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Comparing Types of Health Insurance for Children:

A Public Option versus a Private Option

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Abstract

Background—Many states have expanded public health insurance programs for children, and further expansions were proposed in recent national reform initiatives; yet the expansion of public insurance plans and the inclusion of a public option in state insurance exchange programs sparked controversies and raised new questions with regard to the quality and adequacy of various insurance types.

Objectives—We aimed to examine the comparative effectiveness of public versus private coverage on parental-reported children’s access to health care in low-income and middle-income families.

Methods/Participants/Measures—We conducted secondary data analyses of the nationally representative Medical Expenditure Panel Survey, pooling years 2002 to 2006. We assessed univariate and multivariate associations between child’s full-year insurance type and parental-reported unmet health care and preventive counseling needs among children in low-income (n = 28,338) and middle-income families (n = 13,160).

Results—Among children in families earning <200% of the federal poverty level, those with public insurance were significantly less likely to have no usual source of care compared with privately insured children (adjusted relative risk, 0.79; 95% confidence interval, 0.63–0.99). This

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Data Access: Medical Expenditure Panel Survey data is publicly available. Jennifer DeVoe and Carrie Tillotson have had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

Authorship: All six authors take responsibility for the entire content of the manuscript. Each of the listed authors meets each of the three authorship requirements as stated in the Uniform Requirements for Manuscripts. All authors conceptualized and designed the revised study design and provided expert interpretation of the new analyses and results. Dr DeVoe obtained funding for the project, drafted the original manuscript and provided supervision throughout. Ms Angier and Drs Wallace, Selph, and Graham critically revised the manuscript and provided additional supervision. Ms Tillotson acquired and analyzed the data, critically reviewed the manuscript, and conducted all statistical analyses.

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was the only significant difference in 50 logistic regression models comparing unmet health care and preventive counseling needs among low-income and middle-income children with public versus private coverage.

Conclusions—The striking similarities in reported rates of unmet needs among children with public versus private coverage in both low-income and middle-income groups suggest that a public children’s insurance option may be equivalent to a private option in guaranteeing access to necessary health care services for all children.

Keywords

health insurance; Medicaid; CHIP; child health; access to care

For children in the United States, stable health insurance coverage guarantees better “financial access” to care.^{1–3} Thus, many states have expanded the Children’s Health Insurance Program (CHIP) over the past decade^{4–7}; however, heated debate ensued when federal health insurance reform proposals included public program expansions and a public insurance option for all.⁸ These debates led us to question the differences between the experiences of publicly and privately insured children.

Earlier studies have reported associations between public coverage and worse access to outpatient specialist services and higher usage of inpatient services.^{9–11} On the other hand, private coverage is associated with worse access to trauma facilities, as compared with public coverage;¹² and unmet mental health care needs are reportedly higher among children with private coverage,¹³ with some data showing their unmet needs nearly equivalent to the uninsured.¹⁴ Public coverage has been associated with less out-of-pocket expense than private coverage, and total medical spending for children with public coverage is lower compared with the cost of care for privately insured children.^{15–17} Although some earlier studies have found differences in unmet need when comparing types of coverage, no clear patterns have emerged. In some, univariate differences disappeared after adjusting for covariates such as age, sex, ethnicity, residential area, family income, family composition, household size, and child’s health status.^{2,3,18,19} In one, disparity patterns reversed once more robust statistical analyses were used.²⁰

The 2009 reauthorization of the CHIP will continue to provide public coverage for seven million enrolled children, and expand coverage for an additional four million in need.²¹ This recent emphasis on the use of public insurance expansions to cover America’s uninsured and the debate about whether to include a public option in proposed state insurance exchange programs confirm the need (1) to continue investigations of the comparative effectiveness of public versus private insurance programs,^{3,6,22–28} and (2) to understand whether there is a difference when stratified by income. In this comparative effectiveness study, we conducted multivariate analyses of nationally representative data from families responding to the Medical Expenditure Panel Survey (MEPS), which included both low-income and middle-income groups. We aimed to determine whether there were significant associations between parental-reported unmet need among children with private coverage versus those with public coverage, and whether low-income and middle-income families reported different

experiences based on health insurance type. The stratification by income group allowed for a more equitable comparison between public and private insurance coverage.

METHODS

Data Source

We used data from the MEPS household component (MEPS-HC), which collects information from a subsample of households from the National Health Interview Survey and uses a stratified and clustered random sample with weights that produce nationally representative estimates for the civilian, noninstitutionalized US population.^{29–32} Respondents to the MEPS-HC are interviewed 5 times over a 2-year period. We combined data from 2002 through 2006, as these 5 years have a common variance structure necessary to ensure compatibility and comparability of our variables within the complex sample design of the MEPS. The MEPS-HC overlapping panel design facilitates the combination of data from 2 overlapping panels for each year (eg, data for 2002 combines the overlapping panels of 2001 to 2002 and 2002 to 2003). Each year of MEPS-HC data constitutes a nationally representative sample, and pooling the data produces average annual estimates. We included 41,498 children <17 years of age with responses to 1 full year of the survey and known full-year insurance/uninsurance data, with income of <400% federal poverty level (FPL) weighted to a US population of nearly 52.8 million children.

For the multivariate analyses, which included variables pertaining to parental characteristics, we further limited the analyses to children who had at least 1 parent who could be linked to the child. This linkage was possible for biological, adoptive, and step parents residing in the same household; MEPS does not include similar variables for linking foster parents or nonparent guardians.³³

Variables

We selected 5 MEPS-HC outcome variables previously shown to be associated with the child's and/or parent's insurance status and relevant to the child's access to and utilization of health care services^{19,34,35} including no usual source of care (USC); no doctor visits in the past year; unmet medical and/or prescription needs; less than yearly dental visits; and unmet dental needs. Yearly doctor visits were chosen as an unmet need variable because the American Academy of Pediatrics recommends yearly preventive pediatric health care visits up to 21 years of age.³⁶ In addition, the American Academy of Pediatric Dentistry recommends that yearly dental visits begin at the time of the first tooth and no later than 12 months of age.³⁷

We created 8 preventive counseling variables which incorporated MEPS-HC items that asked parents of children between age 2 and 17 years whether a doctor or health care provider had ever advised their child about the importance of (1) healthy eating; (2) routine exercise; (3) use of car safety seats/booster seats/seat belts; and (4) use of a helmet while riding a tricycle/bicycle. We then combined these 4 measures to assess whether parents reported their child (5) never received counseling with regard to at least 1 of these 4 items; (6) never received counseling with regard to all 4 items; (7) had not received counseling

with regard to at least 1 of these 4 items in the past 2 years; and/or (8) had not received counseling with regard to all 4 items in the past 2 years. All reported estimates are generated from sample sizes of at least 30 participants or have a relative standard error of less than or equal to 30% (unless otherwise noted).

