



Published in final edited form as:

Pediatrics. 2009 November ; 124(5): 1363–1371. doi:10.1542/peds.2008-3141.

A Medical Home versus Temporary Housing: The Importance of a Stable Usual Source of Care Among Low-Income Children

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Abstract

Introduction—Recent health care reform policies focus on finding the best medical home for everyone. Less is known about how the stability of a usual source of care (USC) over time impacts on structural access to care.

Objectives—To examine the prevalence of USC changes among a low-income population of children, and how these changes were associated with unmet need.

Design and Methods—Cross-sectional, multivariable analyses of mail-return survey data from Oregon's food stamp program in January 2005. Results from 2,681 completed surveys were weighted back to a population of 84,087 families with adjustments for oversampling and non-response. The independent variable: whether a child had ever been required to change USC for insurance reasons. Dependent variables included: parents report of unmet medical need, unmet prescription need, missed medication doses, delayed urgent care, no ambulatory visits; and problems obtaining dental care, specialty care and counseling.

Results—Nearly 23% of children had changed their USC due to insurance reasons, and 10% had no current USC. Compared to children who had maintained a stable USC, children who had changed their USC due to insurance reasons had higher rates of unmet medical need (unadjusted odds ratio [OR] 2.69, 95% confidence interval [CI] 1.83, 3.29); unmet prescription need (OR 1.85, 95% CI 1.31, 2.61); delayed care (OR 1.87, 95% CI 1.21, 2.89); and reported more problems obtaining dental care (OR 1.66, 95% CI 1.20, 2.31) and counseling (OR 3.22, 95% CI 1.53, 6.77).

Conclusions—This study highlights the importance of ensuring stability with a USC. In our zeal to move people into new medical homes, we need to be wary of harming quality by disturbing existing care relationships, thus merely creating “temporary housing.”

Keywords

access to health care; pediatrics; health insurance; delivery of health care; primary care; continuity of patient care

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We have no conflicts of interest to disclose.

Introduction

Children in the United States (US) have better access to health insurance than they did a decade ago.¹⁻¹³ Despite this expanded access to insurance, many still have limited access to quality health care services,^{10, 14} and low income children are particularly vulnerable.^{1, 15-17} So, while debates continue about how to ensure financial access for all US children through the State Children's Health Insurance Program (SCHIP) or some other means, simultaneous efforts are underway to achieve access to care through better delivery (structural access).¹⁸ Lately, the rhetoric revolves around securing a “medical home” for all children.¹⁹⁻²²

Although not synonymous with the strict definitions of a “medical home,” having an ongoing relationship with either a primary care facility or an individual provider—a “usual source of care” (USC)—is a strong predictor of structural access and has been associated with increased preventive services, decreased use of emergency services, and shorter hospital stays.²³⁻³⁸ Having a USC also correlates positively with better rates of self-reported access to care and higher levels of patient satisfaction.³⁹⁻⁴³ Interestingly, as evidence supporting the benefits of having a USC began to increase, the number of patients with a stable USC showed a decline.⁴⁴ Currently, 20% of American adults³⁹ and 10% of American children⁴⁵ are without a USC. Furthermore, USC statistics are often based on static measurements, asking respondents about only one point in time. Less is known about the stability of a USC over time among low-income children and how it impacts their structural access to health care.

Smith, et al examined how a recent USC change among a nationally-representative sample of adults affected their perceived health care access, quality, and utilization.⁴⁰ Eleven percent of the adults in this survey reported a change in their USC in the preceding 12 months and an additional 14 percent reported no USC during that period. Responses from adults who changed their USC were more similar to those who lacked a USC than those who kept the same USC.⁴⁰ To date, no research has addressed the issue of USC change among children.

The primary objectives of this study were to examine the prevalence of USC changes among a low-income population of children, and how these changes were associated with their parents' perceptions of unmet need and other measures of access to child health care service, controlling for insurance status and other potentially confounding variables. As Smith, et al found with adults, we hypothesized that children who changed their USC would look more similar to those without a USC and less like the ones with a stable USC.

