



Published in final edited form as:

*Adm Policy Ment Health*. 2014 March ; 41(2): 205–214. doi:10.1007/s10488-012-0449-1.

## Dual diagnosis capability in mental health and addiction treatment services: An assessment of programs across multiple state systems

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### Abstract

Despite increased awareness of the benefits of integrated services for persons with co-occurring substance use and psychiatric disorders, estimates of the availability of integrated services vary widely. The present study utilized standardized measures of program capacity to address co-occurring disorders, the Dual Diagnosis Capability in Addiction Treatment (DDCAT) and Dual Diagnosis Capability in Mental Health Treatment (DDCMHT) indexes, and sampled 256 programs across the United States. Approximately 18% of addiction treatment and 9% of mental health programs met criteria for dual diagnosis capable services. This is the first report on public access to integrated services using objective measures.

### Keywords

Behavioral health; co-occurring disorders; dual diagnosis; integrated treatment

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Among public health concerns, the disease burden associated with alcohol, illicit and prescription drug problems, as well as mental health disorders, such as depression, posttraumatic stress disorder and schizophrenia, is substantial (Kehoe, Rehm, & Chatterji, 2007; World Health Organization, 2003; World Health Organization, 2008; World Health Organization, 2009). Although substance use and mental health disorders frequently co-occur within any one given individual, historically, the treatment delivery system has been bifurcated, attending to one or the other disorder as if unrelated (McGovern & McLellan, 2008). For the past decade, considerable attention has been dedicated to improving policy and services to persons with co-occurring psychiatric and substance use disorders (Center for Substance Abuse Treatment (CSAT), 2005; New Freedom Commission on Mental

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The data reported in this manuscript were presented at the annual meeting of the American Psychiatric Association, Philadelphia, PA, on May 7<sup>th</sup>, 2012.

Health, 2003; Substance Abuse and Mental Health Services Administration, 2002). Although public awareness has been raised, and systemic motivation enhanced, recent findings from a national study conducted by the Substance Abuse and Mental Health Services Administration (SAMHSA) suggest individuals with co-occurring substance use and psychiatric disorders continue to receive disparate care that targets *either* the psychiatric *or* substance use disorder (Substance Abuse and Mental Health Services Administration, 2007; Substance Abuse and Mental Health Services Administration, 2010). This remains the case despite the preponderance of evidence that suggests integrated treatments are associated with improved patient outcomes (Drake et al., 2001; Mangrum, Spence, & Lopez, 2006; McGovern & McLellan, 2008; McGovern & Carroll, 2003; O'Brien et al., 2004; Sacks, Chandler, & Gonzales, 2008; Stilen & Baehni, 2002, 4th edition; Substance Abuse and Mental Health Services Administration, 2003; Watkins et al., 2004).

The SAMHSA (2010) data were gathered via survey methods directly from individuals in the community, the majority of individuals with co-occurring mental health and substance use problems (55.8%) had not received any treatment (Substance Abuse and Mental Health Services Administration, 2010). In contrast, survey data obtained directly from treatment providers suggest that integrated treatment for co-occurring disorders is common, ranging from 47% to 84% (Ducharme, Knudsen, & Roman, 2006; Ducharme, Mello, Roman, Knudsen, & Johnson, 2007; Gil-Rivas & Grella, 2005; Knudsen, Roman, & Ducharme, 2004; McGovern, Xie, et al., 2007; McGovern, Xie, Segal, Siembab, & Drake, 2006; Mojtabai, 2004; Timko, Dixon, & Moos, 2005). Most of these provider-report surveys have sampled traditional addiction treatment providers from public (3), private (3), both a public and private (1), or the U.S. Veterans Affairs (VA) (1). The Timko et al. (2005) survey of program managers in the VA system sampled psychiatric inpatient and residential programs (n=298) as well as outpatient programs (n=547). These data were compared with surveys from 114 VA substance abuse inpatient and residential and 176 outpatient programs (Timko et al., 2005).

Across all these community provider and VA program manager surveys, there lies an obvious contradiction with the SAMHSA report drawn from individuals in the community with co-occurring disorders.

### What may account for this difference?

Recent research has examined the difference between self-assessment versus external assessment of program level integrated services capacity (Lee & Cameron, 2009; McGovern, Xie, et al., 2007). These findings are consistent with differences found in psychiatric evidence-based practice fidelity studies that have examined self-report versus independent objective ratings of adherence to the practice in question (Bond, Evans, Salyers, Williams, & Kim, 2000; Brunette et al., 2008). Both sets of research demonstrate a positive response bias associated with provider self-report about their own programs.

