

Regular article

# Characteristics of substance abuse treatment programs providing services for HIV/AIDS, hepatitis C virus infection, and sexually transmitted infections: The National Drug Abuse Treatment Clinical Trials Network

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## Abstract

Illicit drug users sustain the epidemics of human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS), hepatitis C (HCV), and sexually transmitted infections (STIs). Substance abuse treatment programs present a major intervention point in stemming these epidemics. As a part of the “Infections and Substance Abuse” study, established by the National Drug Abuse Treatment Clinical Trials Network, sponsored by National Institute on Drug Abuse, three surveys were developed; for treatment program administrators, for clinicians, and for state and District of Columbia health and substance abuse department administrators, capturing service availability, government mandates, funding, and other key elements related to the three infection groups. Treatment programs varied in corporate structure, source of revenue, patient census, and medical and non-medical staffing; medical services, counseling services, and staff education targeted HIV/AIDS more often than HCV or STIs. The results from this study have the potential to generate hypotheses for further health services research to inform public policy. © 2006 Elsevier Inc. All rights reserved.

**Keywords:** HIV/AIDS; Hepatitis C virus infection; Sexually transmitted infections; National Drug Abuse Treatment Clinical Trials Network; Community treatment program

## 1. Introduction

Substance abuse is associated with a wide spectrum of medical disorders, including infectious diseases, resulting in excessive morbidity and mortality in the United States. Infections due to human immunodeficiency virus (HIV; the causative agent of acquired immunodeficiency syndrome

[AIDS]), hepatitis C virus (HCV), and sexually transmitted infections (STIs) are the most prominent. Among substance abusers, the rates for these infections are especially significant; published studies indicate that 30–40% of injection drug users are HIV-infected (Battjes, Pickens, & Brown, 1995; Booth, Watters, & Chitwood, 1993; Chiasson et al., 1991; Francis, 2003; Zylberberg & Pol, 1996), 60–95% are HCV-infected (Broers et al., 1998; Garfein et al., 1998; Lorvich, Kral, Seal, Gee, & Edlin, 2001; Thomas et al., 1995; Zylberberg & Pol, 1996), and 90% have had at least one type of STI (Bachmann et al., 2000;

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Belongia et al., 1997; Fortenberry et al., 1999; Plitt et al., 2005; Poulin, Alary, Bernier, Ringuet, Joly, & 1999).

Because many substance-dependent persons are known to practice risky sexual behaviors and to trade sex for drugs (either directly or indirectly for money), clinics that treat substance-abusing individuals should be aware of new findings and should integrate proven preventive interventions into their programs.

In substance abuse treatment settings, previous assessments sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA) have demonstrated that there is a significant difference in the desire for and the receipt of medical services by persons enrolled in different treatment modalities (SAMHSA, 2004). However, there has been no systematic evaluation of the following: infection-related health services in a wide range of substance abuse treatment modalities, the challenges to providing these, or the relationships between these services and the state policies and regulations that govern these substance abuse treatment programs. This article is a report of the design of such a study.

The focus of this study is important because substance abusers play a pivotal role in the transmission of these infections in society and because substance abuse treatment programs represent an important point of access to substance abusers. Information from this study has the potential to help shape future programs and policies to further reduce the transmission of these infections among substance abusers, their families, their communities, and the American public at large.

The overall objective of this study was to describe the availability of services for HIV/AIDS, HCV, and STI among substance abuse treatment programs within a nationwide network of substance abuse treatment agencies, called community treatment programs (CTPs), that participate in the National Drug Abuse Treatment Clinical Trials Network (NIDA CTN). The portfolio of health services examined is as follows: provider education, patient risk assessment, patient education, biologic testing, medical examinations, counseling, treatment, and treatment monitoring. In addition, treatment program administrators and clinicians were asked to report the impact of state regulatory guidelines/policies and barriers to the availability of these services in their respective settings. Administrators for state agencies were also asked to report on current state policies, regulations, and funding related to these health services.

