

Characteristics of Providers Using a Child Psychiatry Access Program

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Objective: Child psychiatry access programs (CPAPs) help increase access to mental health services. This study aimed to provide information on the types of pediatric primary care clinicians (PPCCs) who call Maryland's CPAP.

Methods: Descriptive statistics and multinomial logistic regressions were conducted with data from 676 PPCCs who called Maryland's CPAP at least once between October 2012 and June 2019.

Results: On average, PPCCs contacted Maryland's CPAP 6.8 times. Providers who called seven or more times were

more likely to have an allopathic or osteopathic medicine degree and to specialize in pediatrics. Providers calling from rural regions were less likely to call only for referrals.

Conclusions: Most PPCCs contacted the CPAP for consultation or referrals but not both. PPCCs in rural areas were more likely to call for consultation, suggesting that they may be more likely to manage the care of patients with mental health conditions themselves, because of a lack of resources in their locations.

Psychiatric Services 2021; 72:1213–1217; doi: 10.1176/appi.ps.202000292

Pediatric psychiatric disorders are common; 16.5% of U.S. youths have at least one psychiatric disorder (1), and rates are increasing (2). Unfortunately, there is a dearth and unequal distribution of child psychiatrists to address the growing need for mental health care (3). To address this need, the American Academy of Pediatrics has recommended that pediatric primary care clinicians (PPCCs) enhance their skills and comfort with managing common pediatric psychiatric disorders (4) through collaborations with mental health specialists.

Child psychiatry access programs (CPAPs) offer an integrated care approach to increase access to treatment for youths with psychiatric disorders by increasing capacity to manage these conditions in pediatric primary care settings (5). Nationwide, approximately 30 CPAPs provide telephone consultation with a child psychiatrist regarding management of pediatric psychiatric disorders. Many CPAPs also provide continuing education, resource and/or referral networking, and one-time psychiatric evaluation. For example, Washington State's CPAP (called the Partnership Access Line) includes one centralized team of child psychiatrists and other behavioral health clinicians who provide training through regional conferences, telephone consultation, and resource/referral networking for PPCCs in Washington and two neighboring states (<https://nncpap.org/>).

Previous research has described characteristics of primary care practices that use CPAP services (6), provider and practice CPAP service usage (7, 8), provider and patient satisfaction with CPAP services (7, 8), and the impact of CPAPs on provider comfort, practice change (5, 9), and patient outcomes (10). Although these studies suggest that the CPAP model is a promising approach to help close the mental health services gap, few studies have investigated the characteristics of providers who use CPAPs. The purpose of this

HIGHLIGHTS

- Increasing understanding of the types of pediatric primary care clinicians (PPCCs) who call child psychiatry access programs (CPAPs) and of the services they request may help improve such services and lead to better mental health care.
- PPCCs tended to contact the CPAP for clinical consultation or referrals but not for both.
- PPCCs in rural areas were more likely to call for consultation, suggesting that in underserved, rural areas, it may be particularly helpful to increase primary care providers' knowledge and comfort in managing the care of youths with mental health conditions.

study was to describe the types of PPCCs who call CPAPs and to examine how provider characteristics relate to program usage. We hypothesized that the volume and type of calls to the CPAP would vary as a function of provider characteristics (e.g., type, specialty) and that PPCCs in rural regions with limited mental health services would use the CPAP differently than providers in urban areas with more services. Thus, this study was undertaken to increase understanding of the providers most likely to take advantage of CPAPs.

METHODS

Maryland Behavioral Health Integration in Pediatric Primary Care (BHIPP), a CPAP located in two universities in Baltimore, provides free continuing education, clinical consultation, and resource and referral networking, Monday through Friday, 9 a.m.–5 p.m., to Maryland PPCCs. Similar to other CPAPs, BHIPP has a warmline staffed by master's-level behavioral health specialists who collect deidentified patient information from PPCCs seeking services, answer general behavioral health questions, and assist PPCCs in connecting patients to relevant community-based services. When clinical consultation is requested, calls are triaged and sent to the child psychiatrist on duty. For this study, telephone requests to assist PPCCs in connecting patients to community-based services were designated as referral calls, whereas requests for consultation with a child psychiatrist were designated as consultation calls.