In the case of program level dual diagnosis capability, using the Dual Diagnosis Capability in Addiction Treatment (DDCAT) index, Lee and Cameron (2009) found close to an average 2-point difference on a 5-point scale of ratings of capacity by program directors and independent evaluators across 13 programs in Australia. Also using the DDCAT, McGovern and Giard (2007) found that across 16 addiction treatment programs, 12 program leaders categorized their program as Dual Diagnosis Capable (DDC)(75%) versus 25% Addiction Only Services (AOS) on the DDCAT index. In contrast, objective evaluators rated only 4 of the programs as DDC (25%) and 75% as AOS. The findings from these two studies suggest that at least part of the explanation for the apparent disconnection between provider and prospective patient report about co-occurring services is related to the source of data (source

variance). In addition, the variability in how providers are queried about services may likewise account for the discrepancy (method variance).

As noted previously, with the exception of the Timko et al study of the VA systems, most existing data pertain to traditional community addiction treatment providers (Timko et al., 2005). Little information exists about the range of integrated services available to persons with co-occurring disorders in traditional public and/or private sector mental health service settings.

The present study utilizes two comparable objective measures designed to assess the dual diagnosis capability of addiction (DDCAT index) and mental health treatment programs (Dual Diagnosis Capability in Mental Health Treatment [DDCMHT] index)(Giard et al., 2011; Gotham et al., 2011). These measures are structured similarly, use the same rating scale and have the same number of items. The DDCAT and DDCMHT measures therefore afford the opportunity to address the following research questions:

1. Across a large sample of community addiction and mental health treatment programs, what is the variation in dual diagnosis services?
2. Is there a difference between the dual diagnosis capability of community addiction versus mental health programs?

## Methods

### Design

This study sampled addiction treatment programs and mental health programs using a cross-sectional design. The addiction treatment programs were assessed using the Dual Diagnosis Capability in Addiction Treatment (DDCAT) index and the mental health treatment programs were assessed using the Dual Diagnosis Capability in Mental Health Treatment (DDCMHT) index.

### Sample

Data were obtained from a total of 256 programs. One hundred and eighty addiction treatment programs were assessed across 11 states, and 76 mental health treatment programs were assessed across 8 states. The 8 states that provided mental health treatment program data also contributed addiction treatment program data. Mental health and addiction treatment programs were assessed by teams composed of state agency personnel, academic evaluators and/or technical assistance center staff members. Each state had a unique plan for selecting programs, varying from collected standardized DDCAT/DDCMHT assessments from volunteer programs, by releasing a Request For Proposals (RFP) or by selecting all programs within their state. Sixty-one percent of programs were urban focused, 18% were large rural city/town focused, 13% were small rural town focused, and 8% were isolated small rural towns. Ninety-two percent of the programs assessed by the states were private, non-profits. Programs accepted payments from Medicaid (78%), Medicare (70%), Military (46%), State (75%), Individual (86%), Other Public funds (81%), and Other funds (57%). Of the programs assessed, 69% provided outpatient or intensive outpatient services, while the remaining 31% provided residential or inpatient services. The states involved were members of a learning collaborative funded by The Robert Wood Johnson Foundation and SAMHSA designed to improve services for persons with co-occurring disorders by using common data collection protocol (DDCAT and DDCMHT measures). The learning collaborative was organized using methods similar to the Institute for Healthcare Improvement (IHI) model (Institute for Healthcare Improvement, 2003), and as implemented in behavioral health quality improvement (Becker et al., 2011; Vannoy et al., 2011). The learning collaborative

consisted of members of state or tribal systems of care who meet monthly via conference call. There were 3 in person meetings as well. The calls and in-person meetings afforded learning collaborative members the opportunity to share lessons learned, strategies for increasing co-occurring capability. Data sharing agreements were developed across a subsample of the 16 states in the learning collaborative that contributed to a combined dataset through Dartmouth.

