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Association Between the Medical Home Model of Care and Demographic Characteristics in US Children

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Abstract

Given the medical home model of care's (MHMOC) potential to reduce disparities in health care, this study determined the relationship between MHMOC, MHMOC indicators, and (1) demographic characteristics and (2) health outcomes in US children. Caregivers (n = 50 212) of children 0 to 17 years completed the 2016 National Survey of Children's Health. The MHMOC measure comprised 5 indicators (e.g., having a personal doctor/nurse and receiving family-centered care). Bivariate and multiple logistic regressions assessed the relationships between MHMOC, MHMOC indicators, and (1) demographic characteristics and (2) health outcomes. Approximately 49% of the children were served in a MHMOC. MHMOC and MHMOC indicators were related to race, ethnicity, nativity, caregiver education, federal poverty level, insurance type, and predicted health outcomes. These findings suggest that children most in need of MHMOC are less likely to be served in them. Thus, the current distribution of MHMOC likely contributes to greater disparities in care.

Keywords

medical home; pediatrics; health disparities; health outcomes; family-centered care; National Survey of Children's Health

The American Academy of Pediatrics (AAP) defines the medical home model of care (MHMOC) as a comprehensive, high-quality medical care that is accessible, family-centered, coordinated, continuous, compassionate, and culturally effective.¹ Though the AAP initially focused on children with special health care needs (CSHCN), the MHMOC is beneficial to everyone,^{2,3} and several efforts have been initiated to increase the prevalence of children and adults served in a MHMOC. Most notably, the 2010 Patient Protection and Affordable Care Act (ACA) supports the MHMOC for public insurance beneficiaries.⁴ Furthermore, Healthy People 2020 included 2 goals related to MHMOC for children⁵: increase the proportion of (1) children and (2) CSHCN served in a MHMOC. When Healthy

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Supplemental Material

Supplemental material for this article is available online.

People 2020 was published, 57.5% and 47.1% of all children and CSHCN were served in a MHMOC, respectively.

Several studies highlight the disparities in children's quality of and access to health care.⁶⁻⁸ For example, children in low-income families are more likely to be uninsured or have public insurance, use emergency departments, and report negative interactions with health care providers, and less likely to attend medical office visits.⁹ Furthermore, African American and Latino children are less likely to have a usual source of care, a doctor's visit in the last year, or to receive any screening or counseling during well-child visits.⁸ Parent education, particularly, low parent education and health literacy, are associated with poor navigation of the health care system resulting in difficulty accessing quality health care.^{10,11} Immigrant status also affects care: noncitizen children or US children born to noncitizen parents, particularly non-English-speaking parents, are less likely to have insurance and a nonemergency department usual source of care.¹² These children are also more likely to have a delay in care and parents who are dissatisfied with or feel discriminated against in health care.¹² These disparities are also prevalent among CSHCN.^{13,14}

The MHMOC is considered a tool to reduce disparities in quality of care^{3,15,16} and health outcomes. Hence, the focus on increasing the number of children served in a MHMOC in Healthy People 2020. However, if the goal is to reduce health disparities through increased care within the MHMOC, the current disparities in who is more likely to be served in a MHMOC must be identified and followed by targeted efforts to improve access for groups most likely to be underrepresented in the MHMOC. Hence, this study's primary goal was to determine the demographic characteristics associated with being served in a MHMOC and endorsing each of the 5 MHMOC indicators using the most recent US national data. Additionally, given the emphasis of the MHMOC as a tool to improve health outcomes, a secondary goal of this article was to examine the relationship between health-related outcomes, being served in a MHMOC, and endorsing MHMOC indicators.

Method

Study Population and Design

Data were obtained from the 2016 National Survey of Children's Health (NSCH; N = 50 212).¹⁷ The NSCH, a national epidemiological survey, conducted by the US Census Bureau for the US Department of Health and Human Services, Health Resources and Services Administration's Maternal and Child Health Bureau (MCHB), examines the physical and emotional health of US children 0 to 17 years old. Participants were identified using address-based sampling that factored in administrative data to determine addresses most likely to house children. Participants were mailed invitations to complete an online survey about children in their household (screener questionnaire). Participants not responding online were mailed paper screener questionnaires. On completion of the screener, one child per household was randomly chosen to be the subject of the age-appropriate topical questionnaire (3 versions: 0–5 years, 6–11 years, and 12–17 years). Caregivers in 72.8% of the eligible households completed questionnaires between June 2016 and February 2017. The overall response rate was 40.7%. The MCHB provided 2 files for data analyses; this paper used the topical file. Survey sampling units were also provided and more details on

this and other methodological considerations are available on the NSCH website¹⁸ and NSCH Source and Accuracy Statement.¹⁹ This study was exempt from institutional review as it was a secondary analysis of a publicly available de-identified dataset.

Measures

Demographics.—Children's ages (mean = 8.60 years, standard deviation = 0.05) were reported in years: age was used as a continuous variable in the regression analyses but categorized in the demographics table for ease of presentation. Sex options included male and female. Caregivers were asked "What is [child's] race?" Race was grouped into White, Black or African American, Asian, Multiracial (2 or more races), and other (American Indian, Alaskan Native, Hawaiian, other Pacific Islander, and other). Ethnicity was based on responses to "Is [child] of Hispanic, Latino, or Spanish origin?" Caregivers' education was the highest level of education among caregiving adults in the household. The MCHB used total family income and number of individuals in the household to determine the family's federal poverty level (FPL). The MCHB used caregivers' responses to insurance coverage questions including current insurance status and insurance types to create a 5-category insurance variable: private (coverage from employer/union, directly purchased, TRICARE/ other military health care, and ACA market), public (any government assistance), private/ public (both sources), unspecified, and uninsured. Child nativity was calculated when at least one of the identified adults in the household were the child's biological, step, or foster parent. Child nativity considered parents' and children's birthplace and were categorized into first generation (child and parents born outside the United States), second generation (child born in the United States, immigrant parents), third generation or higher (child and parents born in the United States), and nativity unknown (child born in the United States, parents nativity unknown). The MCHB created the CSHCN variable using responses to 5 special health care needs screener questions.^{19,20}

MHMOC Variables.—The MHMOC measure was designed to mirror the indicators of MHMOC defined by the AAP. Indicators and composites were calculated similarly to the NSCH 2011–2012 MHMOC variable²¹ with 2 major differences: (1) for care coordination, it was assumed that children who did not have more than one health care provider in the last 12 months did not need care coordination and the number of people needing care coordination was based on caregivers' responses to a question regarding if anyone helps with coordinating care and (2) the MHMOC composite was only considered missing if all indicators were missing. The questions included in each indicator are presented in Supplemental Table 1 (available in the online version of the article). Family-centered care data were only available for children whose caregivers reported at least one of the following visits during the past year: medical/doctor, dental, mental health counselor, or specialist (n = 44 036). Additionally, not all indicators applied to all participants as only some children needed a referral (n = 9141) or care coordination (n = 27 030) in the past year. For children not requiring referrals, care coordination, or seeing a provider in the past year, legitimate skip was coded. For the calculation of the MHMOC composite only, children with legitimate skip were subsumed in meeting indicators and were assigned to the MHMOC group if they had positive valid responses on all nonmissing indicators. Children with missing data on all indicators were classified as missing. To be assigned to the MHMOC group, except where

missing, children had to have (1) a personal doctor/nurse; (2) family-centered care; (3) a [nonemergency room] usual source of sick care; (4) care coordination when needed; and (5) no referral problems when needed. Skip logic rules and syntax for variable construction are available in the 2016 NSCH SAS Codebook.²²