A detailed evaluation of these health services and associations in terms of availability of services and other factors, such as regulatory guidelines and barriers, will appear in subsequent study reports. This initial report contains an overview of the study design, the study methods and processes, the characteristics of substance abuse treatment programs, and an inventory of infection-related health services available in substance abuse treatment programs participating in this study.

## 2. Methods

### 2.1. Study population

The NIDA CTN is an ambitious initiative that is dedicated to improving addiction treatment at the national level using science and evidence-based medicine as vehicles. The CTN was launched by NIDA partly in response to a 1998 Institute of Medicine Report, “Bridging the Gap between Research and Practice,” which highlighted the public health need to translate new medical and behavioral treatments for addiction into use by broader communities (Lamb, Greenlick, & McCarty, 1998). The missions of the NIDA CTN are as follows: (1) to conduct effectiveness studies of behavioral and pharmacological interventions across a wide range of community-based treatment settings in diverse clinical populations, and (2) to transfer research results to physicians, providers, and their patients to improve the quality of drug abuse treatment throughout the country using science as vehicle.

The NIDA CTN is based on a model that has been used successfully by other National Institutes of Health (NIH) divisions. It is funded as a cooperative agreement, which

Table 1  
Areas covered by each survey

Variables	Survey A (treatment program administrators)	Survey B (treatment program clinicians)	Survey C (state administrators)
Reimbursement			
(A) By type of source	X		X
(B) By type of service	X		X
Staffing	X		
Patient characteristics			
(A) Percent with HIV or with risk factors for HIV	X	X	
(B) Percent with HCV or with risk factors for HCV	X	X	
(C) Percent with STIs or with risk factors for STIs	X	X	
Knowledge			
(A) Risk behaviors		X	
(B) Screening methods		X	
(C) Diagnostic methods		X	
(D) Treatments/monitoring		X	
Opinions			
(A) Regarding HIV/AIDS	X	X	
(B) Regarding HCV	X	X	
(C) Regarding STIs	X	X	
Practices/policies			
(A) Educational programs	X	X	X
(B) Counseling	X	X	X
(C) Risk assessments	X	X	X
(D) Screening/ diagnostic tests	X	X	X
(E) Medical history/ physical examination	X	X	X
(F) Treatments/monitoring	X	X	X

incorporates substantial NIH scientific and programmatic involvement to accomplish primary goals in partnership with grantees. The network consists of a National Steering Committee, which is the primary governing body, and a number of nodes, each of which consists of an academically based Regional Research and Training Center affiliated with 5–10 CTPs. More information on the CTN is available at the NIDA CTN web site: <http://www.nida.nih.gov/CTN/about.html> (Rotrosen et al., 2002).

All of the more than 300 substance abuse treatment programs that are part of the over 100 CTPs in the NIDA CTN were invited to participate in the protocol. Every effort was made to encourage complete participation of all treatment programs within the NIDA CTN. A program director or manager (aka treatment program administrator) at each treatment program was asked to complete a survey to report site-specific information. Up to a maximum of 10 randomly selected clinicians, along with all designated clinical experts (clinicians, both medical and nonmedical, with training and experience who are providing care for at least one of the infection groups) at each treatment program, were asked to complete a survey to assess their knowledge, opinions, and behaviors related to HIV/AIDS, HCV, and STI screening, testing/diagnosis, treatment, and monitoring.

Administrators of state and District of Columbia substance abuse and health departments were also surveyed about policies, mandates, and funding within their jurisdiction for HIV/AIDS, HCV, and STI screening, testing/diagnosis, treatment, and monitoring.

We anticipated the participation of up to 300 or more treatment program administrators, up to 3,000 treatment program clinicians, and up to 102 administrators from 50 state and District of Columbia substance abuse and health departments. This protocol collected data from drug abuse treatment program administrators and clinicians in the programs. Inclusion criteria were as follows: (1) administrators of treatment programs within CTPs of the NIDA CTN, or (2) clinicians (medical and nonmedical direct care providers) of treatment programs within CTPs of the NIDA CTN, or (3) administrators of state and District of Columbia substance abuse and health departments. The exclusion criterion was refusal to participate in the study.

