

THE UNIVERSITY OF GEORGIA

CLINICAL TRIALS NETWORK

**COUNSELOR-LEVEL DATA ON
EVIDENCE-BASED TREATMENT PRACTICES**

**National Treatment Center Study
Summary Report No. 11**

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OVERVIEW OF THE NATIONAL TREATMENT CENTER STUDY

The National Treatment Center Study (NTCS) is a family of projects designed to document and track changes in the organization, structure, staffing, and service delivery patterns of substance abuse treatment programs throughout the U.S. The NTCS is headquartered at the University of Georgia's Institute for Behavioral Research under the direction of Paul M. Roman.

The NTCS currently consists of 5 separate national samples of substance abuse treatment providers:

- NIDA Clinical Trials Network community treatment programs (CTPs)
- Publicly Funded Treatment Centers
- Privately Funded Treatment Centers
- Therapeutic Communities (TCs)
- Opioid Treatment Programs

This report is based on data collected in 2003-2004 from counselors employed by community based treatment programs (CTPs) participating in NIDA's Clinical Trials Network (CTN). Of particular interest during the counselor-level data collection were workforce characteristics and receptivity to evidence-based treatment practices among counselors of the CTPs. We were interested in understanding the factors that increase receptivity to evidence-based treatment practices, including how employment in a CTN-affiliated treatment program was related to attitudes toward treatment innovations.

Data collection from the CTPs involved two major components: face-to-face interviews with administrators/clinical directors about service delivery at the CTP and mailback questionnaires with counselors employed by the CTP. (For additional details on the on-site data collection, see *Appendix C*). At the close of the face-to-face interview, participating administrators were asked to provide the study team with a list of substance abuse counselors at the CTP. The sole purpose of collecting this list of counselors was to invite them to participate in the mailback questionnaire portion of the study. Administrators who were unwilling to identify counselors were offered the opportunity to oversee the distribution of questionnaires to their staff members. Using the CTP's address, counselors were mailed an invitation letter, an informed consent form, and the questionnaire. Counselors who returned the questionnaires received \$40 for their participation. At least one valid counselor questionnaire was received from 177 of the 240 CTPs (73.8%). In all, 1,643 questionnaires were distributed and 1,001 questionnaires were returned, yielding a counselor-level response rate of 60.9%.

The purpose of this report is twofold. First, we report summary statistics of the demographic characteristics of the counselor respondents and overall receptivity to six evidence-based treatment practices (EBPs): buprenorphine, methadone, naltrexone, disulfiram, motivational enhancement therapy (MET) and voucher-based motivational incentives. We consider the extent to which variation in receptivity to these EBPs is a function of counselor characteristics, CTP setting, and EBP-specific training. The second aim of this report is to compare receptivity to EBPs expressed by counselors in the CTN to their counterparts employed in nationally representative samples of publicly funded and privately funded treatment organizations. The purpose of these comparisons is to understand the similarities and differences between CTN counselors and the non-CTN workforce; these findings have potential implications for the whether these models of EBP receptivity can be generalized to the broader treatment field.

Further detail regarding sampling, study design, and data collection procedures for the CTN and non-CTN samples are provided in Appendix C, “Study and Sample Design” at the end of this report.

EXECUTIVE SUMMARY

This report describes the characteristics of counselors within the National Institute on Drug Abuse's Clinical Trials Network (CTN) as well as presenting key findings about these counselors' attitudes toward evidence-based treatment practices (EBPs). In addition to examining differences between counselors in different types of CTP settings, this report provides comparative data on the attitudes of counselors in non-CTN treatment centers.

Key findings regarding counselor characteristics include the following:

- Within the CTN, there were notable differences in counselor characteristics between methadone maintenance treatment settings, privately funded treatment centers, and publicly funded centers. There were differences in terms of racial/ethnic diversity, certification, educational attainment, and personal recovery status.
- There were significant differences between CTN and non-CTN counselors in terms of educational attainment, personal recovery status, and adherence to a 12-step orientation towards treatment. CTN counselors were more likely to have attained a Master's-level degree, while being less likely to be personally in recovery and less likely to adhere to a 12-step orientation.

This report also describes CTN counselor attitudes towards six EBPs: buprenorphine, methadone, naltrexone, disulfiram, motivational enhancement therapy (MET), and voucher-based motivational incentives. Specifically, counselors were asked about their professional orientation toward the acceptability of each EBP for treating substance abuse. Across these six EBPs, we consistently found:

- Receiving more specific training on each EBP was linked to greater perceived acceptability.
- Routine use of the EBP in the treatment centers was associated with greater perceived acceptability.
- Master's-level counselors reported significantly higher perceived acceptability.
- Greater adherence to a 12-step orientation was related to lower perceived acceptability.

Comparisons of CTN and non-CTN counselors revealed several key differences with regard to EBPs. In general:

- CTN counselors rated the EBPs as more acceptable than non-CTN counselors.
- CTN counselors tended to report that they had received more specific training about EBPs than non-CTN counselors.
- EBPs were more routinely used in CTPs than in non-CTN programs.

In models of perceived acceptability, the differences between CTN and non-CTN counselors were largely explained by counselor characteristics, receipt of specific training, and routine implementation of EBPs. However, there were important differences between types of EBPs:

- For EBPs that have been the focus of CTN clinical trials (e.g. buprenorphine, MET, & voucher-based motivational incentives), CTN/non-CTN differences were explained by the receipt of training and implementation of the EBP.
- For EBPs not tested in CTN clinical trials (e.g. methadone, naltrexone, & disulfiram), differences in perceived acceptability were more likely to be explained by differences in counselor characteristics.

I. THE CTN COUNSELING WORKFORCE

This section of the report summarizes key findings about 1,001 counselors employed by CTPs in the CTN in 2003-2004. We describe the socio-demographic characteristics of the respondents and compare these data to administrators' reports of workforce characteristics. Next, we examine receptivity to evidence-based treatment practices (EBPs) among the entire CTN counselor sample as well as differences between counselors employed in three types of CTPs: publicly funded CTPs, privately funded CTPs, and methadone programs in the CTN. Finally, we summarize multivariate models of counselor receptivity to EBPs in the CTN sample.

A. Demographic Characteristics of CTN Counselors

Key socio-demographic characteristics of the CTN counselor sample appear below. The first column summarizes the socio-demographic characteristics of the counselor respondents. The second column presents descriptive data provided by administrators during the face-to-face interviews. There was a high degree of similarity between the counselor-level data and the average demographic characteristics reported by administrators during the CTP-level data collection. These comparisons suggest that response bias was not a significant problem in the counselor questionnaire portion of the CTN study.

Counselor Characteristics		
	<u>Counselor Sample</u>	<u>Administrator Reports*</u>
	% of Sample	Mean % at CTP
Female	61.0%	62.3%
Racial/Ethnic Minority (Total)	37.8%	34.3%
African American	20.6%	
Asian American	1.5%	
Hispanic/Latino	8.2%	
Other	6.5%	
Master's Level Degree (or Higher)	48.2%	44.5%
Certified in addictions	46.5%	42.7%
Recovering	41.9%	42.5%

*During the face-to-face interviews, administrators were asked to report the number of women, racial/ethnic minority, Master's-level degree (or higher), certified, and recovering counselors employed by the CTP; these values were divided by the total number of counselors to yield percentages. This column reports the mean values of these measures.

We also examined the sample in terms of employment in three different types of CTP settings: methadone CTPs, publicly funded CTPs, and privately funded CTPs. We differentiate private CTPs and public CTPs by measuring the types of revenue received by the organization. For the purposes of this report, public CTPs are those that received greater than 50% of their annual operating revenues from federal, state, and local government grants and contracts, while private CTPs are defined as those receiving less than 50% of revenue from such sources.

In the sample of 1,001 counselors, 32.0% (n = 320) were employed in methadone CTPs, 44.3% (n = 443) in publicly funded CTPs, and 23.8% (n = 238) in privately funded CTPs. There were significant differences in counselor characteristics, including race/ethnicity, educational attainment, certification status, and recovery status, by CTP setting.

