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Medical Home Disparities between Children with Public and Private Insurance

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Abstract

Objectives—To compare the prevalence of a medical home for children with public versus private insurance and identify components of the medical home that contribute to any differences.

Methods—We performed a secondary data analysis of the 2007 National Survey of Children's Health. A medical home was defined as meeting each of 5 components: 1) usual source of care; 2) personal doctor/nurse; 3) family-centered care; 4) care coordination, if needed; and 5) no problems getting a referral, if needed. We estimated the national prevalence of the medical home and its components for children with public versus private insurance. Comparisons were made using logistic regression, unadjusted and adjusted for sociodemographic factors.

Results—67% of privately-insured children met all 5 components of the medical home, compared with only 45% of publicly-insured children ($p < .001$). The gap in medical home prevalence between public and private groups remained significant after controlling for sociodemographic characteristics (public vs. private adjusted odds ratio [AOR]: 0.82 [95% CI 0.73 – 0.92]). Over 90% of children in both groups reported having a usual source of care and a personal doctor/nurse. Only 58% of publicly-insured children reported family-centered care, compared with 76% of privately-insured children ($p < 0.001$). This difference was significant after adjustment for sociodemographic characteristics (public vs. private AOR: 0.90 [95% CI 0.77 – 0.99]).

Conclusions—Significant medical home disparities exist between publicly- and privately-insured children, driven primarily by disparities in family-centered care. Efforts to promote the medical home must recognize and address determinants of family-centered care.

Keywords

medical home; family-centered care; public insurance; National Survey of Children's Health

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Introduction

As defined by the American Academy of Pediatrics (AAP), the medical home is a source of primary care that is “accessible, continuous, comprehensive, family centered, coordinated, compassionate, and culturally effective.”¹ The AAP promotes the medical home as a model of primary care for all children,¹ and the concept has garnered substantial attention from patient groups, corporations, private insurers, and state and federal governments.² A growing number of state-level medical home projects are sponsored by public, private, and mixed payers and are intended to improve care for all enrolled children.^{3,4} Such efforts extend the medical home concept beyond children with special health care needs (CSHCN), for whom the medical home concept has been most intensively studied,^{5–11} to the broader population of all children seeking primary care.

Prior medical home studies have primarily focused on differences between children with versus without insurance.^{7, 10–13} However, there are compelling reasons to consider differences within the group of insured children, particularly for those with public versus private insurance.¹⁴ A large proportion of the most vulnerable populations of children who may benefit from a medical home are enrolled in public insurance programs, including those who are poor, minorities, and in poor health.¹⁵ Additionally, children with public insurance face many challenges in accessing and maintaining primary care. Historically, fewer primary care pediatric practices have accepted publicly-insured children compared with privately-insured children.^{16–18} Publicly-insured children have been more likely to seek sick care in settings other than their usual source of well care (e.g., emergency departments).^{19–21} As one-third of all children are enrolled in public insurance over the course of a year,²² public insurance programs could represent efficient mechanisms to promote the medical home for large numbers of children.

The few studies of the medical home for children with public insurance have focused on potential rather than realized access.^{23–26} As described in the Behavioral Model of Health Services Use by Andersen and Aday, realized access is defined as rates of utilization and subjective descriptions of care, in contrast to potential access, which is defined as facilitators of care such as insurance and a usual source of care.^{23, 24} These studies have primarily measured the medical home as a usual source of care,^{23–26} despite the growing use of measures that address many other attributes of the medical home.^{7, 10, 11, 27, 28} No studies to date have compared the prevalence of multiple components of the medical home (i.e., realized access) for children with public versus private insurance.

The objective of this study was to examine the prevalence of a medical home for children with public versus private insurance, using a widely adopted measure that incorporates aspects of the AAP definition beyond a usual source of care. Specifically, we addressed the following questions: 1) What is the national prevalence of a medical home for children with public compared with private insurance?; and 2) What are the contributions of specific components of the medical home measure to any differences by insurance type?

