



## Beyond ADHD: How Well Are We Doing?

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### ABSTRACT

**BACKGROUND AND OBJECTIVE:** There has been increasing emphasis on the role of the pediatrician with respect to behavioral, learning, and mental health (MH) issues, and developmental behavioral rotations are now required in pediatric residency programs. We sought to examine whether this newer emphasis on MH is reflected in pediatricians' reports of their current practices.

**METHODS:** Data from 2 periodic surveys conducted in 2004 and 2013 by the American Academy of Pediatrics were examined to see whether there were differences in self-reported behaviors of usually inquiring/screening, treating/managing/comanaging, or referring patients for attention-deficit/hyperactivity disorder (ADHD), anxiety, depression, behavioral problems, or learning problems. We examined patterns for all practicing members and for those who practiced general pediatrics exclusively.

**RESULTS:** There were few changes over the decade in the percentage who inquired or screened among all clinicians; among those exclusively practicing general pediatrics, the percentage

who inquired or screened increased about 10% for ADHD and depression. ADHD remained the only condition for which the majority of respondents treated/managed/comanaged (57%). While there was some increase in the percentages who treated other conditions, the other conditions were usually treated by <30% of respondents. A similar pattern of results was observed in analyses adjusted for physician, practice, and patient characteristics.

**CONCLUSIONS:** Despite the changing nature of pediatric practice and increased efforts to emphasize the importance of behavior, learning, and MH, the pediatric community appears to be making little progress toward providing for the long-term behavioral, learning, and MH needs of children and adolescents in its care.

**KEYWORDS:** ADHD; anxiety; behavior problems; depression; developmental behavioral pediatrics; learning problems; mental health; screening

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### WHAT'S NEW

In a 2004 survey, pediatricians indicated they should be responsible for identifying mental health (MH) issues, but they reported they did little to treat patients with these conditions except for attention-deficit/hyperactivity disorder (ADHD). Almost a decade later, there are few changes. Despite a 1½ to 2 times increase in the percentage who report treating, managing, or comanaging MH conditions, still less than 30% treat any MH problems except ADHD.

and mental health (MH) issues that are frequently seen in pediatric practice.<sup>1–3</sup> In the face of waning acute infectious diseases and increasing numbers of children with chronic physical health conditions, MH, behavioral, and learning issues have become central concerns for children and adolescents, both among those cared for by general pediatricians and among those with chronic conditions followed predominantly in subspecialty settings.

Recent epidemiologic studies suggest that behavioral, learning, and MH issues are now among the most common conditions that concern parents who present to primary care pediatricians' offices<sup>4</sup>; they also are the most frequent causes of disability, accounting for 3 of the 5 most frequent disabling conditions, ahead of even asthma.<sup>5</sup> It is also well documented that MH conditions are even more prevalent

FOR SEVERAL DECADES, senior pediatric leaders have expressed concern that pediatricians were getting inadequate training in the care of common behavioral, learning,

among the growing numbers of children and adolescents with chronic conditions affecting other body systems.<sup>6–8</sup> In the face of these epidemiologic and practice changes, it is important to understand the attitudes and actions of pediatricians towards the care of behavioral, learning, and MH issues over time.

Findings from the American Academy of Pediatrics (AAP) 59th Periodic Survey (PS) conducted in 2004 showed that less than 50% of pediatricians who practiced general pediatrics were providing MH and behavioral care to their child and adolescent patients with anxiety, depression, behavioral problems, and learning problems.<sup>9</sup> The only exception to this pattern was attention-deficit/hyperactivity disorder (ADHD), which the majority of pediatricians addressed in their practice and which had been heavily promoted by the AAP beginning with guidelines in 2001.<sup>10</sup> These findings were further supported by a subsequent AAP survey of graduating residents, which also found similarly low rates of reported care for MH issues among those most recently trained.<sup>11</sup>

Since 2004 there has been considerable emphasis on the need for pediatricians to address these issues. There is growing awareness of the familial nature and lifelong health implications of many MH and learning problems.<sup>12</sup> It is also increasingly clear that these conditions have long-term academic, employment, and functional implications for children, their families, and society.<sup>13–15</sup> A GuideLine for management of Adolescent Depression in Primary Care (GLAD-PC) that was widely endorsed by pediatric and MH organizations, including the AAP, was made available on the Internet.<sup>16,17</sup> Subsequently, the United States Preventive Services Task Force recommended universal screening of adolescents for depression in 2009 if adequate supports for diagnosis and treatment are available to care for identified problems.<sup>18</sup> Several states have also implemented payment incentives and/or requirements for some forms of MH screening, and the Mental Health Task force of the AAP,<sup>19</sup> as well as the widely disseminated *Bright Futures*,<sup>20,21</sup> have promoted far wider responsibilities for pediatricians. Additionally, since February 1997, the Residency Review Committee of the American Council for Graduate Medical Education has required all pediatrics residents to complete a developmental and behavioral pediatrics 1-month rotation. However, there are no data on what impact these changes in practice demands, policy recommendations, and training have had on actual pediatric practice.