The sample included 676 PPCCs who contacted BHIPP at least once between October 2012 and June 2019 for consultation and/or referral. Institutional review board approval for the study was obtained from Johns Hopkins University, University of Maryland, and the Maryland Department of Health.

Demographic information, self-reported during BHIPP enrollment, included provider type (e.g., allopathic [M.D.] or osteopathic [D.O.] degree), specialty (e.g., pediatrics), years in practice, gender, race-ethnicity, and types of insurance accepted. If provider gender was missing on the enrollment form, data were drawn from the National Plan and Provider Enumeration System. Urbanicity was determined on the basis of the county where the provider practiced. Counties were dichotomized as rural or semi-rural, or urban or suburban, as specified by the rural-urban commuting area codes (11).

Reasons for calling and call volume were drawn from the BHIPP database through June 2020 to allow sufficient time for PPCCs enrolling in June 2019 to have called multiple times. Reasons for calling were categorized as requests for general information, consultation, referral, or not appropriate and were documented at the time of the call. Calls deemed not appropriate included those seeking emergency services or direct patient care.

Descriptive statistics were used to describe call volume and frequency. PPCCs were categorized into two caller-frequency groups guided by prior research (5): low-volume

callers (LVCs), who called one to six times, and high-volume callers (HVCs), who called seven or more times. PPCCs were also categorized by the reason they called BHIPP: consultation only, referral only, consultation and referral, or other. Bivariate analyses were used to compare provider characteristics and call type by caller frequency. Multinomial logistic regression was used to examine characteristics of PPCCs that predicted call type. All analyses were conducted in SPSS, version 26.

RESULTS

PPCCs made a total of 4,779 calls to BHIPP between October 2012 and June 2020. Annual call volume steadily increased over time, from 55 calls in fiscal year 2013 to 997 calls in fiscal year 2020. Frequency of clinician contact ranged from one to 176 times, with providers contacting BHIPP a mean \pm SD of 2.85 ± 6.92 (median=1, maximum=77) times for consultation, 3.57 ± 11.75 (median=1, maximum=171) times for referrals, 0.24 ± 0.65 (median=0.00, maximum=7.00) times for other reasons (e.g., general information), and 6.82 ± 14.90 (median=2.00, maximum=176.00) times across all call types. Thirty-eight percent (N=256) of PPCCs called once, 15% (N=104) called twice, 9% (N=58) called three times, 7% (N=47) called four times, 5% (N=31) called five times, 3% (N=23) called six times, and 23% (N=157) called seven or more times.

Table 1 compares characteristics of providers calling BHIPP by caller frequency. Most providers (77%) were LVCs, whereas 23% were HVCs. There were significant differences by caller frequency. HVCs were more likely to have an M.D. or D.O. degree, whereas LVCs were more likely to have other credentials (e.g., nurse practitioners, physician assistants, nurses). HVCs were more likely to be pediatricians and were less likely to specialize in family practice or another specialty. HVCs were more likely to accept uninsured and publicly and privately insured patients than were LVCs. Provider race-ethnicity also varied. HVCs were more likely to be Asian or White compared with LVCs, who were more likely to be of "unknown" race-ethnicity. There were no differences in caller frequency by gender, years in practice ($t = -0.22$, $df = 373$, $p = 0.82$), or urbanicity of the caller's practice. However, call type varied by caller frequency, with HVCs more likely than LVCs to call for both consultation and referral and less likely to call for consultation or referral alone or for another reason.

