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The Dual Diagnosis Physician-infrastructure Assessment Tool: Examining Physician Attributes and Dual Diagnosis Capacity

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Abstract

Objective—Inadequate physician training and involvement in addictions treatment are barriers to integrating mental health and addiction services in public behavioral health care. The authors designed and implemented the Dual Diagnosis Physician-infrastructure Assessment Tool (DDPAT) to quantify statewide dimensions of this workforce problem.

Methods—The DDPAT examined institutional dual diagnosis capability and physician workforce, training backgrounds, and clinical roles across Indiana's 30 community mental health centers (CMHCs), six psychiatric hospitals, and 13 addiction treatment centers.

Results—All treatment centers and 75% of physicians responded. Sixty-nine percent of all treatment centers and 97% of CMHCs reported dual diagnosis capability. However, 29% of physicians treated both mental illness and addictions, and only 8% had certification in an addiction specialty. Overall workforce shortages, particularly of younger psychiatrists, contextualized these findings.

Conclusions—The DDPAT identified multiple deficiencies in the physician workforce with respect to dual diagnosis and addictions care in Indiana. The DDPAT may be useful for characterizing similar trends in other states.

Substance use disorders involving nicotine, alcohol, and drugs collectively represent the leading cause of medical morbidity in the general population (1) and are hyperconcentrated among persons with mental illness, contributing significantly to their premature death rates and the total public health burden (2,3). Research spanning translational neuroscience, clinical epidemiology, and health care delivery shows that addiction and mental disorders are fundamentally linked (4,5), pointing to the need for integrated mental health and addictions services and professional expertise (6).

The development and implementation of tools that gauge clinical systems' capabilities in treating both psychiatric and substance disorders is an important focus of research on integrating care for these disorders (7). The COMorbidity Program Audit and Self-Survey for Behavioral Health Services (COMPASS) (8), the Integrated Dual Diagnosis Treatment

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(IDDT) Fidelity Scale (9), and the Dual Diagnosis Capability in Addiction Treatment (DDCAT) (10) examine multiple parameters, including system structure; clinician staffing, responsibilities, and attitudes; availability of screening and treatment; and pathways of follow-up. Despite the comprehensiveness and utility of these instruments, however, none of them directly assess physician workforce size, training background, or clinical roles with respect to dual diagnosis care.

Insufficient training in the neuroscience and clinical care of addictions in medical schools and psychiatry residency programs may underpin a paucity of physician expertise and involvement in the care of patients with dual diagnoses nationwide (11,12). To measure these trends in the public-sector behavioral health physician workforce on a statewide level, the Indiana Division of Mental Health and Addiction (DMHA) sponsored the development of the Dual Diagnosis Physician-infrastructure Assessment Tool (DDPAT). We describe the design and implementation of the DDPAT in examining all public-sector treatment centers supported by DMHA, which, with an operating budget exceeding \$1 billion annually, funds public behavioral health for a Midwestern state with a population size approximating the mean of U.S. states.

Methods

The DDPAT was constructed as a two-phase, Web-based or paper survey, with each phase consisting of ten questions. The box on this page provides a summary of the questions. [The complete DDPAT is available as an online supplement at ps.psychiatryonline.org.] Questions were designed to efficiently gather general and dual diagnosis-specific information about treatment centers and physicians. Phase I focused on the clinical attributes of treatment centers and asked for contact information of physicians employed by them; phase II focused on each physician's training background and clinical role. We estimated that phase I could be completed by administrative leaders within 15 minutes and phase II could be completed by physicians within ten minutes.

Summary of items on the Dual Diagnosis Physician-infrastructure Assessment Tool

Phase I: treatment centers

- 1 Name of organization
- 2 Number of treatment sites
- 3 Type of treatment provided (inpatient, outpatient, or both)
- 4 Primary treatment focus (mental illness, addictions, or both [separately or integrated])
- 5 Specific addictions services (inpatient detoxification or outpatient opiate treatment)
- 6 Patient population (primarily children, primarily adults, or both)
- 7 Number of unfilled physician positions (full-time equivalents)
- 8 Number of individual physicians on staff
- 9 Names and contact information of physicians
- 10 Number of nonphysician prescribers on staff

Phase II: individual physicians

- 1 Physician identifier code
- 2 Age
- 3 Clinical specialty by residency training
- 4 Primary clinical role (psychiatric care, general addiction, treatment of opiate addictions, combination of psychiatric illness and addictions, or medical care)