## 2.2. Study design

This was a cross-sectional, descriptive, and exploratory study of the range of available services that are associated

Table 2  
Definitions

<b>Treatment program:</b> A group of substance-abuse-specific services associated with a particular modality (drug-free housing, agonist therapy, and/or detoxification) of substance abuse care in a particular setting (inpatient, outpatient, and residential). A treatment program may have specially trained staff and specific funding, distinguishing it from other programs or components of an agency (or a CTP of the CTN). If the same type of treatment program is available at more than one geographical site, it is counted separately (e.g., a CTP that has residential substance abuse services at three different locations will be counted as three different treatment programs). Based on this, CTPs within the CTN may have one or more treatment programs.
<b>Provider education:</b> The training of providers in the screening, counseling, referral, treatment, and partner notification of patients who may have or who are at risk for acquiring HIV/AIDS, HCV, or STIs.
<b>Patient education:</b> The provision of specific information to patients about behaviors or activities that may have caused or have placed them at risk for acquiring HIV/AIDS, HCV, or STIs, along with information about screening, counseling, referral, treatment, and partner notification.
<b>Patient risk assessment:</b> Techniques or instruments for evaluating patients who provide reliable information about behaviors or activities that may have caused or may have put them at risk for acquiring HIV/AIDS, HCV, or STIs.
<b>Medical history and physical examination:</b> Obtaining self-reported information from the patient or significant others about the existence, currently or in the past, of clinical symptoms, disorders, or diseases suggestive of infection with HIV/AIDS, HCV, or STIs; and the performance of assessments, by observation, palpation, or other physical techniques, that determine the existence of physical signs consistent with current or past infection with HIV/AIDS, HCV, or STIs.
<b>Biologic testing:</b> The use of laboratory tests that can specifically identify past or present infection with HIV/AIDS, HCV, or STIs; assess the effectiveness of treatment; or detect the progression of these infections.
<b>Patient counseling:</b> Counseling that specifically focuses on modifying behaviors to reduce the risk of acquiring HIV/AIDS, HCV, or STIs, along with breakdown of barriers in seeking diagnosis, referral, treatment, and partner notification.
<b>Patient treatment:</b> The provision of on-site (or linkage) pharmacological or other interventions that target infection by HIV/AIDS, HCV, or STIs, or the consequences of these infections.
<b>Patient monitoring:</b> The use of any or all of the above modalities to detect: (1) the acquisition of new infections or the progression of current infections due to HIV/AIDS, HCV, or STIs; (2) the resumption of behaviors or activities that increase the risk of acquiring these infections; or (3) clinical outcomes or side effects due to pharmacologic or other interventions provided to infected persons.
<b>Patient reporting:</b> Any requirement by a state or a local regulatory agency that newly diagnosed patients with HIV/AIDS, HCV, or STI be reported to that agency by the diagnosing entity.
<b>Medical staff:</b> This includes, but is not limited to, full-time and part-time treatment program physicians, physician assistants, nurse practitioners, registered and licensed practical nurses, and medical assistants.
<b>Nonmedical clinical staff:</b> This includes, but is not limited to, full-time and part-time treatment program counselors, social workers, case managers, case workers, psychologists and peer counselors/educators.
<b>Expert clinicians (medical and nonmedical):</b> Treatment program clinicians who are knowledgeable or experienced in the education, counseling, evaluation, and/or management of substance abusers who have or who are at risk for acquiring HIV/AIDS, HCV, or STIs, including clinicians with expertise in only one of these infections. This can include the treatment program administrator, if appropriate.

with targeted infections in substance abuse treatment settings within the NIDA CTN.

Three surveys were used as assessment tools used in the study: one for treatment program administrators, one for treatment program clinical staff, and one for state and District of Columbia substance abuse and health department administrators. The treatment program administrator survey has sections on structure and service setting, patient characteristics, staff characteristics, reimbursement issues, practices, program guidelines, barriers, and opinions. The treatment program clinician survey has sections on practices, program guidelines, knowledge, barriers, and opinions. The state administrator survey has sections on policies/regulations, reimbursement for providers, and level of priority. All three surveys were designed to uncover factors that describe substance abuse treatment programs within CTN CTPs with respect to practices associated with HIV/AIDS, HCV, and STI (Table 1). A definition sheet was provided with all survey packets to provide uniformity of understanding by respondents in answering the survey questions (Table 2).

