Primary Care Referral of Children With Psychosocial Problems

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Objectives: To examine primary care provider referral patterns for patients with psychosocial problems and to understand the factors that influence whether a mental health referral is made.

Design: Secondary analysis of the Child Behavior Study data collected during 1994-1997 from background survey of providers, visit survey of providers and parents, and follow-up survey of parents.

Setting: Two hundred six primary care offices in the United States, Canada, and Puerto Rico.

Patients: Four thousand twelve of 21,150 patients aged 4 to 15 years in the Child Behavior Study with a clinician-identified psychosocial problem.

Main Outcome Measures: Referral for psychosocial problem at index visit and reported follow-up with mental health care provider within 6 months.

Results: Six hundred fifty (16%) of 4,012 patients with psychosocial problems were referred at the initial visit. In multivariate analysis, significant factors associated with likelihood of referral included patient factors (severity, type of problem, academic difficulties, prior mental health service use) and family factors (mental health referral of parent); however, none of the provider factors were significant. Clinicians reported frequent barriers to referral and mental health services in the general background survey; however, these factors were rarely reported as influences on individual management decisions. Only 61% of referred families reported that their child saw a mental health care provider in the 6-month period after the initial primary care referral.

Conclusions: Most psychosocial problems are initially managed in primary care without referral. However, referral is an important component of care for patients with severe problems, and many families are not effectively engaged in mental health services, even after a referral is made.

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Patients with psychosocial problems (PSPs) make up a notable portion of pediatric patients in primary care—more than 25% of pediatric patients have a mental or behavioral problem. Pediatric mental health disorders range from self-limited or mild problems to severe, debilitating illnesses, such as depression and psychosis, that account for significant morbidity, mortality, and health care expenditure. Most children and adolescents in the medical system are treated within primary care, however, some PSPs require referral to mental health specialists for further evaluation, counseling, or additional treatment. Very little is known about the process of pediatric primary care providers’ management decisions and triage of patients for mental health referral.

The role of family physicians, pediatricians, and other primary care providers has continued to evolve with managed care and changes in health care organization. Gatekeeping and the judicious referral of patients to appropriate services are key components of primary care. Previous work has shown that clinician referrals and mental health service use may be influenced by patient age, sex, race, diagnosis, family history, parental requests, insurance type, clinician sex, and other factors. Forrest et al have described general issues related to primary care–specialist interactions; however, mental health referrals have not been a main focus of these studies.

Referral and management decisions are often more complex for PSPs. Attention-deficit/hyperactivity disorder, depression, and other mental health problems require comprehensive assessment and
PARTICIPANTS AND METHODS

STUDY POPULATION

We performed a secondary analysis of the CBS. The CBS was an office-based survey conducted from October 1994 to June 1997 through the Ambulatory Sentinel Practice Network, Pediatric Research in Office Settings (PROS) network, and 2 smaller Midwest practice networks. The CBS survey items were developed by 3 focus groups of PROS providers and pilot tested on more than 1000 patients. The study was approved by the University of Pittsburgh (Pittsburgh, Pa) institutional review board. Previous studies have described additional details of the survey items, patient population, and practice networks involved.

The survey involved 401 clinicians from 206 practices in the United States, Canada, and Puerto Rico, who recruited patients aged 4 to 15 years to participate in the study. Data were collected from the 3 surveys: (1) a background survey of clinician practice characteristics, perceived barriers, and beliefs regarding mental health care using a structured questionnaire; (2) a visit survey completed at the initial visit by both parents (or caregivers) and clinicians; and (3) a follow-up survey of parents conducted 6 months after the initial visit survey.

The CBS produced a sample of 22059 children seen in office visits. Among those visits, 909 (4%) had inadequate or missing data that precluded further analyses, resulting in a study sample of 21150. Clinicians identified a PSP in 4012 (19%) of 21150 children at the index visit. Our analysis focused on the 4012 PSP patients with a clinician-identified PSP at the index visit.

We also reviewed data from the follow-up study, which was conducted 6 months after the index visit. Families were selected for the follow-up survey based on their insurance status. African American children were oversampled to include more managed care patients and children, who have been known to be underrepresented in the PROS network. Of note, the method of selection of follow-up subjects changed during data collection; thus, statistical analyses were limited to general descriptive statistics. A total of 1970 patients and families were included in the follow-up study; 1354 (69%) were successfully followed up.