The AAP's 85th PS, conducted in 2013, repeated many of the questions that originally appeared in the 2004 PS 59 and provided an opportunity to assess how pediatricians' practice behaviors have changed and whether there have been improvements in the percentage of pediatricians who reported identifying, treating, or comanaging behavioral MH. Previous data suggest that it may take as long as 1 to 2 decades for recommended changes to be adopted,<sup>22–24</sup> and enough time has now elapsed that we hoped to see some changes in pediatricians' self-reported behavior.

Our objective was to assess whether the increasing emphasis on the role of the pediatrician with respect to the care of patients with behavioral, learning, and MH issues is reflected in changes in the reported practices of pediatricians. We sought to examine their current practices with respect to usually identifying, treating/managing, and referring patients and to compare the responses across the 2 surveys.

## METHODS

Data come from the 2004 and 2013 AAP 59th and 85th PSs, each sent to a random sample of approximately 1600 of the >50,000 pediatricians who are nonretired US members of the AAP. The details of the surveys have been previously described.<sup>25,26</sup> In brief, beginning in March 2004, the PS 59 questionnaire was sent to 1600 members, with the final mailing in August 2004; 832 members (52.0%) responded. Between July and December 2013, the PS 85 questionnaire was sent to 1617 members, of whom 594 (36.7%) responded. Sample weights were created for each survey to ensure that the respondents were representative of the AAP membership and to minimize potential bias due to differential nonresponse. As previously described,<sup>25</sup> logistic regression was used to estimate the probability of responding to the survey, and auxiliary information available for both responders and nonresponders was included as predictors (age, sex, region). The sample weights were rescaled such that the mean was unity and the sum was equal to the analytic sample size for each survey. The analyses in this report were restricted to pediatricians who provide patient care, completed their residency training, and answered questions about inquiring, treating, and referring for 5 prevalent child/adolescent conditions (665 in 2004 and 478 in 2013).

### AAP PSs

The 2004 and 2013 PSs included sociodemographic questions, practice characteristics (eg, practice type, location), and experience with MH problems in their practices. Questions on self-reported behaviors were ascertained by asking clinicians how often (never, sometimes, or usually) they inquire, screen (ie, systematically use a formal instrument), treat/manage, and refer each of 5 conditions: ADHD, anxiety, depression, behavioral problems, and learning problems. In the 2013 sample we combined the responses on screening and inquiring because screening was not asked about in 2004. We assumed that most of those who were screening would have indicated that they were usually inquiring, if they had not had the option of indicating that they were screening. The data supported our assumption: in 2013 almost everyone who was screening was inquiring (78% to 88%), but not all who inquired reported they were screening (36% to 52%). We also combined the separate responses on child and adolescent depression in the 2013 sample, as they were not asked separately in the 2004 survey. Those 2013 respondents who reported "usually" for either the child or adolescent

question were coded as “usually inquiring” about depression. Additionally “comanage” was added to the question on how often respondents treat or manage each condition in the 2013 survey. In the analyses, we compared those who reported usually treating/managing in 2004 to those who usually treat/manage/comanage in 2013.

## ANALYSES

Weighted means and standard errors were used to summarize continuous measures and weighted percentages to describe categorical measures. For each of the 5 MH conditions, the weighted percentages of pediatricians reporting usually (vs sometimes or never) inquiring/screening, treating/managing, and referring in 2004 were compared to the weighted percentages in 2013 using the Rao-Scott chi-square test and weighted logistic regression analyses. We further examined these associations after adjusting for potential confounders (physician age, physician sex, physician race/ethnicity, region, practice location, type of practice, ambulatory visits per week, patient race/ethnicity, and patient insurance) using weighted multivariable logistic regression. The results are summarized using odds ratios and 95% confidence intervals, and statistical significance was set at  $P < .05$ . Analyses were performed using procedures appropriate for survey data in SAS 9.3 (SAS Institute, Cary, NC).