The duration of this study was contingent on the length of time necessary to train node protocol managers for each of the 17 nodes comprising the NIDA CTN, to obtain local Institutional Review Board approval or waiver, to inform participants about the objectives of the survey, and to administer the survey (once) to the study population. Therefore, there was only one visit with the study population. The actual length of time necessary to complete the study was approximately 22 months (March 23, 2003–January 14, 2005).

### 2.3. Statistical analysis

Each section of the survey contained mostly multiple-choice questions. A few questions required a numerical response. Consequently, the number and the proportion of respondents providing a given answer were used to summarize each question. For numerical responses, the mean, median, minimum, maximum, and standard deviation were used to summarize the question. In addition, numerical responses were sometimes categorized, and the number and the proportion of respondents in each category were presented. For some categorical variables, the categories of responses were collapsed into a broader set of categories (e.g., federal, state, and local funding collapsed to government funding).

Due to the exploratory nature of the protocol, sample size was not based on statistical test considerations. Instead, the following calculations show that the precision of the estimated mean is more than adequate when 10 clinicians per treatment program are randomly sampled.

Using the information from Smith, Goudeau, Katner, and Farmer (1993) and the assumptions on the number (300) of substance abuse treatment programs within the CTN, the following statements can be made about

precision in subgroups of clinic staff (medical or non-medical) when we select 10 per treatment program: A sample size of 500 produces a 95% confidence interval equal to a sample mean of  $\pm 0.1$  when the estimated  $SD = 1.136$ , whereas a sample size of 1,500 produces a 95% confidence interval equal to a sample mean of  $\pm 0.057$  when the estimated  $SD = 1.136$ .

The above statements were based on the determination of precision for confidence intervals for one mean using PASS 2000 software (Hintze, 2001). A value of 1,500 would correspond to an equal number of medical and nonmedical staff. A value of 500 would correspond to one sixth of the estimated 3,000 clinical staff surveys conducted in one subgroup (medical or nonmedical). The same

Table 3  
Characteristics of treatment programs

Characteristics	Surveys with valid responses [n]	Treatment programs <sup>a</sup> [n (%)]
Corporate structure		
Private not-for-profit	268	212 (78.5)
Private-for-profit		15 (5.6)
Government		36 (13.4)
Other		6 (2.2)
Largest source of revenue		
County/local grants	269	45 (16.7)
State funds		103 (38.1)
Medicaid		46 (17.0)
Federal grants		33 (12.2)
Veterans Administration benefits		5 (1.9)
Medicare		4 (1.5)
Private contracts/insurance		9 (3.3)
Self-pay		15 (5.6)
Other		3 (1.1)
Unknown		7 (2.6)
Patient census		
$\leq 500$	250	145 (53.9)
500–1,000		52 (19.3)
$>1,000$		53 (19.7)
Addiction services offered <sup>b</sup>		
Inpatient or residential services	256	148 (55.0)
Outpatient pharmacotherapy	242	89 (33.1)
Other outpatient services	257	206 (76.6)
Outreach and support services	259	227 (84.4)
Medical staff <sup>c</sup>		
0		55 (20.4)
1		31 (11.5)
2–3		64 (23.8)
4–7		54 (20.1)
8+		57 (21.2)
Nonmedical staff		
0–7		79 (29.4)
8–11		59 (21.9)
12–17		59 (21.9)
18+		64 (23.8)

<sup>a</sup> Percentages do not total 100% due to rounding and nonrespondents.

<sup>b</sup> Responses were not mutually exclusive for this item.

<sup>c</sup> Refers to physicians, physician assistants, nurse practitioners, registered nurses, licensed practical nurses, pharmacists, and medical technicians.