- 5 Number of hours per week at this center
- 6 Site of residency training (in state, out of state, or other)
- 7 American Board of Psychiatry and Neurology (ABPN) certification in psychiatry
- 8 ABPN certification in addiction psychiatry
- 9 ABPN certification in child psychiatry
- 10 American Society for Addiction Medicine certification

The DDPAT was administered to every treatment facility funded by Indiana's DMHA, including all six state psychiatric hospitals, all 30 community mental health centers (CMHCs), and all 13 stand-alone addiction treatment centers. Data collection was conducted over a nine-month period, from February 1, 2007, to October 31, 2007, primarily via the Internet by using WebSurveyor (Vovici) software. The first author contacted the administrative leadership of each center by e-mail, telephone, or letter to explain the purpose and parameters of the survey and encourage completion of phase I. Upon return of phase I results, the first author contacted individual physicians at each center by e-mail, telephone, or letter. Respondents were ensured that data would be analyzed in aggregate only and not for identifying or characterizing individual centers or physicians. Data collection ended when 100% of treatment centers completed phase I and at least 75% of the statewide physician workforce completed phase II. This study was granted exempt status by the institutional review board of the Indiana University School of Medicine.

Results

All 49 treatment centers responded to phase I. Treatment centers reported a total of 286 physicians on staff, 215 (75%) of whom completed phase II. Physician response rates ranged from >93% at state hospitals and addiction treatment centers to 67% at CMHCs. Four of six hospitals, 11 of 13 addiction centers, and eight of 30 CMHCs had 100% physician response rates. [Detailed information on treatment center profiles, addiction services provided by treatment centers, the age distribution of physicians who responded to the survey, and the clinical focus of the treatment center and the physicians' treatment roles is available as an online supplement at ps.psychiatryonline.org.]

Hospitals provided only inpatient services, whereas short-term beds were provided by 22 (73%) CMHCs and four (31%) addiction centers. All CMHCs were composed of multisite outpatient facilities, whereas most addiction centers (N=9, 69%) had only one outpatient facility. Over half of all centers care for children and adults (N=28, 57%). One facility (2%), a state hospital, cares for children only.

Only five of the 19 (26%) hospitals and addiction centers described themselves as providing treatment for both mental illness and addictions. By contrast, 29 (97%) CMHCs reported providing treatment for both, with two-thirds (N=20, 67%) reporting provision of integrated dual diagnosis care. However, much smaller numbers of CMHCs provided standard addiction services, such as inpatient detoxification (N=16, 53%), outpatient opiate maintenance treatment (N=4, 13%), or both (N=1, 3%). Notably, availability of these services at CMHCs was comparable to, or better than, their availability at addiction treatment centers.

A large majority (N=229, 80%) of the physician staff identified in phase I worked at CMHCs, which also relied on the largest contingent of nonphysician prescribers (20% of their prescribing workforce). Although CMHCs had the largest absolute physician workforce deficit (30 full-time equivalents [FTEs] needed), hospitals and addiction centers

taken together had the largest deficits as a percentage of their total number of physician positions ($N=25.7$ of 82.7 , or 31% , compared with $N=30.2$ of 259.2 , or 12% , for CMHCs).

Centers reporting dual diagnosis treatment capability ($N=34$) had a broader array of available addiction treatment services than centers reporting treatment of mental illness only ($N=5$) or addictions only ($N=10$). However, availability of both inpatient detoxification and outpatient opiate maintenance treatment (present only at dual diagnosis-capable centers) was rare statewide (two of 49 centers, 4%). Centers providing integrated dual diagnosis care employed the largest number of physicians ($N=190$) and had the largest absolute unmet need for new physicians (36 FTEs needed).

Of the 215 physicians who responded to phase II, 166 (77%) worked in CMHCs, 35 (16%) worked in hospitals, and 14 (7%) worked at addiction treatment centers. All hospitals and CMHCs had physicians on staff, but four of the 13 (31%) addiction treatment centers did not. Physician workforce profiles aggregated by organization type are shown in Table 1. Only half of the physicians were employed full-time. The mean age of the entire physician workforce was 51.8 ± 11.6 years, with the youngest group working at CMHCs (50.5 ± 10.6 years) and the oldest working at state hospitals (58.6 ± 12.8 years). The age distribution of physicians reflected an aging workforce. Physicians aged 50 to 54 outnumbered those younger than 35 by nearly threefold ($N=41$ versus $N=15$). About four in ten ($N=82$, 38%) were within a decade of or beyond a retirement age of 65, but only 34 (16%) were aged 30–39.

The majority of the 215 physicians (90%) were trained in general psychiatry or child psychiatry, whereas 8% were trained in family medicine, internal medicine, or surgery. Only 27% of the entire workforce trained in psychiatry residency in Indiana; 71% of psychiatrists trained out of state.