The primary analysis compared the responses of all practicing pediatricians in 2004 versus 2013, regardless of subspecialty. The decision to analyze the whole sample was based on 2 factors: the changes in subspecialty options over time with the introduction of board certification of developmental and behavioral pediatrics as a separate subspecialty in 2002, which shifted pediatricians who trained for <3 years from the category of subspecialists to generalist; and the growing data supporting the increased prevalence of MH and learning problems among children with chronic physical health conditions. Children with severe chronic physical health conditions are increasingly being followed in subspecialty settings, which may serve as their medical homes and thus would be required to provide or coordinate their comprehensive care and all their health care needs. Moreover, even when they do not serve as medical homes, subspecialists may actually have contact with patients far more often than the general pediatrician does. In secondary analyses, we also compared the responses in 2004 and 2013 among those practicing only general pediatrics.

## RESULTS

Compared to 2004, a smaller percentage of pediatricians in 2013 were male, in 1- to 2-person practices, and practicing general pediatrics (Table 1). A higher percentage saw <100 patients per week and reported that <80% of their patients had private insurance in 2013 compared to 2004. About 60% of pediatricians in 2004 and 2013 reported that they provided MH services to children and adolescents, and almost 90% had referred at least one patient in the previous year.

**Table 1.** Physician and Practice Characteristics, and MH Experiences by Survey Year (Weighted Percentages)

Characteristic	2004 (n = 655)	2013 (n = 478)	P
Physician			
Sex			.0016
Female	52.7%	62.1%	
Male	47.3%	37.9%	
Age, y (mean)	45.2 (0.4)	45.9 (0.5)	.2729
Race/ethnicity			.8771
White	71.6%	72.3%	
Asian	14.6%	13.5%	
Other/unknown	13.8%	14.2%	
Years in practice			.2196
1–4	27.4%	22.0%	
5–9	17.1%	17.2%	
10–19	26.5%	28.6%	
≥20	29.0%	32.2%	
Year completed residency training			<.0001
<1998	61.1%	42.5%	
≥1998	38.9%	57.5%	
Practice characteristics			
Area			.0097
Urban	43.2%	51.3%	
Suburban	43.1%	39.6%	
Rural	13.7%	9.1%	
Type of practice			.0002
1 or 2 physicians	15.8%	8.1%	
Pediatric group practice	37.2%	35.8%	
Multispecialty	11.0%	15.8%	
Other	36.0%	40.3%	
Time in general pediatrics			.0001
None (0%)	16.2%	25.4%	
Some (1% to 99%)	14.7%	9.2%	
Exclusively (100%)	69.1%	65.3%	
<100 ambulatory visits per week			<.0001
No	48.2%	26.0%	
Yes	51.8%	74.0%	
≥75% of patients are white			<.0001
No	68.9%	81.4%	
Yes	31.1%	18.6%	
Patient insurance			<.0001
<80% have private insurance	53.3%	63.3%	
≥80% have private insurance	29.8%	18.6%	
Unknown	26.9%	18.1%	
MH Experiences			
Physician provides MH treatment to children			.4091
No	36.7%	39.1%	
Yes	63.3%	60.9%	
Referred ≥1 child for MH treatment in past year			.0324
No	8.0%	11.8%	
Yes	92.0%	88.2%	

MH indicates mental health.

Among all respondents, the percentage usually inquiring in 2004 versus usually inquiring or screening in 2013 significantly decreased for both behavioral problems and learning disabilities, but did not significantly differ for the other 3 conditions in both unadjusted and adjusted analyses (Table 2). The percentage of pediatricians who reported usually treating, managing, or comanaging ADHD remained stable over time at 57%. For the other 4 conditions, although the percentage treating, managing, or comanaging significantly increased

**Table 2.** Unadjusted Weighted Percentages, and Unadjusted and Adjusted ORs for Inquiring, Treating, and Referring for Child Mental Health Problems: Physicians in 2013 Versus 2004 for All Clinicians (n = 655 in 2004; n = 478 in 2013)\*