## Measures

**DDCAT and DDCMHT**—The Dual Diagnosis Capability in Addiction Treatment (DDCAT) and Dual Diagnosis Capability in Mental Health Treatment (DDCMHT) indexes were used to assess dual diagnosis capability in community addiction treatment and community mental health treatment programs respectively. The DDCAT and DDCMHT ratings are derived from a site visit to a treatment program at which data are gathered via ethnographic observation, interview of staff and patients, and document review. Thirty-five benchmark items encompassing policy, practice and workforce factors are scored using a 5-point Likert type scale that ranges from 1 – AOS or MHOS to 3 – DDC to 5- DDE. Intermediate scores of 2 and 4 are used to reflect observations in between the 3 and 5 categories. Precise and objective scoring anchors have been developed (Giard et al., 2011; Gotham et al., 2011). Each measure consists of 7 dimensions: *I. Program Structure, II. Program Milieu, III. Clinical Process: Assessment, IV. Clinical Process: Treatment, V. Continuity of Care, VI. Staffing, and VII. Training*. Summary scores are derived on each of these dimensions. Based on the sum of the 35 items the program assessed can be categorized as AOS or MHOS, DDC or DDE. AOS/MHOS level of care is indicated when at least 80% (28) of the items are rated at a “1”. To meet criterion for the DDC level, at least 80% (28) of 35 benchmark items must be rated at a “3” (DDC) or higher level. To be categorized at the DDE level, at least 80% (28) of the 35 benchmark items must be rated at a “5” (DDE). In addition, a DDCAT or DDCMHT Total Score can be computed.

The psychometric properties of the DDCAT and DDCMHT have been reported and its evidence-base for reliability and validity steadily accumulating (Gotham, Brown, Comaty, & McGovern, 2008; Gotham, Brown, Comaty, McGovern, & Claus, 2009; Gotham, Claus, Selig, & Homer, 2010; Gotham, Haden, & Owens, 2004; Brown & Comaty, 2007; McGovern, Matzkin, & Giard, 2007; Claus, 2010; McGovern & Giard, 2007; Mangrum, 2007).

### **Community addiction and mental health treatment program characteristics—**

Program descriptive characteristics were gathered from each program director by the DDCAT and DDCMHT assessment team. Most of these descriptors are based on items in the SAMHSA National Survey of Substance Abuse Treatment Services (N-SSATS) format. These characteristics include: 1) urban/rural (RUCAS; version 1.11) (Hart, Larson, & Lishner, 2005); 2) type of payments accepted by the agency; 3) primary focus of the agency (addiction treatment services, mental health services, mix of addiction treatment and mental health services, general health services, hospital); 4) agency type (private, public, non-profit, for-profit, government operated, Veterans Health Administration); 5) size of program (total admission in past year, highest number of clients served, average length of stay, typical planned length of stay, number of unduplicated clients); 6) level of care (addiction treatment: outpatient, intensive outpatient/partial hospitalization, residential, medically managed intensive inpatient/hospitalization; mental health treatment: outpatient, partial hospitalization, inpatient/hospitalization); and 7) any exclusive admission criteria (adolescent, co-occurring mental health and substance use disorders, HIV/AIDS, gay and lesbian, seniors, pregnant/postpartum women, women, residential setting for patients and their children, men, DUI/DWI, criminal justice clients, or general adult services).

## Procedures

Addiction and mental health treatment programs were voluntary participants. Programs participated in either a DDCAT or DDCMHT assessment between 2004 and 2011. State agency staff or academic partners assessed programs based on representativeness, and interest in improving co-occurring capacity as a component of quality improvement efforts.

Once identified, a site visit was arranged. The assessment was conducted by a trained DDCAT or DDCMHT assessment team, typically consisting of two individuals. Training was consistent across all states contributing data to the study, and included a didactic session, shadowing and observing a trained DDCAT/DDCMHT evaluator conducting an assessment, and then being observed by an experienced assessor. Studies of both measures have found inter-rater reliability to be excellent (Brown & Comaty, 2007; Gotham et al., 2004).

The site visit typically took place over the course of one day, during which, in adherence with DDCAT and DDCMHT protocol, agency leadership, clinical staff, support staff and patients are interviewed, an environmental and milieu scan conducted, and program documents, including medical records, reviewed. The evaluators provided the program with preliminary feedback at the end of the visit, and many programs used the data for quality improvement planning.

State agency level evaluators submitted the aggregate information on each program, de-identified, to the research team at Dartmouth. Data at the patient, staff member, and program levels were de-identified. The study has been reviewed and approved by the Committee for the Protection of Human Subjects, Trustees of Dartmouth College.