Health Outcomes Variables.—Caregivers reported children's health status on a 5-point scale ranging from Poor to Excellent, responses were dichotomized into Excellent/Very good and Good/Fair/Poor. Caregivers also reported the number of hospital emergency room visits their children had for any reason in the past year, this variable was dichotomized into 0 and ≥ 1 visits. Caregivers reported whether their children had unmet medical, dental, vision, hearing, mental health, or other type of care needs in the past year. These responses were summed and dichotomized into 0 and ≥ 1 unmet needs.

Statistical Analyses

SAS 9.3 survey procedures were used to compute all analyses. All analyses included strata (state of residence and households flagged with children), clusters (unique household identifier), and weights (selected child sampling weight) provided in the dataset.¹⁹ Descriptive statistics were calculated (Table 1). Bivariate logistic regressions assessing the relationship between the (1) MHMOC and (2) MHMOC indicators and each demographic variable were computed. Multiple logistic regressions including all demographic variables were also computed to account for the shared variance of the variables. Results of bivariate and multiple logistic regressions are presented in Tables 2 and 3, respectively. Bivariate logistic regressions assessing the relationship between health outcomes (health status, emergency room visits, and unmet health needs) and (1) MHMOC and (2) MHMOC indicators were computed. Odds ratios adjusting for demographic variables (all demographic variables included in previous analyses) were also estimated using multiple logistic regressions. Note that MHMOC and each MHMOC indicator were entered in separate multiple logistic regressions with only demographic variables added. The unadjusted and adjusted odds ratios of these regressions are presented in Table 4. Demographic variables were chosen based on the disparities in health outcomes for children and inequality in access to care and resources literature. Note that all data were kept in the data files for all analyses for accurate calculation of sample variance.

Results

Weighted percentages and 95% confidence intervals of MHMOC and MHMOC indicators are presented in Table 1. Approximately 49% of US children were served in a MHMOC, ~73% had a personal doctor/nurse, ~86% received family-centered care, ~80% had a usual source of sick care, ~72% received care coordination when needed, and 78% had no referral problems when needed in the past year. Approximately 90% of caregivers rated their children's health status as excellent/very good, 20% of children had at least one hospital emergency room visit, and ~3% had at least one unmet health need in the last year.

Bivariate logistic regressions revealed consistent disparities across the MHMOC and MHMOC indicators (Table 2). Specifically, younger children were more likely to be served in a MHMOC and endorse family-centered care, usual source of sick care, and no referral

problems when needed than older children. Non-Hispanic and third generation or higher immigrant children were more likely to be served in a MHMOC and to endorse all MHMOC indicators than Hispanic, first and second generation immigrants, and nativity unknown children. Children who were White, had private insurance, and family income $\geq 400\%$ FPL were more likely to be served in a MHMOC and to endorse all MHMOC indicators. Children of caregivers with a college degree or higher were more likely to be served in a MHMOC and endorse all MHMOC indicators except care coordination. Additionally, CSHCN were less likely to be served in a MHMOC, and to endorse family-centered care, care coordination, and no referral problems. CSHCN were more likely to have a personal doctor/nurse and to have a usual source of sick care. Though to a lesser extent and with some comparison groups (within demographic characteristic) becoming statistically insignificant, disparities persisted in the adjusted models for MHMOC and all MHMOC indicators. There were a few noteworthy exceptions. Specifically, age was not related to family-centered care, race was not related to personal doctor/nurse and care coordination, and ethnicity was not related to care coordination and no referral problems in the adjusted models. Caregiver education was not related to no referral problems but became a significant predictor of care coordination in the adjusted models.

Results of bivariate and multiple logistic regression predicting health status, emergency room visits, and unmet health needs are presented in Table 4. MHMOC and all MHMOC indicators except having a personal doctor/nurse were positively related to endorsing excellent/very good health status and negatively related to having at least one emergency room visit and unmet health needs in the past year. However, after adjusting for demographic variables, usual source of care was not related to any of the outcomes and having no referral problems was not related to health status. For emergency room visits only, having a personal doctor/nurse was significant and positive in the adjusted model.

Discussion

This study determined the demographic characteristics related to being served in a MHMOC for US children as well as the relationship between the MHMOC and health outcomes. MHMOC and MHMOC indicators were unevenly distributed within demographic characteristics and were significantly related to health outcomes. The results highlight that groups most at risk for health disparities^{23–25} (eg, lower income, lower education, racial and ethnic minorities, public insurance, and first and second generation immigrants) were least likely to be served in a MHMOC or endorse MHMOC indicators. Furthermore, the results support addressing MHMOC and MHMOC indicators' prevalences since, even after controlling for demographic differences, these variables were significantly related to health outcomes. Given that the MHMOC has been proposed as a systemic change to reduce health disparities,^{3,16} and that our results confirm the demographic differences in MHMOC, and MHMOC's relationship to health outcomes, specific efforts should focus on improving the access and utilization of MHMOC among families at risk for health disparities to augment other population-level efforts.

Approximately 49% of US children were served in a MHMOC. This prevalence is lower than that cited in Healthy People 2020⁵ and found in NSCH 2011–2012 (ie, ~54%).²⁶ One

possible explanation for these differences is methodology. Prior to 2016, the MCHB's sampling procedures primarily included landlines with some cellphone supplementation. However, cellphones are increasingly replacing landlines²⁷ resulting in landline phone-based surveys having lower response rates and likely being biased. The MCHB redesigned the 2016 survey recruitment using an address-based sample that included web and paper data collection procedures, likely producing a more representative and unbiased sample than prior years given that young adults and low-income individuals are less likely to have landlines.²⁷ Blumberg and Luke²⁸ found that the use of landline telephone surveys for young (18–29 year olds) and low-income (FPL < 200%) adults resulted in overestimations of health insurance status and usual source of care. Given that lower income was negatively related to all MHMOC indicators in the results, it is likely that prior the NCHS datasets overestimated MHMOC prevalences.