Characteristic	Unadjusted Weighted %		Unadjusted			Adjusted†‡		
	2004	2013	OR	95% CI	P	OR	95% CI	P
ADHD								
Inquire or screen	63.5%	61.3%	0.91	0.70, 1.17	.4604	0.98	0.74, 1.31	.9128
Treat/manage/comanage	57.6%	57.3%	1.02	0.79, 1.31	.9033	1.22	0.91, 1.63	.1841
Refer	30.9%	21.1%	0.59	0.44, 0.79	.0004	0.51	0.39, 0.75	.0002
Child/adolescent depression†								
Inquire or screen	55.1%	60.0%	1.28	0.99, 1.64	.0582	1.31	0.99, 1.73	.0565
Treat/manage/comanage	17.5%	24.3%	1.63	1.20, 2.21	.0017	1.96	1.39, 2.77	.0001
Refer	68.6%	64.5%	0.80	0.61, 1.04	.0940	0.77	0.58, 1.03	.0809
Anxiety disorders								
Inquire or screen	46.7%	41.5%	0.82	0.64, 1.05	.1136	0.86	0.66, 1.13	.2773
Treat/manage/comanage	15.2%	20.4%	1.53	1.10, 2.11	.0106	1.74	1.21, 2.48	.0025
Refer	62.8%	49.2%	0.56	0.43, 0.72	<.0001	0.59	0.45, 0.78	.0001
Behavior management problems								
Inquire or screen	58.6%	49.2%	0.72	0.56, 0.92	.0083	0.75	0.57, 0.98	.0369
Treat/manage/comanage	13.6%	20.0%	1.64	1.18, 2.29	.0035	2.00	1.39, 2.88	.0002
Refer	64.6%	58.2%	0.75	0.58, 0.97	.0305	0.78	0.59, 1.03	.0747
Learning disabilities								
Inquire or screen	62.4%	51.4%	0.64	0.50, 0.82	.0004	0.64	0.49, 0.84	.0014
Treat/manage/comanage	7.9%	18.3%	2.76	1.86, 4.09	<.0001	2.83	1.85, 4.33	<.0001
Refer	78.7%	57.8%	0.35	0.27, 0.47	<.0001	0.38	0.28, 0.52	<.0001

OR indicates odds ratio; and ADHD, attention-deficit/hyperactivity disorder.

\*Inquire asked in both years, and screening was added in 2013. Treat/manage was asked in both years, and comanage was added in 2013.

ORs are for 2013 vs 2004.

†Child/adolescent depression asked in 1 question in 2004 and in 2 separate questions in 2013.

‡Models adjusted for physician age, sex, race/ethnicity, region, practice location, type of practice, ambulatory visits per week, patient race/ethnicity, and patient insurance.

between 2004 and 2013, the percentages who treated/managed or comanaged continued to be low, ranging from 18% to 24%. The percentage of pediatricians who usually refer ranged between 21% for ADHD to 65% for depression in 2013 and decreased significantly between 2004 and 2013 for ADHD, anxiety disorders, and learning disabilities in unadjusted analyses and after adjusting for potential confounders. For anxiety disorders and learning disabilities, the percentage decrease in referral was twice as large as the rise in treatment. In 2013, the percentage reporting usually treating or referring for each condition ranged from 63% (anxiety) to 75% (depression) (data not shown).

The results of secondary analyses comparing self-reported behaviors among pediatricians exclusively practicing general pediatrics are shown in Table 3. The percentage usually inquiring/screening was significantly higher in 2013 than 2004 for ADHD and depression, but not for the other 3 conditions. Consistent with the primary results, a greater percentage of physicians exclusively practicing general pediatrics in 2013 compared to 2004 reported usually treating/managing depression, anxiety, behavioral problems, and learning disabilities. Additionally, in this subsample, the percentage treating/managing ADHD was also significantly higher in 2013 compared to 2004. Also similar to the primary results, <30% of those exclusively practicing general pediatrics in 2013 reported usually treating, managing, or comanaging any other developmental or behavioral condition besides ADHD.

In 2013, 25% of all clinicians reported never treating/managing ADHD, and more than one third reported never treating/managing/comanaging each of the other conditions (Table 4). In the subsample of those exclusively practicing general pediatrics, 8% reported never treating/managing/comanaging ADHD, and 26% to 39% reported never treating/managing/comanaging each of the other conditions (Table 4).

## DISCUSSION

These data show that pediatricians do not commonly inquire about, treat, or refer 5 common behavioral, learning, and MH conditions, except for ADHD, which the majority treats. It is worrisome that there has been a decrease overall in inquiring about MH, which was unexpected in the face of new standards for screening of children and adolescents on a routine basis and the considerable emphasis on the importance of primary care specialties becoming involved in behavioral health. Although the percentage of pediatricians treating several MH conditions significantly increased between 2004 and 2013, the absolute percentages remain low. Taken together, these results suggest that progress toward the goal of providing MH care within the pediatric setting is slow and far from complete despite the changes in residency education and recommendations by the AAP and in *Bright Futures*.