Table 4  
HIV/AIDS, HCV, and STI services offered by substance abuse treatment programs in the NIDA CTN

	HIV/AIDS services offered [n (%)]			HCV services offered [n (%)]			STI services offered [n (%)]		
	Yes	No	Unknown	Yes	No	Unknown	Yes	No	Unknown
Provider education	186 (68.9)	68 (25.2)	16 (5.9)	171 (63.3)	83 (30.7)	16 (5.9)	155 (57.4)	100 (37.0)	15 (5.6)
Patient education	226 (83.7)	27 (10.0)	17 (6.3)	200 (74.1)	55 (20.4)	15 (5.6)	205 (75.9)	51 (18.9)	14 (5.2)
Patient risk assessment	224 (83.0)	29 (10.7)	17 (6.3)	194 (71.9)	62 (23.0)	14 (5.2)	195 (72.2)	60 (22.2)	15 (5.6)
Patient medical history and physical examination	150 (55.6)	101 (37.4)	19 (7.0)	135 (50.0)	120 (44.4)	15 (5.6)	133 (49.3)	125 (46.3)	12 (4.4)
Patient biologic testing	131 (48.5)	119 (44.1)	20 (7.4)	93 (34.4)	160 (59.3)	17 (6.3)	109 (40.4)	149 (55.2)	12 (4.4)
Patient counseling	178 (65.9)	70 (25.9)	22 (8.1)	159 (58.9)	96 (35.6)	15 (5.6)	163 (60.4)	93 (34.4)	14 (5.2)
Patient treatment	103 (38.1)	145 (53.7)	22 (8.1)	78 (28.9)	175 (64.8)	17 (6.3)	92 (34.1)	165 (61.1)	13 (4.8)
Patient monitoring	117 (43.3)	130 (48.1)	23 (8.5)	95 (35.2)	158 (58.5)	17 (6.3)	105 (38.9)	150 (55.6)	15 (5.6)

precision would be obtained if the number of experts were 500 or 1,500.

### 3. Results

The response rate was 269 administrators from 319 substance abuse treatment programs within the NIDA CTN (84%), 1,723 clinicians of the targeted 2,210 (78%), and at least one substance abuse or health department administrator from 48 states and the District of Columbia (96%). The administrators described their programs as hospital-based (10.4%), as independent agencies (60.2%), and as a wide variety of other treatment settings (by the remainder of the respondents).

Table 3 presents the characteristics of the treatment programs represented by responding administrators. About 78.4% of the programs were private not-for-profit agencies, 5.6% were private-for-profit agencies, 13.4% were public agencies, and 2.2% were reported as other. The largest source of revenue was the public sector (87.4%), predominantly at the state and local levels (71.8%), with 5.6% and 3% of the administrators reporting self-pay and private revenue sources, respectively. More than 53% of administrators reported a patient census of 500 or less, 19.3% reported 501–1,000 patients, and 19.7% reported more than 1,000 patients. The mean, median, and standard deviation of patients enrolled was 736, 400, and 1,062, respectively.

Fifty-five percent of the administrators reported one or more types of inpatient or residential service. Of the inpatient or residential services (detoxification, short-term or long-term residential care, halfway house, therapeutic community, or drug-free housing), detoxification services were the most prevalent (30.1%) among responding administrators. Almost a third (33.1%) of the treatment program administrators reported the provision of outpatient pharmacotherapy services (either opiate agonist maintenance therapy or maintenance to abstinence). One or more outpatient services (including detoxification, drug-free housing, intensive outpatient, and aftercare) were provided by 76.6% of the treatment programs. Of the other outpatient services, aftercare was the most frequent, reported by 62.8%

of the treatment programs. Substance abuse outreach, home visits, case management, and substance abuse prevention were the types of outreach and support services provided by 84.4% of treatment programs. Case management was the most prevalent of these services, provided by 75.8% of substance abuse treatment programs (Table 3).

Staffing patterns among treatment programs are also shown in Table 3. The mean number of medical staff (physicians, physician assistants, nurse practitioners, registered nurses, licensed practical nurses, pharmacists, and medical technicians) is 5.52, with a median of 3 ( $SD = 8.09$ ), and the mean number of nonmedical staff (psychologists, social workers, counselors, educators, case managers, and aides) is 14.48, with a median of 11 ( $SD = 13.01$ ).

