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General Pediatricians' Views on Allocating More Time in Primary Care Practice to Children with Special Health Care Needs: Results from a National Survey

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ABSTRACT

Objective. To describe the proportion, characteristics, and attitudes of pediatricians who want to allocate more time in primary care to children with special health care needs (CSHCN).

Methods. Data from a national random sample mail survey of 1000 pediatricians were used to examine attitudes towards allocating more time to CSHCN, and associated preferences towards changes to primary care.

Results. Sixty percent (n=502) of eligible subjects participated. Forty-five percent of pediatricians reported that, if they could redesign their practices to maximize efficiency and effectiveness, they would allocate more time to providing care to CSHCN. After multivariate adjustment, respondents who wanted to allocate more time to CSHCN were more likely to want to allocate more time to care coordination with staff (OR 3.6[1.7-7.4, $p \leq 0.001$]) and non-visit communication with parents (OR 3.0[1.7-5.5], $p \leq 0.001$), and were more likely to prefer delegation of well-child care services to non-physicians (OR 5.9[2.8-12.5], $p \leq 0.001$). Inadequate reimbursement was reported as the most important obstacle to implementing such changes in their practices.

Conclusions. These findings suggest that a substantial number of pediatricians would ideally allocate more time in primary care to CSHCN. Systems of care that could support such a change should be investigated.

Children with special health care needs (CSHCN) make up a significant and expanding proportion of the pediatric population in the United States; it has been estimated that approximately 13%-18% of US children have special health care needs.[1-3] These children have numerous unmet needs in primary and specialty care.[2, 4-9] Most pediatricians report that they or someone in their office provides care coordination services to CSHCN, but fewer than half provide specific coordination services, including contacting the child's school, coordinating care with other providers, and addressing non-medical family needs.[10] Pediatricians most often cite lack of time as the most important barrier to providing these types of care coordination services.[10]

We previously reported results from a national survey of pediatricians showing that a majority of pediatricians thought that non-physicians should serve as the primary providers of most well-child care (WCC) services for healthy children.[11] Since over one-quarter of general pediatric visits are for WCC,[12] it is presumable that if such a change did occur, pediatricians could devote more time to caring for CSHCN. It is widely accepted that CSHCN require comprehensive, coordinated care through a medical home.[13] Although researchers have proposed and studied several ways to redesign WCC and primary care in general,[14-17] we are not aware of any published, empirical data on pediatricians' views on allocating more time in outpatient pediatric primary care to the care of CSHCN.

We used data from a national survey of pediatricians to describe the proportion and practice preferences of pediatricians who want to allocate more of their primary care time to CSHCN. We hypothesized that pediatricians who want to allocate more time to CSHCN would also want to allocate more time to care coordination and non-visit

communication with parents, and would want to allocate less time to providing WCC services to healthy children. We reasoned that examining pediatricians' attitudes toward practice changes might help to inform efforts to better provide the comprehensive and coordinated care required by children with special health care needs.

METHODS

Subjects and Design

Our methods have been previously described.[11] Briefly, we utilized a random sample of 1000 pediatricians from the American Medical Association (AMA) 2005 Masterfile of office and hospital-based pediatricians. This sample was selected from a list of pediatricians who chose pediatrics as their primary specialty, completed training, and were less than 70 years old (n=42,593). The survey was mailed in August 2005, followed by two additional mailings 6-8 weeks apart to non-respondents. As an incentive, all respondents were entered in a drawing for a $1000 prize. Due to financial constraints, a $5 cash incentive was included only in the third mailing. Subjects were considered ineligible if they had an undeliverable address or did not practice general pediatrics. The study was approved by the University of Chicago Institutional Review Board.