## Data analyses

Uni-variate analyses were used to calculate categorical data, program characteristics and dual diagnosis capability by category. Differences between program types on individual and overall dimension scores were examined using two-tailed t-tests. Given the number of t-test comparison there is increased risk for Type I error. To adjust for this possibility, post-hoc Bonferroni corrections were conducted (Westfall, Tobias, & Wolfinger, 2011). An acceptable significance level of differences between groups on the 35 benchmark items was set at  $p < .001$  ( $.05/35$ ) and for the 7 dimensions was set at  $p < .007$  ( $.05/7$ ) to conservatively reject the null hypotheses. Using regression techniques, the State variable did not significantly account for the variance in overall DDCAT/DDCMHT Total Scores, so State was not selected for use as a covariate in subsequent comparison tests. Missing data was not included in the analysis. Data analysis was conducted using SPSS 17.0 (SPSS, 2008).

## Results

### Program characteristics

As shown in Table 1, the majority of the programs were private and outpatient/intensive outpatient levels of care. Based on number served the mental health programs were larger than the addiction treatment programs: 1127 patients ( $sd=2572.9$ ) versus 155 patients ( $sd=504.7$ )(See Table 1).

### Range of program dual diagnosis capability by category and dimension profiles

Eighty-one percent of the addiction treatment programs were at the Addiction Only Services (AOS) level of dual diagnosis capability ( $n=146$ ), eighteen percent were at the Dual Diagnosis Capable (DDC) level of dual diagnosis capability ( $n=33$ ), and one percent were at the Dual Diagnosis Enhanced (DDE) level ( $n=1$ ). Among the mental health programs, 91%



(n=69) were at the MHOS level of dual diagnosis capability, and 9% (n=7) scored at the DDC. None of the mental health programs met the DDE level of capability (See Table 2).

As shown in Figure 1, the DDCAT and DDCMHT dimension scores were similar across most domains. However, the mental health programs scored significantly lower on one dimension: *VI. Staffing* (M=2.89 vs. M=2.59;  $p<.007$ ).

### Range of program dual diagnosis capability by benchmark items

Significant differences between addiction and mental health programs are found on benchmark items within the following dimensions: *III. Clinical Process: Assessment*; *IV. Clinical Process: Treatment*; *V. Continuity of Care*; and *VI. Staffing*. Within the *Clinical Process: Assessment* dimension the addiction treatment programs scored significantly higher on assessing for stage of motivation to address substance use and mental health concerns. In the *Clinical Process: Treatment* dimension, relative to the mental health programs, addiction treatment programs scored significantly higher on the benchmark item pertaining to stage-wise treatment: adjusting treatment approach based on patients' stage of motivation.

In the *Continuity of Care* dimension, addiction programs also scored significantly higher than mental health programs on: 1) discharge planning addressing both substance use and psychiatric problems; and, 2) a focus on recovery issues for both disorders. Finally, the addiction treatment programs scored higher than the mental health programs on two benchmark items in the *Staffing* dimension: 1) access to integrated supervision or consultation; and 2) access to peer recovery support person(s).

## Discussion

### Summary of Findings

Using the observational and objective methodology inherent in the DDCAT and DDCMHT, the majority of addiction and mental health treatment programs in this sample were operating at the Addiction Only or Mental Health Only services level. These findings are not congruent with previous estimates from community provider surveys about the co-occurring capability of their services. The results are more consistent with estimates that were obtained directly from potential consumers of services. Across this present sample, 18% of addiction treatment programs and 9% of mental health treatment programs were Dual Diagnosis Capable. This suggests that patients and families seeking care in these programs have a 1 in 10 to 2 in 10 chance of having both disorders addressed adequately. Despite the national and perhaps international call to action for integrated services (i.e. "no wrong door"), these data suggest that the opportunity for systemic improvement persists.

Examining the specific DDCAT and DDCMHT dimensions and benchmark items reveals several significant differences at the more molecular level. These differences are measured similarly but not identically by the two measures. For instance, admitting or deflecting patients based on symptom acuity pertains to psychiatric symptom acuity (e.g. active psychotic symptoms) on the DDCAT and substance use acuity (e.g. withdrawal or intoxication symptoms) on the DDCMHT. Nonetheless, the structure on meaning of the measures across settings is comparable. Using the Bonferroni correction approach, only one dimension score (Staffing) was found to be significantly different between groups ( $p<.007$ ). Also using the Bonferroni correction, of the 35 benchmark items, 6 (17.1%) were significant at the  $p<.001$  level; all favored the addiction treatment programs in capability. On most items and all dimensions the addiction providers scored higher, with the exception of those related to physician or psychiatrist role and potentially related practices (diagnosis, access to medications). Although there is no data about mental health treatment programs in the