The relatively low MHMOC prevalence is unexpected given the legislative changes meant to increase the number of individuals served in a MHMOC. Specifically, the ACA incentivizes primary care sites designated as health homes for Medicaid and CHIP (Children's Health Insurance Program) beneficiaries,²⁹ thus one would anticipate that more providers would engage in delivering services consistent with a MHMOC. Furthermore, one would expect insurance type, particularly public insurance, to be less of a barrier to being served in a MHMOC. It is possible that the ACA may have increased the number of MHMOC providers; however, caregivers' perceptions of quality of care may not meet criteria for a MHMOC. Alternatively, the MHMOC may also be disproportionately increasing in communities least in need of them. These are potentially larger issues that should be addressed in federal and state policies on evaluating MHMOC qualifications and who/what should be incentivized. The ACA allows states to use national organizational standards or create their own,^{4,29} and this variability in standards, as well as the subjectivity inherent in some MHMOC indicators (eg, family-centered care, culturally effective care), could lead to disparities in what meets criteria for a MHMOC, and more important, the quality of care patients receive. The AAP provides resources for building a MHMOC.³⁰ However, more specific, measurable, centrally regulated guidelines are needed for determining whether providers adhere to a MHMOC to ensure an equitable standard of care.

Subjective indicators of the MHMOC (ie, family-centered, culturally effective, and compassionate care) are particularly vulnerable to providers' biases. In this study, children who were Black, Asian, Hispanic, first or second generation immigrants, and with FPL <400% were less likely to receive family-centered care. Health care providers are less likely to include racial and ethnic minorities, immigrants, and low-income patients in health decision-making and treatment planning.^{31–33} As the goal of family-centered care is to treat families "as equals on the health care team,"³⁴ providers with these biases are, by default, not engaging in a MHMOC. These biases also affect rates of referrals.³¹ Thus, part of the infrastructure for building a MHMOC is to ensure that providers are adequately trained to work in partnership with families and recognize and work through their biases.³⁵

While providers are central in providing a MHMOC for patients, structural barriers such as insurance restrictions may limit whether a MHMOC is possible for specific patients. Insurance policies requiring multiple authorizations for specialists or use of overly restrictive

lists of providers that may not include required specialists limit coordinated care and increase referral problems.^{36,37} Furthermore, low-income families may face additional accessibility issues including transportation and time. Caregivers' education was related to being served in a MHMOC. Caregivers' education is also highly correlated with health literacy,^{11,38} which is the ability to understand, access, and utilize health information and resources.³⁹ Caregivers, especially those with less than a college degree, may need more scaffolding and targeted interventions around identifying care that fits within the MHMOC, as well as education on advocating for themselves and their families, and their rights to shared decision-making. This knowledge would likely help caregivers make informed decisions on best sources of care for their children. Furthermore, the availability and accessibility of the MHMOC in neighborhoods populated by individuals underrepresented in the MHMOC data (eg, low education, low income, and public insurance) should also be assessed. These data should be used to identify neighborhoods for targeted interventions including caregiver MHMOC-related education/advocacy, and state and local policies and programs that incentivize providers to build practices centered on the MHMOC principles in these neighborhoods.

The personal doctor/nurse MHMOC indicator is implicated in 27.5% of the 48.7% of children not served in a MHMOC. Furthermore, the race, ethnicity, nativity, caregiver education, and income differences noted in the bivariate regressions are consistent across personal doctor/nurse, family-centered care, and usual source of sick care. In addition to reducing disparities in who is served in a MHMOC and increasing the overall prevalence of children served in a MHMOC, addressing disparities in the personal doctor/nurse MHMOC indicator has the potential to simultaneously reduce disparities and increase prevalences in endorsements of usual source of sick care and family-centered care. Specifically, though not guaranteed, having a personal doctor/nurse creates an option for nonemergency room usual source of sick care.⁴⁰ Additionally, having a high-quality patient-centered personal doctor/nurse reduces nonurgent emergency room visits⁴¹ and provides an opportunity for patient-provider relationships characteristic of family-centered care to develop. Furthermore, the personal doctor/nurse indicator is more easily targetable through policies (eg, public insurance recipients must have a primary care provider) and programs (eg, satellite clinics with continuity of care structures).

Conversely, though having a personal doctor/nurse was implicated in more than half of the children without a medical home, the indicator was unrelated to the health outcomes examined in the bivariate regressions. Note, however, that in the multiple logistic regressions, having a personal doctor/nurse was positively related to having at least one emergency room visit. These results reiterate the importance of medical homes being a model of care versus an institution for care. Some insurance policies (eg, health maintenance organization [HMO]) require enrollees to have a designated primary care provider who act as a "gatekeeper" to care and, in theory, manages most of enrollees' health care needs. These primary care providers are well-positioned to provide a MHMOC. This is another example of where programmatic and policy changes can be implemented to increase the number of individuals served in a MHMOC (eg, primary care providers within HMOs could be required to demonstrate they provide a MHMOC).

Even after controlling for demographics, individuals with family-centered care and care coordination were at least twice as likely to endorse excellent/very good health status than those without these indicators. These individuals were also 18% to 20% less likely to have an emergency room visit and 70% to 80% less likely to have unmet health needs. These results highlight the importance of these indicators to overall health. Conversely, the nonsignificance of usual source of sick care in the adjusted models, highlight the importance of social determinants of health in the relationship between usual source of sick care and health outcomes.

Limitations and Future Directions

This study is not without limitations. Though the MHMOC measure used is widely accepted in the field, it is still an operational approximation that is not exhaustive of all AAP's indicators of a MHMOC.⁴² Additionally, the NSCH survey was retrospectively completed by caregivers for all age groups and required recall of the past year. Adolescents, particularly those living in states with minor consent laws, may have different experiences with and expectations of their providers that caregivers are not privy to.⁴³ Future studies should expand the MHMOC measure to include all indicators, utilize a longitudinal design to allow for multiple assessments of experiences across a year rather than a one-time recount of the timespan, and assess adolescents directly.

Conclusions

Approximately 49% of US children were served in a MHMOC. Common demographic characteristics associated with disparities in children's health^{13,44,45} were related to MHMOC and MHMOC indicators. Furthermore, MHMOC and MHMOC indicators were related to health outcomes even after controlling for demographics. These findings suggest that, in addition to population-level efforts, specific initiatives are needed to improve the access and utilization of the MHMOC among families at risk for health disparities to achieve equity in care and health outcomes.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1. Weighted Percentages for Demographic Characteristics and Health Outcomes for Medical Home Model of Care Sample and Medical Home Model of Care Indicators Subsamples.