OUTCOMES AND VARIABLES

We examined different outcomes for each of the 3 surveys. For the background clinician survey, we analyzed yes/no and Likert responses to questions regarding general practice barriers to PSP referrals. Multiple items queried provider time pressures, perceived effectiveness of medications and treatment, clinician satisfaction, belief in the biomedical model, and related topics. The main outcome variable for the visit survey was referral for a PSP vs no referral. This dichotomous outcome was obtained from the clinicians’ yes or no responses to the following item “Did you refer this patient for mental health treatment today?” Follow-up questions using multiple-choice answers and write-in options asked clinicians to list reasons for referral or reasons why they did not believe that a referral was indicated at that time. Finally, we analyzed the follow-up survey outcome of parent-reported mental health care provider visits in the 6 months after initial referral to determine the rate of use of mental health services.

Independent variables linked to all 3 surveys included parent-clinician visit survey responses on patient factors (age, sex, race, school performance); family factors (family structure, family dysfunction, and family mental health referral); PSP type and related factors (clinician diagnosis, comorbidity, and Pediatric Symptom Checklist items); clinician factors (age, sex, specialty, practice type and setting, and attitudes toward PSP treatment); and health system factors (patient insurance type, access to mental health care providers, and wait time for referral appointment).

The family APGAR score is a 5-item scale that measures family cohesion, support, and functioning. The Pediatric Symptom Checklist is a 35-item instrument that has been validated and reported in other CBS publications and includes subscales to identify patients with internalizing features, externalizing features, and attention issues. The Physician Belief Scale is a measure of clinicians’ reported burdens and beliefs regarding psychosocial issues using 32 items from the survey.

ANALYSIS

All analyses were conducted using SAS version 6.12 (SAS Corporation, Cary, NC). Univariate statistics described patients, clinicians, and descriptive information on general treatment by diagnosis. Bivariate comparisons used the Pearson χ² and the Fisher exact χ² tests (2-tailed) to determine associations between referral and patient, family, clinician, and health system factors. Significance was set at P<.05, unless noted to correct for multiple comparisons.

Data on clinician beliefs and practice characteristics were merged with patient data using a clinician identifier. Since each participating CBS clinician often saw more than one study patient, common data elements were correlated across patients seen by a common provider. To adjust for these correlated measurements, a hierarchical model using clusters of patients seen by a given clinician was analyzed using a generalized linear mixed model (SAS GLIMMIX macro). This method was used to determine associations among clinician-level variables, where the degrees of freedom reflected the adjusted number of clinician clusters. The same method was used in multivariate modeling of patient and clinician factors associated with the odds of referral of a patient with a PSP. Variable selection used univariate associations suggestive of referral (P<.20). A variable reflecting early patient enrollment was included to test the Hawthorne effect. Iterative logistic regression models, with referral as the response, were run on patient-level variables to generate a condensed list of independent variables suggestive of referral (P<.10). Patient variables were placed in a general linear mixed model with clinician variables (at the clinician and patient level), and model selection proceeded until a parsimonious group of variables was generated. Goodness-of-fit measures confirmed appropriate model and covariance selection.

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BACKGROUND SURVEY RESULTS

Data from the initial clinician survey were obtained prior to patient enrollment to describe general barriers to referrals in their practice. In general, access to mental health specialists was a major barrier reported by clinicians. On a Likert scale asking the availability of child mental health services in the community, only 12.7% of clinicians reported that services were “very accessible,” 1.7% reported that services were “not available,” and most were evenly distributed between these extremes. When asked about general restrictions by managed care, 52.8% reported “sometimes” or “very often” having restrictions on referral to child psychiatrists and 56.0% were sometimes or very often restricted in their referrals to psychologists.

For managed care patients, many clinicians reported several general barriers to psychosocial referrals, including difficulty obtaining an appointment (65.6%), lack of pediatric specialists (61.1%), limited acceptance of Medicaid (60.7%), provider panel restrictions (58.6%), complex appeals processes (54.3%), and complex authorization (44.7%). Clinicians reported these barriers more commonly for managed care patients in comparison with responses on the same items regarding fee-for-service patients.