public or private system sector, given what has been reported by addiction treatment providers, we found the findings from the present study surprising. In part due to the size of the agencies, as well as the likely advanced education and training of clinical personnel, we expected mental health programs to be more dual diagnosis capable than addiction treatment programs. This was not the case. It is possible that the DDCAT and DDCMHT measures are too conservative or restrictive in classifying programs as DDC or especially DDE. It is also possible that the measures are positively biased towards addiction treatment providers, particularly since four items evaluate aspects of peer recovery support. Clearly there is more of an emphasis on peer recovery support groups, such as Alcoholics Anonymous, in traditional addiction treatment programs. The peer recovery support movement is more recent among those with mental health issues. Nonetheless, in both the DDCAT and DDCMHT, the yardstick is similar.

The findings may also point to each measure's recovery value orientation. Peer recovery supports, stage-wise assessment and treatment, and ongoing chronic disease management approaches are in greater use by addiction providers, and more recently being adopted by mental health agencies. The differential findings overall are similar to those reported by Timko et al (2005) in the differences in integrated service components in VA psychiatric and substance abuse residential, inpatient and outpatient programs.

Although 18% DDC in addiction programs is greater than 9% in mental health programs, neither is close to the minimally adequate criteria of DDC as suggested by Minkoff and Cline (2004). Given the high rates of co-occurring psychiatric disorders among those in addiction treatment settings, as well as the high rates of active substance use disorders among those in traditional mental health programs, co-morbidity is the norm. DDC and integrated services should be in place to match the needs of patients already under care.

There are multiple potential benefits to a psychometrically supported and objective metric with which to evaluate services for dual diagnosis capability. The first is a data-based description of the disparity and variation in services across a given geographic territory: national, state, county or city. This information is useful for program planning, quality improvement, resource distribution and possibly differential reimbursement strategies. Second, having an objective indicator of capability provides a pragmatic opportunity to measurably improve policy, practice and workforce to address co-occurring disorders. In fact, both the DDCAT and DDCMHT indexes have been designed with this purpose in mind (McGovern, Drake, Merrens, Mueser, & Brunette, 2008). Data on quality improvement and significant enhancement of dual diagnosis capacity across mental health and addiction treatment programs has been reported (Gotham et al., 2010; McGovern, Lambert-Harris, McHugo, Giard, & Mangrum, 2010). In a study of change in capability over time in the DDCAT and DDCMHT learning community, addiction treatment programs went from 11% DDC capacity at baseline to 48% capacity at 18 month follow-up DDCAT assessment. Likewise 3% of mental health programs scored at the DDC level at baseline versus 38% at follow-up (McGovern et al., 2010). These applications of the indexes suggest their utility to guide and measure improvement in co-occurring organizational capacity across systems with minimal to no additional resources. Finally, having an objective measure of the capability of services may be useful to potential patients and families seeking services. A categorization of programs as AOS or MHOS, DDC or DDE can assist consumers in making informed choices about where to obtain care.

## Limitations

Although each state/academic partnership had similar training in administering and scoring the DDCAT and DDCMHT measures, each state from which programs were recruited undoubtedly had some sampling biases. These biases may have included volunteer or

Hawthorne effects, preselecting programs that were innovative or early adopters of integrated treatments, or programs that were geographically accessible to evaluator offices, for example. Neither programs nor states that participated were systematically selected for range and representativeness. In essence, this is a convenience sample. The programs sampled represent a very small number of agencies relative to the population of behavioral health organizations across the United States and internationally. The generalizability of these findings can only be verified with study replication, particularly with a larger and more diverse sample of programs. For instance and in contrast, the SAMHSA data are drawn from a sample of over 13,000 addiction treatment agencies, and the National Treatment Center Study from over 750 addiction treatment programs (Ducharme et al., 2006; Ducharme et al., 2007). In the study of VA programs, Timko et al. (2005) surveyed 1135 mental health and substance abuse treatment programs in the VA. The present study sampled from a variety of states of different sizes and from different regions of the United States, most serving ethnically diverse clientele in the public and private not-for-profit sector, and with considerable urban/rural variation. The programs sampled within the states ranged in size, characteristics and focus. The sampling of addiction treatment programs matches the population of programs as cataloged in the SAMHSA Center for Substance Abuse Treatment directory. Unfortunately no similar catalogue of agencies exists from the SAMHSA Center for Mental Health Services.