Treatment programs reported four types of medical services (patient history and physical examination, biologic testing, treatment, and clinical monitoring), three types of nonmedical services (patient education, risk assessment, and counseling), and staff education related to HIV/AIDS, HCV, and STI (see Table 4). These services were delivered on-site or via referral agreements with other agencies. Substance abuse treatment programs reported HIV/AIDS-related services more often than HCV- or STI-related services. Non-medical services related to these infections were more prevalent than medical services related to these infections among administrators' responses.

### 4. Discussion

HIV/AIDS, HCV, and STI remain major public health challenges for today's society. Persons who use substances participate in behaviors that place them and others at substantial risk for these infections (Bachmann et al., 2000; Battjes et al., 1995; Belongia et al., 1997; Booth et al., 1993; Broers et al., 1998; Chiasson et al., 1991; Fortenberry et al., 1999; Francis, 2003; Garfein et al., 1998; Lovich et al., 2001; Plitt et al., 2005; Poulin et al., 1999; Thomas et al., 1995; Zylberberg & Pol, 1996). Substance abuse treatment or various services provided in the mix of services in substance abuse treatments have been demonstrated to be important tools in developing effective responses to reduce

the transmission of these infections (Brown, Chu, Nemoto, Ajuluchukwu, & Primm, 1989; Cooper, 1989; Hartel & Schoenbaum, 1998; Hubbard, Marsden, Cavanaugh, Rachal, & Ginsburg, 1988; Lally et al., 2002, 2005; Metzger, Navaline, & Woody, 1998; Sorensen & Copeland, 2000). Determining that relevant services exist represents an important prerequisite to assessing effectiveness. These are among the issues that have spurred interests in the availability of infection-related services in substance abuse treatment programs. Unlike prior studies, this report focuses on all three major infection groups.

Another difference between this study and prior reports is design. Prior reports were based either on investigations of infection-related services in a single substance abuse treatment program or on a group of local or regional programs (Brown et al., 1989; Hartel & Schoenbaum, 1998; Lally et al., 2002, 2005; Sylvestre, 2002). Strauss, Falkin, Vassilev, Des Jarlais, and Astone (2002) reported the results of a survey of program directors from a randomized sample of substance abuse treatment programs derived from a nationwide list maintained by SAMHSA. The report of Strauss et al. focused on organizational characteristics, patient characteristics, and the availability of HCV-related services in substance abuse treatment programs. In addition to these data, this study also focused on HIV- and STI-related services, on surveys of substance abuse treatment clinicians with and without expertise in these infections, and on surveys of state directors of public health and state substance abuse agencies. These additional areas of focus enhance the richness of results and provide a greater potential to generate a wide spectrum of hypotheses to be tested by future analyses.

Because the respondents to two of the surveys are part of a government-sponsored network of clinicians and researchers, questions about the generalizability of the results may arise. Like the study of Strauss et al. (2002), participation was voluntary. Similar to the SAMHSA Office of Applied Studies (2004) National Survey of Substance Abuse Treatment Services, the main findings of this study demonstrate that testing for these infections is prevalent among drug abuse treatment programs, with HIV testing more frequent than HCV or STI testing. Collectively, these findings suggest that the results of this study are similar to those of two previous studies in areas where they had sought similar information.

This report also raises a cautionary note. Despite the public health impact of these infections and the data demonstrating the potential effectiveness of substance abuse treatment and various addiction-related services therein to intervene in the transmission of these infections, it is disconcerting that a significant number of programs offer no patient or provider education, no patient counseling, and no biologic testing for these infections. There are a number of possible explanations for these observations, including the presence of barriers (such as inadequate funding) or the absence of incentives (a lower priority dedicated to these infections in substance abuse treatment settings in the health

planning of state regulatory agencies). Answering questions such as these await further analysis of a rich database generated by this study and by investigations of other researchers. Although there continues to be fierce debates about how to respond to addiction in the United States, studies such as the present one may aid in shaping substance abuse treatment to reach its potential in curtailing the spread of substance-use-related infections. Subsequent reports from this study will delve into these issues in greater depth.

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