Counselor Characteristics by Types of CTP Settings			
	<u>Methadone</u>	<u>Public</u>	<u>Private</u>
Female	64.0%	61.0%	58.9%
Racial/Ethnic Minority***			
African American	23.3%	20.6%	17.0%
Asian American	3.2%	0.5%	1.3%
Hispanic/Latino	11.4%	7.6%	5.1%
Other	8.8%	4.8%	6.4%
Master's Degree (or Higher)*	43.8%	47.7%	55.1%
Certified in addictions*	50.5%	52.0%	60.4%
Recovering**	65.0%	56.3%	52.1%

Significant chi-square: *p<.05, **p<.01, ***p<.001

In addition to these socio-demographic characteristics, several other relevant counselor characteristics were measured. The average counselor age was about 44 years (mean = 43.98, SD = 11.65). Counselors were asked about how long they had been employed by the CTP. The average tenure was 4.76 years (SD = 5.29). About 32.0% of the CTP counselor sample had been employed for less than two years. There were no significant differences in counselor age and tenure across the three types of CTN settings.

B. Comparisons of CTN Counselors with National Samples of Non-CTN Counselors

Concurrent with the collection of counselor-level data in the CTN, the National Treatment Center Study team was also collecting similar data from counselors employed in treatment organizations outside the CTN. The NTCS includes nationally representative samples of 362 publicly funded programs and 402 privately funded programs. These two samples are differentiated by their reliance on governmental block grants/contracts. As described in the previous section, publicly funded programs receive greater than 50% of their revenues from governmental sources, while privately funded programs receive less than 50% of their funding from such sources. (Additional information on these samples appears in *Appendix C*.) Although the NTCS team is about to begin collecting data from a sample of non-CTN methadone programs, such data are not available for analysis at this time. Thus, this section of the report compares the CTN counselors in public and private centers with their non-CTN counterparts:

- N = 443 CTN counselors in public centers
- N = 1,171 counselors in non-CTN public centers
- N = 238 CTN counselors in private centers
- N = 1,094 counselors in non-CTN private centers

B.1. Counselors in Publicly-Funded Programs: CTN vs. Non-CTN

First, we compared the counselors employed by publicly funded CTPs with their counterparts outside the CTN. There were two significant differences between the CTN and non-CTN counselors in publicly-funded programs. First, CTN counselors were significantly more likely to report having a Master's level degree (or higher) than non-CTN counselors. In addition, CTN counselors were significantly less likely than their non-CTN counterparts to report being personally in recovery. We also examined differences in adherence to a 12-step orientation. On a scale that ranged from 1 to 7, CTN counselors reported significantly lower adherence to a 12-step philosophy (mean = 4.45, SD = 1.54) than non-CTN counselors (mean = 4.76, SD = 1.50, $p < .001$).

Public Center Counselor Characteristics		
	<u>CTN Public</u>	<u>Non-CTN Public</u>
Female	61.0%	64.0%
Racial/Ethnic Minority		
African American	20.6%	22.6%
Asian American	0.5%	1.0%
Hispanic/Latino	7.6%	8.0%
Other	4.8%	4.6%
Master's Level Degree (or Higher)***	47.7%	37.3%
Certified	48.0%	53.1%
Recovering**	43.7%	51.2%

Significant chi-square, *p<.05, **p<.01, ***p<.001

B.2. Counselors in Privately-Funded Programs: CTN vs. non-CTN

Next, we compared the demographic characteristics of CTN and non-CTN counselors employed in privately funded treatment centers. There were three significant differences between the CTN/non-CTN private center counselor samples. First, privately funded CTPs employed a more racially and ethnically diverse counselor workforce than did non-CTN settings. In addition, counselors in privately funded CTPs were significantly more likely to have Master's level degrees, but less likely to be certified in addiction counseling. Although there was no significant difference in personal recovery status, CTN counselors reported significantly less adherence to a 12-step orientation (mean = 4.19, SD = 1.31, p<.001) than counselors employed by private centers outside the CTN (mean = 5.02, SD = 1.49).

Private Center Counselor Characteristics		
	<u>CTN Private</u>	<u>Non-CTN Private</u>
Female	58.9%	57.9%
Racial/Ethnic Minority**		
African American	17.0%	10.1%
Asian American	1.3%	0.6%
Hispanic/Latino	5.1%	3.3%
Other	6.4%	3.7%
Master's Level Degree (or Higher)*	55.1%	47.8%
Certified***	39.6%	59.2%
Recovering	47.9%	53.0%

Significant chi-square, *p<.05, **p<.01, ***p<.001

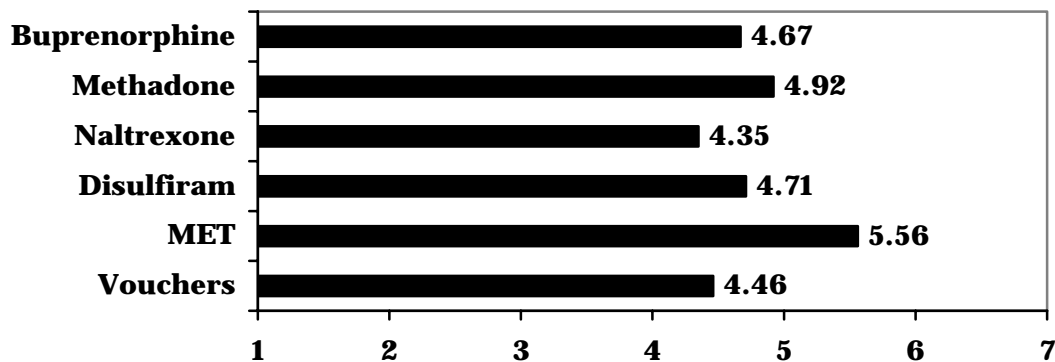
In summary, there are some key differences between CTN counselors and non-CTN counselors. CTN counselors from both public and private centers had achieved greater educational attainment than their non-CTN counterparts. Furthermore, CTN counselors reported significantly lower adherence to a 12-step model of recovery.

II. CTN Counselors and Evidence-Based Treatment Practices (EBPs)

A. CTN Counselor Attitudes towards EBPs

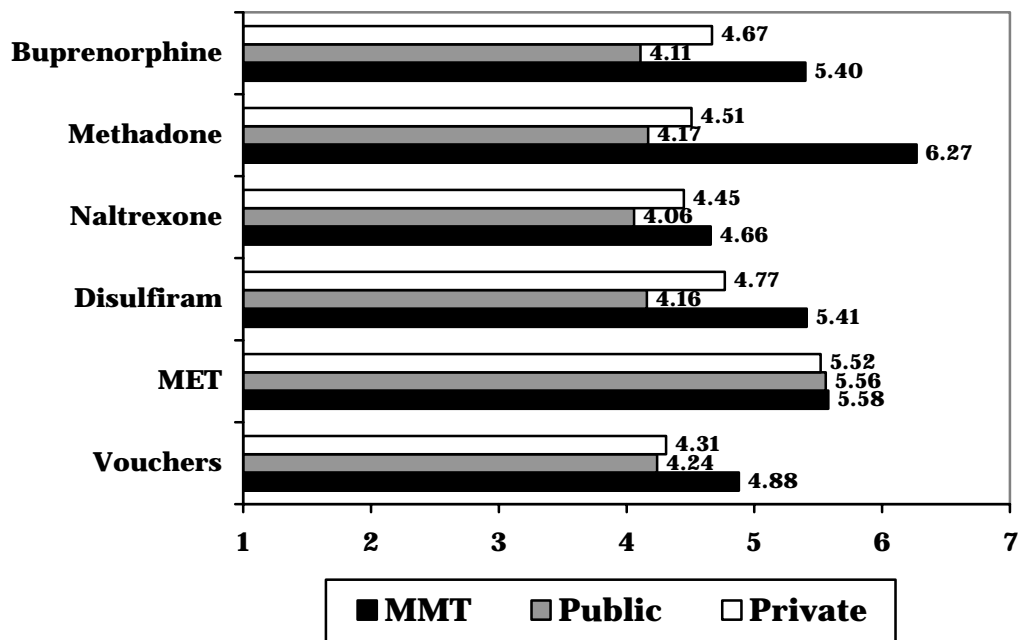
For this report, we consider six evidence-based treatment practices (EBPs): buprenorphine, methadone, naltrexone, disulfiram, motivational enhancement therapy, and voucher-based motivational incentives. Each of the medications is FDA approved to treat substance abuse, while the two behavioral interventions were selected for their relationship with CTN protocols. Our primary concern in this section is the perception of acceptability of each technique for the treatment of substance abuse among CTN-affiliated counselors. In the questionnaire, counselors were asked to rate each EBP on a scale that ranged from 1 to 7, with 1 indicating “totally unacceptable” and 7 indicating “completely acceptable.” The average ratings for these six techniques appear below:

Perceived Acceptability of EBPs among CTN Counselors



We examined potential differences in the perceived acceptability of these EBPs by the three types of CTP settings (i.e. methadone, public, and private CTPs). There were significant differences by CTP setting type for all EBPs except perceived acceptability of MET. In general, counselors working in methadone programs (MMT) were most receptive to the four types of medications, as evidenced by higher mean scores of acceptability. For the medications, nearly all of the pairwise comparisons between the types of CTPs were significant; the only exceptions were a non-significant difference between private and methadone counselors for naltrexone, and a nearly significant difference between public and private counselors on methadone ($p=.051$). As for voucher-based motivational incentives, methadone counselors reported higher acceptability than public and private counselors; the comparison between public and private counselors was not significant.