Survey Instrument

Since there were no previous surveys to address our research question, we compiled an advisory board of 6 pediatricians in academic and community pediatrics to help with development of a new survey. This advisory board met for two 2-hour sessions to discuss possible improvements to primary care pediatrics, such as time allocation, recommended changes, and obstacles to practice redesign. The survey was written with

input from the advisory board. In order to improve the reliability and validity of the survey, it was reviewed with experts in survey design, revised, and then pre-tested with 15 practicing general pediatricians as well as the 6 advisory board members. After the pre-test, we revised question wording and ordering, as well as response scales. The data analyzed here include items examining ideal time allocation, ideal providers of WCC, and obstacles to change.

We asked respondents to think of a recent outpatient clinical day, and then asked, "If you could reallocate your time, how much more or less time would you spend on each of the following activities in primary care, with a goal of maximizing effectiveness and efficiency?" Respondents could answer that they would spend more time, about the same amount of time, or less time on each of the 7 primary care activities. Respondents were asked to assume that their income would remain the same, regardless of their responses.

There have been multiple ways to define CSHCN [18]; the Maternal and Child Health Bureau (MCHB) defines this group as children "who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally." [19] In order to obtain information on pediatricians' views toward this broad population of children, we asked respondents about "children with chronic diseases and special health care needs," referred to henceforth as CSHCN.

We hypothesized that some respondents may think that their role should focus on care for CSHCN, while non-physicians provide most of the routine preventive care services to healthy children. We asked respondents to report which type of providers should ideally provide each of 4 WCC services (anticipatory guidance, developmental screening,

psychosocial screening, and physical examination) to healthy children; respondents could select pediatricians, nurse practitioners, physician assistants, registered nurses, medical assistants, or other staff. The results were dichotomized into physicians and non-physician providers. Lastly, respondents were asked to rate obstacles they faced in changing their current way of providing primary care. They were given a list of 8 obstacles to primary care practice redesign in general, and could answer that each was a big obstacle, a small obstacle, or not an obstacle.

Statistical Methods

We used Chi-square and t-tests to examine differences between respondent and non-respondent characteristics using data from the AMA Masterfile. We then used descriptive statistics to describe respondents' personal and practice characteristics, and their attitudes toward ideal time allocation for 7 different primary care activities. Since care for CSHCN was the only task that a significant proportion of respondents wanted to allocate more time, we examined this group of pediatricians more closely. We used Chi-square and t-tests to compare the characteristics and attitudes of respondents choosing to allocate more time to CSHCN with respondents who chose to allocate less or the same amount of time to CSHCN. The attitudes examined were: 1) allocation of more time to other primary care activities, 2) ideal WCC provider type, and 3) obstacles to change. These attitudes toward primary care were the primary outcome variables, and respondents' choice to allocate more time to CSHCN was the main predictor variable.

Lastly, we used multivariate logistic regression to examine how preferences about time allocation for CSHCN were associated with these attitudinal outcomes, controlling for potentially confounding covariates. We conducted separate regressions for each

outcome. In our analyses, we adjusted for respondent characteristics that we hypothesized may be associated with physician attitudes regarding time allocation for CSHCN and other primary care tasks. These include personal characteristics for age (categorized into 4 groups; 27-40, 41-50, 51-60, and 61-70), gender, and pediatric board certification. Practice characteristics included the reported percentage of patients with Medicaid insurance (<25% and ≥ 25%), the number of nurse practitioners or physician assistants (0 and ≥1), the percentage of current time in a clinical day spent caring for CSHCN (<15% and ≥15% of a clinical work day), and the percentage of income from productivity-based measures (<50% and ≥50%), as opposed to salary. Lastly, we included the respondent rating of our current system of primary care, described as a system where the physician is the primary provider of care with some support from nurses and other staff. Respondents rated how well the system works for providing chronic illness management (excellent-good and fair-poor).

RESULTS

Respondent Characteristics

Seventeen percent of the subjects were ineligible due to an undeliverable address (n=84), or because they reported that they did not provide primary care (n=84). Our adjusted response rate was 60%, with 502 of 833 eligible subjects completing a survey (32% after the first mailing, 10% after the second, and 18% after the third). There were no statistically significant differences between respondents and non-respondents with regards to gender, age, time since residency completion, and practice type. However, respondents were more likely to be board certified than the non-respondents (Table 1).

