview of available estimates of the use of mental health services by adolescents, and draws a tentative conclusion about whether adolescents in need are getting access. Then, using the leading, but quite limited, source of information on mental health services utilization by adolescents —NIMH's Inventory of Mental Health Organizations (208,209,210,21 1,212)--the section reviews current patterns of utilization by setting and adolescent patient characteristics (e.g., race, ethnicity, diagnosis, source of payment), and reviews shifts in patterns of utilization over the period 1975 through 1986.

There are few sources of data on the utilization of mental health treatment services by adolescents and each source has limitations. DHHS National Ambulatory Care Survey (NAMCS), a periodic survey of office-based private physicians, provides some information about adolescents' visits to physicians, including psychiatrists.[33] The last NAMCS survey for which data were available for this Report was conducted in 1985. The 1988 National Health Interview Survey (NHIS), also conducted by DHHS, asked respondents to report on whether their chil-

[31] This was amended in 1990 by the Education of the Handicapped Act Amendments of 1990 (Public Law 101-476).

[32] This was amended in 1990 by the Mental Health Amendments of 1990 (Public Law 101-639).

[33] The methods and limitations of NAMCS are discussed in app. C, "Issues Related to the Lack of Information About Adolescent Health and Related Services," in Vol. I, ch. 6, "Chronic physical Illnesses: Prevention and Services, " in this volume, and ch. 15, ''Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents, " in Vol. III.

Box n-B-Mental Health Service Organizations Surveyed by the National Institute of Mental Health: Definitions

Mental health service organizations surveyed by the National Institute of Mental Health (NIMH) can be split into four levels. Those levels, from the most restrictive to the least restrictive, are **defined as** follows:[1]

- **Inpatient psychiatric facilities-Psychiatric inpatient units in State** and county mental hospitals, general hospital psychiatric units, and private psychiatric hospitals.
- **Residential treatment centers--Residential** organizations, not licensed as psychiatric hospitals, whose primary purpose is the provision of individually planned programs of mental health treatment services in conjunction with residential care for children and youth primarily under the age of 18. Programs must be directed by a psychiatrist, social worker, or psychiatric nurse who has a master's and/or a doctorate degree. At least half of the admissions must be for mental illnesses that can be classified by DSM-II/CDA-8 or DSM-III/ICD-9-CM codes other than mental retardation or substance abuse codes.
- **Partial hospitalization/day treatment-A** planned program of mental health treatment services generally provided in sessions of 3 to 6 hours to groups of patients or clients who do not require 24-hour supervision. This level of care offers more intensive treatment than the usual outpatient care (once a week psychotherapy) and provides a range of treatment modalities (individual and group therapy, education, and rehabilitation). Partial care/day treatment can be offered in general hospitals with separate psychiatric services, psychiatric hospitals, freestanding psychiatric outpatient clinics, or multiservice mental health organizations.
- **Outpatient mental health services provided in organized mental health settings-Mental** health services provided to ambulatory patients or clients who do not need either 24-hour supervision or partial hospitalization. As a general matter, outpatient services include the provision of psychotherapy and psychotropic prescriptions in outpatient clinics, crisis services such as home-based treatment, and services in emergency rooms. NIMH only collects data on outpatient services provided in organized mental health settings (e.g., federally funded community mental health centers, freestanding psychiatric outpatient clinics, and multiservice mental health organizations). Information about mental health services provided in private office-based practices and other settings is very limited.

[1]NIMH does not have a specific definition of a "mental health organization." Rather, it collects data on patient care episodes from eight types of mental health organizations: State and county mental hospitals, private psychiatric hospitals, Department of Veterans Affairs (formerly Veterans Administration) psychiatric organizations, general hospitals with separate psychiatric services, residential treatment centers for emotionally disturbed children, freestanding psychiatric outpatient clinics, freestanding psychiatric partial care organizations, and multiservice mental health organizations. Omitted from the NIMH inventory are patient care episodes in all psychiatric services maintained by Federal agencies other than the Department of Vet- Affairs, such as the Public Health Service, Indian Health Service, Department of Defense, and the Bureau of Prisons.

SOURCE: B.J. Burns, CA. Taube, and J.E. Taube, "Mental Health Services for Adolescents," contract paper prepared for the Office of Technology Assessment, U.S. Congress, Washington DC, 1990.

dren had seen psychologists, psychiatrists, or other mental health providers ever and in the past year.[34]

Data on the utilization of mental health services provided by ''specialty mental health organizations' are available from the National Reporting Program of the DHHS, NIMH, Division of Biometry and Applied Sciences. These data are relied upon extensively in this chapter but are also limited. The types of mental health service organizations surveyed by NIMH are inpatient psychiatric facilities, residential treatment centers, partial hospitalization/ day treatment, and outpatient services provided in organized settings (see box 1 l-B). Inpatient data are available from NIMH's survey for 1975, 1980, and 1986; residential treatment center data for every 2 years between 1969 and 1983, and then 1986; partial hospitalization data for 1986 only; and outpatient data for 1975 and 1986 (210,211,212).

In 1986, NIMH surveyed 4,747 specialty mental health organizations in the 50 States and the District

[34]The 1988 National Health Interview Survey is described, and its limitations discussed, in app C., "Issues Related to the Lack of Information About Adolescent Health and Related Services" in Vol. I and inch. 6, "Chronic Physical Illnesses: Prevention and Services,'' in this volume. Parents who reported a specific condition were asked whether the child had been treated for the condition ever and in the last 12 months. Parents who had not reported a specific condition were asked 'Has [your child] ever seen a psychiatrist, psychologist doctor, or counselor about any emotional, mental, or behavioral problem?'

of Columbia (159).35 The data from NIMH surveys do not include private office-based mental health services (e.g., provided by primary care physicians, psychiatrists, social workers, clinical psychologists, and nurse-therapists outside the auspices of a clinic or residential setting) and do not include mental health services provided in human service sectors such as health, education, social welfare, and juvenile justice. As discussed briefly in this chapter and elsewhere in this Report, however, mental health services are not typically available in non-mental-health sectors. However, mental health services are provided extensively outside of specialty mental health organizations (e.g., in private practices) by primary care physicians, psychiatrists, psychologists, social workers, nurse-therapists, and other providers. Tremper has estimated the utilization of school psychologists by adolescents (198).

A further source of information is a 1986-87 survey of States conducted by the National Mental Health Association (NMHA), which obtained estimates of children and adolescents in institutional settings (143). Placements made or paid for by different State government entities (mental health, social services, juvenile justice and education) to State hospitals and out-of-state residential treatment centers were reported.

Information about the utilization of some services—e.g., group homes, therapeutic foster care, home-based crisis treatment, emergency rooms, and hot lines-is not collected in any systematic fashion, and their utilization is not discussed below.

Other *potential sources* of information about the receipt of mental health services include data from Education for All Handicapped Children Act programs mandated by Public Law 94-142 (amended by the Education of the Handicapped Act Amendments of 1990 [Public Law 101-476]) (134a), and mental health services provided in school-linked health centers (SLHCs).[36] Mental health services provided under Public Law 94-142 and in SLHCs are discussed below (see ''The Public School System' ').

Estimates of Utilization

The following estimates of adolescents' utilization of mental health services can be made from available data sources:

- NAMCS: 2 percent (1.004 million visits) of visits by 10- to 18-year-olds to private, office-based physicians in 1985 were to psychiatrists (220).
- NHIS: According to parents' reports, 10 percent of all children ages 3 to 17[37] (or an estimated 75 percent of all those who had ever had emotional or behavioral problems) had received treatment or counseling for emotional or behavioral problems at some time in their lives (235). Five percent were reported to have received this help within the previous 12 months .38
- NIMH: In 1986, an estimated 1.9 percent of the 10- to 17-year-old adolescent population (586,845 adolescents) was served by specialty mental health organizations (212). Of the 1.9 percent, 1.3 percent were served by partial hospitalization or outpatient facilities, and 0.6 percent were served in general hospitals, inpatient psychiatric facilities, or residential treatment centers.[39]
- NMHA: States reported to NMHA that, in the year 1986-87, they had placed at least 4,000[40] children (including adolescents) with emotional problems in out-of-State placements, and about 22,000 in State mental hospitals. According to NMHA, "State agencies often do not know the exact number of children they place in out-of-State and in-State psychiatric facilities, the amount of money being spent on their treatment, their diagnosis, or even their whereabouts" (143).

35For those mental health organizations unable to provide patient care episode data on NIMH's inventory forms or during a subsequent telephone followup, data were imputed by NIMH (159).

36See ch. 15, ''Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents,' in Vol. III.

37Data are not available separately for adolescents.

38 Because complete data are not available on the annual prevalence of mental health problems (that is, the proportion of children and adolescents who experienced an emotional or behavioral problem in the year preceding the survey), it is not possible to determine what percentage of those in need in the last year actually received mental health treatment.

39The NIMH data used in this part of the chapter have not been tested for statistical significance, and for further guidance in interpreting the figures presented herein the reader is cautioned to consult relevant NIMH publications (e.g., 159).

40Only a minimum number was able to be estimated, because 14 States were not able to provide complete data to NMHA.

- Public Law 94-142: Of the 341,000 seriously emotionally disturbed individuals ages 3 to 21 identified under Public Law 94-142 in 1986-87, less than one-third received psychological, social work, or counseling services (136a).
- Tremper: An estimated 2 percent of adolescents in any one year may be seen by school psychologists [41] (198).

It is important to note that these estimates from varying sources do *not* allow an overall estimate of mental health services utilization by adolescents, and thus make it difficult to assess possible gaps between service need[42] and access. Of the available sources, probably the best estimate of utilization is from NHIS, because NHIS records the proportion of *children and adolescents* who have had a visit to *any* mental health professional.[43] However, NHIS did not estimate mental health visits separately for adolescents. If one assumes that the level of care for adolescents is the same as that for all 3- to 17-year-olds combined, then one would estimate that, in 1988,5 percent of all adolescents had had at least some contact with a mental health provider. Because the NHIS relies on parents as informants, and adolescents may seek care on their own without their parents' knowledge, this may reflect an underestimate. There is no national estimate of adolescents' seeking of care for mental health problems on their own.

However useful the estimate based on the NHIS is, NHIS data on mere contact do not reflect the duration (e.g., one visit v. sustained contact over the year), purpose (diagnostic v. therapeutic), or quality[44] of the contact.

Further Examination of Patterns of Utilization Using NIMH Survey Data

As noted above, NIMH data on the utilization of mental health services by adolescents are seriously limited. But despite having numerous limitations, available NIMH data on the utilization of mental health services by specialty mental health organizations serve three useful functions: 1) they enable some examination of current patterns of service use, 2) they allow exploration of the characteristics of adolescents who use each level of care, and 3) they document shifts in patterns of service use over time. Thus, this section is devoted to a detailed examination of NIMH survey data.[45]

Table 11-3-Admissions of U.S. Adolescents Ages 10 to 18 to Specialty Mental Health Care in Organized Settings, by Level of Care, 1986

Level of care	Number of admissions	Percent of admissions	Admissions/ 100,000
Inpatient care	127,351	22%	406
Residential treatment center	44,375	8	141
Partial hospitalization	15,967	3	50
Outpatient care	399,152	68	1,273
Total	586,845	100%	1,870

SOURCE: B.J. Burns. C.A. Taube, and J.E. Taube, "Use of Mental Health Sector Services by Adolescents, 1975, 1980, 1986," contract paper prepared for the Office of Technology Assessment, U.S. Congress, Washington, DC, 1990, based on 1986 data from the U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute of Mental Health, unpublished National Institute of Mental Health Inventory of Mental Health Organizations, Rockville, MD, 1989.

Current Patterns of Service Use—NIMH survey data offer some perspective on the relationship between institutional and noninstitutional mental health care. As shown in table 11-3, outpatient mental health services in organized mental health settings accounted for 68 percent of admissions of adolescents to specialty mental health organizations in 1986, with the remainder accounted for by hospital inpatient services (22 percent), residential treatment centers (8 percent), and partial hospitalization (3 percent).

[41] The number of school psychologists in the Nation's schools is currently estimated at 1 per 2,633 students. Moreover, these psychologists are able to devote only between 5 to 9 percent of their time to direct counseling and therapy (198).

[42] As discussed in the beginning of this chapter, it is difficult to estimate need for mental health services fora number of reasons, including uncertainties about diagnosis for this age group and, in part as a consequence of uncertainties about diagnosis and measurement, the lack of national epidemiological studies.

[43] In contrast NIMH data pertain to individuals but are limited t. care provided in mental health organizations; NAMCS data are limited to visits (in contrast to individuals) to psychiatrists; NMHA data are limited to placements (in contrast to individuals), to residential placements, and to placements made by public entities; and Tremper's data are limited to school psychologists.

[44] In a previous report, OTA defined the quality of medical care as the degree to which the process of care increases the probability of outcomes desired by patients and reduces the probability of undesired outcomes, given the state of medical knowledge" (202a).

45 For additional details, see B.J. Burns, C.A. Taube, and J.E. Taube, "Use of Mental Health Sector Services by Adolescents: 1975, 1980, and 1986" (39a).

Thus, about 2.4 times as many adolescents receiving mental health treatment in a specialty mental health organization receive care in nonresidential settings (outpatient facilities and partial hospitalization) as are treated in a residential setting (hospital inpatient psychiatric facility or residential treatment center). Of the funding for services in specialty mental health organizations, however, 74 percent goes to residential (overnight) care and 26 percent to nonresidential care (39).

Characteristics of **Adolescents in Specialty Mental Health Organizations,** 1986--Major demographic and clinical characteristics of adolescents receiving treatment in specialty mental health organizations are highlighted below:

- Male adolescents are much more likely than females to use partial hospitalization (73.2 percent of patients are male) and residential treatment centers (approximately two-thirds are male); gender differences in the use of outpatient services in organized settings and the use of hospital inpatient psychiatric services, however, are less pronounced, with 59.6 percent of outpatients, and 50.7 percent of inpatients, male.
- Racial and ethnic minority adolescents make up a larger share of users of partial hospitalization (24 percent) and residential treatment centers[46] (about 30 percent) than they do of users of outpatient services in organized settings (14 percent) and of inpatient psychiatric services (about 20 percent in State and county mental hospitals and general hospital psychiatric units, and 8 percent in private psychiatric hospitals).
- The most common inpatient diagnosis, accounting for about one-third of inpatient admisions of adolescents in 1986, was affective disorder, followed by adjustment disorder or behavior disorder (depending on the age of the adolescent) (see table 11-4).
- In 1986, the most common diagnosis of adolescents receiving outpatient and partial hospitalization services in mental health organizations was adjustment disorder (accounting for 30 percent of admissions), followed by behavior disorder (about 20 percent of admissions). The two leading diagnoses for 1986 outpatient admissions were followed by either anxiety disorder (5 percent of diagnoses for 10- to 14-year-olds) or substance abuse(11 percent of diagnoses for 15- to 17-year-olds). Affective disorders (16 percent) and substance abuse (9 percent) diagnoses were the third and fourth leading reasons for admission to partial hospitalization in 1986 (for 10- to 17-year-olds combined).
- Involuntary commitment in 1986 occurred for 15 percent of outpatient admissions, for 22

Table 11-4-Distribution of Admissions of U.S. Adolescents Ages 10 to 14 and 15 to 17 to All Inpatient Psychiatric Services, by Diagnosis and Age, 1975 and 1986

	Percent of admissions	
Age, **diagnosis**	**1975**	**1986'**
Ages 10 to 14 . . . . . (N= 25,834)		(N= 38,682)
Mental retardation 1.970		•
Substance **abuse 2.1**		•
Affective disorder 10.1		30.6%
Schizophrenia 6.3		•
Anxiety disorder 6.9		11.9
Adjustment disorder 43.9		11.5
Behavior disorder 18.7		26.5
Other 10.4		21.0
Total 100.0%		100.0%
Ages 15 to 17 . . . . . (N= 54,648)		(N= 68,707)
Mental retardation 2.2%0		•
Substance **abuse 5.5**		9.6%
Affective disorder 15.6		34.0
Schizophrenia 22.4		5.1
Anxiety disorder 4.7		•
Adjustment disorder 25.4		19.5
Behavior disorder 8.2		17.2
Other 16.1		12.1
Total . . . . . 100.0?40		100.0?40

[a]Entries marked with an asterisk had five or fewer eases and therefore did not meet standards of reliability or precision.