Methods

For this analysis, we used publicly available data from the 2007 National Survey of Children’s Health (NSCH). The NSCH is a nationally representative telephone survey of households with children ages 0–17 years, stratified by state to allow for national and state estimates of a wide variety of child health indicators. The survey is sponsored by the Maternal and Child Health Bureau of the Health Resources and Services Administration. The 2007 NSCH had a final sample size of 91,642 children (overall response rate 66%),²⁹

including children from all 50 states and the District of Columbia. Details of the survey methodology are available from other sources.²⁹

The 2007 NSCH used 18 questions to construct a composite measure of the medical home reflective of the 2002 American Academy of Pediatrics definition.^{27, 30} This measure attempts to assess comprehensive, family-centered, coordinated, compassionate, and culturally effective care but does not include questions on accessibility or continuity. The questions are grouped into 5 components: 1) a usual source of sick and well care; 2) a personal doctor/nurse; 3) family-centered care; 4) care coordination, if needed; and 5) no difficulty getting referrals, if needed (Table 1). Responses must meet criteria for all 5 components to qualify as a medical home. Family-centered care made up the largest component, with 5 questions required for all respondents and an additional question about interpreters, if needed.

We estimated the national prevalence of the medical home composite and its components for children with public and private insurance using sampling weights. Insurance status was defined by coverage at the time of response. Public insurance included Medicaid and the State Children's Health Insurance Program (SCHIP). Differences between the groups with public and private insurance were then compared using logistic regression, unadjusted and adjusted for child/family sociodemographic characteristics. In the multivariate models, we included characteristics associated with odds of a medical home in prior studies, including: child's age, race/ethnicity, special health care need, and gap in insurance coverage; maternal education; and household income and primary language.^{7, 8, 10-13, 27, 28, 30} Special health care needs were defined using the widely used multi-question screener included in the NSCH.³¹ For the family-centered care, care coordination, and referral problems components, we performed a sensitivity analysis to assess the influence on results of controlling for having a usual source of care and a personal doctor/nurse.

All statistical analyses were performed using Stata/IC version 10.0 (StataCorp LP, College Station, TX). Analyses used the survey weights supplied with the NSCH data set to account for the complex survey design, including stratification of households by state, unequal probability of selection based on number of children in the household, and non-response. The publicly available data set contained imputed values for income level in 8.5% of the sample.²⁹ For the other covariates used, no variable contained more than 6% missing data, and no imputation was performed.

Results

Sample Demographics

In this nationally representative sample (unweighted n=91,642), 29% of children had public insurance and 62% had private insurance (Table 2). Compared with privately-insured children, the publicly-insured group was younger on average and included more children who were from a racial/ethnic minority, had a special health care need, spoke a primary language other than English, and had a mother with low education (Table 2).

National estimates of the medical home composite by insurance type

In the United States, only 45% of children with public insurance met all 5 components of the medical home composite, significantly less than 67% of children with private insurance ($p < 0.001$) (Table 3). Publicly-insured children had lower odds of meeting criteria for a medical home compared to privately-insured children in both unadjusted analyses and after adjustment for available sociodemographic characteristics (adjusted odds ratio [AOR]=0.82, 95% CI 0.73 – 0.92) (Table 3).

Estimates of medical home components by insurance type

When we examined the individual components of the medical home, over 90% of children in both insurance groups reported having a usual source of care and personal doctor or nurse (Table 3). Although the differences between the groups for these components were statistically significant in bivariate comparisons, the absolute difference was 5 percent or less. Moreover, these differences were not significant after adjusting for other sociodemographic characteristics (Table 3).

Only 58% of children with public insurance reported family-centered care, significantly less than 76% of children with private insurance ($p < 0.001$). This public-private gap remained significant after adjustment for other sociodemographic characteristics (AOR=0.87, 95% CI 0.77–0.99) (Table 3). The difference remained significant after further adjustment for the presence of a personal doctor/nurse and usual source of care (AOR=0.85, 95% CI 0.75–0.97). In bivariate comparisons for the specific questions regarding family-centered care, significantly fewer publicly-insured children reported that their provider spent enough time, listened carefully, was sensitive to family values and customs, provided needed information, or partnered in care (Table 4). However, these differences for specific questions were not significant in multivariate analyses.