VISIT SURVEY DATA

Referral and Management of Patients With PSPs

Next, we described the actual management and referrals from the visit survey data. The most common management strategy for a patient with a PSP (n=4012) at the initial visit was watchful waiting/no treatment (38.4%) followed by primary care counseling alone (33.4%), primary care counseling with medication prescription (18.0%), or prescribing medication alone (10.2%). Six hundred fifty (16.2%) of all PSP patients were referred at the index visit. Of the 650 patients who received a referral, most (72.8%) received primary care counseling as well. Nearly one quarter (24.2%) received referral with medication and primary care counseling. Almost 20% (19.1%) of the 650 referred patients received referral alone. Additional details of counseling and medication treatment in the CBS have been described by Gardner et al.

Table 3 presents the frequency of PSP by number of patients. The most commonly reported types of PSP were attention-deficit/hyperactivity and behavioral/conduct problems. Substance abuse, mental retardation, and psychotic episodes were rarely reported problem types.

Table 3 also presents referral rates by PSP type. Psychotic episodes, substance abuse, emotional problems, and adjustment reaction were somewhat more likely to generate a referral than other types of PSP. Children with attention problems, developmental delays, and mental retardation were somewhat less likely to be referred. Some patients had 2 or more identified PSPs, resulting in column totals exceeding the total number of patients.

When only patients with a newly diagnosed PSP were considered (n=1299), the overall referral rate was 27.4%.

Table 1. Demographics of a Pediatric Patient Population of 4012 With Psychosocial Problems

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (SD), y</td>
<td>8.9 (3.2)</td>
</tr>
<tr>
<td>Male</td>
<td>64.8</td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>85.8</td>
</tr>
<tr>
<td>Black</td>
<td>8.2</td>
</tr>
<tr>
<td>Other</td>
<td>6.0</td>
</tr>
<tr>
<td>Insurer</td>
<td></td>
</tr>
<tr>
<td>Commercial</td>
<td>64.2</td>
</tr>
<tr>
<td>Medicaid</td>
<td>28.9</td>
</tr>
<tr>
<td>Uninsured</td>
<td>4.6</td>
</tr>
<tr>
<td>Canadian</td>
<td>2.3</td>
</tr>
</tbody>
</table>

*Data are given as percentage of patients unless otherwise indicated.

Table 2. Demographics of Clinician Population Managing 385 Pediatric Patients With Psychosocial Problems

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>51.7</td>
</tr>
<tr>
<td>Age, mean (SD), y</td>
<td>43.0 (8.0)</td>
</tr>
<tr>
<td>Completed residency ≥1990</td>
<td>19.2</td>
</tr>
<tr>
<td>Clinician specialty</td>
<td></td>
</tr>
<tr>
<td>Pediatrics</td>
<td>67.3</td>
</tr>
<tr>
<td>Family medicine</td>
<td>26.5</td>
</tr>
<tr>
<td>General/other</td>
<td>6.2</td>
</tr>
<tr>
<td>Any behavioral fellowship training</td>
<td>4.4</td>
</tr>
<tr>
<td>Solo practice</td>
<td>9.6</td>
</tr>
<tr>
<td>Rural practice (population &lt;5000)</td>
<td>2.9</td>
</tr>
<tr>
<td>Geographic location</td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>28.6</td>
</tr>
<tr>
<td>South</td>
<td>21.8</td>
</tr>
<tr>
<td>Midwest</td>
<td>29.1</td>
</tr>
<tr>
<td>West</td>
<td>17.9</td>
</tr>
<tr>
<td>Canada</td>
<td>2.6</td>
</tr>
</tbody>
</table>

*Data are given as percentage unless otherwise indicated.

Table 1 presents the sample of 4012 patients with PSPs. Four hundred one physicians participated in the study, and 385 different clinicians cared for the 4012 patients with PSPs. Characteristics of these clinicians are presented in Table 2.
The right-hand column in Table 3 presents referral rates by PSP type for patients with new PSPs. Although referral rates were generally higher for new PSPs, trends among the PSP types remained, with attention-deficit and somatic complaints less likely to generate a referral at the initial visit.