SOURCE: 1975 **data:** U.S. Department of Health and Human **Services,** Public Health **Service,** Alcohol, Drug Abuse, and Mental Health Administration, National Institute of Mental Health, *Use **of** Psychiatric **Facilities** by Children and **Youth,** U. S., 1975*, DHHS Pub. No. **(ADM)** 81-1142 (Washington, DC: U.S. Government Printing Office, 1981). 1986 **data:** U.S. Department of Health and Human **Services,** Public Health **Service,** Alcohol, Drug Abuse, and Mental Health Administration, National Institute of Mental Health, unpublished sample survey data, Washington, DC, 1986.

[46]One reason for the greater minority representation in residential treatment centers may be that most referrals to residential treatment centers are made by entities other than the mental health treatment system, such as the juvenile justice (17 percent), social services (46 percent), and education (28 percent) systems (143),

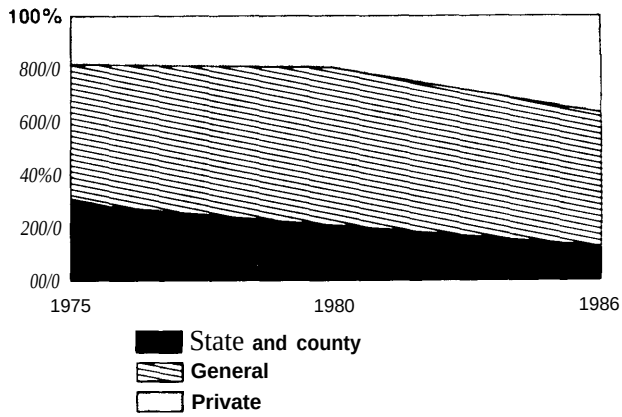
Table n-5-Distribution of Outpatient Admissions of U.S. Adolescents Ages 10 to 14 and 15 to 17 in Mental Health Organizations, by Source of Payment, 1975 and 1986

	Percent of admissions	
Age, source of payment	1975	1986[a]
Ages 10 to 14	(N=134,202)	(N=206,407)
No payment	25.0	12.3
Personal payment	40.4	30.7
Commercial insurance	9.4	24.4
Medicaid	16.1	21.0
Other government[b]	9.0	•
Other[c]	•	11.5
Total	100.0%	100.O%
Ages 15 to 17	(N=94,382)	(N=164,900)
No payment	34.4	12.6
Personal payment	35.5	36.3
Commercial insurance	6.7	22.6
Medicaid	9.5	14.6
Other government[b]	13.5	•
Other[c]	•	13.5
Total	100,O%	100.O%

[a]Entries marked with an asteriskhadfive orfewereases andthereforedid not meet standards of reliability or precision.
[b]This includes 1986 data for the Civilian Health and Medical Program of the Uniformed Services and Medicare.
[c]This includes social services and State and local sources.

SOURCE: 1975 **data:** U.S. Department of Health and Human Services, Public Health Services, Alcohol, Drug Abuse, and Mental Health Administration, National Institute of Mental Health, *Use of Psychiatric Facilities by Children and Youth, U. S., 1975,* DHHS Pub. No. (ADM) 81-1142 (Washington, DC: U.S. Government Printing Office, 1981). 1986 **data:** U.S. Department of Health and Human Services, Public Health Services, Alcohol, Drug Abuse, and Mental Health Administration, National Institute of Mental Health, unpublished sample survey data, Washington, DC, 1986.

Figure 11-3-Distribution of Admissions of Individuals Under Age 18 to Inpatient Psychiatric Services, by Type, United States, 1975,1980, and 1986



SOURCES: 1976 **data:** U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute of Mental Health, *Use of Psychiatric Facilities by Children and Youth, U.S. 1975,* DHHS Pub. No. (ADM) 81-1142 (Washington, DC: U.S. Government Printing Office, 1961). 1980 **data: U.S. Department** of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute of Mental Health, *National Institute of Mental Health Statistical Note 175,* Washington, DC, 1986. 1986 data: U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute of Mental Health, unpublished National Institute of Mental Health Inventory of Mental Health Organizations data, Washington, DC, 1989.

percent of partial hospitalization admissions, and for 20 percent of inpatient admissions.[47]

- About two-thirds of adolescents using partial hospitalization and inpatient psychiatric services in 1986 had received prior mental health treatment, in contrast to a third of adolescents using outpatient services.
- Commercial insurance (60 percent) is the most frequently used source of payment for inpatient psychiatric treatment, Medicaid (28 percent) for partial hospitalization, and the patients themselves (33 percent) for outpatient services (table 11-5).

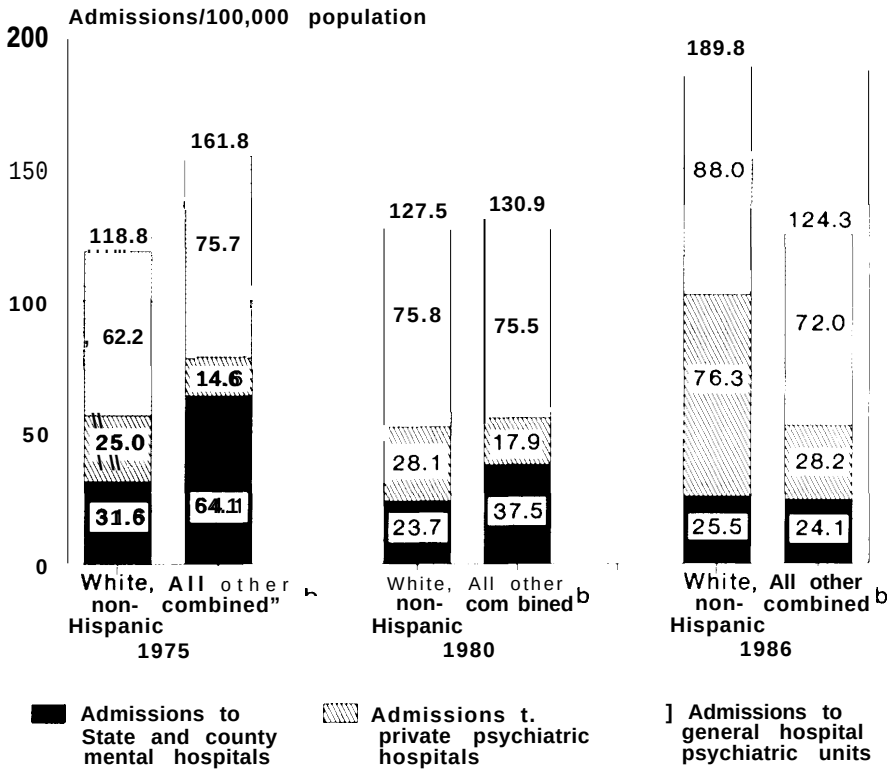
Shifts in **Patterns of Service Use, 1975-1986--** From 1975 to 1986, the latest year for which NIMH survey data are available, the provision of mental health services to adolescents ages 10 to 17[48] in organized mental health settings increased. The greatest increase was in adolescent treatment episodes in residential treatment centers. These increased 66 percent between 1975 and 1986. Adolescent admissions to outpatient services provided in organized mental health settings increased 62 percent between 1975 and 1986, meaning that 170,000 more adolescents were admitted in 1986 than in 1975. Inpatient psychiatric admissions of 10- to 17-year-olds increased 33 percent between 1975 and 1986.

The growth in inpatient psychiatric admissions of adolescents since 1975 has been controversial, because it has been largely due to growth in admissions of adolescents to private psychiatric hospitals (229) (see figure 11-3). A small portion of the increase in adolescent admissions to private psychiatric hospitals may be due to decreased use of State and county hospitals for adolescents. Other

[47]It should be noted that 32 States permit parents to make "voluntary' admissions of a minor, with or without consent of the minor. For further discussion see ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in vol. III.

[48]This age group is used for cross-time comparisons because data on 18-year-olds are not available for comparison in 1975 and 1980.

Figure 11-4—Inpatient Admissions to Specialty Mental Health Organizations Among U.S. Children and Adolescents Under Age 18, by Race and Ethnicity, 1975, 1980, and 1986[a]



[a]Breakdowns by race and ethnicity are not available separately for adolescents. In 1986, however adolescents ages 10 to 17 accounted for 98 percent of child inpatient admissions to the organizations surveyed by NIMH.
[b]Finer racial and ethnic breakdowns are not possible for purposes of these calculations.

SOURCE: 1975 data: U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute of Mental Health, *Use of Psychiatric Facilities by Children and Youth, U. S., 1975*, DHHS Pub. No. (ADM) 81-1142 (Washington, DC: U.S. Government Printing Office, 1981). 1980 data: U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute of Mental Health, *National Institute of Mental Health Statistical Note 175,* Washington, DC, 1986. 1986 data: U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute of Mental Health, unpublished 1986 NIMH Inventory of Mental Health Organizations data, Washington, DC, 1989.

explanatory factors may include the following: an increase in mental health problems, such as depression and suicide, among adolescents; decreased stigma and greater acceptance by adolescents and their families of mental health care; increased insurance coverage for inpatient psychiatric treatment; and effective marketing by private psychiatric hospitals.

Other major shifts in patterns of hospitalizing adolescents for mental health treatment from 1975 to 1986 include the following:[49]

- A far greater proportion of the adolescent inpatient population was white, non-Hispanic in 1986 than in 1975 (see figure 11-4).[50]
- Several shifts in inpatient and outpatient diagnoses for adolescents, with large decreases in

[49]For additional details, see Burns, Taube, and Taube, "Use of Mental Health Sector Services by Adolescents, 1975, 1980, 1986" (39a).

[50]Although the proportion of nonwhite adolescents declined in all types of inpatient facilities for mental health treatment, the greatest decline occurred in State and county mental hospitals (from 30.5 percent nonwhite in 1975 to 18.3 percent nonwhite in 1986) (see figure 11-4). As noted above, however, nonwhite adolescents are less likely than white non-Hispanic adolescents to use private psychiatric facilities.

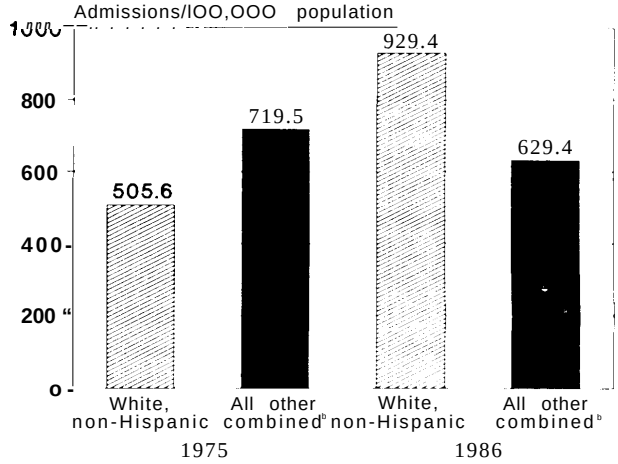
admissions for adjustment disorder[51] and schizophrenia, 52 and large increases in admissions for affective disorder[53] and substance abuse (table 11-4).54

- The provision of about 20 percent less individual and group therapy to adolescents in State and county hospitals.
- A major increase in the use of commercial insurance for psychiatric admissions to inpatient settings in conjunction with a reduced role for Medicaid coverage.[55] The change was most pronounced for private psychiatric facilities.[56]
- No significant decrease in the length of stay for adolescents admitted to hospitals for mental health treatment despite the decrease in length of stay observed for adult psychiatric admissions.

The trend toward increased use of *outpatient mental health services* from 1975 to 1986 is probably tied to increased awareness and acceptance of using mental health services as well as better reimbursement by private insurers (39).[57] The proportion of adolescents using commercial insurance for outpatient mental health services in organized mental health settings increased from about 8 percent in 1975 to 24 percent in 1986 (see table 1 1-5).

The decrease in use of *outpatient and inpatient* mental health services by racial and ethnic minority adolescents may be related to the overall increasing reliance on commercial insurance to fund such services. The rate of use of outpatient services in organized mental health settings by minorities was higher than for whites in 1975, but it dropped below the rate for whites in 1986 (see figure 11-5). In 1986,

Figure 11-5-Outpatient Admissions to Speciality Mental Health Organizations Among U.S. Children and Adolescents Under Age 18, by Race and Ethnicity, 1975 and 1986a [b]



[a]Breakdowns by race and ethnicity are not available separately for adolescents. In 1986, however, adolescents ages 10 to 17 accounted for 67 percent of child outpatient admissions to the organizations surveyed by NIMH.

[b]Finer racial and ethnic breakdowns are not available for 1985. Of 1986 adolescent outpatient admissions to specialty mental health organizations, however, 78.4 percent were white, non-Hispanic, 10.1 percent were black, non-Hispanic, 10.1 percent were Hispanic, and 1.4 percent were "other, non-Hi spanic. "

SOURCE: 1975 data: U.S. Department of Health and Human Services, Public Health Services, Alcohol Drug Abuse, and Mental Health Administration, National Institute of Mental Health, *Use of Psychiatric Facilities by Children and Youth, U. S.*, 1975, DHHS Pub. No. (ADM) 81-1142 (Washington, DC: U.S. Government Printing Office, 1981). 1986 data: U.S. Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute of Mental Health, unpublished 1986 NIMH Inventory of Mental Health Organizations data, Washington, DC, 1989.

20 percent of black, non-Hispanic adolescent outpatients in the NIMH survey used Medicaid; 29 percent made a' 'personal payment,' and 23 percent

[51]From 31 percent of inpatient admissions in 1975 t. 17 percent in 1986, and from 44 percent of outpatient admissions in 1975 to 30 percent in 1986.

[52]From 15 percent of inpatient admissions in 1975 t. less than 5 percent in 1986, and from 2.8 percent of outpatient admissions in 1975 to less than 10 sample cases (percentage unable to be calculated) in 1986.

[53]From 11 percent of inpatient admissions in 1975 to 23 percent in 1986, and from 2.6 percent of outpatient admissions in 1975 to 6.6 percent in 1986.

[54]From 4,4 percent of inpatient admissions in 1975 to 6 percent in 1986, and from less than 10 sample cases of outpatient admissions (percentage unable to be calculated) in 1975 to 5 percent in 1986.