Perceived Acceptability of EBPs by CTP Type



B. Modeling Perceived Acceptability of EBPs

In addition to measuring counselor attitudes toward EBPs, we were concerned with understanding variation in perceived acceptability of each EBP. Previous research suggests that attitudes toward treatment innovations are partly explained by the amount of specific training received about a given technique. In addition, we expect higher levels of acceptability to be reported by counselors who work in CTPs where a given EBP is routinely used as a treatment technique.

Using ordinary least squares (OLS) regression, we examined the association between specific training and perceived acceptability, while controlling for several additional variables. The models include the following measures:

- Extent of specific training provided by center, ranging from 1 = no extent to 7 = very great extent
- Implementation of EBP at the center, ranging from 1 = never used to 7 = routinely used
- CTP setting (methadone CTP, private CTP, and public CTP as the reference category)
- Master's level degree or higher (1 = yes, 0 = no)
- Certified addictions counselor (1 = yes, 0 = no)
- Personal recovery status (1 = recovering, 0 = not recovering)
- Twelve-step orientation (1-to-7 scale)

For each EBP, we present the standardized coefficients so that comparisons can be made across models about the size of the relationships. Associations can range from 0 (no association) to +/- 1 (perfect association). These models allow for the assessment of three issues: statistical significance (as indicated by $p < .05$, two-tailed test), the direction of the association (i.e. whether a variable is associated with higher or lower scores of acceptability), and how large the association is.

Across the four medications, training and routine implementation are significantly associated with perceptions of the acceptability of each medication. CTN Counselors who had received more innovation-specific training reported significantly greater scores on the acceptability measures, while counselors that reported the innovation was more routinely used indicated higher acceptability scores.

OLS Regression Models of Perceived Acceptability of Medications

	<u>Buprenorphine</u>	<u>Methadone</u>	<u>Naltrexone</u>	<u>Disulfiram</u>
Specific Training	.363***	.248***	.258***	.163***
Implementation	.177***	.287***	.215***	.289***
Master's Degree	.145***	.100***	.159***	.078**
Certified	-.006	-.031	.028	-.045
Recovering	.012	.029	.034	.063*
12-Step Orientation	-.173***	-.158***	-.139***	-.160***
MMT CTP vs. Public CTP	.101**	.124**	.086*	.197***
Private CTP vs. Public CTP	.002	-.006	.012	.105**
Adjusted R²	.335	.384	.229	.286

Significant differences, * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed)

Certain counselor characteristics were associated with perceived acceptability. Counselors with a Master's-level degree (or higher) rated each medication higher in acceptability than counselors without a Master's-level degree. Twelve-step orientation was also associated with perceived acceptability, such that counselors who more strongly endorsed a 12-step model of recovery reported significantly lower scores of medication acceptability. In general, the personal recovery status of the counselor was not associated with perceived acceptability. Certification in addiction counseling was also not associated with the perceived acceptability of these medications. Finally, CTN counselors in MMT settings reported higher acceptability than counselors in public centers. Most of the differences between private and public center counselors were not significant.

**OLS Regression Models of Perceived Acceptability of
MET and Voucher-Based Incentives**

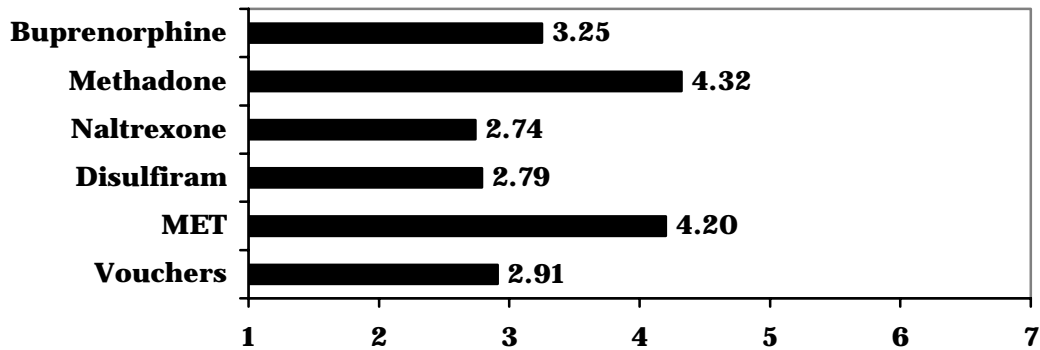
	<u>MET</u>	<u>Voucher-Based Incentives</u>
Specific Training	.166***	.193***
Implementation	.339***	.269***
Master's Degree	.084**	.033
Certified	-.008	-.017
Recovering	-.016	-.036
12-Step Orientation	-.110***	-.150***
MMT CTP vs. Public CTP	-.009	.062
Private CTP vs. Public CTP	-.003	.008
Adjusted R²	.242	.205

Significant differences, *p<.05, **p<.01, ***p<.001 (two-tailed)

The results for the two behavioral interventions were similar in terms of the positive associations for training and implementation. However, a key difference was that CTP setting type was not associated with perceived acceptability of these two interventions. In addition, educational attainment was only associated with MET acceptability.

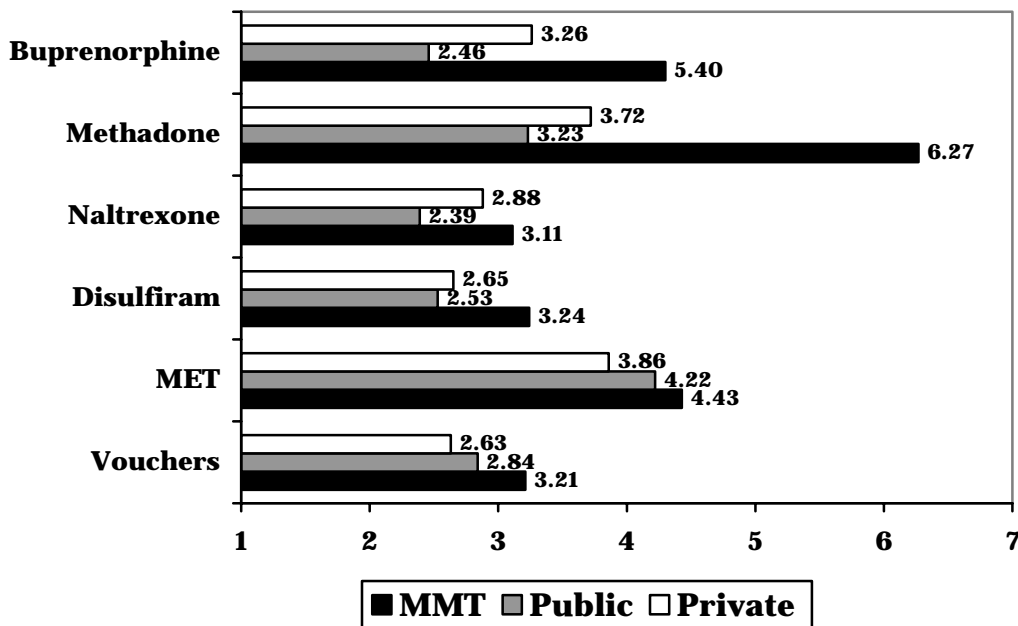
Given the importance of specific training and routine implementation, the following charts show counselor-reported data for these measures. CTN counselors reported receiving the greatest amount of training for MET and methadone, while training for naltrexone, disulfiram, and voucher-based incentives was considerable lower.