Methods

Study Population--Sample of Parents

To collect primary data from a statewide sample of low-income children, capturing a significant percentage of the uninsured population, we studied families enrolled in Oregon's food stamp program at the end of January 2005. We found that approximately one quarter of the households with children enrolled in food stamps did not have children enrolled in the Oregon Health Plan (OHP), Oregon's combined Medicaid and SCHIP. We used the survey selection procedure in SAS 9.1, aided by PASS software for adequate power calculations, to obtain a stratified, random sample of 10,175 households with children—divided evenly between families with no children enrolled in OHP and families with at least one publicly-insured child. We excluded families with only children less than one year of age due to different public insurance eligibility requirements. We also over-sampled in rural areas. A focal child was then randomly selected from each household. Our final sample included 8,636 eligible households (families who had moved out of state and those with no current

address were excluded). We received completed surveys from 2,681 households, for a response rate of approximately 31%. This response rate is consistent with rates for other similar statewide and national surveys of Medicaid-eligible populations.⁴⁶⁻⁴⁸

Survey respondents had similar characteristics to the total eligible sample (see reviewer Appendix 1). With the use of administrative data from the entire sample, survey responses were weighted back to the total food stamp population depending on the probability of original selection into the random sample. Final weights assigned to each respondent case were further adjusted using a raking ratio estimation process to account for non-response.^{49, 50} (see reviewer Appendix 2) All reported results have been weighted back to the overall study population of 84,087 households.

Data Collection—Survey of Parents

As insurance coverage often impacts on access to a USC, these two issues cannot be considered in isolation from one another. We were particularly interested in finding a subgroup of children who had changed their USC because of a change in or loss of insurance coverage. We designed a survey instrument to capture this important relationship and other policy-relevant variables requested by state policy-makers, which could not be determined from secondary analysis of one national dataset alone. We pooled survey questions adapted from several widely accepted national data collection tools, including the Consumer Assessment of Health Plans Survey, the Community Tracking Study, the National Health Interview Survey, and the Medical Expenditure Panel Survey.⁵¹⁻⁵⁴ The mail-return survey was designed to be self-administered and contained sixty-three items written at a fifth grade reading level. After conducting cognitive interviews with low-income parents to finalize our instrument, the surveys were translated into Spanish and Russian (the two most common non-English languages among this population), and then independently back translated to ensure fidelity of translation. To optimize response rate, a four-wave survey methodology was employed (two surveys and two reminder postcards) and participants were entered into a drawing to win \$100 gift cards at a local grocery store. Due to budgetary constraints, telephone follow-up was not possible. The survey and all aspects of the study protocol were approved by the Oregon Health and Science University Institutional Review Board (OHSU eIRB# 1717).

Study Variables

Dependent variables pertained to compromised children's health care access and barriers to receiving care, including: unmet medical need, unmet prescription need, missed medication doses, delayed urgent care, no ambulatory visits; and reports of problems obtaining necessary dental care, specialty care and counseling (see Appendix 3).

The primary predictor variable was based on two survey questions regarding the child's USC and whether or not the child had ever been required to make a USC change “because the child's health insurance changed or because the child lost health insurance.” We created three mutually-exclusive groups of low-income children: those with 1) a current USC and no change (Stable USC), 2) a current USC, but had to change due to insurance (Unstable USC), 3) no current USC. To determine if the child had a current USC, parents were asked: “Where do you usually take your child for needed medical care?” Children whose parents reported no USC, the Emergency Department or an urgent care center were assigned to the group No USC, all others were assigned Yes USC. Among those with a USC, nearly 70% reported regular visits to a private doctor's office, approximately 20% were seen at a community health center, and the remaining 10% were going to school-based clinics, hospital-based clinics or other unspecified primary care sites.

Receipt of necessary health care services is, of course, also influenced by other factors. For our multivariable analyses, we selected demographic and socioeconomic covariates according to the health services utilization conceptual models described by Aday, Andersen, and others⁵⁵ including: age, race/ethnicity, parental employment status, child's insurance status, parent's insurance status, household income and whether or not the child had a special healthcare need. We kept all covariates in the final models because each was found to have a significant bivariate association ($p < 0.05$) with at least one of the outcomes. Because Oregon's predominant minority population is Hispanic and a large number of Hispanics in the sample reported "other" as their race, a combination race/ethnicity covariate was created for the multivariable analysis.