Characteristics	General, n = 50 177			Personal Doctor/Nurse, n = 49 932			Family-Centered Care, n = 44 036			Usual Source of Sick Care, n = 49 579			Care Coordination, n = 27 030			No Referral Problems, n = 9141		
	Total Sample, % (95% CI)	% With MHMOC, % (95% CI)		Total Sample, % (95% CI)	% With Personal Doctor/Nurse, % (95% CI)		Total Sample, % (95% CI)	% With Family-Centered Care, % (95% CI)		Total Sample, % (95% CI)	% With Usual Source of Care, % (95% CI)		Total Sample, % (95% CI)	% With Care Coordination, % (95% CI)		Total Sample, % (95% CI)	% With No Referral Problems, (95% CI)	
Total population		48.7 (47.7, 49.7)			72.5 (71.6, 73.5)			86.3 (85.5, 82.6)			79.7 (78.8, 80.5)			72.2 (71.0, 73.4)			78.0 (75.8, 80.2)	
Demographics																		
Sex																		
Boys	51.1 (50.1, 52.1)	48.5 (47.2, 49.9)		51.0 (50.0, 52.0)	72.6 (71.3, 74.0)		51.3 (50.3, 52.3)	86.4 (85.4, 87.5)		51.0 (50.0, 52.0)	79.9 (78.6, 81.1)		52.9 (51.6, 54.2)	71.8 (70.2, 73.5)		54.7 (52.3, 57.0)	77.3 (74.2, 80.3)	
Girls	48.9 (47.9, 49.9)	48.9 (47.4, 50.3)		49.0 (48.0, 50.0)	72.5 (71.1, 73.9)		48.7 (47.7, 49.7)	86.2 (85.0, 87.4)		49.0 (48.0, 50.0)	79.5 (78.1, 80.8)		47.1 (45.8, 48.4)	72.5 (70.9, 74.2)		45.3 (43.0, 47.6)	78.9 (75.8, 82.0)	
Age																		
0–5 years	32.3 (31.4, 33.3)	52.0 (50.2, 53.8)		32.3 (31.4, 33.3)	74.1 (72.4, 75.7)		30.0 (29.1, 30.9)	88.0 (86.8, 89.3)		32.2 (31.3, 33.1)	81.3 (79.6, 82.9)		30.0 (28.8, 31.2)	75.1 (72.9, 77.2)		31.8 (29.6, 34.0)	79.8 (75.7, 83.9)	
6–11 years	33.8 (32.9, 34.8)	47.2 (45.5, 49.0)		33.8 (32.9, 34.8)	71.5 (69.7, 73.3)		33.1 (32.1, 34.1)	85.2 (83.6, 86.8)		33.9 (32.9, 34.9)	81.0 (79.4, 82.6)		34.1 (32.8, 35.4)	69.0 (66.7, 71.3)		32.3 (30.1, 34.6)	78.9 (75.2, 82.5)	
12–17 years	33.8 (32.9, 34.7)	47.0 (45.4, 48.5)		33.8 (32.9, 34.7)	72.1 (70.6, 73.6)		38.9 (31.9, 33.8)	85.7 (84.3, 87.1)		33.9 (33.0, 34.8)	76.9 (75.4, 78.3)		35.9 (34.5, 37.1)	72.7 (71.0, 74.5)		35.9 (33.7, 38.0)	75.7 (72.1, 79.2)	
Race																		
White	67.6 (66.6, 68.5)	52.7 (51.6, 53.9)		67.7 (66.7, 68.9)	74.7 (73.6, 75.9)		69.0 (68.0, 70.0)	88.5 (87.6, 89.4)		67.8 (66.8, 68.8)	82.7 (81.7, 83.8)		68.2 (66.9, 69.6)	73.0 (71.7, 74.3)		65.5 (63.0, 67.9)	81.1 (78.9, 83.2)	
Black	14.0 (13.2, 14.7)	40.2 (37.3, 43.1)		13.9 (13.1, 14.6)	67.8 (65.0, 70.7)		13.9 (13.1, 14.7)	80.2 (77.4, 83.0)		13.9 (13.1, 14.6)	73.1 (70.4, 75.9)		14.2 (13.1, 15.2)	72.0 (68.3, 75.6)		15.0 (13.2, 16.9)	74.0 (67.5, 80.5)	
Asian	4.7 (4.3, 5.1)	42.2 (38.1, 46.2)		4.7 (4.3, 5.1)	69.5 (65.7, 73.4)		4.3 (3.9, 4.7)	82.6 (80.0, 85.7)		4.7 (4.3, 5.0)	68.5 (64.4, 72.5)		3.8 (3.4, 4.2)	70.5 (65.7, 75.4)		3.8 (2.9, 4.8)	66.7 (51.8, 81.7)	
Other	7.1 (6.4, 7.8)	34.1 (29.4, 38.9)		7.1 (6.4, 7.8)	60.3 (55.2, 65.4)		6.0 (5.3, 6.6)	77.8 (73.0, 82.7)		7.1 (6.4, 7.7)	69.0 (64.1, 73.8)		6.7 (5.7, 7.6)	70.9 (64.1, 77.7)		7.6 (5.9, 9.4)	71.2 (60.1, 82.3)	
Multiracial	6.6 (6.2, 7.1)	45.7 (42.2, 49.1)		6.6 (6.2, 7.2)	24.8 (21.8, 27.8)		6.8 (6.3, 7.3)	86.7 (84.5, 89.0)		6.6 (5.0, 5.8)	81.3 (78.3, 84.4)		7.1 (6.5, 7.8)	66.5 (62.0, 71.1)		8.0 (6.6, 9.5)	72.5 (62.9, 82.0)	
Ethnicity																		
Non-Hispanic	75.5 (74.4, 76.4)	52.8 (51.8, 53.7)		75.5 (74.4, 76.6)	75.7 (74.9, 76.5)		78.1 (77.1, 79.2)	88.5 (87.8, 89.2)		75.5 (74.4, 76.5)	82.2 (81.5, 83.0)		77.1 (75.7, 78.5)	73.1 (72.0, 74.3)		75.7 (73.2, 78.1)	80.2 (78.1, 82.3)	