Receipt of Specific Training on EBPs

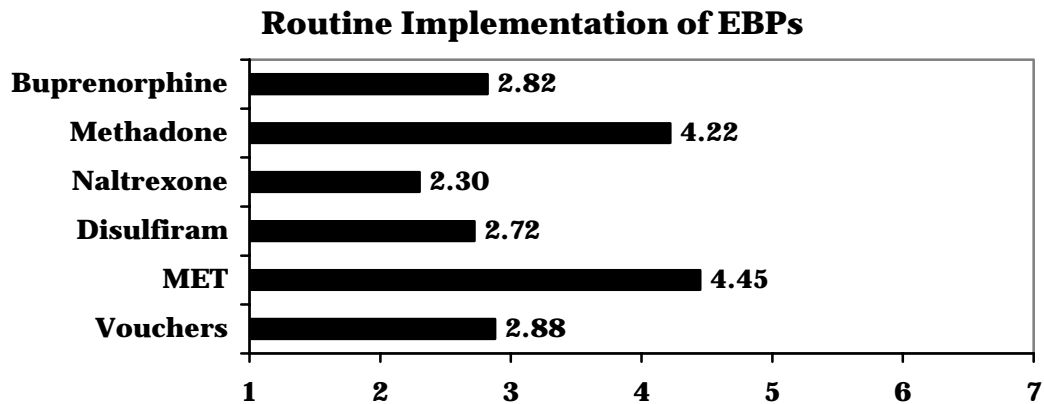


As seen below, there were substantial (and significant) differences in receipt of specific training across the three types of CTPs. For buprenorphine and methadone, all of the pairwise comparisons were significant. In the case of naltrexone, counselors in public CTPs reported lower amounts of training than counselors in private CTPs and in MMT programs. Counselors in methadone programs reported receiving more training in disulfiram than counselors in public and private CTPs.

Receipt of Training on EBPs by CTP Type

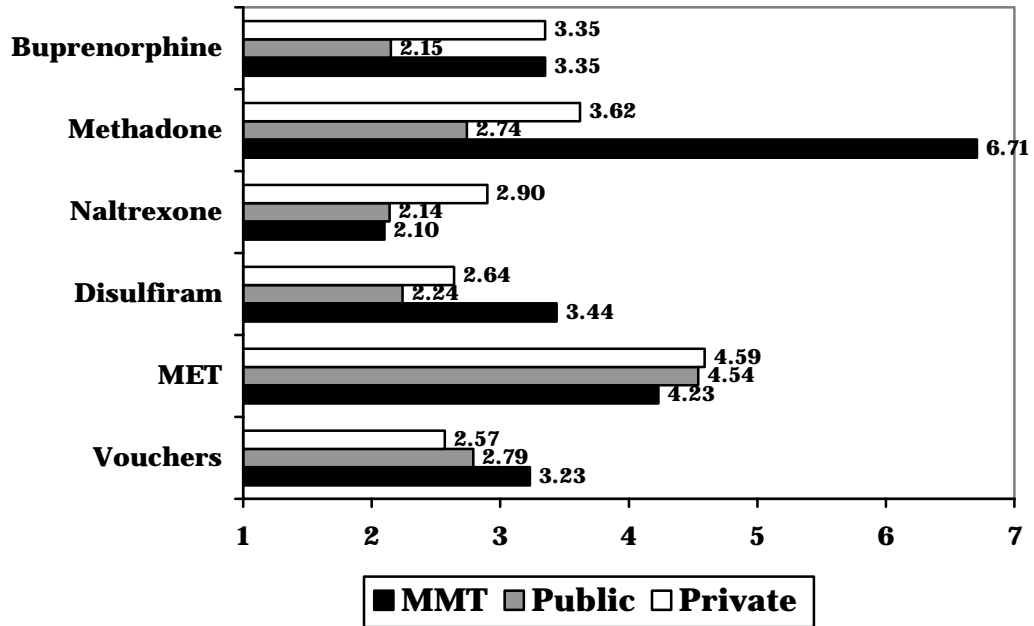


Next, we report counselors' perceptions of how routinely these innovations are used in their CTPs. These data suggest greatest routine use for MET and methadone (which is not surprising given the inclusion of counselors employed by MMT programs).



Finally, we explored differences in counselors' perceptions of routine implementation of the EBPs. There was significant variation in implementation by CTP type for all EBPs except MET. For buprenorphine, greater implementation was reported by counselors in MMT and private CTPs than in public CTPs. Private center counselors reported greater methadone implementation than public center counselors; they also reported greater naltrexone implementation than both MMT and public center counselors. For disulfiram, MMT counselors reported greater implementation than private and public center counselors. Finally, MMT counselors reported significantly greater implementation of voucher-based incentives than either private or public center counselors.

Routine Implementation of EBPs by CTP Type



III. Comparing CTN and Non-CTN Counselors on Perceived Acceptability of EBPs

A. Comparisons of Perceived Acceptability, Training, and Routine Implementation of EBPs

There is keen interest in understanding if, and how, participation in the CTN impacts the counseling staff in CTPs. Specifically, it is of interest to document whether exposure to new treatment techniques through participation in the CTN translates into an increased acceptance and use of these techniques. To examine this issue, we compared two samples of CTN counselors (those in public and private CTPs) with their non-CTN counterparts on three measures related to each EBP. Although perceived acceptability of EBPs is our primary variable of interest, we also examine differences in training and routine implementation since these variables were key predictors in the models summarized in the previous section.

As noted previously, we are currently unable to compare CTN counselors in MMT programs with counselors outside the CTN, although data collection underway will allow us to make such comparisons in the future. To ensure meaningful between-group comparisons, MMT counselors are omitted from the analyses that follow.

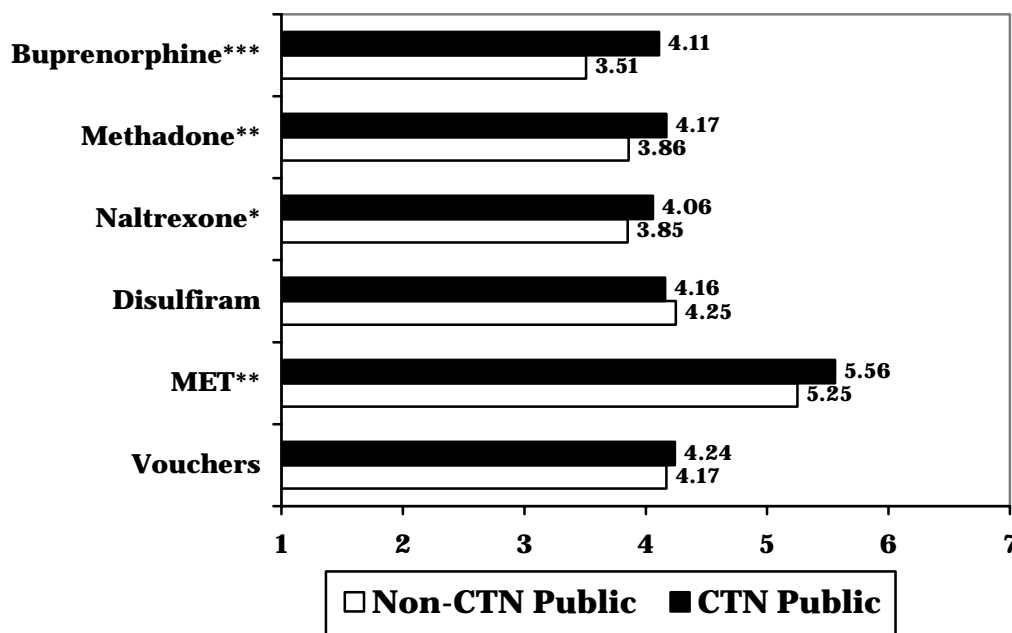
A.1. Counselors in Publicly-Funded Programs: CTN vs. non-CTN

The next three tables focus on the six EBPs that were examined in Section II:

- buprenorphine,
- methadone,
- naltrexone,
- disulfiram,
- motivational enhancement therapy (MET), and
- voucher-based motivational incentives.

In this section, we present comparisons of counselors' average ratings of perceived acceptability, training received, and routine implementation in the public CTP and non-CTN samples. Higher values indicate greater perceived acceptability.