[55]In 1975, commercial insurance paid for 44 percent of inpatient care provided to 10- to 14-year-olds and 50 percent of the care provided to 15- to 17-year-olds. In 1986, the percentages paid by commercial insurance were 61 and 67 percent, respectively. In 1975, Medicaid paid for approximately 21 percent of adolescent inpatient care, and in 1986, 11 percent, See ch. 16, "Financial Access to Health Services, " in Vol. III for a discussion of the limitations in Medicaid that may account in part for the reduction in Medicaid coverage for inpatient mental health treatment. For example, 13 States (25 percent) do not allow payment for such care. Even States that do pay for inpatient treatment maintain precertification requirements, restrictions on length of stay, and payment rates regarded as unreasonable by some in the psychiatric community (e.g., 194). Low payment is an often cited reason for physicians' lack of participation in Medicaid.

[56]In 1975, Medicaid paid for about 8 percent of adolescent admissions to private psychiatric facilities. In 1986, the number of adolescent admissions paid by Medicaid was too small (five or fewer sample cases) for a statistically reliable estimate to be made.

[57]Although coverage may have improved between 1975 and 1986, mental health benefits are still less generous than many other health care benefits. In the face of rising health care costs, some commercial insurers are now considering placing additional limits on mental health benefits, particularly for adolescent dependents. See ch. 16, "Financial Access to Health Services, " in Vol. III.

made no payment; only 7 percent of black, non-Hispanic adolescent users of organized outpatient mental health services used commercial insurance, in contrast to 24 percent of white, non-Hispanic users (212).[58]

An issue which may merit attention is the growth in *substance abuse treatment.* In *1975,* not even 1 percent of adolescent outpatients were diagnosed with a substance abuse disorder, but by 1986, 11 percent of 15- to 17-year-old outpatients in mental health organizations were given a substance abuse diagnosis (221). Inpatient admissions of 15- to 17-year-olds for substance abuse disorders also rose between 1975 and 1986, from 5.5 percent to 9.6 percent (see table 11-4). These changes are difficult to interpret.

Effectiveness of the Mental Health Treatment System for Adolescents

Research on the effectiveness of inpatient psychiatric services, residential treatment centers, day treatment and partial hospitalization, and specific therapeutic modalities for adolescents with mental health problems is reviewed below. The review relies heavily on a 1986 children's mental health report by OTA (202), updated with new studies.

Effectiveness of Inpatient Psychiatric Services and Residential Treatment Centers

As described in box 11-B, inpatient psychiatric facilities are in many ways distinct from residential treatment centers. However, there is often much overlap between the two types of facilities, and they have in common the fact that they offer 24-hour residential care for adolescents. In addition, they are often located away from the adolescent patients' home communities (143). Sometimes, residential treatment centers, which are less medically intensive, are located on the same campuses as inpatient psychiatric hospitals, and serve as an interim step between discharge from the psychiatric hospital and release to less restrictive treatments such as partial care, outpatient or ambulatory treatment, or to home. Further, the literature on the effectiveness of inpatient psychiatric treatment does not always distinguish between hospital care and residential treatment center care (202). In this section, the research on the effectiveness of inpatient care refers generally to both hospital care and residential treatment center care. The section then reviews available studies relating specifically to residential treatment center care.

Inpatient Psychiatric Service--Controversy exists over the use of inpatient psychiatric services for adolescents with mental health problems. In 1982, Knitzer reported that at least 40 percent of hospital placements of adolescents with mental disorders were inappropriate, and that these clients could have been more effectively treated in an outpatient setting or in a residential care setting (115). Recently, concerns have arisen with regard to increases in admissions of adolescents to private hospital inpatient psychiatric facilities (229). Judging the appropriateness of this increase in admissions is difficult because of the limited research on the effectiveness of inpatient psychiatric care.

Some researchers suggest that hospital and residential services are no more effective for the majority of adolescents with mental health problems than are outpatient services (70). However, it is difficult to separate effects attributable to particular treatment modalities from effects attributable to particular settings (202). The limited research on the effectiveness of inpatient psychiatric settings for adolescents with mental health problems suggests a critical need for research on this type of care (108,139,155a,202).

In its 1986 report on children's mental health, OTA concluded that ''questions about the effectiveness of mental health treatment in psychiatric hospitals and residential treatment centers are difficult to answer because of the lack of systematic research' (202). OTA noted a particular lack of true experiments, or even quasi-experiments, in this area (49,201). True or quasi-experiments would measure treatment outcomes of patients with similar diagnoses and severity of illness placed randomly in either inpatient or ambulatory settings.[59] This approach would allow researchers to begin to distinguish the effects of the treatment settings from those of the clients and other factors. Clearly, however, such experimental research is "complex, difficult, and

[58] Interestingly, 42 percent of Hispanic adolescent outpatients used commercial insurance. Twenty-one percent used Medicaid, 13 percent ~& a "personal payment,'' and 20 percent made no payment (212).

[59] Of course, such trials would also maintain some control over (or at least measure) the treatment modalities delivered in the different settings.

expensive' (85); furthermore, it is regarded by some as unethical (202).

At the time of OTA's study, the most comprehensive review of the outcome literature on inpatient treatment for children and adolescents was Blotcky et al. 1984 review (23a,202). However, this review and the studies included in it were seriously flawed (202). In 1990, Pfeiffer and Strzelecki attempted to update and improve upon Blotcky's review by reviewing new studies and attempting to conduct a quantitative meta-analysis of outcome studies conducted since 1975 (including those reviewed by Blotcky using a narrative review) (155a). Unfortunately, Pfeiffer and Strzelecki were not able to conduct a true quantitative meta-analysis because only 2 of the 34 studies they found reported the necessary information (155a). In addition, only 4 studies were uncovered that examined the effects of aspects of treatment on outcome. Most studies were concerned with the impact of various patient characteristics (e.g., age, gender, intelligence, pattern of symptoms) on outcome (155a). The aspects of treatment examined in the studies reviewed by Pfeiffer and Strzelecki were: completion of the treatment program; planned discharge; a cognitive-based problem-solving skills training package, and therapeutic alliance (155a).

Using a relatively unrefined method of rating studies for their effectiveness (i.e., a score of +1, O, or -1, depending on the patients' outcome, adjusted for various factors such as the number of subjects in the study), Pfeiffer and Strzelecki concluded that all 4 treatment studies reviewed found a positive relationship between inpatient treatment and the patients' outcome. Nevertheless, Pfeiffer and Strzelecki noted serious conceptual and methodological shortcomings in the existing literature, including failure to delineate the critical dimensions of inpatient treatment, an absence of consensus on definitions of improvement, a limited range of predictor variables, and failure to use adequate research designs and powerful statistical techniques. Pfeiffer and Strzelecki note that most of the outcome studies they reviewed "had no recognizable research design beyond the modest reporting of one or more measures taken after discharge' (155a). This was the same situation noted by OTA in 1986.

The sole clinical trial of inpatient psychiatric hospitalization for adolescents, conducted in Brooklyn by Winsberg and colleagues, found somewhat better outcomes for adolescents treated primarily in out-of-hospital settings (232). Behavioral and educational outcomes were comparable for both groups. On subsequent followup, though, one-half of the hospitalized cohort were in institutions, and only a quarter of the nonhospitalized adolescents were in institutions. However, these results are difficult to interpret because all patients in the sample were initially hospitalized for a 1- to 3-week evaluation.

Effectiveness of Residential Treatment Centers-The American Psychological Association's Statement on Residential Treatment indicates that there is a lack of consensus in the field regarding which types of adolescents are best treated in residential treatment centers (7). The American Psychological Association reports that current criteria for placement are either too imprecise or too narrowly conceptualized to be used for case-by-case placement decisions. Moreover, it states that no single definition of a residential treatment center exists. Therefore, the decision to place an adolescent in a particular residential treatment center program cannot be reduced to a few universally acceptable criteria.

The research on residential treatment centers consists largely of uncontrolled studies. Two residential treatment center programs merit detailed description because they represent the only programs for which (published) controlled studies were identified. The first, called Project Re-Education (Re-Ed), was started in the early 1960s (99). The aim of Project Re-Ed was to develop anew approach for working with emotionally disturbed children based on educational, psychological, and ecological strategies. Teacher-counselors, backed up by consultant mental health specialists, were trained to work with the emotionally disturbed children and their families. The programs were located in the communities, which facilitated therapeutic work with the family, and the children went home every weekend. Camping was an important component of the program, inspired by the Outward Bound schools in England. The average length of stay was 4 to 8 months, and the program was said to cost about half that of traditional residential programs.

Project Re-Ed has spread in the United States. In 1981, Project Re-Ed programs were located in nine States. Although designed initially for children 6 to 12 years of age, Project Re-Ed has been applied to

older adolescents, apparently successfully (99). For example, in a study of Project Re-Ed by Weinstein, comparison groups included 122 emotionally disturbed adolescent males participating in Project Re-Ed, 128 untreated disturbed adolescents, and 128 nondisturbed adolescents (223). The groups were equivalent in age, intelligence, and socioeconomic status. At discharge, the Re-Ed staff rated 94 percent of the adolescents participating in Project Re-Ed as moderately or greatly improved; 18 months after the clients had returned home from Project Re-Ed, their families reported significant improvement compared with adjustment before entering the program. The Project Re-Ed adolescents improved in self--esteem, control of impulsiveness, and internal control.

The only other controlled study of residential treatment center use was conducted by Rubenstein and colleagues in Ontario, Canada (164). In this study, a group of adolescents in a Parent Therapist program with specially trained foster parents was compared with a similar group treated in a residential treatment center. Both client groups shared comparable backgrounds and made similar progress in their respective treatment programs.

Aside from concerns about the lack of evidence for effectiveness of residential care, there are concerns about the cost of such care (70), the potential for institutional dependence, trauma associated with the separation from the family, difficulty recentering the family (or even abandonment by the family), and the learning of antisocial or bizarre behavior from intensive exposure to other disturbed children (14). Some have observed that adolescents in inpatient psychiatric and residential facilities may be subject to harsh treatments (e.g., prolonged isolation) (229). No specific standards prohibit such treatments.[60] Research is essential to determine when and for whom the potential benefits of inpatient care and care in residential treatment centers outweigh potential risks.

Effectiveness of Day Treatment[61]

Research on day treatment for adolescents as an alternative to inpatient psychiatric treatment or as followup to inpatient or residential treatment center care suffers from many of the same limitations as research on inpatient care.

Most day treatment programs are like schools with treatment worked into the curriculum (187). The City Lights program in Washington, DC, for example, enrolls adolescents who have been ‘ ‘written off by the schools as unteachable, by the juvenile justice system as intractable, and by the mental health system as untreatable’ (195). During the day, the environment is structured, but the patient is allowed to return home at night. This type of care fosters continuing involvement with family and peers. The City Lights program uses self-paced, computer-assisted education in the context of a therapeutic milieu. A long-term evaluation is planned, but initial results suggest that it is possible to keep this population of juveniles in school, to increase their reading and math skills by 1.5 grade levels a year, and to return only 10 percent to hospitals or jails (195). Unfortunately, however, the study on which these promising results are based suffers from the lack of a comparison group.

A Florida day treatment program for emotionally disturbed adolescents emphasizes the development of social skills to deal with peer conflict (e.g., “fair fighting” is taught) and disruptive behavior in ways that promote problem-solving (70). Initial results, which addressed the issue of placements at a l-year followup, cited reductions in placements to foster care, shelter care, psychiatric units, and settings for delinquents (70).

Reviews of the literature have pointed to positive gains from adolescent use of day treatment in three

[60] While there are no restrictions on the use of treatments that may be regarded by some as harsh, the National Association of Private Psychiatric Hospitals, a membership organization of 300 private psychiatric hospitals, does require that each member hospital have written policies and procedures regarding patients’ rights (142). These policies and procedures are required to address ‘the use of high-risk or restrictive procedures, including seclusion, restraint, and behavior modification that employs noxious stimulation or deprivation of nourishment’ (142),

[61] A more generic term for&y treatment/partial hospitalization is ‘‘partial care’’ (e.g., 159). As defined by NIMH for its inventory of mental health organizations, partial care is a ‘‘planned program of mental health treatment services generally provided to groups of clients/patients in sessions lasting 3 or more hours” (159). Included by NIMH as partial care are ‘‘day/evening *treatment*’’ (programs that place heavy emphasis on intensive short-term therapy and rehabilitation), “day/evening care” (programs that focus on sustainment, maximization, or socialization through recreation and/or occupational activities, etc., including sheltered workshops), and ‘‘education and training” (programs that focus on change through an integration of education, habilitation, and training, including special education classes, therapeutic nursery schools, and vocational training) (159). Most programs for adolescents are day programs that include education and training. As noted in box 1 l-B, partial care can be delivered in psychiatric hospitals, freestanding psychiatric partial care organizations, or multiservice mental health organizations.

areas: 1) academic and behavioral improvement, 2) reduction or delay of hospital and residential placements, and 3) a return to less restrictive school placements for about 75 percent of adolescents receiving treatment (13,73). However, as noted above, there have been no methodologically rigorous studies of this type of intervention.

Day treatment programs are not being used as frequently as they might be because private third-party payers seem reluctant to support this type of treatment (1 14). Critics claim that day treatment is an ambiguous modality; that it creates demand for services; and that length of stay, treatment outcomes, and costs are unpredictable (114). Research to address the validity of these concerns is needed.

Effectiveness of Therapeutic Modalities

The research on the effectiveness of mental health treatments for children and adolescents was thoroughly reviewed in OTA's 1986 report on children's mental health (202). In general, the studies accumulated considerable evidence suggesting effectiveness for a wide range of treatment modalities for children and adolescents, Most studies reviewed by OTA, however, were plagued by methodological problems.

More recently, a 1987 review of *psychotherapy* outcomes for children and adolescents through age 18 found that, although the overall effect of treatment was positive, therapy was less effective with adolescents than children. Professional training seemed to be more critical for older clients than for children (228).

A subsequent study raised a question about whether the implementation of psychotherapy for children and adolescents in clinic settings is optimal (227). The study compared outcomes for children and adolescents from nine clinics who completed a course of therapy and for those who dropped out after an intake evaluation. The groups were comparable at intake on demographics, family, and clinical measures. Followup evaluations at 6 and 12 months after termination of therapy showed no significant effects of therapy for 6- to 12-year-olds and 13- to 17-year-olds.

Research on the effectiveness of *psychopharmacological agents* has also been reviewed extensively (202). According to Ryan and Puig-Antich, the psychiatric disorders that are responsive to psychotropic medications are similar for adolescents and adults, including schizophrenia, bipolar and unipolar depressive disorder, panic attacks, and generalized anxiety disorder (165). Despite Ryan and Puig-Antich's assurances that adults and adolescents have similar responses to psychotropic medications, the authors are careful to identify a number of caveats because of the very limited research literature specific to adolescents (165). For example, they note that only two studies, with small numbers of subjects, have addressed the effectiveness of tricyclic antidepressants for adolescents; there are no controlled studies on the use of lithium for adolescents; and for anxiety disorders, controlled studies have been done only on separation anxiety disorders. In contrast, the evidence for effective use of stimulants for attention deficit disorder and hyperactivity which continues into adolescence is stronger; the evidence for the use of neuroleptics for adolescents with schizophrenia is also stronger, but special attention to the side effect of tardive dyskinesia is urged as it may occur within 3 months of neuroleptic treatment (165).