Analysis

We described demographics associated with each of the three USC groups among this population and used chi-square analyses to ascertain significant differences between the three USC groups (Table 1). Similarly, we confirmed that each of our demographic covariates was associated with at least one of the outcomes through chi-square bivariable analyses and individual logistic regression models (table not shown). We then created two dichotomous outcome variables pertaining to the child's USC and performed a series of individual and multivariable logistic regression models to determine which covariates were significantly predictive of the stability of the child's USC. First, among all children with known USC status and complete information for all covariates ($n=2211$), we assessed predictors of no current USC (Table 2). Second, among only those with a current USC ($n=1933$), we examined the likelihood that a child had changed his/her USC (Table 3). In the final series of analyses, we examined associations between the USC groups and access/utilization outcome variables, controlling for all other potentially confounding independent variables (Table 4). SPSS 14.0 software with the complex samples module was used to conduct statistical tests and make estimates with variance adjustment required for the complex sampling design of the survey.

Results

As noted in Table 1, an estimated 23% of the children in this study population had changed their USC due to insurance reasons, and 10% had no current USC. Those more likely to have no current USC were older, Hispanic, and lacking health insurance coverage for both children and parents. A USC change was more common among White, non-Hispanics, children with employed parents, those with uninsured parents, and with household incomes above \$1500. Children with special healthcare needs were also slightly more likely to have changed their USC, compared to those without a special need.

Characteristics Associated with Usual Source of Care Status

Among children in Oregon's food stamp population, the most important characteristic associated with whether the child had a current USC was the child's insurance status. Uninsured children were more than seven times as likely to have no USC (adjusted OR [odds ratio] 7.44, 95% CI [confidence interval] 3.97 to 13.95). (See Table 2)

Among just the subgroup of children with a current USC, parental employment and insurance status were most significantly associated with whether or not the child had a USC change. Children with employed parents were nearly twice as likely to have made a change (adjusted OR 1.74, 95% CI 1.26 to 2.41). Children with uninsured parents were also vulnerable to having changed their USC (adjusted OR 2.12, 95% CI 1.28 to 3.51). (See Table 3)

Access to Health Care and the Stability of a Usual Source of Care

Among children in Oregon's food stamp population, having a stable USC was associated with the highest likelihood of receiving necessary health care services and having the lowest rates of unmet healthcare need. In most cases, children having changed their USC or without a current USC were significantly more likely to have unmet healthcare needs and more significant problems obtaining services. After controlling for the effects of all potentially confounding characteristics reported in Table 1, these associations remained strong (Table 4). With few exceptions, the group of children with a USC change (unstable USC) had significantly more unmet need in the most recent 12 months when compared to children with a stable USC.

Discussion

One in ten children among this low-income Oregon population lacked a current USC, mirroring national trends. Not surprisingly, children in our study without a USC had significantly higher rates of unmet healthcare need, compared with children who had a stable USC. These findings contribute to the large body of literature about the importance of having a USC.²³⁻³⁵ More importantly, this study found that one in four children had to change their USC for health insurance reasons. After controlling for several potentially confounding factors, the rates of unmet need for children with an unstable USC were similar to the needs of children without a USC. These findings suggest that simply having a current USC is not enough, children do better when they are able to develop a stable relationship with the same USC over time. The continuity of care that results when maintaining a stable USC not only matters for adults but also for children.

This study has important research implications. Increasingly, health services researchers are incorporating USC variables—sometimes dependent, other times independent—in models studying access to care. As we have learned to avoid assumptions that consider health insurance to be a static phenomenon, we also need to develop new methods that can accurately reflect the fluidity of having a USC one day and changing it the next. The USC changes described in this paper will have an impact on current models, and future research must account for this important variance in seeking a better understanding of health care access and utilization.

This study also has profound implications in the policy realm. Much of the current debate about health care reform has been focused on providing a medical home for everyone. Medical home advocates argue that having a USC can offer children uninterrupted access, despite potential insurance discontinuities.^{19, 21} In fact, a USC has proven more important than health insurance under certain circumstances.^{26, 28} Our study highlights the importance of ensuring stability with a USC provider or facility, which may be more important than shifting business towards more robust medical homes and away from others. In fact, attempts to move patients from one USC to another as insurance plans change may actually result in a health care system that merely provides “temporary housing,” defeating the purpose of creating medical homes in the first place.