We examined these patterns 2 ways: once for all the practicing respondents and then for the subset of clinicians

**Table 3.** Unadjusted Weighted Percentages, and Unadjusted and Adjusted ORs for Inquiring, Treating, and Referring for Child Mental Health Problems: Physicians in 2013 Versus 2004 for Physicians Exclusively Practicing General Pediatrics (n = 452 in 2004; n = 311 in 2013)\*

Characteristic	Unadjusted Weighted %		Unadjusted			Adjusted‡		
	2004	2013	OR	95% CI	P	OR	95% CI	P
<b>ADHD</b>								
Inquire or screen	67.4%	76.2%	1.47	1.05, 2.06	.0253	1.39	0.96, 2.02	.0851
Treat/manage/comanage	65.1%	75.0%	1.59	1.14, 2.21	.0059	1.77	1.23, 2.55	.0023
Refer	28.6%	18.7%	0.58	0.40, 0.83	.0033	0.58	0.39, 0.89	.0113
<b>Child/adolescent depression†</b>								
Inquire or screen	55.5%	67.7%	1.69	1.24, 2.31	.0010	1.67	1.17, 2.36	.0042
Treat/manage/comanage	14.0%	27.2%	2.47	1.70, 3.60	<.0001	3.11	2.02, 4.79	<.0001
Refer	72.8%	72.8%	0.98	0.69, 1.37	.8882	0.86	0.59, 1.26	.4478
<b>Anxiety disorders</b>								
Inquire or screen	47.5%	47.8%	0.99	0.73, 1.33	.9242	0.96	0.69, 1.33	.8020
Treat/manage/comanage	13.3%	21.5%	1.98	1.33, 2.94	.0008	2.26	1.44, 3.56	.0004
Refer	66.8%	58.1%	0.68	0.50, 0.93	.0170	0.70	0.50, 0.98	.0362
<b>Behavior management problems</b>								
Inquire or screen	61.0%	58.0%	0.90	0.66, 1.21	.4771	0.89	0.63, 1.24	.4803
Treat/manage/comanage	11.8%	21.1%	2.09	1.38, 3.15	.0004	2.73	1.72, 4.33	<.0001
Refer	67.8%	68.4%	1.02	0.74, 1.41	.9042	0.99	0.69, 1.41	.9459
<b>Learning disabilities</b>								
Inquire or screen	65.4%	61.3%	0.81	0.60, 1.11	.1931	0.75	0.53, 1.05	.0971
Treat/manage/comanage§	4.9%	20.4%	5.79	3.35, 10.02	<.0001	6.38	3.57, 11.42	<.0001
Refer	85.2%	67.7%	0.37	0.26, 0.53	<.0001	0.36	0.24, 0.54	<.0001

OR indicates odds ratio; and ADHD, attention-deficit/hyperactivity disorder.

\*Inquire asked in both years, and screening was added in 2013. Treat/manage asked in both years, and comanage was added in 2013. ORs are for 2013 vs 2004.

†Child/adolescent depression asked in 1 question in 2004 and in 2 separate questions in 2013.

‡Models adjusted for physician age, sex, race/ethnicity, region, practice location, type of practice, ambulatory visits per week, patient race/ethnicity, and patient insurance.

§Because of small event size, learning disabilities treat/manage outcome was adjusted for fewer physician/patient characteristics (physician age, race/ethnicity, type of practice; and patient race/ethnicity).

who practice general pediatrics exclusively. We believe these issues are relevant regardless of clinical specialty because of the high incidence of MH, behavioral, and learning problems among children with chronic physical conditions, many of whom consider their subspecialists to be their primary clinician or who might be seeing a variety of specialists. Many prior studies document the associations of individual chronic physical conditions with increased emotional morbidity, especially depression and anxiety,<sup>7,8,27</sup> and disturbances of many body systems have both dramatic and subtle effects on cognitive functioning and learning problems. Therefore, some

subspecialties recommend assessment of these domains as a routine component of subspecialty care for certain types of patients under their care (cf American Heart Association<sup>28</sup>), and others require MH and support staff on their teams of tertiary-care specialists (cf cancer centers, spina bifida centers). Providers need to identify and treat or comanage these issues, regardless of subspecialty. Additionally, emotional well-being and cognitive functioning also have major influences on adherence to treatment protocols and hence to the outcome of many chronic physical conditions.<sup>29,30</sup>