Finally, some of the DDCAT and DDCMHT assessors were affiliated with the single state authorities who fund and regulate the programs sampled. This may have influenced the level of candor with which the programs presented themselves. To circumvent this effect, assessors were clear in communicating in advance of the visit that findings would not be utilized to determine funding, but would more so be used for quality improvement purposes. Emphasis was placed on the voluntary nature of participation. The findings of the proportion of AOS and MHOS programs support the likelihood that agencies were not pre-selected for co-occurring capacity and did not appear to misrepresent capacity in a favorable light. Additionally, by design, the observational methods of the measures serve to reduce the impact of any positive response bias.

This study did not directly compare integrated service capability perceptions of providers versus consumers of services. As observational measures, the DDCAT and DDCMHT capitalize on the experiences of both “players” in the organizations assessed. Although the findings suggest that the observational measure findings are closer to those in consumer interviews vs. provider surveys, the present study did not directly test this hypothesis.

### Future research

As suggested by the research limitations, future studies should consider a broader range of programs and more systematic sampling. Although the psychometric properties of the DDCAT and DDCMHT have been studied, including reliability and criterion-related validity, more research is necessary to link program level performance with services and patient level outcomes. There is an underlying assumption that programs that are more capable, as measured on the DDCAT and DDCMHT, they produce more favorable outcomes for the patients they serve with co-occurring disorders. Several studies have found that dual diagnosis capable programs admit and treat patients of more significant severity, but the link with patient outcomes (i.e. benefit from treatment) remains for study. Similar research is needed for fidelity to other evidence-based treatments, including Integrated Dual Disorders Treatment (Mueser, Noordsy, Drake, Fox, & Barlow, 2003). Future research might also evaluate under what circumstances provider-patient discrepancies in integrated service capacity are most and least likely to occur, and likewise to develop methods to increase efficiency and reduce costs of independent objective assessments of services.



## Implications for Behavioral Health

The pragmatic and measurable benchmarks of the DDCAT and DDCMHT can serve systems and treatment providers alike, first by determining co-occurring capacity at baseline, and second, by guiding and measuring evidence-based practice implementation initiatives. Community mental health and addiction treatment programs can use these policy, practice and workforce benchmarks to provide integrated care. Doing so will increase the chances that a person with a co-occurring substance use and psychiatric disorder will receive evidence-based treatment that are most effective. The potential benefits of standardized observational level measures to evaluate true organizational capacity are underscored with this study's findings. Although the use of self-report and provider surveys to assess capacity is economical and efficient, the dubious reliability and validity of these approaches merit significant caution.

Finally, despite nearly a two decade effort to integrate services and systems for persons with co-occurring disorders, these data reveal there is considerable room for improvement. The availability of practical and objective benchmark measures may serve to organize and guide the process beyond rhetoric and platitude.

## Acknowledgments

This research was supported by The Robert Wood Johnson Foundation Substance Abuse Policy Research Program (#63110) and by the Substance Abuse and Mental Health Services Administration Co-Occurring Disorder Implementation and Innovation (#8732). The authors are grateful to the states, tribes and other organizations participating in the DDCAT/DDCMHT/DDCHCS Learning Collaborative, as well as the treatment providers and patients in the community programs.