These differences between respondents and non-respondents were similar when including the ineligible subjects as well.

Respondent characteristics are described in Table 1; 66% were white, 47% were male, and the majority worked in group or solo practices (91%) in urban and suburban settings (88%). Ninety-three percent rated our current system as excellent or good for providing chronic illness management, and respondents reported that they spent a mean of 13% (±1%) of their clinical day providing care to CSHCN (Table 1).

Ideal Time Allocation

Table 1 describes respondents' reported ideal time allocation in primary care. Across the seven tasks examined, most physicians (50%-70%) reported that they would not change the amount of time on the task. However, many reported that they would spend less time communicating by phone/email with parents about acute care issues (41%) and about chronic illness and preventive services (31%). Thirty-five percent wanted to spend less time coordinating patient care with outside providers, and 21% wanted to spend less time coordinating patient care with staff. Forty-five percent reported that they would ideally spend more time providing care to CSHCN, while only 4% reported they would ideally spend less time on this task.

We then analyzed the differences between respondents who wanted to allocate more time to CSHCN and those who did not. There were no significant differences between these two groups of respondents in personal or practice characteristics (Data not shown). There were significant differences in preferences for ideal time allocation. Respondents who wanted to allocate more time to CSHCN were more likely to want to allocate more time to the sorts of activities that would make such care possible, i.e. to parent

communication by phone/email about chronic illness or preventive care (OR 3.0, [1.7-5.5], p<0.001) and to coordinating care with staff (OR 3.6 [1.7-7.4] p=0.001) and outside providers (OR 8.7 [3.2-23.5] p<0.001) (Table 2).

Ideal Provider Type for WCC

Respondents who wanted to allocate more time to CSHCN were more likely to report non-physicians as ideal providers for each of 4 WCC services; these were anticipatory guidance (OR 2.3 [1.5-3.6], p<0.001), developmental screening (OR 1.9 [1.3-2.9], p=0.003), psychosocial screening (OR 2.3 [1.4-5.5], p<0.001), and physical examination (OR 2.8 [1.7-4.7], p<0.001). The odds of reporting that non-physicians should provide all WCC services to healthy children were 6 times greater for respondents wanting to allocate more time to CSHCN (Table 3).

Obstacles to Change

A majority of respondents rated the following as "big obstacles" to changing their current practices: lack of reimbursement for some primary care services provided by the pediatrician (rated as a "big obstacle to change" by 66% of respondents), lack of reimbursement for services provided by other staff (58%), parent preference to see the pediatrician at each visit (63%), and insufficient funds to hire adequate office staff (58%). Other obstacles less frequently rated as important barriers to change were: lack of time to implement a new system (39%), inadequately trained office staff (32%), and disagreement between practice partners on how to change (17%). There were no significant differences in the ratings of these obstacles between respondents who wanted more time for CSHCN and those who did not (Data not shown).

DISCUSSION

In this national survey of pediatricians, a majority of respondents, for each of 7 primary care tasks, reported that they would not change their current time allocation. However, a large group (45%) of respondents reported that they would like to allocate more of their time in primary care to CSHCN. This group of pediatricians was more likely to think that more time should be allocated for care coordination, and that non-physicians should provide all WCC services to young children.

CSHCN represent between 13%-18% of children under the age of 18, [1-3] and many have unmet healthcare needs, both in routine and subspecialty care.[2, 4-6] Care coordination is an essential element of the medical home, especially for CSHCN who have more complex care needs.[13, 20] However, in a national survey of pediatricians, most reported that they do not consistently provide specific care coordination services.[10] Respondents who wanted to allocate more time to CSHCN seemed to understand that this would require more time communicating by phone/email with parents about chronic illness and preventive services, and care coordinating activities with staff and other providers. However, there was still only a small minority of respondents who chose to increase time allocation for these activities. Although we asked respondents to assume that their income would not change based on their responses, we hypothesize that one reason why respondents did not want to increase time allocation for care coordination and phone/email communication was because these are generally poorly reimbursed services. In order for busy pediatric practices to devote more time to CSHCN, we will need to develop mechanisms to finance these often poorly reimbursed but important activities.[21] Lack of adequate reimbursement for services provided by the pediatrician was the most

important obstacle to change for respondents wanting to allocate more time to CSHCN, as well as those who did not.

