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Citation: Godley, M.D., & White, W.L. (2005). A brief history and some current dimensions of adolescent treatment in the United States. In M. Galanter (ed.), *Progress in the treatment of alcoholism, Vol 17*. New York, NY: Springer, 369-382. Posted at www.williamwhitepapers.com

A Brief History and Some Current Dimensions of Adolescent Treatment in the United States

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Introduction

The development of a national system for treating adolescent substance use disorders actually began more than a century ago. In this chapter, we will provide a brief history of adolescent substance use and its clinical management, an overview of the state of adolescent treatment system development in the United States, describe the characteristics of substance-involved adolescents entering specialty treatment and the levels of care within which they are treated, and discuss how recent research findings are beginning to influence clinical responses to alcohol and other drug problems among adolescents.

A Brief History of Adolescent Treatment. Growing concerns about “drunkard children” in the late eighteenth and early nineteenth centuries fueled minimum drinking age and temperance education laws, the inclusion of young people in cadet branches of recovery-oriented societies such as the Washingtonians and the Ribbon Reform Clubs, and the admission of adolescents into the nation’s first inebriate homes and asylums (Mosher, 1980; White, 1998).

Opiate addiction among disaffiliated urban youth garnered early twentieth century attention via reports of rising juvenile arrests and the rejection in thousands of World War I draftees due to heroin addiction (Musto, 1973; Terry & Pellens, 1921). Efforts to treat juvenile addiction included hospital detoxification and enrolling addicted adolescents in the morphine maintenance clinics that operated across the nation between 1919-1924. During this time approximately 7,500 narcotic addicts were registered at the Worth Street Clinic in New York City and 743 of these were under the age of 19 (Hubbard, 1920).

Juvenile narcotic addiction declined in the 1930s and 1940s but rose again in the early 1950s. Admissions of persons under age 21 at the two U.S. Public Health Hospitals (narcotics farms) in Lexington, Kentucky and Fort Worth, Texas increased from 22 in 1947 to 440 in 1950. In the 1950s, alarm over juvenile narcotic use triggered the opening of addiction wards in some urban community hospitals (e.g., Chicago’s Bridewell Hospital, Detroit Receiving Hospital, and New York City’s Manhattan General) and sparked faith-based addiction

counseling ministries (e.g., St. Mark's Clinic in Chicago, the Addicts Rehabilitation Center and Exodus House in New York City, and Teen Challenge (Conferences, 1953; White, 1998). Adolescents and adults were treated in these programs together as only one specialized adolescent treatment facility existed in the 1950s.

The opening of Riverside Hospital in New York City in 1952 marked the birth of specialized treatment for adolescent substance use disorders. Riverside's 140-bed facility offered a multidisciplinary staff to provide detoxification; psychiatric and medical evaluation; psychological testing; and an inpatient program of therapeutic, educational, vocational and recreational activities followed by outpatient visits at community clinics. In spite of its "state-of-the-art" status, Riverside was closed in 1961 after a follow-up study of former patients documented a 97 percent relapse rate (Gamso & Mason, 1958). Other mid-century events that influenced the future evolution of adolescent treatment included the development of "young peoples' meetings" within Alcoholics Anonymous and Narcotics Anonymous, the development of modified therapeutic communities for adolescents (Jainchill, 1997), and the appearance of adolescent chemical dependency programs based on the "Minnesota Model" (Winters et al., 2000).

Alarm about polydrug experimentation by adolescents in the 1960s undergirded federal and state support for the expansion of treatment services in the 1970s, but support for specialized adolescent treatment services waned as youthful drug experimentation declined in the 1980s (National Institute of Drug Addiction [NIDA], 1999). Between the 1960s and mid-80s, the treatment of adolescent substance use disorders continued to be provided primarily in adult substance use units using adult models of treatment. A 1985 federal report on adolescent treatment services lamented the lack of treatment programs in the U.S. designed specifically for adolescents (Friedman & Beschner, 1985).