Less than half of children had a reported need for care coordination (45% of publicly-insured versus 41% of privately-insured) (Table 3). For children who needed care coordination, fewer children with public insurance reported receiving assistance with coordination of care, but the public-private difference was not significant after adjustment for sociodemographic variables (Table 3). Less than 20% of children had a reported need for a referral (18% of publicly-insured versus 16% of privately-insured) (Table 3). For the minority of children needing referrals, publicly-insured children had lower odds of receiving a referral without experiencing problems after adjustment for sociodemographic variables (AOR=0.71, 95% CI 0.51–0.99). This difference remained significant after further adjustment for the presence of a personal doctor/nurse and usual source of care (AOR=0.70, 95% CI 0.50–0.99).

Discussion

Significantly fewer publicly-insured than privately-insured children report a medical home, using a broadly adopted composite measure of medical home in this recent, nationally representative sample. Our examination of the individual components of the medical home measure illustrates that this insurance-based disparity has less to do with basic access to primary care (usual source of care or personal doctor/nurse) than with disparities in perceptions of physician-family interactions (family-centered care).

Other studies have demonstrated medical home disparities associated with a variety of sociodemographic factors, including uninsured versus insured children.^{7, 10–13} In contrast, this study is the first to find an association between a composite measure of the medical home and type of insurance (public versus private) in a broad cross-section of children. These findings provide a national benchmark for state programs promoting the medical home for publicly- and privately-insured children and illustrate both successes and challenges regarding the goal of high-quality primary care for children with public insurance.

The medical home disparity identified in this study can be described as a disparity in realized access, as described by Andersen and Aday.^{23, 24} Most medical home research involving children with public insurance has focused instead on potential access, typically measured as a usual source of care.^{23–26} By that measure, nearly all children with public and

private insurance in this study would have a medical home. In contrast, disparities by insurance type in this study are apparent in markers of realized access, including a process of care (getting needed referrals) and the experience of care (family-centered care).

This study is the first to show that insurance type has an independent association with perceptions of FCC in a population of primarily healthy children. Public versus private insurance has been shown to be associated with less family-centered care in one study of children with special health care needs,³² but another study found no association.³³ The public-private disparity in FCC found here has several potential explanations. Cross-cultural communication likely plays a key role, including communication across racial/ethnic, socioeconomic, and language differences. Parents from racial/ethnic minorities and other disadvantaged groups report less family-centered communication with their child's provider,³³⁻³⁵ and these groups are over-represented in the publicly-insured population. Also, physicians have expressed negative opinions about publicly-insured patients in some studies;^{17, 36, 37} these opinions may affect the quality of interpersonal interactions. Additionally, many publicly-insured patients receive care in primary care practices where resource limitations and patient volumes may limit family-centered care.^{18, 38} Interestingly, the public-private disparity in FCC was not attributable to any specific question but rather a trend toward lower reports by publicly-insured children for all included questions except getting help with an interpreter.

The public-private disparity in obtaining needed referrals is also concerning. However, because relatively few children needed referrals, this gap contributed little to the overall medical home disparity. Studies of specialty care utilization and access have shown inconsistent trends for publicly versus privately-insured children.³⁹⁻⁴² The 2007 NSCH only asks if "getting referrals" was a problem; it does not include follow up questions to explore causes of problems. Thus, these findings cannot differentiate whether difficulties were related to parents not communicating concerns, primary care providers not responding to requests for referrals, specialty providers not being available, or other factors. Further work is needed to identify points of intervention to decrease problems for publicly-insured children in getting referrals.

The measure of the medical home used in this study reveals the challenges in measuring this complex concept on a population scale and proposing interventions to reduce disparities. On one hand, the full composite measure allows estimation of a single prevalence for large groups of children and can be used to make comparisons based on many different sociodemographic characteristics. On the other, the composite collapses different aspects of care into an all-or-none measure that has the potential to obscure important meaning. For example, if the public-private difference in the overall medical home composite is viewed in isolation, it could lead to the reasonable, but flawed, assumption that the disparity is indicative of differences in access to a usual source of care, given the restricted number of primary care providers that have accepted Medicaid.^{16-18, 21} Interventions to address a disparity in usual source of care might include adjusting primary care provider rates or providing other incentives for primary care providers to accept publicly-insured patients. However, examination of the components of the medical home in this study would contradict this assumption and show that this medical home disparity more directly reflects a difference in the report of family-centered care, likely indicating the relationship between parents and providers after a usual source of care is established. Promoting family-centered care will require interventions to enhance parent-provider interactions, such as practice resources to improve timely communication during and after office hours, provider incentives for results on patient satisfaction surveys, or continuing medical education on communication skills.