Two of the most promising new drugs for mental health problems are fluoxetine (trade name Prozac®) and clozapine (trade name Clozaril®). As noted above, there have been no studies of the effectiveness of fluoxetine for depression in adolescents (193a). Studies are underway, however, on the effectiveness of fluoxetine for obsessive-compulsive disorders, bulimia, and smoking in adolescents (193a). Clozapine is a new drug for schizophrenia that is helping many patients who were previously considered untreatable; however, its availability is raising cost and access issues (114a).

A 1989 Institute of Medicine review of child and adolescent mental health research needs questioned the assumption that the psychiatric disorders that are responsive to psychotropic medications are similar for adolescents and adults (139). The Institute of Medicine noted that animal studies of neurotransmitters revealed markedly different sequences of formation, differentiation, and synaptogenesis (formation of nerve interconnections) of neuronal pathways related to psychiatric areas of interest. The differential development of these neuronal systems were conjectured to correspond with age-related onset of certain psychiatric symptoms in humans. Medications were found to have different effects on these neuronal pathways; for example, stimulants increase motor activity in adults and decrease it in immature animals, and dopamine D-2 receptor-

blocking antipsychotic drugs exhibit striking differences in effect on behaviors of prepubertal and postpubertal animals. The Institute of Medicine concluded that psychopharmacological interventions have not been adequately studied for short-term and long-term side effects and for both effectiveness and appropriateness to specific age groups.

As did OTA in 1986 (202), the Institute of Medicine in 1987 (139), an NIMH National Advisory Mental Health Council (213) concluded that more research on the effectiveness of a wide range of therapeutic modalities for children and adolescents is critical.

Access *to Mental Health Treatment Services*

Access to mental health treatment services refers to the ability to get treatment, when needed, at an appropriate level, in a facility which is competent to provide the services at an affordable cost (either financial or psychological). For adolescents to have access to mental health treatment services three requirements must be met:

1) Mental health treatment services must be *available,* meaning that appropriate referrals are made (from either the public or the private sector) and competent clinicians and organizations exist to assess and provide mental health services in the community;
2) Mental health treatment services must be *affordable,* either through insurance, personal resources, or other reasonable means; and
3) Mental health treatment services must be *approachable,* meaning that policy and program barriers (e.g., eligibility requirements) and sociocultural issues (e.g., fears due to stigma or a lack of confidence in treatment) do not hinder use.

The availability, affordability, and approachability of mental health treatment services for adolescents are discussed below. It is important to note that adolescents (and children) with mental health problems face special access issues related to their dependent status. Parental consent is necessary to obtain treatment in most help-seeking situations, and parental involvement is usually required to obtain health insurance coverage.[62]

Availability of Services

Limited availability of mental health treatment services contributes to the access problem. Although an effective mental health treatment system should be able to meet the mental health needs of those who require treatment, serious concerns have been raised about the lack of mental health services for adolescents.

One way to look at the issue of availability is to compare estimates of the need for mental health treatment services with actual use, since a gap between use and need would strongly suggest that adequate services are not available. No national studies have examined the relationship between the need for mental health treatment services based on state-of-the-art psychiatric epidemiological measures and the use of services for the adolescent population.[63] Thus, the only method available to identify the gap between need and use involves applying available prevalence estimates to available mental health service utilization data. These sets of data are, as noted, extremely limited and they do not address issues of intensity, duration, quality, or effectiveness of services. However, if, as estimated above, between 5.6 million (18 percent) and 6.8 million (22 percent) of U.S. adolescents are in need of mental health services, yet only 1.2 million (6 percent) receive such services, then between two-thirds and three-quarters of adolescents do not receive needed services.

Any number of reasons can account for this level of failure in providing mental health services by the mental health treatment system. In some areas, the problem is that mental health treatment services are not available (134,204a). Even nationally, there are fewer mental health professionals specially trained

[62] See ch. 16, "Financial Access to Health Services," in Vol. III, for a discussion of health insurance coverage of mental health treatment and ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking," in Vol. III, for a discussion of parental consent requirements.

[63] The 1988 National Health Interview Survey (NHIS) cited earlier in this chapter inked parents about the existence Of an emotional Or behavioral problem in their adolescents. The development of a valid diagnostic interview applicable to children and adolescents has proven to be very difficult (139,202). NIMH currently has in the field pilot studies of a diagnostic interview schedule for use in estimating the lifetime and point prevalence of diagnosable mental disorders, and utilization of mental health services, of children and adolescents in the United States.

to deliver care to adolescents than are believed to be needed.

The question of what constitutes an adequate number of mental health professionals for adolescents is difficult to answer. Such an estimate is made difficult by the fact that both the total number of such specially trained mental health professionals in the United States and standards for provider-to-population ratios are generally not available. The American Academy of Child and Adolescent Psychiatry approximates that 5,000 psychiatrists specially trained to treat children and/or adolescents are currently available (see *204).* Approximately 1,400 psychologists have declared an interest in working with adolescents,[64] and 5,150 licensed clinical social workers appear to have a primary interest in treating adolescents (25a), but these data are rough estimates.

In 1981, the Graduate Medical Education National Advisory Committee (GMENAC) recommended to the Secretary of Health and Human Services that 8,000 to 10,000 child psychiatrists (not including other mental health professionals) be available by 1990 (see 204). A GMENAC panel estimated, however, that psychiatrists would be needed to treat approximately 25 percent of the mental health needs of children and adolescents, with the other needs being treated by primary care physicians, pediatricians, and other mental health professionals. Since then, the advisability of primary care physicians' treating mental disorders has been questioned (see 20465). Thus, OTA concludes that GMENAC's recommended total number of child and adolescent mental health professionals (including, but not limited to, psychiatrists) could be increased to between 32,000 and 40,000 in 1990. This estimate remains somewhat conservative in that an oversight panel of GMENAC reduced their original recommended projection of child psychiatrists from 25,000 to between 8,000 and 10,000 in part because of ''a lack of capacity to train an adequate number of professionals to treat the large unmet need by 1990' (see 204).

These estimates of the need for mental health professionals do not differentiate between the needs of children and adolescents. One indication of differential need is the variation in prevalence of mental health problems. Using current diagnostic criteria for the prevalence of mental health problems, it appears that adolescents are somewhat more likely to require mental health services than are younger children (e.g., 51,235).

In situations where mental health services do exist, barriers to gaining access (e.g., lack of insurance to pay for care, stigma, lack of belief in the value of treatment) may result in low rates of use. Limited coordination of services between the large public and private sector agencies where adolescents receive other services (schools, juvenile justice, health, social services) may also discourage use of mental health services but some evidence suggests that if services were known to be available, they would be used more often.[66]

Affordability of Services

The impact of financial barriers is difficult to examine without information about persons who do not use care because they lack adequate financial resources or insurance coverage. It seems probable, however, that limited insurance coverage may prevent many adolescents and their families from seeking mental health care. A substantial proportion of adolescents (15 percent of 10- to 18-year-olds in 1987) have no health insurance coverage, and the rates of no coverage are higher for Hispanics and blacks than they are for non-Hispanic whites (203).[67] Insured Hispanics and blacks are more likely than whites to be covered by Medicaid, which varies considerably by State in its mental health benefits. In comparison with physical illness coverage under most insurance policies, mental health coverage has more limitations (e.g., higher copayments, annual and lifetime benefit limitations, and greater deductibles). Thus, for many adolescents and their families, cost is likely to be a major issue in access to mental health services.[68]

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[64] See ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III.

[65] Also see ch. 15, ''Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III, which reports evidence that primary care physicians believe themselves to be not adequately trained to meet the psychosocial needs of adolescents, and that objective studies have found that primary care physicians have difficulty recognizing mental health problems in adolescents.

[66] See ch. 15, '' 'Major Issues Pertaining t. the Delivery of Primary and comprehensive Health Services to Adolescents, ' in Vol. III.

[67] For a discussion of adolescents' health insurance coverage, see ch. 16, ''Financial Access to Health Services," in Vol. III.

68 For a fuller discussion of issues surrounding insurance and financial across to health care, see ch. 16, "Financial Access to Health Services," in Vol. III.

Approachability of Services

The approachability of the mental health treatment system is a much more complex issue to assess. A recent professional experience related to access to mental health services in a crisis situation involving a suicidal adolescent is described inbox 1 l-C. In this case, getting access to appropriate services at a time of critical need required almost 24 hours. Fortunately, a hot line provided some assurance that help could be obtained, but professional mental health resources were either unavailable, delayed, or believed by some mental health professionals not likely to be constructive (the State hospital). At a minimum, three general hospitals with psychiatric units contacted for help could have offered to arrange a referral to a private psychiatric hospital, but they did not. This kind of system insensitivity is not unusual. When even mental health professionals cannot get the system to work, it is not surprising that families and adolescents, especially those without resources, become extremely frustrated. Little is known about how adolescents view the mental health services system.

The notion that adolescents in many respects require a different *approach* to the delivery of health services in general is coming to be accepted, although a full conceptualization of this approach is yet to be developed and applied.[69]

Shifting to the issue of access to mental health services for minority adolescents, a series of serious consequences associated with minority status and serious emotional disturbance were reviewed by Cross and his colleagues (53):

- There is a tendency to place black adolescents in the juvenile justice system instead of the treatment settings likely to be obtained by their white counterparts (46,95).
- A Native American child is more likely than a white child to go without treatment or to be removed geographically from the family and tribe (20,175,204).
- A Spanish-speaking Hispanic child probably will be assessed in a language that is not his or her own (152).
- An Asian child with a mental health problem is not likely to come to the attention of the mental health system (53).

The preceding observations imply that different approaches to designing or altering the mental health treatment system may be needed to increase access for each minority group.[70]

Box n-C-An Adolescent Mental Health Crisis Situation Described by a Mental Health Professional

One Sunday evening about 7 p.m., I received a call from parents of an 18-year-old male saying that their son was suicidal (he later admitted to taking an overdose of pain pills shortly before the call). I agreed to find a source of help and called the local general hospital with a psychiatry unit. The hospital staff said they could not handle anyone who was suicidal but that the adolescent could be sent to the State hospital (not an appropriate option for a first episode where the environment would be threatening and only protection from further self-inflicted injury might occur). As the family had insurance, calls were made to two teaching hospitals an hour away from their home. Neither had a psychiatric bed available, and both would have required a 3-hour wait in an emergency room before a psychiatrist could be seen. AU that they could offer, after a psychiatric evaluation, was referral to the State hospital.

The only help received that night was an encouraging conversation between the adolescent patient and a volunteer on a suicide hot line. There was no offer of crisis intervention from any of the emergency rooms (other than that a psychiatrist could be called for an evaluation) or any possibility of a home-based team that could come in and work with the family and adolescent. Late the next day, an admission to a private psychiatric hospital was arranged for the adolescent.

[1]This incident was related by B.J. Burns, one of the authors of the background paper on which this section of the chapter is based.

SOURCE: B.J. Burns, C.A. Taube, and J.E. Taube, "Mental Health Services for Adolescents," contract paper prepared for the Office of Technology Assessment, Us. congress, Washington, DC, 1990.

[69]These issues are discussed more fully in ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents, " in Vol. III.

[70]Ch.18, ' 'Issues in the Delivery of Services to Selected Groups of Adolescents, '' in Vol. III, discusses access issues relating to racial and ethnic minority adolescents in greater detail.

Mental Health Treatment Costs

Estimating the costs of **treatment** for a specific illness within a particular age group is difficult. A 1989 Institute of Medicine study noted that the difficulty in quantifying costs arises from the failure to collect relevant age-specific data necessary to calculate such costs (139). The usual technique is to apply the percent of total admissions that are accounted for by adolescents to total expenditures, within major setting types. This method does not distinguish between unique costs associated with treating adolescents and the costs of treatment for the average patient. It also assumes that the percent of admissions is a reasonable measure of caseload, which is probably more true for short stay facilities than longer stay facilities. Further, according to the Institute of Medicine, the dearth of services for adolescent mental health problems artificially deflates potential costs (139).

Using the best evidence and method available, OTA estimates that the total cost of mental health treatment for U.S. adolescents in 1986 was about $3.5 billion (see table 11-6). Forty-six percent of the total was spent for hospital inpatient care; 28 percent for residential treatment center care; and 26 percent for ambulatory (outpatient) care. Comparing adolescent expenditures with expenditures for other age groups (192), one finds the following:

- Adolescent care includes a major expense category, residential treatment centers, which is not part of the adult costs. The cost and use of residential care has risen dramatically in the past decade. An estimated $359.1 million was spent on residential treatment centers in 1977, increasing to $573 million by 1983. By 1986, expenditures for residential treatment center care rose to $978 million a year, 29 percent of the total costs of adolescent care (192).
- Adolescent costs account for 13 percent of the total specialty psychiatric costs for all ages in 1986, 7 percent of the hospital costs, and 18 percent of the outpatient costs.
- Inpatient hospital expenditures for adolescents are a much smaller proportion of total costs (46 percent) than for all ages (78 percent) .71 However, when residential treatment center costs are added to hospital costs, the percent for institutional costs is 76 percent; 24 percent of costs are for services in the community (outpatient treatment, partial hospitalization).

Table 11-6-Rough Estimate of Direct Expenditures for Mental Health Services for U.S. Adolescents Ages 10 to 18, 1986a

	Estimated expenditures in millions
Hospital inpatient, total	$1,592.1
Psychiatric hospital, total	852.4
State	304.9
Private	547.5
General hospitals, total	739.7
Specialty psychiatric units	192.2b
Medical units	547.5'
Residential treatment centers for severely emotionally disturbed	$ 978.0d
Ambulatory care, total	$ 883.3
Organized settings	489.3"
Office-based practice	394.0f
All specialty mental health facilities, total	$3,453.4

[a]Estimated expenditures were obtained by applying the Percentage of admissions of individuals ages 10 to 18 (National Institute of Mental Health sample survey) to the total expenditures for mental health services estimated in C.A. Taube, "Funding and Expenditures for Mental Illness: Persistence of Trends," 1989 (192).
[b]This figure includes all specialty psychiatric units and inpatient units of what the National Institute of Mental Health classifies as "multipurpose mental health organization s."
[c]This assumes the same adolescent percentage as occurs in specialty units.
[d]This assumes 100 percent of expenditures are for adolescents and represents a slight overestimation as residents less than 10 years old, although expected to be a small number, are included in this figure.
[e]This figure includes hospital outpatient programs, free-standing clinics, and other specialty mental health outpatient programs.
[f]This assumes the same adolescent percentage as in organized settings.
SOURCE: B.J. Burns, C.A. Taube, and J.E. Taube, "Mental Health Services for Adolescents," contract paper prepared for the Office of Technology Assessment, U.S. Congress, Washington, DC, 1990.

Coordination Between the Mental Health System and Other Systems of Care

Numerous analyses have concluded that coordination of treatment services for adolescents with mental health problems is the exception rather than the rule (1 15,127,202). Instead of an orderly provision of appropriate services in a timely manner, one typically finds fragmented services provided across multiple jurisdictions--e. g., mental health systems, social services, schools, juvenile justice, and sub-

[71]Hospital expenditures for psychiatric care are also about equally split between psychiatric hospitals and general hospitals; however, the costs fOr adolescents in private psychiatric hospitals represents a larger share of hospital costs (34 percent) than for all ages (12 percent), The cost of hospitalization ranges from $300 to $500 a day (187). This is the most expensive treatment setting available to an adolescent patient with mental illness. In 1988, the per episode cost of private psych iatric hospitalization for adolescents was greater than $1 6,000 per adolescent (140).

stance abuse programs. Where linkages between the mental health and other service systems exist, they are generally the result of governmental mandate and encouragement, innovative demonstration projects, or the personal efforts of individual providers. For an adolescent with mental health problems, the only way to get comprehensive-but not necessarily coordinated-treatment may be through application to numerous agencies, each with its own eligibility criteria, legal scope of authority, diagnostic and treatment perspectives, independent resources and benefit structure, and administrative requirements.