This situation changed as adolescent experimentation with marijuana, LSD,

methamphetamine, "club drugs" (MDMA/"ecstasy", GHB, rohypnol), and dissociative anesthetics (PCP, ketamine) rose in the 1990s. Between 1991 and 1999, past year illicit drug use rose from 29% to 42% among high school seniors and from 11% to 21% among eighth grade students. National high school survey data also revealed high rates of binge drinking (consuming five or more drinks in one drinking episode): 15% of 8th graders, 26 percent of 10th graders, and 31% of 12th graders (NIDA, 1999). At the height of this surge in drug use (1992-1998), the number of youth admitted to substance treatment in the U.S. increased 53% (from 96,787 to 147,899), fueled by marijuana-related juvenile arrests and treatment referrals from the criminal justice system (Office of Applied Studies [OAS], 2003).

The resurgence in youthful polydrug experimentation led to a greater emphasis on systems of prevention (Drug Free Schools and Community Act-1986), early intervention (the proliferation of student assistance programs via the National Association of Student Assistance Professionals-1994), an expansion of public and private programs that specialized in the treatment of adolescent substance use disorders, and an increase in the number of controlled studies evaluating the efficacy and effectiveness of adolescent treatment. This surge in treatment and research activity was guided by the collective efforts of the National Institute on Alcohol Abuse and Alcoholism, the National Institute on Drug Abuse, and the Center for Substance Abuse Treatment. In the opening decade of the twenty-first century, the treatment of adolescent substance use disorders is transitioning from folk art status to a subspecialty of the larger addiction treatment effort. Increasingly it is noted that adolescent treatment is becoming a professionalized, and science-guided endeavor (White, Dennis & Tims, 2002).

The Adolescent Treatment System

Adolescents experiencing substance-related problems in the United State can be

found in multiple health and social service systems. They are served by a host of child welfare and juvenile justice youth service agencies, publicly funded addiction treatment agencies, private addiction treatment agencies that cater to insured and private pay insured families, and by more than one third of the juvenile correctional facilities (37%) that provide on-site substance abuse treatment (Office of Applied Studies [OAS], 2002).

More than 145,000 adolescents each year are treated in publicly funded addiction treatment programs in the United States (Office of Applied Studies [OAS], 2000). The number of adolescent specialty programs and overall adolescent admissions rose rapidly through the late 1980s and 1990s. A comparison of Substance Abuse and Mental Health Services Administration's (SAMHSA) national treatment center directories reveals that the number of self-identified adolescent specialty programs increased from 2,874 to 4,291 (a 49% increase) between 1987 and 2003. The growth of adolescent treatment was not the same across different regions of the country. While the number of adolescent specialty units actually decreased in seven states between 1987 and 2003, figure 1 shows that growth occurred across each region of the U.S., ranging from an 84% increase in the Pacific Region to only 2% in the New England. ([See Figure 1](#))

The 2002 National Survey of Substance Abuse Treatment Services (N-SSATS; SAMHSA, 2003) provides a window into the current status of adolescent treatment in the United States. The survey identified 18,204 institutions that provide substance abuse treatment services and 13,720 participated in the survey. Services to adolescents were provided by 37 % of the surveyed facilities. Adolescent substance abuse treatment services were provided by private non-profit facilities (37% survey response rate), private for profit facilities (36% responded); local government facilities (42% responded), 167 of 441 state-operated facilities (38% responded), federal facilities (8% responded), and tribal owned facilities (64% responded). Substance abuse treatment

services for adolescents were more likely to be provided in facilities that offered both substance abuse treatment and mental health services (50%) than in substance abuse treatment only (33%), mental health services only (34%), or general health care facilities (22%).

Most of what we know about adolescent treatment in the United States is based on surveys and studies of the publicly funded programs. Surveys of private sector treatment programs documented a dramatic growth in private for-profit addiction treatment during the 1980s but did not segregate data for adolescent specialty units (Yahr, 1988). While many private treatment programs closed in the early 1990s in the face of an aggressive system of managed behavioral health care, the private sector continues to provide a significant source of specialized adolescent treatment. The most recent data on private programs is contained in the National Treatment Center Study (NTCS) conducted by the University of Georgia and the Georgia Institute of Technology (Roman, Blum, Johnson, & Neal, 2002).

