ARTICLE

The Partnership Access Line

Evaluating a Child Psychiatry Consult Program in Washington State

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Objective: To evaluate a telephone-based child mental health consult service for primary care providers (PCPs).

Design: Record review, provider surveys, and Medicaid database analysis.

Setting: Washington State Partnership Access Line (PAL) program.

Participants: A total of 2285 PAL consultations by 592 PCPs between April 1, 2008, and April 30, 2011.

Interventions: Primary care provider–initiated consultations with PAL service.

Main Outcome Measures: The PAL call characteristics, PCP feedback surveys, and Medicaid claims between April 2007 and December 2009 for fee-for-service Medicaid children before and after a PAL call.

Results: Sixty-nine percent of calls were about children with serious emotional disturbances, and 66% of calls were about children taking psychiatric medications. Primary care providers nearly always received new psychosocial treatment advice (87% of calls) and were more likely to receive advice to start rather than stop a medication (46% vs 24% of calls). Primary care provider feedback surveys reported uniformly positive satisfaction with the program. Among Medicaid children, there was significant increases in attention-deficit/hyperactivity disorder and antidepressant medication use after the PAL call but no significant change in reimbursements for mental health medications ($P<.05$). Children with a history of foster care experienced a 132% increase in outpatient mental health visits after the PAL call ($P<.05$).

Conclusions: Primary care providers used PAL for psychosocial and medication treatment assistance for particularly high-needs children and were satisfied with the service. Furthermore, PAL was associated with increased use of outpatient mental health care for some children.

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An estimated 11% to 20% of children in the United States have a mental health problem.[1-3] Many are initially seen and treated in primary care, reflecting primary care's central role in the identification of psychiatric disorders and the initiation of services to treat these disorders.[4-8] However, many primary care providers (PCPs) are not comfortable providing mental health care or they may lack the training and systems-level supports to do so.[4,9,10]

In response, innovative models of consultation and collaboration between PCPs and mental health specialists have been gaining momentum as a means to integrate these 2 disciplines to improve access to and delivery of high-quality pediatric mental health services.[11-16] Despite their promise as an effective means of care delivery, to our knowledge, there is limited research on the impact of these models on health outcomes and health service use for children.[12]

In 2007, Washington state passed legislation to expand mental health services for Medicaid children, which included establishing a telephone-based consultation program called the Partnership Access Line (PAL).[17] The PAL program has similarities to a consult service developed 2 years earlier in Massachusetts, called the Massachusetts Child Psychiatry Access Project (MCPAP), but PAL services were tailored to fit a more limited funding stream, a lower population density, and more uneven dispersion of child psychiatrists.[15,17] Key differences between the programs include PAL's use of

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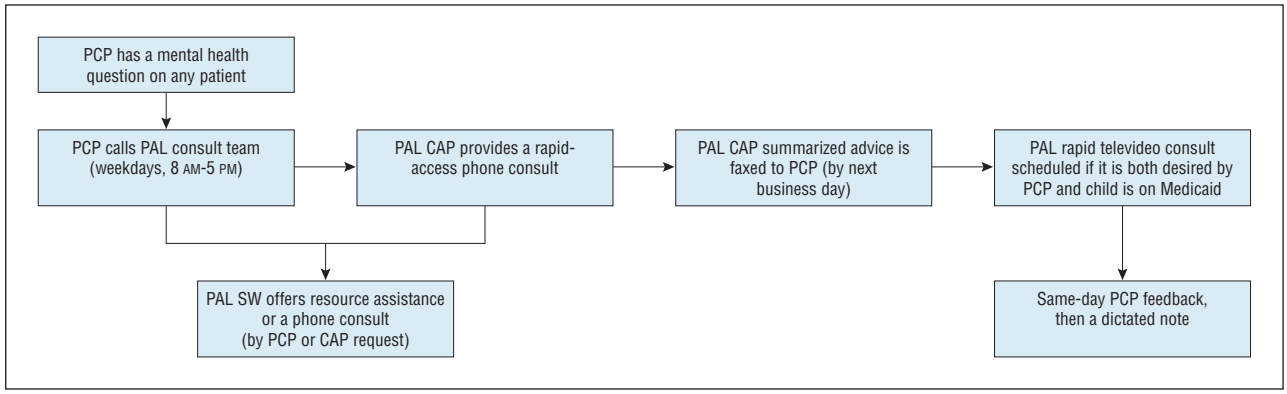

Figure 1. Partnership Access Line (PAL) program design. CAP indicates child and adolescent psychiatrist; PCP, primary care provider; SW, social worker.