Perceived Acceptability of EBPs: Public Centers

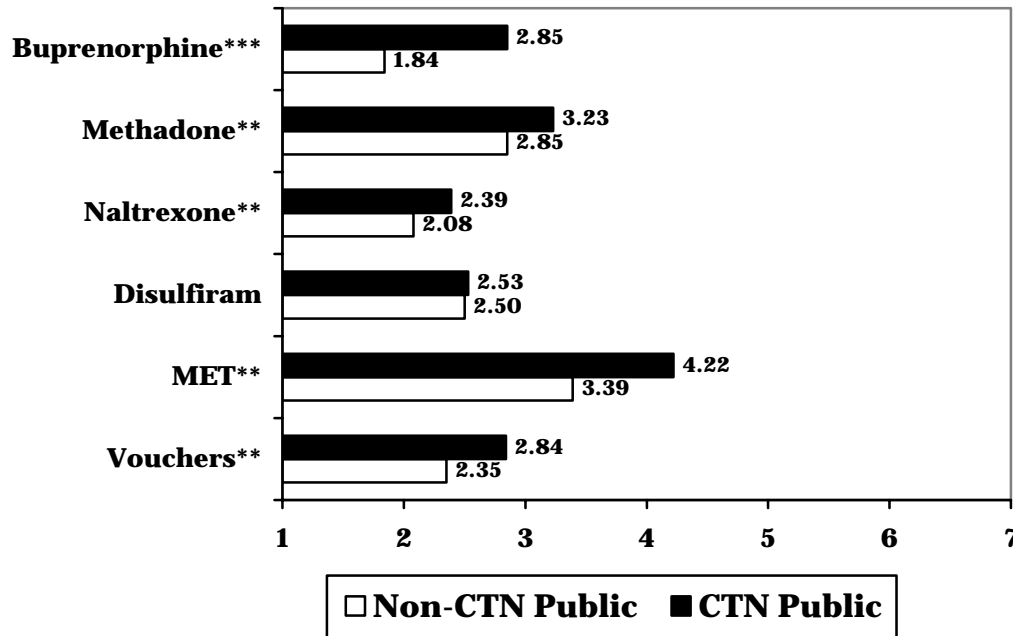


Significant differences, * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed)

The figure above reveals four significant differences between CTN counselors working in publicly funded programs and their non-CTN counterparts. The largest difference was for perceived acceptability of buprenorphine, which has been the subject of several CTN-sponsored clinical trials; CTN counselors rated buprenorphine as significantly more acceptable than did counselors outside the CTN. Likewise, CTN counselors were also more supportive of MET for drug treatment than were non-CTN counselors. Finally, CTN counselors perceived methadone and naltrexone to be more acceptable than did their non-CTN colleagues.

Next we compared these two samples of counselors on training received for each EBP. For five of the six EBPs, CTN counselors in publicly funded programs reported receiving significantly more training than counselors in non-CTN public centers. The training differences were considerable, particularly for the three EBPs that have been the focus of CTN clinical trials (buprenorphine, MET, and voucher-based motivational incentives).

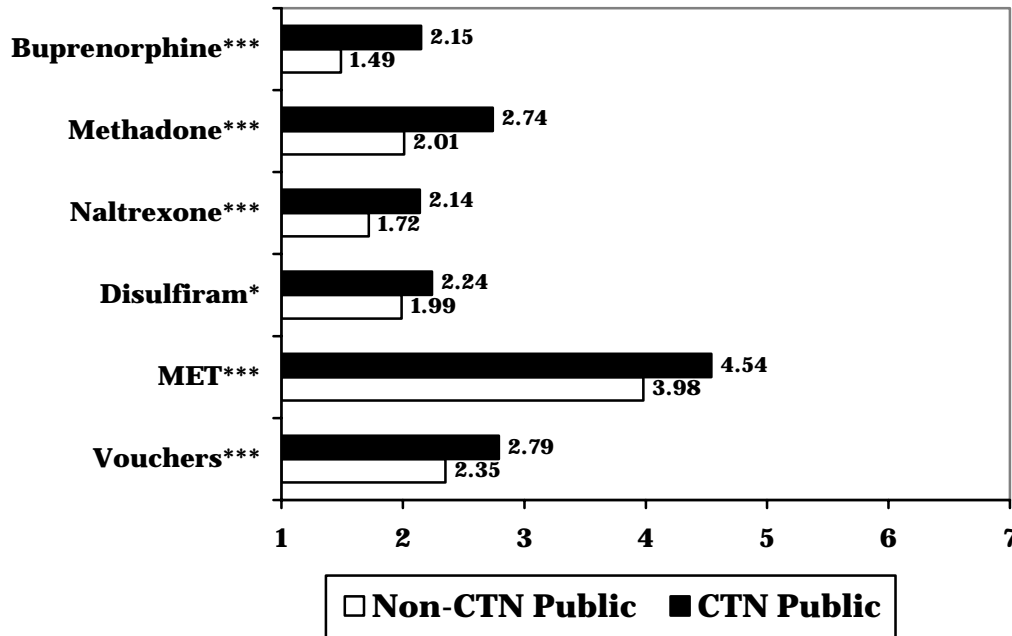
Receipt of Training on EBPs: Public Centers



Significant differences, * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed)

The next figure compares the mean scores of counselors' perceptions that the six EBPs are routinely used at their center. The differences between CTN counselors and public center counselors outside the CTN are all statistically significant, with CTN counselors perceiving greater routine implementation of all six EBPs.

Routine Implementation of EBPs: Public Centers



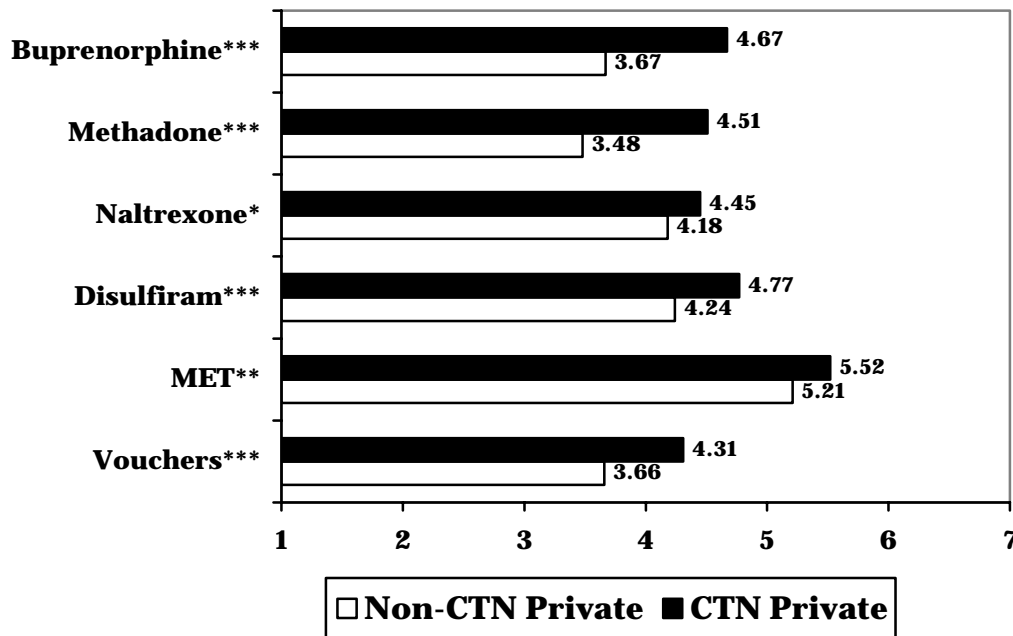
Significant differences, * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed)

A.2. Counselors in Privately-Funded Programs: CTN vs. non-CTN

In the following figures, we compare CTN counselors employed by privately-funded CTPs with their non-CTN counterparts. Again, we consider the six EBPs and three key measures: perceived acceptability, receipt of specific training, and routine implementation.

CTN counselors in privately funded CTPs reported higher mean scores on perceived acceptability for all six EBPs, relative to private sector counselors outside the CTN. These differences were particularly large for buprenorphine and methadone.