The NTCS surveyed 400-private programs specializing in addiction treatment during three waves of data collection between 1997-98 and 2000-01. The survey findings revealed considerable institutional turnover in the private sector with approximately one fourth of the 1996 programs surveyed closed by the 2001 survey. (Roman et al., 2002). The number of private programs providing adolescent treatment only remained at four programs between the 1996 and 2001 surveys; however 38% of the programs offered a separate treatment track for adolescents by the 2000-01 survey. For the preparation of this chapter Johnson (2003) has contributed several adolescent program findings from the NTCS survey results. While the small number of programs specializing in adolescent treatment should be interpreted with caution, the NTCS survey provides a better understanding of current private treatment and allows us to compare some dimensions of private programs to publicly funded programs.

Private Sector Adolescent Treatment. Adolescents constitute more than half of admissions in only four percent of the 450 private programs surveyed; only one percent of private addiction treatment facilities specialize exclusively in adolescent treatment. There has been considerable growth in the number of private programs treating adolescents (38% of total) but the number of designated adolescent beds to total facility beds is actually declining (Johnson, 2003). Similarly, 40% of publicly funded treatment programs admit adolescents, with two thirds of these offering a specialized treatment track for adolescents (OAS, 2003).

The number of beds devoted to adolescent treatment within private centers averages 17 and ranges from 2 to 88. Utilization rates (daily census divided by number of beds) for specialized adolescent units ranges between 33% and 36% within the surveys. The average length of stay within private inpatient adolescent specialty units increased from 17.6 days in 1995 to 21.1 days in 2000. Daily rates for inpatient treatment ranged from \$357-\$1045 per day (Roman and Blum, 1997; Roman et al., 2002). Payor sources in the specialty adolescent programs (when compared to private adult addiction treatment units) have a higher percentage of Medicaid reimbursement and charity write-offs and a lower percentage of self-pay (Medicaid 45%; Private Indemnity Insurance 2%; HMOs 10.2%; POSs-7.5%; Self-Pay 17.5%; and Charity 17.5%) (Johnson, 2003).

Referral Source. The primary referral sources of adolescents into private specialty treatment are the legal system (36%), schools (34%), and social service agencies (29%). In contrast, the primary referral sources for adolescents into publicly funded treatment are the: legal system (41%), school/community agencies (22%), and self/family (17%), other substance abuse providers (6%) (OAS, 2000).

Characteristics of Clients Entering Treatment. While national data is lacking on demographic characteristics of adolescents entering private treatment, those entering public treatment are primarily male (70%),

racially diverse (63% Caucasian/non-Hispanic, 15% African American, 11% Hispanic, and 5% other races), and range in age from early to late adolescence (25% age 14 or younger; 75% ages 15-17) (Dennis, Dawud-Noursi, et al, 2002).

Presenting Problems. Adolescents are entering private addiction treatment due to dependence upon cannabis (66%), alcohol (34%), cocaine (15%) and opiates (6.5%) (exceeds 100% because of multiple drug choices). These findings compare to the following drug choices for adolescents entering publicly funded treatment: cannabis (54%), alcohol (24%), cocaine (2%), opiates (1%), and stimulants (3%) (Johnson, 2003; OAS, 2000). Dennis and his colleagues (2003) summarized changes in drug of choice characteristics between 1992 and 1998 adolescent treatment admissions. Especially noteworthy is the reversal between alcohol as the dominant drug in 1992 (56% of admissions) decreasing to 24% of admissions in 1998 while marijuana increased as the drug of choice for admissions during this period, from 23% to 54%. Just over half (54.5%) of adolescents admitted to private treatment programs have a co-occurring psychiatric disorder. Studies of youth admitted to public sector treatment programs (e.g, Dennis, Godley, & Titus, 1999) have found higher rates of co-morbid problems, e.g., other substance use disorders, internal emotional disorders (major depression, generalized anxiety, suicidal thoughts or actions, traumatic stress disorders), and external behavioral disorders (conduct disorder, attention deficit-hyperactivity disorder), and high rates of victimization. In terms of prior treatment for substance use disorders, 71% of adolescents admitted to private programs compared to 29% of adolescents admitted to public treatment have one or more prior episodes of treatment (Johnson, 2003; OAS, 2000).