Table 1. Summary of the 3 PAL Evaluation Analyses

	PAL Program Use and Consult Characteristic	PAL Program Satisfaction and Feedback	FFS Medicaid Claims Analysis
Description	Characteristics of all PAL consults performed	PCP-reported satisfaction with PAL consults	Health service use and mental health medication use and costs before and after the PAL call
Data source	PAL consult database	Satisfaction surveys mailed after 1st, 2nd, 5th, and subsequent 5th phone consults	FFS Medicaid claims
Study sample	2285 calls from 592 PCPs	272 returned surveys from 168 PCPs	158 FFS Medicaid children
Period	April 2008-April 2011	May 2008-April 2011	April 2007-December 2009

Abbreviations: FFS, fee for service; PAL, Partnership Access Line; PCP, primary care provider.

a smaller centralized team of child and adolescent psychiatrists (CAPs), televideo sites for appointments, a published care guide reference, and program outreach using 4 regional provider education conferences per year.[17,18] The PAL program was targeted to all 970 PCPs in 22 rural counties in eastern and southwest Washington that have a collective population of approximately 500 000 children.

With PAL, PCPs call a toll-free number and connect with available CAPs, who provide an immediate psychiatric consultation regarding 1 or more of the PCPs' patients. Phone consultations are supported by parent handouts/tip sheets and a written synopsis of CAP recommendations (typically faxed to the PCP within 1 business day). A PAL social worker provides referral assistance to local mental health providers when recommended by the CAP or when requested by the PCP. If more detailed consultation is needed, a televideo appointment between the child and the CAP can be scheduled for Medicaid clients within 2 weeks of the call at 1 of 5 telemedicine sites in Washington[17] (**Figure 1**). The PAL CAP advice is intended to align with the peer-reviewed, best-practice child mental health treatment guide, with which quarterly blinded assessments have found recommendation fidelity to be approximately 95%.[18]

The purpose of this study was to characterize PAL program use and consultation characteristics, assess PCP feedback, and evaluate mental health medication and health service use among fee-for-service (FFS) Medicaid children who were the focus of a PAL call during the program's startup phase.

METHODS

To evaluate the PAL program, 3 separate analyses were conducted (**Table 1**).

PAL PROGRAM USE AND CONSULT CHARACTERISTICS

A PAL call database was queried to obtain the CAPs' diagnoses and treatment advice associated with calls made between April 1, 2008, and April 30, 2011.

PAL PROGRAM SATISFACTION AND FEEDBACK

Primary care providers from the targeted 22 rural counties were asked to complete a survey after their first, second, fifth, and subsequent fifth PAL calls from the beginning of the program in May 2008 until April 2011. Primary care providers working in other Washington counties were not eligible for a survey. The satisfaction tool (developed by 2 authors, R.J.H. and M.G.M.) consisted of 12 statements related to the feasibility and quality of PAL consultations (eTable, http://www.jamapeds.com). Respondents rated each satisfaction statement based on a Likert scale of 1 (strongly disagree or not satisfied) to 5 (strongly agree or satisfied). The survey had high internal consistency at alpha = 0.93.

FFS MEDICAID CLAIMS ANALYSIS FOR PAL CALL SUBJECTS

Medicaid pharmacy and health services claims data were available for FFS Medicaid children who were the focus of a call be-

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Table 2. Select Characteristics of 2285 PAL Consult Calls

Characteristic	%
Age, y	
0-5	12
6-12	45
≥13	43
Insurance	
Medicaid	56
Private	42
Uninsured or unknown	2
Duration of call, min	
≤15	65
16-20	22
>20	13
Overall clinical severity, CGAS score	
≥51, low to moderate emotional disturbance	31
36-50, serious emotional disturbance	61
≤35, may need hospital level of care	8
Psychotropic medication use at the time of the PAL call	
No medication	34
Receiving 1 medication	32
Receiving ≥2 medications	34
Medication frequency	
Stimulant	32
Selective serotonin reuptake inhibitor	24
Antipsychotic	18
Clonidine/guanfacine	14
Anticonvulsant	7
Atomoxetine	4
Benzodiazepine	3
Probable mental health/behavioral diagnoses per the CAP	
Attention-deficit/hyperactivity disorder	52
Anxiety disorder	36
Disruptive behavior disorder	36
Depressive disorder	20
Autism spectrum disorder	14
Developmental disorder	11
Posttraumatic stress disorder	11
Mood disorder, not otherwise specified	9
Medication adverse effect	7
Bipolar disorder	6
Learning disability	5
Psychotic disorder	5
Sleep disorder	5

