Integrating Mental Health Services in Primary Care Continuity Clinics: A National CORNET Study

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Received for publication December 27, 2012; accepted July 8, 2013.

ABSTRACT

OBJECTIVE: To determine whether pediatric continuity clinics integrate mental health (MH) services into care delivery; and to determine whether the level of MH integration is related to access to MH services, types of MH screening performed, self-efficacy, satisfaction with referral sites, and communication with the primary care provider.

METHODS: Pediatric Residency Integrated Survey of Mental Health in Primary Care (PRISM_PC) is a newly designed cross-sectional, Web-based survey of continuity clinic directors participating in a national network of pediatric continuity clinics (CORNET). Definitions of MH models included integrated or nonintegrated MH models or traditional care. The survey included questions regarding access, screening that was performed at sites, comfort with MH management as well as provider satisfaction and communication with referral sites.

RESULTS: Seventy-eight percent (57 of 73) of CORNET site directors responded, representing input from 30% of US pediatric residency continuity programs. Thirty-five percent (n = 20) reported an integrated MH model while 65% (n = 37) reported a nonintegrated MH model. Seventy-nine percent screened for attention-deficit/hyperactivity disorder, 44% for behavioral-emotional issues, and 19% for pediatric depression. No differences were found in terms of screening or tools used on the basis of the level of MH integration. Those with integrated programs were more likely to have access to an on-site psychologist (P = .001) or psychiatrist (P = .006).

CONCLUSIONS: Directors from one-third of training programs surveyed reported some level of MH integration in their primary care teaching clinics. Future studies are needed to compare patient and resident education outcomes between integrated and nonintegrated sites.

KEYWORDS: continuity experience; CORNET; integrated health care; mental health care; pediatric residency education

ACADEMIC PEDIATRICS 2013;13:551–557

WHAT’S NEW

This survey of pediatric continuity clinic directors describes types of mental health (MH) integration in resident clinics, reported patient access to MH services, types of screening performed, comfort with patient management, satisfaction, and communication with referral sites.

OVER 20% OF school age children in the United States have a diagnosable mental condition. Mental health (MH) problems are more common in low socioeconomic populations.1 About 75% of all children with psychiatric disturbances are seen in primary care settings, and half of all visits involve concerns about behavioral, psychosocial, or emotional concerns.2 Yet more than 75% of children who are in need of these services do not receive them.2 The Surgeon General, the President’s Council, and the American Academy of Pediatrics have all documented this high prevalence of MH needs for America’s children as well as the gap between those who need and those who receive behavioral health treatment.3–5 Moreover, children with untreated MH disorders continue to have impairment as they approach adulthood and are at risk for increased use of medical care, higher rates of unemployment, and poverty.5

In contrast to the limited access for MH appointments, most children do receive pediatric primary medical care.6 The pediatric primary care setting is ideal for identifying, evaluating, and initiating MH services to children and adolescents, especially those children with common disorders such as attention-deficit/hyperactivity disorder (ADHD), anxiety, depression, sleep, and substance use disorders.7 However, many primary care practices do not feel comfortable identifying or treating these disorders routinely and perceive that their MH colleagues are either inaccessible or that families perceive societal stigmatization with MH care. Integrated mental/behavioral health care offers a possibility for eliminating many of the barriers of the fragmented system.8–10 Colocation of pediatric therapists, psychologists, and/or psychiatrists in primary care settings can further expand the range of services...
provided and conditions treated.\textsuperscript{11} MH integration allows consultation and evaluation at a time of engagement and crisis when parents are most receptive to the further assessment and interventions. This may increase access, because scheduled MH appointments at a later date are associated with over 50\% nonadherence (the so-called no-show rate).\textsuperscript{12,13}

Little is known about MH referral practices in pediatric resident continuity training. Even less is known regarding MH integration in pediatric training settings. Objectives of the survey were to determine whether pediatric continuity clinics integrate MH services into care delivery and to determine whether the level of MH integration is related to access to MH services, types of MH screening performed, self-efficacy, satisfaction with referral sites, and communication with the primary care provider.

METHODS

This Pediatric Residency Integrated Survey of Mental Health in Primary Care (PRISM\_PC) study was a newly designed cross-sectional Web-based survey of a convenience sample of continuity clinic directors within CORNET from January to June 2010. The survey was sent to the designated CORNET champion at each site, usually the continuity director, but the survey may have been completed by another knowledgeable faculty member at that site. Only one response from each training program was accepted. Responses were confidential but not anonymous. We obtained institutional review board approval at University of Colorado as an expedited protocol.