We created a 5-category full-year child insurance-type variable based on MEPS-HC monthly insurance coverage data, including (1) child had full-year private insurance; (2) child had full-year public insurance; (3) child had full-year combination of private and public insurance; (4) child had part-year insurance (coverage gap); and (5) child was uninsured for the full-year. As the combined public/private full-year coverage variable included the 2 groups we set out to compare, we excluded it from further analyses.

Data Analysis

We used the conceptual model designed by Aday and Andersen³⁸ to guide identification of 12 potential covariates.³⁴ This process was further informed by MEPS-HC variables previously shown to be associated with unmet needs.^{19,34,35} We used 2-tailed χ^2 analyses to test univariate associations between outcomes and the following potential covariates: child's age, child's race/ethnicity, family composition, parental employment, parental education, geographic residence, metropolitan statistical area, child's USC status, parental insurance status, child's health status, whether the child had special health care needs, and parental USC status. Child's USC was not included as a covariate in the models assessing USC as an outcome.

Covariates

Family composition refers to whether the child could be linked to 1 parent or 2 parents residing in the same household (it does not account for biological relationship between parent and child or the marriage status between the 2 parents). If at least 1 parent (or the sole parent) had any private health insurance in the year, parent's insurance type was coded as "any private"; if both parents (or the sole parent) had only public insurance, or 1 had only public and 1 was uninsured during the year, parent's insurance type was coded as "public only"; if both parents (or the sole parent) were uninsured for the full year, parent's insurance type was coded as uninsured.

Geographic information included 4 regional categories in the MEP-HC, which are based on United States census regions. Metropolitan statistical area was defined by the US Office of Management and Budget as having at least one urbanized area of 50,000 or more inhabitants.³⁹ Child's race/ethnicity was determined by parent respondents based on standard options provided by MEPS interviewers; 1 combined child race/ethnicity variable was created by combining a race variable and an ethnicity variable. Child's health status as perceived by the responding parent was assessed as excellent, very good, good, fair, or poor, and the special health care needs variable identifies children with activity limitations, or who need or use more health care or other services than is usual for most children of the same age.³³ Child's and parents' USC status were defined as whether there was a particular doctor's office, clinic, health center, or other place that the individual usually goes to when sick or need advice about health.

Parental employment was defined as at least one parent (or the sole parent) being currently employed versus both parents (or the sole parent) currently unemployed (includes not working during the reference period, but having a job to return to; working during the reference period but not at time of interview; or not working during the reference period with no job to return to). Parental education was defined as at least one parent (or the sole parent) having greater than or equal to 12 years of education versus both parents (or the sole parent) having less than 12 years of education. Further details on all original MEPS variables can be found in the MEPS-HC documentation files.⁴⁰ All independent variables were significantly associated with at least 1 outcome at the 90% confidence level ($P < 0.10$).

We created univariate and multivariate logistic regression models to assess the associations between child's insurance type and parental-reported unmet health care and preventive counseling needs. We stratified groups by household income as a percentage of the FPL, including a group of families earning <200% of the FPL and families earning between 200% and 400% of the FPL. These household income groups were based on the MEPS-HC constructed variable that divides families into 5 income groups based on earnings as a percentage of the FPL: poor (<100% FPL); near poor (100% to <125% FPL); low income (125% to <200% FPL); middle income (200% to <400% FPL); and high income (>400% FPL). In 2006, the FPL for a family of 4 was \$20,000.⁴¹ Owing to small numbers of publicly insured children in the category >400% FPL, we did not conduct analyses for this group. We recognized that those over 300% FPL were very unlikely to have public coverage unless disabled; however, the MEPS-HC continuous FPL variable (POVLEV07) did not become available until the 2007 release of MEPS-HC data. Further, reducing the size of the middle-income group would have created very small cell sizes for some of the analyses. We did, however, include a covariate to control for whether the child had special health care needs to better account for the most likely reason for public coverage among children in families earning >300% FPL.

We originally included parental USC as a covariate in our models; however, this variable was removed from the multivariate models, as we found the results did not differ with its exclusion. We also investigated whether to include or exclude child's USC as a covariate in all models except the one using child's USC as the outcome. We found the association changed when child's USC status was excluded, which could overestimate the relationships between insurance status and the outcomes; however, including child's USC status might underestimate this relationship. Therefore, we report results from models with and without child's USC. Of note, we found an interaction between USC and insurance in only 1 of the 24 models that used USC as a covariate.

We report primary measures of association as adjusted relative risks calculated directly from statistical software, as opposed to odds ratios, because when an outcome is common in the underlying population (>10%), the odds ratio does not accurately approximate the relative risk.⁴² We used SUDAAN, version 10.0.1 to conduct statistical tests and make estimates with variance adjustment required for the complex sampling designs of the MEPS-HC. We set α level at 0.05 for all multivariate analyses a priori. This study was reviewed by the institutional review board at our academic health center and was deemed exempt because MEPS data is publicly available.

RESULTS

Among all MEPS-HC respondent children in households earning <400% FPL, 32.2% had public insurance all year, 40.5% had private coverage all year, and 7.7% were uninsured all year. A larger percentage of families earning below 200% FPL had full-year public coverage and children in families earning between 200% and 400% FPL had a larger percentage with private coverage (Table 1).

Among children from families earning <200% FPL, the privately insured group (compared with the public and uninsured groups) had the largest percentage of children who were white/non-Hispanic, from 2 parent households, had at least 1 employed parent, had at least 1 parent who completed high school, had a USC, and at least 1 parent who had private coverage (Table 2). These differences were also noted among children from families earning between 200% and 400% FPL, although some of the differences were less pronounced.