A multinomial logistic regression was conducted to examine predictors of call type, with calling for consultation and referrals as the reference group. Providers calling only for other reasons were excluded from the analysis to limit the focus to patient-specific CPAP contacts. Compared with those calling for consultation and referral, providers calling for consultation only were less likely to be pediatricians (odds ratio [OR]=0.37, 95% confidence interval [CI]=0.19–0.69, $p = 0.002$) or HVCs (OR=0.10, 95% CI=0.05–0.15, $p < 0.001$) and had a similar likelihood of practicing in rural or semirural areas (OR=1.01, 95% CI=0.52–1.98, $p = 0.98$), being female (OR=0.73, 95% CI=0.40–1.32,

TABLE 1. Characteristics of 676 pediatric primary care clinicians who called the BHIPP and the reasons they called, by call frequency^a

Provider characteristic	All callers		Low-volume callers		High-volume callers		Test statistic	df	p
	N	%	N	%	N	%			
Providers calling BHIPP	676	100	519	77	157	23			
Years in practice (mean±SD) ^b	13.75±10.7		13.66±11.02		13.92±9.88		t=-.22	373	.82
Provider type ^c							χ ² =17.69	3	.001
M.D. or D.O.	455	67	330	64	125	80			
N.P.	152	23	125	24	27	17			
P.A.	17	3	17	3	0	0			
Other (i.e., R.N., S.W., Ph.D.)	52	8	47	9	5	3			
Specialty							χ ² =15.67	3	.001
Pediatrician	515	76	377	73	138	88			
Family practice	71	11	63	12	8	5			
Other (e.g., internal medicine)	85	13	75	14	10	6			
Unknown	5	1	4	1	1	1			
Urbanicity							χ ² =1.52	1	.22
Urban/suburban	597	88	454	88	143	91			
Rural/semirural	79	12	65	12	14	9			
Insurance accepted ^d									
Uninsured	213	32	150	29	63	40	χ ² =7.04	1	.008
Sliding scale	85	13	66	13	19	12	χ ² =.41	1	.84
Public	352	52	243	47	109	69	χ ² =24.68	1	<.001
Private	364	54	248	48	116	74	χ ² =33.04	1	<.001
Gender							χ ² =1.90	2	.39
Male	113	17	87	17	26	17			
Female	527	78	401	77	126	80			
Unknown	36	5	31	6	5	3			
Race-ethnicity							χ ² =37.25	4	<.001
African American	43	6	30	6	13	8			
Asian	50	7	30	6	20	13			
White	247	37	170	33	77	49			
Other	24	4	17	3	7	5			
Unknown	312	46	272	52	40	25			
Call type							χ ² =158.80	3	<.001
Clinical consultation only	240	36	216	42	24	15			
Referral only	239	35	209	40	30	19			
Both consultation and referral	181	27	78	15	103	66			
Other only ^e	16	2	16	3	0	0			

^a Low-volume callers=1–6 calls; high-volume callers= \geq 7 calls. BHIPP, Maryland Behavioral Health Integration in Pediatric Primary Care.

^b Comparison based on 375 providers who officially enrolled in the program and provided this information at enrollment.

^c M.D., doctor of medicine; D.O., doctor of osteopathic medicine; N.P., nurse practitioner; P.A., physician assistant; R.N., registered nurse; S.W., social worker; Ph.D., doctor of philosophy.

^d These categories are not mutually exclusive because providers may take multiple insurances.

^e Calls about general information or calls deemed not appropriate.

p=0.30), and having an M.D. or D.O. degree (OR=1.16, 95% CI=0.69–1.93, p=0.57). Providers calling for referral only were less likely to be pediatricians (OR=0.27, 95% CI=0.14–0.51, p<0.001), HVCs (OR=0.11, 95% CI=0.06–0.18, p<0.001), or practice in a rural or semirural area (OR=0.47, 95% CI=0.21–1.01, p=0.05) and had a similar likelihood of being female (OR=1.31, 95% CI=0.69–2.48, p=0.42) and of having an M.D. or D.O. degree (OR=1.40, 95% CI=0.83–2.36, p=0.20), compared with those calling for consultation and referral.