If pediatricians were to devote more time in primary care to CSHCN, where would this time come from? One option would be to delegate many routine WCC services, including developmental screening and anticipatory guidance, to non-physician providers, including nurses and other staff. However, there is some evidence that non-physicians may not provide some aspects of primary care to the same extent as pediatricians. A recent study found that non-physicians were less likely to provide counseling about healthy behaviors when compared with pediatricians.[22] We need further research to more completely assess the quality of primary care provided by non-physicians. Other options could include developing a pediatric subspecialty board in the care of CSHCN or special certifications for primary care providers in the care of CSHCN. These options might foster those pediatricians who want to focus on CSHCN, while differentiating their work from that of pediatricians whose focus is routine WCC.

Our finding that 45% of respondents wanted to spend more time on CSHCN seems to contradict our finding that 93% rated our current system as excellent or good for providing chronic care services. We do not have data to explain this apparent contradiction; however, there may be some possible explanations. First, it could be that respondents were satisfied with the current system for providing care for CSHCN, but were less satisfied with the proportion of their time spent caring for this population, as well as the related time spent on care coordination. Second, social desirability bias may have influenced the initial high ratings of the system of care, since later in the survey respondents identified areas of improvements when asked about specific changes to the

current system of care. Finally, the order of questions in the survey may have been a factor; respondents rated the system of primary care and components early in the survey, and were later asked about ideal time allocation as a part of several queries about specific changes to care.

Although this analysis focused on pediatricians who wanted to allocate more time to CSHCN, the respondents reported several other attitudes towards time allocation in primary care. First, many wanted to spend less time communicating with parents outside of the patient visit about acute care issues (41%) or chronic and preventive care issues (31%), and many wanted to spend less time on care coordination activities with outside providers (35%) and with staff (21%). Our findings suggest considerable heterogeneity in pediatricians' preferences toward primary care practice time allocation. As reflected in the wide variation in proposals for the redesign of primary care in the literature,[14-16, 23, 24] there is likely not a "one-size fits all" model for primary care practice, but several different ways to model a new system of pediatric primary care.

This study has limitations. First, we reported an adjusted response rate of 60%. Although this is a relatively low response rate, it is similar to other physician surveys.[25] Additionally, our findings may be influenced by non-response bias. Respondent and non-respondent characteristics were, however, generally similar, except that our respondents were more likely to be board certified. Second, the survey questions were theoretical and may not reflect the decisions that doctors actually make. Our findings describe what pediatricians think might be an ideal way to allocate their time in primary care, despite the obstacles they might face in doing so. Third, in order to reduce the complexity and length of the survey, we did not ask respondents to quantify their idealized changes to

time allocation, or to explain how they would structure a change in time allocation. Finally, we did not provide a standardized definition of CSHCN or focus on children with specific conditions, so our results should be taken to reflect subjects' general views regarding a broad yet not precisely defined population of children.

Even with these limitations, our findings have implications for primary care practice and for research in the area of primary care practice redesign. First, a substantial number of pediatricians may want to devote more time to CSHCN. Further investigations are needed of the obstacles that pediatricians may face in implementing these changes to their practices, especially as it relates to reimbursement of care coordination activities and non-visit parent communication. Next, an examination of how healthcare market changes affect pediatricians' preferences might explain some of the heterogeneity we observed in preferences for time allocation. Future research efforts in this area should also examine these changes to primary care practice as presented in comprehensive models for primary care practice redesign instead of as single, isolated changes. Our findings suggest that one of these new models for primary care may be one in which the general pediatrician allocates a greater proportion of practice time to providing comprehensive and coordinated care to CSHCN.