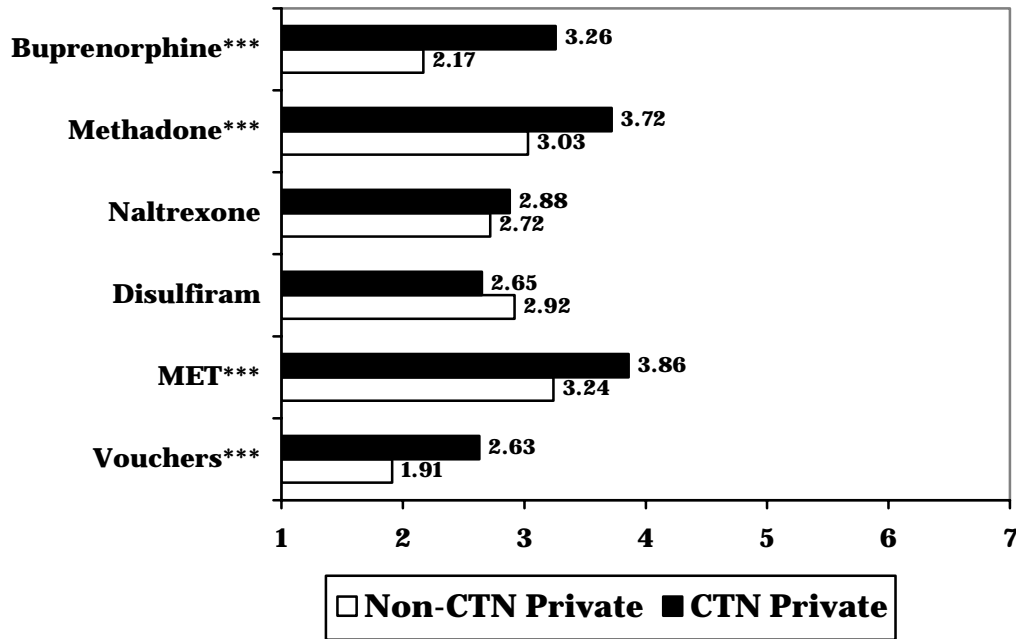
Perceived Acceptability of EBPs: Private Centers



Significant differences, * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed)

In the next figure, we examine counselors' reports regarding the training they have received from their center for each EBP. Counselors in private sector CTPs reported greater training on four of the EBPs compared to counselors outside the CTN. CTN counselors reported greater training on buprenorphine, methadone, MET, and motivational incentives.

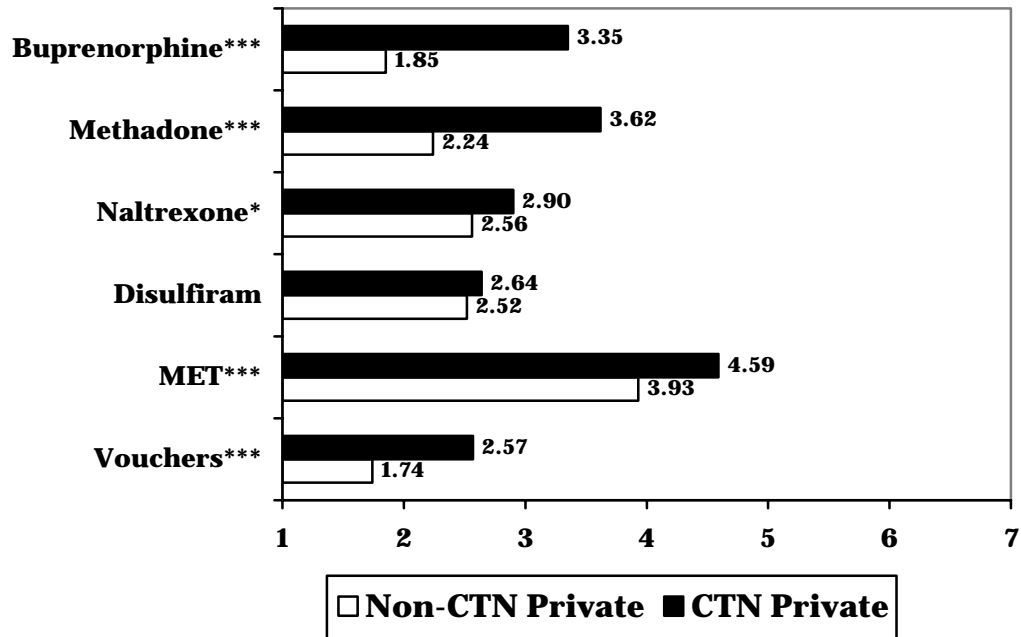
Receipt of Training on EBPs: Private Centers



Significant differences, * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed)

Finally, we compare counselor reports of routine use of the six EBPs. There were significant CTN/non-CTN differences for five of the six EBPs. In each instance, CTN counselors reported significantly greater levels of routine use of the EBPs. The differences were considerable for interventions that have been tested within the CTN.

Routine Implementation of EBPs: Private Centers



*Significant differences, * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed)*

B. Models of Perceived Acceptability: CTN and Non-CTN Comparisons

B.1. CTN and Non-CTN Counselors in the Public Sector

We estimated multivariate OLS regression models of perceived acceptability using a combined sample of CTN counselors working in publicly funded programs (n = 443) and counselors in public centers outside the CTN (n = 1171). For each EBP, we conducted analyses in three stages:

- **Model 1:** Only includes a dichotomous variable for whether the counselor works in a publicly funded CTP or in a non-CTN public center. This model will show baseline differences between CTN and non-CTN counselors.
- **Model 2:** Includes the CTN/non-CTN variable plus basic counselor characteristics, including educational attainment (Master's level degree or higher), certification status, personal recovery status, and 12-step orientation. This model will allow us to see whether CTN/non-CTN differences persist once counselor characteristics are controlled – in other words, to assess whether CTN/non-CTN differences are attributable to underlying differences in counselor characteristics.
- **Model 3:** Measures of training received and routine implementation for that EBP are added. This comprehensive model allows us to further specify the nature of any differences between CTN and non-CTN counselors.

Tables reporting the standardized regression coefficients for each EBP appear in [*Appendix A*](#).

The bivariate estimates in Model 1 essentially replicate the relationships outlined in the previous section: counselors in publicly-funded CTPs report greater perceived acceptability for buprenorphine, methadone, naltrexone, and MET compared to their non-CTN counterparts.

In the second model, several counselor characteristics are added. Controlling for these counselor characteristics has varying effects on the CTN/non-CTN differences. For buprenorphine and MET, the CTN versus non-CTN difference remains statistically significant, suggesting that the difference between these two groups is not accounted for by differences in educational attainment, certification, recovery status, and 12-step orientation. In contrast, these counselor characteristics reduce the CTN/non-CTN difference for methadone and naltrexone to non-significance.

Model 3 adds two measures to the regression equations: amount of specific training on the EBP provided by the center and the routine use of the EBP at the center. For both buprenorphine and MET, the addition of these measures renders the CTN/non-CTN difference to non-significance. That is to say, *the observed differences between public-sector CTN and non-CTN counselors on perceived acceptability of buprenorphine and MET are explained by differences in training and implementation of the EBPs.*

Consistent with the regression models described in Section II, there are four other variables that are consistently associated with perceived acceptability, net of the other variables in the models. Training and implementation are positively associated with acceptability for all six EBPs. In addition, greater endorsement of a 12-step philosophy is associated with lower perceived acceptability of both the pharmacological and behavioral interventions. Finally, counselors with a Master's level degree (or higher) report significantly higher acceptability scores for all six EBPs.

B.2. CTN and Non-CTN Counselors in the Private Sector

The OLS regression models, described above, were replicated in the samples of CTN (n = 238) and non-CTN counselors (n = 1094) employed by private sector treatment facilities. The standardized coefficients for these models appear as a series of tables in *Appendix B*.

Among counselors working in the private sector, there were significant differences CTN and non-CTN counselors in perceived acceptability for all six EBPs; again, this is consistent with the mean differences reported in the previous section. As with the public center sample, these differences were accounted for by counselor characteristics in some cases, and by training and implementation in others.

Counselor characteristics, such as education, certification, recovery status, and 12-step orientation, accounted for the CTN/non-CTN differences for two EBPs: naltrexone and MET. In the case of MET, the CTN/non-CTN difference trended towards significance in Model 2 ($p = .071$). However, controlling for counselor characteristics did not account for the CTN/non-CTN differences in perceived acceptability of buprenorphine, methadone, disulfiram, and voucher-based motivational incentives.

The third model of each EBP added specific training and routine implementation to the regression models. Adding these two variables rendered the CTN/non-CTN differences in perceived acceptability of buprenorphine and motivational incentives non-significant. Thus, apparent differences between CTN and non-CTN counselors on acceptability of buprenorphine and incentives are explained by differences in receipt of training and routine implementation.

For methadone and disulfiram, there continued to be significant differences between CTN and non-CTN counselors in the private sector even after controlling for counselor characteristics, training, and implementation. This suggests that, net of other factors, membership in the CTN is associated with a greater propensity to perceive these pharmacotherapies as acceptable.