Recruitment was via e-mail with 2 presurvey notifications. A survey link was sent to all CORNET continuity directors, and 2 subsequent reminders were sent to members who had not completed the survey from the CORNET regional research chairs. We distributed cards with the survey link at the Pediatric Academic Societies meeting in Vancouver 2010. Amazon $10 e-mail gift certificates were sent to those who completed the survey as reimbursement for their time.

CORNET

Continuity clinic directors who were active members of the CORNET research network were recruited for this survey. CORNET is a national pediatric primary care practice-based research network that was established in 2002 and is a core function of the Academic Pediatric Association. The research goals of CORNET are threefold: to study 1) health and health care issues of children belonging to minority and underserved populations; 2) health care disparities; and 3) resident education. At the time of the survey, 73 pediatric training programs were enrolled in CORNET, which represented 30\% of all programs nationally.

SURVEY DESIGN AND ADMINISTRATION

The survey was developed jointly by authors who are faculty from the Department of Pediatrics (MB, AK) and the Department of Psychiatry (AT, BS) at the University of Colorado, Denver, and CORNET leadership (JRS and ND). It was piloted with approximately 10 providers. The survey was designed to address classification of programs into levels of MH integration, and determine referral patterns, access issues, communication, and satisfaction with MH care for pediatric patients as well as utilization of screening tools in these practices. The survey consisted of 85 questions in both categorical (yes/no) and Likert-type responses, 15 addressing staffing and clinic demographics (Appendix).

SURVEY DOMAINS

Demographic questions included type of academic medical center (private vs public), location (urban, suburban and rural), total clinic visits per year, types of visits, number of clinic sessions per resident, number of residents and preceptors who care for patients at each site, discipline of preceptors (psychiatry, behavior, and development), insurance, race/ethnicity, language of patients, didactic teaching lectures and sessions devoted to MH topics, and use of electronic medical record.

CLASSIFICATION OF SITES

Study participants were asked to choose 1 of 5 models of MH services in their setting, as follows.

INTEGRATED/COLLABORATIVE CARE

Colocation of developmental, behavioral and MH consultants or direct service providers available for consultation at the time of identification by the pediatric provider or point of care without the need for a return visit.

ENHANCED CARE

A model of care in which a pediatric behavioral/MH specialist has an office in the pediatric clinic setting that allows for easy referral but required a return visit to see the specialist.

PHONE CONSULTATION MODEL

A model of care in which a pediatric behavioral/MH specialist is available for phone consultation during the visit which provides guidance in evaluation and triage of these issues.

TRADITIONAL CARE

A model of care where pediatrics MH/behavioral care is provided by the pediatrician based on the provider’s comfort level and available resources—that is, some conditions treated and more complex conditions referred to local resources.

EXCLUSIVE REFERRAL

All MH care is referred to off-site resources.

The survey contained items that addressed patient access to on-site MH professionals including inquiries about availability of social workers, psychologists, behavior/developmental pediatricians, psychiatrists, or other MH professionals (eg, licensed practicing counselor). These
The continuity clinic director’s perception of the comfort level in providing MH services of preceptors and residents who practiced at their site was queried. These survey items assessed perceptions of comfort level in: 1) identifying, assessing, and providing education around MH and behavior, 2) routinely treating MH and behavioral issues, and 3) treating MH and behavioral issues in the face of known poor access to such care for patients. These questions were answered using a Likert scale from 1 to 4, with 1 = always true, 2 = usually true, 3 = rarely true, and 4 = never true.

For each type of MH facility to which the primary care provider might refer (eg, public/local health center, child adolescent psychiatry clinic, or other MH center), survey questions included types of referral practice, acceptance of referral with and without insurance, length of time until evaluation, usefulness as a referral source, helpfulness in treating the MH issues, satisfaction with referral site, and method of communication back to the provider about the MH visit. Responses also utilized a Likert scale from 1 to 4, with 1 = not helpful/useful, 2 = minimally helpful/useful, 3 = moderately helpful/useful, and 4 = significantly helpful/useful, as well as not aware/not sure.

**Statistical Analysis**

Descriptive statistics were compiled, and comparisons were made by the chi-square or Fisher’s exact tests for categorical variables, as appropriate. Continuous variables were analyzed by the Wilcoxon rank sum test as a result of their nonnormality. SAS version 9.2 was used for all analyses (SAS Institute, Cary, NC).