DISCUSSION AND CONCLUSIONS

Most prior research on CPAPs has focused on practice-level characteristics of primary care practices using CPAP

services, use of CPAP services, provider and patient satisfaction with CPAP services, or characteristics of patients for whom PPCCs sought CPAP consultation (6–10). This study examined characteristics of the PPCCs calling one CPAP and identified distinct types of clinical users. Our results are consistent with prior studies, which have shown that providers contacting CPAPs tend to be pediatricians, have an M.D. or D.O. degree, and accept uninsured as well as publicly and privately insured patients (9)—findings that are in line with demographic information on PPCCs nationwide (12).

Our study differed from the literature in terms of the reasons the providers called BHIPP. Prior research by the Massachusetts CPAP found that their most frequent callers sought consultation regarding medication management,

whereas their least frequent callers sought referrals (5). BHIPP's HVCs were more likely to have called for consultation and referrals and less likely to have called only for consultation, referral, or another reason. This difference, however, may have been secondary to the unique design of the Massachusetts CPAP, which has regional treatment teams that form relationships with primary care practices in their region and provide phone consultation, referrals, and in-person evaluation (6). In contrast, the Maryland CPAP's design is similar to that of the Washington State CPAP and other CPAPs, in that it was designed to fit a lower population density, with less even dispersion of child psychiatrists, and consists of a single, centralized team of psychiatrists and behavioral health specialists who provide consultation and referrals via telephone to providers throughout the state. Of note, the volume of calls to BHIPP was comparable with that of Washington State's CPAP (7). Given the dearth of research on the PPCCs who contact CPAPs, the mechanism behind differences between HVCs and LVCs can only be speculated on and may include improvements in provider comfort in addressing pediatric psychiatric disorders after one to three calls.

As expected, those contacting BHIPP for consultation were more likely to be from rural areas, where gaps in access to pediatric mental health services are greater. This finding suggests that clinicians in rural areas are more willing than those in urban or suburban areas to expand their scope of practice to include medication management of psychiatric illness if consultation is available. Thus, collaboration between CPAPs and PPCCs in rural areas is essential to increase access to mental health services and underscores the continued need for CPAPs to provide clinical education and training to increase provider confidence in managing the care of patients with mental health conditions. As a result, BHIPP has launched TeleECHO Clinics, a web-based learning collaborative that uses the Project ECHO framework (<https://echo.unm.edu/>). Through synchronous virtual learning sessions, these clinics, staffed by BHIPP psychiatrists, provide clinicians with didactic education and case-based learning to improve their recognition and treatment of pediatric psychiatric disorders.

This study was limited by missing demographic data. Because not all callers to BHIPP completed the enrollment survey, some information (e.g., race-ethnicity) was missing for some callers. However, the demographic data collected were in line with demographic data of PPCCs nationwide. In addition, the amount of missing data was comparable to survey nonresponse rates in other CPAP studies (7). Finally, the recent increase in nonphysician providers of pediatric care may have contributed to an overrepresentation of physician providers among HVCs, because these providers may have had a longer time to access BHIPP services.

In conclusion, addressing pediatric psychiatric disorders is a complex, nuanced problem. However, CPAPs are a small step forward to increase access to pediatric mental health services. As the country moves to population-based reimbursement (versus fee for service), integration

of primary and specialty care will become more important. Increasingly, PPCCs will facilitate services once provided by specialists. An understanding of the characteristics of PPCCs most likely to take on specialty care will inform efforts to deepen PPCC knowledge and skills in providing specialty services. Future directions include studying the types of patients and clinical issues for which PPCCs seek consultation and referrals, examining the impact on pediatric mental health care of expanding CPAP services to include training for these providers in managing psychiatric disorders via mechanisms such as Project ECHO, and increasing access to child psychiatrists via telepsychiatry.

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Preliminary study findings were presented at the annual meeting of the American Academy of Child and Adolescent Psychiatry, October 14–19, 2019, Chicago.

This project was supported by funding from the Maryland Department of Health, Behavioral Health Administration (BHA), and operates as a collaboration between the University of Maryland School of Medicine, the Johns Hopkins University School of Medicine, Salisbury University, and Morgan State University. Maryland Behavioral Health Integration in Pediatric Primary Care and this study are also supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) as part of an award approximately 20% financed by nongovernmental sources.