Abbreviations: CAP, child and adolescent psychiatrist; CGAS, Children's Global Assessment Scale; PAL, Partnership Access Line.

tween May 1, 2008, and December 31, 2009. Claims data were not available for privately insured and Medicaid managed care children. Fee-for-service Medicaid claims data regarding the use of mental health medications, inpatient admissions, emergency department visits, and outpatient mental health services occurring between April 1, 2007, and December 31, 2009, were available for analysis. Children's claim history was available for up to 32 months before a PAL call and up to 12 months after the last PAL call made on their behalf.

STATISTICAL ANALYSES

PAL Program Use and Consult Characteristics

Frequencies were used to describe the number of calls, the reasons for the calls, the CAPs' recommendations after speaking with the PCPs, and the characteristics of children who were the focus of a PAL call.

PAL Program Satisfaction and Feedback

Satisfaction data were summarized and associations between provider characteristics and satisfaction were analyzed using Pearson correlation coefficients or 1-way analysis of variance, as appropriate. Generalized estimating equations were used to investigate the relationship between the frequency of consultations and satisfaction scores to account for within-subjects variance (ie, some providers completed multiple surveys).

FFS Medicaid Claims Analysis for PAL Call Subjects

Among FFS Medicaid children, we calculated the average number of mental health medication claims, mental health medication reimbursement amounts on the claims, and the number of health care visit claims per child for the months before and after the PAL call. Multivariate regression analysis was used to assess the independent effect of the PAL call on medication use, reimbursements, and health care visits/admissions, controlling for the child's age at the first PAL call, sex, race/ethnicity, and whether the child was ever known to be in foster care as identified via PCP report and Medicaid eligibility data. We modeled mental health medication use and visits/admissions as count data using negative binomial generalized estimating equations.[19-21] Multivariate analyses for medication use were limited to those for attention-deficit/hyperactivity disorder (ADHD) medications, antidepressants, and antipsychotics. A detailed list of the medications included within each drug category is available from the authors. Expenditures for mental health medications were modeled as continuous data using linear generalized estimating equations.[19,20,22] Costs incurred in 2007 and 2008 were inflated to 2009 dollars using the Personal Health Care Expenditure component of the National Health Expenditure Accounts.[23] We also performed an exploratory analysis of medication and health service use, stratifying by whether the child was ever in foster care because children in foster care were specifically targeted in the PAL legislation given their increased vulnerability to mental health morbidity.[24,25]

Study procedures were approved by the Washington State institutional review board.

RESULTS

PAL PROGRAM USE AND CONSULT CHARACTERISTICS

From April 1, 2008, through April 30, 2011, there were 2285 PAL calls regarding 1863 patients. A total of 592 different PCPs used the service, including 362 from the targeted rural counties (37% of those eligible). The 230 PCPs from nontargeted counties called the program after hearing about PAL from colleagues (no PCP callers were turned away). The CAPs performed 120 inperson/televideo consult appointments. There were 645 calls in year 1, 776 in year 2, and 864 in year 3.

Table 2 summarizes the characteristics of the consults. Calls were brief, with 65% of PAL calls lasting 15 minutes or less. The primary question was about medications 58% of the time and about a diagnosis 6% of the time. Eleven percent of PAL calls were regarding children who had seen a child psychiatrist within the previous year. More than half of the calls (56%) were about children with Medicaid coverage. Sixty-nine percent of

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calls were regarding children with a CAP-assigned Children's Global Assessment Scale (CGAS) score of 50 or less, the federal definition of serious emotional disturbance.[26] The CGAS is a global functioning rating in widespread use and reported to have good psychometric properties.[27] Eight percent of PAL calls pertained to children with a CGAS of 35 or less, a clinical severity that might meet criteria for psychiatric hospitalization. Children had on average 2.9 clinical problems. The most common CAP-recorded probable diagnoses per the PCP-reported clinical presentations were ADHD, anxiety, disruptive behavior, depression, and autism spectrum disorder. Repeat consultations about children previously discussed with the program comprised 30% of calls.