Univariate and multivariate associations between a child's insurance type and parental-reported unmet health care and preventive counseling needs are shown in Tables 3 and 4. Among children in families earning <200% of the FPL, those with public insurance were significantly less likely to have no USC compared with privately insured children (adjusted relative risk, 0.79; 95% confidence interval, 0.6–0.99). This was the only significant difference in 50 logistic regression models comparing unmet health care and preventive counseling needs among low-income and middle-income children with public versus private coverage, which included 24 models with and 26 models without child's USC status as a covariate. Compared with the reference group of children with full-year private coverage, those with coverage gaps or no coverage were significantly more likely to have unmet needs in both the low-income and middle-income groups.

DISCUSSION

These findings are somewhat contrary to many earlier studies that have showed significant differences between public and private coverage. Consistent with earlier studies, we found that children with coverage gaps or those uninsured all year were more likely to have unmet needs. To our knowledge, this is one of the first studies that stratified groups by income allowing for a narrower examination of income groups most likely to access public coverage. Previous studies have focused on differences between public and private insurance for the low-income group, but our study has a unique focus on the middle-income group. One explanation for the lack of significant differences between public and private coverage among the low-income children (<200% FPL) might be that private programs accessible to this group would be leaner with extensive cost sharing. More striking, perhaps, was the fact that there were no public-private differences among the 200% to 400% FPL group.

This study confirms that coverage gaps and lack of insurance are associated with a higher likelihood of unmet needs; however, as long as a child has continuous insurance coverage, the particular type of coverage may not affect whether a child's basic health care needs are met. This study noted only 1 significant difference in parental-reported unmet needs

between a public plan and a private plan. Although insurance status was not randomly allocated to children within this study population and some families likely chose coverage that best fit their child's needs, the findings of this study are relevant to current policy discussions. For example, if private and public plans are comparable, one way to prevent propagation of a 2-tiered system might be to provide a public option for everyone regardless of income. This would minimize stigma associated with public options that are only for the poor. In addition, low-income families who improve their financial status would have fluidity within a universal public coverage option, allowing them to cover both children and parents under the same plan and not worry about being forced to lose or change insurance plans due to increasing income.

Regardless of the comparability of public and private insurance in this study, concerns about the quality of public options are valid and will continue.^{9,10,43,44} If health insurance reform efforts include significant expansions in public insurance programs and the inclusion of public options in state exchange programs, it will be important to continue ongoing processes that ensure all public and private programs being offered (and mandated) are equitable and equivalent—both on paper and in practice.

Interpretation of these data requires several important considerations. First, our analyses were limited by the existing data. For example, we analyzed MEPS data through the end of 2006, so we were not able to ascertain how families have fared in the recent economic downturn. We were also unable to further stratify the middle-income group. Second, as with all studies that rely on self-report, response bias remains a possibility. Third, the observational nature of the data limits causal inferences. Fourth, we aimed to achieve consistency in our examination of how type of insurance was associated with all outcomes; thus, we included the same covariates across all models. We did not build individual models for a comprehensive examination of each covariate. Fifth, there are possible biases associated with insurance coverage selection in that families may have chosen the insurance that was best suited to their needs. Sixth, insurance type was not randomly allocated to the population raising concerns about endogeneity of insurance. Interestingly, the potential for children with special health care needs to be disproportionately covered by public insurance^{45–48} might bias the results toward publicly covered children having higher rates of unmet need, but our analysis did not find this to be the case. Finally, beyond any type of health insurance, a growing body of literature suggests that insuring all eligible children is not a panacea and does not sufficiently guarantee that their health care needs will be met.^{1, 49–51}

For children, having health insurance coverage is important; however, the striking similarities in reported rates of unmet need among children with public versus private coverage confirm that type of coverage is not a critical factor in guaranteeing access to certain types of care. This study suggests that public insurance options and private options, comparatively, may have similar effects on the receipt of recommended health care services among low-income and middle-income children.

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REFERENCES

1. Starfield B. Access, primary care, and medical home: rights of passage. *Medical Care*. 2008; 46:1015–1016. [PubMed: 18815520]
2. Olson LM, Tang SF, Newacheck PW. Children in the United States with discontinuous health insurance coverage. *N Engl J Med*. 2005; 353:382–391. [PubMed: 16049210]
3. Cummings J, Lavarreda S, Rice T, et al. The effects of varying periods of uninsurance on children's access to health care. *Pediatrics*. 2009; 123:e4411–e418.
4. Centers for Medicare and Medicaid Services. [Accessed December 29, 2009] Children's Health Insurance Program Reauthorization Act (CHIPRA) of 2009. Available at: <http://www.cms.hhs.gov/CHIPRA/>
5. Centers for Medicare and Medicaid Services. [Accessed December 29, 2009] National CHIP Policy. Available at: <http://www.cms.hhs.gov/NationalCHIPPolicy/>
6. The White House. [Accessed December 29, 2009] Remarks by President Barack Obama on Children's Health Insurance Program Bill Signing. Available at: http://www.whitehouse.gov/the_press_office/RemarksbyPresidentBarackObamaOnChildrensHealthInsuranceProgramBillSigning/
7. Rosenbaum S. Medicaid and national health care reform. *N Engl J Med*. 2009; 361:2009–2012. [PubMed: 19828526]
8. Tanne JH. Obama tries to defuse anger over healthcare reforms. *BMJ*. 2009; 339:b3385. [PubMed: 19690001]
9. Skaggs DL, Oda JE, Lerman L, et al. Insurance status and delay in orthotic treatment in children. *J Pediatr Orthop*. 2007; 27:94–97. [PubMed: 17195805]
10. Wang E, Choe M, Meara J, et al. Inequality of access to surgical specialty health care: why children with government-funded insurance have less access than those with private insurance in Southern California. *Pediatrics*. 2004; 114:e584–e590. [PubMed: 15520090]
11. Todd J, Armon C, Griggs A, et al. Increased rates of morbidity, mortality, and charges for hospitalized children with public or no health insurance as compared with children with private insurance in Colorado and the United States. *Pediatrics*. 2006; 118:577–585. [PubMed: 16882810]
12. Wang NE, Saynina O, Kuntz-Duriseti K, et al. Variability in pediatric utilization of trauma facilities in California: 1999 to 2005. *Ann Emerg Med*. 2008; 52:607–615. [PubMed: 18562043]
13. DeRigne L, Porterfield S, Metz S. The influence of health insurance on parent's reports of children's unmet mental health needs. *J Maternal Child Health*. 2009; 13:176–186.
14. Kataoka SH, Zhang L, Wells KB. Unmet need for mental health care among US children: variation by ethnicity and insurance status. *Am J Psychiatry*. 2002; 159:1548–1555. [PubMed: 12202276]
15. Galbraith AA, Wong ST, Kim SE, et al. Out-of-pocket financial burden for low-income families with children: socioeconomic disparities and effects of insurance. *Health Serv Res*. 2005; 40:1722–1736. [PubMed: 16336545]
16. Yu H, Dick AW, Szilagyi PG. Does public insurance provide better financial protection against rising health care costs for families of children with special health care needs? *Medical Care*. 2008; 46:1064–1070. [PubMed: 18815528]