Frustration for adolescents with mental health problems, for their families, and for service providers is a common result of system fragmentation. Because of the difficulty in locating and qualifying for various services, potential beneficiaries may abandon the effort and forgo needed treatment. Parents may be required to relinquish custody of their children (143). Interagency differences and confidentiality requirements may hamper professionals who attempt to create cooperative arrangements to facilitate service delivery or followup on clients in other agencies.

To highlight these problems, brief reviews of the general health care system, the juvenile justice system, the child welfare system, and the public school system, and their interactions with the mental health system, are presented below.

The General Health Care System

Adolescents enter the general health care system—hospitals, emergency rooms, clinics, private physician offices-for a variety of reasons (checkups, illness, accident, disability, substance abuse, pregnancy). But whatever the reason, adolescents who enter the general health care system may also have mental health problems that merit treatment (145). Some adolescents or their families may seek out a general health care provider specifically because of a mental health problem.

Unfortunately, the mental health needs of adolescents entering the general health system are frequently not recognized by the attending physician, nurse, or other provider (38).[72] Even if their mental health needs are recognized, such adolescents may not be appropriately referred. Health care professionals frequently lack state-of-the-art information about diagnosis and treatment of mental health problems and may be unfamiliar with referral resources (38).

To overcome this problem, some health centers have employed specially trained and funded, multidisciplinary teams, although these teams remain rare examples in the general health care field. These teams have been able to detect mental disorders more effectively than traditional health care models (56).[73] Community health centers with a mental health component have demonstrated the value of an interdisciplinary team approach where a full range of services are available within a single agency (37). A Federal effort to coordinate care between community health centers and community mental health centers was never fully implemented because of a shift in policy priorities in 1980 (82,202).

The Juvenile Justice System[74]

For some adolescents with mental health problems, the police or courts maybe their first encounter with a public agency. Police may be called upon to intervene in an aggressive act or violation of the law by a minor with a mental health problem; and the court may order a mental health assessment when appropriate. Mental health screening of adolescents involved with the juvenile justice system is not a universal practice, but for those adolescents who are screened and found to have significant problems, a "brush with the law" may be the opening wedge to needed treatment. The courts may not only call upon the expertise of mental health professionals for diagnosis and evaluation, but also may order commitment of adolescents for mental health treatment. The 1989 survey by the National Mental Health Association (NMHA) found that 17 percent of placements of children and adolescents to out-of-State mental health residential treatment were ordered by State juvenile justice systems (143).

The provision of mental health services through the juvenile justice system has not been systematically studied, but it is thought to be limited once

[72] See ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents," in Vol. III.

[73] Unfortunately, specially funded adolescent health care teams in this study were no more effective than nonfunded clinics in reducing mental health problems among adolescent clients (56).

[74] For a more extensive discussion of health services for adolescents in the juvenile justice system, see ch. 13, "Delinquency: Prevention and Services," in this volume.

disposition of a pending case is made. Interaction between the court and the mental health system is often fragmented and time-limited, but litigation may force changes in this area. A suit brought on behalf of four North Carolina minors *(Willie M. et al. v. James B. Hun?, Jr.),* which claimed the four minors had been denied rightful education and appropriate mental health treatment, was settled in favor of the plaintiffs and the class of children ''likely to be institutionalized' that they represented (18). This case and similar class litigation may inject the courts into a more visible oversight role vis-a-vis services for adolescents with mental health problems,

The Child Welfare System[75]

Adolescents tend to enter the child welfare system because of families or environmental factors which place them at risk-e. g., neglect, abuse, or other need for protective intervention. Many adolescents who enter the child welfare system may need mental health treatment. In some States, the child welfare agency may provide its own diagnosis and treatment (whether directly or through referral or purchase of services). In others, the child welfare system may turn to the State mental health authority for diagnosis and treatment or referral. High caseloads for social workers, lack of available services, funding problems, and other impediments may work against appropriate placement and treatment.

Further difficulties arise over legal questions. For example, the Adoption Law and Child Welfare Act of 1980 (Public Law 96-272) has been interpreted differently in different States. Under its provisions, States may require parents to relinquish custody in order to obtain mental health treatment for their adolescent child. Following loss of custody, the adolescent may be removed from the home and community and placed in a residential treatment center (39). In areas where services such as crisis intervention, day treatment, and family preservation services are available, greater cooperation between child welfare agencies and mental health seem to be occurring (1 16a).

The Public School System

The 1975 Education for All Handicapped Children Act (Public Law 94-142) has provided the potential for stronger linkages between public schools and the mental health sector. This landmark legislation requires a free and appropriate education (and "related services") in the least restrictive setting for all children, including those with mental disorders. Individual education plans are required for all students with disabilities. If mental health services are deemed necessary for a student educational progress, they must be provided.

Despite the promise implicit in Public Law 94-142, recent research indicates that there are serious limits to mental health services currently available in school settings. As reported by Tremper, there is one school psychologist per 2,633 pupils, and typically school psychologists devote only 5 to 9 percent of their time to direct counseling or therapy (198).

Knitzer recently estimated that only 19 percent of students of all ages with serious emotional disturbance are currently being served under Public Law 94-142 (116). Even among the 341,000 emotionally disturbed 3- to 21-year-olds identified under Public Law 94-142 in 1986-87, an analysis for the U.S. Department of Education found that less than one-third received psychological, social work, or counseling services (136a). Fiscal concerns and other factors have led some States to determine that mental health services do not have to be provided through the schools when they are not directly related to educational objectives (1 16).

Recently, however, the Education of the Handicapped Act Amendments of 1990 (Public Law 101-476) authorized funding of $35.5 million over 4 years for two new competitive grant programs designed to improve services for children and youth with serious emotional disturbance (20 U.S.C. 1426, Section 627). These grant programs do not go so far as to mandate that mental health be included under ''related services, ' but one grant program is for the use of local educational agencies working in collaboration with mental health entities (20 U.S.C. 1426, Section 627(b)).

Another approach to delivering mental health services to adolescents in schools is through school-

75 Adolescents in the child welfare system are discussed in ch. 3, "Parents' and Families' Influence on Adolescent Health. "

linked health centers (SLHCs).[76] The SLHC model for providing comprehensive health and related services to adolescents has received considerable attention and has the potential to reach many underserved adolescents. Definitions of SLHCs vary, and the precise number of SLHCs is not known, but their number has grown in recent years, particularly in the latter half of the 1980s. As the movement to provide health services in or near schools has advanced, SLHCs have found that mental health services are in great demand by students and, on behalf of students, by school faculty and SLHC staff. For example, in the 1988-89 and 1989-90 school years, mental health-related conditions were the second leading cause of clinic visits to the 23 SLHCs funded by the Robert Wood Johnson Foundation, accounting for 20 percent of visits. Mental health visits to these SLHCs were almost as frequent as those for the leading cause of visits, acute illness and accidents (25 percent of visits).

Although the duration and intensity of the services provided is not known, 90 percent of in-school SLHCs[77] surveyed by the Center for Population Options reported that they provided some level of mental health and psychosocial counseling in the 1988-89 school year. Nonetheless, a group that has been charged by the Robert Wood Johnson Foundation with advancing the provision of mental health services in SLHCs notes that the need for mental health services is far from met, even in schools that have SLHCs (3a).

Barriers to Coordination Between the Mental Health System and Other Systems

Experience has shown barriers to greater coordination and integration of mental health services for adolescents to include the following:

- multiple entry points and jurisdictions;
- lack of interagency linkages, coordination mechanisms, communication, and trust;
- lack of continuity of care over time, as adolescent mental health needs change and are served by different providers;
- the absence of programs specifically designed for adolescents;
- inadequate research on optimum treatment approaches and outcomes;
- the absence of appropriate legislative mandates;
- isolation of providers and lack of information about available services, resources, and funding outside one's own arena; and
- incongruent missions and responsibilities of agencies.

There is not yet a universally accepted model for coordinating and integrating adolescent mental health services with other systems of care. The range of services required by some adolescents is very broad: primary health care, education, legal, social welfare, and mental health. For the most part, each adolescent requiring services must be dealt with on an individual basis by multiple agencies and individuals. Fragmentation of this magnitude limits the ability of systems to provide continuity of care in a comprehensive manner.

These barriers are not insurmountable, but success will require several factors: mechanisms to bring representatives from different systems together formally and informally at the State and local levels, enhanced training for professionals through workshops targeted toward adolescent mental health concerns, greater reliance on case conferences which include all parties concerned with an adolescent's welfare, and similar creative strategies. Innovative approaches are being devised and tested in communities around the country. Selected models of innovative mental health services and model systems of coordinated and comprehensive mental health services are discussed in the sections that follow.

Selected Models of Innovative Mental Health Services

In addition to schools as centers for providing and increasing referrals to mental health services (see above), innovative mental health services include home-based mental health services for disturbed adolescents at high risk of out-of-home placement, therapeutic foster care for adolescents with mental disorders who cannot be managed in their own homes, and therapeutic group homes for emotionally

[76] See ch. 15, "Major Issues Pertaining to the Delivery of Primary and Comprehensive Health Services to Adolescents, in Vol. III, for a discussion of SLHCs, including bibliographic sources for the information discussed here.

[77] SLHCs need not be on school grounds. However, the Center for Population Options survey has to date been conducted only among those SLHCs actually located in schools.

and behaviorally disturbed adolescents. Home-based mental health services are by definition provided in an adolescent's own community, and therapeutic foster care is likely to be provided in an adolescent's own community. As is evident from the discussion below, innovative community-based mental health services are likely to require collaboration among different service systems.

Home-Based Mental Health Services

The goal of home-based mental health services is to preserve the family. Services are provided within the homes of disturbed adolescents and their families on an outreach basis. Home-based services have three primary objectives: 1) to preserve the family's integrity and prevent unnecessary out-of-home placements, 2) to introduce and connect adolescents and their families to community agencies and individuals in order to create an outside support system, and 3) to strengthen the family's coping skills and their capacity to function effectively in the community after crisis treatment is over (185). Only adolescents at high risk of placement in out-of-home settings (e.g., those perceived as dangerous to self or others) are accepted for home-based mental health services.

Home-based mental health services are provided by both public and private agencies. The services are multifaceted, including evaluation and assessment, counseling, skills training, and coordination of services. Program staff usually have caseloads ranging from two to four families, and the length of intervention is typically between 2 to 5 months. Small caseloads are essential to provide immediate and intensive service. Treatment is often provided by a team of at least three professionals. Generally, a primary counselor is assigned to the case, with backup counselors enabling 24-hour coverage. The estimated cost of a three-person program (including secretarial and administrative expenses) has been estimated to range from $120,000 to $160,000 per year (185).

Early demonstrations of home-based services report encouraging results. These include the Homebuilders Program in Tacoma, Washington (1 12,92); the Systemic Crisis Intervention program in Houston, Texas; and other home-based services programs in San Diego, California, Hennepin County, Minnesota, and Maine (188). Studies have suggested that 75 to 90 percent of the children and adolescents who participated in such programs did not subsequently require placement outside of the home; verbal and physical aggression decreased; and fiscal savings have been reported (91,98).

An evaluation of the Houston Child Guidance Center's program called the Systemic Crisis intervention Program followed 75 participating youths over an 18-month period (91). Suicidal behavior was the cause for treatment of 47 subjects (26 of these had suicidal ideation and 21 had actually attempted suicide). No suicide attempts were made during treatment. Among those followed after treatment, there was a significant decrease in the range of problem behaviors. Only 5 of the 75 youths were hospitalized or in residential placement at followup. Two made minor suicide attempts during the followup period. The mean per patient cost of the program was $3,200 per episode of care. Other findings included regular school or work attendance.

The results from evaluations of home-based programs are impressive, but methodological shortcomings exist in most of the research. Few studies have assessed whether families continue to remain intact after home-based services have been withdrawn. If the goal of home-based services is to prevent out-of-home placement, it is essential for the researchers to examine not only the short-term results of intervention but also to conduct longitudinal followup studies. Another problem with available evaluations is that they have not included control families with comparable characteristics and problems for whom home-based services were not provided (193). Without control groups, it is not possible to predict whether comparable adolescents would have entered or avoided out-of-home placement without the intervention.

Despite the preceding cautions, the early evidence indicates that home-based programs, in their short history, have demonstrated that many children who would have been removed from their families can best be served in their homes (72). If a community is committed to a family-oriented system of care that emphasizes treatment in the least restrictive setting possible, in-home services should be tried before out-of-home placements, unless an individual is in immediate danger (12). When intensive services are provided during a time of crisis, they may contribute to lasting improvements in family functioning, and these services may be cost-effective in relation to residential placements (200).

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Therapeutic Foster Care

Therapeutic foster care, provided within the private homes of trained families, is a relatively new and specialized form of residential treatment for adolescents with mental disorders who cannot be managed in their own homes. The approach combines the normalizing influence of family-based care with specialized treatment interventions (186). It is the least restrictive of all residential placements for adolescents with mental disorders and is capable of providing individualized, intensive therapy even for adolescents with severe disorders as an alternative to highly supervised institutional settings.

The flexibility of therapeutic foster care programs offers an opportunity to match adolescents to specific social and cultural backgrounds and to design individual treatment programs. No special physical facility is required; therefore, there are no zoning problems when establishing a new program. Therapeutic foster care programs can expand or contract as caseload demands change. All therapeutic foster care programs have a low staff-to-client ratio, allowing the clinical staff to work closely with each adolescent, with the therapeutic foster parents, and, if they are willing and available, with the biological parents. Linkages with schools and other agencies are made.

The estimated annual cost of therapeutic foster care ranges from $10,000 to $20,000 per adolescent (187). Included in this cost are payments to staff and therapeutic foster parents. A portion of the cost of therapeutic foster care programs may be covered by funds for regular foster care in the State. Programs are typically jointly funded by child welfare and mental health agencies, and costs are reported to be lower than for other residential settings (186).

The Presley Ridge Youth Development Extension in Pittsburgh collects annual followup surveys on clients discharged from therapeutic foster care (103). Seventy percent of discharged clients are still living in a less restrictive setting than therapeutic foster care at 1 and 2 years after discharge, and over 70 percent are attending school or are working. When change in functioning is measured over time, behaviors are reported to have improved in more than 75 percent of discharges (103). Friedman reported that significant progress on behavioral objectives was made by 60 percent of youth discharged from Florida's therapeutic foster care programs (69). Snodgrass and Bryant report that an average of 77 percent of children in therapeutic foster homes are discharged to less restrictive settings (e.g., their families, independent living arrangements, less structured group homes) (180).

As noted above, an Ontario study compared outcomes of foster placement in the Parent Therapist program with care in a residential treatment center (164). Although clients were not randomly assigned, the groups were roughly comparable in background and made similar improvement. The significant difference was that the foster care arrangement was reported to cost only one-half as much as the residential treatment for the same period of time (164).