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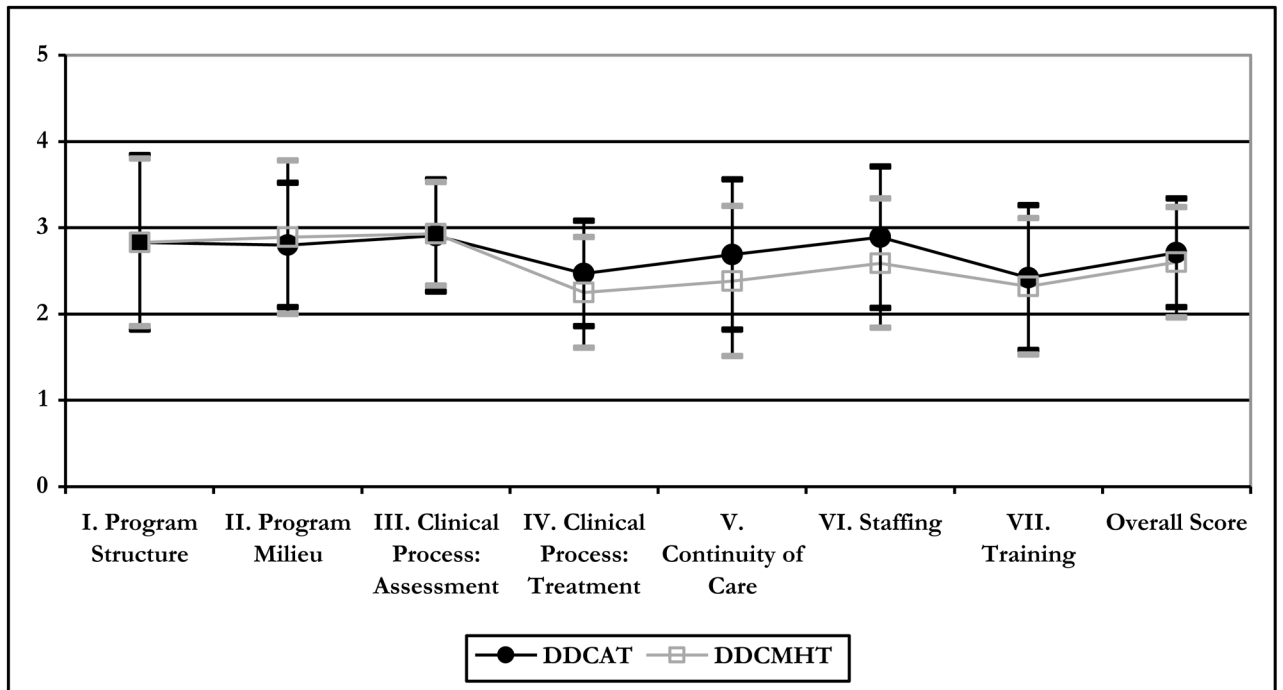
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**Figure 1.** Profile of dual diagnosis capability of programs by DDCAT and DDCMHT dimension and total score (N=256)



**Table 1**

Program characteristics (n of programs=256)

Program characteristics by treatment program type		
	Addiction Treatment (n=180)	Mental Health Treatment (n=76)
<b>Agency Type<sup>1</sup>:</b>	N (%)	N (%)
Private	131 (74.0)	39 (51.3)
Public	35 (19.8)	23 (30.3)
Non-Profit	156 (87.6)	47 (61.8)
Government Operated	30 (16.9)	28 (36.8)
<b>Level of Care:</b>		
Outpatient/Intensive Outpatient	103 (57.2)	74 (97.4)
Residential/Inpatient	77 (42.7)	2 (2.6)
<b>Size of Program:</b>	M (sd)	M (sd)
Admission (last fiscal year)	345.5 (375.7)	1232.6 (2294.7)
Highest # of patients served	154.9 (504.7)	1127.3 (2572.9)
Average LOS	136.3 (238.0)	433.5 (489.7)
Typical Planned LOS	139.5 (218.7)	615.5 (441.4)
# of unduplicated patients	399.9 (516.0)	1505.4 (1826.2)

<sup>1</sup> Due to overlap among categories counts do not add up to the total n

**Table 2**

Dual diagnosis capability of programs by DDCAT and DDCMHT category

Dual diagnosis capability by category		
	Addiction Treatment (n=180)	Mental Health Treatment (n=76)
DDCAT/DDCMHT Category	N (%)	N (%)
AOS/MHOS	146 (81.1)	69 (90.8)
DDC	33 (18.3)	7 (9.2)
DDE	1 (0.6)	0 (0.0)