Levels of Care. Addiction specialists recommend that placement in a level of care (e.g., outpatient, intensive outpatient, residential) should be based on a number of presenting characteristics including the adolescent's substance use

diagnosis/severity, intoxication and withdrawal risk, biomedical issues, psychological problems, treatment acceptance and resistance, relapse potential, environmental risk, legal pressure, and school or vocational pressure (American Society of Addiction Medicine [ASAM], 1996). Adolescents presenting with complex problems across multiple ASAM dimensions are more likely to be placed in residential treatment while those with fewer/less severe problems are placed in a lower level of care such as outpatient treatment. Levels of care provided were not broken out for the adolescent programs within the NTCS surveys but public surveys reveal the following adolescent admission pattern to adolescent treatment: outpatient (69%), intensive outpatient (11%), long-term residential (9%), short-term residential (6%), and detoxification (6%), (Dennis, Dawud-Noursi, et al., 2003). Changing reimbursement policies that required greater justification for costlier treatment and the introduction of the ASAM Patient Placement Criteria (1996) encouraged adolescent treatment providers in both the private and public sector to move from providing a single level of care (e.g., residential only) to providing multiple levels of care.

ASAM placement recommendations support the practice of continuing or “step down” care in the treatment of substance use disorders (both adult and adolescent). Under this plan, a client successfully discharged from residential treatment would be referred to a “lower” level of care such as Intensive Outpatient or Outpatient treatment and so on.

Treatment Approach. Descriptions of private programs for adolescent treatment center around a 12-step foundation that involves confrontational group therapy, family and individual psychotherapy, and pharmacological adjuncts (Johnson, 2003). Funded by SAMHSA’s Center for Substance Abuse Treatment, Stevens and Morral (2003) provide a description of current best practice approaches for ten outpatient, intensive outpatient, and residential treatment programs. Unlike private programs the Minnesota Model/12 step

programs are likely to be viewed as one of several approaches used with adolescents in treatment rather than the foundation of the treatment experience. Social learning theory, self-efficacy, social skills training within group and individual treatment is evident. Cultural appropriateness is frequently mentioned in the training and therapeutic approaches in the publicly funded programs, however pharmacotherapy, while evident, appears to be used less than in the private programs. The lower use of pharmacotherapy in public programs may be due to less affiliation with medical resources than private programs. Whatever the reasons for this trend, it is disturbing given the higher rates of co-occurring disorders noted in the publicly funded programs. Continuing care services exist in public and private programs to the extent that they follow an ASAM placement model and make “step down” referrals to less intensive levels of care when clients are successfully discharged. The extent to which such transfers are successful is not fully known but one study indicates a need for greater attention to this (Godley et al., 2002). Except to the extent that clients participate in mutual aid support groups, long-term disease management strategies (e.g., recovery monitoring and support) do not appear to be available in either private or public treatment models.

Treatment Staff. Staff working in private specialty adolescent units (compared to staff working in private adult units) are less likely to be in recovery, less likely to be a certified counselor, but more likely to have a Master’s degree and more likely to turnover (29% versus 19% annual turnover). There is no comparable national studies of publicly funded facilities regarding treatment staff. Although, little national information is available on treatment staff qualifications and stability in publicly funded programs, McLellan (2003) recently reported counselor turnover in these programs as high as 50%. High rates of staff turnover in publicly funded programs due to low salaries and difficult working conditions have also been noted in state evaluation reports (Carlson, Deck, &

Wadeson, 2001; Northrup & Heflinger, 2000).

Summary. Several conclusions can be drawn comparing public and private treatment using the N-SSSATS, TEDS and NTCS data. The overwhelming majority of adolescents treated for substance use disorders in the United States are treated within the network of publicly funded programs, but the differences between public and private treatment (e.g., characteristics of clients, staff qualifications and staffing patterns, treatment duration and outcomes) remain relatively unexplored. It does appear, from available data, that adolescents entering publicly funded treatment are less likely to have had prior treatment episodes, but are more likely to be referred from the criminal justice system or by self/family referral, and more likely to present with a co-occurring disorder.