**Results**

Seventy-eight percent (57 of 73) of CORNET programs responded, representing 30% of US pediatric residency training programs.

The CORNET practice sites that participated were based in public academic centers (35%), private academic centers (36%), and other (9%) and included military, private nonacademic, and health care maintenance organizations. They are relatively large clinic sites with a median of almost 15,000 visits per year, a median of 10 preceptors per site, and a mean number of 34 categorical pediatric residents and 4 med-ped residents. Most patients receiving care have public insurance. Over 50% of programs have electronic medical records.
as in cases of known poor access to such care (Table 3). Integrated programs reported that they were responsible for identifying MH issues more frequently (100%) than nonintegrated programs (76%, \( P < .05 \)), but interestingly, they reported that it was less often their responsibility to “assess and provide education” (25% vs 56%) about MH issues once they were identified (\( P < .05 \)). No differences were found when integrated and nonintegrated programs were compared on treating MH issues in general or treating when patients had poor access to MH services.

**Referral Patterns**

Overall, 84% of the continuity directors stated they referred to community health centers, 84% to developmental/behavioral pediatric practice setting, and 81% to a child/adolescent psychiatry clinic. Generally, programs reported that it took 3 to 4 weeks for patients to be seen in the various settings, and they found most of these settings to be of moderate or significant usefulness for their patients. We found no differences in the referral practices when comparing integrated and nonintegrated programs or the acceptance of referral based on public or private insurance.

**Communication**

Communication varied across all sites, with clinic directors stating that community MH centers often reported communication back about patients only 28% of the time, most commonly as a written summary of the visit (26%) or a phone call only (2%); 4% answered “don’t know/unsure.” This finding did not vary by MH type (integrated or nonintegrated). Clinic directors reported that programs received communication most often from developmental/behavioral pediatrician practice settings in written form (77%).

**Satisfaction With Access**

As shown in Table 4, integrated programs reported more satisfaction with access for their patients to counseling and therapy services for 6- to 18-year-old schoolchildren (\( P = .03 \)). Other domains including access to early intervention, child psychiatry services for 6- to 18-year-olds (eg, medication evaluation and management), and pregnancy-related depression services demonstrated trends toward greater satisfaction in the integrated groups but were not statistically significant.

**Discussion**

To our knowledge, this study is the first description of MH practices in pediatric residency training programs as well as integrated MH pediatric training sites in the United States. We found that approximately one third of the programs responding to the survey have access to MH providers who are either integrated into the practice or

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### Table 1. Comparison of Characteristics of Participating CORNET Clinics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Nonintegrated Programs (n = 37, 65%)</th>
<th>Integrated Programs (n = 20, 35%)</th>
<th>( P ) Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of medical center</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public academic</td>
<td>56%</td>
<td>55%</td>
<td></td>
</tr>
<tr>
<td>Private academic</td>
<td>39%</td>
<td>30%</td>
<td>.45</td>
</tr>
<tr>
<td>Other*</td>
<td>6%</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>89%</td>
<td>95%</td>
<td></td>
</tr>
<tr>
<td>Suburban</td>
<td>9%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>3%</td>
<td>5%</td>
<td>.60†</td>
</tr>
<tr>
<td>Total number of clinic visits per year for program sites, median (range)</td>
<td>13,500 (3000–38,000)</td>
<td>18,500 (3500–30,000)</td>
<td>.46‡</td>
</tr>
<tr>
<td>Total number of health supervision visits per year for program sites, median (range)</td>
<td>6000 (1750–32,000)</td>
<td>8900 (1500–30,000)</td>
<td>.44‡</td>
</tr>
</tbody>
</table>

50% or more of clinic patients are...  

- Hispanic 26% 35% .47  
- White 29% 42% .35  
- African American 47% 37% .47  
- Private insurance 9% 0% .29†  
- Publicly insured 91% 100% .55†  
- Spanish-speaking 14% 15% .99†

*The “other” category in nonintegrated programs included 1 health care maintenance organization and 1 military medical center. The “other” category in integrated programs included 1 community medical center, 1 military medical center, and 1 private nonacademic center.  
†Fisher’s exact test.  
‡Wilcoxon test.