Although general pediatricians are doing more inquiring and screening for some conditions, the overall patterns are similar regardless of which sample is examined, with 27% or less of general pediatricians and <25% of all pediatricians usually treating, managing, or comanaging any condition other than ADHD. Even more disconcerting is the high percentage of pediatricians who report that they never treat, manage, or comanage these conditions. We expected that the addition of comanagement to the question on treatment and management in 2013 might have increased the percentages attending to behavioral, learning, and MH issues for 2 reasons. First, a colocation model that involves other professionals with MH expertise has been advocated as one method of addressing these needs in primary care.<sup>31</sup> Second, comanagement would be expected from pediatricians providing a medical home even for those whose behavioral, learning, and MH services are not colocated. Given the well-documented shortages of MH professionals

**Table 4.** Weighted Percentage of All Clinicians in 2013 and Those Exclusively Practicing General Pediatrics in 2013 Who Report Never Treating, Managing, or Comanaging Child/Adolescent Mental Health Problems

Never Treat, Manage, or Comanage	2013 Unadjusted Weighted%	
	All Clinicians (n = 478)	Clinicians Exclusively Practicing General Pediatrics (n = 311)
ADHD	24.8	8.2
Child/adolescent depression	34.8	25.9
Anxiety disorders	35.0	25.9
Behavioral management problems	42.4	33.4
Learning disabilities	48.1	39.1

ADHD indicates attention-deficit/hyperactivity disorder.

in most communities, as well as the current policy emphasis on integrating physical and MH care, one cannot help but be concerned about whether and where these children are receiving needed services.

To rule out the possibility that these findings were a reflection of changing workforce or practice characteristics, we adjusted the results for physician, practice, and patient characteristics. The results of the analyses adjusted for these potential confounders were similar to the unadjusted results, suggesting that the findings are not due to differences in the workforce or sample characteristics between 2004 and 2013.

Several limitations to this study are noted. These are cross-sectional studies and cannot assess causality. Additionally, although each survey was sent to a random sample of AAP members, it is possible that despite the adjustments in the multiple linear regressions, respondents differed in other unmeasured ways, a possibility increased by the suboptimal response rates in the surveys. However, these response rates are not unusual for surveys of physicians.<sup>32,33</sup> Analysis of AAP surveys shows<sup>34</sup> little response bias, and weighting for nonresponse would be expected to reduce potential bias. Further, because response rates tend to be highest among those most comfortable with a subject, these findings may overestimate pediatricians' level of involvement in inquiring/screening, treating, and referring common behavioral, learning, and MH conditions.<sup>35</sup> We would not expect that bias to be different across the 2 surveys. Further, these data are entirely based on self-reports, which are known to exaggerate behavior in the direction of giving socially desirable results. We would also note that no definitions of the terms (inquire, screen, treat, manage or comanage, or refer) were supplied in the survey, nor were there any definitions of the terms "usually" or "sometimes." However, these deficiencies were true for both surveys. There were also small differences in the wording of a few questions, which we have noted in the [Methods](#). Perhaps the most significant difference was the addition of "comanage" to the treatment category. We could not determine how much of the increase in treatment was due to the addition of comanagement in the 2013 sample; nor can we calculate the percentage who were treating without the inclusion of comanagement. Nevertheless, the percentages of those who treated, managed, or comanaged were quite disappointing.

Despite these limitations, we are able to draw some important conclusions. The overall findings in this report suggest that despite the changing nature of pediatric practice and the increased efforts to emphasize the importance of behavior, learning, and MH in primary care and specialty care of children with chronic conditions, the pediatric community as a whole does not appear to be making much progress toward providing for the long-term behavioral, learning, and MH needs of children and adolescents in its care. These findings differ significantly from a recent report by Olfson et al<sup>36</sup> that suggests that a higher percentage of children and adolescents are receiving MH services over time, and would indicate that the increase in receipt of MH services is from other MH providers but not from their

pediatricians. This suggests the need for rethinking ways to involve pediatricians in meeting these still vastly underserved MH needs of the child and adolescent population.