From Science to Service

The past 30 years of adolescent treatment evaluation spans early studies that included adolescents (the Drug Abuse Reporting Program (DARP) in the early 1970s, the Treatment Outcome Perspective Study (TOPS) in the late 1970s and early 1980s, the Service Research Outcome Study (SROS) and National Treatment Improvement Evaluation Study (NTIES) that extended into the 1990s. All of these studies evaluated adolescents as a small subset of the larger treatment population. Over the past 15 years increased attention to adolescent treatment evaluation and research has resulted in a host of adolescent-specific, longitudinal outcome studies and randomized clinical trials (Hser, Grella, Hubbard et al., 2001; Brown et al., 2001; Williams & Chang, 2000; Deas & Thomas, 2001; Muck et al., 2001). While not perfect, the recent generation of studies are methodologically more rigorous than their predecessors. The cumulative effect of these studies has been a growing body of scientific knowledge that is slowly influencing funding policy and practice. Considerable efforts are underway by various federal agencies, scientific

committees, and professional associations to forge an evidence-based system of adolescent treatment. Led by the National Institute on Alcoholism and Alcohol Abuse, the National Institute on Drug Abuse, the Robert Wood Johnson Foundation, and the Center for Substance Abuse Treatment each of these national organizations have funded major initiatives designed to improve clinical practice.

With increasing frequency treatment provider associations (e.g., The National Association of Addiction Treatment Providers), trade publications (e.g., *The Counselor*) and provider agencies across the country are exploring the practical implications of available scientific studies. Some of the most significant of these findings (for reviews, see Deas and Thomas, 2001; Muck, et al., 2001; Williams & Chang, 2000; Winters, 1999) and their implications for clinical practice include the following.

Early Age of Onset. A significant factor affecting adolescent substance use disorders and their treatment is the lowered age of onset of alcohol and other drug use (White, 1999). Several recent studies have documented progressive declines in the age of substance use initiation during the second half of the twentieth century (Presley, Meilman, & Lyerla, 1991; Dennis, Babor, Roebuck, & Donaldson, 2002; National Institute on Drug Abuse, 1999; Substance Abuse and Mental Health Services Administration, 1999). A tri-generational study of those born before 1930, between 1930 and 1949, and after 1949 found a progressive decline in the age of onset of regular alcohol consumption and a parallel increase in the probability of developing an alcohol-related problem before age 25 (Stoltenberg, Hill, Mudd, Blow, & Zucker, 1999). Lowered age of onset of drug use is particularly prominent among juveniles entering the criminal justice system and addiction treatment programs (U.S. Department of Justice, 1994). In a national study of the treatment of adolescent substance use disorders, 80% of the 600 youth admitted to the study began regular substance use between the ages of 12 and 14 (Dennis, Titus, et al., 2002).

Concern about lowered age of onset of substance use springs from studies suggesting that precocious drug experimentation is related to: juvenile offending and school failure (Fergusson, Lynskey and Horwood, 1996), risk of adult alcohol dependence (Chou and Pickering, 1992; Grant & Dawson, 1997; Dennis, et al., 2000), faster progression of substance-related problems (Kreichbaun & Zering, 2000), greater problem severity (Chen & Millar, 1998; National Institute on Alcohol Abuse and Alcoholism, 2003), increased health risk behaviors (DuRant, Smith, Kreiter, and Krowchuk, 1999), greater medical and psychiatric comorbidity (Fergusson, Lynskey and Horwood, 1996; Warren, et al, 1997; Sobell, Sobell, Cunningham, & Agrawal, 1998), and increased risk of future alcohol-related accidents and violence (Hingson, Heeren, Jananka, & Howland, 2000; Hingson, Heeren, & Zakocs, 2001). There is also evidence suggesting that early age of onset may be linked to poorer treatment outcomes (Keller, Lavori, Beardslee, Wunder, & Hasin, 1992; Kessler, et al., 2001; Chen & Millar, 1998).

In summary, the evidence suggests that decreased age of onset leads to increased risk of a subsequent substance use disorder, increases in the developmental speed and severity of substance-related problems and compromises treatment outcomes. The practical implications of this research auger for the need to intensify prevention programs as well as youth-oriented outreach and early intervention programs. Realization of the risks associated with precocious substance use has contributed to the development of a growing national network of school-based student assistance programs and the development of more effective youth screening instruments and brief interventions. In 2003 the Center for Substance Abuse Treatment (CSAT) funded 22 adolescent grants to implement standardized screening, assessment and brief treatment for low problem severity youth to test the effectiveness of an early intervention model.