### Table 2. Comparison of Access to On-site Mental Health Providers According to Level of Integration of Mental Health Services

<table>
<thead>
<tr>
<th>Presence of:</th>
<th>Nonintegrated (n = 37)</th>
<th>Integrated (n = 20)</th>
<th>( P ) Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical social worker</td>
<td>31 (84%)</td>
<td>16 (80%)</td>
<td>.73*</td>
</tr>
<tr>
<td>On-site clinical or child psychologist</td>
<td>11 (30%)</td>
<td>15 (75%)</td>
<td>.001</td>
</tr>
<tr>
<td>Behavioral/developmental pediatrician</td>
<td>16 (43%)</td>
<td>9 (45%)</td>
<td>.90</td>
</tr>
<tr>
<td>Child psychiatrist</td>
<td>7 (19%)</td>
<td>11 (55%)</td>
<td>.006</td>
</tr>
</tbody>
</table>

*Fisher’s exact test.
are readily available for consultation, while two thirds reported engaging in traditional care with identification and external referrals that occur at a later time. Although MH integration has permeated the family medicine and internal medicine adult training programs in the United States, we are not aware of similar residency training surveys from these disciplines for discussion or comparison with the current pediatric survey (Benjamin Miller, personal communication, January 10, 2012).

Because MH and behavioral issues can be addressed within the integrated MH model, identification, diagnosis, assessment, and therapeutic processes are initiated within the clinic setting. If continued therapy is needed beyond initial consultations and follow-up visits, the patient and family may require referral to community resources for ongoing therapy and/or psychotropic medication management that is beyond the scope of the primary care context. In our survey, the main measurable difference between integrated and nonintegrated sites appears to be having on-site access to both a psychologist and psychiatrist. However, some integrated sites reported use of social workers and licensed counselors in this role. We had anticipated that nonintegrated sites would have a higher likelihood of developmental pediatrician on faculty or social worker performing that role, but we found no differences. As was described by Williams et al with the North Carolina model, access to MH services appears to be increased by colocation, but whether the quality of medical and MH care is improved is not yet known.\(^\text{14}\) As an example, on the basis of the authors’ experience of actual primary care practice in our respective settings, we anticipated positive associations with improved referral processes and communication for those MH sites that were integrated compared to nonintegrated sites. However, the current findings did not reveal a difference in referral processes or communication based on integration of MH services.

Thirty-five percent of programs that we surveyed reported having access to integrated MH services. Our results suggest that pediatric training programs have comfort in training residents to screen for and identify MH conditions but are less likely to train to assess and diagnose or to initiate treatment, even when they have access to integrated MH services. It may be that in the integrated model the integrated MH team takes over for the assessment and education portion. Our data also show that focused screening for both child and parental MH is still an emerging practice in these training settings. We were surprised that even in settings reporting integrated services, focused screening for MH issues is not yet common practice. Only the Vanderbilt tool for ADHD screening is routinely used. Even though our survey was completed before the publication of the American Academy of Pediatrics recommendations for screening for pregnancy-related depression\(^\text{15}\) and adolescent depression,\(^\text{16}\) we had anticipated that, at a minimum, postpartum depression screening of mothers attending clinic would be commonplace, particularly given the evidence demonstrating negative consequences of maternal depression on the child’s development and well-being.\(^\text{17}\)

One of the barriers to integrated mental/behavioral health care in the broader pediatric community has been the lack of exposure to models of this type of care during pediatric training and the mind-set, and commitment to creating a similar practice model in the community.\(^\text{18,19}\) With appropriate training and collaborative relationships, primary care pediatricians can be empowered to deliver MH services in the pediatric primary care setting.\(^\text{7,9,11}\) Most CORNET directors surveyed concurred with previous work that shows that pediatricians think it is their responsibility to identify and refer, but not treat, patients with MH disorders.\(^\text{20}\) Moreover, given the reported poor communication rates in this survey from external MH sources, practices should continue to move toward medical homes that include MH with care coordination. In a retrospective survey, Garfunkel et al reported that residents who learn in an integrated care environment are more likely to feel comfortable in future integrated care settings, but unlikely to feel more comfortable in their own competency.