There was nothing in the data to inform us about solutions to the persistence of these disappointing practice patterns. It may be that improvements will take more time.<sup>23</sup> However, it is our opinion that a single month of exposure is not sufficient even to provide basic skills across the spectrum of developmental and behavioral pediatrics and that these issues, which are relevant to patients across contexts, need to be infused throughout residency, as recommended originally by Richmond<sup>37</sup> and more recently by one of us.<sup>38</sup> We would argue that major changes will also require paradigm shifts in the fundamental model of pediatrics and the incorporation of new paradigms, such as those outlined recently by Garner et al,<sup>39</sup> into all aspects of pediatric education. These paradigms emphasize the contextual nature of development and behavior and how they are incorporated into the individual's biology and become of central importance to long-term health and well-being. The implications of these changes for training are that MH issues are not an afterthought or discretionary add-on but rather a fundamental part of the responsibilities of the medical home, whether in primary care or in subspecialties. Furthermore, addressing these issues and decreasing their lifelong morbidities are critical ways for pediatrics to remain relevant in an era that increasingly focuses on prevention and value-added services. In the absence of this type of fundamental transformation and paradigm shift, we remain skeptical about whether a Band-Aid approach will work.

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## REFERENCES

1. Haggerty RJ, Friedman SB. History of developmental-behavioral pediatrics. *J Dev Behav Pediatr*. 2003;24:S1.
2. Task Force on Pediatric Education. *Future of Pediatric Education*. Evanston, Ill: American Academy of Pediatrics; 1978.
3. Leslie L, Rappo P, Abelson H, et al. Final report of the future of pediatric education II: Pediatric Generalists of the Future Workgroup. *Pediatrics*. 2000;106:1199–1223.
4. Blanchard LT, Gurja MJ, Blackman JA. Emotional, developmental, and behavioral health of American children and their families: a report from the 2003 National Survey of Children's Health. *Pediatrics*. 2006;117:e1202–e1212.
5. Halfon N, Houtrow A, Larson K, et al. The changing landscape of disability in childhood. *Future Child*. 2012;22:13–42.
6. Gortmaker SL, Walker DK, Weitzman M, et al. Chronic conditions, socioeconomic risks, and behavioral problems in children and adolescents. *Pediatrics*. 1990;85:267–276.
7. Hysing M, Elgen I, Gillberg C, et al. Chronic physical illness and mental health in children. Results from a large-scale population study. *J Child Psychol Psychiatry*. 2007;48:785–792.
8. Barlow JH, Ellard DR. The psychosocial well-being of children with chronic disease, their parents and siblings: an overview of the research evidence base. *Child Care Health Dev*. 2006;32:19–31.
9. Stein RE, Horwitz SM, Storfer-Isser A, et al. Do pediatricians think they are responsible for identification and management of child