Two-thirds of PAL calls (66%) were about children already receiving a psychiatric medication, and 51% of that group were receiving 2 or more psychiatric medications. Frequently used medications at the time of the PAL call included stimulants, selective serotonin reuptake inhibitors, and antipsychotics (Table 2). The CAPs made recommendations to decrease a medication in 8% of calls and recommendations to stop a medicine in 24% of calls. They also made recommendations to increase a medication in 12% of calls and recommendations to start a medication in 46% of calls. Recommendations regarding individual medications varied significantly. For example, when making an antipsychotic recommendation, CAPs were twice as likely to recommend starting rather than stopping risperidone therapy, but for treatment with other antipsychotics, they were 1.5 times as likely to recommend stopping rather than starting them. Thirty-five percent of all consults recommended ongoing care from a psychiatrist or psychiatric nurse practitioner.

There were 1989 new psychosocial recommendations made by the CAPs (87% of all calls). The most common psychosocial recommendations were for initiating cognitive behavioral therapy (38%), parent/behavior management training (23%), and behavior therapy (11%). To assist families in accessing local, community-based mental health care and/or psychosocial treatment, 51% of calls used the PAL social worker to facilitate this connection.

PAL PROGRAM SATISFACTION AND FEEDBACK

Satisfaction surveys were mailed or e-mailed to the 362 providers who had called from a targeted area. A total of 272 satisfaction surveys were received from 168 providers (46% of those eligible). Overall scores showed that satisfaction with telephone consultations was high (mean [SD] Likert scale score, 4.6 [0.51]). Each individual item had a mean satisfaction score of 4.2 or greater (eg, item "PAL helps me to increase my own skills in the mental health care of my patients" received a mean [SD] score of 4.6 [0.7] and the item "PAL helped me to manage my patient's care" received a mean [SD] score of 4.7 [0.6]). Satisfaction was higher among providers who reported treating more children in foster care and more children with psychiatric disorders (**Table 3**). Those who called PAL 5 or more times reported more satisfaction with PAL than those who used the service less often.

Table 3. PCP Satisfaction Scores by Provider Demographic and Practice Characteristics From 272 Surveys[a]

Characteristic	Mean (SD)	*P* Value
Provider type		
Physician	4.63 (0.40)	Not significant
Nonphysician	4.51 (0.78)	
Specialty		
Family practice	4.41 (0.79)	<.05
Pediatrics	4.68 (0.35)	
Foster care children per y, No.		
0-15	4.48 (0.68)	<.05
16-35	4.66 (0.41)	
>35	4.70 (0.35)	
Pediatric patients with psychiatric problems per wk, No.		
1-4	4.37 (0.80)	<.05
5-9	4.69 (0.38)	
10-19	4.62 (0.34)	
≥20	4.72 (0.40)	
PAL calls, No.[b]		
1	4.49 (0.06)	<.05
2-4	4.63 (0.05)	
≥5	4.73 (0.03)	

[a] Survey respondents rated satisfaction based on a Likert Scale of 1 (not satisfied) through 5 (very satisfied). The mean satisfaction score was determined by averaging satisfaction ratings across all satisfaction survey items.
[b] Analyses accounted for within-subjects variance.

FFS MEDICAID CLAIMS ANALYSIS FOR PAL CALL SUBJECTS

Medicaid pharmacy and health services claims data were available for 158 FFS Medicaid children who were the focus of a call between May 1, 2008, and December 31, 2009 (approximately 13% of all PAL calls during that period). Among the 158 children included in this analysis, 87% were 6 years of age or older. More than two-thirds were male (69%), and 54% had been in foster care. Fee-for-service Medicaid children had higher clinical severity than the group as a whole, with 82% having a CGAS score of 50 or less.