This study has several limitations. First, as in all survey research, there is the possibility of selection bias influencing estimates of a medical home. It is difficult to hypothesize the direction of this bias because the medical home questions were part of a much larger survey instrument. Second, the cross-sectional nature of the study shows associations between insurance type and the prevalence of a medical home for children and cannot determine causation. Additionally, the medical home questions reflect parent recall of the prior 12 months while the insurance type only reflects coverage at the time of survey. We attempted to adjust for this by including a variable for gaps in insurance coverage, but these data cannot indicate if the child had coverage with a different insurance type at any point during the prior 12 months. Third, the medical home composite was used as an all-or-none measure. While this is the structure most commonly used and advocated by the authors of the National Survey of Children's Health,^{7, 10, 11, 27, 28, 30} other constructs of the measure have been implemented.^{27, 43} With the absence of strong validation of any specific medical home measure, we chose the form most commonly used in the literature. Fourth, we were unable to associate the medical home composite or its components with patterns of health care utilization or patient health outcomes. The 2007 NSCH did not include questions regarding emergency department use or hospitalization. Lastly, all data are by parent self-report. Differences in parent report may be due to complex interactions between parent expectations and specific provider behaviors, particularly for family-centered care. This study cannot determine the relative contribution of these factors to the disparities identified.

Conclusion

Publicly-insured children have lower odds of a medical home compared with privately-insured children, using a multi-component measure and adjusting for other sociodemographic characteristics. This difference is primarily due to a difference in parental report of family-centered care. Interventions to promote the medical home for children with public insurance must extend beyond simply assuring access to care, and must focus on families' experiences as their children receive care.

Abbreviations

AAP	American Academy of Pediatrics
FCC	family-centered care
NSCH	National Survey of Children's Health
SCHIP	State Children's Health Insurance Program

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What's New

We identify a disparity in medical home prevalence for publicly- versus privately-insured children, independent of other sociodemographic factors. This disparity is driven primarily by a difference in reports of family-centered care. These findings have implications for medical home measurement and policy.

Table 1
The Medical Home Composite Components and Questions, 2007 National Survey of Children's Health

Component	Criteria to be Considered a Medical Home ^a	Medical Home Concepts
1. Usual Source of Care	Yes and not an emergency department	Comprehensive
2. Personal doctor or nurse	Yes	Relationship with a specific provider
3. Care coordination (if needed) ^b	Usually/always gets help coordinating care Usually/always satisfied with communication among providers Usually/always satisfied with communication between providers, school, and other programs	Coordinated
4. No problems getting referrals (if needed)	Getting a referral was not a problem	Comprehensive
5. Family centered care	Provider usually/always: <ul style="list-style-type: none"> • spent enough time • listened carefully • provided needed information • partnered in care • was sensitive to family values and customs • helped to get an interpreter other than a family member (if needed) 	Family Centered, Compassionate Culturally Effective

^a All questions asked regarding 12 months prior to the survey. Children are considered to have a medical home if they meet all 5 criteria.

^b Only asked of children using two or more health services (preventive medical care, preventive dental care, mental health, or a specialist)

Table 2
Demographic Characteristics of Children with Public and Private Insurance in the United States, 2007 National Survey of Children's Health