17. Ku L, Broaddus M. Public and private health insurance: stacking up the costs. *Health Affairs*. 2008; 27:w318–w327. [PubMed: 18577537]
18. Luo X, Liu G, Frush K, et al. Children's health insurance status and emergency department utilization in the United States. *Pediatrics*. 2003; 112:314–319. [PubMed: 12897280]
19. Perry C, Kenney G. Preventive care for children in low-income families: how well do Medicaid and State Children's Health Insurance Programs do? *Pediatrics*. 2007; 120:e1393–e1401. [PubMed: 18055657]
20. Selden T, Hudson J. Access to care and utilization among children: estimating the effects of public and private coverage. *Medical Care*. 2006; 44(5 suppl):I-19–I-26. [PubMed: 16625060]
21. Kaiser Commission on Medicaid and the Uninsured. [Accessed March 31, 2011] Children's Health Insurance Program Reauthorization Act of 2009 (CHIPRA). <http://www.kff.org/medicaid/upload/7863.pdf>
22. Federico SG, Steiner JF, Beaty B, et al. Disruptions in insurance coverage: patterns and relationship to health care access, unmet need, and utilization before enrollment in the State Children's Health Insurance Program. *Pediatrics*. 2007; 120:e1009–e1016. [PubMed: 17908722]
23. Newacheck P, Hughes D, Stoddard J. Children's access to primary care: differences by race, income, and insurance status. *Pediatrics*. 1996; 97:26–32. [PubMed: 8545220]
24. Satchell M, Pati S. Insurance gaps among vulnerable children in the United States, 1999–2001. *Pediatrics*. 2005; 116:1155–1161. [PubMed: 16264003]
25. Smith PJ, Stevenson J, Chu SY. Associations between childhood vaccination coverage, insurance type, and breaks in health insurance coverage. *Pediatrics*. 2006; 117:1972–1978. [PubMed: 16740838]
26. Stevens GD, Seid M, Halfon N. Enrolling vulnerable, uninsured but eligible children in public health insurance: association with health status and primary care access. *Pediatrics*. 2006; 117:e751–e759. [PubMed: 16585286]
27. Sommers A, Dubay L, Blumberg L, et al. Dynamics in Medicaid and SCHIP eligibility among children in SCHIP's early years: implications for reauthorization. *Health Affairs*. 2007; 26:w598–w607. [PubMed: 17684031]
28. Sommers B. Why millions of children eligible for Medicaid and SCHIP are uninsured: poor retention versus poor take-up. *Health Affairs*. 2007; 26:w560–w567. [PubMed: 17656394]
29. Weinick, RM.; Zuvekas, SH.; Drilea, SK. Access to Health Care: Source and Barriers, 1996; MEPS Research Findings No. 3. AHCPR Pub. No. 98–0001. Rockville, MD: Agency for Health Care Policy and Research; 1997.
30. Zuvekas SM, Weinick RM. Changes in access to care, 1977–1996: the role of health insurance. *Health Serv Res*. 1999; 34(1, Part II):271–279. [PubMed: 10199674]
31. Cohen J, Monheit A, Beauregard K, et al. The medical expenditure panel survey: a national health information resource. *Inquiry*. 1996; 33:373–389. [PubMed: 9031653]
32. Cohen, S. Sample Design of the 1996 Medical Expenditure Panel Survey Household Component. MEPS Methodology Report No. 2, Pub. No. 97-0027. Rockville, MD: Agency for Healthcare Research and Quality; 1997.
33. Agency for Healthcare Research and Quality. [Accessed January 10, 2008] MEPS HC-089: 2004 Full Year Consolidated Data File. Available at: http://www.meps.ahrq.gov/mepsweb/data_stats/download_data/pufs/h89/h89doc.pdf
34. DeVoe JE, Tillotson C, Wallace L. Uninsured children and adolescents with insured parents. *JAMA*. 2008; 300:1904–1913. [PubMed: 18940977]
35. DeVoe JE, Tillotson C, Wallace LS. Children's receipt of health care services and family health insurance patterns. *Ann Fam Med*. 2009; 7:406–414. [PubMed: 19752468]
36. American Academy of Pediatrics. [Accessed December 8, 2010] Recommendations for Preventive Pediatric Health Care. Available at: <http://practice.aap.org/content.aspx?aid=1599&nodeID=4027>
37. Clinical Affairs Committee. Guideline on Periodicity of Examination, Preventive Dental Services, Anticipatory Guidance/Counseling, and Oral Treatment for Infants, Children, and Adolescents. *Clinical Guidelines Reference Manual* [serial online]. 2009; 32:93–100. Available from American Academy of Pediatric Dentistry. at http://www.aapd.org/media/policies_guidelines/g_periodicity.pdf.