MENTAL HEALTH MEDICATION USE

The average numbers of mental health medication claims per child per month before and after the PAL call are summarized in **Figure 2**. In adjusted regression analyses, the PAL call was associated with a 28% increase in ADHD medication use (incident rate ratio [IRR] = 1.28; 95% CI, 1.09-1.50) and a 38% increase in antidepressant use (IRR = 1.38; 95% CI, 1.05-1.81) among the total study sample. In stratified analyses, children who had ever been in foster care had a 40% increase in ADHD medication use after the PAL call (IRR = 1.40; 95% CI, 1.13-1.72). No other significant changes in medication use were noted. The mean (SD) per child monthly costs for mental health medications was $171 ($261) before the PAL call and $171 ($260) after the PAL call among the total study sample, with no difference in mental health medication reimbursements in adjusted analyses (β = 0.07; 95% CI, –0.11 to 0.26).

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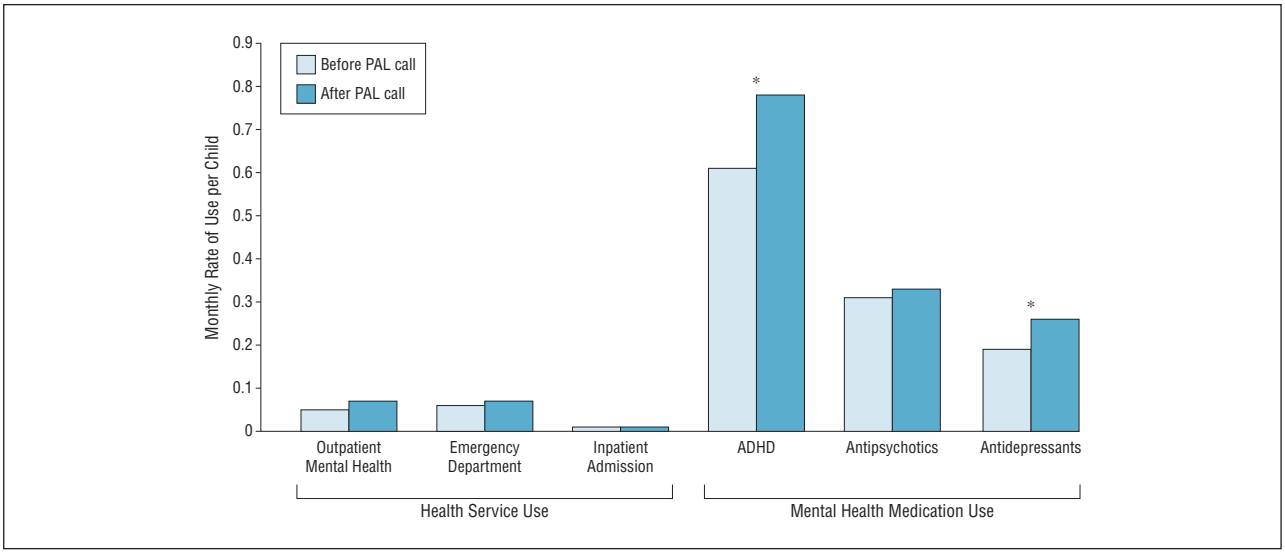

Figure 2. Average numbers of health care visits and mental health medication claims per child per month among 158 fee-for-service Medicaid Children. *Changes in use were significantly different after the Partnership Access Line (PAL) call in multivariate regression models ($P < .05$). ADHD indicates attention-deficit/hyperactivity disorder.

HEALTH SERVICE USE

The average numbers of claims for health care visits before and after the PAL call are summarized in Figure 2. In adjusted regression analyses, there was no statistically significant evidence that a PAL call was associated with changes in outpatient mental health (IRR = 1.62; 95% CI, 0.99-2.63), emergency department (IRR = 1.13; 95% CI, 0.78-1.63), or inpatient (IRR = 1.29; 95% CI, 0.66-2.51) use among the study sample. However, in stratified analyses, children who had ever been in foster care had a 132% increase in outpatient mental health use after the PAL call (IRR = 2.32; 95% CI, 1.16-4.64). No other significant changes in use were noted.

COMMENT

This study examined the impact of the PAL program using (1) use and call characteristics, (2) satisfaction data, and (3) FFS Medicaid claims data.