	Public insurance	Private insurance
Survey Population (n) ^d	19,748	64,165
Weighted population		
n	21,205,602	45,073,890
% of total population ^b	29	62
Mean age, years ^c	7.7	8.9
Female, % (95% CI)	49 (47.7–51.0)	49 (47.7–49.7)
Race/ethnicity, % (95% CI) ^c		
White, non-Hispanic	35 (33.1–36.0)	69 (68.4–70.5)
African-American, non-Hispanic	25 (23.8–26.5)	9 (8.5–9.6)
Hispanic	32 (30.0–33.6)	12 (11.1–12.9)
Other	9 (7.7–9.6)	10 (8.9–10.3)
Income levels, % (95% CI) ^c		
0–99% FPL	45 (43.8–47.1)	4 (3.5–4.4)
100–199% FPL	34 (32.9–36.0)	13 (12.3–13.7)
200–399% FPL	16 (15.0–17.6)	39 (37.8–39.7)
≥400% FPL	4 (3.4–4.5)	44 (43.3–45.3)
Maternal education, % (95% CI) ^c		
< high school	25 (23.5–27.0)	4 (3.8–4.8)
12 years/high school graduate	39 (37.5–41.0)	18 (17.4–19.0)
> high school	36 (34.0–37.2)	78 (76.7–78.4)
Primary language at home, % (95% CI) ^c		
English	77 (74.8–78.3)	95 (94.3–95.4)
Other	23 (21.7–25.2)	5 (4.6–5.7)
Children with special health care needs, % (95% CI) ^c	24 (22.4–24.9)	18 (17.4–18.9)

^aTotal survey population n = 91,642, weighted n = 73,758,616

^bSample also included 9% uninsured, not included in this analysis, and 1% missing data

^cDifferences by insurance type significant at $p < 0.05$

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Table 3

National Prevalence of the Medical Home and its Components for Children with Public versus Private Insurance, 2007 National Survey of Children's Health

	Public % (95% CI)	Private % (95% CI)	Adjusted ^b OR for Children with Public vs. Private Insurance (95% CI)
Medical Home (meets all 5 components)	45 (43.8–47.1) ^a	67 (65.6–67.5)	0.82 (0.73–0.92)
Components			
Usual source of care	91 (89.4–91.5) ^a	96 (95.8–96.8)	1.14 (0.86–1.50)
Personal doctor/nurse	91 (89.8–91.7) ^a	95 (95.0–95.9)	1.08 (0.84–1.40)
Family centered care	58 (56.6–60.0) ^a	76 (74.7–76.5)	0.87 (0.77–0.99)
Care coordination (CC)			
Needed CC	45 (43.4–46.8) ^a	41 (40.4–42.4)	
Needed and received CC	63 (60.2–65.2) ^a	74 (72.4–75.1)	0.90 (0.74–1.08)
Referral			
Needed a referral	18 (16.7–19.0) ^a	16 (15.0–16.5)	
Needed and had no problem getting referral	76 (72.8–79.1) ^a	87 (85.4–88.5)	0.71 (0.51–0.99)

^a Difference significant at $p < 0.05$

^b Adjusted for child age, race/ethnicity, special needs, and gap in insurance coverage; maternal education; and household income and primary language

Table 4

Differences in Family Centered Care Questions between Children with Public and Private Insurance, 2007 National Survey of Children's Health

Family Centered Care Questions	Public % (95% CI)	Private % (95% CI)	Adjusted ^b OR for Children with Public vs. Private Insurance (95% CI)
The provider:			
Spent enough time?	71 (69.4–72.6) ^a	86 (85.3–86.9)	0.97 (0.83–1.14)
Listened carefully?	86 (84.3–87.0) ^a	93 (92.2–93.4)	1.00 (0.80–1.25)
Was sensitive to family values/customs?	84 (82.3–85.0) ^a	94 (93.0–94.0)	0.88 (0.71–1.10)
Provided needed information?	81 (80.1–82.8) ^a	89 (87.8–89.3)	1.02 (0.85–1.22)
Partnered in care?	85 (83.2–85.8) ^a	91 (90.1–91.4)	1.04 (0.84–1.27)
Helped with an interpreter? (if needed) ^c	65 (57.4–72.1)	63 (51.5–72.7)	0.98 (0.51–1.87)

^a Significant at $p < 0.01$ ^b Adjusted for child age, race/ethnicity, special needs, and gap in insurance coverage; maternal education; and household income and primary language^c 9.5% of publicly-insured children and 0.7% of privately-insured children reported a need for an interpreter