- mental health problems? Results of the AAP Periodic Survey. *Ambul Pediatr.* 2008;8:11–17.
10. ADHD: clinical practice guideline for the diagnosis, evaluation, and treatment of attention-deficit/hyperactivity disorder in children and adolescents. *Pediatrics.* 2011;128:1–16.
  11. Horwitz SM, Caspary G, Storfer-Isser A, et al. Is developmental and behavioral pediatrics training related to perceived responsibility for treating mental health problems? *Acad Pediatr.* 2010;10:252–259.
  12. Shonkoff JP, Garner AS. The lifelong effects of early childhood adversity and toxic stress. *Pediatrics.* 2012;129:e232–e246.
  13. Shonkoff JP, Phillips D, et al., National Research Council. *From Neurons to Neighborhoods: The Science of Early Childhood Development.* Washington, DC: National Academies Press; 2000:588.
  14. Kuh D, Ben-Shlomo Y. *A Life Course Approach to Chronic Disease Epidemiology.* 2nd ed. New York, NY: Oxford University Press; 2004:473.
  15. Report of the Surgeon Generals Conference on Children's Mental Health: a national action agenda. *Am J Health Educ.* 2001;32:179–182.
  16. Zuckerbrot R, Cheung A, Jensen PS, et al., GLAD PC Steering Group. Guidelines for Adolescent Depression in Primary Care (GLAD-PC): part I—identification, assessment, and initial management. *Pediatrics.* 2007;120:e1299–e1312.
  17. Cheung A, Zuckerbrot RA, Jensen PS, et al., GLAD-PC Steering Group. Guidelines for Adolescent Depression in Primary Care (GLAD-PC): part II—treatment and ongoing management. *Pediatrics.* 2007;120:e1313–e1326.
  18. US Preventive Services Task Force. *Depression in children and adolescents: screening.* Available at: <http://www.uspreventiveservice.org/Page/Document/UpdateSummaryFinal/depression-in-children-and-adolescents-screening?ds=1&s=adolescent%20depression>. Accessed September 18, 2015.
  19. American Academy of Pediatrics. Policy statement—The future of pediatrics: mental health competencies for pediatric primary care. *Pediatrics.* 2009;124:410–421.
  20. Knight JR, Frazer C, Emans SJ, eds. *Bright Futures Case Studies for Primary Care Clinicians: Child Development and Behavior.* Boston, Mass: Bright Futures Center for Education in Child Growth and Development, Behavior and Adolescent Health; 2001.
  21. Hagen JF, Shaw JS, Duncan PM. *Guidelines for Health Supervision of Infants Children and Adolescents.* 3rd ed. Elk Grove Village, Ill: American Academy of Pediatrics; 2008.
  22. Agency for Healthcare Research and Quality. Translating research into practice (TRIP)—II. Available at: <http://archive.ahrq.gov/research/findings/factsheets/translating/tripfac/trip2fac.pdf>. Accessed August 24, 2015.
  23. Morris ZS, Wooding S, Grant J. The answer is 17 years, what is the question: understanding time lags in translational research. *J R Soc Med.* 2011;104:510–520.
  24. Vale CL, Ryzewska LHM, Rovers MM, et al., Cochrane IPD Meta-analysis Methods Group. Uptake of systematic reviews and meta-analyses based on individual participant data in clinical practice guidelines: descriptive study. *BMJ.* 2015;350:h1088.
  25. Horwitz SM, Kelleher KJ, Stein REK, et al. Barriers to the identification and management of psychosocial issues in children and maternal depression. *Pediatrics.* 2007;119:e208–e218.
  26. Horwitz SM, Storfer-Isser A, Kerker BD, et al. Barriers to the identification and management of psychosocial problems: changes from 2004 to 2013. *Acad Pediatr.* 2015;15:613–620.
  27. HealthyChildren.org. *Children with chronic illness: dealing with emotional problems and depression.* Available at: <http://www.healthychildren.org/English/health-issues/conditions/chronic/Pages/Children-with-Chronic-Illness-Dealing-with-Emotional-Problems-and-Depression.aspx>; August 20, 2015. Accessed March 20, 2015.
  28. Marino BS, Lipkin PH, Newburger JW, et al, American Heart Association Congenital Heart Defects Committee of the Council on Cardiovascular Disease in the Young, Council on Cardiovascular Nursing, Stroke Council. Neurodevelopmental outcomes in children with congenital heart disease: evaluation and management a scientific statement from the American Heart Association. *Circulation.* 2012;126:1143–1172.
  29. DiMatteo M, Lepper HS, Croghan TW. Depression is a risk factor for noncompliance with medical treatment: meta-analysis of the effects of anxiety and depression on patient adherence. *Arch Intern Med.* 2000;160:2101–2107.
  30. Well CM, Wade SL, Bauman LJ, et al. The relationship between psychosocial factors and asthma morbidity in inner-city children with asthma. *Pediatrics.* 1997;104:1274–1280.
  31. American Academy of Pediatrics. *Strategies for System Change in Children's Mental Health: A Chapter Action Kit.* Elk Grove Ill: American Academy of Pediatrics; 2007.
  32. Asch DA, Jedrzejewski MK, Christakis NA. Response rates to mail surveys published in medical journals. *J Clin Epidemiol.* 1997;50:1129–1136.
  33. Cummings SM, Savitz LA, Konrad TR. Reported response rates to mailed physician questionnaires. *Health Serv Res.* 2001;35:1347.
  34. Cull WL, O'Connor KG, Sharp S, et al. Response rates and response bias for 50 surveys of pediatricians. *Health Serv Res.* 2005;40:213–226.
  35. Groves RM, Presser S, Dipko S. The role of topic interest in survey participation decisions. *Public Opin Q.* 2004;68:2–31.
  36. Olfson M, Druss BG, Marcus SC. Trends in mental health care among children and adolescents. *N Engl J Med.* 2015;372:2029–2038.
  37. Richmond JB. Child development: a basic science for pediatrics. *Pediatrics.* 1967;39:649–658.
  38. Stein REK. Are we on the right track? Examining the role of developmental behavioral pediatrics. *Pediatrics.* 2015;135:589–591.
  39. Garner AS, Forkey H, Szilagyi M. Translating developmental science to address childhood adversity. *Acad Pediatr.* 2015;15:493–502.