38. Aday LA, Andersen R. A framework for the study of access to medical care. *Health Serv Res.* 1974; 9:208–220. [PubMed: 4436074]
39. Office of Management and Budget, Standards for Defining Metropolitan and Micropolitan Statistical Areas; Notice. *Federal Register* [serial online]. 2000; 65:82228–82238.
40. Agency for Healthcare Research and Quality. [Accessed December 21, 2010] Available at: http://www.meps.ahrq.gov/mepsweb/data_stats/download_data/pufs/h105/h105doc.pdf
41. Office of the Secretary, Annual Update of the HHS Poverty Guidelines. Services Department of Health and Human Services, ed. *Federal Register* [serial online]. 2006; 71:3848–3849.
42. Zhang J, Yu K. What's the relative risk? A method of correcting the odds ratio in cohort studies of common outcomes. *J Am Med Assoc.* 1998; 280:1690–1691.
43. Skaggs DL, Lehmann CL, Rice C, et al. Access to orthopaedic care for children with Medicaid versus private insurance: results of a national survey. *J Pediatr Orthop.* 2006; 26:400–404. [PubMed: 16670556]
44. Hwang AH, Hwang MM, Xie HW, et al. Access to urologic care for children in California: Medicaid versus private insurance. *Urology.* 2005; 66:170–173. [PubMed: 15993479]
45. Stein RE, Shenkman E, Wegener D, et al. Health of children in title XXI: should we worry? *Pediatrics.* 2003; 112:e112–e118. [PubMed: 12897316]
46. Shenkman E, Vogel B, Boyett J, et al. Disenrollment and Re-enrollment Patterns in a SCHIP. *Health Care Financ Rev.* 2002; 23:47–63.
47. Blumberg SJ, O'Connor KS, Kenney G. Unworried parents of well children: a look at uninsured children who reportedly do not need health insurance. *Pediatrics.* 2005; 116:345–351. [PubMed: 16061588]
48. Davidoff A, Kenney G, Dubay L. Effects of the State Children's Health Insurance Program expansions on children with chronic health conditions. *Pediatrics.* 2005; 116:E34–E42. [PubMed: 15958662]
49. Starfield B. US child health: what's amiss, and what should be done about it? *Health Affairs.* 2004; 23:165–170. [PubMed: 15371382]
50. Starfield B. Insurance and the US health care system. *N Engl J Med.* 2005; 353:418–419. [PubMed: 16049215]
51. Mangione-Smith R, DeCristofaro AH, Setodji CM, et al. The quality of ambulatory care delivered to children in the United States. *N Engl J Med.* 2007; 357:1515–1523. [PubMed: 17928599]

TABLE 1
Prevalence of US Children's Full-year Patterns of Insurance Coverage, MEPS 2002–2006

	Children With Family Income <200% FPL		Children With Family Income 200%–400% FPL		All Children With Family Income 400% FPL	
	Unweighted N*	Weighted N in Millions (Weighted %) [†]	Unweighted N*	Weighted N in Millions (Weighted %) [†]	Unweighted N*	Weighted N in Millions (Weighted %) [†]
Full year—child insurance patterns						
Child has private all year	3698	5.3 (18.5)	7962	16.1 (66.6)	11,660	21.4 (40.5)
Child has public all year	15,391	14.2 (49.6)	2001	2.8 (11.7)	17,392	17.0 (32.2)
Child has private/public combination but no gap	1699	1.9 (6.8)	649	1.1 (4.5)	2348	3.0 (5.7)
Child was uninsured part year (coverage gap)	4800	4.8 (16.7)	1490	2.5 (10.4)	6290	7.3 (13.8)
Child was uninsured full year	2750	2.4 (8.4)	1058	1.7 (6.9)	3808	4.1 (7.7)
Total	28,338	28.6 (100)	13,160	24.2 (100)	41,498	52.8 (100)

Source: 2002 to 2006 MEPS, Household Component.

Notes: Percentages may not add to 100% due to rounding to the nearest tenth.

FPL: federal poverty level (in 2006, FPL for family of 4 was \$20,000).

* Unweighted counts represent the actual number of children, aged 0 to 17 years, from MEPS respondent households with a positive person weight.

[†] To derive national population estimates, each child record from the MEPS was weighted according to person-level weights provided by the data-collection agency. MEPS indicates Medical Expenditure Panel Survey.

TABLE 2

Characteristics Associated With Children’s Different Insurance Types and Patterns

	Children’s Different Insurance Types and Patterns Stratified by FPL Categories									
	<200% FPL					200%–400% FPL				
	Child had Private all Year	Child had Public all Year	Child was Uninsured Part Year (Coverage gap)	Child was Uninsured Full Year	All Children (100%)	Child had Private all Year (66.6%)	Child had Public all Year (11.7%)	Child was Uninsured Part Year (Coverage gap) (10.4%)	Child was Uninsured Full Year (6.9%)	All Children (100%)
No. of sample*	3698 (18.5%)	15,391 (49.6%)	4800 (16.7%)	2750 (8.4%)	26,639 (100%)	7962 (66.6%)	2001 (11.7%)	1490 (10.4%)	1058 (6.9%)	12,511 (100%)
Characteristics	Weighted % †									
Child’s age, years										
0–4	23.1	34.3	28.0	18.5	29.5	23.6	28.0	28.1	20.4	24.4
5–9	30.7	28.6	28.1	27.2	28.8	27.0	26.9	26.6	23.2	26.6
10–14	25.2	19.9	22.1	26.0	21.9	24.4	21.2	23.9	25.7	24.0
15–17	21.0	17.2	21.8	28.3	19.8	25.1	23.9	21.4	30.7	25.0
Child’s Race/Ethnicity										
White, non-Hispanic	56.3	34.1	40.1	30.0	39.2	72.5	43.8	57.5	52.4	65.9
Hispanic, any Race	18.7	30.9	36.3	51.8	31.3	11.3	28.3	22.4	28.1	15.8
Non-White, non-Hispanic	25.1	35.0	23.6	18.2	29.5	16.2	28.0	20.1	19.4	18.3
Family composition‡										
1 parent in household	28.4	51.6	41.3	34.2	43.5	16.0	38.6	27.9	26.7	20.7
2 parents in household	71.6	48.4	58.7	65.8	56.5	84.0	61.4	72.1	73.4	79.3
Parental employment										
Employed	94.8	70.4	78.5	84.8	78.1	99.1	90.2	93.4	96.0	97.2
Not employed	5.2	29.6	21.5	15.2	21.9	0.9	9.8	6.6	4.0	2.8
Parent’s education										
12y	87.7	63.8	68.4	58.1	69.0	96.4	81.2	88.6	81.5	92.7
<12y	12.3	36.2	31.6	42.0	31.0	3.6	18.8	11.4	18.5	7.3
Geographic residence										
Northeast	17.3	15.8	12.8	9.3	15.0	18.7	15.6	11.3	12.3	17.0
Midwest	24.5	18.0	16.6	16.0	18.9	28.3	15.8	19.6	18.5	25.1