Course and Outcome. There is growing evidence that adolescent substance use disorders can appear as transient or chronic problems. Where the former are amenable to resolution through maturation or relatively brief intervention (Temple and Fillmore, 1985-86), the latter constitute problems characterized by escalating severity and prolonged duration. In the recently completed Cannabis Youth Treatment (CYT) study of outpatient interventions, 41% of adolescent participants diagnosed with cannabis abuse or dependence reported they had failed prior attempts to stop drug use, 25% had prior episodes of formal treatment, and 33% were re-admitted to treatment during the year following their treatment in the CYT study (Dennis, et al, 2000). Those suffering more chronic substance use disorders can be distinguished by greater personal vulnerability (e.g., lower age of onset, family history of addiction), greater medical and psychiatric co-morbidity, and less personal, family and social assets to support recovery and resolve problems (Godley et al., 2003). This suggests the need to differentiate these two populations and to develop intervention modalities more appropriate for this high problem severity/duration group. Interventions for the latter will likely address a broad spectrum of problems and involve interventions of greater intensity and duration.

Other problems of youth and families interact (as causes and consequences) of adolescent substance use disorders to compromise clinical outcomes. Unfortunately, co-morbidity is the norm among adolescent admissions to treatment (Hoffmann, Mee-Lee, and Arrowood, 1993; Hser, et al., 2001). Of the 600 adolescents admitted to the CYT study, 95% reported one or more (83% had three or more) other problems, e.g., alcohol use disorders, other substance use disorders, internal emotional disorders (major depression, generalized anxiety, suicidal thoughts or actions, traumatic stress disorders), external behavioral disorders (conduct disorder, attention deficit-hyperactivity disorder), victimization, and violence (Dennis, et al,

2000). These findings reinforce the need for multidimensional screening and assessment procedures, and the need for multidisciplinary, if not multi-agency intervention models that can provide an integrated response to adolescent clients who present with multiple, co-occurring problems.

Engagement. The earlier noted roles of courts, schools and parents in the referral of adolescents to treatment suggest that most adolescents enter treatment under coercive influences. Voluntarily engaging adolescents and eliciting positive involvement of those coerced to treatment is a considerable challenge. Findings from the DATOS-A studies suggest that such engagement and involvement is enhanced by building rapport between the adolescent and the service team, enhancing the adolescent's confidence in his or her ability to change and encouraging and strengthening the adolescent's commitment to change (<http://www.datos.org>). Outreach services (e.g., home visits) and case management services have also been found to exert a positive influence on treatment engagement and retention (Szapocznik et al., 1988; Henggeler, Borduin, Melton et al., 1991; Godley et al., 1994; Garner, Godley & Funk, 2002).

Variability of Treatment Effectiveness. All treatment programs are not the same. Friedman and Glickman (1986) conducted one of the first studies that attempted to link clinical outcomes to characteristics of particular treatment programs. They found that programs with the best clinical outcomes: a) treat a larger number of adolescents, b) have a larger budget, c) use evidence-based therapies, d) offer specialized educational, vocational, and psychiatric services, e) employ counselors with two or more years' experience working with adolescents, f) offer a larger menu of youth-specific services (e.g., art therapy, recreational, and other prosocial activities and services), and g) are perceived by clients as empathic allies in the recovery process (Friedman and Glickman, 1986).

Lack of Theoretical Superiority. No theoretical model or clinical protocol of adolescent treatment has proven itself

superior to others in the treatment of all adolescent substance use disorders. While some reviews attributed slight superiority to family therapies (Williams & Chang, 2001) more recent randomized trials have not shown a clearly superior treatment approach for substance-involved adolescents (Dennis, et al, 2000). In the absence of superior outcomes for a particular model, communities may be encouraged to develop a menu of early intervention, treatment, and post-treatment recovery support services that meet other criteria, e.g., cultural viability, cost-effectiveness.