This study contributes to global discussions about the attributes of an ideal medical home and the need to ensure stability with a USC. Most countries in the developed world can participate in these discussions without worrying about universal access to these services. In the US, however, insurance and a USC cannot be considered in isolation. A lack of health insurance was the most significant predictor for a child not having a USC, and having a parent who was uninsured was highly predictive of whether or not a child had changed his or her USC. While this study confirms the importance of a stable USC, our findings do warn

against developing medical homes in the US as a substitute for expanding SCHIP and other models that are needed to stabilize the insurance system.

Limitations

Interpreting data presented here requires consideration of several important factors. First, families enrolled in the food stamp program may be more resourceful when compared to a general low-income population; therefore, their children may be more likely to maintain a stable USC. Second, while a four-wave survey methodology was employed, the survey was only administered in English, Spanish and Russian; and telephone follow-up was not possible; thus, the response rate was 31%. Although this rate is comparable to the response rates of other similar studies of Medicaid-eligible populations, even some that employed telephone follow-up and personal interviews, response bias remains a concern. Some of the same factors influencing the likelihood that a family was enrolled in food stamps, such as higher literacy levels, better knowledge of available benefits, stable housing, and more secure sources of income, also influenced the likelihood of response. While responders and non-responders differed only slightly in demographic comparisons and statistical adjustments were made to control for non-response, we recognize the potential for selection and response bias even in the results that have been weighted back to the total food stamp population.

Third, as with any self-reported data, there is always the potential for recall bias. To minimize bias, respondents were asked to recall events and occurrences only in the past 12 months, and several questions pertained to similar topics in order to verify consistency in responses. Fourth, for the usual source of care predictor variable, it was possible to determine if the child had a site for usual care but not an individual provider. There may have also been subtle differences attributed to different types of usual source of care sites that were not measured in this study. We also focused on only those children who had a USC change for insurance reasons, so we did not capture all children who had changed USC for other reasons.

Finally, another factor that may vary across regions is the willingness of providers to care for underserved populations or the availability of safety net services versus how these services are delivered in other states. (Recent Graham Center Access Study) Our findings do, however, capture how a USC change can compromise access to health care services, putting children at a disadvantage similar to those who lack a USC. This study also draws strength from its focus on low-income children, a population of particular concern in the current debate about health care reform, and its relevance to current state policy discussions in Oregon. Studies such as this one are crucial to informing future state policy directions. Further studies are also needed to examine nationally-representative populations and children of all incomes.

Conclusions

This study not only highlights the importance of having a USC but also the need to ensure stability with a USC. A continuity relationship with a USC may, in fact, serve to buffer vulnerable populations from some of the current access disparities. We cannot build strong medical homes in isolation, however. As we build medical homes to improve the delivery of health care services, we must be wary of creating financing structures that require patients to move away from their current medical homes. In fact, shifting patients away from one USC to another, in search of the best medical home, may actually result in a health care system that merely provides “temporary housing.”

Acknowledgments

Thank you to the Office for Oregon Health Policy and Research (OHPR), the Oregon Department of Children, Adults and Families (CAF - food stamp office), and the Oregon Department of Medical Assistance Programs. We are grateful for contributions from LeNeva Spires, Janne Boone, Jessica Miller, James Oliver, Rebecca Ramsey, Pooya Naderi, Ron Taylor and Jeff Tharpe. And, a special thank you to Tina Edlund, for her survey design expertise, and to every parent who took the time to complete our survey.

Funding Sources: The study was partially funded by a grant to the Oregon Office for Health Policy and Research from the Health Resources and Services Administration (HRSA) and by the OHSU Department of Family Medicine Research Division. Dr. DeVoe's time on this project was supported by grant numbers 5-F32-HS014645 and 1-K08-HS16181 from the Agency for Healthcare Research and Quality (AHRQ).

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Table 1
Demographic Characteristics of Children in Oregon's Food Stamp Population By Usual Source of Care (USC) Status