### Referral Providers

Of the 650 children who were referred at the initial visit, the most common mental health care providers patients were referred to included child psychologists (28%), psychologists (22%), counselors/therapists (20%), social workers (12%), school services (12%), and child psychiatrists (11%). Primary care providers referred patients to developmental/behavioral pediatricians (4%) and general psychiatrists (2%) less frequently. Almost one quarter of the 250 clinicians reported that psychologists or counselors were present in their offices or practices at least 1 day per week. Five percent of providers reported that their practice group or office included a psychiatrist or child psychiatrist.

Most referrals were arranged by the patient/family (57%). The primary care office sometimes arranged appointments (23%) but the primary care provider rarely had direct contact with the mental health specialist (12%). The clinician’s estimate of wait time for a referral appointment was 2 weeks (median, 14 days), with 10% of patients expected to wait more than 30 days.

### Reasons for Referral

When clinicians were asked why they referred a patient to a specific mental health care provider in the visit survey, the most commonly cited reasons were the specialist’s expertise (39%), availability (16%), and insurer requirement (12%). Proximity (4%), having only one specialist available (1%), and cost (1%) were less commonly cited reasons for the referral.

The most common clinician-reported reasons for nonreferral included the ability of the clinician to manage the patient in his or her primary practice (46%), the patient was already receiving services (35%), or the problem was self-limiting (15%). In 3% of the cases, the patient/parent refused, citing a lack of need. Several other barriers were rarely given as reasons for a referral not being made for a specific patient encounter—less than 2% reported lack of insurance, lack of effectiveness, financial disincentives to the referring clinician, lack of availability, past reimbursement denials, or paperwork. These data specific to patient encounter were in marked contrast to the data from the general clinician survey.

### Factors Influencing Referral

We used generalized linear mixed modeling to further analyze factors associated with clinician referral of a patient for a PSP (n=4012) while considering covariates and clinician-clustering effects. Table 4 presents the significant model variables, coefficients, SEs, significance levels, and odds ratios (ORs) of a mental health referral at the index visit. The factors associated with referral dealt with the patient’s problems—new or severe PSP, high Pediatric Symptom Checklist score, low/dropping grades, and family dysfunction along with attention problems. However, one significant interaction occurred between family dysfunction (indicated by a low family APGAR score) and visit duration were also significantly associated with referrals in our analysis. Family factors of significance included insurance, and health system factors were not significant in any multivariate modeling.

Some pairs of independent variables were interrelated to referral, such that interactions with modification of ORs occurred. In general, these effects were small and thus interaction terms were not included in the final model. However, one significant interaction occurred between family dysfunction (indicated by a low family APGAR score ≤5) and 3 variables: comorbidity, minority status, and attention-deficit/hyperactivity disorder. This interaction term had an important effect such that patients with a normal family APGAR score who were identified with attention problems had nearly half (OR, 0.55) the odds of obtaining a referral. Yet when the family APGAR score indicated family dysfunction along with attention problems, the odds of referral was increased (OR, 1.76).

### Table 3. Referral Rates by Problem Type for All Pediatric Patients With Previously Diagnosed and New Psychosocial Problems (PSPs)

<table>
<thead>
<tr>
<th>PSP Grouping</th>
<th>No. of All Patients With PSP</th>
<th>No. (%) of All Patients With PSP Referred</th>
<th>No. of Patients With New PSP</th>
<th>No. (%) of Patients With New PSP Referred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention-deficit/hyperactivity disorder</td>
<td>2007</td>
<td>340 (17)</td>
<td>336</td>
<td>92 (27)</td>
</tr>
<tr>
<td>Behavioral/conduct problem</td>
<td>1592</td>
<td>356 (22)</td>
<td>415</td>
<td>153 (37)</td>
</tr>
<tr>
<td>Adjustment reaction</td>
<td>938</td>
<td>221 (24)</td>
<td>359</td>
<td>125 (35)</td>
</tr>
<tr>
<td>Somatic/physical complaint</td>
<td>822</td>
<td>154 (19)</td>
<td>302</td>
<td>72 (24)</td>
</tr>
<tr>
<td>Emotional problem</td>
<td>754</td>
<td>199 (26)</td>
<td>235</td>
<td>110 (47)</td>
</tr>
<tr>
<td>Developmental delay</td>
<td>659</td>
<td>120 (18)</td>
<td>97</td>
<td>35 (36)</td>
</tr>
<tr>
<td>Family dysfunction</td>
<td>496</td>
<td>115 (23)</td>
<td>115</td>
<td>42 (37)</td>
</tr>
<tr>
<td>Other problems</td>
<td>338</td>
<td>61 (18)</td>
<td>139</td>
<td>35 (25)</td>
</tr>
<tr>
<td>Mental retardation</td>
<td>138</td>
<td>14 (10)</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Substance abuse</td>
<td>48</td>
<td>15 (31)</td>
<td>19</td>
<td>7 (37)</td>
</tr>
<tr>
<td>Psychotic episode</td>
<td>40</td>
<td>11 (28)</td>
<td>6</td>
<td>3 (30)</td>
</tr>
</tbody>
</table>