General, n = 50 177				Personal Doctor/Nurse, n = 49 932				Family-Centered Care, n = 44 036		Usual Source of Sick Care, n = 49 579			Care Coordination, n = 27 030		No Referral Problems, n = 9141	
Characteristics	Total Sample, % (95% CI)	% With MHMOC, % (95% CI)	Total Sample, % (95% CI)	% With Personal Doctor/Nurse, % (95% CI)	Total Sample, % (95% CI)	% With Family-Centered Care, % (95% CI)	Total Sample, % (95% CI)	% With Usual Source of Care, % (95% CI)	Total Sample, % (95% CI)	% With Care Coordination, % (95% CI)	Total Sample, % (95% CI)	% With No Referral Problems, (95% CI)				
Hispanic	24.5 (23.4, 25.6)	36.1 (33.5, 38.7)	15.4 (14.5, 16.3)	62.8 (60.0, 65.7)	21.9 (20.8, 22.9)	78.6 (76.0, 81.3)	24.5 (23.5, 25.6)	71.7 (69.0, 74.5)	22.9 (21.5, 24.3)	69.0 (65.5, 72.5)	24.3 (21.9, 26.8)	71.2 (65.1, 77.2)				
Nativity																
First generation	2.6 (2.2, 3.0)	22.8 (17.8, 27.8)	2.6 (2.2, 3.0)	51.8 (44.4, 59.1)	2.0 (1.7, 2.4)	66.2 (58.1, 74.3)	2.6 (2.2, 3.0)	66.0 (59.5, 72.4)	1.9 (1.5, 2.2)	60.2 (50.5, 70.0)	2.4 (1.4, 3.3)	55.0 (34.0, 76.0)				
Second generation	23.3 (22.3, 24.3)	41.4 (38.9, 43.9)	23.3 (22.3, 24.3)	68.2 (65.5, 70.8)	22.0 (21.0, 23.0)	80.3 (77.8, 82.8)	23.4 (22.4, 24.4)	74.6 (72.1, 77.2)	21.3 (20.0, 22.6)	68.2 (64.8, 71.6)	23.2 (20.9, 25.5)	71.7 (66.3, 77.2)				
Third generation and higher	66.3 (65.3, 67.4)	54.0 (52.9, 55.0)	66.4 (65.3, 67.4)	76.2 (75.2, 77.1)	69.1 (68.1, 70.2)	89.2 (88.5, 89.9)	66.4 (65.4, 67.5)	83.8 (82.9, 84.6)	69.3 (67.9, 70.6)	73.7 (72.5, 74.9)	67.2 (64.7, 69.7)	82.4 (80.5, 84.2)				
Nativity unknown	7.7 (7.1, 8.4)	36.6 (32.7, 40.5)	7.7 (7.1, 8.3)	63.5 (59.3, 67.6)	6.9 (6.3, 7.5)	83.6 (80.0, 87.3)	7.6 (7.0, 8.3)	66.7 (62.4, 71.1)	7.6 (6.7, 8.4)	73.1 (68.2, 77.9)	7.2 (5.5, 8.9)	64.7 (51.1, 78.4)				
Education ^a																
Less than high school	9.2 (8.4, 10.2)	29.4 (24.7, 34.1)	9.2 (8.3, 10.1)	53.3 (47.9, 58.7)	6.6 (5.7, 7.4)	74.0 (68.1, 80.0)	9.1 (8.2, 10.0)	59.3 (53.9, 64.8)	7.2 (6.1, 8.3)	75.4 (68.5, 82.2)	9.0 (6.9, 11.0)	61.6 (49.7, 73.5)				
High school ^b	19.6 (18.7, 20.5)	36.7 (34.2, 39.1)	19.6 (18.7, 20.5)	64.0 (61.3, 66.7)	17.9 (17.0, 18.8)	82.1 (79.8, 84.3)	19.5 (18.6, 20.4)	70.0 (67.5, 72.5)	17.3 (16.1, 18.5)	70.7 (67.3, 74.2)	18.5 (16.4, 20.6)	77.1 (71.7, 82.6)				
Some college	22.4 (21.6, 23.2)	46.7 (44.7, 48.6)	22.4 (21.6, 23.2)	71.2 (69.3, 73.1)	23.0 (22.1, 23.9)	84.4 (82.6, 86.2)	22.4 (21.6, 23.2)	79.7 (77.9, 81.5)	22.8 (21.7, 23.9)	70.9 (68.3, 73.5)	26.7 (21.7, 25.7)	77.3 (72.8, 81.8)				
College degree and higher	48.7 (47.8, 49.7)	59.2 (58.1, 60.3)	48.8 (47.9, 49.8)	81.1 (80.3, 82.0)	52.6 (51.5, 53.6)	90.6 (89.8, 91.4)	49.0 (48.0, 50.0)	88.3 (87.5, 89.0)	52.7 (51.4, 54.1)	72.9 (71.5, 74.2)	48.8 (46.5, 51.1)	82.5 (80.2, 84.8)				
FPL																
<100%	21.6 (20.7, 22.6)	35.2 (32.7, 37.7)	21.5 (20.6, 22.5)	62.6 (59.9, 65.3)	19.3 (18.3, 20.2)	79.0 (76.4, 81.6)	21.3 (20.4, 22.4)	68.4 (65.7, 71.2)	19.8 (18.5, 21.0)	68.1 (64.8, 71.4)	23.6 (21.3, 25.8)	70.4 (64.8, 76.0)				
100% to 199%	22.1 (21.2, 23.0)	40.6 (38.3, 42.9)	22.1 (21.2, 23.0)	67.6 (65.1, 70.0)	21.1 (20.1, 22.0)	81.3 (79.1, 83.6)	22.1 (21.1, 23.0)	76.0 (73.9, 78.2)	20.7 (19.5, 21.9)	68.4 (65.2, 71.6)	23.8 (21.5, 26.1)	72.3 (66.5, 78.0)				
200% to 299%	15.2 (14.5, 15.9)	49.1 (46.7, 51.5)	15.2 (14.5, 15.9)	72.3 (70.1, 74.6)	15.4 (14.6, 16.1)	86.9 (85.1, 88.8)	15.2 (14.5, 15.9)	79.8 (77.6, 81.9)	14.8 (13.9, 15.7)	71.6 (68.5, 74.7)	13.5 (12.1, 14.9)	82.6 (79.0, 86.1)				
300% to 399%	11.6 (11.1, 12.1)	55.5 (53.3, 57.6)	11.6 (11.1, 12.1)	76.8 (75.0, 78.7)	12.3 (11.7, 12.8)	88.7 (87.0, 90.4)	11.7 (11.2, 12.2)	84.5 (82.8, 86.1)	11.8 (11.1, 12.5)	75.2 (72., 77.8)	10.7 (9.5, 11.9)	79.0 (74.1, 83.9)				
≥400%	29.5 (28.7, 30.2)	61.7 (60.4, 63.0)	24.2 (23.5, 24.9)	82.0 (80.9, 83.0)	32.0 (31.2, 32.9)	92.8 (92.0, 93.5)	29.7 (29.0, 30.5)	88.5 (87.6, 89.5)	32.9 (31.8, 34.0)	76.2 (74.6, 77.7)	28.5 (26.7, 30.2)	86.6 (84.6, 88.6)				
Insurance type																
Public	31.7 (30.7, 32.8)	38.8 (36.7, 40.9)	31.7 (30.7, 32.8)	67.7 (65.6, 69.9)	31.0 (30.0, 32.1)	80.8 (78.9, 82.7)	31.6 (30.5, 32.6)	74.5 (72.5, 76.5)	31.6 (30.3, 33.0)	68.2 (65.5, 70.8)	39.0 (36.6, 41.5)	72.8 (68.9, 77.0)				