The PAL program appeared to preferentially serve children who had multiple and serious mental health problems as evidenced by the high number of active clinical problems per patient, the low CGAS scores, and the fact that about two-thirds of children were already taking 1 or more psychiatric medications. Despite the high clinical complexity of these children, about 70% of patient calls were 1 time only and averaged only 15 minutes in length. High caller satisfaction with the consultations suggested that, from the callers' perspective, the format of these phone consultations even with very complex cases can meet PCP needs.

Primary care providers who called the PAL line reported that they were very satisfied with the service, similar to reported findings from the MCPAP consult service in Massachusetts. However, in a reflection of site and design differences, PAL and MCPAP were dissimilar in other ways. For instance, compared with MCPAP, PAL calls were more likely to be triggered by medication questions, focus on children with disruptive behavior, and recommend that ongoing care remain with the PCP; they were less likely to result in consult appointments.[15] Primary care providers further reported that with PAL's help, they improved their mental health management skills.

Because most PAL calls came from PCPs with a medication question about children with high clinical acuity (eg, "which medication is the most appropriate to initiate?"), we expected to find some overall increases in medication use. In fact, we found that CAPs were more likely to recommend starting treatment with a new medication rather than stopping one, and the Medicaid claims analyses found corresponding significant increases in ADHD and antidepressant medication use. This was a positive finding, given that underrecognition and undertreatment of mental health conditions such as depression in pediatric primary care is a well-recognized problem.[28] Despite the greater use of certain medications, there was no overall increase in total medication costs for Medicaid. Increased use of lower-cost generic medications relative to branded medications may be the reason for this, but we could not investigate this in our data.

A central aspect of this model was to encourage appropriate use of psychosocial treatments—in fact, new psychosocial treatment recommendations were offered during 87% of calls, about twice the rate of advice offered to initiate a medication. The PAL program social workers facilitating access to local therapists may also be the reason for the significant increase in outpatient mental health service use by foster care children following the PAL call—a population usually characterized as having greater barriers to care and mental health needs.[24]

Our study findings may have direct implications for Medicaid. Children covered by Medicaid can have both high medical and social costs owing to current and future psychiatric morbidity. If programs like PAL succeed in reducing these costs, the return on investment

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for supporting PAL-like consult programs could be significant. Although such analyses were beyond the scope of the present study, we believe it is an important direction for future evaluation of PAL and PAL-like programs.

The results of this evaluation also have implications for primary care. As health care reform increasingly focuses on the medical home model, PCPs are being asked to provide access to and coordination with child mental health care specialists for effective mental health care delivery. This evaluation demonstrates that a brief, telephone-based consultation model is a feasible, efficient way to support mental health care delivery that does not necessitate wholesale changes in the workflow of a primary care practice.

There are several considerations in interpreting our results. An important strength of this study was the focus on real-world implementation of mental health consult services for primary care. As such, results have strong potential to be replicated in states that, like Washington, have significant challenges providing access to child psychiatric services. There are also several limitations. First, while the PAL program could track consult characteristics, we did not know the extent to which recommendations were followed by either the PCP or the family, nor did we know how PAL may have influenced children's mental and behavioral functioning. Second, as is common with satisfaction surveys, those who were most satisfied may have been more likely to take the time to complete and return the survey, biasing the results to the positive. Third, the FFS children who were the focus of the claims analysis are a select Medicaid population including foster and disabled children—populations recognized to have more mental health problems and higher costs compared with other Medicaid children or the general pediatric population.[24,29,30] Therefore, claims data findings cannot be generalized to children beyond the FFS Medicaid pediatric population. Furthermore, the small number of consults included in the claims analysis, relative to total consult activity (13% of child PAL consults during that period), limits our power to detect patterns of use. Finally, there may be child, family, and health system factors for which we could not account that influenced both PAL participation and health service and medication use. For example, during our study, Washington promoted specific mental health medication prescribing guidelines for Medicaid providers and spillover effects of these activities could have influenced our findings.[31]

This evaluation suggests that a centralized, psychiatric telephone and televideo consultation program for primary care implemented in a state with significant rural/underserved areas can improve access to evidence-based child mental health care and yield measurable changes in health service use. Primary care providers have shown that they will use such a program to receive psychosocial and medication treatment advice particularly for their high-needs patients as well as for ongoing case collaboration, and they are highly satisfied with both the service and education they received. As states explore innovative approaches to improving the delivery of child mental health services in a child's medical home, a consult model like PAL warrants consideration.

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