Although these findings are promising, the research studies on therapeutic foster care are flawed by the same types of methodological problems as are studies on other settings. Therapeutic foster care would seem theoretically to meet the needs of some adolescents more effectively than more institutional alternatives, and some have suggested that the major constraint in developing therapeutic foster care programs has not been lack of enthusiasm about the effectiveness of this type of service, but one of recruiting and training qualified foster parents (40). More research is needed before definitive conclusions can be reached.

Therapeutic Group Homes

Therapeutic group homes can theoretically provide emotionally and behaviorally disturbed adolescents with an environment in which to learn social and psychological skills, In comparison with residential treatment centers, therapeutic group homes are smaller, have fewer medical staff available, and tend to be less security-oriented (187). Such homes typically serve 5 to 10 clients and provide an array of therapeutic interventions.

There are two major models of therapeutic group homes. One is the teaching family model, developed at the University of Kansas, then moved to Boys Town in Omaha, Nebraska (157). The other is the Charley model, developed at the Menninger Clinic. In both models, staff are the key agents for change in the disturbed adolescents; trained couples live at the homes 24 hours a day, with some relief assistance available. Other types of therapeutic group homes may have rotating staff instead of permanent houseparents.

Therapeutic group homes vary with respect to the types of treatment programs they offer, but often combine individual psychotherapy, group therapy, and behavior modification. The teaching family model emphasizes structured behavioral interventions through teaching new skills and positively reinforcing improved behavior. Other types of therapeutic group homes use individual psychotherapy and group interaction. Vocational training, work experiences, and recreation are normally included as part of the treatment program for adolescents.

Some research has suggested that therapeutic group home programs produce positive gains for adolescents while they are in the group home, but that these gains do not appear to be maintained after discharge (1 13). However, a 1987 dissertation studied changes in relationships between 20 adolescents treated in a therapeutic group home and their parents and peers over an 18-month followup period (162). The study also looked at changes in work relationships and adolescents' level of psychopathology. Twenty untreated adolescents served as controls. At followup, 90 percent of adolescents treated in the therapeutic group home had fair or good relationships, while only 45 percent of adolescents in the untreated group achieved similar ratings. The treated group realized a significant decrease in psychopathology, while the untreated group did not. Future research would benefit from further longitudinal assessments and, perhaps, evaluation of alternative strategies for treatment after discharge from a therapeutic group home. In addition, adolescents with severe character pathology or major psychiatric disorders were not included in the dissertation study, suggesting the need for more analysis of appropriate matchings of clients to treatments (e.g., 202).

Models for the Provision of Comprehensive, Coordinated Mental Health Services

Three models that exemplify successful alternatives to the fragmentation of systems of care for adolescents are the Ventura County Project in California, the Alaska Youth Initiative, and the Kaleidoscope Program in Illinois.

Although they differ in approaches to organizing services, these models of comprehensive services share similar goals and philosophies. All three models are designed to do the following:

. care for adolescents who are at risk of mental health problems or who have been separated from their home and family because of psychiatric hospitalization or placement in mental health residential care;
- maintain and preserve the family of the adolescent as a functioning unit;
- to the extent possible, treat adolescents with mental health problems in their homes and communities;
- maintain the adolescent's personal freedom, responsibility, and participation in normal community activities;
- provide individualized treatment, tailoring the program to meet the specific needs of the adolescent;
- make clinical and therapeutic services available 24-hours a day;
- aid in developing self-sufficiency in the adolescent and family, teaching them the skills to obtain any further aftercare or outpatient services needed, and to live independent and productive lives; and
- encourage and maintain the involvement of multiple agencies in assisting the adolescent clients.

Ventura County Project

The comprehensive service model developed in 1985 in Ventura County, California, is identified as a ''satellite model" because multiple public agencies are linked together to provide mental health services to severely emotionally and behaviorally disturbed children and adolescents in decentralized locations throughout the community (104). Agencies involved in the Ventura County demonstration project authorized by the California legislature include mental health, social services, juvenile justice, and special education. Services, staff, and funding are blended together across agencies in order to reach the treatment goals. Case management is provided to ensure that each client receives individual, appropriate, and easily accessible treatment at a low cost. Outcomes are individually monitored for as long as the client receives mental health care. The data are analyzed and used for program improvement.

The Ventura County Project has been reported to decrease rates of out-of-home placement of severely emotionally disturbed adolescents and facilitated earlier return of adolescents to their homes and schools when placement does occur (104). Dowrick estimated that short-term reductions in recoverable

State general fund expenditures have offset costs by more than 50 percent and that the Ventura model will enable California to save almost $17 million a year in State hospital costs (55). Since 1985, out-of-county, court-ordered juvenile justice and social services placements have been reduced by 46 percent in Ventura County, according to Dowrick (55). OTA did not attempt to validate these estimates, but, if true, the model could be promising.

Alaska Youth Initiative

The Alaska Youth Initiative provides highly individualized mental health services to severely maladjusted children and adolescents in Alaska (36). The Alaska Youth Initiative was created by the State government to bring young people placed out of State back to Alaska and to limit out-of-State placements for children, adolescents, and young adults between the ages of 7 and 20 years of age. The Alaska Youth Initiative is called a "wraparound" service system. The dollars available to buy services are allocated to the community by the State government. The service package is developed by the child or adolescent's case manager and is purchased from vendors. Both the funds and the services are ''wrapped around' the child or adolescent, providing the most individualized treatment and education possible. The essential concepts are flexible funding and flexible service delivery. When a service for a given child or adolescent is not available from an existing organization, funds are used to develop the service. For example, instead of bringing an adolescent male with schizophrenia from a remote village into Anchorage for treatment, a mental health consultant was flown to his village to work with the school and family to set up a community-based program for the boy (55).

An interdepartmental team, consisting of staff in the State Department of Education, the Division of Mental Health and Developmental Disabilities, and the Division of Family and Youth Services, manages the Alaska Youth Initiative and evaluates the strengths and gaps in the continuum of services in the communities. Regional coordinators organize local treatment and education teams that devise the individualized service plans for each youth. On average, 4.3 agencies are represented on an individual treatment team, although participation may range from 3 to 7 agencies at a time with one case.

For each child served by the Alaska Youth Initiative, the average yearly cost is reported to be ***$40,562*** (including administration, direct service, and State education costs) (55). This cost may seem high, but costs in residential treatment centers would have been closer to $50,000 to $75,000 per year. Costs for an adolescent in his or her second year of the program are estimated to be 24 percent less than first year costs. The average length of participation in the Alaska Youth Initiative is 11.8 months.

Initial outcomes (as of January 1989) from the frost and second years of the Alaska Youth Initiative are encouraging. Almost half of the young people participating in the Alaska Youth Initiative were diverted from out-of-State placements and remained in Alaska, Two of these youth subsequently required out-of-State placement, one short-term. The amount of time spent with natural families or in family-like care, as opposed to institutional care, increased. Runaway episodes among participants decreased by 75 percent and substance abuse declined. Assaultive behavior, property damage, contacts with police, and suicide attempts were almost eliminated. Medication compliance, school attendance, and parental involvement were also reported to have improved (55).

The Alaska Youth Initiative approach seems most appropriate for isolated or sparsely populated rural areas because it permits an infusion of resources and expertise to maintain community-based alternatives to more institutional and centralized services. There are plans to systematically produce long-term client outcome data on each severely emotionally disturbed child and adolescent being served by the Alaska Youth Initiative. Further, this model has been extended to other States (Washington, Montana, and Wyoming), where client outcomes are also being monitored (39,55).

Kaleidoscope Program

The Kaleidoscope Program, a private umbrella organization in Chicago, offers a continuum of services for adolescents with diagnosable mental disorders and members of their families (185). Support for the Kaleidoscope Program comes from the Cook County Region of the Illinois Department of Children and Family Services, from other regions of that department, and from the Joint Services Children's Initiative of the Illinois Department of Mental Health. Additional support includes funds contributed by the private sector and from fundraising.

The underlying philosophy of treatment at Kaleidoscope is normalization and unconditional provision of care. Adolescent clients are treated in a normal environment so that they may learn from their surroundings. All adolescents referred to the Kaleidoscope Program are accepted provided there is an opening (185).

Three basic program models are provided by Kaleidoscope: 1) therapeutic foster care (see above); 2) a youth development program, which places and supervises older adolescents in apartments in the community and helps them live on their own, and 3) satellite family outreach, which reunites adolescents placed in residential treatment with their families and prevents the unnecessary removal of adolescents from their families.

The adolescent clients' regular caregivers—parents, child care workers, or foster parents-are the Kaleidoscope Program's key resources for treatment. They provide around-the-clock care and are in charge of the client's treatment plans. Mental health professionals are available for specialized treatment and consultation.

Kaleidoscope staff provide child care, diagnostic assessments, and a wide range of therapeutic services. About 70 staff and 45 professional foster parents are employed. All staff have at least a bachelor's degree, and about 20 have master's degrees.

The home-based services provided to Kaleidoscope clients are estimated to cost approximately $1,200 per month (185). The average 18-month episode is estimated to cost $21,600 (185).

Kaleidoscope has not yet formally evaluated the program's effectiveness but has estimated that at least 50 percent of adolescents referred for services are maintained outside of the residential placement system for a minimum of 18 months (185). When clients are discharged, at least 50 percent of their families require less intensive services at followup (185). Research support for additional evaluation seems warranted.

More information about innovative financing alternatives to financing and coordinating mental health services for adolescents will be forthcoming from the Robert Wood Johnson Foundation (161) and NIMH (186a,2 13a).

Major Federal Policies and Programs Pertaining to Adolescent Mental Health

Historically, most public mental health prevention, promotion, services, and treatment have been the exclusive domain of State and local governments, with no discernible Federal role beyond research and research training. It was the movement to deinstitutionalize persons with mental illnesses that caused a shift in Federal policies, focusing attention on the need for a community-based infrastructure for mental health services.

Passage of the Community Mental Health Centers Act (Public Law 88-164) in 1963 promised a stronger Federal presence in the mental health arena. In 1981, however, this law was superseded by the law establishing the alcohol, drug abuse, and mental health (ADM) block grant, placing more responsibilities on States and local communities (see below). Generally, national engagement in child and adolescent initiatives at the Federal level has remained fragmented and erratic. In its 1989 report on child and adolescent mental health research, the Institute of Medicine observed:

> Problems of children are of potential interest to many Federal agencies. For example, the Department of Education addresses problems of children with emotional or developmental difficulties that interfere with learning; the Office of Children, Youth, and Families in DHHS has programs for delayed and deprived children, including Head Start; Maternal and Child Health in HRSA [DHHS' Health Resources and Services Administration] works to prevent problems and has especially close ties to pediatrics; the Justice Department must cope with children who violate societal norms; and other agencies deal with issues of developmental disabilities, rehabilitation, and entitlement programs. However, none of these agencies have shown a strong or consistent interest in children and adolescents with severe mental disorders (139).

Although, as the Institute of Medicine noted, there are extensive roles for the Federal Government to play in improving the mental health of adolescents, this chapter emphasizes major Federal programs related to financing of mental health treatment for adolescents. Federal activities related to the coordination of services for adolescents with mental health problems, and research on adolescent mental health

issues. An overview of the Federal role in adolescent health is provided elsewhere in this Report.[78]

Financing of Mental Health Treatment for Adolescents

Medicaid

The major vehicle for Federal financial involvement in adolescent mental health-the Medicaid program-is not primarily a mental health program nor is it targeted specifically to adolescents. Rather, Medicaid (Title XIX of the Social Security Act) is a joint Federal/State program for financing general health care services for families (and some individuals) who meet certain eligibility criteria.[79] Covering an estimated 4.5 million individuals ages 10 to 18 and representing approximately 55 percent of all public health funds spent on children and adolescents, Medicaid is the major health care financing mechanism for low-income adolescents. A Medicaid program is available in every State except Arizona, where a special waiver program is in effect.

Medicaid is managed at the State level, and the Federal Government gives States considerable latitude in decisions about what services to cover, what eligibility standards to apply, and what limitations to impose on services. Some services, including hospital and physician services, are mandatory, while other services are optional. States have substantial flexibility in financing mental health services are generally among those services. Thus, for example, individual States are permitted to cover the services of psychologists or inpatient psychiatric services for persons under age 21 but are not required to do so. As of 1989, 38 States covered inpatient care in freestanding psychiatric facilities; 10 permitted reimbursement for residential treatment centers which have not been specifically certified as psychiatric facilities; and 18 States covered partial hospitalization as a mental health service.[80] The Health Care Financing Administration in DHHS, which administers Medicaid, estimates that 10.5 percent of Medicaid expenditures on behalf of adolescents ages 10 to 18 in fiscal year 1988 were for hospital-based mental health services. Outpatient mental health benefits vary among State Medicaid programs and also fluctuate depending upon the treatment setting and provider. Estimates of Medicaid expenditures on outpatient mental health treatment for adolescents are not available. Medicaid restrictions can make it difficult to provide the kind of comprehensive, coordinated case that may be needed by low-income adolescents covered by Medicaid.

A potentially important reform under Medicaid occurred in the Omnibus Budget Reconciliation Act of 1989 (Public Law 101-239), when Congress refined the Early and Periodic Screening, Diagnosis and Treatment (EPSDT) Program. EPSDT mandates States to conduct periodic screenings for treatable conditions of Medicaid-eligible children and adolescents, with appropriate followup, referral, and treatment. The 1989 amendments would override any State-imposed Medicaid coverage limitations on conditions discovered during screening for which medical treatment is necessary and allowable under the Federal guidelines. Thus, an adolescent with a mental health problem detected during an EPSDT screening could obtain necessary mental health services under Medicaid, notwithstanding a State Medicaid standard which would have restricted such services. As far-reaching as the EPSDT reforms may become, it is still too early to assess their impact. EPSDT reforms will not help the one out of three poor adolescents not covered by Medicaid (203).

Alcohol, Drug Abuse, and Mental Health Block Grant

The Alcohol, Drug Abuse, and Mental Health (ADM) Block Grant program is unlike Medicaid in that it was developed specifically to help States finance mental health and substance abuse treatment. Enacted in 1981 as Public Law 97-35, the ADM Block Grant Program is administered at the Federal level by the Alcohol, Drug Abuse, and Mental Health Administration in DHHS. It is currently the only Federal program that provides funding to States for the support of outpatient community mental health services. ADM block grant funds cannot be used for inpatient institutional care.

For fiscal year 1990, Federal ADM block grant funds totaled $1.133 billion. Of the total, $237.5 million was allocated for mental health services and

[78] See ch. 19, "The Role of Federal Agencies in Adolescent Health," in Vol. III.

[79] For more information on Medicaid eligibility rules, see ch. 16, "Financial Access to Health Services," in Vol. III.

[80] See ch. 16, "Financial Access to Health Services," in Vol. III.

$895.6 million was allocated for substance abuse programs.[81] Both parts of the ADM block grant are subject to 10 percent set-asides. Ten percent of the substance abuse funds must be used for services to pregnant women and women with dependent children. Ten percent of the mental health funds must be set-aside for new programs for underserved populations, with a priority given to severely emotionally disturbed children and adolescents (105). In 1986, OTA noted that the ADM block grant set aside for mental health services for children was so small that its significance was more symbolic than substantive *(202).*

Coordination of Mental Health Services for Adolescents

Child and Adolescent Service System Program (CASSP) of NIMH

A relatively small, but important, program in the area of adolescent mental health is the Child and Adolescent Service System Program (CASSP) administered by NIMH. CASSP was created by Congress in 1984 to promote greater coordination among public and private agencies providing services to children and adolescents with mental health problems (202).