Characteristics	General, n = 50 177			Personal Doctor/Nurse, n = 49 932			Family-Centered Care, n = 44 036			Usual Source of Sick Care, n = 49 579			Care Coordination, n = 27 030			No Referral Problems, n = 9141		
	Total Sample, % (95% CI)	% With MHMOC, % (95% CI)	% With Personal Doctor/Nurse, % (95% CI)	Total Sample, % (95% CI)	% With Family-Centered Care, % (95% CI)	Total Sample, % (95% CI)	% With Usual Source of Care, % (95% CI)	Total Sample, % (95% CI)	% With Care Coordination, % (95% CI)	Total Sample, % (95% CI)	% With No Referral Problems, % (95% CI)	Total Sample, % (95% CI)	% With Care Coordination, % (95% CI)	Total Sample, % (95% CI)	% With No Referral Problems, % (95% CI)			
Private	56.4 (55.4, 57.4)	58.1 (57.0, 59.1)	78.8 (77.9, 79.7)	59.7 (58.6, 60.7)	90.8 (90.1, 91.5)	56.7 (55.6, 57.7)	86.1 (85.3, 87.0)	58.2 (56.8, 59.6)	75.5 (74.2, 76.7)	50.3 (48.0, 52.7)	84.7 (82.7, 86.7)							
Private and public	4.2 (3.8, 4.7)	39.8 (35.1, 44.6)	70.9 (66.2, 75.6)	4.4 (3.9, 4.8)	78.3 (73.3, 83.3)	4.5 (3.8, 4.6)	73.9 (69.4, 78.4)	4.9 (4.3, 5.5)	62.1 (55.9, 68.3)	5.5 (4.5, 6.4)	67.8 (57.9, 77.8)							
Unspecified	1.7 (1.3, 2.0)	28.1 (20.4, 35.8)	51.5 (41.1, 61.9)	1.2 (0.9, 1.5)	81.2 (68.7, 93.8)	1.6 (1.3, 2.0)	49.0 (38.9, 59.1)	1.3 (0.9, 1.7)	73.0 (61.2, 84.8)	1.1 (0.7, 1.5)	66.7 (46.2, 87.1)							
Uninsured	6.0 (5.4, 6.6)	24.6 (20.8, 28.5)	46.1 (41.0, 51.3)	3.8 (3.4, 4.3)	72.9 (66.9, 79.0)	5.9 (5.3, 6.5)	59.0 (53.8, 64.2)	4.0 (3.4, 4.7)	66.7 (59.5, 74.0)	4.1 (2.8, 5.4)	60.9 (43.3, 78.5)							
CSHCN status																		
No	80.6 (79.9, 81.4)	50.0 (48.9, 51.1)	70.9 (69.8, 72.0)	78.9 (78.1, 79.7)	87.3 (86.4, 88.2)	80.7 (79.9, 81.4)	79.1 (78.0, 80.1)	70.9 (69.7, 72.0)	76.2 (74.8, 77.6)	58.8 (56.5, 61.1)	80.5 (77.7, 83.4)							
Yes	19.4 (18.6, 20.1)	43.2 (41.2, 45.1)	79.3 (77.4, 81.2)	21.1 (20.3, 21.9)	82.6 (80.7, 84.5)	19.3 (18.5, 20.0)	82.1 (80.3, 84.0)	29.1 (58.0, 30.3)	62.3 (60.1, 64.5)	41.2 (38.9, 43.5)	74.4 (71.0, 77.8)							
Health outcomes																		
Health status																		
Good/fair/poor	10.3 (9.6, 11.0)	30.0 (26.8, 33.2)	71.3 (67.9, 74.7)	10.0 (9.3, 10.7)	71.3 (67.5, 75.1)	10.2 (9.5, 10.9)	73.9 (70.5, 77.2)	12.9 (12.0, 13.9)	54.1 (49.9, 58.2)	22.2 (19.9, 24.4)	69.2 (63.3, 75.2)							
Excellent/very good	89.7 (89.0, 90.4)	50.9 (49.8, 51.9)	72.7 (71.7, 73.7)	90.0 (89.3, 90.7)	88.0 (87.2, 88.8)	89.8 (89.1, 90.5)	80.4 (79.4, 81.3)	87.1 (86.1, 88.1)	74.9 (73.7, 76.1)	77.9 (75.6, 80.1)	80.5 (78.3, 82.7)							
Emergency room visits																		
0 visits	80.0 (79.2, 80.8)	50.3 (49.2, 51.4)	72.2 (71.1, 73.3)	78.6 (77.7, 79.5)	87.5 (86.7, 88.4)	80.2 (79.4, 81.1)	80.6 (79.6, 81.6)	75.1 (73.9, 76.3)	73.7 (72.4, 75.1)	63.1 (60.7, 65.5)	81.8 (79.5, 84.0)							
≥1 visit	20.0 (19.2, 20.8)	42.6 (40.3, 44.8)	74.2 (72.0, 76.3)	21.4 (20.5, 22.3)	82.1 (80.0, 84.2)	19.8 (18.9, 20.6)	76.8 (74.5, 79.1)	24.9 (23.7, 26.1)	67.4 (64.8, 70.0)	36.9 (34.5, 39.3)	71.4 (67.0, 75.7)							
Unmet needs																		
0 unmet needs	97.1 (96.7, 97.5)	49.6 (48.6, 50.6)	72.7 (71.7, 73.7)	97.3 (96.9, 97.6)	87.1 (86.3, 87.9)	97.1 (96.8, 97.5)	79.9 (79.0, 80.9)	96.4 (95.9, 96.9)	73.7 (72.6, 74.9)	93.4 (92.2, 96.6)	80.5 (78.3, 82.7)							
≥1 unmet needs	2.9 (2.5, 3.3)	21.4 (17.2, 25.7)	68.8 (62.6, 75.0)	2.7 (2.4, 3.1)	59.5 (53.0, 66.0)	2.9 (2.5, 3.2)	73.6 (67.9, 79.3)	3.6 (3.1, 4.1)	32.1 (25.8, 38.4)	6.6 (5.4, 7.8)	42.7 (33.4, 52.0)							

Abbreviations: MHMOC, medical home model of care; CI, confidence interval; FPL, federal poverty line; CSHCN, children with special health care needs.

^aCaregiver education.

^bHigh school or GED or vocational graduate.

Unadjusted Odds of Being Served in a MHMOC and Endorsing Medical Home Indicators Based on Demographic Characteristics.

Table 2.