**Table 4 presents the significant model variables, coefficients, SEs, significance levels, and odds ratios (ORs) of a mental health referral at the index visit.**
FOLLOW-UP DATA

Finally, we examined utilization data obtained from parents at 6 months. One hundred sixty-four (25%) of 650 patients who were initially referred were included in the 6-month follow-up survey. At 6 months, 61.0% of the referred patients had been treated or evaluated by a mental health care professional (psychiatrist, psychologist, therapist, social worker, or mental health counselor). Less than a third of the referred patients (30.5%) saw a mental health care provider more than once in the follow-up period. Use of medical services in the 6 months after referral was common, with 133 (81.1%) of 164 returning to their primary care provider and 41 (25.0%) of 164 receiving care in an emergency department. Of the patients who were seen by a mental health specialist in the 6 months following referral, 43.0% of parents (43/100) reported mental health visit(s) in a school setting, 84.0% in a clinic or private office, and 13.0% in overnight hospitalization.

Less than half of patients with a new diagnosis of PSP (44.9%) saw a mental health care provider during the 6-month follow-up period. Factors that showed a trend toward greater likelihood of follow-up with a mental health care provider within 6 months of referral included patients with low/dropping grades, patients who had previously received mental health services, and patients from nonrural areas. Patients with referral appointments arranged by their parents or providers instead of office staff tended to have better follow-up results. Patients referred to child psychiatrists tended to have better follow-up compliance, and patients with a referral to social workers had lower rates of completion of a mental health visit. Patients who expected to wait 3 weeks or longer for an appointment were less likely to see a mental health specialist during the follow-up period. Many other patient, family, clinician, and insurance factors did not seem to affect rates of follow-up, although statistical power and interpretation were limited by sampling strategy and sample size.

The referral process is a complex but important part of primary care and the mental health care system. Most children with PSPs are initially treated in primary care and not referred. Even in a subsample of patients with a newly identified PSP, most patients (76%) are not initially referred. Referral rates vary somewhat by type of PSP but only the few patients with psychotic episodes are referred most of the time. Many primary care providers report that problems can be managed in primary care or are self-limited. In particular, attention problems and somatic complaints are less likely to be referred. These findings illustrate the broad scope of primary care in providing services to children with PSPs. Our study demonstrates the important role of primary care in the management of children in addition to recognition and assessment.

Our study found that most patients with PSPs are referred to psychologists or counselors instead of psychiatrists. Most of these providers are selected based on expertise and availability; cost and payer requirements are less commonly cited factors. The decision to refer a patient with a PSP to a specialist or to manage the patient within primary care seems to be influenced by several factors primarily related to patient, family, and problem characteristics. Despite concerns that clinicians’ management decisions are potentially influenced by insurance, financial pressures, or other beliefs about mental health, our results demonstrate that most clinician and health system factors are not significantly associated with referral practices for specific patients.

However, responses from the background clinician survey on general practice and beliefs are different compared with the results from the actual patient visit data. Clinicians commonly report access limitations for many
managed care and Medicaid patients in the background survey but rarely cite these barriers when making specific patient management decisions. This may represent differences in approaches to individual patients or possibly methodological effects of the background survey items that are more readily endorsed. It seems that clinicians are more reluctant to change their practices or to report influence by insurance and other factors when individual patients are discussed. Another possibility is that providers and primary care practice groups may have limited remaining options available for the management and referral of children with PSPs due to previous effects of health care organizations and insurance companies. Challenges to mental health care delivery may be taking place on a broader scale that is not reflected in decisions regarding individual patients.