Post-treatment Functioning. Following treatment, most adolescents are precariously balanced between recovery and reactivation of substance use and related problems. The percentage of treated adolescents in stable recovery erodes in the years following treatment while others who relapsed and continued to use relatively early after treatment move into stable recovery in the years following treatment (Brown, A'Amico, McCarthy, and Tapert, 2001). Also noteworthy is the relatively low percentage of treated adolescents who participate in professionally directed aftercare groups or mutual aid groups such as Alcoholics Anonymous (AA) or Narcotics Anonymous (NA) relative to adults (Godley, Godley, & Dennis, 2001; Donovan, 1998). Recovery mutual aid groups can help support long-term recovery following primary treatment (Hoffman and Miller, 1992; Hoffman, et al, 1993), but they suffer from low post-treatment affiliation and high attrition rates. These findings suggest the need for more formalized programs of continuing care, the creation of more indigenous, youth-specific recovery support groups, and more active linkage to such resources during the treatment process.

Post-treatment Support. Post-treatment monitoring and recovery support services can enhance the stability and durability of recovery, however, there is little evidence from controlled studies to support this clinical and correlational observation (Donovan, 1998). In practice, step-down continuing care is recommended by ASAM and is considered to be standard practice.

Retrospective studies of statewide datasets (Godley, 2003) as well as prospective follow-up studies of post residential functioning and services (Godley, Godley, & Dennis, 2001) suggests that the actual rate of linkage to a continuing care service within 90 days of discharge from residential treatment is less than 40 percent. These findings suggest the need for improved approaches to step-down care linkage. Assertive continuing care approaches that shift the responsibility for continued contact from the client to the treatment professional and involve extended telephone follow-up and/or home visits for monitoring, recovery education, support, and early re-intervention are currently being tested. In a randomized study of adolescent post-residential continuing care services, 94% of an assertive continuing care (ACC) group received monitoring and other continuing care services compared to 54% of the "usual continuing care"(UCC) group. During a 90 day continuing care test phase the median number of face-to-face contacts for the ACC group was 10 compared to 2 for the UCC group. At the end of the active continuing care phase, 52% of ACC group members were still abstinent from marijuana compared to 32% in the UCC group (Godley, Godley, Dennis, Funk & Passetti, 2002). Organizing post-treatment recovery support services within the adolescent's natural environment (e.g., recovery home rooms, in-school recovery meetings, recovery schools) also offers promise for preventing relapse and boosting post-treatment recovery. More research is needed to evaluate proactive continuing care and recovery management to strategies to determine if this approach results in long-term improved clinical outcomes and a better stewardship of community resources

Post-treatment Environment. Peer group, social networks, and family environment have high salience to most adolescents. It is, therefore, not surprising that treatment outcome is heavily influenced by the adolescent's post-treatment family and social environment. Adolescents who experience major relapse experience higher rates of parental substance use and family conflict and a higher density of drug users in

their post-treatment social milieu (Hoffman, et al, 1993; Brown et al., 2001; Godley et al., 2003). This suggests the need for models of intervention that can alter these family and peer environments. Few treated adolescents completely change their social networks. Future research is needed to find ways to lessen the risk in the adolescent's recovery environment. Additionally, creative methods of working with the adolescent's peer network are also needed. For example, is it possible to recruit close using peers into treatment as well as the primary client? Could one or more close peers be enlisted to attend recovery support meetings to assist the primary client? Finding new ways to work with the adolescent's social and peer networks is an outstanding need to further support and maintain treatment gains experienced during treatment.

Summary

Resources for the treatment of adolescent substance use disorders have increased over the past century in tandem with the increased visibility and cultural alarm regarding adolescent substance-related problems. The United States now has a multi-branched and growing system of adolescent treatment services that spans public and private sectors and offers services in both specialty and non-specialty service settings. Most adolescents are entering treatment due to alcohol and/or cannabis-related problems (and, to a lesser degree, other illicit drugs), but present with a wide array of co-occurring problems and obstacles to recovery. Multiple levels of specialized care are available but most adolescents being treated via outpatient counseling. The number and methodological rigor of adolescent treatment outcome studies have increased dramatically in recent years. The findings of these studies suggest the need for earlier systems of problem identification and intervention, a model of sustained recovery support for adolescents presenting with high problem severity and complexity, and sustained interventions with the adolescent's post-treatment family and social environment. In

the opening decade of the twenty-first century, the treatment of adolescent substance use disorders is itself maturing into a professionalized and science-guided service arena.

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Figure 1. Increase in adolescent treatment programs from 1987 – 2003

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