Characteristics	MHMOC, n = 50 177, OR (95% CI)	Personal Doctor/ Nurse, n = 49 932, OR (95% CI)	Family-Centered Care, n = 44 036, OR (95% CI)	Usual Source of Sick Care, n = 49 579, OR (95% CI)	Care Coordination, n = 27 030, OR (95% CI)	No Referral Problems, n = 9141, OR (95% CI)
Sex						
Female	1.00	1.00	1.00	1.00	1.00	1.00
Male	.99 (.91, 1.07)	1.01 (.92, 1.11)	1.02 (.89, 1.17)	1.02 (.91, 1.15)	.97 (.86, 1.09)	.91 (.70, 1.17)
Age	.98 *** (.98, .99)	.99 (.98, 1.00)	.98 ** (.97, .99)	.97 *** (.96, .99)	.99 (.98, 1.00)	.98 * (.95, .99)
Race						
White	1.00	1.00	1.00	1.00	1.00	1.00
Black	.60 *** (.53, .69)	.71 *** (.62, .82)	.53 *** (.43, .64)	.57 *** (.49, .67)	.95 (.78, 1.15)	.66 * (.46, .96)
Asian	.65 *** (.55, .78)	.77 ** (.64, .93)	.62 *** (.49, .78)	.45 *** (.37, .56)	.89 (.70, 1.13)	.47 * (.24, .93)
Other	.47 *** (.38, .58)	.51 *** (.41, .64)	.46 *** (.34, .61)	.46 *** (.37, .59)	.90 (.64, 1.26)	.58 (.33, 1.01)
Multiracial	.75 *** (.65, .87)	1.02 (.86, 1.21)	.85 (.69, 1.06)	.91 (.73, 1.13)	.73 ** (.59, .91)	.62 (.37, 1.02)
Ethnicity						
Non-Hispanic	1.00	1.00	1.00	1.00	1.00	1.00
Hispanic	.51 *** (.45, .57)	.54 *** (.48, .62)	.48 *** (.40, .58)	.55 *** (.47, .63)	.82 * (.69, .97)	.61 ** (.44, .84)
Nativity						
Third generation or higher	1.00	1.00	1.00	1.00	1.00	1.00
First generation	.25 *** (.19, .34)	.34 *** (.25, .45)	.24 *** (.16, .34)	.38 *** (.28, .50)	.54 ** (.36, .82)	.26 ** (.11, .62)
Second generation	.60 *** (.54, .67)	.67 *** (.59, .77)	.49 *** (.41, .59)	.57 *** (.49, .66)	.77 ** (.65, .91)	.54 *** (.40, .73)
Unknown	.49 *** (.41, .59)	.54 *** (.45, .66)	.62 *** (.46, .82)	.39 *** (.32, .48)	.97 (.75, 1.25)	.39 ** (.21, .73)
Caregiver education						
College degree or higher	1.00	1.00	1.00	1.00	1.00	1.00
<High school	.29 *** (.23, .36)	.27 *** (.21, .33)	.30 *** (.21, .41)	.19 *** (.15, .25)	1.14 (.78, 1.66)	.34 ** (.20, .58)
High school ^a	.40 *** (.36, .45)	.41 *** (.36, .47)	.48 *** (.40, .57)	.31 *** (.27, .36)	.90 (.75, 1.08)	.72 (.51, 1.01)
Some college	.60 *** (.55, .66)	.57 *** (.51, .64)	.56 *** (.48, .66)	.52 *** (.46, .59)	.91 (.79, 1.05)	.72 * (.53, .97)
FPL						

Characteristics	MHMO, n = 50 177, OR (95% CI)	Personal Doctor/ Nurse, n = 49 932, OR (95% CI)	Family-Centered Care, n = 44 036, OR (95% CI)	Usual Source of Sick Care, n = 49 579, OR (95% CI)	Care Coordination, n = 27 030, OR (95% CI)	No Referral Problems, n = 9141, OR (95% CI)
≥400%	1.00	1.00	1.00	1.00	1.00	1.00
<100%	.34 *** (.30, .38)	.37 *** (.32, .42)	.29 *** (.24, .35)	.28 *** (.24, .33)	.67 *** (.56, .80)	.37 *** (.27, .51)
100% to 199%	.42 *** (.38, .47)	.46 *** (.40, .52)	.34 *** (.28, .41)	.41 *** (.35, .48)	.68 *** (.57, .80)	.40 *** (.29, .57)
200% to 299%	.60 *** (.54, .67)	.58 *** (.50, .66)	.52 *** (.43, .63)	.51 *** (.43, .60)	.79 *** (.66, .94)	.74 * (.54, .99)
300% to 399%	.77 *** (.70, .86)	.73 *** (.65, .83)	.61 *** (.50, .75)	.71 *** (.60, .83)	.95 (.81, 1.12)	.58 *** (.42, .82)
Insurance type						
Private	1.00	1.00	1.00	1.00	1.00	1.00
Public	.46 *** (.42, .50)	.57 *** (.51, .63)	.43 *** (.37, .50)	.47 *** (.42, .53)	.70 *** (.61, .80)	.48 *** (.37, .63)
Private/public	.48 *** (.39, .59)	.66 *** (.52, .83)	.37 *** (.27, .50)	.46 *** (.36, .58)	.53 *** (.41, .70)	.38 *** (.24, .62)
Unspecified	.28 *** (.19, .59)	.29 *** (.19, .44)	.44 (.19, 1.01)	.16 *** (.10, .23)	.88 (.48, 1.61)	.36 * (.14, .92)
Uninsured	.24 *** (.19, .29)	.23 *** (.19, .29)	.27 *** (.20, .38)	.23 *** (.19, .29)	.65 * (.47, .91)	.28 *** (.13, .60)
CSHCN status						
No	1.00	1.00	1.00	1.00	1.00	1.00
Yes	.76 *** (.69, .83)	1.57 *** (1.38, 1.78)	.69 *** (.59, .80)	1.22 *** (1.06, 1.40)	.52 *** (.46, .58)	.70 *** (.54, .91)

Abbreviations: MHMO, medical home model of care; OR, odds ratio; CI, confidence interval; FPL, federal poverty level; CSHCN, children with special health care needs.

^aHigh school or GED or vocational graduate.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

Table 3.
Adjusted Odds of Being Served in a MHMOC and Endorsing Medical Home Indicators Based on Demographic Characteristics.