A majority (62%) described their main clinical role as treating only mental illness. Less than one-third (29%) said they treated both psychiatric and addiction disorders and 3% said they provided only addictions treatment. Six percent of physicians reported their primary role as treating medical illnesses. Sixty-four percent of physicians were board certified in general psychiatry (American Board of Psychiatry and Neurology [ABPN]), and 9% were certified in child psychiatry. Seven (3%) physicians were ABPN-certified in addiction psychiatry; of these, only three physicians had completed an addictions fellowship, and four had been “grandfathered in” (that is, certified before the requirement of a completed fellowship in 1998). American Society for Addiction Medicine (ASAM) certification was reported by 11 (5%) physicians: five were psychiatrists and six were internists or family practitioners. One physician was addictions certified by both ABPN and ASAM. Eight percent of physicians were formally certified in addictions.

Although the highest number of addiction-certified physicians worked at CMHCs ($N=11$ of 166, or 7% of the CMHC workforce that responded to the survey), hospitals and addiction treatment centers employed higher proportions of addiction-certified physicians, representing four of 35 (11%) and three of 14 (21%) of their workforces that responded to the survey, respectively. A majority of ABPN addiction-certified physicians ($N=4$, 57%) worked at state hospitals, and most ASAM-certified physicians ($N=8$, 73%) worked at CMHCs. Most addiction-certified physicians ($N=14$, 82%) worked at centers providing either segregated or integrated dual diagnosis care, but they represented only 8% of the total physician workforce at those centers (14 of 180 physicians). Only a minority of addiction-certified physicians ($N=7$, 41%) were engaged in treating both addictions and mental illness.

Discussion

This implementation of the DDPAT in Indiana demonstrates its utility for characterizing a statewide physician workforce engaged in behavioral health care with respect to dual diagnosis capability and related profiles of treatment centers. The brief response time required and the ability of the DDPAT to uncover multiple workforce concerns indicative of the status of behavioral health care, public health, and professional training will be of interest to our own state and other large regions where it may be implemented.

The DDPAT quantified general shortages in the public-sector behavioral health physician workforce in Indiana. As percentages of the total positions available (FTEs unfilled plus number of full and part time physicians) at state hospitals, CMHCs, and addiction treatment centers, 12% of positions at CMHCs and 31% of positions at hospitals and addiction centers were unfilled. These and related findings have utility for gauging the adequacy of production of new psychiatrists in Indiana. First, the total number of physician FTEs needed (55.9) is more than nine times larger than the annual class size (6) of Indiana's only psychiatry training program at the Indiana University School of Medicine. Second, only 27% of surveyed physicians trained in psychiatry in Indiana, even though this school is the second largest medical school in the United States by medical student class size. Third, progressive decrements in the numbers of employed physicians in age groups below 50 years suggest diminishing production rates of new psychiatrists or rates of entry into public-sector psychiatry.

The DDPAT also found that only a small percentage of physicians were formally trained or involved in addictions treatment. Formal training in addictions indicated by certifications in addiction psychiatry (ABPN) or addiction medicine (ASAM) characterized only 3% and 5% of the workforce, respectively. Then, of the three-quarters of all physicians surveyed who worked at CMHCs, only 29% described their primary clinical role as treating both mental illnesses and addictions, even though 97% of CMHCs reported dual diagnosis capability. Only a minority of addiction-certified physicians (either ABPN or ASAM) identified their primary clinical role as treatment of both mental illness and addictions. The majority of ABPN-certified addiction psychiatrists (57%) were employed at the state hospitals, and the addiction treatment centers hosted the highest overall percentage of addiction-certified physicians (21%), even though only a minority of these centers reported dual diagnosis capability. Taken together, these findings suggest a disconnect between how centers report their dual diagnosis capability and levels of physician expertise and involvement in dual diagnosis.

Limitations of the DDPAT include the difficulty in recruiting participation among a large pool of geographically dispersed physicians and design features of the instrument itself. Although all treatment centers participated, 25% of the physician workforce did not. Some treatment centers and individual physicians voiced reluctance to participate, because of concerns that results could have a negative impact on their funding or job security; others cited limited time in the face of growing clinical demands. In addition to potentially affecting response rates, a request for data from the state mental health authority might have altered the quality or factuality of responses received. Data from nonresponding physicians could have altered the overall response patterns we detected. However, because our sampling captured a large majority of the workforce, and selection bias resulting from attitudes toward the survey would likely have minimized participation by physicians who may have felt undervalued by it, we have reason to accept our results as a fairly accurate depiction of the physician dual diagnosis workforce in Indiana in 2007.