**Table 3**

Dual diagnosis capability of programs by dimension and benchmark items

	Addiction Treatment (n=180)	Mental Health Treatment (n=76)	t-test
	M (sd)	M (sd)	
<b>I. Program Structure</b>			
IA. Organizational identity and documented focus	2.78 (1.25)	2.83 (1.25)	-0.30
IB. Program certification, licensure and/or accreditation	2.99 (1.30)	2.82 (1.40)	0.95
IC. Relationship between mental health and addiction services	2.87 (1.04)	2.87 (1.04)	0.27
ID. Financial and reimbursement provisions	2.61 (1.41)	2.82 (1.30)	1.11
Dimension I Score	2.83 (1.01)	2.83 (0.97)	-0.03
<b>II. Program Milieu</b>			
IIA. Cultural expectation of co-occurring disorders	3.51 (0.82)	3.49 (0.90)	0.16
IIB. Evidence of materials promoting integrated services	2.09 (0.96)	2.29 (1.12)	-1.33
Dimension II Score	2.80 (0.72)	2.89 (0.89)	-0.79
<b>III. Clinical Process: Assessment</b>			
IIIA. Routine screening methods	3.20 (1.01)	2.76 (1.03)	3.14
IIIB. Integrated assessment	2.72 (0.99)	2.62 (0.89)	0.74
IIIC. Both diagnoses made and documented	2.94 (1.19)	3.43 (1.14)	-3.06
IIID. Chronology of both disorders examined	2.69 (0.81)	2.89 (0.81)	-1.86
IIIE. Access to program based on symptom acuity	3.22 (0.79)	3.51 (0.84)	-2.57
IIIF. Access to program based on overall severity and persistence	3.47 (0.94)	3.72 (0.92)	-2.01
IIIG. Assessment of motivation for both disorders	2.13 (0.96)	1.54 (0.79)	4.72***
Dimension III Score	2.91 (0.65)	2.93 (0.60)	-0.20
<b>IV. Clinical Process: Treatment</b>			
IVA. Integrated treatment/recovery plans	2.81 (1.03)	2.71 (1.02)	0.72
IVB. Monitor interactive treatment response for both disorders	2.46 (0.96)	2.43 (1.00)	0.20
IVC. Procedures for emergencies and crises	3.01 (1.03)	2.67 (1.14)	2.21
IVD. Adjusting treatment based on stage of motivation	1.89 (0.90)	1.49 (0.84)	3.34***
IVE. Policies/Procedures: medication evaluation and management	3.16 (1.07)	2.95 (1.28)	1.24
IVF. Integrated psychosocial interventions	2.78 (0.98)	2.42 (1.09)	2.62
IVG. Patient education about co-occurring disorders and treatment	2.41 (0.91)	2.41 (1.02)	0.03
IVH. Family education and support	1.86 (0.87)	1.66 (0.72)	1.74
IVI. Facilitation to community peer recovery support groups	2.39 (0.91)	2.09 (0.90)	2.42
IVJ. Exposure to peer recovery support individuals	2.02 (1.16)	1.68 (0.82)	2.65
Dimension IV Score	2.47 (0.61)	2.25 (0.64)	2.63
<b>V. Continuity of Care</b>			
VA. Integrated discharge planning	3.02 (1.21)	2.28 (1.20)	4.51***
VB. Capacity to maintain treatment continuity	2.48 (1.29)	2.41 (1.16)	0.41
VC. Focus on recovery issues for both disorders	3.11 (1.10)	2.43 (1.07)	4.52***

	Addiction Treatment (n=180)	Mental Health Treatment (n=76)	t-test
	M (sd)	M (sd)	
VD. Facilitation of peer-recovery support post-treatment	2.12 (0.95)	1.76 (0.83)	2.86
VE. Sufficient supply and adherence plan for medications	2.73 (1.24)	3.03 (1.58)	-1.47
Dimension V Score	2.69 (0.87)	2.38 (0.87)	2.61
<b>VI. Staffing</b>			
VIA. Psychiatric or other prescriber	3.02 (1.38)	3.46 (1.43)	-2.33
VIB. Onsite staff with dual licensure	3.08 (1.32)	2.55 (1.16)	3.01
VIC. Access to integrated supervision or consultation	3.30 (1.13)	2.57 (1.01)	4.87***
VID. Case review, staffing, quality assurance for integrated treatment	2.90 (1.08)	2.79 (1.12)	0.74
VIE. Access to peer support persons	2.16 (1.28)	1.58 (1.04)	3.79***
Dimension VI Score	2.89 (0.82)	2.59 (0.75)	2.73**
<b>VII. Training</b>			
VIIA. Basic training on co-occurring disorders: All staff	2.42 (0.81)	2.63 (0.80)	-1.90
VIIB. Advanced training on co-occurring disorders: Clinical staff	2.42 (1.20)	2.01 (1.08)	2.65
Dimension VII Score	2.42 (0.84)	2.32 (0.79)	0.86
<b>DDCAT OR DDCMHT TOTAL SCORE</b>	<b>2.71 (0.63)</b>	<b>2.60 (0.64)</b>	<b>1.33</b>

\*\* p<=.007; With Bonferroni correction applied to dimension scores, .05/7.

\*\*\* p<=.001; With Bonferroni correction applied to benchmark items, .05/35.