Children's Different Insurance Types and Patterns Stratified by FPL Categories									
<200% FPL					200%–400% FPL				
	Child had Private all Year	Child had Public all Year	Child was Uninsured Full Year	All Children	Child had Private all Year	Child had Public all Year	Child was Uninsured Full Year	All Children	Child was Uninsured Full Year
South	33.6	40.8	42.6	39.9	30.7	43.9	42.2	44.0	34.5
West	24.6	25.4	28.1	26.2	22.4	24.8	26.9	25.3	23.4
Metropolitan statistical area (MSA)									
Non-MSA	20.3	21.5	17.0	19.7	18.6	16.1	18.0	16.0	18.0
MSA	79.7	78.5	83.0	80.3	81.4	83.9	82.0	84.0	82.0
Child's USC status									
Yes USC	92.9	92.3	78.1	87.0	94.2	92.3	84.7	72.8	91.4
No USC	7.1	7.7	21.9	13.1	5.8	7.7	15.3	27.2	8.6
Parent's insurance type									
Any private	96.0	23.3	43.2	41.7	99.1	51.3	82.3	41.0	87.6
Public Only	0.9	53.1	29.1	34.1	0.1 [‡]	26.9	4.9	2.9	3.9
Uninsured	3.1	23.6	27.8	24.2	0.8*	21.8	12.8	56.1	8.5
Child health status									
Excellent/very good/good	98.2	95.7	96.1	96.4	98.9	96.9	97.9	98.6	98.5
Fair/poor	1.8	4.3	3.9	3.6	1.1	3.1	2.1	1.4 [§]	1.5
Child has special health care needs									
Yes	17.6	22.0	16.3	18.9	18.5	26.0	15.6	12.2	18.7
No	82.4	78.0	83.7	81.1	81.5	74.0	84.4	87.8	81.3

Source: 2002–2006 MEPS, Household Component.

Notes: Column percentages may not add to 100% due to rounding to the nearest tenth.

FPL: in 2006, FPL for family of 4 was \$20,000).

$P < 0.05$ in χ^2 test comparisons of overall differences between subgroups of each covariate and insurance patterns, except for Metropolitan Statistical Area for the 200% to 400% FPL group.

* Unweighted counts represent the total number of children, aged 0 to 17 years, from MEPS respondent households with a positive person weight.

[‡] To derive national population estimates, each child record from the MEPS was weighted according to person-level weights provided by the data-collection agency.

[§] One parent: $n=11,519$ for <200%FPL; $n=2,798$ for 200% to 400%FPL. Two parents: $n=15,389$ for <200%FPL; $n=10,102$ for 200% to 400%FPL.

§ This estimate represents ≤ 30 people and/or has relative standard error > 30%, and may not be reliable.
FPL indicates federal poverty level; MEPS, Medical Expenditure Panel Survey; USC, usual source of care.

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Association of Child's Full-year Insurance Type and Child's Access to Health Care Services in the Preceding 12 mo, by Family Income Categories

TABLE 3

Child Unmet Health Care Needs	<200% FPL		<200% FPL		200%–400% FPL		200%–400% FPL	
	Weighted %*	Includes USC as a Covariate	aRR [†] (95% CI)	Excludes USC as a Covariate	aRR [†] (95% CI)	Includes USC as a Covariate	aRR [†] (95% CI)	Excludes USC as a Covariate
No usual source of care								
Child insurance pattern and type								
Child has full-year private insurance	7.1	NA	1.00	1.00	5.8	NA	1.00	1.00
Child has full-year public	7.7		0.79 (0.63–0.99)		7.7		0.74 (0.53–1.04)	
Child is part-year uninsured (gap)	21.9		2.22 (1.79–2.75)		15.3		1.89 (1.44–2.49)	
Child is full-year uninsured	40.1		3.36 (2.97–4.23)		27.2		2.32 (1.72–3.14)	
No doctor visit in past year [‡]								
Child insurance pattern and type								
Child has full-year private insurance	27.0	1.00	1.00	1.00	21.7	1.00	1.00	1.00
Child has full-year public	24.8	0.97 (0.88–1.07)	0.94 (0.84–1.05)	0.91 (0.76–1.09)	21.6	0.94 (0.79–1.12)	0.91 (0.76–1.09)	
Child is part-year uninsured (gap)	34.1	1.07 (0.97–1.19)	1.18 (1.06–1.32)		31.5	1.26 (1.08–1.46)	1.32 (1.14–1.52)	
Child is full-year uninsured	53.4	1.32 (1.17–1.50)	1.56 (1.38–1.77)		42.4	1.30 (1.11–1.52)	1.41 (1.21–1.64)	
Unmet medical and/or prescription needs [§]								
Child insurance pattern and type								
Child has full-year private insurance	2.5	1.00	1.00	1.00	2.6	1.00	1.00	1.00
Child has full-year public	2.5	0.86 (0.54–1.38)	0.86 (0.54–1.37)	1.05 (0.65–1.70)	3.0	1.05 (0.65–1.70)	1.05 (0.65–1.69)	
Child is part-year uninsured (gap)	5.5	2.14 (1.43–3.20)	2.21 (1.47–3.30)		6.1	2.44 (1.61–3.71)	2.51 (1.65–3.82)	
Child is full-year uninsured	6.3	2.60 (1.64–4.10)	2.78 (1.76–4.38)		6.0	2.92 (1.94–4.39)	3.07 (2.02–4.68)	
No dental visits at least yearly								
Child insurance pattern and type								
Child has full-year private insurance	28.1	1.00	1.00	1.00	22.2	1.00	1.00	1.00
Child has full-year public	33.3	0.95 (0.85–1.06)	0.94 (0.84–1.05)	1.08 (0.94–1.24)	29.3	1.04 (0.95–1.13)	1.08 (0.94–1.24)	
Child is part-year uninsured (gap)	41.0	1.20 (1.09–1.33)	1.25 (1.13–1.38)		36.3	1.35 (1.25–1.46)	1.42 (1.26–1.60)	
Child is full-year uninsured	55.7	1.63 (1.48–1.81)	1.74 (1.58–1.93)		41.2	1.73 (1.60–1.87)	1.69 (1.49–1.92)	
Unmet dental needs [¶]								

Child Unmet Health Care Needs	<200% FPL		<200% FPL		200%-400% FPL		200%-400% FPL	
	Weighted %*	aARR [†] (95% CI)	Includes USC as a Covariate	Excludes USC as a Covariate	aARR [†] (95% CI)	Includes USC as a Covariate	Excludes USC as a Covariate	aARR [†] (95% CI)
Child insurance pattern and type								
Child has full-year private insurance	3.9	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Child has full-year public	3.6	1.02 (0.71–1.46)	1.02 (0.71–1.46)	1.02 (0.71–1.46)	0.97 (0.56–1.69)	0.96 (0.55–1.67)	0.96 (0.55–1.67)	0.96 (0.55–1.67)
Child is part-year uninsured (gap)	7.6	1.94 (1.34–2.81)	1.99 (1.38–2.86)	1.99 (1.38–2.86)	2.30 (1.54–3.42)	2.35 (1.58–3.50)	2.35 (1.58–3.50)	2.35 (1.58–3.50)
Child is full-year uninsured	7.9	2.02 (1.35–3.03)	2.11 (1.42–3.12)	2.11 (1.42–3.12)	1.84 (1.18–2.88)	1.84 (1.18–2.88)	1.94 (1.24–3.04)	1.94 (1.24–3.04)

Source: 2002–2006 MEPS, Household Component.