Although the DDPAT's brevity likely facilitated the high participation rates, another limitation was the relatively simple and limited number of questions posed, despite the complexity of the topic. For example, we did not explore physician involvement in individual or group psychotherapeutic modalities for addictions or dual diagnosis. We used addiction certification and other measures as indicators of group-level trends and not for assessing the competence, interest, or quality of individual physicians or treatment centers. The DDPAT is thus best suited for use across large jurisdictions and possibly as an adjunct to more comprehensive measures of dual diagnosis capability, such as the DDCAT.

Our results in using the DDPAT should motivate greater collaboration between medical student and residency training programs and state systems of behavioral health care delivery, with a focus on supporting the training of more psychiatrists and allied physicians in addictions and integrated dual diagnosis treatment. National workforce training data suggest our findings are consistent with a broader problem affecting much of the United States. In 2000, seven years after the 1993 inception of the ABPN addiction psychiatry subspecialty, less than 1% of psychiatry residents were enrolled in addiction fellowships (13), against a background total of 1,776 certificates awarded without fellowship training (that is, "grandfathered in") from 1993 to 1998 (14). By 2002 only half of states had addiction psychiatry fellowships, and a total of 186 individuals had graduated from 73% of then-existing programs (13). In 2003 only 55% of 108 available U.S. addiction fellowship positions were filled (12); by 2006 this figure dropped to 47% of 116 positions (15). By 2007 a total of 4,162 physicians had received ASAM certification, with roughly half awarded to psychiatrists (15).

Conclusions

The DDPAT is an efficient and informative survey tool for measuring dual diagnosis-related health services and physician workforce attributes statewide. In its first large-scale deployment in 2007 in Indiana, the survey identified overall shortages of psychiatrists punctuated by diminishing numbers of younger psychiatrists and deficient numbers formally trained or involved in treating both addictions and mental illnesses. Given the extent to which dual diagnosis presentations are mainstream in behavioral health care, these findings should motivate changes in physician workforce development in Indiana and similar workforce examinations in other states.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

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Table 1

Characteristics of physicians who responded to the Dual Diagnosis Physician-infrastructure Assessment Tool, by treatment center

Variable	Hospitals (N=35)		Community mental health centers (N=166)		Addiction centers (N=14)		Total (N=215)	
	N	%	N	%	N	%	N	%
Age (M±SD)	58.6±12.8		50.5±10.6		50.6±14.3		51.8±11.6	
Clinical specialty								
General psychiatry	22	63	124	75	6	43	152	71
Child psychiatry	4	11	37	22	1	7	42	20
Internal medicine	3	9	1	1	0	—	4	2
Pediatrics	0	—	0	—	0	—	0	—
Family medicine	3	9	2	1	6	43	11	5
Surgery	1	3	0	—	1	7	2	1
Neurology	0	—	0	—	0	—	0	—
Emergency medicine	0	—	0	—	0	—	0	—
Other	2	6	2	1	0	—	4	2
Treatment role								
Mental illness	19	54	112	68 ^a	3	21	134	62
Addictions	1	3	1	1	3	21	5	2
Opiate addictions	0	—	1	1	0	—	1	<1
Mental illness and addictions	9	26	50	30	3	21	62	29
Medical care	6	17	1	1	5	36	12	6
Hours per week								
>40	26	74	81	49	4	29	111	52
30–40	2	6	36	22	1	7	39	18
20–29	3	9	30	18	0	—	33	15
6–19	3	9	15	9	3	21	21	10
<6	1	3	4	2	6	43	11	5
Psychiatric residency								
Indiana	7	20	47	28	3	21	57	27
Out of state	21	60	116	70	4	29	141	66
Nonpsychiatrist	7	20	3	2	7	50	17	8

Variable	Hospitals (N=35)		Community mental health centers (N=166)		Addiction centers (N=14)		Total (N=215)	
	N	%	N	%	N	%	N	%
American Board of Psychiatry and Neurology certification								
General psychiatry	16	46	118	71	4	29	138	64
Child psychiatry	3	9	17	10	0	—	20	9
Addiction psychiatry	4	11	3	2	0	—	7 ^b	3
American Society for Addiction								
Medicine certification	0	—	8	5	3	21	11	5

^aMissing case excluded; one physician did not respond to treatment role question.

^bOnly three physicians had completed an addictions fellowship; the other four had been “grandfathered in” (that is, certified before the requirement of a completed fellowship in 1998).