### Table 3. Comfort With Mental Health Management for Preceptors

<table>
<thead>
<tr>
<th>In Terms of MH Issues, I Feel Responsible to:</th>
<th>Responded “Always True”</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Combined Total†</td>
<td>Nonintegrated</td>
<td>Integrated</td>
<td>(P) Value</td>
</tr>
<tr>
<td>Identify</td>
<td>84% (48/57)</td>
<td>76%</td>
<td>100%</td>
<td>.02*</td>
</tr>
<tr>
<td>Assess and provide education</td>
<td>45% (25/56)</td>
<td>56%</td>
<td>25%</td>
<td>.03</td>
</tr>
<tr>
<td>Treat</td>
<td>11% (6/57)</td>
<td>8%</td>
<td>15%</td>
<td>.65*</td>
</tr>
<tr>
<td>Treat when poor access</td>
<td>23% (13/57)</td>
<td>19%</td>
<td>30%</td>
<td>.51*</td>
</tr>
</tbody>
</table>

\*Fisher’s exact test.  
†Comparisons are between the proportion who responded “always true” vs responded “usually,” “rarely true,” or “never true.”

### Table 4. Comparison of Clinic Director Satisfaction With Referral Sources According to Level of Integration of Mental Health Services

<table>
<thead>
<tr>
<th>Very/Somewhat Satisfied for:</th>
<th>Nonintegrated, % (n) (n = 37)</th>
<th>Integrated, % (n) (n = 20)</th>
<th>(P) Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early intervention</td>
<td>81% (30)</td>
<td>90% (18)</td>
<td>.47*</td>
</tr>
<tr>
<td>Counseling 6–18 y</td>
<td>46% (17)</td>
<td>75% (15)</td>
<td>.03</td>
</tr>
<tr>
<td>Psychiatry 6–18 y</td>
<td>30% (11)</td>
<td>50% (10)</td>
<td>.13</td>
</tr>
<tr>
<td>Postpartum depression</td>
<td>38% (14)</td>
<td>60% (12)</td>
<td>.11</td>
</tr>
<tr>
<td>Parental mental health</td>
<td>31% (11)</td>
<td>30% (6)</td>
<td>.97</td>
</tr>
</tbody>
</table>

\*Fisher’s exact test.
in providing behavioral health care.\textsuperscript{17} We also found that being in an integrated training center improves comfort but does not necessarily facilitate resident competence in assessing and treating MH issues on their own.

This study’s strength is that we had a robust response rate to our survey and represented continuity sites from across the country. This was largely due to recruitment within the established and engaged CORNET network. As with many surveys, we were limited in that information was by self-report by continuity directors. We asked programs to choose which definition was closest to their model of MH care, and we are not able to discern why all integrated sites did not report an on-site psychologist or psychiatrist. It may be that they use a social worker or a counselor in this role. At the same time, some nonintegrated sites reported having an on-site psychologist/psychiatrist who may have been present but not accessible to the clinic; this was not clear. CORNET sites provide care to a higher proportion of publicly insured minority patients who have higher rates of MH issues. Hence, these results may not be generalizable to all community sites. Even with a high response rate, it is likely that the small sample size (one response from each site) precluded demonstrating statistically significant differences in the comparisons of integrated and nonintegrated programs, especially in the comparisons of satisfaction, which all trended toward higher satisfaction in programs with integrated care. Finally, using a single representative from each clinic site as a proxy for measuring “comfort with managing MH issues” is another potential weakness. Perhaps other preceptors are more or less comfortable than this particular individual answering the survey.

It appears that MH integration is in its early phases in terms of permeating pediatric resident clinics. Recently Leslie and others of the Residency Review and Redesign in Pediatrics (R\textsuperscript{3}P) have described the need to train pediatric residents to better handle MH and behavioral issues in their training.\textsuperscript{21,22} Future studies are needed to determine the impact of integrated MH care sites on resident education and resident competence in caring for these patients. Patient outcomes may also be affected in terms of stronger alliance with medical home, adherence to well-child visits, and immunizations—and even perhaps acute care utilization. It would also be valuable to determine whether there is better compliance with seeking MH services for those families in integrated programs. Families who have had exposure to colocated short-term counseling have started to see the benefits of the therapeutic process and would perhaps seem more likely to pursue longer-term treatment with an outside MH setting.

**ACKNOWLEDGMENTS**

We are grateful for funding for this study from M. Doug Jones, MD, University of Colorado, and from Children’s Outcomes Research. We also want to thank the participants who were CORNET continuity clinic directors.

**SUPPLEMENTARY DATA**

Supplementary data related to this article can be found online at http://dx.doi.org/10.1016/j.acap.2013.07.002.

**REFERENCES**