Since 1984, CASSP has provided 47 States with technical assistance, training programs, and planning grants (126). States receiving CASSP grants are required to have a child mental health authority and mechanisms for interagency coordination of services involving mental health, juvenile justice, social services, and related agencies; family participation; and culturally sensitive programs. In fiscal year 1990, Federal finding for CASSP was approximately $9 million, essentially the same level of funding as in the previous year. From that amount, CASSP is funding 45 State grants for State and local systems development demonstrations and launching several new research-oriented programs (126, 186a).

The State Comprehensive Mental Health Services Plan Act

CASSP's efforts at the State level have been complemented by a recent Federal planning initiative which, even though originally targeted toward adults, has helped focus attention on adolescent mental health services. In 1986, Congress enacted the State Comprehensive Mental Health Services Plan Act (Public Law 99-660), mandating each State to develop-with the advice of mental health consumers, their families, and other advocates—a comprehensive plan to serve the needs of seriously mentally ill individuals. The emphasis under the original act was clearly on services for seriously mentally ill adults, although services for children and adolescents were expected to be a part of each State's plan.[82] The Mental Health Amendments of 1990 (Public Law 101-639), passed in late 1990, imposed a requirement that States cover children and adolescents in their comprehensive plans.

The State Comprehensive Mental Health Services Plan Act created a small grant program to provide resources for technical assistance to the States during the course of the 3-year planning process, but appropriations were cut back from the statutory minimum grant level in each of the first 2 years and completely eliminated in the third year. The State plans developed under Public Law 99-660 were approved by NIMH in mid-1990. Compliance monitoring of implementation also will be conducted by NIMH, and States will be expected to submit progress reports documenting substantial implementation in September 1991.

The Education for All Handicapped Children Act

For adolescents still in school, the Education for All Handicapped Children Act (Public Law 94- 142), has sometimes proven useful in obtaining needed mental health services. This act requires all public school systems to provide free and appropriate education together with ''related services, ' in the least restrictive environment, for children and adolescents with physical or mental handicaps. Some school jurisdictions have interpreted the ''related services" provision as requiring them to provide mental health care, while other local educational authorities have excluded the provision of such care from their obligations under Public Law 94-142. Such uneven application of mental health services to the mental health needs of children and adolescents has been a cause of concern (205). As noted above, recent amendments to Public Law 94-142 are

[81] The substance abuse component of the ADM block grant is further divided—35 percent of the funds must be devoted to alcohol abuse programs, 35 percent must be used for drug abuse programs, and the remaining 30 percent may be used in a discretionary manner for the overall substance abuse prevention and treatment field.

[82] NIMH requested States to include these populations in their plans.

intended to improve the delivery of special educational and related services to seriously emotionally disturbed adolescents.

NIMH estimates that Public Law 94-142 provided $63.6 million in fiscal year 1983 expenditures for both direct educational and related services (e.g., transportation, support, counseling, assessment, diagnostic, and medical services) to mentally ill children and adolescents (131). An additional $23.5 million was paid to assist previously institutionalized students and for educational support for students in State-operated or -supported mental health institutions under another related act, the Education Consolidation and Improvement Act of 1981 (Public Law 89-313).

Research on Adolescent Mental Health Issues

Three recent studies have evaluated the Federal commitment to adolescent and child mental health research and found it wanting.

In 1986, an OTA study on children's mental health found that Federal research efforts on child and adolescent mental health were seriously underfunded (202). OTA's study recognized that the Federal Government was virtually the only source of funds for such research and suggested that children's mental disorders was a prime example of an area with missed research opportunities.

In 1988, at the request of NIMH, the Institute of Medicine initiated a study of mental, behavioral, and developmental disorders among children and adolescents. The following year, its report, *Research on Children and Adolescents' Mental, Behavioral, and Developmental Disorders,* faulted NIMH for failure to exert leadership in relation to child and adolescent mental disorders and called for a 5-year plan to increase NIMH's funding for child and adolescent mental health research and research training to $162 million (139).

Following release of the Institute of Medicine's study in 1989, Congress asked NIMH to develop a plan delineating how it would expand basic, clinical, and services research in the area of children's mental health. In 1990, the National Advisory Mental Health Council of NIMH released its *National Plan for Research on Child and Adolescent Mental Disorders (213).* A conclusion in that document was that the Nation was "doing far too little to develop the scientific knowledge needed to treat or prevent' mental illness among young people (213). After recounting several recent advances in research, the document noted that NIMH had not been able to provide the level of support necessary to sustain and build upon those advances. The Advisory Mental Health Council of NIMH expressed particular concern about the dearth of young scientists committing themselves to research in adolescent and children's mental disorders. It recommended a phased increase in NIMH support for research[83] and research training in adolescent and children's mental disorders from a total of $92.3 million in fiscal year 1990 to $283.3 million by fiscal year 1995 (213).[84]

The Federal Government has become involved somewhat circuitously in financing adolescent mental health services, in funding and promoting research, and in fostering coordinated service delivery. Either the activity's focus has been broader than just mental health, or adolescents have been beneficiaries of programs serving a larger population (e.g., low-income families as in Medicaid, children and adolescents, all mentally ill individuals). Scant regard has been paid to the unique developmental aspects of adolescence which seem to merit a distinction between adolescent mental health and either child or adult mental health. While more than an afterthought, adolescent mental health has not been a high priority on the Federal agenda.

Conclusions and Policy Implications

Although a national systematic epidemiological study has not yet been mounted, and definitional issues persist, recent data suggest that approximately 1 out of 5 U.S. adolescents ages 10 to 18 suffers from a mental health problem severe enough

[83] The recommended increase was to support both clinical research and services research. *Clinical research* is conducted in a clinical setting, focusing on questions regarding such matters as epidemiology, etiology, or treatment effectiveness. *Services research,* on the other hand, examines systems issues like services needs, effective delivery mechanisms, or financing options.

[84] The budgets for child and adolescent mental health recommended by the Institute of Medicine and by the Advisory Council of NIMH were structured differently aad cannot be directly compared. Nonetheless, the finding level recommended by the Advisory Council represents a significant increase over the recommended level of funding endorsed by the Institute of Medicine.

to require treatment. About 1 out of 4 U.S. adolescents reports symptoms of emotional distress.[85] In general, the adolescents most likely to be diagnosed with a mental disorder are male and/or of lower socioeconomic status. Females are more likely than males to report subjective distress.

Suicide is perhaps the most severe manifestation of mental health problems among adolescents, and the official suicide death rate has more than doubled for 15- to 19-year-olds since 1968. Trends in adolescent suicide attempts are not available, but in 1987, 1 out of 7 adolescent 10th graders reported having attempted suicide. White, American Indian, and male adolescents are most likely to commit suicide. Female adolescents are more likely than males to report suicide attempts,

While between 18 and 22 percent of all adolescents are estimated to need some mental health treatment, perhaps 6 percent actually receive some level of care from the mental health system in a given year, meaning that at least two-thirds to three-quarters of adolescents who do have--or are likely to have—a diagnosable mental disorder have no contact with a mental health provider. This estimate of the gap between services and need does not take into account the duration, intensity, appropriateness, or quality of the level of service provided; in addition, it does not include the adolescents who may not have a diagnosable disorder but maybe in need of services because they are experiencing subjective distress.

In addition to attempting to estimate the gap between mental health service need and availability, this chapter evaluated the effectiveness of two levels of prevention of mental health problems among adolescents: promotion of positive mental health, and prevention of suicide. In addition, it provided an overview of the mental health treatment system, including (to the extent possible) changes over time in adolescents' utilization of mental health treatment services, reasons for the gap between service needs and availability (including shortcomings in financing of mental health treatment services and lack of coordination among systems charged with serving the health and related needs of adolescents), the effectiveness of mental health treatment for adolescents, and innovative approaches to service delivery. Finally, it examined the Federal role in enhancing mental health services for adolescents. The remainder of this chapter draws conclusions about each of these issues, and notes the policy implications for each of them.

The Promotion of Mental Health and Prevention of Mental Health Problems Among Adolescents

Despite a mounting literature on positive mental health promotion, there remains a need for additional, rigorous scientific research on mental health risks, appropriate interventions, and program outcomes (both immediate and longitudinal). Additional research is needed on the social competence model of mental health promotion to assess the effects of various interventions on children with different sociodemographic characteristics, adjustment levels, and learning styles (225). Nonetheless, mental health promotion efforts seem a promising way to help adolescents cope with the changes that adolescence brings and develop the skills needed for the future. Mental health promotion efforts may not involve labeling any adolescent as having a mental disorder, and, if done well, they can give adolescents a chance to develop empathy, improve interpersonal relations, and, perhaps, avoid experiencing untoward distress and serious behavioral problems (92a).

Programs for the prevention of specific mental disorders have not been adequately assessed either, although one observer goes even further in criticizing the state of the art in prevention. Shaffer asserts that there is a consensus among mental health care providers that primary prevention of mental disorders is not possible in most instances, precisely because our knowledge of causes and mechanisms of adolescent mental disorders is so limited (169). He argues for more epidemiological and longitudinal research to correct the deficit, as well as for increased attention to early intervention (secondary prevention) for those adolescents exhibiting early symptoms of mental health problems.

The effectiveness of suicide prevention efforts is difficult to evaluate, in large part because the base rate of completed suicides is low. Thus, the effec-

[85] It is unclear to what extent the proportion of adolescents who report symptoms of distress overlaps with the proportion who are found to have mental disorders using standard diagnostic criteria.

tiveness of suicide prevention efforts is often assessed in terms of gains in knowledge and changes in attitude. Shaffer's comments about the difficulty of primary prevention seem particularly applicable to suicide, although there may be one exception. Given that firearms are the leading method for committing suicide (accounting for half of all successful adolescent suicides), limiting adolescents' access to firearms would probably reduce the number of completed suicides, if not the number of suicide attempts.

The Delivery of Mental Health Treatment Services to Adolescents

In considering policy changes directed toward the mental health treatment system, it is important to review both recent encouraging developments and persistent problems in the mental health treatment system.

A number of gains in the mental health service system for adolescents in recent years provide a foundation for future policy changes:

- A child and adolescent mental health presence has been established in almost every State as a result of CASSP (the Child and Adolescent Service System Program) of NIMH. This presence has increased awareness of child and adolescent mental health needs among legislators, service planners, and providers and identified promising approaches to address those needs.
- Models for the provision of comprehensive, coordinated mental health services to adolescents have been developed in selected parts of the country (e.g., the Ventura County Project in California; the Kaleidoscope Program in Chicago; and the Alaska Youth Initiative), demonstrating that community-based, multisystem, public sector efforts are feasible and apparently promising in terms of effectiveness.
- There is a growing, though still incomplete, research base on the potential effectiveness of a range of mental health services for adolescents.
- There was an across-the-board increase between 1975 and 1986 in the use of mental health services in organized settings by adolescents. Increases were greatest in the use of outpatient mental health services such as psychotherapy and partial hospitalization. National data are not available to track growth in use of other nonresidential services, like home-based services and therapeutic foster care.

Perplexing and persistent problems in mental health service delivery include the following:

- Adolescents who need mental health and related (e.g., social, educational, general health) services from multiple agencies continue to suffer in most communities as they are bounced from one bureaucracy to another, often preceded by a wait to meet eligibility requirements for services. Interjurisdictional rivalries often prevent the pooling of resources to enrich the availability of community-based services and deter development of a comprehensive and effective mental health system. The State Comprehensive Mental Health Services Plan (Public Law 99-660, as amended) may help alleviate this problem. That law may provide an opportunity to identify local resources and coordinate the array of services used by adolescents with mental health problems and their families (e.g., intake and assessment, treatment, rehabilitation, crisis intervention, education, housing, recreation).
- Even when mental health treatment services are available for adolescents, some adolescents' access to those services may be limited because of their inability to pay for the services. The lack of health insurance, health insurers' limitations on mental health benefits, and restrictive Medicaid policies in some States are all factors that may limit utilization of mental health services by adolescents in need.
- In 1986, racial and ethnic minority adolescents received disproportionately fewer inpatient and outpatient services *in specialty mental health organizations than* did white, non-Hispanic adolescents. Further, racial and ethnic minority adolescents received fewer services from such facilities in 1986 than they did in 1975 (relative to the size of their populations). It is unclear why this change occurred, but it maybe related to inadequate Medicaid funding, and the increase in reliance on commercial health insur-

ance, for such services.[86] Lack of ‘ ‘cultural competency’ in the service delivery system has also been implicated.
- There are apparent shortages of mental health professionals with expertise in treating adolescents, and such shortages may contribute to the limited availability of mental health services for the adolescent population.

The combination of encouraging developments and persistent problems in the mental health treatment system just cited has a number of implications for change. To begin to correct the problems of mental health service delivery will require attention at Federal, State, and local levels, across systems of care which serve adolescents, and by the professional organizations of physical and mental health providers concerned with the adolescent population. Major implications for change in mental health services can be grouped in five areas and are discussed in more detail below:

1. developing local systems for the delivery of mental health services,
2. financing the delivery of mental health treatment services,
3. use of institutional mental health care,
4. training for mental health professionals, and
5. research on services for adolescents with mental health problems.

Developing Local Systems for the Delivery of Mental Health Services

If adolescents are to have mental health treatment services available to them in proportion to their need, the capacity of local communities to deliver such services will have to be expanded. Furthermore, achieving a rational and integrated system of comprehensive care for adolescents will require a reconfiguration of the mental health service delivery system. Critical areas for change in the mental health service delivery system were specified recently by Knitzer and Yelton:

> 1) strengthening, systematically, the range of nonresidential services that are available to children and adolescents and families across systems, 2) anchoring responsibility for individual children (and adolescents) through a cross-agency case-management system, and **3) creating a new organizational** framework to facilitate cross-system decisionmaking and resource sharing (1 17).

Such changes will require new resources. Federal and other grants to build mental health system capacity at the local level should encourage the development of a continuum of care for mental health and related problems in those agencies which are most likely to serve adolescents. Funding should be flexible so that implementation of individualized service plans for adolescents with mental health problems is feasible.

Priority should be given to increasing the availability of the least restrictive forms of treatment that are appropriate (e.g., home-based crisis services, day treatment, and therapeutic foster care). Research on the appropriateness of various levels of care is essential, so that decisions are not based solely on insurance status or the physical availability of mental health services,

Financing the Delivery of Mental Health Services

If State and local governments are to respond to the need for developmentally appropriate mental health services for adolescents, funding sources must allow greater flexibility in the use of funds. Fragmented and restrictive financing mechanisms impede the delivery of comprehensive and coordinated mental health and related services. But if resources could be pooled and redirected to meet individual treatment needs of adolescents with mental health problems, funding streams could provide incentives for interagency linkages and a more cohesive mental health ‘‘system’ might begin to emerge. Programs also could more readily be held accountable for client outcomes, since they would be better positioned to garner the resources necessary to do the job they were intended to do.