Independent Covariables	Child has stable USC, did not change in prior 12 months n=1637 (Weighted %)	Child has current USC, but had to change in prior 12 months n=574 (Weighted %)	Child has no current USC n=273 (Weighted %)
TOTAL	67.3	22.8	9.9
Child's Age* (N=77,927) ^{\$}			
1-4 years	76.3	14.5	9.2
5-9 years	69.3	22.3	8.4
10-14 years	58.6	30.5	11.0
15-18 years	61.6	26.2	12.2
Race/Ethnicity* (N=77,927) ^{\$} [combined variable]			
White, Non-Hispanic	64.9	26.1	9.0
Hispanic, Any Race	75.2	12.3	12.5
Non-White, Non-Hispanic	69.2	19.5	11.3
Parental Employment* (N=76,161) ^{\$\$}			
Not Employed	72.2	18.8	9.1
Employed	60.8	28.3	10.9
Child's Insurance Type* (N=77,113) ^{\$\$}			
Privately-Insured	65.7	28.9	5.4
Publicly-Insured	71.4	21.3	7.3
Not Insured	42.9	23.3	33.9
Parent's Insurance Type* (N=72,424) ^{\$\$}			
Privately-Insured	69.3	23.6	7.0
Publicly-Insured	71.5	20.9	7.6
Not Insured	58.8	25.5	15.7
Monthly Household Income* (N=77,927) ^{\$}			
<\$500	64.5	23.6	11.9
\$501-\$1000	73.9	17.4	8.7
\$1,001-\$1,500	70.5	22.5	7.0
\$1,501-\$2,000	60.3	29.8	9.9
>\$2,000	57.5	29.9	12.5
Child Has Special Healthcare Need(s)** (N=73,824) ^{\$\$}			
No	68.7	21.3	10.0
Yes	59.3	31.4	9.3

Note: Row Percentage = 100% (may not be exact due to rounding to nearest tenth)

* $p < 0.01$ in the χ^2 analysis for overall differences between demographic subgroups.

** $p < 0.05$ in the χ^2 analysis for overall differences between demographic subgroups.

\$ Demographic characteristic known from administrative data.

\$\$ Demographic characteristics known from self report. (Note: Population number varies for each characteristic depending on the information available. The demographic data gathered from administrative files was more complete than the self-reported data.)

Total in sample with self-reported USC information = (Unweighted N=2484; weighted N=77,927).

Child has Stable USC, No change in prior 12 months: unweighted N=1637, weighted N=52,478 (67.3%).

Child has Current USC, but had to change in prior 12 months: unweighted N=574, weighted N=17735 (22.8%).

Child has no Current USC: unweighted N=273, weighted N=7713 (9.9%).

Table 2
Predictors of the Likelihood that a Child in Oregon's Food Stamp Population had No Usual Source of Care in the prior 12 months

Independent Covariables	Odds that a Child has no USC
	<i>Adjusted Odds Ratio</i>
Child's Age	
1-4 years	1.00
5-9 years	0.79 (0.44, 1.44)
10-14 years	1.07 (0.59, 1.94)
15-18 years	1.10 (0.56, 2.17)
Race/Ethnicity [combined variable]	
White, Non-Hispanic	1.00
Hispanic, Any Race	0.88 (0.51, 1.52)
Non-White, Non-Hispanic	1.68 (0.78, 3.59)
Parental Employment	
Not Employed	1.00
Employed	1.18 (0.79, 1.76)
Child's Insurance Type	
Privately-Insured	1.00
Publicly-Insured	1.27 (0.69, 2.33)
Not Insured	7.44 (3.97, 13.95)
Parent's Insurance Type	
Privately-Insured	1.00
Publicly-Insured	1.03 (0.52, 2.04)
Not Insured	1.35 (0.74, 2.44)
Monthly Household Income	
<\$500	1.00
\$501-1,000	0.85 (0.51, 1.41)
\$1,001-\$1,500	0.43 (0.21, 0.92)
\$1,501-\$2,000	0.89 (0.47, 1.67)
>\$2,000	1.06 (0.49, 2.26)
Child Has Special Healthcare Need(s)	
No	1.00
Yes	0.97 (0.48, 1.96)

Note: Multivariable logistic regression models controlled for all covariates listed in the table.

This model included all respondents with known USC status and complete information for all covariates (unweighted n=2211).