These results suggest that the factors most clinically relevant and patient-centered are given the greatest weight in management decisions. However, before we can conclude that the current rate of referral for PSPs is reasonable or appropriate, we need to examine long-term outcomes and view primary providers in a system of care. An important but overlooked issue in mental health service is referral follow-up and completion. Effective engagement in treatment is necessary for many children with more serious mental conditions; yet, as our study shows, referral from primary care is not the end of the process. Many families do not access the recommended mental health services within 6 months, especially for children with a newly identified PSP. The follow-up rate with a mental health referral appointment of 61% was similar to other studies of mental health services and general referral follow-up rates. Other barriers of access, scheduling, and wait time may also affect the completion of a referral. We need to study referrals as part of a long-term process and not as an end point. Adherence and noncompliance are serious issues that clinicians must address and discuss with families, just like any medication or treatment recommendation.

Data from a separate PROS network study demonstrated that for all types of referrals, greater pediatrician communication with specialists resulted in higher rates of referral completion, provider communication, and provider satisfaction. We must build on these results to design and implement effective interventions to engage families in the long-term treatment and follow-up often required for PSPs. This may include a public health approach to reduce stigmatization of mental health disorders, changes in health systems to enhance tracking of referrals and primary care—specialty interactions, and individual clinician efforts. Although a great deal of attention has been focused on primary care recognition of PSPs, these providers also have an important role in motivating patients with identified problems to seek appropriate mental health services.

The CBS study design has some limitations that have been previously reported—reliance on parent and clinician reports to describe potential influences on referral, use of general PSP categories instead of strict diagnostic codes identified by criteria, and underrepresentation of minority patient and clinician groups in the Ambulatory Sentinel Practice Network and PROS practices. This study adds to the understanding of the important interface between primary care providers and mental health specialists and the referral process. The decision to refer patients can be affected by many different factors, such as patient, family, provider, and health care system factors. Our study confirms that most patients with PSPs are initially managed in primary care without referral, yet the decision to refer individual patients does not seem to be influenced by provider characteristics, managed care, or health system pressures. Thus, we make an important distinction between general barriers to mental health care delivery and specific influences on individuals. Also, we highlight the relatively poor rate of follow-through with mental health services after a referral is made. This is an important link in the complex pathway to effective mental health service delivery.

It is notable that many clinicians reported good access to mental health care providers and one quarter had a counselor or other mental health care provider affiliated with their practice at least 1 day per week. Thus, our sample may underestimate the challenges that many clinicians face in accessing mental health care for their patients.

Some limitations specific to our study include the outcomes of referral and follow-up visits within 6 months. First, the referral data reflect care delivery at the initial visit and may not have accounted for ongoing management decisions, treatment, or referral by clinicians after the initial visit. Also, the follow-up outcomes are based on parent recall and may not accurately reflect use of mental health services for the specific PSP identified by the primary care provider. Finally, respondents described completion of referral visits but items did not address the content of services or patient adherence to mental health care provider recommendations. Noncompliance with counseling, medications, or follow-up appointments is yet another challenge and can diminish effective receipt of services and affect long-term outcomes.

Primary care providers play a major role in the mental health system—many clinicians provide counseling and treatment within the primary care system. In addition, these providers serve as gatekeepers to determine access to specialty mental health care and can function as coordinators of mental health services and referrals. Although most patient encounters do not seem to be significantly influenced by patient demographics, clinician factors, or health care system barriers, the poor rate of follow-through with referrals demands attention. Future research must address the referral process as a key component in the long-term care of PSPs, which often requires the integration of multiple services through multiple providers. We must continue to work with families and serve their interests and needs but not leave the entire burden of traversing the complex mental health system to parents. Primary care providers and the health care system must assist families facing complex, chronic, and recurrent psychosocial conditions in children to improve the processes of care and ultimately—patient outcomes.
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REFERENCES