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Table 1. Respondent and Non-Respondent Characteristics

Personal and Practice Characteristics	Respondents (*n*=502)	Non-Respondents (*n*=331)
Gender, male, %	47	45
Age, mean ± SD, y	49 ± 9.4	48 ± 10.0
Time since residency completion, mean ± SD, y	17 ± 10.0	16 ± 9.5
Pediatric board certification, %	93	85*
Present Employment, %		
Group practice	79	79
Solo practice	12	11
Health maintenance organization	1	1
Government	3	4
Hospital based	3	5
Other	1	1
Practice Location, %		
Urban	32	---
Suburban	56	---
Rural	12	---
Physician Race, %		
White or Caucasian	66	---
Black or African-American	5	---
Latino or Hispanic	4	---
South Asian or East Asian	22	---
Native American or Alaskan Native	0	---
Other	3	---
≥25% of patients with Medicaid insurance, %	50	---
≥1 nurse practitioners or physician assistants, %	51	---
≥50% of work income from productivity-based measures, %	48	---
Rated chronic care as excellent/good, %	93	---
Current time caring for CSHCN, % of average clinical day ± SD	13 ± 1	---

*p≤0.001

Table 2. Respondent report of ideal time allocation in primary care (n=485)

Primary care task	Would spend more time, %	Would not change amount of time, %	Would spend less time, %
Providing care for children with chronic diseases and/or special health care needs	45	51	4
Seeing healthy children for check-ups	18	67	14
Communicating by phone/email with parents about chronic illnesses or preventive services	16	53	31
Providing care for children with acute minor illnesses	10	70	20
Coordinating patient care with staff	10	69	21
Coordinating patient care with outside providers	9	56	35
Communicating by phone/email with parents about acute issues	9	50	41

Table 3. Ideal time allocation for respondents who want to allocate more time to CSHCN (n=484)

More time on the following primary care tasks	Less/Same CSHCN Time (%)	More CSHCN Time (%)	OR† (95% CI)
Communicating by phone/email with parents about chronic illnesses or preventive services	9	25	3.0 (1.7-5.5)*
Communicating by phone/email with parents about acute issues	7	10	1.4 (0.7-2.8)
Coordinating patient care with staff	6	16	3.6 (1.7-7.4)*
Coordinating patient care with outside providers	2	17	8.7 (3.2-23.5)*
Providing care for children with acute minor illnesses	9	11	0.8 (0.4-1.6)
Seeing healthy children for check-ups	17	19	0.9 (0.5-1.6)

*p≤0.001; †Covariates are respondent gender, age, board certification status, reported proportion of patients with Medicaid insurance, number of nurses or physician assistants in the practice, rating of chronic illness management, proportion of time currently spent providing care for CSHCN, and proportion of work income from productivity-based payments.

Table 4. I**deal well child care providers for respondents who want to allocate more time to children with special health care needs (CSHCN) (n=478)**

Non-physicians should provide the following well-child care services	Less/Same CSHCN Time (%)	More CSHCN Time (%)	Odds Ratio† (95% confidence interval)
Anticipatory guidance	48	68	2.3 (1.5-3.6)**
Developmental screening	48	62	1.9 (1.3-2.9)*
Psychosocial screening	55	67	2.3 (1.4-5.5)**
Physical exam	17	32	2.8 (1.7-4.7)**
All well-child care services (all 4 services above)	6	23	5.9 (2.8-12.5)**

*p≤0.01; **p≤0.001; †Covariates are respondent gender, age, board certification status, reported proportion of patients with Medicaid insurance, number of nurses or physician assistants in the practice, rating of chronic illness management, proportion of time currently spent providing care for CSHCN, and proportion of work income from productivity-based payments.