The contents of this Brief Report are the responsibility of the authors and do not necessarily represent the official views of, nor an endorsement by, BHA, HRSA, HHS or the U.S. government.

Dr. Riddle receives book royalties from the American Academy of Pediatrics, fees from Emmes for Best Pharmaceuticals for Children Act Data and Safety Monitoring committee membership, and an honorarium from the Non-Verbal Learning Disability Project for chairing the Scientific Council. The other authors report no financial relationships with commercial interests.

Received April 28, 2020; revision received November 9, 2020; accepted December 23, 2020; published online May 7, 2021.

REFERENCES

- Whitney DG, Peterson MD: US national and state-level prevalence of mental health disorders and disparities of mental health care use in children. *JAMA Pediatr* 2019; 173:389–391
- Data and Statistics on Children's Mental Health. Atlanta, Centers for Disease Control and Prevention, 2020. <https://www.cdc.gov/childrensmentalhealth/data.html>. Accessed Apr 24, 2020
- Findling RL, Stepanova E: The workforce shortage of child and adolescent psychiatrists: is it time for a different approach? *J Am Acad Child Adolesc Psychiatry* 2018; 57:300–301
- Foy JM, Green CM, Earls MF: Mental health competencies for pediatric practice. *Pediatrics* 2019; 144:e20192757
- Van Cleave J, Holifield C, Perrin JM: Primary care providers' use of a child psychiatry telephone support program. *Acad Pediatr* 2018; 18:266–272
- Van Cleave J, Le T-T, Perrin JM: Point-of-care child psychiatry expertise: the Massachusetts Child Psychiatry Access Project. *Pediatrics* 2015; 135:834–841

7. Hilt RJ, Romaire MA, McDonell MG, et al: The partnership access line: evaluating a child psychiatry consult program in Washington State. *JAMA Pediatr* 2013; 167:162–168
8. Cama S, Knee A, Sarvet B: Impact of child psychiatry access programs on mental health care in pediatric primary care: measuring the parent experience. *Psychiatr Serv* 2020; 71:43–48
9. Gadowski AM, Wissow LS, Palinkas L, et al: Encouraging and sustaining integration of child mental health into primary care: interviews with primary care providers participating in Project TEACH (CAPES and CAP PC) in NY. *Gen Hosp Psychiatry* 2014; 36:555–562
10. Stein BD, Kofner A, Vogt WB, et al: A national examination of child psychiatric telephone consultation programs' impact on children's mental health care utilization. *J Am Acad Child Adolesc Psychiatry* 2019; 58:1016–1019
11. Defining Rural Population. Rockville, MD, Health Resources and Services Administration, 2017. <https://www.hrsa.gov/rural-health/about-us/definition/index.html>. Accessed Apr 24, 2020
12. Pediatric Physicians Workforce Data Book, 2017–2018, Chapel Hill, NC, American Board of Pediatrics, 2018. <https://www.abp.org/sites/abp/files/pdf/pediatricphysiciansworkforcedatabook2017-2018.pdf>

***Psychiatric Services* Announces New Column: Lived Experience Inclusion & Leadership**

We are pleased to welcome Nev Jones, M.A., Ph.D., and Keris Jän Myrick, M.B.A., M.S., as coeditors of the Lived Experience Inclusion & Leadership column.

This column aims to publish critical analyses, case studies, and reports on the involvement and leadership of mental health service users (peers and consumers) and caregivers in mental and behavioral health service delivery. Specific topics include novel or innovative peer support and peer-led interventions, case studies of the lived experience leadership roles, participatory research efforts that center meaningful involvement (or leadership), and empirically informed lived-experience perspectives on topics related to the ethics and sociopolitics of interventions and services. We have a strong interest in intersectionality and the perspectives of individuals with multiple historically underrepresented or marginalized identities and encourage all submissions to include lived-experience lead authors or coauthors.

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