Table 3
Predictors of the Likelihood that a Child in Oregon's Food Stamp Population had to Change Usual Source of Care due to Insurance Reasons in the prior 12 months

Independent Covariables	Odds that a Child has current USC, but had to change in prior 12 months (Unstable USC)
	<i>Adjusted Odds Ratio</i>
Child's Age	
1-4 years	1.00
5-9 years	1.78 (1.17, 2.70)
10-14 years	2.76 (1.78, 4.28)
15-18 years	1.92 (1.19, 3.10)
Race/Ethnicity [combined variable]	
White, Non-Hispanic	1.00
Hispanic, Any Race	0.43 (0.26, 0.70)
Non-White, Non-Hisp	0.54 (0.28, 1.04)
Parental Employment	
Not Employed	1.00
Employed	1.74 (1.26, 2.41)
Child's Insurance Type	
Privately-Insured	1.00
Publicly-Insured	0.79 (0.50, 1.25)
Not Insured	1.28 (0.72, 2.23)
Parent's Insurance Type	
Privately-Insured	1.00
Publicly-Insured	1.61 (0.92, 2.80)
Not Insured	2.12 (1.28, 3.51)
Monthly Household Income	
<\$500	1.00
\$501-1,000	0.50 (0.33, 0.76)
\$1,001-\$1,500	0.62 (0.40, 0.97)
\$1,501-\$2,000	1.11 (0.69, 1.82)
>\$2,000	1.01 (0.58, 1.75)
Child Has Special Healthcare Need(s)	
No	1.00
Yes	1.51 (1.00, 2.29)

Note: Multivariable logistic regression models controlled for all covariates listed in the table.

This model included only those respondents with known USC status, a current USC, and complete information for all covariates (unweighted n=1933).

Table 4
Usual Source of Care Status and Access to Healthcare Services in the Prior 12 Months
Among Children in Oregon's Food Stamp Population

Access Measure	Percent Reporting Children's Healthcare Access Difficulties (%) [weighted]	Multivariate Odds Ratio ***
Unmet Medical Need*	(Total 16%)	
Child has Current USC, Stable	10.6	1.00
Child has Current USC, Unstable (had to change)	25.5	2.69 (1.83-3.96)
Child has No Current USC (unweighted N=2108, weighted N=65,941)	29.3	1.97 (1.18-3.29)
Unmet Prescription Need*	(Total 22%)	
Child has Current USC, Stable	17.3	1.00
Child has Current USC, Unstable (had to change)	32.1	1.85 (1.31-2.61)
Child has No Current USC (unweighted N=2091, weighted N=65,406)	29.5	1.31 (0.82-2.09)
Missed Medication Doses*	(Total 11%)	
Child has Current USC, Stable	8.2	1.00
Child has Current USC, Unstable (had to change)	15.6	1.94 (1.27-2.96)
Child has No Current USC (unweighted N=2100, weighted N=65,665)	18.8	2.24 (1.29-3.90)
No Doctor Visits*	(Total 14%)	
Child has Current USC, Stable	10.3	1.00
Child has Current USC, Unstable (had to change)	11.2	1.14 (0.69-1.88)
Child has No Current USC (unweighted N=2126, weighted N=66,493)	45.6	6.37 (3.76-10.80)
Big Problem Getting Dental Care*	(Total 25%)	
Child has Current USC, Stable	19.9	1.00
Child has Current USC, Unstable (had to change)	34.1	1.66 (1.20-2.31)
Child has No Current USC (unweighted N=2080, weighted N=65,193)	46.5	2.55 (1.55-4.21)
Rarely or Never Got Immediate Care*¹	(Total 21%)	
Child has Current USC, Stable	16.7	1.00
Child has Current USC, Unstable (had to change)	23.5	1.87 (1.21-2.89)
Child has No Current USC (unweighted N=1440, weighted N=45,779)	46.1	2.87 (1.67-4.92)
Big Problem Getting Specialty Care*²	(Total 30%)	
Child has Current USC, Stable	21.8	1.00
Child has Current USC, Unstable (had to change)	38.6	1.86 (0.99-3.47)
Child has No Current USC (unweighted N=544, weighted N=17,184)	57.9	4.71 (1.83-12.15)
Big Problem Getting Counseling*³	(Total 21%)	
Child has Current USC, Stable	13.9	1.00
Child has Current USC, Unstable (had to change)	37.3	3.22 (1.53-6.77)
Child has No Current USC (unweighted N=489, weighted N=15,550)	21.1	0.61 (0.17-2.20)

* $p < 0.001$ in the χ^2 analysis for overall differences between the USC groups.

*** Adjusted for age, race/ethnicity, household income, parental employment, parent's insurance type, child's insurance type, and whether or not the child has a special healthcare need

¹ Only among children who needed immediate care in the previous 12 months.

² Only among children who needed specialty care in the previous 12 months.

³ Only among children who needed counseling in the previous 12 months.