The challenge for Federal and other policymakers is to forge funding approaches that respond to individual treatment needs, rather than continuing to

[86] As discussed in ch. 18, ‘ ‘Issues in the Delivery of Services to Selected Groups of Adolescents, ‘‘ in Vol. III, half of black, Hispanic, and American Indian and Alaska Native adolescents live in poor or near-poor families and are likely to depend on Medicaid to gain access to health services. Further, not all poor or near-poor adolescents are eligible for Medicaid, and Medicaid coverage of mental health services is even more restricted than that for services related to ‘‘physical ‘‘ illnesses and conditions (see above and ch. 16, ‘ ‘Financial Access to Health Services,’’ in Vol. III).

finance services tied to specific delivery sites (e.g., hospitals, residential treatment centers, day treatment programs, community mental health centers). When the individual is the focal point of service financing, jurisdictional barriers can be crossed and interagency coordination and cooperation becomes a necessity.

Examples of some models of mental health service delivery that allow flexible funding already exist. These examples illustrate that the seemingly daunting task of relaxing fiscal constraints on programs can be overcome. In the Alaska Youth Initiative, for example, funds previously used for residential treatment center placements were redirected toward development of community programs for the same adolescents. Some private insurance companies are beginning to experiment with individualized mental health treatment plans that are not restricted by the usual outpatient benefit limits. These plans permit reimbursement for community-based alternatives when it becomes clear (on a case-by-case basis) that institutional care would be more expensive.[87] Similarly, Medicaid allows States to apply for a waiver to use funds for innovative community services. Only Vermont has taken advantage of this option however, and its impact has not been evaluated.[88]

In the long term, Federal and other policymakers should probably develop more durable and well-delineated policies to finance mental health services in communities. In the public sector, these policies might involve: 1) sharing resources across agencies (e.g., social services departments could reimburse the mental health system for in-State or community care); 2) use of State Medicaid matching funds to promote coordination across agencies; 3) more creative and extensive use of the Medicaid Home and Community Care option, which could substantially increase reimbursement for community-based services; and 4) creative use of EPSDT Federal regulations to correct the significant inequities in coverage of mental health services by Medicaid across States. Insurance companies may have to be convinced with cost-effectiveness studies that the range of community interventions being advocated is both viable and effective.

Use of Institutional Mental Health Care

The third major policy area, concern about extensive use of private psychiatric hospitals and residential care for adolescents, requires careful attention, although the Federal role in this area has been limited. NMHA has proposed a number of recommendations directed at reducing excessive use of mental hospitals and residential treatment centers for children (see box 1 l-D).

Hospitals and residential treatment centers provide an important component of care for severely mentally disturbed adolescents, albeit on the extreme end of the continuum. Explicit criteria for the most restrictive and expensive forms of treatment need to be developed. The Federal Government could support efforts to develop such criteria.

Resolving the issue of appropriate use of general hospitals, psychiatric hospitals, and residential treatment centers vs. less restrictive levels of care for adolescents with mental health problems is likely to require major public/private sector negotiation. Private psychiatric hospitals-major providers of inpatient adolescent care-tend not to serve public Medicaid patients. These hospitals are more likely to offer comprehensive care than general hospitals, however, and, in some communities, they have more extensive resources than the public mental health agencies. An area to explore is whether some of these well-established hospitals could be interested in providing comprehensive care for a broader socioeconomic range of adolescent patients (as is currently occurring at Sheppard Pratt Hospital in Baltimore through a contract with the State of Maryland) *(39).* Residential treatment centers, mostly private, nonprofit organizations, are reimbursed largely under governmental contracts with public dollars. Possibly residential treatment centers could offer a broader range of mental health services to local populations in the areas where they are located.

Training for Mental Health Professionals

Although comprehensive data on the numbers of mental health professionals trained to work with adolescents are not available, the difficulties encountered in filling clinical positions (39) and with the data that are available make it clear that there are shortages. If adolescents are to receive mental health

[87] See ch. 16, "Financial Access to Health Services," in Vol. III.

[88] See ch. 16, "Fi~ci~ Access to Health Services," in Vol. III.

Box n-D-The National Mental Health Association's Recommendations To Limit Use of Inpatient Mental Health Care

1. Create community-based mental health services.
2. Develop a child-centered and family-focused system of mental health services.
3. Adopt a children's Bill of Rights (to protect against inappropriate placements).
4. Plan to return children home (applies to children placed out of State).
5. Prohibit placements outside of the State's jurisdiction.
6. Prohibit treatment of children in adult wards of State hospitals.
7. Establish a gatekeeping system (i.e., local case review committees to prevent out-of-home placement unless there is no alternative).
8. Fully implement Public Law 94-142 (Education for All Handicapped Children Act).
9. Improve State monitoring.
10. Provide case management from the child's perspective.
11. Expand advocacy.
12. Mandate interagency planning.
13. Permit flexible use of funds.
14. Improve or repeal interstate compacts.
15. Improve data collection (refers to improving data systems on services for children with emotional problems).
16. Conduct a national study to determine the status of children in private psychiatric facilities.

SOURCE: National Mental Health Association *Report of the Invisible Children Project (Washington DC: 1989).*

services, a sufficient number of mental health professionals must be recruited into the child and adolescent mental health field and encouraged to locate throughout the Nation. NIMH funding for clinical training has diminished over the years. One possibility is for States to assume a more significant role in training clinicians to work with adolescents and their families. Another possibility is for NIMH to increase its funding for clinical training (127a). Continuing education to promote clinicians' awareness of innovations and successful models of service delivery would also be useful.

Finally, as new policies for mental health services are deliberated, sensitivity to the needs of different cultural, ethnic, and racial groups needs to be a priority. Designing services that are more responsive to minorities may be a community-level issue, but the recruitment and training of minority clinicians and the development of appropriate knowledge bases pertaining to adolescents, have implications at the State and national level. A recent volume describing the consensus about provision of mental health services to minority children and adolescents with mental illness delineates a number of useful guiding principles (53,204), but as discussed more fully in chapter 18, "Issues in the Delivery of Services to Selected Groups of Adolescents, " in Vol. III of this Report, much more research needs to be done on this topic.

Research on Services for Adolescents With Mental Health Problems

Research on services for adolescents with mental health problems has lagged behind research on such services for adults. Ideally, service systems for mental health problems should be designed on the basis of clear conceptions about disorders (including definition, etiology, course, and prognosis) and knowledge about the efficacy of treatment for specific disorders and populations. But controversy surrounds both the diagnosis of adolescent mental health problems and their treatment. Thus, there are research deficits in epidemiological data, clinical information, and services data.

Although the existing knowledge base offers some general guidance to mental health providers and policymakers, more precise guidance on the types of treatment to be offered cannot be offered without significant research advances. The unavoidable need for service systems development requires that research on service systems proceed at the same time that the epidemiological and clinical research base continues to mature. Findings will have to be incorporated into policy developments and into research on service systems on an incremental basis.

The following implications for research touch briefly on epidemiological and clinical research that is directly relevant to mental health service systems development. A more comprehensive research agenda addressing these areas can be found in the 1989 Institute of Medicine and the NIMH Advisory Mental Health Council reports on research pertaining to children and adolescents with mental, behavioral, and developmental disorders (139,213). Both reports recommended significant increases in Federal support for research on mental health services

and systems of care for children and adolescents, and even larger amounts for other types of research on the mental health problems of children and adolescents (139).

Research is needed to accomplish the following tasks:

1. *Develop estimates of adolescents' need for mental health services based on epidemiological surveys.* At all levels of care, the utilization of mental health services by adolescents is increasing. Despite increases in service use, the low rate of mental health service use relative to need represents a significant concern. While an estimated 20 percent of U.S. adolescents need mental health services, only about 6 percent of adolescents use such services. The possibility that a number of adolescents are receiving mental health care through sectors other than the mental health system (i.e., health, education, social services, and juvenile justice) needs to be examined in studies at the national, State, and local levels to more accurately assess the availability of mental health services. The low rates of mental health service use by adolescents also suggest a need to study the perceived accessibility of services to adolescents from the perspectives of cost and comfort with seeking care.

Estimating adolescents' need for mental health care will require going beyond the usual approach of identifying the gap between adolescents with a mental health condition and those actually receiving services. The need for treatment must be related to specific system components and defined in terms of severity of illness, level of functioning, family concerns, community attitudes, and capacity. For that reason, the inclusion of such parameters in the forthcoming child and adolescent epidemiology catchment area studies will be important.

2. *Evaluate the effectiveness of various mental health treatment modalities for adolescents.* Given the very limited and poorly controlled research literature on the effectiveness of mental health treatment modalities for adolescents, research is needed on all levels of care and all types of services.

An initial priority for a research agenda should be to carefully delineate the characteristics of adolescents who require and benefit from inpatient and residential settings. Research on the more restrictive and expensive forms of treatment needs to be balanced with research on innovative and less expensive forms of care. Future studies on the effectiveness of psychotherapy, psychotropic medication, and other outpatient services should give special attention to low-income and minority populations and should pay attention to specific clinical conditions and comorbidities (particularly substance abuse and other mental disorders). A major initiative could be designed to assess the effectiveness of different treatment modalities for adolescents with conduct disorders, as this is a frequently identified clinical population across levels of care and in school-supported programs for emotionally disturbed children and adolescents (71). Research on psychotropic medications requires larger adolescent samples and longer followup periods than are typically used. In addition, the appropriate modes of treatment for subclinical problems that are disturbing to adolescents, but that may not meet the criteria for diagnosable disorder, deserve attention.

In planning studies of the effectiveness of mental health treatment for adolescents, it is important to give methodological issues critical attention. Research on treatment modalities should be of experimental or quasi-experimental designs. Studies with random assignment of subjects are preferable, but if randomized studies are not feasible, researchers should find acceptable comparison groups. To be useful in assessing treatment effectiveness, studies should be longitudinal, assess combinations of treatments, and pay special attention to reliable and valid outcome measures. With sound information about effectiveness, the next level of studies can be considered.

3. Assess the potential for substitution of community-based mental health treatment services for restrictive institutional services. This undertaking seems warranted because of observations that institutional care may be overutilized for adolescents with mental health problems and that the great majority of service dollars are tied up in hospitals and residential treatment settings. Some of these restrictive institutional services may neither be required nor effective (at least for selected clinical groups), but these issues ought to be very carefully examined. Alternative service strategies should be in place before research to test substitution of services is undertaken.

4. *Develop criteria for quality mental health treatment of adolescents. An* initial step may be to obtain descriptive data on the characteristics of clients and clinical practices at each level of mental

health care. This would provide a basis for consensus groups to propose criteria or standards for care that would define quality. A subsequent critical step would be to explore and identify linkages between clinical processes and client outcomes to be sure that quality care does in fact result in positive outcomes.

5. *Determine effective mental health service system design and development.* Comprehensive service models using a continuum of care have been reviewed (e.g., the Ventura County Project California, the Alaska Youth Initiative), and additional research is underway. Further research opportunities to compare approaches to organizing services will emerge as the child and adolescent demonstrations recently funded by the Robert Wood Johnson Foundation get underway. In order to be most useful, organizational models need to be clearly described, fully tested, and replicated for their differential ability to affect rates of service use by target populations, quality of care, cost, and clinical outcomes.

To determine whether increased availability and provision of mental health services actually results from capacity-building policy changes, the relationship between policy change and service system capacity needs to be critically examined (186a). There is also a need to evaluate service system performance to assess whether clients who are the most in need receive services in ways that meet their needs. The usefulness of case management as a systems level intervention also requires specific attention. Case managers, particularly for seriously emotionally disturbed youth, are being employed across the country, but OTA is not aware of any published research on their effectiveness with adolescent clients.

Finally, research on the extent, adequacy, and appropriateness of mental health services for adolescents provided in sectors other than the mental health system—primary health care, juvenile justice, social welfare, and the schools—should be expanded in order to develop a complete picture of adolescents' access to appropriate and effective mental health services. Currently, the lack of complete information may lead to diffusion of responsibility-a sense that the adolescent ''must be' receiving care in some other system. Areas for investigation range from the adequacy of diagnosis and the appropriateness of treatment provided in these sectors to the mechanisms available for coordinating care with the traditional mental health system.

6. *Evaluate alternative methods for financing mental health services for adolescents. In* order to improve access for adolescents, techniques ranging from varying insurance benefits to creating fiscal incentives for improving community care, should be explored to identify financing methods that facilitate implementation and operation of a continuum of care. Further, financing mechanisms that influence utilization of mental health services (such as managed care with a network of contracted providers v. a fee-for-service system) need further attention to determine their impact on adolescent client groups.

7. *Strengthen recruitment and training of researchers in adolescent mental health. In* order to eventually improve the system of care for adolescents, NIMH should continue to be encouraged to support the recruitment and training of mental health professionals prepared to conduct research on adolescent disorders, treatment, and services. This need was reflected as a priority in the 1989 Institute of Medicine report on research (139).

Summary of Federal Policy Implications

Although mental health policy and program changes can be made in both the private and public sectors, and at many levels of both sectors, the Federal Government could take several steps to improve adolescent mental health.

In order to make mental health services available for more adolescents, the Federal Government could support efforts to make health insurance more available for mental health problems. One way to do this would be to mandate changes in Medicaid rules pertaining to mental health services. In order to be consistent with the goal of providing care in the least restrictive environment, any such changes could favor outpatient and other nonresidential forms of care over inpatient care.

To the extent that insurance reimbursement depends on the existence of a diagnosable mental disorder, adolescents' subjective distress may be overlooked. In addition, the approachability of mental health services for adolescents may be reduced by insurance requirements for parental

consent or notification.[89] In order to increase access to mental health services for adolescents—based on their subjectively perceived needs—the Federal Government could support the increased availability of mental health services for adolescents in accessible settings such as schools.[90]

One factor that impedes efforts to increase availability of mental health services to adolescents is the paucity of mental health professionals specially trained to deal with adolescents. The Federal Government could support a major clinical training effort to increase the number of mental health professionals trained to work with adolescents.

A second factor holding back a major effort to increase mental health services for adolescents is the paucity of research on the full range of issues related to adolescent mental health, including epidemiology, risk and protective factors, prevention, treatment, and service systems. As recommended by the Institute of Medicine and the NIMH's National Advisory Mental Health Council, Federal funds for mental health research and research training need to be increased dramatically for the foreseeable future (139,213). Because the appropriateness and effectiveness of inpatient and residential treatment for adolescents is so controversial an issue, objective, scientific research on the topic requires particular attention.

Much of the Federal Government's attention to mental health issues—for all ages combined—pertains to serious mental disorders. This focus may not be appropriate for adolescents, many of whom may require help in learning how to deal with normal life circumstances (e.g., 92a) and/or suffer from subjective distress. In order to be responsive to the needs of adolescents as a group, the Federal Government could initiate efforts to support: 1) the promotion of positive mental health (for all adolescents); and 2) early treatment intervention for those adolescents at high risk for problems, as evidenced by their subjective distress, their troubled behavior [which may not meet the criteria of DSM-III-R], or their life circumstances. Research efforts are needed to substantiate the most effective ways of meeting these adolescent needs, although more progress has been made in the area of mental health promotion. In sum, a much more active effort is needed on the part of the Federal Government if adolescents' mental health needs are to be met.

Specific options for congressional consideration are listed in Vol. I of this Report, *Summary and Policy Options.*

Chapter 11 References

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[89] This issue is discussed more fully in ch. 16, "Financial Access to Health Services," and ch. 17, "Consent and Confidentiality in Adolescent Health Care Decisionmaking, " both in Vol. III.

[90] For a discussion of school-linked health services, see ch.15, ''Major Issues in the Delivery of Primary and Comprehensive Health Services to Adolescents, " in Vol. III.

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