Finally, the analysis of private sector counselors revealed associations with perceived acceptability that were similar to those documented in the public sector samples. Master's level counselors were more receptive to all of these EBPs, while counselors that more strongly endorsed a 12-step orientation were less receptive to all of the EBPs. Training and implementation were both positively associated with perceived acceptability for all six EBPs.

IV. Conclusions

These data, collected from 1,001 CTN counselors and 2,265 non-CTN counselors, revealed differences in counselor characteristics and in attitudes regarding the acceptability of EBPs for treating substance abuse. For example, CTN counselors have attained higher levels of education than non-CTN counselors. Given the consistent positive relationship between greater educational attainment and more positive attitudes towards EBPs, this difference in educational attainment may have implications for issues related to technology transfer. In addition, CTN counselors reported lower adherence to a 12-step treatment philosophy than non-CTN counselors. In models of perceived acceptability of EBPs conducted with just the CTN sample and with comparison data, greater adherence to a 12-step treatment orientation was associated with lower receptivity to EBPs. Thus, it would appear that the characteristics of CTN counselors may make them more receptive to EBPs than counselors outside the CTN.

Indeed, CTN counselors perceived these EBPs as more acceptable treatment techniques than non-CTN counselors. In part, CTN counselors appear to be advantaged with regard to two key predictors of perceived acceptability: specific training and routine implementation. Counselors within the CTN have received more training about EBPs and report that these EBPs are more routinely used within their programs. In fact, these differences in training and implementation explain the CTN/non-CTN differences in perceived acceptability of EBPs that similar to interventions tested in CTN clinical trials (buprenorphine, MET, and voucher-based motivational incentives).

In conclusion, these data suggest that involvement in the CTN may be producing measurable differences in attitudes towards EBPs. The involvement of CTPs in research activities likely increases access to training activities that may impact counselors' attitudes about these interventions. Finally, CTN counselors are more likely to work in settings where these EBPs are routinely used, giving them the opportunity to experience and see first-hand "science" being put into "practice."

APPENDIX A:
***OLS Regression Models of EBP Acceptability with
 CTN/Non-CTN Comparisons: Public Sector***

Table 1: OLS Regression of Buprenorphine Acceptability, Public Sector Counselors (Standardized Coefficients)

	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
CTN Public vs. Non-CTN Public	.166***	.130***	.046
Master's Degree		.180***	.173***
Certified		.032	-.004
Recovering		.024	.003
12-Step Orientation		-.166***	-.167***
Specific Training			.280***
Implementation			.186***
Adjusted R²	.027	.090	.244

Significant differences, *p<.05, **p<.01, ***p<.001 (two-tailed)

Table 2: OLS Regression of Methadone Acceptability, Public Sector Counselors (Standardized Coefficients)

	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
CTN Public vs. Non-CTN Public	.065*	.041	-.006
Master's Degree		.095**	.106***
Certified		-.003	-.015
Recovering		.035	.039
12-Step Orientation		-.185***	-.157***
Specific Training			.120***
Implementation			.254***
Adjusted R²	.004	.047	.150

Significant differences, *p<.05, **p<.01, ***p<.001 (two-tailed)

Table 3: OLS Regression of Naltrexone Acceptability, Public Sector Counselors (Standardized Coefficients)

	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
CTN Public vs. Non-CTN Public	.069*	.042	-.003
Master's Degree		.161***	.143***
Certified		.082**	.029
Recovering		.006	-.005
12-Step Orientation		-.131***	-.130***
Specific Training			.237***
Implementation			.207***
Adjusted R²	.004	.053	.190

Significant differences, *p<.05, **p<.01, ***p<.001 (two-tailed)

Table 4: OLS Regression of Disulfiram Acceptability, Public Sector Counselors (Standardized Coefficients)

	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
CTN Public vs. Non-CTN Public	-.024	-.046	-.063**
Master's Degree		.129***	.121***
Certified		-.008	-.031
Recovering		.008	.014
12-Step Orientation		-.104***	-.077**
Specific Training			.127***
Implementation			.316***
Adjusted R²	.000	.029	.182

Significant differences, *p<.05, **p<.01, ***p<.001 (two-tailed)

Table 5: OLS Regression of MET Acceptability, Public Sector Counselors (Standardized Coefficients)

	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
CTN Public vs. Non-CTN Public	.082**	.053*	-.009
Master's Degree		.130***	.102***
Certified		.047	.007
Recovering		-.036	-.022
12-Step Orientation		-.152***	-.127***
Specific Training			.202***
Implementation			.341***
Adjusted R²	.006	.057	.293

Significant differences, *p<.05, **p<.01, ***p<.001 (two-tailed)

Table 6: OLS Regression of Acceptability of Voucher-Based Motivational Incentives, Public Sector Counselors (Standardized Coefficients)

	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
CTN Public vs. Non-CTN Public	.026	.008	-.033
Master's Degree		.039	.070**
Certified		.038	.011
Recovering		-.055	-.026
12-Step Orientation		-.111***	-.097***
Specific Training			.192***
Implementation			.265***
Adjusted R²	.000	.019	.187

Significant differences, *p<.05, **p<.01, ***p<.001 (two-tailed)

APPENDIX B:
***OLS Regression Models of EBP Acceptability with
 CTN/Non-CTN Comparisons: Private Sector***

Table 1: OLS Regression of Buprenorphine Acceptability, Private Sector Counselors (Standardized Coefficients)

	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
CTN Private vs. Non-CTN Private	.204***	.161***	.030
Master's Degree		.160***	.155***
Certified		.034	.010
Recovering		.066*	.053
12-Step Orientation		-.197***	-.187***
Specific Training			.268***
Implementation			.239***
Adjusted R²	.041	.100	.279

Significant differences, *p<.05, **p<.01, ***p<.001 (two-tailed)

Table 2: OLS Regression of Methadone Acceptability, Private Sector Counselors (Standardized Coefficients)

	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
CTN Private vs. Non-CTN Private	.204***	.140***	.064*
Master's Degree		.058*	.086**
Certified		-.053	-.033
Recovering		-.011	-.016
12-Step Orientation		-.248***	-.225***
Specific Training			.121***
Implementation			.274***
Adjusted R²	.041	.109	.218

Significant differences, *p<.05, **p<.01, ***p<.001 (two-tailed)

Table 3: OLS Regression of Naltrexone Acceptability, Private Sector Counselors (Standardized Coefficients)

	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
CTN Private vs. Non-CTN Private	.059*	.030	-.005
Master's Degree		.189***	.168***
Certified		.091**	.048
Recovering		.022	.021
12-Step Orientation		-.166***	-.180***
Specific Training			.223***
Implementation			.308***
Adjusted R²	.003	.069	.280

Significant differences, *p<.05, **p<.01, ***p<.001 (two-tailed)

Table 4: OLS Regression of Disulfiram Acceptability, Private Sector Counselors (Standardized Coefficients)

	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>
CTN Private vs. Non-CTN Private	.110***	.091**	.086**
Master's Degree		.154***	.117***
Certified		.093**	.055*
Recovering		.071**	.050
12-Step Orientation		-.119***	-.119***
Specific Training			.120***
Implementation			.429***
Adjusted R²	.011	.052	.303

Significant differences, *p<.05, **p<.01, ***p<.001 (two-tailed)

Table 5: OLS Regression of MET Acceptability, Private Sector Counselors (Standardized Coefficients)

	Model 1	Model 2	Model 3
CTN Private vs. Non-CTN Private	.080***	.054	-.005
Master's Degree		.104**	.093***
Certified		.037	-.022
Recovering		-.006	.005
12-Step Orientation		-.113***	-.080**
Specific Training			.153***
Implementation			.444***
Adjusted R²	.006	.028	.325

Significant differences, *p<.05, **p<.01, ***p<.001 (two-tailed)

Table 6: OLS Regression of Acceptability of Voucher-Based Motivational Incentives, Private Sector Counselors (Standardized Coefficients)

	Model 1	Model 2	Model 3
CTN Private vs. Non-CTN Private	.136***	.101**	.017
Master's Degree		.022	.061*
Certified		-.041	-.035
Recovering		-.070*	-.042
12-Step Orientation		-.104**	-.108***
Specific Training			.227***
Implementation			.240***
Adjusted R²	.018	.037	.201

Significant differences, *p<.05, **p<.01, ***p<.001 (two-tailed)

APPENDIX C: ***Study and Sample Design***

The National Treatment Center Study (NTCS) is a set of research projects that collect data on the organization, structure, staffing, and service delivery patterns of substance abuse treatment programs throughout the U.S. The NTCS is headquartered at the University of Georgia's Institute for Behavioral Research under the direction of Paul M. Roman.