Characteristics	MHMOC, n = 48 385, aOR (95% CI)	Personal Doctor/ Nurse, n = 48 192, aOR (95% CI)	Family-Centered Care, n = 42 671, aOR (95% CI)	Usual Source of Sick Care, n = 47 838, aOR (95% CI)	Care Coordination, n= 26 157, aOR (95% CI)	No Referral Problems, n = 8841, aOR (95% CI)
Sex						
Female	1.00	1.00	1.00	1.00	1.00	1.00
Male	1.00 (.92, 1.09)	.97 (.88, 1.08)	1.00 (.87, 1.16)	1.03 (.92, 1.17)	1.02 (.90, 1.15)	.93 (.74, 1.17)
Age, years	.99* (.98, .99)	.99 (.98, 1.00)	.99 (.98, 1.00)	.98*** (.97, .99)	1.00 (.99, 1.01)	.97* (.95, .99)
Race						
White	1.00	1.00	1.00	1.00	1.00	1.00
Black	.77*** (.67, .88)	.86 (.73, 1.00)	.66*** (.53, .81)	.67*** (.57, .80)	1.13 (.91, 1.40)	.84 (.58, 1.22)
Asian	.70*** (.57, .86)	.78 (.60, 1.01)	.70* (.52, .94)	.43*** (.33, .55)	1.03 (.77, 1.38)	.62 (.34, 1.13)
Other	.90 (.70, 1.16)	.91 (.70, 1.19)	.87 (.62, 1.23)	.89 (.65, 1.20)	1.19 (.80, 1.76)	.93 (.50, 1.73)
Multiracial	.77*** (.66, .89)	.99 (.83, 1.18)	.85 (.68, 1.08)	.86 (.69, 1.08)	.80 (.64, 1.01)	.61* (.38, .97)
Ethnicity						
Non-Hispanic	1.00	1.00	1.00	1.00	1.00	1.00
Hispanic	.73*** (.63, .84)	.75*** (.64, .87)	.71** (.58, .87)	.80* (.66, .95)	.90 (.74, 1.10)	.96 (.68, 1.35)
Nativity						
Third generation or higher	1.00	1.00	1.00	1.00	1.00	1.00
First generation	.38*** (.28, .51)	.56*** (.41, .78)	.33*** (.22, .51)	.76 (.53, 1.10)	.52** (.33, .83)	.34* (.13, .88)
Second generation	.82** (.72, .93)	.97 (.83, 1.14)	.64*** (.52, .78)	.90 (.75, 1.08)	.73** (.60, .89)	.64* (.45, .90)
Unknown	.89 (.71, 1.11)	.89 (.70, 1.14)	1.02 (.72, 1.46)	.66** (.51, .86)	1.09 (.77, 1.55)	.70 (.36, 1.38)
Caregiver education						
College degree or higher	1.00	1.00	1.00	1.00	1.00	1.00
Less than high school	.60*** (.46, .78)	.46*** (.34, .59)	.76 (.53, 1.10)	.37*** (.28, .48)	2.00*** (.130, 3.10)	.72 (.40, 1.31)
High school ^a	.61*** (.54, .70)	.56*** (.48, .64)	.82 (.66, 1.02)	.44*** (.37, .52)	1.28* (.103, 1.58)	1.20 (.81, 1.77)
Some college	.79*** (.71, .87)	.68*** (.60, .77)	.78** (.65, .94)	.65*** (.57, .76)	1.16 (.99, 1.36)	1.05 (.75, 1.46)
FPL						

Characteristics	MHMOc, n = 48 385, aOR (95% CI)	Personal Doctor/ Nurse, n = 48 192, aOR (95% CI)	Family-Centered Care, n = 42 671, aOR (95% CI)	Usual Source of Sick Care, n = 47 838, aOR (95% CI)	Care Coordination, n= 26 157, aOR (95% CI)	No Referral Problems, n = 8841, aOR (95% CI)
≥400%	1.00	1.00	1.00	1.00	1.00	1.00
<100%	.69 *** (.59, .81)	.72 *** (.60, .86)	.52 *** (.41, .67)	.66 *** (.53, .81)	.70 * (.53, .93)	.65 * (.43, .99)
100% to 199%	.70 *** (.62, .80)	.74 *** (.63, .86)	.55 *** (.44, .68)	.77 * (.64, .93)	.75 * (.60, .94)	.66 * (.45, .96)
200% to 299%	.77 *** (.68, .87)	.75 *** (.65, .87)	.65 *** (.52, .80)	.72 *** (.60, .85)	.81 * (.66, .99)	.89 (.63, 1.26)
300% to 399%	.84 ** (.76, .93)	.81 ** (.71, .92)	.65 *** (.53, .79)	.80 ** (.68, .95)	.96 (.80, 1.13)	.62 ** (.44, .88)
Insurance type						
Private	1.00	1.00	1.00	1.00	1.00	1.00
Public	.80 *** (.71, .91)	.93 (.80, 1.07)	.80 * (.65, .98)	.89 (.75, 1.05)	.79 * (.65, .96)	.65 ** (.47, .89)
Private/public	.74 ** (.59, .92)	.92 (.71, 1.18)	.66 * (.47, .91)	.70 * (.53, .92)	.64 ** (.48, .85)	.48 ** (.29, .77)
Unspecified	.52 ** (.1, .79)	.49 ** (.31, .78)	.71 (.28, 1.79)	.32 *** (.20, .50)	.90 (.46, 1.75)	.46 (.18, 1.18)
Uninsured	.40 *** (.32, .50)	.40 *** (.32, .51)	.50 *** (.35, .71)	.49 *** (.38, .64)	.66 * (.45, .96)	.47 * (.25, .90)
CSHCN status						
No	1.00	1.00	1.00	1.00	1.00	1.00
Yes	.77 *** (.69, .85)	1.64 *** (1.44, 1.88)	.72 *** (.61, .84)	1.31 *** (1.13, 1.53)	.52 *** (.45, .59)	.74 * (.57, .96)

Abbreviations: MHMOc, medical home model of care; aOR, adjusted odds ratio; CI, confidence interval; FPL, federal poverty level; CSHCN, children with special health care needs.

^aHigh school or GED or vocational graduate.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

Table 4.

Relationship Between Medical Home Model of Care, Medical Model of Care Indicators, and Health Outcomes Among Children.

	Health Status: Excellent/Very good n = 50 060, OR (95% CI)	At Least One Emergency Room Visit n = 50 005, OR (95% CI)	At Least One Unmet Health Need n = 50 022, OR (95% CI)
Unadjusted models ^a			
Medical home model of care	2.42 *** (2.06, 2.83)	.73 *** (.66, .81)	.28 *** (.22, .36)
Personal doctor/nurse	1.07 (.90, 1.28)	1.11 (.97, 1.25)	.83 (.62, 1.11)
Family-centered care	2.95 *** (2.41, 3.60)	.66 *** (.56, .77)	.22 *** (.16, .29)
Usual source of sick care	1.45 *** (1.21, 1.74)	.80 *** (.69, .92)	.70 * (.52, .94)
Care coordination	2.53 *** (2.12, 3.03)	.74 *** (.64, .85)	.17 *** (.13, .23)
No referral problems	1.84 *** (1.34, 2.51)	.56 *** (.43, .72)	.18 *** (.12, .27)
Adjusted models ^b			
Medical home model of care	1.65 *** (1.39, 1.97)	.87 * (.78, .97)	.39 *** (.30, .52)
Personal doctor/nurse	.86 (.70, 1.05)	1.24 ** (1.08, 1.42)	.99 (.73, 1.35)
Family-centered care	2.04 *** (1.62, 2.59)	.82 * (.69, .98)	.30 *** (.22, .42)
Usual source of sick care	.97 (.77, 1.22)	.95 (.82, 1.11)	.99 (.68, 1.43)
Care coordination	2.00 *** (1.64, 2.45)	.80 *** (.70, .93)	.20 *** (.15, .28)
No referral problems	1.34 (.95, 1.89)	.62 *** (.48, .80)	.23 *** (.15, .34)

Abbreviations: OR, odds ratio; CI, confidence interval.

^aResults presented are for each variable modeled separately in bivariate logistic regressions.^bResults presented are for each variable modeled in separate multiple logistic regressions that included the listed variable and demographic characteristics (sex, age, race, ethnicity, nativity, caregiver education, household income, insurance type, and children with special health care needs status).* $P < .05$.** $P < .01$.*** $P < .001$.