Notes: in 2006, FPL for family of 4 was \$20,000. Children with no parent record(s) linked were excluded from all models because information could not be obtained for parental employment, education, and insurance status (for <200% FPL: n=1430; for 200%-400% FPL: n = 260). Bold indicates statistically significant CIs.

* P < 0.05 in the χ^2 analysis for overall differences among insurance groups in each of the 5 outcomes.

[†] Covariates in all multivariate analyses: age, race/ethnicity, parental education, parental employment, parental insurance status, geographic residence, metropolitan service area, family composition, perceived health status, child with special health care needs status. Separate models are reported which include and exclude child's USC status, as noted in the table.

[‡] Respondent reported having zero doctor's office or clinic visits in the past year.

[§] Respondent reported being unable to get medical care and/or prescription medications when needed within the past year.

^{||} Respondent reported having less than 1 dental visit yearly.

[¶] Respondent reported being unable to get dental care when needed within the past year.

ARR indicates adjusted risk ratio; CI, confidence interval; FPL, federal poverty level; MEPS, Medical Expenditure Panel Survey; USC, usual source of care.

TABLE 4

Association of Child's Full-year Insurance Type and Child's Access to Preventive Health Counseling,⁷ by Family Income Categories

Child Preventive Health Counseling Services	<200% FPL		200%-400% FPL		200%-400% FPL		Excludes USC as a covariate
	Includes USC as a covariate	aRR [†] (95% CI)	Includes USC as a covariate	aRR [†] (95% CI)	Includes USC as a covariate	aRR [†] (95% CI)	
	<200% FPL Weighted %*		200%-400% FPL Weighted %*				
Never received counseling regarding Healthy Eating [§]							
Child insurance pattern and type							
Child has full-year private insurance	50.4	1.00	46.5	1.00	1.00	1.00	1.00
Child has full-year public	47.2	0.98 (0.90-1.06)	48.0	0.97 (0.89-1.05)	1.04 (0.94-1.15)	1.03 (0.93-1.14)	1.03 (0.93-1.14)
Child is part-year uninsured (gap)	54.1	1.04(0.96-1.14)	52.2	1.08(0.99-1.17)	1.08 (0.98-1.20)	1.10 (0.99-1.21)	1.10 (0.99-1.21)
Child is full-year uninsured	63.9	1.15 (1.05-1.26)	58.9	1.23 (1.12-1.33)	1.14 (1.01-1.28)	1.16 (1.04-1.31)	1.16 (1.04-1.31)
Never received counseling regarding exercise //							
Child insurance pattern and type							
Child has full-year private insurance	67.9	1.00	67.6	1.00	1.00	1.00	1.00
Child has full-year public	67.0	0.99 (0.93-1.05)	66.7	0.98 (0.93-1.04)	1.00 (0.94-1.07)	1.00 (0.94-1.06)	1.00 (0.94-1.06)
Child is part-year uninsured (gap)	71.7	1.03 (0.97-1.10)	71.8	1.05 (0.99-1.12)	1.04 (0.97-1.11)	1.05 (0.98-1.12)	1.05 (0.98-1.12)
Child is full-year uninsured	76.0	1.06(0.99-1.13)	74.7	1.11 (1.04-1.18)	1.08 (1.00-1.16)	1.09 (1.01-1.18)	1.09 (1.01-1.18)
Never received counseling regarding use of seat belts/safety seats in cars [¶]							
Child insurance pattern and type							
Child has full-year private insurance	63.0	1.00	58.9	1.00	1.00	1.00	1.00
Child has full-year public	59.6	0.98 (0.92-1.04)	61.2	0.97 (0.91-1.03)	0.99 (0.91-1.08)	0.99 (0.91-1.08)	0.99 (0.91-1.08)
Child is part-year uninsured (gap)	64.6	1.01 (0.94-1.08)	65.4	1.03 (0.96-1.10)	1.08 (1.00-1.17)	1.08 (1.01-1.17)	1.08 (1.01-1.17)
Child is full-year uninsured	72.5	1.08(0.99-1.16)	70.1	1.12 (1.03-1.21)	1.08 (0.98-1.19)	1.09 (0.99-1.20)	1.09 (0.99-1.20)
Never received counseling regarding use of bike helmets [#]							
Child insurance pattern and type							
Child has full-year private insurance	62.3	1.00	61.6	1.00	1.00	1.00	1.00
Child has full-year public	65.2	1.03 (0.97-1.09)	67.5	1.02 (0.96-1.09)	1.02 (0.93-1.12)	1.02 (0.93-1.12)	1.02 (0.93-1.12)
Child is part-year uninsured (gap)	68.9	1.05 (0.98-1.11)	69.4	1.07 (1.01-1.14)	1.08 (1.00-1.17)	1.09 (1.01-1.17)	1.09 (1.01-1.17)
Child is full-year uninsured	75.5	1.07(0.99-1.16)	75.7	1.13 (1.05-1.21)	1.11 (1.01-1.22)	1.12 (1.02-1.24)	1.12 (1.02-1.24)

Past 2 y:

Child Preventive Health Counseling Services	<200% FPL		<200% FPL		200%-400% FPL		200%-400% FPL	
	Weighted %	aARR [‡] (95% CI)	Includes USC as a covariate	Excludes USC as a covariate	Includes USC as a covariate	Excludes USC as a covariate	Includes USC as a covariate	Excludes USC as a covariate
Did not receive at least 1 of 4 preventive services ^{**}								
Child insurance pattern and type								
Child has full-year private insurance	83.4	1.00	1.00 (0.97-1.04)	1.00 (0.97-1.04)	1.00	1.00	1.01 (0.97-1.05)	1.01 (0.97-1.05)
Child has full-year public	83.8	1.01 (0.97-1.04)	1.00 (0.97-1.04)	1.00 (0.97-1.04)	1.00	1.00	1.01 (0.97-1.05)	1.01 (0.97-1.05)
Child is part-year uninsured (gap)	86.7	1.02 (0.99-1.06)	1.03 (1.00-1.07)	1.03 (1.00-1.07)	1.05 (1.01-1.09)	1.05 (1.01-1.09)	1.05 (1.01-1.09)	1.05 (1.01-1.09)
Child is full-year uninsured	90.0	1.05 (1.01-1.09)	1.07 (1.03-1.11)	1.07 (1.03-1.11)	1.06 (1.01-1.11)	1.06 (1.01-1.11)	1.06 (1.01-1.11)	1.06 (1.01-1.11)
Past 2 y:								
Did not receive all 4 preventive services ^{††}								
Child insurance pattern and type								
Child has full-year private insurance	42.3	1.00	1.00 (0.89-1.08)	1.00 (0.89-1.08)	1.00	1.00	0.97 (0.86-1.10)	0.96 (0.86-1.08)
Child has full-year public	38.8	1.00(0.90-1.10)	1.00(0.90-1.10)	0.98 (0.89-1.08)	0.97 (0.86-1.10)	0.97 (0.86-1.10)	1.14 (1.02-1.27)	1.16 (1.04-1.29)
Child is part-year uninsured (gap)	48.3	1.11 (1.01-1.23)	1.17 (1.06-1.29)	1.17 (1.06-1.29)	1.20 (1.05-1.38)	1.20 (1.05-1.38)	1.14 (1.02-1.27)	1.16 (1.04-1.29)
Child is full-year uninsured	61.1	1.27 (1.14-1.42)	1.39 (1.25-1.54)	1.39 (1.25-1.54)	1.20 (1.05-1.38)	1.20 (1.05-1.38)	1.24 (1.08-1.43)	1.24 (1.08-1.43)
Lifetime:								
Did not receive at least 1 out of 4 preventive services ^{‡‡}								
Child insurance pattern and type								
Child has full-year private insurance	81.4	1.00	1.00 (0.96-1.04)	1.00 (0.96-1.04)	1.00	1.00	1.01 (0.96-1.06)	1.01 (0.96-1.06)
Child has full-year public	81.9	1.00 (0.97-1.04)	1.00 (0.97-1.04)	1.00 (0.96-1.04)	1.00 (0.96-1.04)	1.00 (0.96-1.06)	1.01 (0.96-1.06)	1.01 (0.96-1.06)
Child is part-year uninsured (gap)	84.6	1.02 (0.98-1.06)	1.03 (0.99-1.07)	1.03 (0.99-1.07)	1.05 (1.00-1.10)	1.05 (1.00-1.10)	1.05 (1.00-1.10)	1.05 (1.00-1.10)
Child is full-year uninsured	87.7	1.04 (0.99-1.09)	1.06 (1.01-1.11)	1.06 (1.01-1.11)	1.06 (1.00-1.12)	1.06 (1.00-1.12)	1.06 (1.00-1.12)	1.06 (1.00-1.12)
Lifetime:								
Did not receive all 4 preventive services ^{§§}								
Child insurance pattern and type								
Child has full-year private insurance	37.1	1.00	1.00 (0.88-1.08)	0.96 (0.86-1.06)	1.00	1.00	1.02 (0.90-1.16)	1.01 (0.89-1.15)
Child has full-year public	34.4	0.97 (0.88-1.08)	0.97 (0.88-1.08)	0.96 (0.86-1.06)	1.02 (0.90-1.16)	1.02 (0.90-1.16)	1.15 (1.01-1.31)	1.16 (1.02-1.32)
Child is part-year uninsured (gap)	41.9	1.07 (0.96-1.20)	1.13 (1.01-1.26)	1.13 (1.01-1.26)	1.22 (1.03-1.44)	1.22 (1.03-1.44)	1.15 (1.01-1.31)	1.16 (1.02-1.32)
Child is full-year uninsured	53.0	1.20 (1.06-1.36)	1.32 (1.18-1.48)	1.32 (1.18-1.48)	1.22 (1.03-1.44)	1.22 (1.03-1.44)	1.25 (1.06-1.48)	1.25 (1.06-1.48)

Source: 2002-2006 MEPS, Household Component.

Notes: in 2006, FPL for family of 4 was \$20,000. Children with no parent record(s) linked were excluded from all models because information could not be obtained for parental employment, education, and insurance status, (for <200% FPL: n=1430; for 200–400% FPL: n = 260). Bold indicates statistically significant CIs.

* $P < 0.05$ in the χ^2 analysis for overall differences among insurance groups in each of the 8 outcomes.

[†] For the receipt of preventive counseling services outcomes, these questions were only asked of children of age 2 of 17 years; children under the age of 2 are excluded from these analyses.

[‡] Covariates in all multivariate analyses: age, race/ethnicity, parental education, parental employment, parental insurance status, geographic residence, metropolitan service area, family composition, perceived health status, child with special health care needs status. Separate models are reported which include and exclude child's USC status, as noted in the table.

[§] Respondent reported having never received advice from a doctor or health care provider regarding child's eating healthy.

^{||} Respondent reported having never received advice from a doctor or health care provider regarding amount and kind of exercise, sports or physically active hobbies child should have.

[¶] Respondent reported having never received advice from a doctor or health care provider about using a safety seat, booster seat, or lap and shoulder belts when child rides in the car.

[#] Respondent reported having never received advice from a doctor or health care provider about the child's using a helmet when riding a bicycle or motorcycle.

^{**} Respondent reported child had not received at least 1 of 4 preventive counseling items in the previous 2 years [advice about the importance of (1) healthy eating; (2) routine exercise; (3) use of car safety seats/booster seats/ seat belts; and (4) use of a helmet while riding a tricycle/bicycle].

^{††} Respondent reported child had not received all 4 of 4 preventive counseling items in the previous 2 years.

^{‡‡} Respondent reported child had never received at least 1 of 4 preventive counseling items.

^{§§} Respondent reported child had never received all 4 of 4 preventive counseling items.

ARR indicates adjusted risk ratio; CI, confidence interval; FPL, federal poverty level; MEPS, Medical Expenditure Panel Survey; USC, usual source of care.