As of February 2006, the NTCS consists of five samples, each of which is described briefly here. Data collection for each sample includes a core set of measures, which allow for comparisons to be made across samples. In addition, there are three core data collection techniques that are utilized for each sample: face-to-face interviews with administrators/clinical directors that focus on service delivery, mailback questionnaires with administrators/clinical directors measuring leadership and organizational strategy, and mailback questionnaires with counselors.

Clinical Trials Network Treatment Programs

In 2001, NIDA awarded the University of Georgia a grant to study the impact of CTN participation on innovation adoption. The CTN is designed as a national network of treatment programs that implement structured trials of emerging pharmacological and behavioral treatment techniques in real-world treatment settings. CTN programs include government owned, public, private non-profit, and private for-profit facilities offering a broad spectrum of treatment services. The study offers a basis for comparison with other non-CTN treatment providers, particularly in terms of programs' familiarity with, and use of, various emerging treatment techniques. A total of 240 administrative units within 104 CTPs were interviewed for this study in 2003-'04.

It is important to note how CTPs were identified within the CTN for this study, as this may differ from definitions used by the CTN itself or by other researchers. At the time of data collection, there were 17 nodes in the CTN and all nodes were involved in the study. Each node consisted of a university-based RRTC (regional research and training center) and multiple community-based treatment organizations. The node coordinator of each RRTC was contacted and asked to verify the name and location of the CTPs within the node. Representatives from those CTPs were then contacted via telephone for a brief screening interview. The primary goal of this brief interview was to ascertain the basic structure of the CTP in terms of how many autonomous units were embedded within the organization. *For the purpose of the study, we defined a CTP as a treatment unit that had a separate administrator who possessed autonomy over that unit's budget.* It is important to note that this is not necessarily the same as a service delivery unit, a "site," or an

organization. For example, some CTPs have separate administrative lines for each modality, or level of care, or physical location. Other CTPs operate an entire organization as a single administrative unit. Our definition reflected the realities of day-to-day business operations in each CTP.

Three other criteria determined eligibility for inclusion of CTPs in the NTCS. First, the administrative unit as defined by the CTP had to deliver some form of substance abuse detoxification or treatment services. Units that were primarily organized around assessment, corrections, or prevention services were excluded from the study. In addition, the administrative unit had to have a realistic expectation of participating in a CTN trial at some point. Actual participation in a trial was *not* a requirement for the study, but occasionally units were identified that the CTP indicated had no realistic expectation of being involved in CTN activities, and they were excluded from the study to conserve project resources. Finally, the CTN itself is an evolving organizational structure. CTPs have joined and exited the CTN over time. Only CTPs that were formally affiliated with the original 17 nodes at the time of our interviews were eligible for study. This means that some recent additions to the original nodes, as well as all CTPs in the new Texas and Appalachia nodes, are not represented in this report.

Using our definition, we collected data from 240 administrative units affiliated with 104 CTN-affiliated organizations in the 17 nodes. In all, 61 of the 104 organizations were structured as a single administrative unit. The remaining 43 organizations were structured with a total of 179 administrative units. The unit of analysis was defined in this way so that valid comparisons could be made with our nationally representative samples of non-CTN facilities. (For simplicity, we refer to these 240 units as “CTPs” throughout this report.) The 240 participating CTPs represented a 95.41% response rate to our on-site interviews.

Representatives from each participating unit provided data in face-to-face interviews with UGA staff. Interviews focused on organizational structure, management practices, personnel (number and type), case mix, services offered, and CTN protocols in which the CTP was involved. A particular focus was the centers’ adoption and use of various evidence-based treatment techniques, particularly those examined in CTN protocols. All administrative respondents were subsequently asked to provide a list of their counselors, to whom anonymous questionnaires were later distributed.

Public Treatment Centers

In 2003-2004, we interviewed the administrators of 362 publicly funded treatment centers throughout the U.S. Unique to this study, “public” centers are defined as those receiving more than 50% of their annual operating revenues from government grants or contracts (including block grant funds).

The average center participating in this study received 86% of its annual revenues from such sources.

These centers were selected using a two-stage statistical sampling process to ensure representation across geographic regions and inclusion of a wide range of treatment facilities. First, all counties in the U.S. were assigned to one of 10 geographic strata of equivalent size, based on population. Next, counties within strata were randomly sampled. All public treatment centers in those sampled counties were then enumerated using federal and state treatment directories and other available sources. Centers were then sampled proportionately across strata. Centers declining to participate in the study were replaced by random selection of alternate units within the same geographic strata. The 362 participating centers reflect a response rate of 80%.

A second round of interviews with this panel of centers began in December 2004 and will conclude in early 2006.

Eligible centers for this study offer treatment for alcohol and drug problems, at a level of care at least equivalent to structured outpatient programming as defined by the American Society of Addiction Medicine's Patient Placement Criteria. Counselors in private practice, DUI / driver education programs, halfway houses, and programs offering exclusively methadone maintenance services were not eligible. Programs with methadone units were eligible if other addiction treatment services meeting ASAM level of care criteria were available. Additionally, because the research design focused on treatment services available to the general public, treatment units based in correctional facilities and those operated by the Veteran's Administration were not eligible.

As in the CTN study, participating administrators were informed about the counselor-level data collection and asked to provide a list of counselors at their center. Counselors were then mailed a packet that included a letter describing the study, an informed consent form, and the questionnaire. Counselors received \$40 for completion of the questionnaire. A total of 1953 questionnaires were mailed and 1207 were returned by counselors employed by publicly funded centers, yielding a response rate of 61.8%.

Private Treatment Centers

A companion study of privately funded treatment centers began in 1995, initially with support from NIAAA (R01AA10130) and most recently with support from NIDA (R01DA13110). In this study, "private" centers are those that receive less than 50% of their annual operating revenues from government grants or contracts. The average center in this component of the NTCS receives only 17% of its funding from such sources. Sampling and

eligibility rules were identical to the public center sample just described.

Using panel data from four waves of interviews (1995-'96, 1997-'98, 2000-'01, 2003-'04), we have been able to identify significant patterns of change within the private sector, including changes in service availability, the adoption of new medications and behavioral therapies, and trends in program closure.

The methodology employed in the counselor-level data collection was identical to the counselor-level data collection conducted as part of the public center study. In the private center sample, a total of 1785 questionnaires were mailed and 1091 were returned (61.1%).

Funding for a fifth and sixth wave of interviews with this panel of private-sector treatment facilities (to extend through 2010) is currently pending award. This would be the longest-running panel study of private-sector addiction treatment services in the U.S.

Therapeutic Communities

In 2000, UGA was awarded an additional grant from NIDA to study the structure, staffing, and service provision of a nationally representative sample of therapeutic communities (TCs) across the US. The central criterion for inclusion in this study was that the program self-identified as a therapeutic community. By using self-identified TCs as the sample, we were better able to capture the diversity of TCs in the U.S. The two-stage sampling design again parallels the studies described above, resulting in a sample of 380 TCs located in 42 states. On-site interviews were conducted in late 2002-early 2004, with a response rate exceeding 85%. Of particular interest in that study is the extent to which modern TCs have adapted or diverged from the “essential elements” of the traditional therapeutic community model described by George De Leon and colleagues. The TC interviews also ask about the program’s clinical services and the availability of specialized treatment services.

Opioid Treatment (Methadone) Programs

In 2005, UGA was awarded an exploratory/developmental grant from NIDA (R21DA20028) to study the adoption of buprenorphine and contingency management (motivational incentives) in a small sample of opioid treatment programs. The design of this study will essentially provide a “reference group” for the 59 methadone units interviewed as part of the CTN study described above. By pooling data from both samples of OTPs, we will be able to address (a) whether OTPs in the CTN are representative of the general population of OTPs; and (b) how direct exposure to clinical trials involving buprenorphine

or contingency management techniques enhances programs' propensity to adopt those practices. Data are expected to be available for analysis in late 2006.

For More Information

Summary reports from all components of the National Treatment Center Study are posted on the project's website, www.uga.edu/ntcs.

In addition, abstracts of all peer-reviewed publications, and slides from all conference presentations, are posted on the website as soon as they become available. Hard copies of these materials may be ordered free of charge from a link on the site.

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